Granite 2000 / 2000+
1ME HD Video Switchers

Operators Manual

Granite
Software Version 5





switchers / graphics / slow motion

Warranty on all Granite Switchers

The Products will be of a professional quality, meet the specifications set forth in the Product descriptions and are warranted to be free from defects in materials and workmanship for a period of thirteen (13) months from shipment from Manufacturer. Broadcast Pix will repair or, at its sole option, replace any component found to be faulty on any system returned to the service center of Broadcast Pix in the USA for repair. The costs of any visit to the customer's site are not included in the warranty. The cost of returning Product to Broadcast Pix is the responsibility of the end user or the Dealer. Dealer is authorized to deliver the Broadcast Pix warranty, as described above, to purchasers of the Products and the Future Products. No software is to be added to the product from any other source than Broadcast Pix, unless approved by Broadcast Pix, or it will invalidate this warranty.

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Section 1:
Installation and Getting Started

Thank you for purchasing a Broadcast Pix Granite Video Production System, soon you will be experiencing how we have redefined the switcher.

A Granite System consists of 2 main components, the Granite Server and the Granite Switcher. The Granite Server stores the Fluent Workflow software and is connected to the Granite Switcher, which processes all the video I/O.

There are a total of 3 Granite 2000 switcher models, as shown below, all of which use the same BP Switcher software, each with unique hardware to control the software.

Take note to which model you have purchased and refer to that section in this manual prior to using your Broadcast Pix Switcher.

Please refer to the Quick Start Guide for preliminary installation of your system, which is included inside the Granite Server box. It is important that the Granite Switcher is plugged in and powered on prior to powering on the Granite Server. To shutdown a system it is important to first turn off the Granite Server then the Granite Switcher.

Granite Configurations:

There are 2 Granite 2000 configurations:

Granite 2000
Granite 2000+
Granite 2000X

All non + models have 11 HD/SD-SDI inputs and 6 HD/SD-SDI outputs.
All + and X models double the I/O for a total of 22 inputs and 12 outputs.

1.1 Granite Switcher

The Granite Switcher consists of a modular design allowing for easy expandability and serviceability. There are a total of 8 modules on the rear of the Granite Switcher, as shown below. There are 2 slots for SDI Input/Output boards, either I/O board accepts Serial Digital Interface (SDI) or High Definition-SDI (HD/SD-SDI). Each I/O board has 11 inputs and 6 outputs with BNC connections. Sources can be synchronous and/or asynchronous, and auto detect 1080i/59.94, 720p/59.94,1080i/50, 720p/50, 486i/29.97 and 576i/25. The Granite Switcher supports the standards:
SMPTE 296M, SMPTE 274M, ITU-R BT601-5, SMPTE 259M and SMPTE 292M.

The DVI-D outputs are used for monitoring Program, Preview or Clean Feed on inexpensive monitors or for feeding a video projector. The DVI outputs support the video standard of 1920x1080i at 59.94/50Hz. Note that depending on your device the DVI signal may or may not be accepted.

The Granite Switcher does not have a power switch, and may be left on even if the Granite Server is powered off. It is important that the Granite Switcher is turned on first prior to booting on the Granite Server.

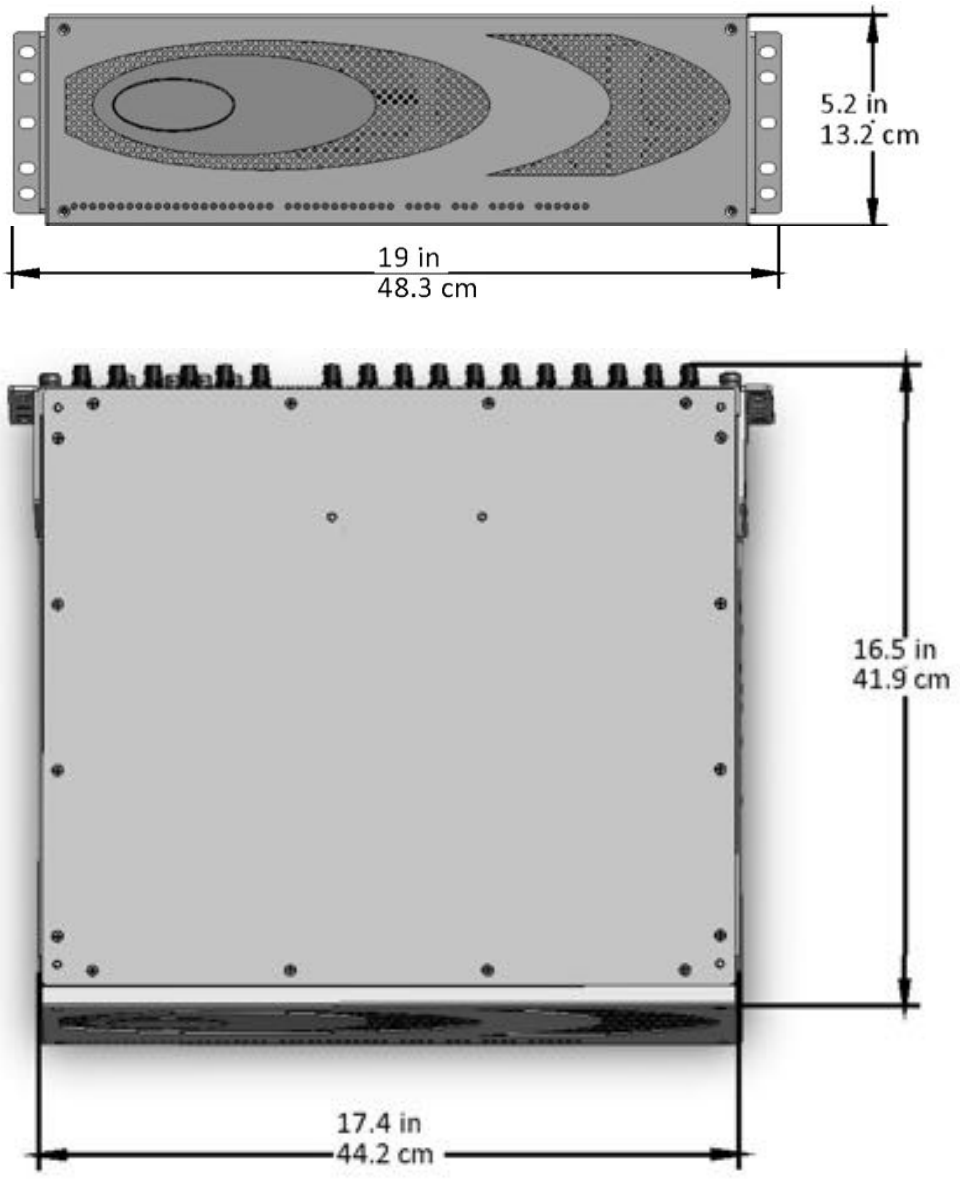
Back Panel Connections:



NOTE: It is not recommended to have long cable runs over 200 meters (655 feet) for SD and 100 meters (325 feet) for HD, as signal quality will be degraded. For longer runs, it is necessary to install video amplifiers/reclockers to boost the signal, although external components may increase overall system delay.

1.1.1 Granite Switcher Installation

The Granite Switcher is a 3 RU frame and can be mounted in a standard 19” rack from the front (logo side) or the rear (connector side). The supplied rack ears are reversible and screw into the side of the Switcher with the supplied screws.
In addition, a rear support bracket is provided for proper support when attached with multiple/heavy cables. The rear support bracket can accept rack depths from 24 inches to 36 inches.



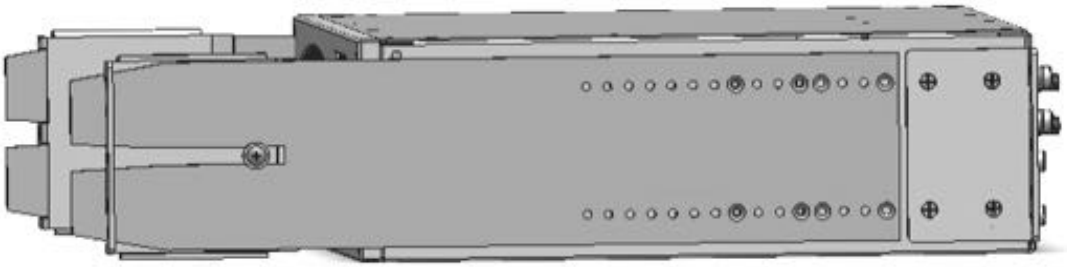
To attach the Switcher rear support brackets:

1. Screw in the 2 rear support rack ears to the desired height in your rack.

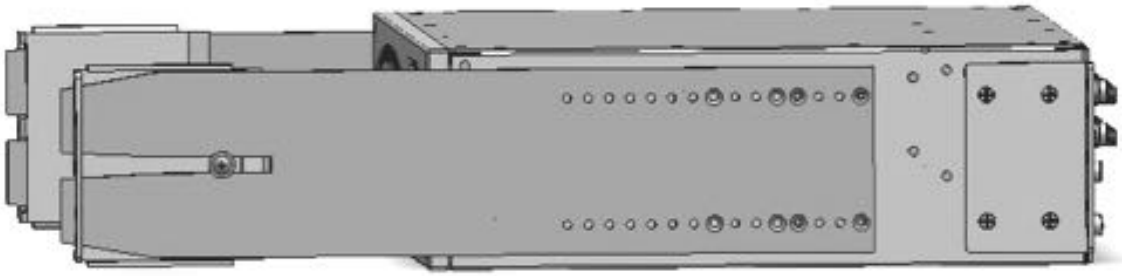
2. Determine the depth of the rack, and screw in the support brackets to each side of the Granite Switcher, using the guide below.

3. Align the Granite Switcher with the rear support ears and slide the support brackets through the nylon bushing.

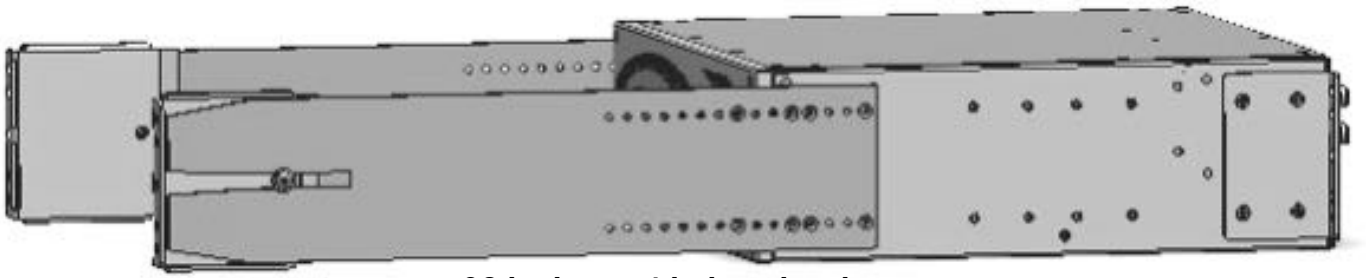
4. Screw in the Granite Switcher to the rack using the front rack ears.



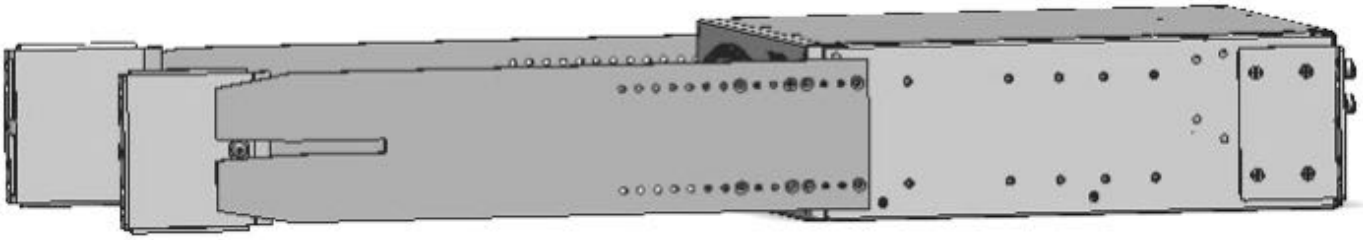
21.5 inches – No holes showing, flush with rack ears



24 inches – No holes showing, with space



32 inches – 4 holes showing

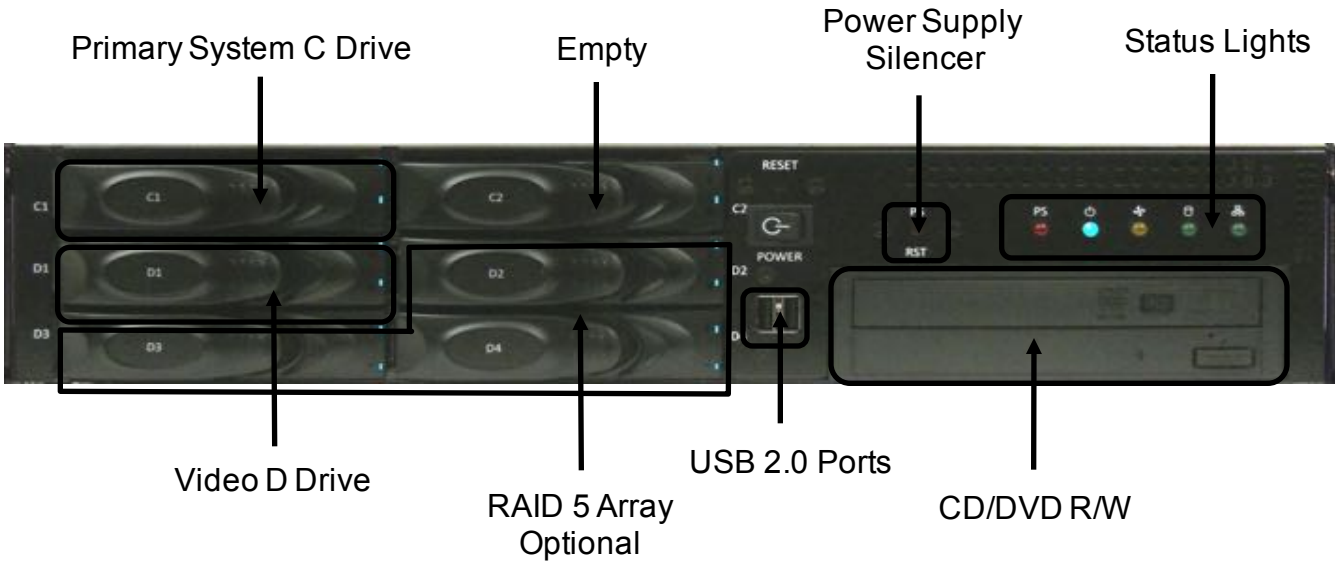


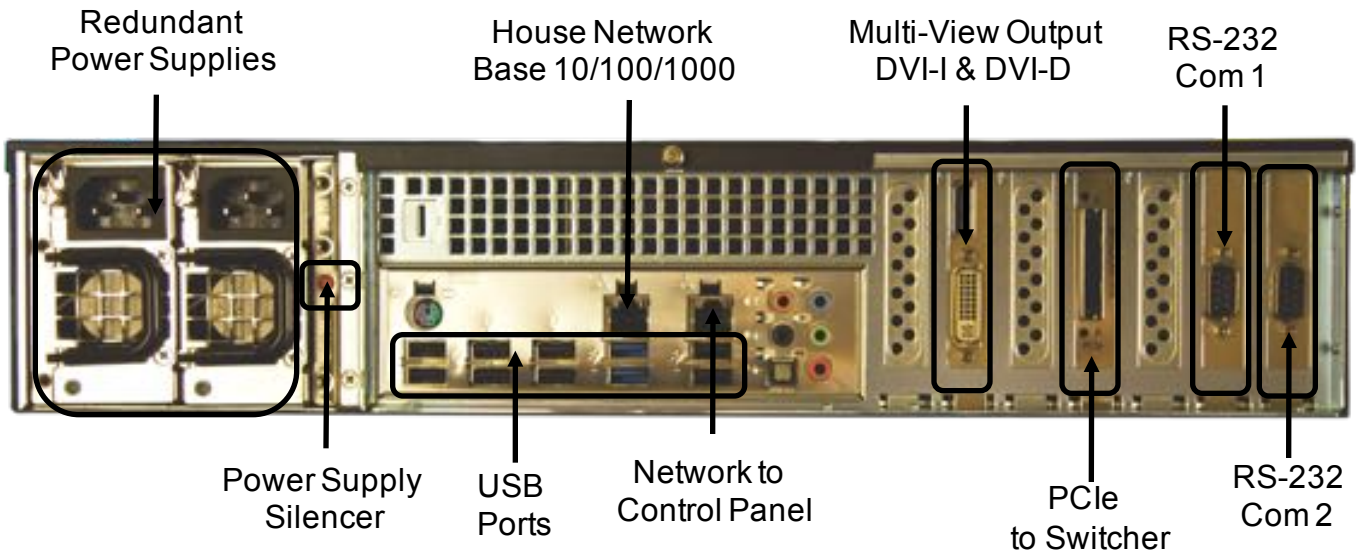
36 inches – 5 holes showing

1.2 Granite Server

The Granite Server is the host machine that runs the BP Switcher application and the Fluent Workflow Software on an embedded version of Microsoft Windows 7. All graphics, animations, clips and show files are stored on the Server. The Granite Server is connected to the Granite Switcher over a high-bandwidth PCI Express (PCIe) cable to allow access of graphics, animations and clips on the Granite Switcher. All graphics, animations and show files live on the Systems C hard drive and all the clips live on the Video D drive.

Front & Rear Panel Connections:





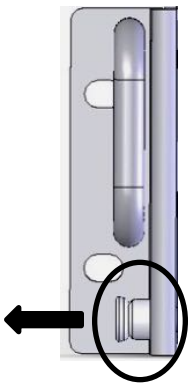
NOTE: The maximum distance for the PCI Express cable between the Granite Server and Granite Switcher is 7 meters (22.9ft). The hard drives are removable, but are not hot-swappable.

1.2.1 Granite Server Installation

The Granite Server is a 2 RU frame and can be mounted in a standard 19" rack. As an option, sliding rack rails may be attached to the Server for added support and flexibility, the rack slides are standard on a Premium Server. Refer to the instructions in the rack rails box. The supplied rack ears are removable, however they are used to keep the custom door attached. The door is also removable, to access the DVD/CD drive and when inserting the Video D drives when mounted on a desktop.

To remove the Server door:

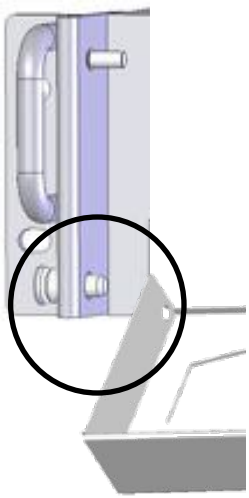
1. **Open** the Server Door by pulling on the top lip of the door, so that the door hanging down
or laying flat on a table top.



2. On the left side rack ear **pull** the silver pin out to the left, as shown on the right, while holding the door in one hand.

3. While keeping the pin pulled out, pull the left side of the door away from the rack ear.

   The door should come lose from the right rack ear.

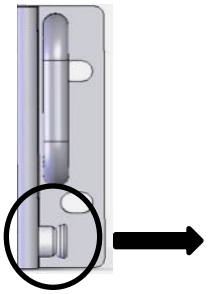


To attach the Server door:

1. **Align** the left side of the Server Door with the left rack ear pin, as shown on the right, and insert the door into the pin.

2. Slide the right of the Server Door to the right rack ear.

3. On the right side rack ear, **pull** the silver pin out to
the right, as shown on the right. Once the door opening is
aligned with the pin, release the pin to lock the door in
position.



1.3 Broadcast Pix Granite 2000 / 2000+ / 2000X

1.3.1 Granite 2000 / 2000+ / 2000X System Contents

The Broadcast Pix Granite 2000 is comprised of the following standard components:

Broadcast Pix Software,
Showing the Multi-View



(Monitor not included)

Software:

- BPswitcher
- Inscriber TitleMotion GS HD Character Generator
- Microsoft Windows 7
- Paragon recovery 11

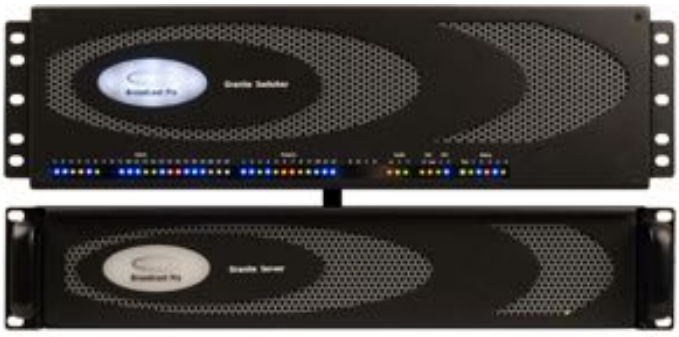
Broadcast Pix
SoftPanel





Broadcast Pix
1ME Control Panel

Granite Switcher



Granite Server



Keyboard and mouse



½ meter PCIe cable

Broadcast Pix Granite 2000 / 2000+ / 2000X System Includes:

Hardware

1 M/E Control Panel
Granite Server, with 6 removable media drives
Granite Switcher with I/O boards
Inscriber USB Dongle, installed internally in the Server at the factory
USB Keyboard
USB Mouse
½ meter PCIe Cable
Network Crossover Cable (to connect panel to Server)
9-Pin Male to Female Straight Serial Cable (for fail-safe control of Switcher)

Software

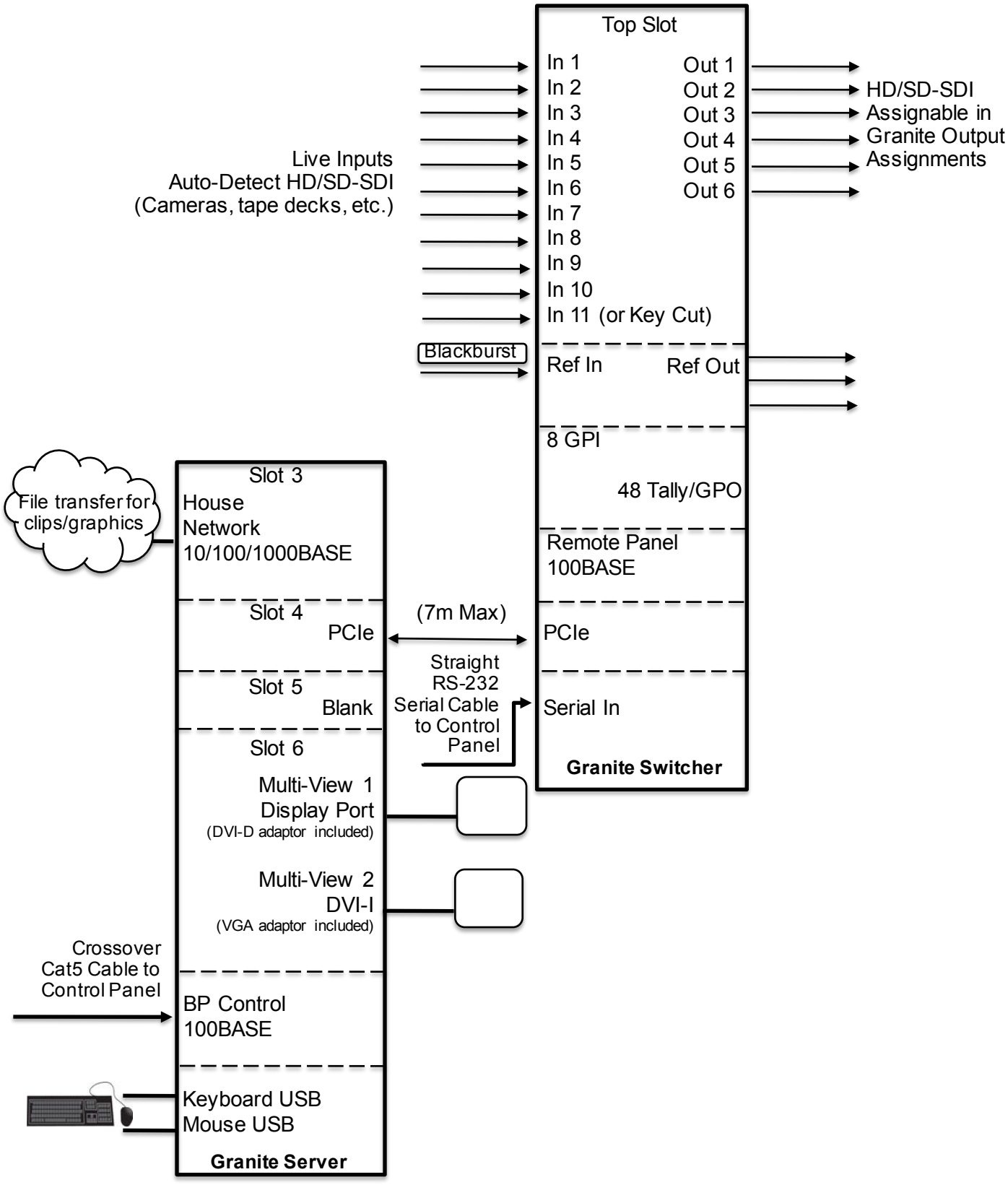
Broadcast Pix Software
Inscriber TitleMotion GS Character Generator
Microsoft Windows 7
Paragon Backup & Recovery Home 11

Requirements

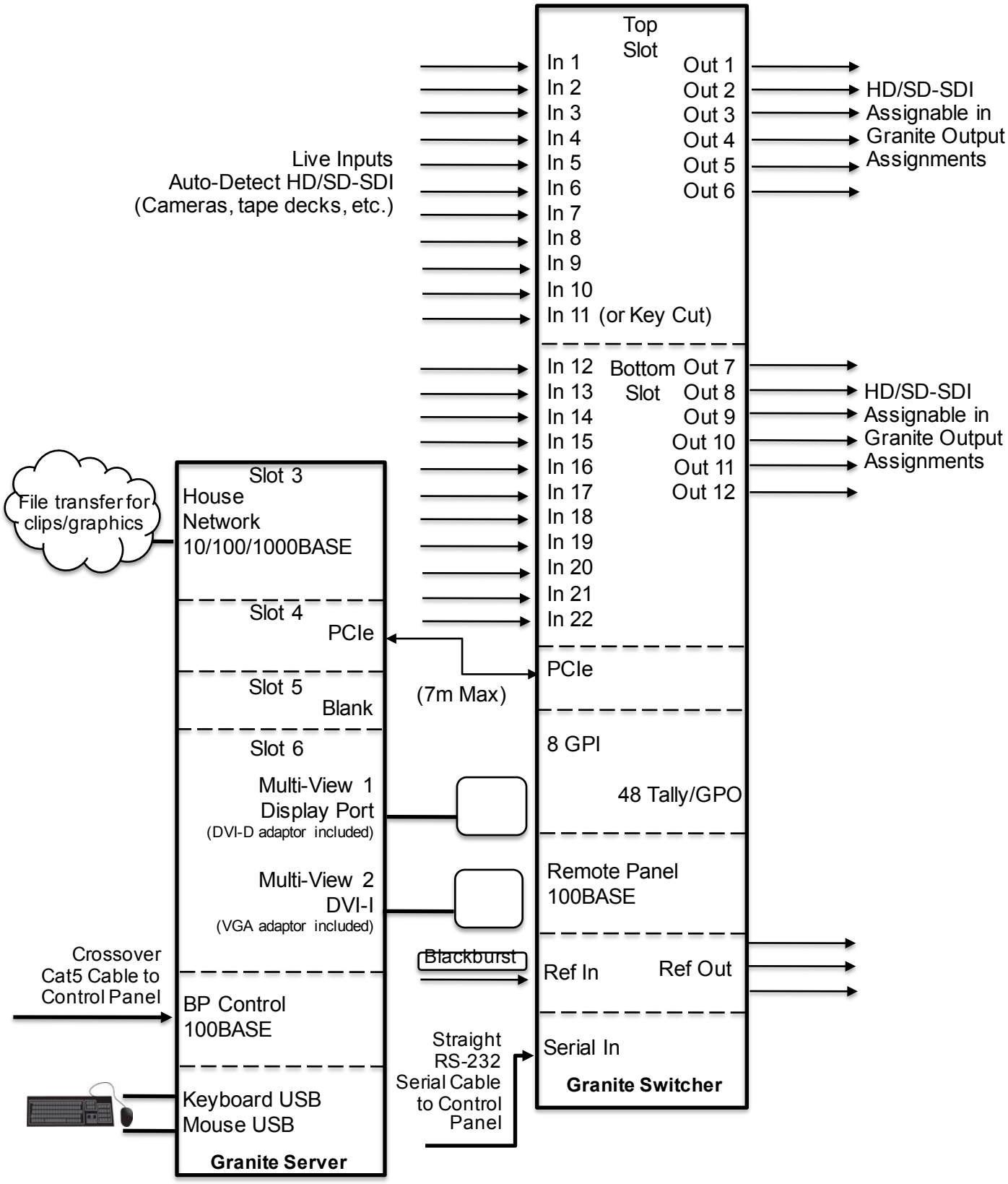
To install a system you will also need:

At least one computer monitor (at least 1280x1024 resolution)

1.3.2 Wiring Diagram for Granite 2000



1.3.3 Wiring Diagram for Granite 2000+ / 2000X



1.4 Tally on the Granite Switcher

The Granite Switcher has a total of 22 Tally outputs for all 22 switcher inputs plus 24 General Purpose Outputs (GPOs) through two DP-25 pin connectors. The standard tallies are open collector driver circuits that can either sink current or provide a TTL level logic interface. The tally outputs are triggered when sources are sent to Program (red) on the switcher.

Each tally contact can sink current to ground when active and have a weak pull up to +5V when off. They can either be used to turn on a light or activate a circuit by sinking current to ground or could be used in an environment that is looking for a 0 to + 5V logic level. The maximum current is 350ma DC and the maximum voltage is +12V DC. Pin 13 on both tally connectors is ground, as shown below.

Tally 1-24 Connector

Pin	Function	Pin	Function
1	Input 1	14	Input 13
2	Input 2	15	Input 14
3	Input 3	16	Input 15
4	Input 4	17	Input 16
5	Input 5	18	Input 17
6	Input 6	19	Input 18
7	Input 7	20	Input 19
8	Input 8	21	Input 20
9	Input 9	22	Input 21
10	Input 10	23	Input 22
11	Input 11	24	N/A
12	Input 12	25	N/A
13	GND		

Tally 25-48 Connector

Pin	Function	Pin	Function
1	GPO 1	14	GPO 13
2	GPO 2	15	GPO 14
3	GPO 3	16	GPO 15
4	GPO 4	17	GPO 16
5	GPO 5	18	GPO 17
6	GPO 6	19	GPO 18
7	GPO 7	20	GPO 19
8	GPO 8	21	GPO 20
9	GPO 9	22	GPO 21
10	GPO 10	23	GPO 22
11	GPO 11	24	GPO 23
12	GPO 12	25	GPO 24
13	GND		



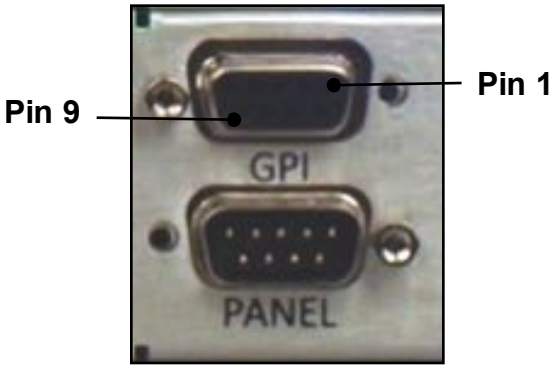
1.4.1 GPI on the Granite Switcher

The Granite Switcher has a total of 8 General Purpose Input (GPIs) through one DP-9 pin connector. GPIs are used to trigger switcher functions through the use of Fluent Macros. More GPIs may be added to a Granite system by attaching external 8 port tally boxes, as described in section 1.5.2. To assign Macros to GPIs see section 4.12

The GPIs are TTL level inputs and active on low or contact closure to ground. Pin 9 on the GPI connector is ground, as shown below.

GPI Connector

Pin	Function
1	GPI 1
2	GPI 2
3	GPI 3
4	GPI 4
5	GPI 5
6	GPI 6
7	GPI 7
8	GPI 8
9	GND



1.4.2 Optional Tally Box on the Granite 2000 / 2000+ / 2000X

There are 2 tally box options for Granite Switchers to provide a contact closure/relay connection in addition to the standard open collector tally on the Granite Switcher. The tally boxes are stand-alone: Sense & Switch 8 and a Measurement Computing USB-ERB24 that plug into the Server via a USB connection. Up to 11 external tally/GPIO boxes may be connected along with the built in tally/GPO on the Granite Switcher for a maximum 96 GPIs and 288 GPOs.

The Sense & Switch 8 provides 8 relays for tally output to your camera control units and 8 isolated inputs for General Purpose Inputs contact points for triggering Macros. Up to 8 external sources plugged into the Granite Input board can be tallied, as shown by the diagram below.

Input 1 on the Granite card corresponds to '0' on Tally Box
Input 2 on the Granite card corresponds to '1' on Tally Box
Input 3 on the Granite card corresponds to '2' on Tally Box
Input 4 on the Granite card corresponds to '3' on Tally Box
Input 5 on the Granite card corresponds to '4' on Tally Box
Input 6 on the Granite card corresponds to '5' on Tally Box
Input 7 on the Granite card corresponds to '6' on Tally Box
Input 8 on the Granite card corresponds to '7' on Tally Box

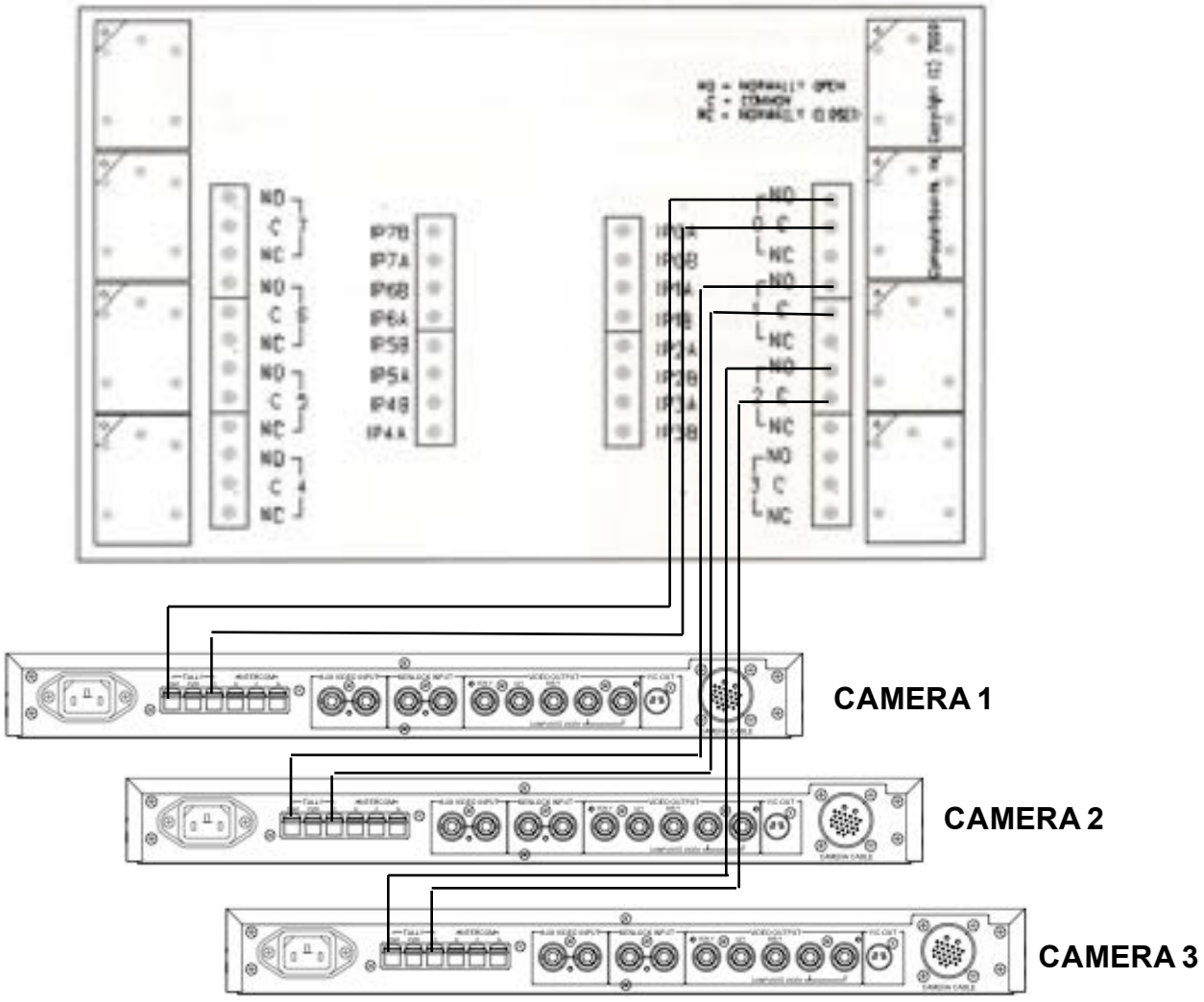
Each relay contact is rated at 6 amps at 120 volts AC or 28 volts DC. The convenient screw terminals can accept cable from 12 to 22 AWG.

Pin	*Signal Name*	*Pin*	*Signal Name*
IP0A	Input 0 terminal A	IP4A	Input 4 terminal A
IP0B	Input 0 terminal B	IP4B	Input 4 terminal B
IP1A	Input 1 terminal A	IP5A	Input 5 terminal A
IP1B	Input 1 terminal B	IP5B	Input 5 terminal B
IP2A	Input 2 terminal A	IP6A	Input 6 terminal A
IP2B	Input 2 terminal B	IP6B	Input 6 terminal B
IP3A	Input 3 terminal A	IP7A	Input 7 terminal A
IP3B	Input 3 terminal B	IP7B	Input 7 terminal B
0-NO	Relay 0 Normally Open contact	4-NO	Relay 4 Normally Open contact
0-C	Relay 0 Common contact	4-C	Relay 4 Common contact
0-NC	Relay 0 Normally Closed contact	4-NC	Relay 4 Normally Closed contact
1-NO	Relay 1 Normally Open contact	5-NO	Relay 5 Normally Open contact
1-C	Relay 1 Common contact	5-C	Relay 5 Common contact
1-NC	Relay 1 Normally Closed contact	5-NC	Relay 5 Normally Closed contact
2-NO	Relay 2 Normally Open contact	6-NO	Relay 6 Normally Open contact
2-C	Relay 2 Common contact	6-C	Relay 6 Common contact
2-NC	Relay 2 Normally Closed contact	6-NC	Relay 6 Normally Closed contact
3-NO	Relay 3 Normally Open contact	7-NO	Relay 7 Normally Open contact
3-C	Relay 3 Common contact	7-C	Relay 7 Common contact
3-NC	Relay 3 Normally Closed contact	7-NC	Relay 7 Normally Closed contact

NOTE: The 'Inputs Contacts' (IP A/B) are for General Purpose Inputs (GPI). The 'Relay Contacts' are for Tally. 'NO' for Normally Open, 'C' for Common or Ground, 'NC' for Normally Closed.

1.4.3 Installing the Optional 8 Port Tally Box:

Run a set of wires from each terminal in the Tally Box to each terminal on your camera/camera unit, one to Program and the other to the Ground, as shown below. 'NO' (Normally Open) goes to Program and 'C' (Common) goes to Ground. 'NC' (Normally Closed) is not used.
The Tally box uses one of the Servers USB ports, and needs to be plugged into an electrical socket with the supplied power supply.



** Camera Control Unit will vary depending on manufacturer.*

2 LEDs should illuminate when power is connected: **External Power** should be solid green, **Status** solid green when connected to the Server and flashing green when the Server is communicating to the tally box.

NOTE: The Tally Box does not supply any voltage for tally. Voltage must be provided by your Camera Control Units or other source. The Tally Box only opens and closes the tally circuit. Check your Camera Control Unit's user manual for more information.

1.4.4 Installing the 24 Port Tally Box:

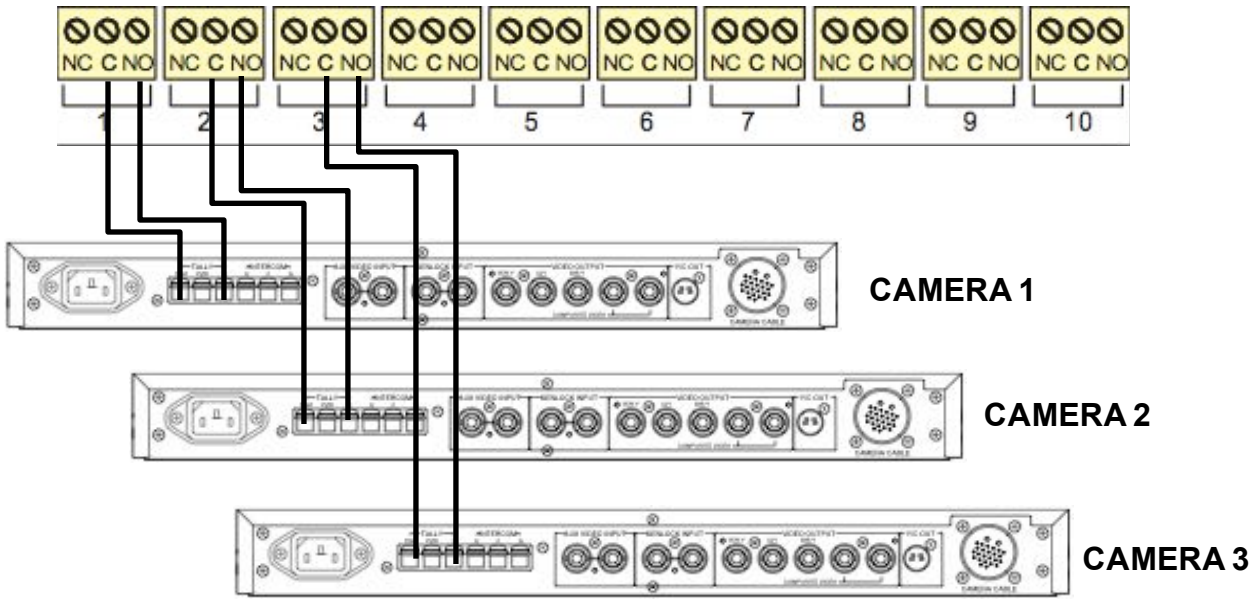
The Measurement Computing USB-ERB24 tally box provides 24 relay contacts for up to 24 camera/sources. It fits into a standard 19" wide rack and comes standard with racking ears and uses convenient screw terminals that accepts cable from 12 to 22 AWG. Each contact is rated a 6 amps at 240 volts AC. The box uses one of the Servers USB ports, and needs to be plugged into an electrical socket with the supplied power supply.
This tally box does not have GPIs, if more than the 8 standard GPIs are needed, then the 8 port tally box may also be used.

Installing the Optional Tally Box:

1. Run a set of wires from each terminal in the Tally Box to each terminal on your camera/camera unit, one to Program and the other to the Ground, as shown below. 'NO' (Normally Open) goes to Program and 'C" (Common) goes to Ground. 'NC' (Normally Closed) is not used.

2. Plug in the supplied USB B to USB A cable. One end in **any port** of the Server, the other in the **USB IN** port of the tally box.

3. Plug in the supplied power supply into **Power In 9VDC** port of the tally box.
2 LEDs should illuminate: **PWR** should be solid green when the power is plugged in, **USB** solid green when connected to the Server and flashing green when the Server is communicating to the tally box.



** Camera Control Unit will vary depending on manufacturer.*

NOTE: The Tally Box does not supply any voltage for tally. Voltage must be provided by your Camera Control Units or other source. The Tally Box only opens and closes the tally circuit. Check your Camera Control Unit's user manual for more information.

1.4.5 Installing Optional Tally Box Drivers

When the tally box option is purchased with a new unit the appropriate drivers are pre-installed at the factory, there is no need to re-install the drivers. On upgrades, where the tally box option was purchased after receiving a system, you will need to manually load the drivers for the Sense & Switch 8 Tally Box, with the install CD that was included with the tally box. In addition you will need to install an option code, as described in section A.2, which can be obtained from Technical Support.

To install the drivers:

1. **Insert** the Measurement Computing driver disc into the CD tray of the workstation.

2. Navigate to the CD drive (Drive E), and **double-click** on the Measurement Computing icon. This will open the install window, as shown below left.

3. Click on the **Install** button to install the drivers.

4. Once the drivers are installed a pop-up window will appear confirming the installation. Click on the **Finish** button to save and exit the installation process.

5. Connect the tally box to the workstation with the supplied **USB** cable and plug-in the **power** with the supplied power supply to an electrical socket.

6. To confirm the installation, navigate to the **Start Menu, All Program, Measurement Computing, InstaCal.** This will launch the InstaCal software program, as shown below center.

7. Your tally box device will appear under the **Universal Serial Bus** section. Click on the **Digital Test** button, to confirm communication to the tally box. This will open up the Board Test window, as shown below right.

8. Click on the **Test** button. You should hear the tally box click once, if the installation was successful. If not, check your connections to the tally box and to the workstation.

9. **Close** all the windows in InstaCal, you are now ready to use the tally box.







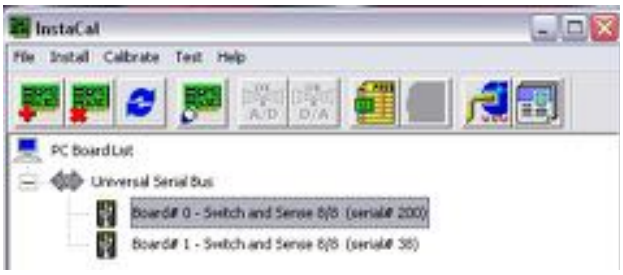
1.4.6 Installing Multiple Tally Boxes

A standard system usually uses one tally box, however multiple tally boxes may be installed on a Broadcast Pix system. Multiple tally boxes expands the number tally outputs as well the number of General Purpose Inputs and Outputs (GPIOs), which can be used with Fluent Macros. Installation is the same, as described in section 1.5.5, however each tally box must be assigned to a specific board number.

To assign multiple tally boxes:

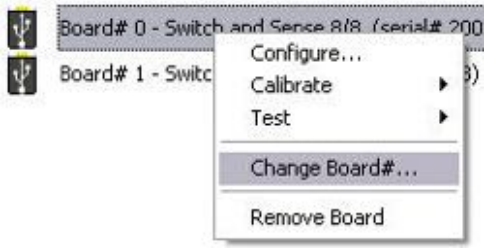
1. Ensure that the Measurement Computing/InstaCal software is installed, as described in section 1.5.5, and open the **InstaCal** software by navigating to Start Menu, All Programs, Measurement Computing, InstaCal.

2. Your tally box devices will appear under the Universal Serial Bus section, as shown on the right.



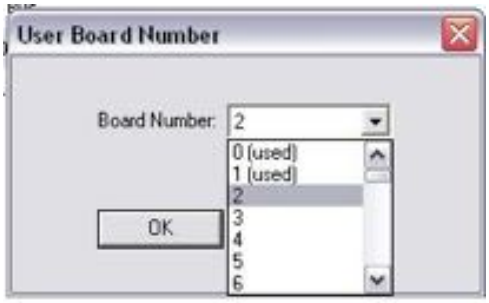
3. **Right-click** on a device, and a pop-up menu will appear.

4. Select **Change Board#...**, as shown on the right. Up to 11 external tally GPIO boxes may be connected.



5. In the Use Board Number window, select the desired board **number**.

6. 0 (zero) is the first tally box used for GPIs 9-16, 1 is the second tally box used for GPIOs 17-24, etc.



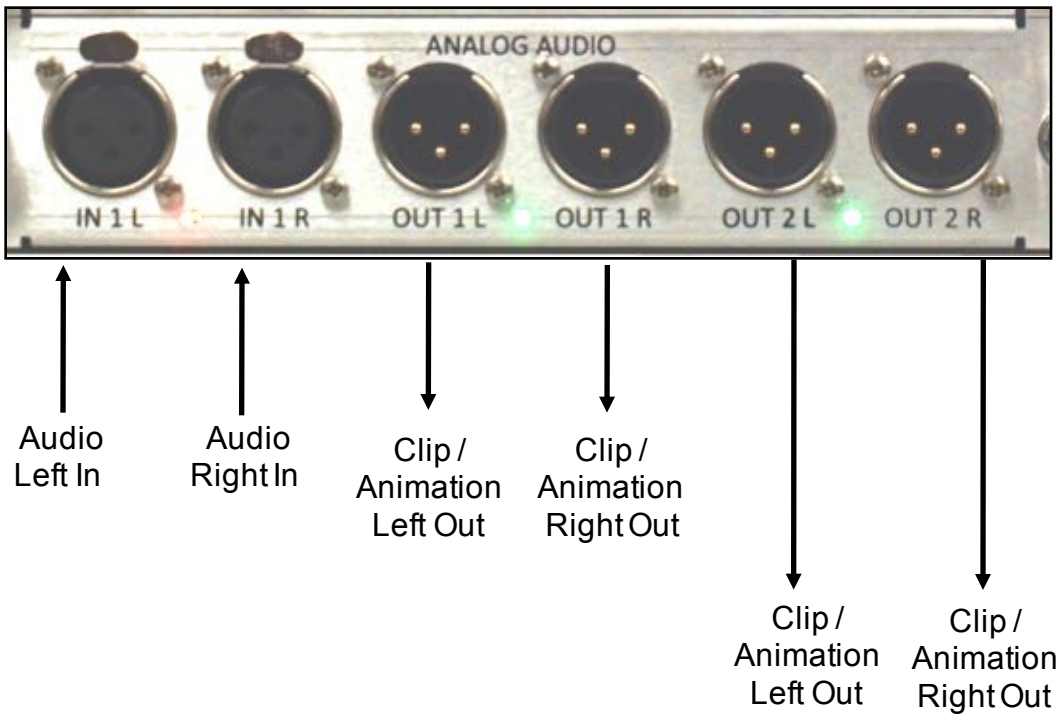
7. Click on **OK.**

8. **Close** all the windows to InstaCal, by clicking on the Red X in the top right corner.

1.5 Audio I/O

All Granite systems do not do any internal audio mixing, all mixing needs to be done externally. For automated control of external audio mixers, see section 7.14. 2 Clip stores and 2 Animation stores are included on all Granite Systems, and they can be used with or without audio. Output 1 and Output 2 are both assignable in the System Settings tab, and can be used for Clip store channel 1, Clip store channel 2, Animation store channel 1 or Animation channel 2 out. You can not have all 4 channels have audio, only 2 may include audio. The 4 XLR output connectors on the Granite Switcher are analog audio with a balanced line level signal.

The 2 XLR input connectors are used to embed the incoming analog audio to the SDI outputs on all 16 channels.



Pin	Function
1	GND
2	+
3	-

1.5.1 Audio Output Control

The audio output on all Granite Systems conforms to the SMPTE RP155 specifications, where -20dBFS = 0dB = +4dBu. Depending on the external equipment you are attaching the output to and depending on how your clips have been encoded, the audio output may have to be attenuated for proper sounding audio. For reference Final Cut Pro and Adobe Premiere for the most part use -12dBFS as 0dB, clips rendered from these applications may sound louder if the output is not attenuated properly.

The audio output from the Granite system is in time with the clip/animation video, since all Granite Systems have extremely low delay (see section 1.10), the clip and animation audio may need to be advanced to compensate for any downstream delay added by the user. For example in a studio environment, you may choose to delay your master audio output from the audio mixer by the total amount of video processing delay, i.e. 33ms, in this case the clip and animation audio will need to be advanced separately by another 33ms or 1 frame. In installations where each audio line has it's own delay, like on many newer digital audio mixers, than the clip and animation audio will not need to be advanced.

Control for both of these settings can be down through the Audio Tab of the System Setting window, which is accessed once a show is loaded, see section 1.7.

To attenuate the audio output:



1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right.

2. In System Settings window, click on the **Audio** Tab, which will bring up the various audio settings.

3. In the Audio Output Attenuation section, move the **sliders** for both the Output 1 and Output 2, according to your encoded video files.

   The bottom of the section has 4 shortcut radio buttons, -20dBFS for 0dB, -12dBFS for -8dB, -6dBFS for -14dB and 0 dBFS for -20dB.



4. Click on the **OK** button.
   This will close the System Settings window.

To advance the audio output:

1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right.



   The System Settings window will appear, as shown on the bottom right.

2. In System Settings window, click on the **Audio** Tab, which will bring up the various audio settings.

3. In the Clip audio advance text box, enter a **number** from 0 to 15 frames. The number entered will advance both the Clip Store and Animation Store. Normally this number will be any where from 0 to 3 frames depending on how the video and audio is delayed.



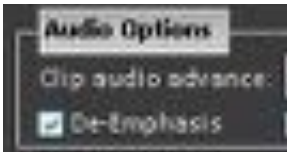
   An application restart is necessary for this setting to take affect.

4. Click on the **OK** button. This will close the System Settings window.

To de-emphasis the audio output:

1. In the System Settings menu, select the **Audio** tab.

2. Under the Audio Options section, place a check-mark next the **De-Emphasis.**



   Now all high frequency audio will be rolled off from the output, this is the default setting. To allow for higher frequencies, for a larger range of audio deselect this option.

To remap the audio output:

1. Since there are 4 different possible sources for the audio output and only 2 outputs available the audio outputs need to be mapped according to your production needs.

   In the System Settings window click on the **Audio Tab**, which will bring up the various audio settings.



2. In the Audio Mapping section, select the desired output source for Output 1 and Output 2. Select either **Clips 1, Clips 2, Anims 1** or **Anims 2,** as shown on the right..

3. Click on the **OK** button.
   This will close the System Settings window.

To accept audio for embedding:

1. In the System Setting window click on the **Audio Tab,** which will bring up the various audio settings.

2. In the Audio Options section, place a check mark next the **Embed analog audio in** option, as shown on the right.



   Now any analog audio coming in through the two input jacks on the rear of the switcher will be available to be used as an audio source for any processed SDI output.

3. Click on the **OK** button.
   This will close the System Settings window.

1.6 Running a Show

Broadcast Pix has a concept of shows, which contain custom I/O settings and specific content for each of your own productions. To run the switcher a show file needs to be running from the Broadcast Pix Switcher application. To create or modify a show see section 3 of this manual, which talks about PixMaster Show Editor.

A show can be set to auto-load when the Switcher application is started and the Switcher application can be set to auto-start when the Server is turned on. When the system comes from the factory the application loads with an empty Multi-View. To run the Broadcast Pix system and to use a control panel a show must be loaded. A show is running when the Multi-View is filled with content/video.

To Run a Show:

1. Double-click on the **Broadcast Pix Switcher** application on the desktop, and it will open and display an empty Multi-View.



   To have the application auto-start when the Server is turned on, add the Broadcast Pix Switcher shortcut to the Windows Startup folder.

2. The Load Show window will appear listing the available shows, as shown on the right.



   Click on one of the listed shows, on a new system select the Sample Show 60 or 50 Hz.

3. Click on **Open**.

   A video initialization progress window will appear, please wait unit the Multi-View is loaded with video, this may take a few minutes.

   Once the progress window disappears you are now ready to start using your Broadcast Pix Granite System.

To Change what Show is Running:

1. In BPswitcher, click on **File** and a drop down menu will appear, then select **Load Show…,** and a window will appear with the various saved shows. Select the desired show and click on **Open.**



1.7 Granite I/O Assignments

The Granite IO Assignments window is used to configure each input and output. Inputs 1-11 or 22 on the Granite Input boards are general purpose video inputs that may be used for cameras, VTRs, and feeds from servers and other external video devices. Any input/output connected to the I/O cards on the Granite Switcher needs to be configured with this assignment window to ensure proper operation. All the settings in the Granite IO Assignments window are show-based, meaning that they are remembered on a show by show basis.

All inputs auto-detect between 1080i, 720p and 486i/576i and can accept synchronous and a-synchronous sources. You may assign a custom name, select a button icon and assign the proper aspect ratio and treatment for each source.

Each output may be assigned to Program, Preview, Clean Feed or an Auxiliary output. Program and Clean Feed are always available at 1080i. In addition, a multi-definition (MD) output of Program and Clean Feed can be set to 720p or 486i/576i with a treatment. Preview and PowerAux (if enabled) can be set to 1080i, 720p or 486i/576i with a treatment.

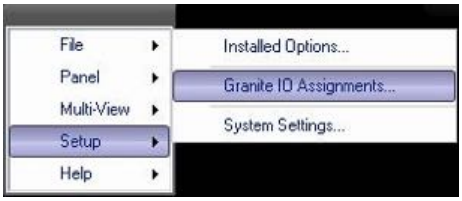
To access the Granite I/O assignments window, the Granite Switcher and Server must be turned on, as described in the Quick Start Guide, and the BPswitcher application must be loaded with a show file opened.

To Assign the Granite Input Assignments:

1. Start the Broadcast Pix application and load a show, as described in section 1.6.



2. Click on the Broadcast Pix **menu button** icon, as shown on the right. The menu button is usually found in the top right corner of the Multi-View.



3. In the drop down menu, select the **Setup** menu.

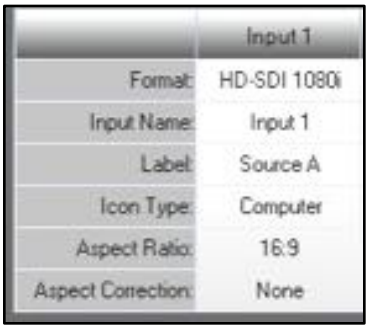
4. Select the **Granite IO assignments…** option, as shown on the right.



   The Granite IO Assignments window will appear as, shown on the right.
   You may also access this menu from the PixMaster menu under File-Edit Show.
   To configure the Switcher inputs, select the **Input Assignments** button.



5. For each input select the **Input Name**, which will determine what name appears on the top line of the source monitor on the Multi-View and the **Label,** which will determine what name appears on the bottom line of the source monitor on the Multi-View and what name will appear on the PixButton on the control panel.



Use the drop down menus to select from the pre-defined names in the list.

6. To assign a custom Name and/or Label, click on the **Manage Custom Names…** button, as shown on the right.



The Mange custom names and labels will open, as shown on the right.

To add a custom Label, select the **Labels** tab and **enter** a custom label in the text field then click on the **Add Label** button. The custom label will appear in the white space above and may be sorted up or down the list with the **arrow** buttons.

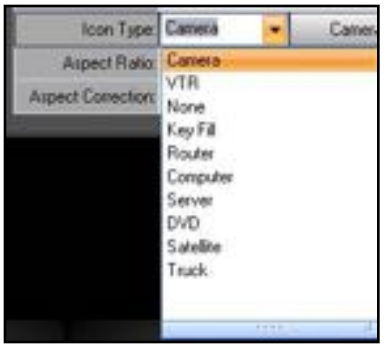


To add a custom Name, select the **Names** tab and **enter** a custom label in the text field then click on the **Add Name** button. The custom name will appear in the white space above and may be sorted up or down the list with the **arrow** buttons.

To remove a custom name or label click on the **Remove Label** or **Remove Name** button.

Click on the **OK** button to save and apply the custom Names and Labels to their drop down list.

7. For each input select Icon Type, which will determine which icon will appear on the Control Panel and SoftPanels.



Select the drop down menu and select either: **Camera, VTR, None, Key Fill, Key Cut, Router, Computer, Server, DVD, Satellite** or **Truck,** as shown on the right.

Note that only Input 11 may be used as the Key Cut signal, and any other input may be used as the Key Fill signal. If no External Keyer is used, then Input 11 may be used as another live input.

8. For each input select its native video Aspect Ratio, either **16:9** or **4:3** from the Aspect Ratio drop down menu.

Use the **Aspect Correction** drop down menu to select the desired treatment that will be applied when using this source in a show that has the opposite aspect ratio.

You may also set these settings from the control panel with Source Controls, see section 4.6.

9. On + models, where 2 I/O cards are installed, click on the **View Inputs 12-22** button, as shown on the right.



The Granite Input Assignments window will change to display the next 11 inputs. Repeat the above steps to configure the inputs.

10. Click on the **OK** button to save and close the Input Assignments window.





To Assign the Granite Output Assignments:

1. Repeat steps 1 through 4 above, to open the Granite I/O Assignments window.

2. Click on the **Output Assignments** button, as shown on the right, and the Granite Output Assignments window will open, as shown above.



3. For each output assign the desired function.

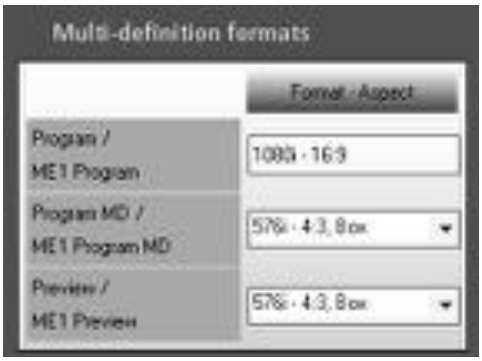
   The function drop down menu lists all the possible types of outputs, select either: **Program, Program MD, Preview, Cleanfeed, Cleanfeed MD, PowerAux** (if enabled) or **Aux 2 – Aux 6,** as shown on the right.



   You may assign the same function to multiple outputs, as the output will be distributed.

   All Aux outputs are un-processed outputs that feed inputs to the outputs. No format, timing or aspect conversion occurs. Power Aux 1, when enabled, does offer format, timing and aspect conversion.

4. To assign the output formats for each set of functions, under the Multi-definition formats section, select either **720p - 16:9, 486i/576 - 16:9, 486i/576 - 4:3, None, 486i/576 - 4:3, Box** or **486i/576 - 4:3, Crop** for the Program MD and ME 1 Program MD. Select either **1080i - 16:9, 720p - 16:9, 486i/576 - 16:9, 486i/576 - 4:3, None, 486i/576 - 4:3, Box** or **486i/576 - 4:3, Crop** for Preview and ME 1 Preview.



5. To assign the DVI-D Outputs, select an output function from the available outputs, either **Program, Preview, Cleanfeed** or **PowerAux** (if enabled), as shown on the right.



   Each output is automatically set to 1920x1080i 59.94/50Hz, 16:9.

   NOTE: Depending on your input device the DVI signal may or may not be accepted.

6. When Auxes are assigned, a default/startup input may be assigned to each Auxiliary output in the **Default aux sources** section. For each assigned Aux output click on the source drop down menu and select the desired default source



7. On + models, where 2 I/O cards are installed, click on the **View Outputs 7-12** button, as shown on the right.



   The Granite Output Assignments window will change to display the next 6 outputs. Repeat the above steps to configure the remaining outputs.

8. Click on the **OK** button to save and close the Output Assignments window.

9. In the Granite IO Assignments window, click on the **OK** button to close the window.



To Embed Analog Audio:

Once the Embed Analog Audio In option is active under the System Settings – Audio Tab – Audio Options menu, the audio is available to be embedded to any of the processed Granite SDI outputs, on all 16 channels. Raw Aux outputs can not have embedded audio routed to them, however PowerAuxes can.

1. Under each output, select the **Embedded audio:** drop down menu and select the Enabled option, as shown on the right.

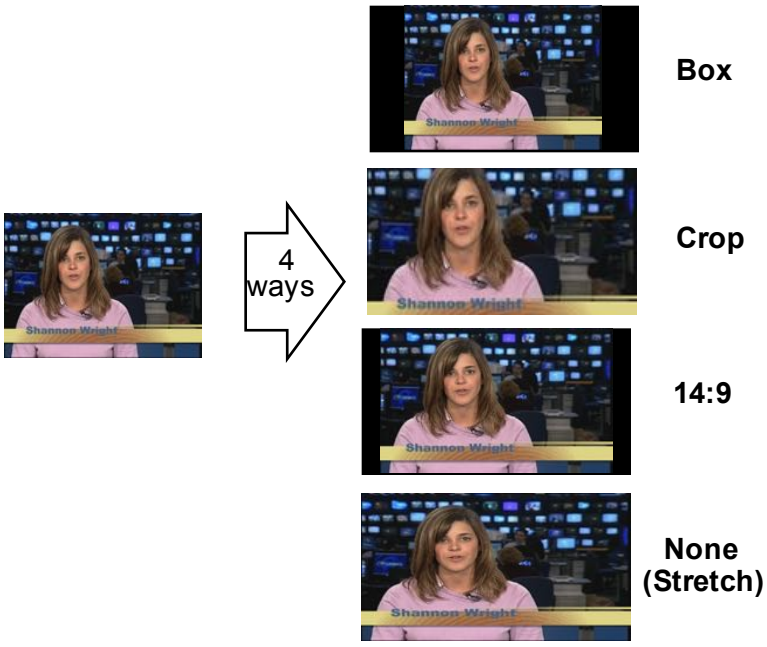


2. To disable the embedded audio, repeat step 1 and select the Disabled option.

3. Click on the **OK** button to save and close the Output Assignments window. In the Granite IO Assignments window, click on the **OK** button to close the window.

1.7.1 AutoAspect Inputs

AutoAspect solves the many challenges of mixing 4:3 and 16:9 content in the same production. It enables 16:9 and 4:3 inputs to be used interchangeably and mixed together in the same live production, while maintaining the native aspect ratio of each element rather than stretching them. Each input can be set to one of 4 aspect treatments, three of which preserve the native aspect ratio. Conventional switchers can only stretch video when crossing aspect ratios, causing people to look too wide or too thin.



The Illustration above shows the four ways that a 4:3 source can be treated in a 16:9 production. If None is selected, then the image is stretched to fill the space, as is done on other switchers, and the result makes the person look too wide. If one of the other three treatments are selected than the original aspect ratio of the source is preserved, and the person does not look too wide.

NOTE: When the show is set to the same aspect ratio as the source's native aspect ratio, then no aspect treatment will be performed. When the show is set to the opposite aspect ratio, than the selected treatment will be applied. See section 1.12.3 for setting the show's aspect ratio

NOTE: When a source is treated, it will appear with that treatment on all video outputs, and on the program and preview windows of the Multi-View, the source monitors will show only the native aspect ratio.

1.8 Troubleshooting

The default Multi-View always displays a status bar with an indicator light, as shown below. If it is green all is OK, if not (Red) click on the status light, which will bring up the Status Tab on the Multi-View and the following detailed status window will appear.



Lights during normal operation



Lights during fail-safe operation

Status on Granite 2000 / 2000+

Status of	Light	Indicates
Granite genlock	Orange	Granite Switcher has external blackburst reference
	Blue	Granite Switcher has external 1080i reference
	Green	Granite Switcher has external 720p reference
	Yellow	Granite Switcher has no external reference and is producing internal reference
Panel ready	Green	Control panel is ready and has joined show
	Grey	It is not
Failsafe ready	Green	Serial cable from panel to Switcher is OK
	Grey	It is not
Failsafe controlling switcher	Green	In normal operation (control via Ethernet)
	Red	In Failsafe operation (control via Serial)
Status message	Message on what is currently happening	

1.9 Input Timing

Reference

The Broadcast Pix Switcher can auto-detect external reference, either analog blackburst or Tri-Level sync in these formats: 480i29.97 (NTSC), 720p59.94, 1080i59.94, 1080p29.97, 1080PsF29.97, 576i25 (PAL), 720p50, 1080i50, 1080p25, 1080PsF25.

If no reference is connected, the Granite Switcher will generate internal sync. In this mode the 3 Ref outputs on the Granite switcher can output blackburst to external equipment. The Ref out LED will illuminate orange when outputting blackburst.

On Reference boards shipped after March 1, 2011, the reference outputs can output the format of the input signal. The Ref out LED will illuminate orange when outputting blackburst, green when outputting 720p and blue when outputting 1080i.

Synchronous Inputs

All Granite systems work well with all video inputs that accept a reference input for genlock, including broadcast cameras, tape recorders, servers, etc. The timing window for genlocked sources is +/- 10 lines. The delay through the Granite system on synchronous sources is 1 frame, even if the image is inside a DVE box (picture in picture).

Asynchronous Inputs

The system will also accept and self time asynchronous sources, such as a DVD player. All 11/22 live inputs accept asynchronous inputs. The delay through the Granite system on asynchronous sources is 2 frames.

System Delay

All Granite Systems have extremely low delay, below is a grid of the maximum total system delay in milliseconds, depending on which formats are used. Usually delay can be compensated in a studio environment with an audio delay. In image magnification (IMAG) productions, it is important to have the least amount of delay possible. The values below include mixing inputs formats, using DVEs, playing clips and graphics; no delay is added when using these features.

	60Hz	*50Hz*
1080i/720p Synchronous/Timed Sources	33 mS	40 mS
1080i/720p Asynchronous/Untimed Sources	67 mS	80 mS
SD Outputs	+ 33 mS	+ 40 mS

1.10 System Settings

1.10.1 Changing the Startup Show

When the system ships from the factory it is not set to load any show. You can turn on auto-loading, or after you create more shows, you can change the system to auto-load a different show. If you turn off auto-loading, then Broadcast Pix Switcher will still open, but you need to then Load a Show as described above.

To change which show auto-loads:

1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right

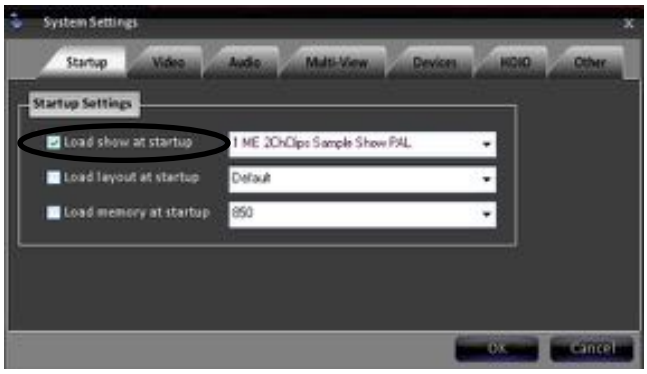
   

   The System Settings window will appear, as shown below.

2. In the Startup Tab, place a check next the to **Load show at startup,** as show on the right.

3. Select the show you want to auto-load, by clicking on the drop down menu and selecting your desired Show id the drop down list.

4. Click **OK** in the System Settings window.



To have no show auto-load on startup:

1. Uncheck the box labeled **Load show at startup** in the System Settings window.

2. Click **OK.**

1.10.2 Selecting between 60 and 50 Hz

Systems generally come from the factory set up for the local standard of the country, such as NTSC / 60 Hz in most of the Americas and Japan and PAL/ 50Hz in Europe and other countries. The system may be switched between 1080i/59.94 Hz and 1080i/50Hz.

To change between 60 / 50 Hz:

1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right.

   The System Settings window will appear, as shown below.

2. In System Settings window, click on the **Video** Tab, which will bring up the various video settings.

3. Select either the **1080i/59.94** or **1080i/50** radio button under the Video Standard section.

   A status message will appear, asking to restart the application.

4. Click on the **OK** button.
   This will close the System Settings window.

5. Close the BPswitcher application by selecting the **File** menu then **Quit.**

6. Restart the application by double-clicking the Broadcast Pix Switcher on the desktop.

   To switch back the video standard, repeat steps 1-6.

1.10.3 Changing the Output Settings

The Granite Switcher is a multi-definition switcher allowing for both SD and HD signals to be mixed and outputted. If SD sources are being used, a details option is also available to enhance the SD outputs. SD filtering applies a very light filter to all the SD outputs. Checking it on is meant for HD sources outputting to SD to eliminate aliasing. No check preserves the most detail of an SD source. When this option is enabled all HD content (video and graphics) may show additional artifacts. This setting does not affect the HD outputs.

To enable SD filtering:

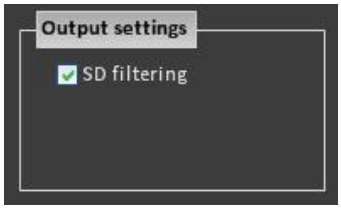
1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right.

   The System Settings window will appear, as shown below.

2. In System Settings window, click on the **Video** Tab, which will bring up the various video settings.

3. Place a check mark next to the **SD filtering** option.

4. Click on the **OK** button.

   This will close the System Settings window.

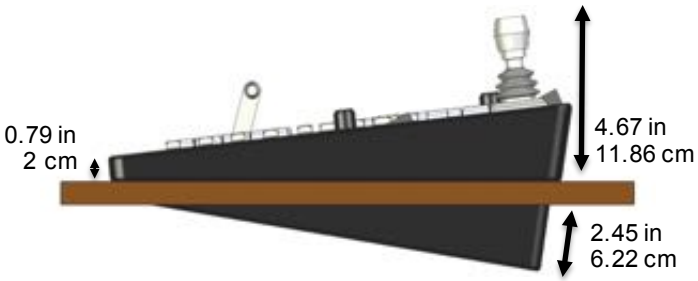
1.11 Control Panel Installation

Most Broadcast Pix control panels are used on a tabletop, which provides a better viewing angle in most light conditions, especially to view the PixButtons. The panel may also be recessed into a cut out of a table top or console. If a cut out installation is desired, then the following dimensions should be used to cut the hole in the console top.

Side Views

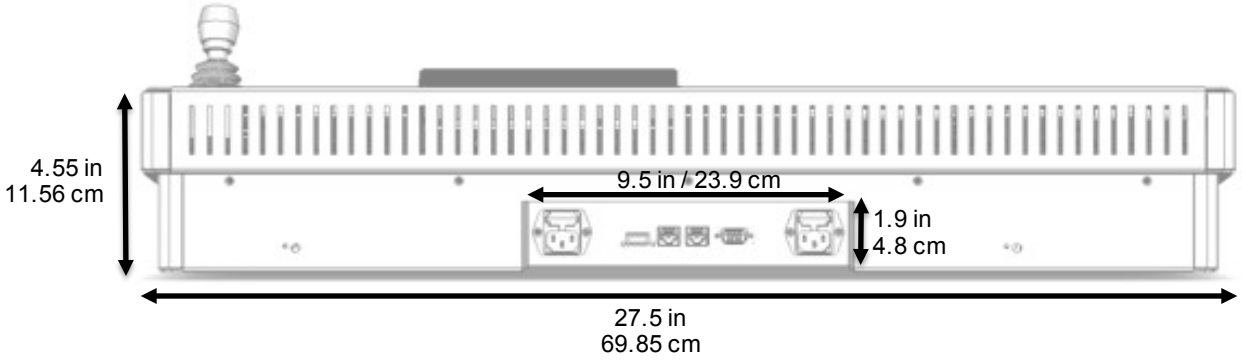


Tabletop installation of control panel

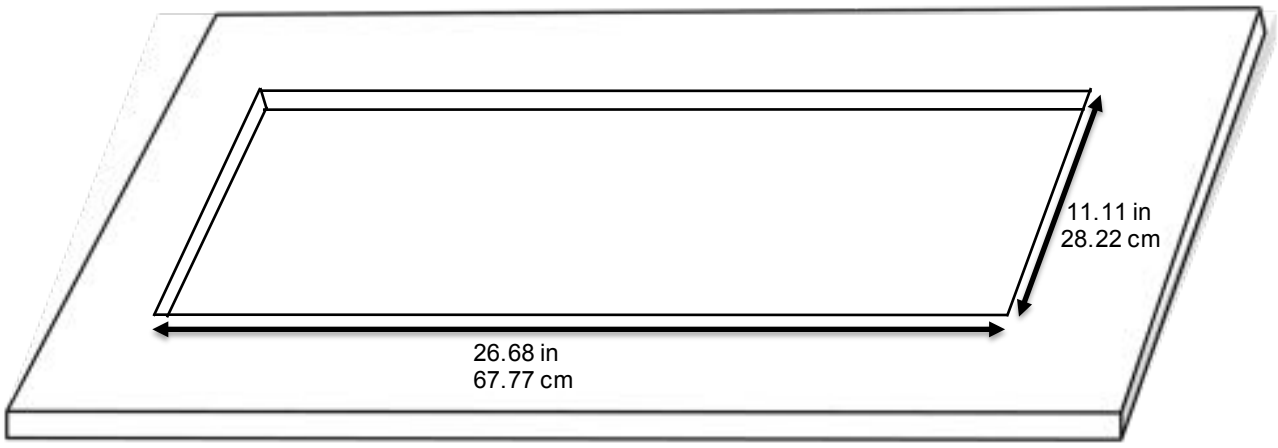


Cut-out installation of control panel

Rear View



Cut-out Dimensions



1.12 Hard Drive Configuration

All Windows 7 Granite systems include a Server with removable media drives plus backup software for the System C drive. As an option, the Video drive may be upgraded to a RAID 5 array, which consists of (4) 500GB hard drives for a total of 1.3TB of usable storage. RAID 5 allows up to 1 hard drive to fail, without interruption to the clip store.

1.12.1 Removable Hard Drives

All the hard drives on the Granite Server are removable, however they are not hot swappable. Do not remove any hard drive when the Server is on. The C1 drive is for the Operating System, show files and graphics/animations. The D1 – D4 drives are media drives that contain only clips from the Video D directory. There is no hard drive in the C2 slot.

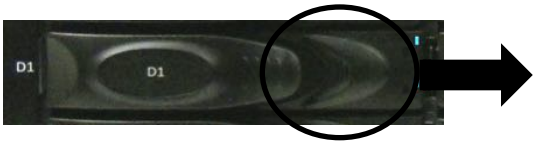
As an option, more removable Video drives are available, which is ideal when large amount of clips are needed for multiple shows. For example, one set of drives could be for sports productions and another set for news. In addition, if a hard drive should fail, the removable drive trays makes it easy to swap out the failed hard drive. If a hard drive should fail, contact Broadcast Pix Technical Support.

To remove hard drives:

1. **Shutdown** the Server by closing all applications and selecting the **Start Menu** then **Shutdown.**

2. **Unlock** the media trays by sliding the right most latch toward the right, as shown on the right. The first latch will pop out.

3. **Pull out** the media trays.
   Keep the set of media trays and their hard drives together as a pair for later use.





1.12.2 Creating a RAID 5 Array

When a system is purchased with a RAID 5 configuration, the media drives will come pre-configured from the factory. Use the following steps to configure the media drives when ordered after the initial system purchase or if the RAID must be rebuilt. Note that RAID 5 and the following steps are only available on Windows 7 systems shipped after April 2012.

To create a RAID 5 Array:

1. In the Start menu of the desktop, navigate to the **All Programs, Intel, Intel Rapid Storage Technology**, as shown on the right.



2. On the top menu strip, click on **Create** button.



3. In the Select Volume Type section, select the **Efficient data hosting and protection (RAID 5)** radio button, as shown on the right.

4. Click on the **Next** button.



5. In the Configure Volume section, change the Name text box to **Video,** as shown on the right.



6. Under the select three to sic disks section, select
Disk on port 2
Disk on port 3
Disk on port 4
Disk on port 5
as shown on the right.

7. Under the Specify the volume size section, leave volume size at **100%**

8. Open Advanced tree and click on the **Enable** link next to **Write-back cache,** as shown on the right.

9. Click on the **Next** button.

10. Under the Confirm Volume Creation section, click on the **Create Volume** button, as shown on the right.



9. Once the Volume is created, click on the **OK** button in the pop up window.



Now the array must be imported in Windows Disk Management in order for the Video D Drive to be assigned to Windows.

1.12.3 Importing Existing Media Drives:

1. One the desktop navigate to the **Start Menu** and right-click on **My Computer.**

2. In the pop-up menu, select **Manage,** as shown on the right.



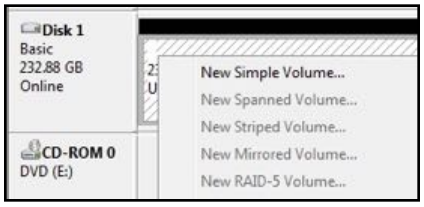
3. In the Computer Management window, click on the **Storage** tree and select **Disk Management** icon, under the Storage section in the left hand section, as shown on the right.



4. In the Initialize Disk pop up window, click on the **OK** button, ensuring that the Disk 1 checkbox is checked



5. Right-click on the black label unallocated **Disk 1.**



NOTE: When importing foreign disks, any shared networking that had been previously done to the drive will no longer be visible. You will need to reset any network settings on the Video D drive.

6. In the New Simple Volume Wizard, click on the **Next** button.



7. In the Specify Volume Size window, leave the default size and click on the **Next** button.



8. In the Assign Drive Letter or Path window, ensure **D** is selected for the drive letter and click on the **Next** button.



9. In the Format Partition window, change the Volume label to **Video** and click on the **Next** button.



10. Click on the **Finish** button.

11. When the volume in ready, an Auto Play pop up window will appear. Click on the **red X** to close the window.



Disk Management should now report 1 large Video D drive around 1.3 TB in size, as shown on the right.

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1.12.4 Back-Up Software

All Broadcast Pix Servers are equipped with Paragon Drive Backup & Recovery software. The Paragon software allows users to create manual back up points onto a Linux partition on the System drive. In this type of backup, if the system should get corrupt or infected with a virus the user can revert to an earlier restore point and continue using the system. The Paragon software only backups the System C drive and not the Video D drives. Stills, CGs and Animations will be backed up, however Clips can not be backed up with this option.

New systems from Broadcast Pix will have both a factory restore point and a restore CD to recover from. It is recommended to create a restore point after your system has been installed and configured. These instructions cover the basics of creating backup point and recovering to that point. For advanced use of the Paragon software, refer to their manual inside the Paragon software.

To create a back up point in Paragon:

1. **Quit** all applications, including Broadcast Pix Switcher.



2. Double-click the green **Paragon icon** on the desktop, to launch the application.
   If the icon is not on the desktop navigate to The Start Menu, All Programs, Paragon Backup and Recovery 11 Home, Paragon Backup and Recovery.



3. Once the software is open, click on **Back up Disk or Partition** button, in the top left corner of the application.

4. In the Backup Wizard window, click on **Next.**



5. Place a check mark next to **Basic Hard Disk 2, First Hard Disk Track, Master Boot Record** and **System C**, as shown on the right.

6. Click on **Next.**

7. Click on the **Save data to the Backup Capsule** radial button, as shown on the right.



If desired you may save the back up onto DVDs or a network drive, by selecting one of the other radial buttons and following the on screen menu options.

8. Click on the **Next** button.

9. Enter a backup name in the **Archive name** text field and click on the **Next** button.



10. In the following window, select the **Back up now** radial button and then click on the **Next** button.

11. In the summary window click on the **Next** button.

12. In the Completing the Backup Wizard window, click on the **Finish button.**

The home screen on the application will return.

13. At the top of menu bar, click on the green **Apply check mark** button.



A confirmation screen will appear, click on **Yes,** as shown on the right.

The Overall Progress window will appear, as shown on the right.
The backup is now taking place. This process will take anywhere from 20 to 40 minutes, depending on the amount of files being backed up. It is advised not to use the system while the back up is occurring.



14. When the back is complete the Overall Progress window will read out 100% and report that All operations have been finished.
Click on the **Close** button, as shown on the right.



15. The backup point has been saved onto the Backup Capsule. Close the home window of Paragon by clicking the **Red X** at the top right corner.

To restore a backup in Paragon:

1. **Quit** all applications, including Broadcast Pix Switcher.

2. Double-click the green **Paragon icon** on the desktop.
If the icon is not on the desktop navigate to
The Start Menu, All Programs, Paragon Backup and Recovery 11 Home, Paragon Backup and Recovery.



3. Once the software is open, click on **Restore Disk or Partition** button, in the top left corner of the application.

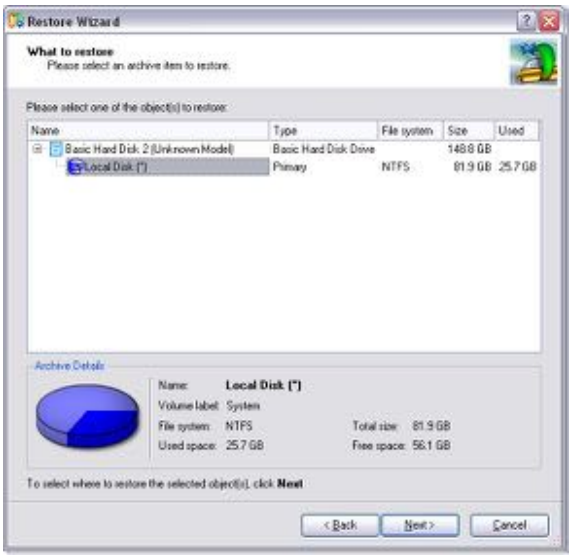


4. In the Welcome to the Restore Wizard screen, click on the **Next** button.

5. In the Browse for Archive window, **select** the desired back up point. Then click on the **Next** button.



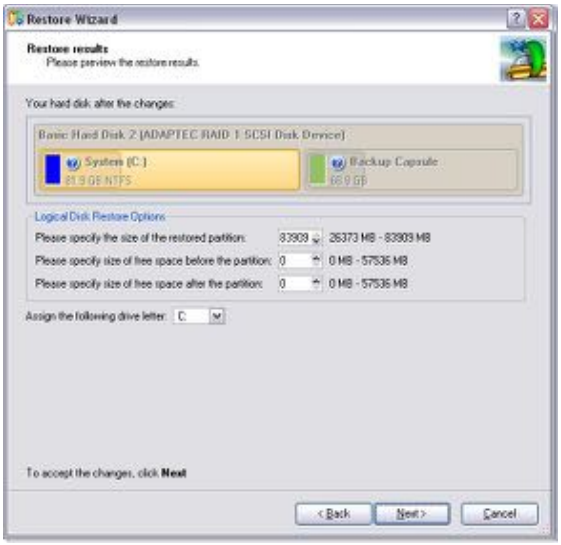
6. In the What to restore window, click on **Local Disk (*)** icon, as shown on the right. Then click on the **Next** button



7. In the Where to restore window, click on the **Next** button.

   Since there is only one system drive in the system there wont be any other choices in this window.

8. In the Restore results window, ensure that the **Assign the following drive letter** is set **C.** Then click on the **Next** button.



9. In the Completing the Restore Wizard window, click on the **Finish** button.

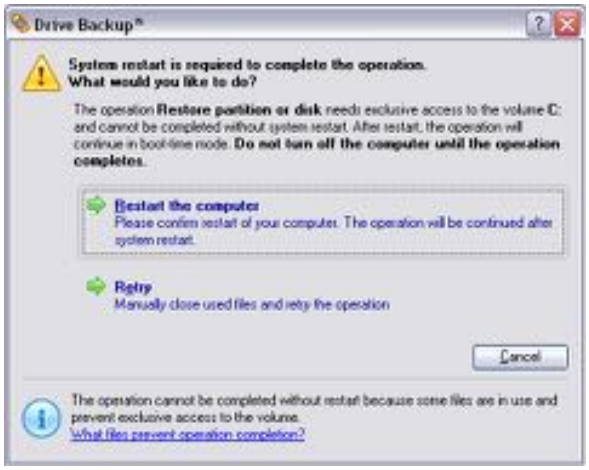
10. At the top of menu bar, click on the green **Apply check mark** button.



    A confirmation screen will appear, click on **Yes,** as shown on the right.

    The backup point will overwrite the contents of the System C drive and replace it with the back up files. Any files that are on the current System drive and not on the backup will be deleted.

11. In the Drive Backup pop-up window, click the **Restart the computer** button, as shown on the right.



This will reboot the system and begin the restore process. During the restore process a Paragon screen will appear showing the overall progress. It is important not to restart or shutdown the workstation during this process as data may be lost.

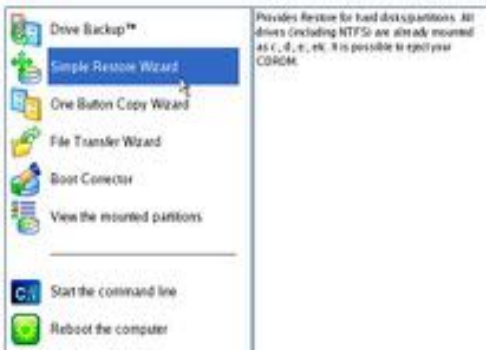
The restore is now taking place. This process will take anywhere from 20 to 40 minutes, depending on the amount of files being restored.

12. When the restore is complete, the workstation will automatically reboot. You are now ready to use your system.

To restore from a bootable CD:

All Server come with a bootable CD that allows you to enter a Linux partition to launch and restore a Paragon back up. If the workstation fails to boot (or fails to pass the BIOS screen) because of a virus attack or some other corruption, insert the disc labeled **Paragon Recovery CD** that is included in the Accessories box of the system. The system will automatically boot from the CD and launch a Linux version of Paragon.

1. In the DOS launch menu, select **Simple Restore Wizard,** as shown on the right. You may use the keyboard arrows and/or mouse.

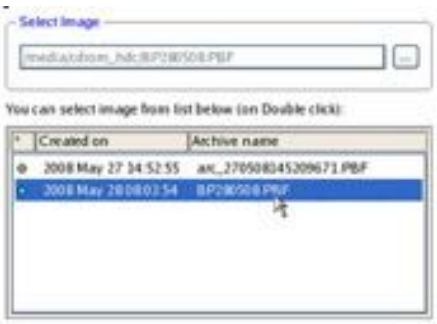


2. Click **Enter** on the keyboard.

3. In the Welcome Wizard screen, click on the **Next** button.

The following screens will be similar to the ones described above when restoring from inside the Paragon software.

4. In the What to Restore screen, **select** a restore point from the capsule, as shown on the right.
If no restore points have been made, the factory default labeled *arc_BP_Install_Ship* may be used.



5. Click on the **Next** button.

6. In the Image properties window, click on the **Next** button.

7. In the Select the destination window, click on the **Next** button.

   Since there is only one system drive in the system there wont be any other choices in this window.

8. In the Restore Summary window, click on the **Next** button.

   This will begin the restore process. During the restore process a Paragon screen will appear showing the overall progress. It is important not to restart or shutdown the workstation during this process as data may be lost.



   The restore is now taking place. This process will take anywhere from 20 to 40 minutes, depending on the amount of files being restored.

9. After the restore is complete, **eject** the CD, **close** the Wizard windows and **reboot** the workstation.

   The restore point should load and you are now ready to use the system.

To delete a restore point in Paragon:

Since the Backup Capsule on the System drive is only 160GB, the capsule may fill up with multiple restore points.

1. **Quit** all applications, including Broadcast Pix Switcher.

2. Double-click the green **Paragon icon** on the desktop.
   If the icon is not on the desktop navigate to
   The Start Menu, All Programs, Paragon Backup and Recovery 11 Home, Paragon Backup and Recovery.

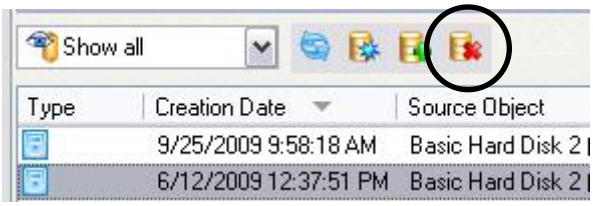


3. Click on the **Archives Tab,** on the top of the application, as shown on the right.



4. At the bottom of the Archives window a list of saved back up points will be visible. **Select** the desired back up point, it will highlight grey.

5. Click on the **Delete the selected archive** button, as shown on the right.



6. A pop-up warning will appear to confirm deletion. Click on the **Delete** button to permanently delete the backup file.
   The file is erased from the backup capsule.

Using the Desktop Shortcuts:

On new systems from Broadcast Pix, 4 desktop icons are available as shortcuts for both creating and resorting a backup. There are 2 shortcuts to create a backup, **Backup 1** and **Backup 2.** These backups automate the above steps without the need of entering the Paragon application. There are 2 shortcuts to restore from the each backup, **Restore 1** (which corresponds with Backup 1) and **Restore 2** (which corresponds with Backup 2). To run a selected shortcut, ensure that no applications or tasks are running and **double-click** the icon and a script will run in the background. Keep in mind these shortcuts offer a quick and easy recovery method, for more advanced recovery refer to the Paragon Backup manual.



Section 2:
Broadcast Pix Concepts

2.1 Broadcast Pix Features

Integrated Broadcast Studio w/ Fluent Workflow Software	Contains an entire control room of devices including: switcher, clip store, character generator still stores, logos, animations, DVEs, Multi-View monitoring, Macros, optional audio, camera and external DDR control.
Versatile Control Panel	Wide 1 M/E panel layout with 16 direct input source buttons, 16 shifted input source buttons for a total of 32 mapable inputs.
6 Standard Keyers	6 standard keyers, each with 2 dimensional DVEs, reposition and cropping capabilities. In addition, one linear key can accept key cut and fill from an external CG. One ClearKey™ Chromakey is standard.
Confidence of On-Button Content	Execute with confidence, as not only the device type, but the actual content element is displayed on PixButtons for every source and keyer, as well as on the Multi-View.
Personal Studio	Now one person can create engaging live video that used to require a team of operators
Grow to a Team Studio	For complex production add more panels, as described in the team section.
Fail-Safe	Multiple redundancies always keep your show on-air. Redundant routing, panels, power and hard drives.

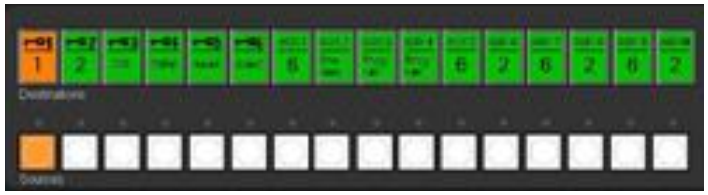
2.1.1 1 M/E Control Panel Overview

The Broadcast Pix 1 M/E Control Panel has a wide layout, resembling more of a traditional 2 M/E panel on the left side, plus direct access to Broadcast Pix devices on the right side of the panel. There are 16 direct input source buttons, plus access to 16 more inputs with a shift, for a total of 32 inputs.

The top section of the control panel consists of 2 buses: the Source and Destination Rows, which correspond with the display row below them. They are used to change key and aux assignments.

Destination Row

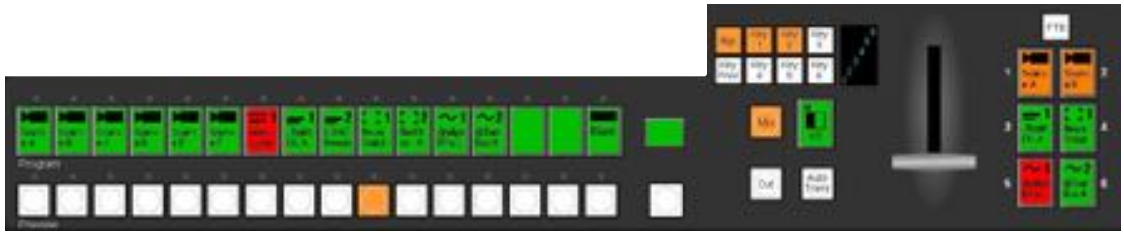
Source Row



The bottom of the panel consists of 2 buses: Program Row & Preview Row. In addition to a transition section to preview/transition all key layers, plus 6 direct keys.

Program Row

Preview Row



Transition Section

Direct Keys

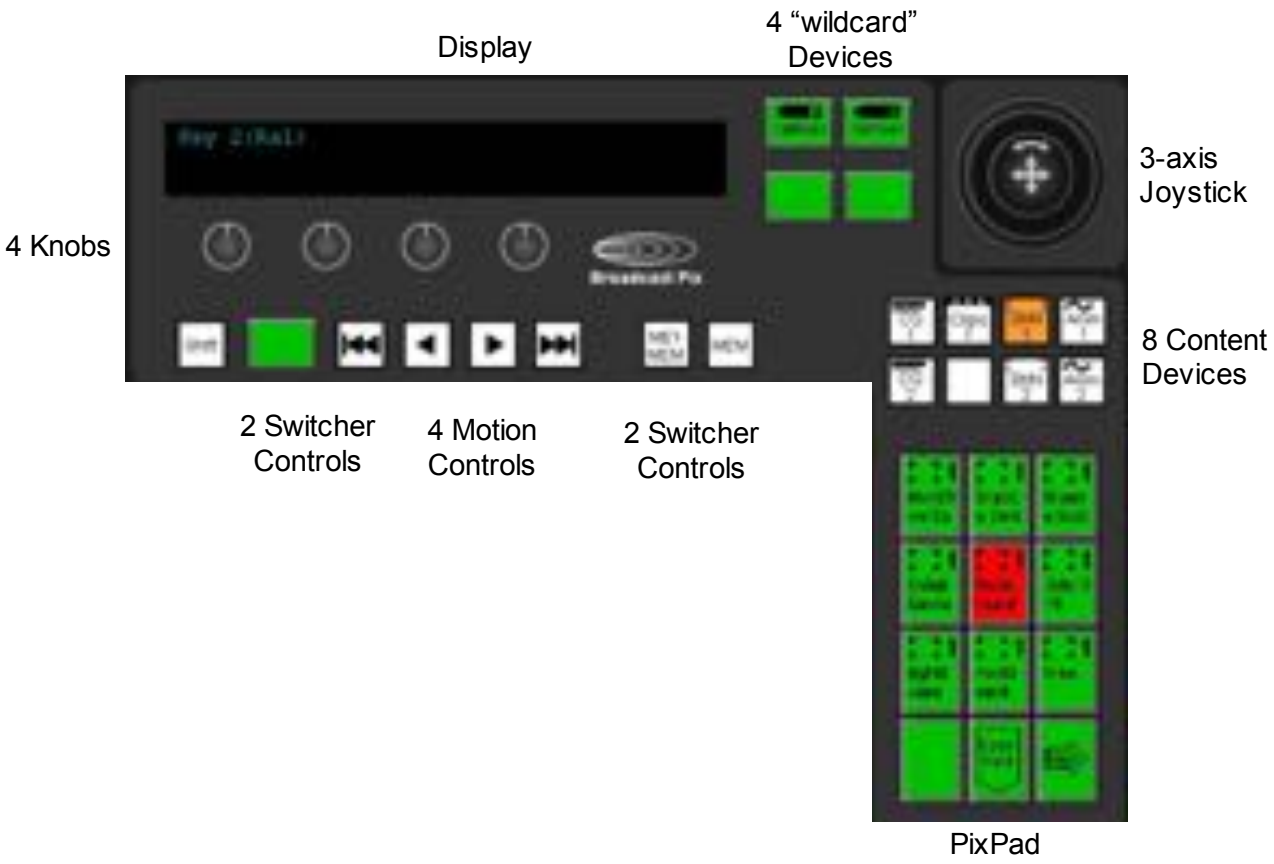
The middle of the panel consists of a 16 button (32 with shift) Macro row to trigger SnapShot and Macro memories quickly. When not in the Macro mode, this row is used for Source Controls.

Macros Row



Macro/Source Controls Enable

The remaining part of the panel consists of the Device Control, which includes a PixPad of 12 PixButtons, 4 Motion Controls, 4 multi-purpose Knobs, 8 Content Devices, 4 assignable “wildcard” device buttons, 4 Switcher Controls, a 3-axis joystick and a Display. These are all used to control various switcher devices, see section 2.4.1.



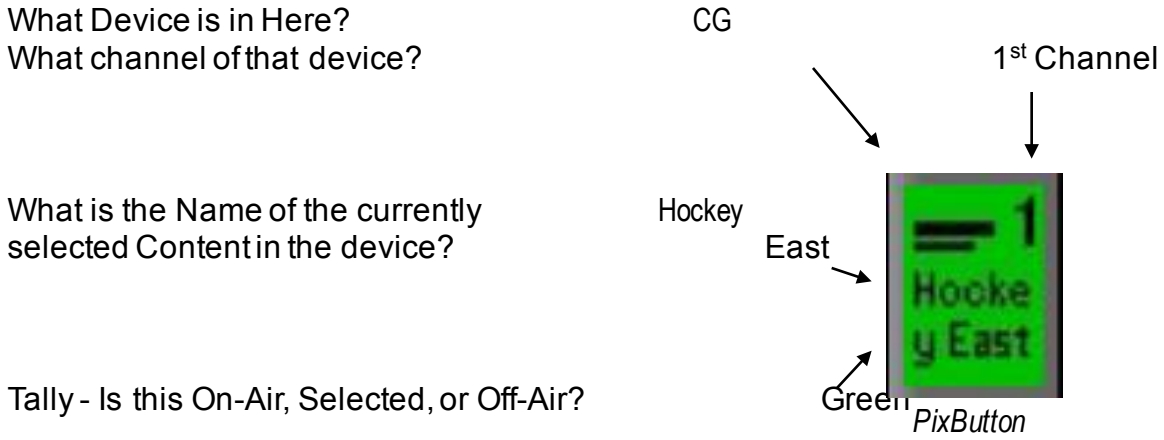
2.2 PixButtons for Executing with Confidence

Much of the versatility of the Broadcast Pix system is due to its unique picture buttons, called PixButtons. Each has a small computer VGA display built into the button, which has a resolution of 36x24 pixels.

PixButtons show Information at a Glance

All PixButtons on the Broadcast Pix panel show information at a glance. They all contain a device icon in their upper portion which shows which device is currently active in that PixButton. In the illustration below, the Character Generator (CG) is active, as shown by the CG icon. See Section 2.3 for all icons.

The remainder of the PixButton generally shows what individual content element is now active on this device in this PixButton. In the illustration shown below the content number and name is shown, which are the file name and number of this content element when it was imported into the show memory system. As an alternative, some PixButtons use a picture to convey content, as shown on the next page.



Red	On-Air
Orange	Off-Air, but selected.
Green	Off-Air and not selected.

PixButtons streamline the selection of content for all devices, such as the uses illustrated below, plus CG, Animations, Stills, Effects or a Keyer.



Clips



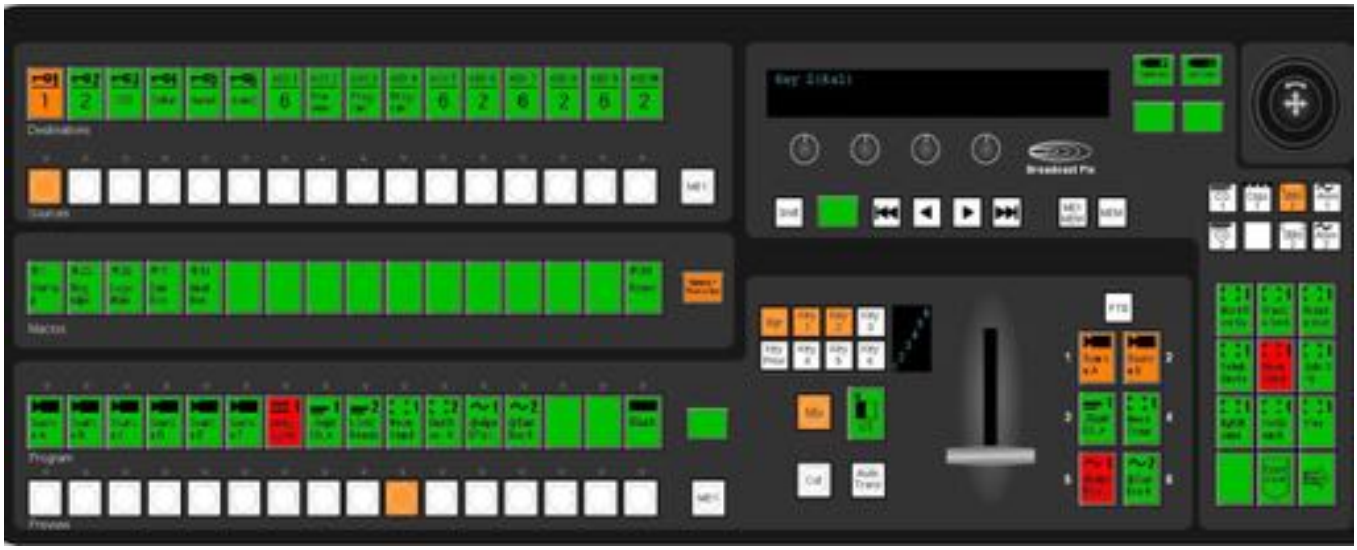
Effects


DVE boxes

Seven Kinds of PixButtons

A total of 74 PixButtons are used in 7 different areas of the Broadcast Pix control panel:

1. 12 in a PixPad — To select content within a device and for modifiers.
2. 32 Source Displays — To see what device is on each source, and to modify controls.
3. 6 Direct Keys — To see what is in each keyer, and to take it on/off air.
4. 4 Assignable Devices — To see what is in each assignable device, and to select it.
5. 1 Effects — To see the active effect, and to select the effects controls.
6. 16 Destinations — To select and modify a keyer and an auxiliary output.
7. 3 Selectors — To select various device controls.



2.3 Devices

The Broadcast Pix panel can control a studio of devices. Each device performs one function. In a traditional live television studio, many of these devices are in a separate box with its own operator. The Broadcast Pix panel provides flexible control over a wide range of devices, by using the device controls. When a device is selected the entire bank of device controls are assigned to that device, including a Joystick, 4 knobs, motion buttons, and a PixPad of 12 PixButtons. The list of supported devices will grow over time, check for new devices at www.broadcastpix.com.

Each device has a unique icon that appears on the top of the PixButtons.



Switcher:
Select both external and internal input with a control panel with 16 direct access input, and 32 with shift. Classic program/preview layout. Illustration shows Camera 1. Other icons are used for VTR and other sources.



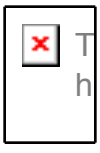
HD Clip Store: (2 Channels)
Instant access to clips, import and play-out. Use motion controls and view time codes. Plays compressed HD and SD clips with embedded audio (ProRes, DNxHD, QT Animation, DV/DVCPro & H.264 .mov/.mp4).



Harris Inscriber TitleMotion GS HD Character Generator: (2 Channels)
Create broadcast quality graphics with shadows, bevels, transparencies, logos and many more. Create your own look, or use easy templates. Add motion with rolls, crawls and 2D/3D animations.



HD Still Store: (2 Channels)
Have thousands of photos and graphics at your fingertips. Recall with a press of a button from the corresponding library shown on the monitor.
Import many file types: .bmp, .jpg, .tga, .gif and .png in HD & SD resolutions.



HD Animation Store: (2 Channels)
Animate your transitions, logos and graphics. Playback a 32 bit image sequence with audio. Also brand your production with a still logo in its own key layer. Import any logo, or create your own with Inscriber logo creation tools.
Import many file types: .bmp, .jpg, .tga (RLE), .gif and .png in HD resolutions.

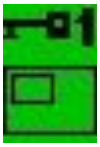


Camera Control:
Optional camera control of Hitachi, Panasonic, Sony and Telemetrics camera systems with Pan & Tilt heads. Including preset positions, tilt, pan, zoom, focus, iris and CCU controls.

List of Devices, Continued



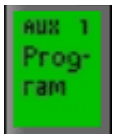
Effects:
Over 150 transitions. DVE transitions include push-offs and squeezes. Wipe transitions include horizontal, circles, stars, clocks and many more.



Keys 1-6:
Each Key supports a standard DVE Box (Picture-in-Picture), sizing, cropping, border controls and Chromakeys/Luma Keys.



External Key:
1 channel of external keying, when a Key Cut and a Key Fill signal is provided from an external graphics machine. Granite X systems may have 2 channels of external keying. This feature uses 2 inputs and supports clip and gain adjustments, shaped and unshaped signals and key inversion.



Aux:
Up to 12 Auxiliary outputs, and can be assigned to Program, Preview, Clean Feed, PowerAux or another external source. The first 10 Auxes can be through the control panel, other auxes through the Output Assignments or Remote Panels.



PowerAux:
A standard feature to enable any combination of Keys 1-6 to be keyed with a cut or mix onto the Aux 1 and/or Aux 2 output. It also converts formats, aspect ratios and timing to a specified output.



Fluent Macros (MEM):
Is a device that enables SnapShot recalls of panel setups & Macro recalls of multiple buttons pushes and sequences.

List of Devices, Continued



External Video Server Control (DDR):
An option which enables up to 4 channels of an external video server to be controlled from the panel through a serial connection using the VDCP Protocol, having its clip name appear in the PixPad. Currently 360 Systems, Harris Nexio, Omneon Mediadeck and Grass Valley K2 Solo/Summit are supported.



Streamer Control:
A standard feature which enables control of external ViewCast streamers/encoders or Matrox Monarch streamers/recorders through TCP/IP. Control the starting and stopping of streams and record form the control panel or Multi-View.



Deck Control:
A standard feature which enables control of external AJA KiPro and Blackmagic Hyperdeck recorders/players through TCP/IP. Select recorded clips directly in the PixPad showing clip names, play/rewind/fast forward clips and start/stop recording of new clips using the motion controls or use PixPlay



Timer Control:
A standard feature which enables control of the Multi-View countdown timer/stopwatch. Select pre-defined countdown times, or enter a user defined time. Use the motion control buttons to start/stop the timer.

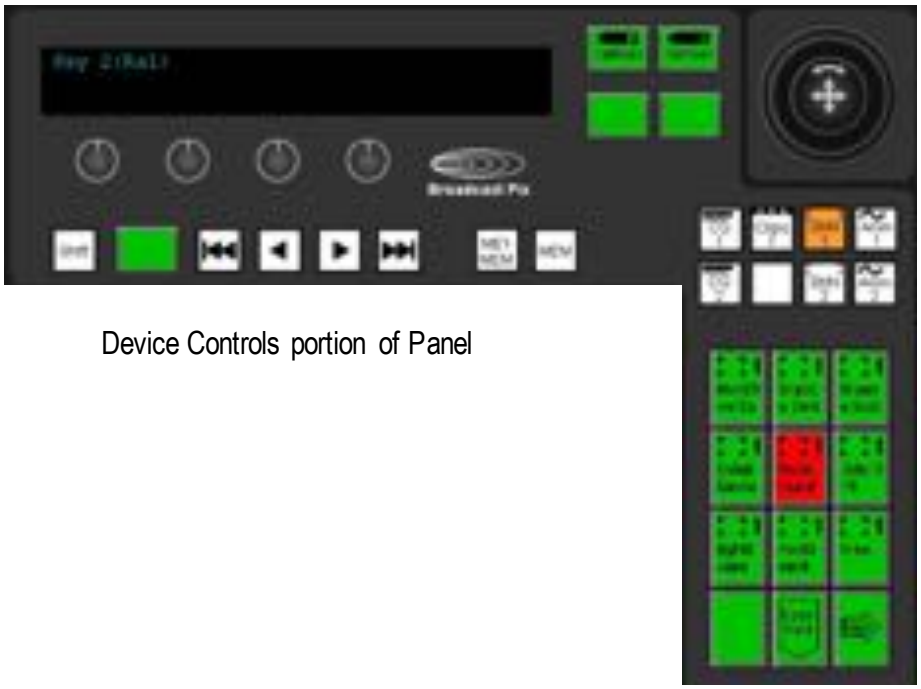


Router Control:
An option which enables control of AJA Kumo SDI video routers. Connection is through TCP/IP and allows for sources from router to be switched from the control panel and/or Macros. Source names from router can also be viewed on the Multi-View.

2.4 Device Controls

Device Controls is the portion of the control panel that can be assigned to whichever device you wish to control, i.e. clips, graphics, keyers, etc. The upper middle half of the panel is comprised of the device controls, as shown in the illustration below.
The remainder of the panel is comprised of the fixed controls, which are described in section 4.

The device controls are comprised of the Joystick, 4 knobs, 4 motion buttons, a group of 12 PixButtons called the PixPad, and a display, as shown below. When any device is selected, all of these the controls are dedicated to it.



Device Controls portion of Panel

2.4.1 Assigning the Device Controls

The entire bank of device controls can be assigned by any of the buttons below:

7 Content Devices

- The device controls are assigned to most devices by using the 7 permanent device selection buttons for CG, Clips, Stills and Animations.



4 “Wildcard” Device PixButtons

- To control the optional camera and server control

16 Destination PixButtons

- 6 Key buttons
- Up to 10 Aux buttons



1 Effects PixButton

1 Memory Button



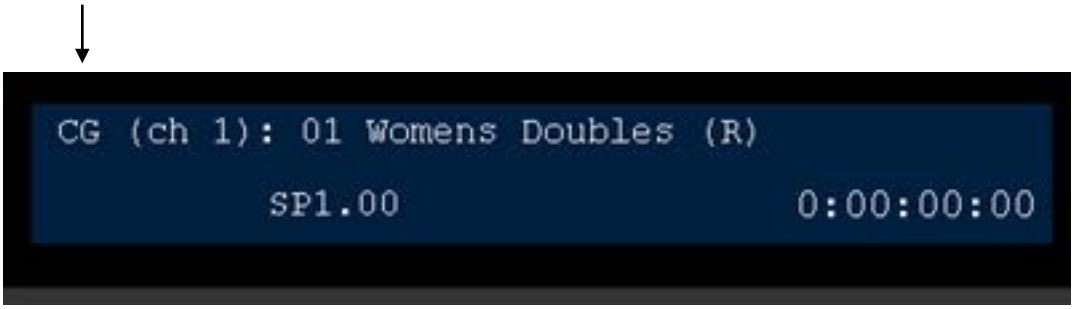
1 Source Control Names/Memories PixButton

- Assigned using the Macro row of 16 PixButtons



Which Device is Assigned?

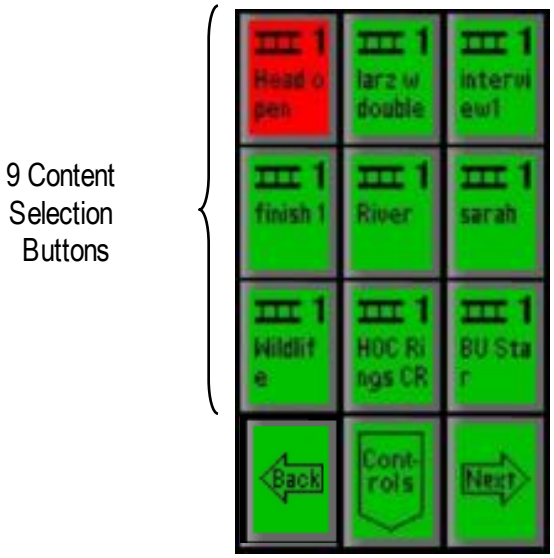
At all times you can tell what device is assigned to the Device Controls, by looking at the upper left corner of the display in either Device Controls section, in this illustration it is the first channel of CG.



2.4.2 PixPad Navigation

The PixPad is a versatile part of the Device Controls that is used to access content and many fast action controls. It has several navigation aids that streamline its use.

For most PixPads (other than control modifiers), the top nine PixButtons are to select which content element, effect or memory you want. The bottom three PixButtons are to move to the next PixPad, move back to the previous PixPad in the library, or move down a level to either controls for the device, such as in the clip store shown below, or to the numeric keypad such as in the Still Store.



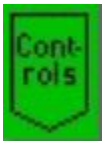


To move back to previous PixPad

To move down to the clip controls PixPad



To move ahead to the next PixPad



-To quickly jump to the first page of the content in the PixPad, simply select the device button you are using in the Device Control section of the control panel or SoftPanel.
-To quickly jump to the last page of the content in the PixPad, simply double-click or double-punch the device button you are using in the Device Control section of the control panel or SoftPanel.
- When you switch to another device, like CG, and then return, the PixPad will return to the page it was last on.
- There is also an up button, to move up from control PixPads, to a previous PixPad.



2.4.3 Multi-View PixPad

In the upper right corner of the default Multi-View is a PixPad of thumbnails which correspond to the active PixPad on the control panel, called the Multi-View PixPad. As the panel changes its PixPad to a content device, the Multi-View displays the thumbnails associated with the device. Content devices are Clips, Stills, CG and Animations.
In the illustration below, the PixPad is set to Clips 1. The control panel PixPad is designed to work with the Multi-View PixPad, use it as a reference of what the 12 control panel buttons represent.

The thumbnails make it easy to select any content element at the press of a button. When selected, the Multi-View PixPad tallies red if on-air and orange if not, the PixPad on the control panel will always tally red, no matter if the content is on or off air, use the Multi-View to check tally status.

If a device has more than 9 content elements, the next page of elements can be reached from the control panel by pressing the [Next] button (button 12) on the control panel PixPad, or by clicking on the button in the lower right hand corner of the Multi-View PixPad.

For the Multi-View PixPads to change and follow the control panel when a device is selected, the Follow panel option needs to be selected for any Multi-View PixPad.

To Follow Panels:

1. **Right-click** on the bottom of a Multi-View PixPad.

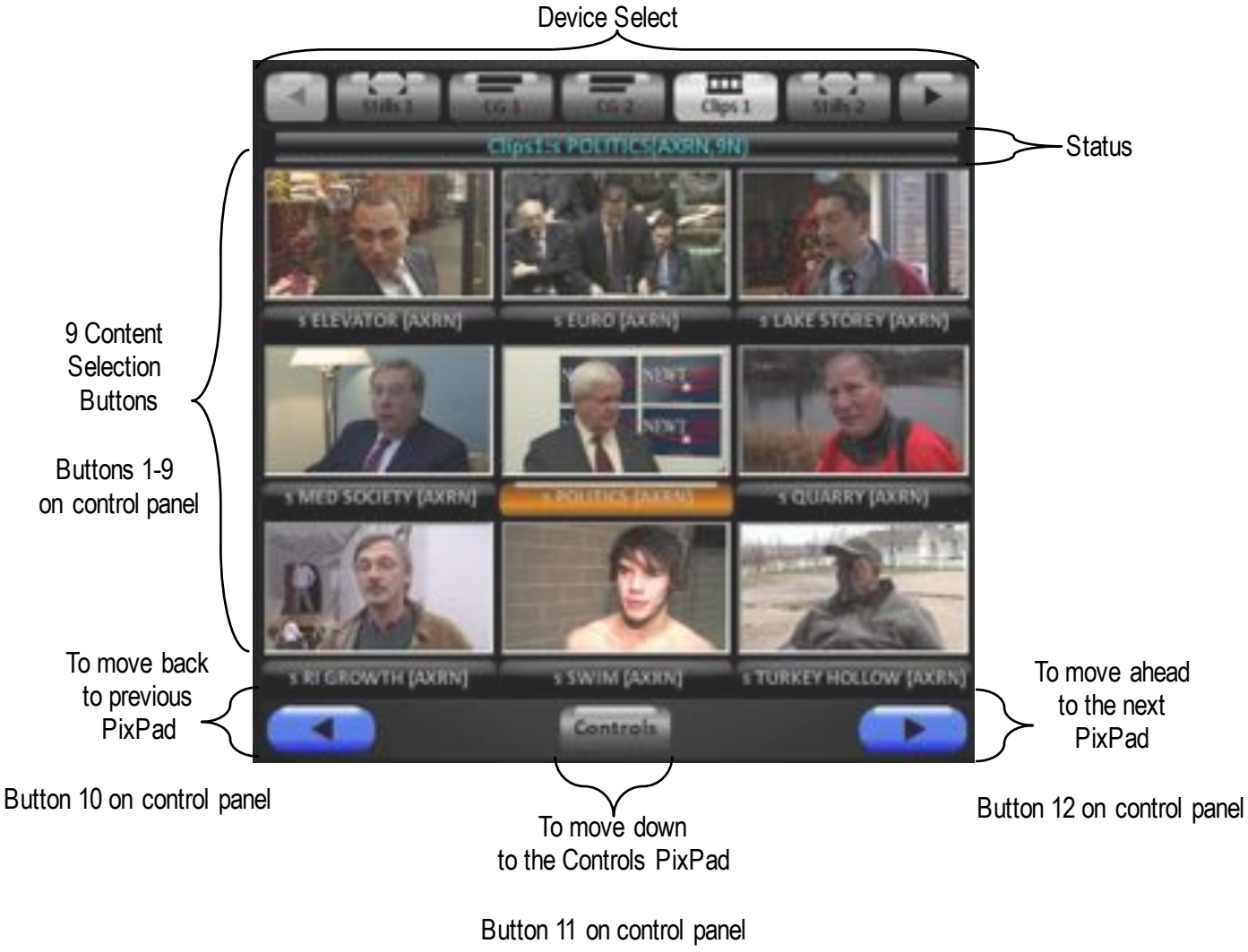


2. In the pop-up menu, select the **Follow panel** option, and a check mark will appear, as shown on the right.

   Now any button selected on any control panel will update any Multi-View PixPad that is following.

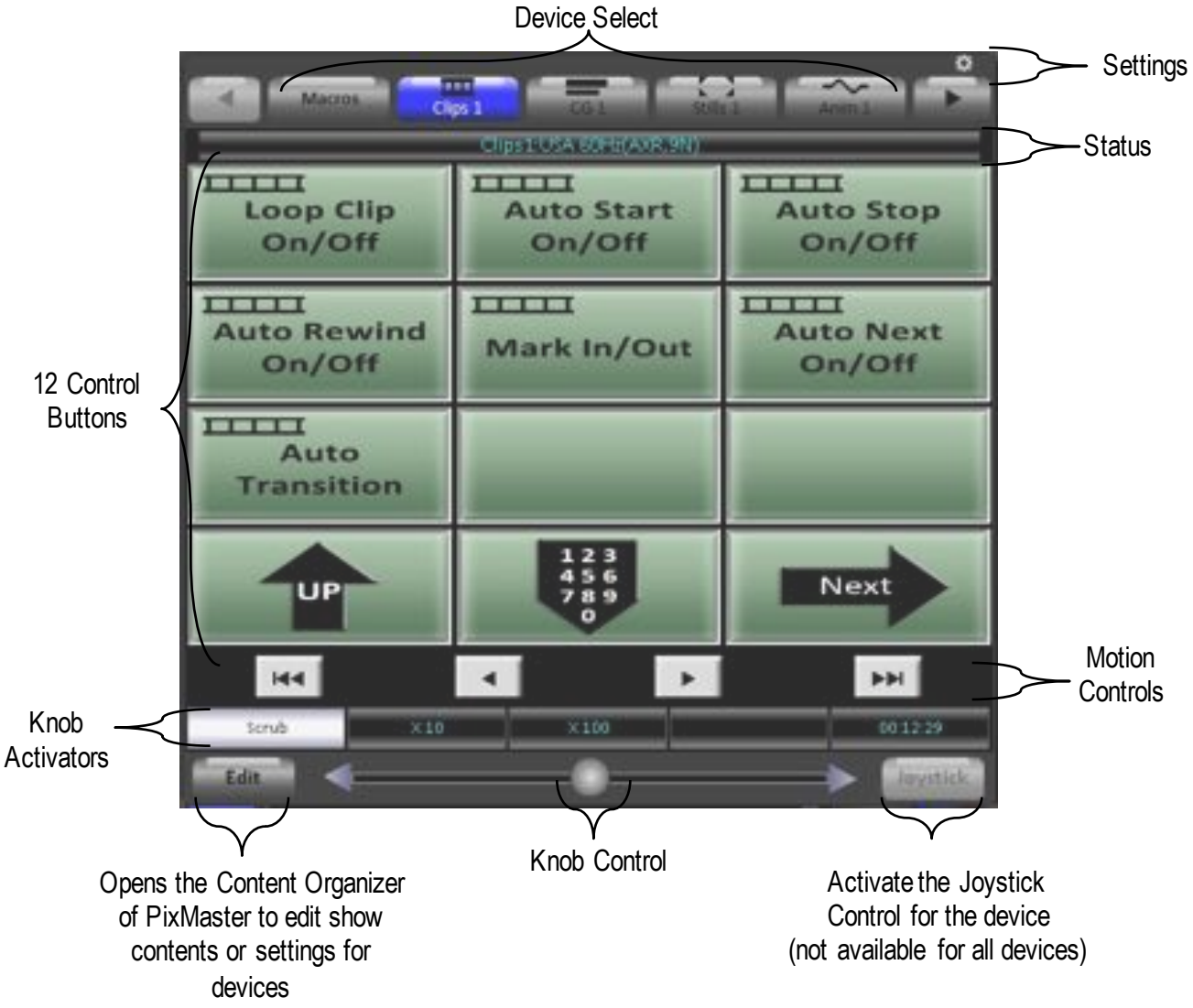


Home Page of Multi-View PixPad



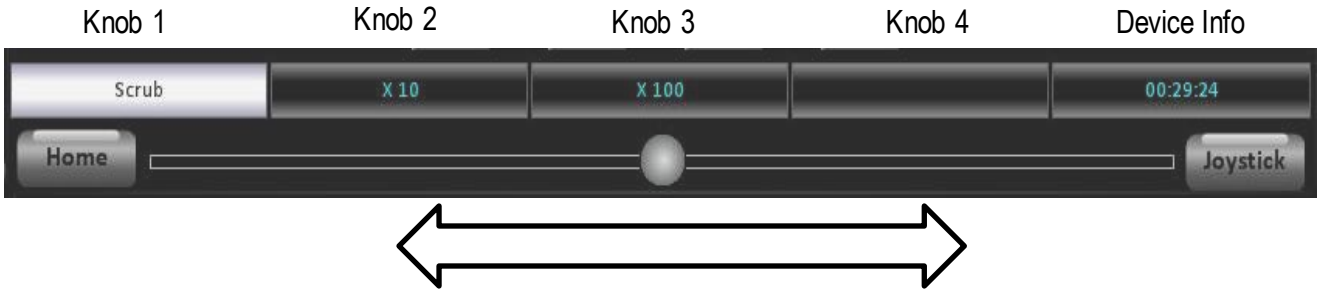
Controls Page of Multi-View PixPad

The control buttons below will vary from device to device.
For specific operation of each control, refer to their section is this manual.



Knob Control on the Multi-View PixPad:

If a device utilizes the knobs for a control, select the desired **Knob Activator**, and it will highlight white, as shown below with the 'Scrub' control.

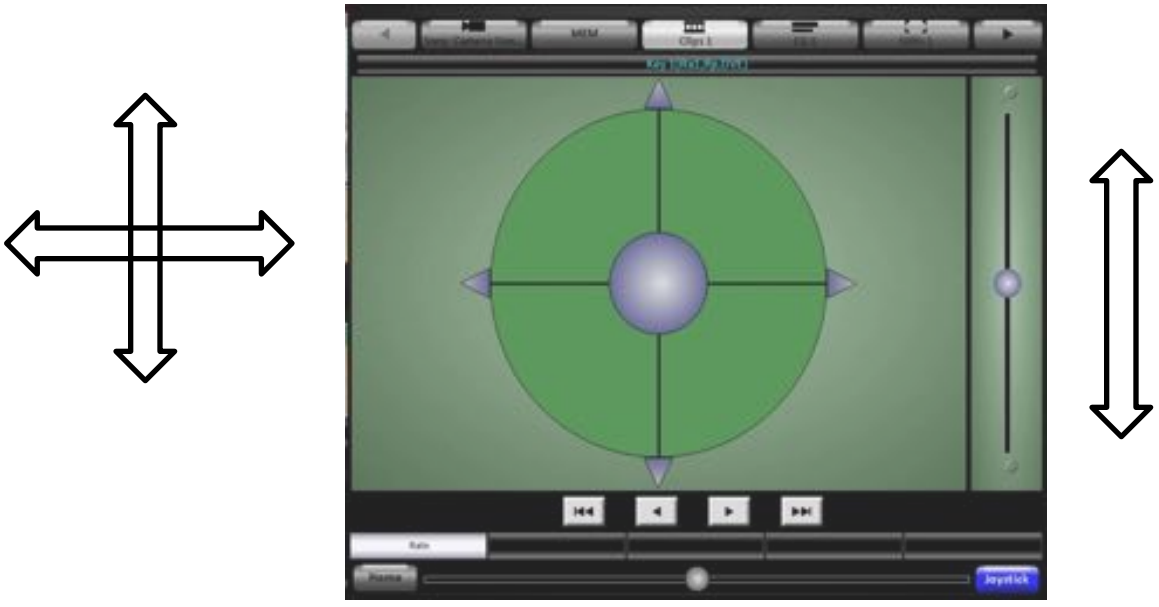


Then using the **Knob Control** circle, click and drag to the right to increase the knob value, or click and drag to the left to decrease the knob value. The Knob Activator label will update as the Knob Control is adjusted.

Joystick Control on the Multi-View PixPad:

To control the Joystick, select he **Joystick** button on the Multi-View PixPad and it will highlight blue and the PixPad will show a 2-axis joystick for the X & Y axis (pan & tilt) plus a slider for the Z axis (zoom), as shown below. Devices which use the Joystick are Keyer Controls and Camera Control.

Click and drag the middle circle to position the joystick. Click and move the right sliderl to zoom in or out the joystick, as if it were being twisted on a physical panel. Clicking on the 4 arrows or magnifying glass will 'nudge' the joystick, providing a finer control.

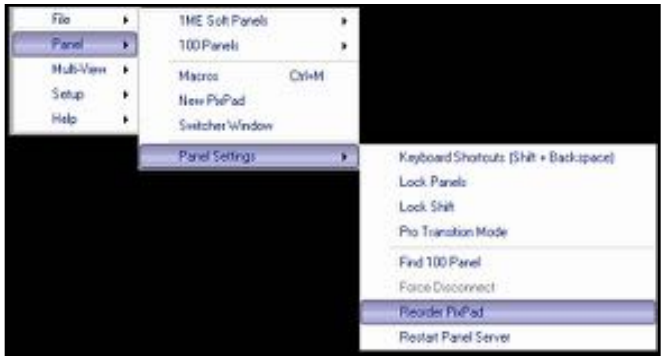


2.4.4 PixPad Order Controls

To change the order in which the PixPad tabs appear across the top of the PixPad:

1. On the **Panel** drop down menu select **Panel settings.**

2. In the following menu select **Reorder PixPad**, and the PixPad order window will appear.



3. Use the up and down arrows to move the highlighted selection to where on the list you want it to appear. Highlight other items and them move them with arrows as for the first item.

4. Click **OK.**



Now the order will appear as you prepared it.

The top of each PixPad share the same group of 5 devices.
Use the forward and back error buttons to switch the next group of 5 devices.



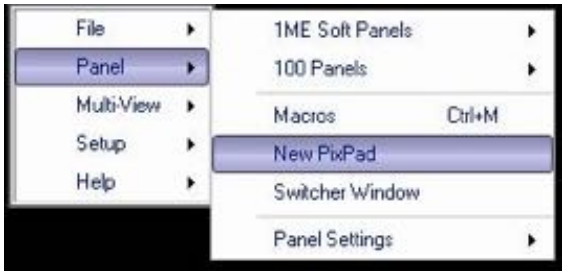
2.4.5 Floating PixPads

In addition to the Multi-View PixPad in the top right corner of the Multi-View, you can create additional floating PixPads. These can be used on another portion of a large screen, or on dual monitor systems can be opened on a the second monitor where they are helpful as either additional info for a solo operator, or dedicated info for a graphics operator. These PixPads can be assigned to either follow the control panel or can de assigned to None to not change when the control panels changes, for independent control.

To open a new PixPad:

1. In BPswitcher click on **Panel** drop down menu, and click on **New PixPad,** as shown on the right.

   A PixPad will open.



To close a PixPad:

1. **Right-Click** on the bottom of the PixPad.

2. In the pop-up menu, select **Close PixPad**, as shown on the right.



To change the size of a PixPad:

1. Move the mouse to the left, right or bottom edge of the PixPad.
   The curser will change to a resize icon.

2. Click and **Drag** the edges to the desired size, using the mouse.

   The PixPads can be resized to virtually any size.

3. **Release/unclick** the mouse and the PixPad has been resized.



NOTE: To have Floating PixPads not follow the control Panel PixPad, deselect the **Follow panel** option in the right-click menu or from the gear icon.

2.5 Multi-View

The default 1ME Multi-View supports 4 sizes of computer (VGA/DVI) monitors in a widescreen resolution and 1 in a 4:3 resolution: 1280x1024, 1360x768, 1440x900, 1680x1050 and 1920x1080. The system automatically will open the correct layout based off the primary monitor set in Windows, see section 2.6.1 to change the desktop screen resolution. These default layouts are designed for one screen, but may be used as a starting point to create other custom layouts in a multiple screen installation, see section 2.5.8 to create custom layouts.

The Multi-View consists of source windows, larger preview and program monitors, a PixPad of thumbnails to correspond to the control panel PixPad, keyer windows, a status bar, a clock/timer, clip counters as well as tally information.

The Multi-View is also interactive, so you can switch a show from the Multi-View, as a complement to using a panel, in place of for simple shows or for backup in case the control panel loses communication.

To load the default layout:

1. Click on the Menu button and select the **Multi-View** drop down menu.

2. Select **Multi-View Layouts.**

3. In the following menu, select **Default Layout** as shown below.



   The Multi-View will refresh and load the correct layout based off the desktop resolution of the primary monitor.

4. To load the default layout at application startup, hold the **Shift** button on the keyboard when the application is being launched.

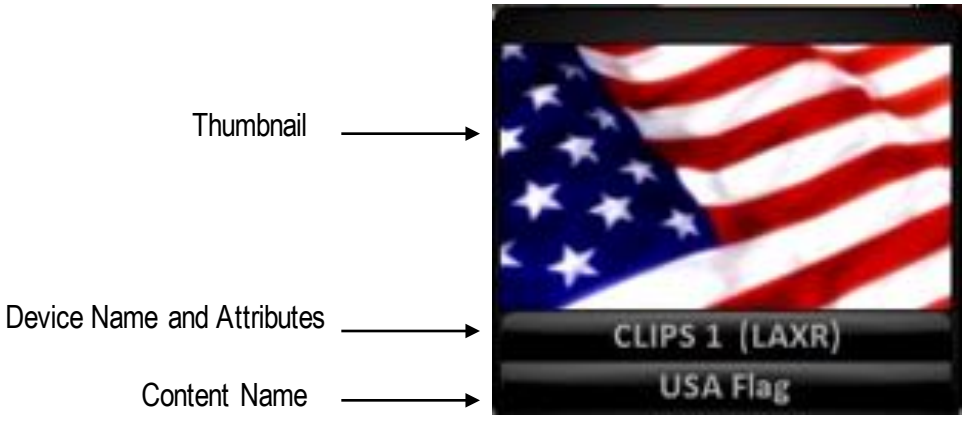
2.5.1 Overview of the Multi-View

Depending on the screen resolution, the default layout may appear slightly different. However, the basic concepts apply to all of Multi-View layouts.



2.5.2 Sources on Multi-View

Each source monitor shows the following information:





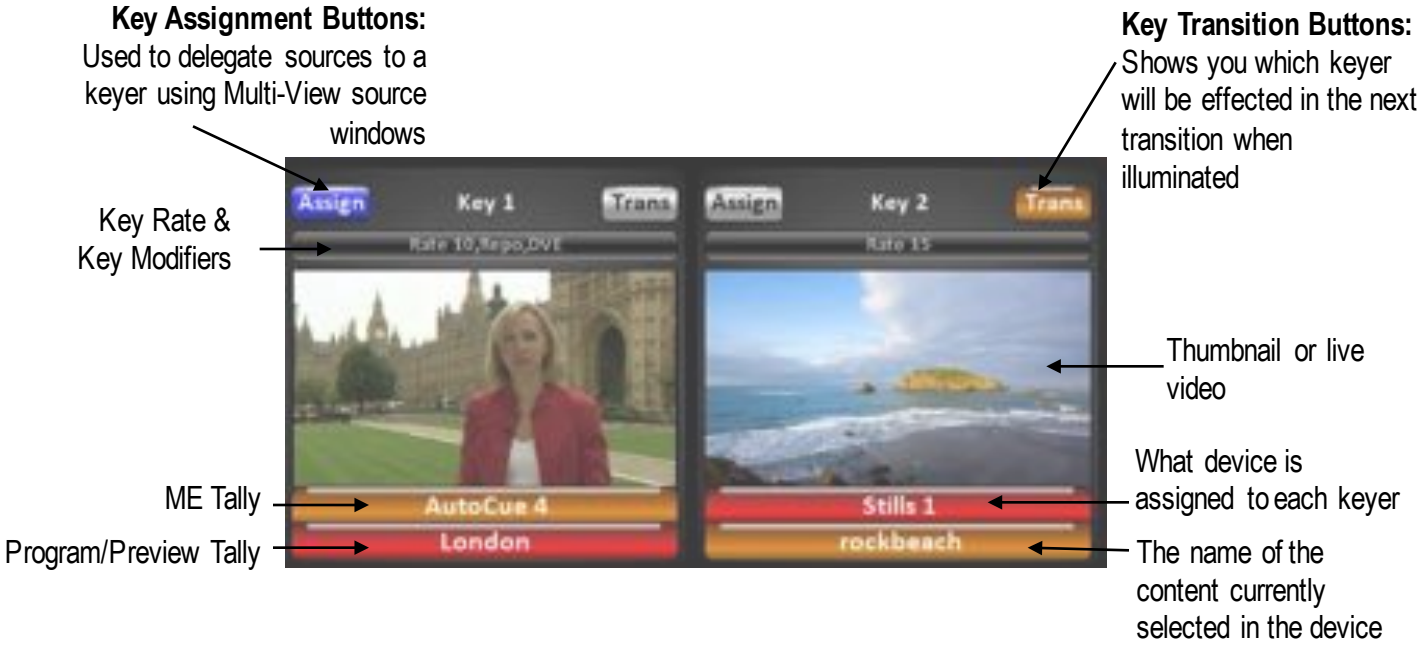
To view more sources above the sources shown, you may create your own custom layout and float up to all 32 inputs. See section 2.5.9.

NOTE: The ME tally will only be active on systems with the 2ME SoftPanel option installed

2.5.3 Keyer Windows on the Multi-View

The Multi-View shows the contents and status of all 6 keyers. Just as with source monitors, a keyer monitor displays the thumbnail of the content that is currently loaded into the keyer as well as the device name, content name and tally status for Program/Preview. Similar to the source monitors, each individual keyer window can be independently positioned and sized.

Modifiers applied to a Key are also shown on the Multi-View in the keyer windows. The Key transition rate and if a keyer has a DVE, Crop and/or a Reposition applied to it appears in the mini status display above the thumbnail.



Transitioning Keys individually with the Multi-View

To Manually Bring a Key On Program:

1.Any key that is off-air (grey or orange), can be brought on-air by clicking on its keyer thumbnail on the Multi-View. This will cause this key to fade on-air at the rate for that keyer, and the tally underneath will change color to red.

To Manually Take a Key Off Program:

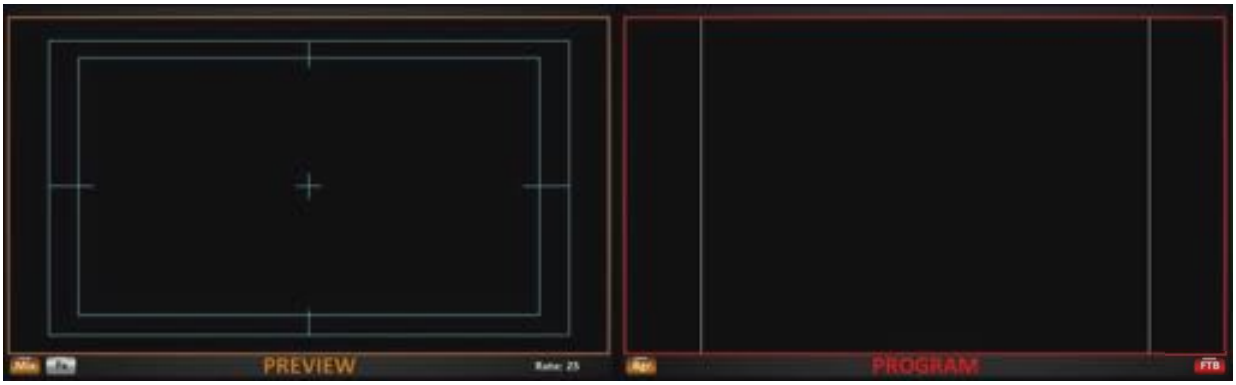
1.Any key that is on-air (red), can be taken off-air by by clicking on its thumbnail on the Multi-View. This will cause this key to fade off-air at the rate for that keyer, and the tally underneath will change color to red (or orange if its key transition button is on).

NOTE: The ME 1 tally will only be active on systems with the 2ME SoftPanel option installed

2.5.4 Program/Preview Overlays on the Multi-View

If desired, the Program and/or Preview monitors on the Multi-View may show safe zone overlays, as shown below. These overlays are useful when aligning Keyers and shot compositions, when adding graphics to ensure visibility on tube monitors and when producing a 4:3 output in a 16:9 show to ensure no video/graphics are cut off.

There are 3 overlays which may be selected on Preview and/or Program:
Title/Action Safe Zones (Aqua-colored lines), 4:3 Video Safe Zone (White-colored lines) and Center marks (Aqua-colored cross).



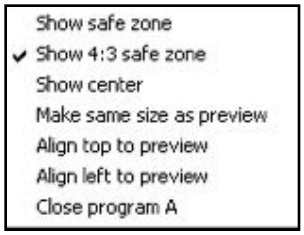
To display an overlay on Preview/Program:

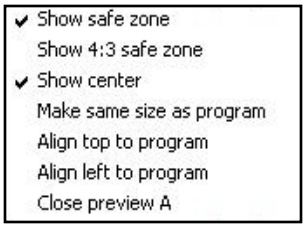
1. **Right-Click** on the Preview or Program Monitor, and a pop-up menu will appear.

2. At the top of the pop-menu select **Show safe zone, Show 4:3 safe zone** (only if the show Video Aspect Ratio is set to 16:9) or **Show center**.

   The active/selected overlays will now show a check mark, as shown on the right.

3. To deselect any overlays on Program/Preview, repeat steps 1-2.



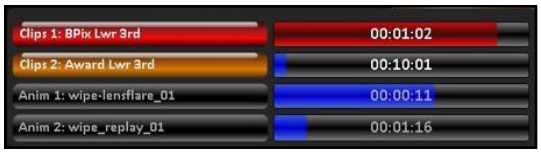


2.5.5 Counters

Counters for the animation stores appear on the Multi-View for each channel. There are 6 different floatable counters. Either individual Clips counters, individual Animation counters, dual Clip counter or a Clip/Animation combination counter, as shown below. They display the clip counter with both a number and a moving blue bar. They can be set to either count up and show elapsed time (runtime), or they can be set to count down, to show the remaining time in an animation or clip.
Counters will move at one-second intervals, and with 10 seconds left in the clip the bar will turn red and the counter will move at one-frame intervals.
Clip counters also provide Tally information. Red letters: On Program, Orange letters: On Preview, White letters: Selected in the device store.



Individual Counters



Clip/Anim Counter

To set the clip counters to count down:

1. **Right-click** on the any counter window.

2. In the pop-up menu, select **Countdown clips/animations**, as shown on the right. A check mark, now both counters and the counter in the display of the control panel will be set to count down.
(To return to show the elapsed time, uncheck the same setting.)

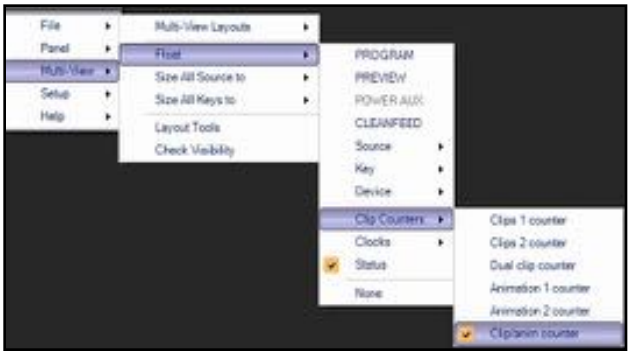


To float individual clip counters:

1. In BPswitcher click on the **Multi-View** menu.

2. In the drop down menu click on **Float.**

3. Click on **Counters** and in the following menu select **Clips 1 counter, Clips 2 counter, Animation 1 counter, Animation 2 counter**, or **Clip/anim counter** as shown on the right.



4. To hide the individual counters, repeat steps 1-3.

NOTE: The counters bar will turn red at 10 seconds remaining only if the Clips Controls Settings are set to not Loop, see section 6.5.5.

2.5.6 Switching on Multi-View

The Multi-View is interactive and can be used to switch a show on a Mica Desktop, or as a complement to a panel (SoftPanel or physical control panel). This can be done with a mouse or with a touch screen monitor for a more tactile interface.

Basic Switching:

To effect Preview to air/Program:
Click on the **Preview** monitor.
Will perform the selected Mix or FX at the assigned transition rate.

To take Preview to air/Program:
Click on the **Program** monitor.
Will perform a Cut.

To change to a different device:

Click on the **Device Tabs** at the top of the PixPad.

To change content:
Click on the desired **thumbnail** in the PixPad.



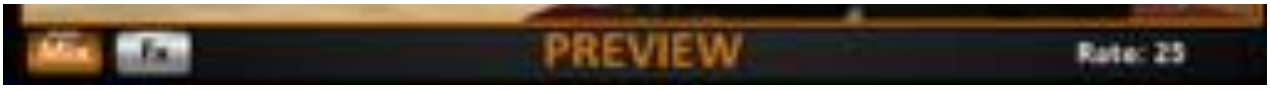
To add a key(s) to Preview or to include a keyer in the next transition:
Click on the **Trans** button(s).

To Preview a source:
Click on the **source** thumbnail and it goes to preview.

To add or remove a key to Program:
Click on the **Direct Key** thumbnail.
Will perform a Mix or Cut at the assigned keyer rate.

Advanced Switching:

To change the style of transition that occurs when you click on the Preview monitor:
Click on **Mix** or **Fx** button on the bottom of the Preview monitor.



To change the transition rate or effect:
Click on **Mix** or **Fx** button on the bottom of the Preview monitor, and the PixPad will change showing a numeric pad or available effects. Changing the transition rate will update the Rate display on the Preview window.





To transition only keyers in the next transition:
Click on the **BGR** button on the bottom of the Program monitor. Now only keyers with Trans enabled will be transitioned.



To Fade to Black:
Click on the **FTB** button on the bottom of the Program monitor. The button will illuminate blue, now click on the Program monitor.



When in black and the FTB button is illuminated red and want to fade up, click on the Program monitor.

See section 4.3.6 for more information.

Advanced Switching:

To assign a source to a keyer:
Click on one of the key **Assign** buttons, it will illuminate blue. Then click on the thumbnail of the **source** you wish to assign, and its key thumbnail will change to show the new key source. The mouse course will change to a key icon. Once a source is selected, the Assign button will turn off.



To assign a source to a PowerAux (if enabled):
Click **Assign** button on the PowerAux monitor, then click on the thumbnail of the **source** you wish to assign. The output monitor will now cut to the selected source.

For more information about PowerAux, see section 4.11.



2.5.7 Multi-View System Settings

Depending on the production or type of user, there are system settings to enable the options described in the previous section.

To disable & hide controls on the output monitors:

1. In BPswitcher, click on **Setup** and a drop down window will appear, then select **System Settings…** as shown on the right.

   The System Settings window will appear.

2. In System Settings window, click on the **Multi-View** tab, which will bring up the various video settings, as shown on the right.

3. Deselect the **Show transition controls** checkbox under the Options section.

   The Mix, Fx, Rate and BGR controls on the Preview and Program output monitors will now be hidden and disabled.

4. Click on the **OK** button.

5. To enable the controls, repeats steps 1-4 above.

To modify how switching control on the Multi-View:

1. Open the **System Settings**, **Multi-View** tab, as described in steps 1&2 above.

2. Under the Multi-View operation section you may modify what output is switched when a source is selected, either **Preview, Program** or **None.**

   And, enable/disable the clicking on the Preview and/or Program windows to perform a transition.

3. Click on the **OK** button to apply the changes.

To use green tally, instead of orange:



1. Open the **System Settings**, **Multi-View** tab, as described in steps 1&2 above.

2. Under the Options section, place a check next to **Preview tally green**, as shown on the right.

3. Click on the **OK** button to apply the changes.

   Now all the source monitors, preview monitors and tally in the Multi-View PixPad will be green, as shown on the right.



4. To revert back to orange tally, repeat steps 1-3 above.

To hide the aspect indicators:



1. Open the **System Settings**, **Multi-View** tab, as described previously.

2. Under the Options sections, deselect the **Show source aspect indicators.**

3. Click on the **OK** button to apply the changes.

   Now all the source monitors will hide the aspect and source control indicators of 9N, DVE and Cr, as shown on the right.



2.5.8 Floating Monitors

In addition to the default layouts, more windows on the Multi-View can be floated, which serves two purposes when working on a multi-monitor system. Either create your own custom Multi-View on a large secondary monitor of any resolution, to replace the default layout that is supplied or float selected windows for a secondary graphics or slo-mo operator.

Up to 4 copies of Program, Preview, Clean Feed and PowerAux and up to 3 copies of each source monitor can be floated and sized. You may arrange the windows any way you like, and then save them for later recall. Each director/producer or each show could have a custom layout tailored to that specific show. You may use the default layouts as a starting point and then modify/save them to your needs.

To create a custom layout:

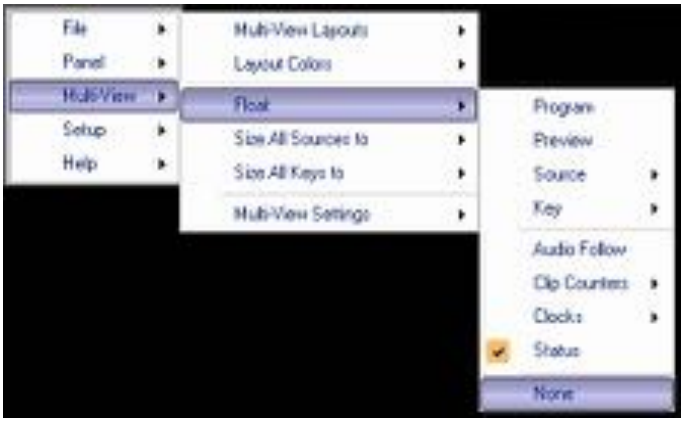
1. In BPswitcher, click the **Multi-View** drop down menu.

2. Click on **Float,** as shown on the right.

   You will see the list of windows you can float. Then select the desired items.

3. After selecting each item, it will appear, and then arrange it on your primary or secondary monitor. Most monitors can be sized by dragging their corners and repositioned by dragging by the top of the window.

   As source monitors are enlarged the text size of monitor will also enlarge, to always use a larger font select the **Use Larger Font** option under the Multi-View Settings menu.



NOTE: The native resolution of the Preview/Program monitors are 920x640, where as the Source monitors are 480x320. When resizing monitors be cautious of how large you make each monitor, as the resolution may get distorted.

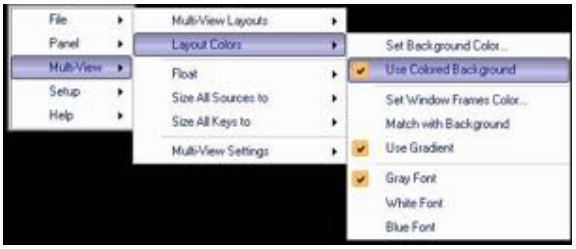
4. To align or size monitors right-click on the monitor and select which source you would like to copy its attributes from, as shown on the right.



You may also size all the sources to each other by selecting the **Multi-View** menu, then **Size All Sources to,** as shown on the right.
A similar option is available for sizing all Key Windows, select **Size all Keys to** in the same menu.



5. To make your monitors stand out in your display, you also have several coloring options under the **Layout Colors** menu, as shown on the right.



To change the background color, select the **Multi-View** menu and select **Use Colored Background** (by default this option is selected on).

To change to the color of the background select the **Set Background Color…** option, which will open a color picker as shown on the right.



Either select a color patch in the **Web** tab or select the **Custom** tab and choose a custom color. To save the color click on the **OK** button.
(The background color will update once OK is selected, there is no preview of the background color)

You may also use your own custom background picture, simply change the Windows desktop to your liking in the Display Properties of the workstation and deselect Use Colored Background.

To change the frame color around each window, select the **Set Window Frames Color…,** as shown on the right, and a similar color picker will appear.



In the Set Window Frames Color window select a color by using either the Web or Custom tab. As a color is selected the Multi-View will update to display the color in the window frame.

To apply the color select the **OK** button.

The **Use Granite** option applies a subtle glow effect behind each window.

The **Gray/White/Blue Font** color option changes the font color of the under monitor displays on the Multi-View.

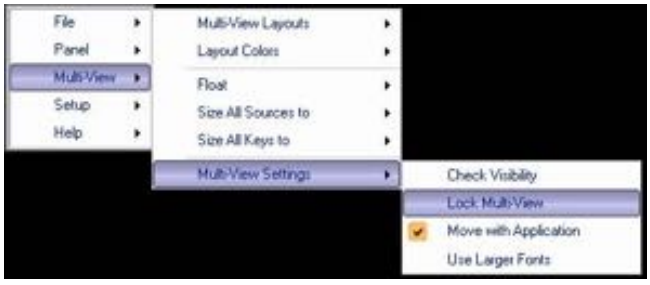


6. Once the Multi-View has been modified to your liking, it may be locked to prevent any window movement or accidental color change.

Select the **Multi-View** menu, then **Multi-View Settings** and select **Lock Multi-View.**

Many menu options will also grey out to prevent selection.

To unlock the Multi-View repeat this step.



NOTE: To close one floating monitor, right click on the window and select **Close window** to close that monitor.

Once a layout has been created and or modified, they can be saved as a template for later recall in the system.

To save a custom layout:

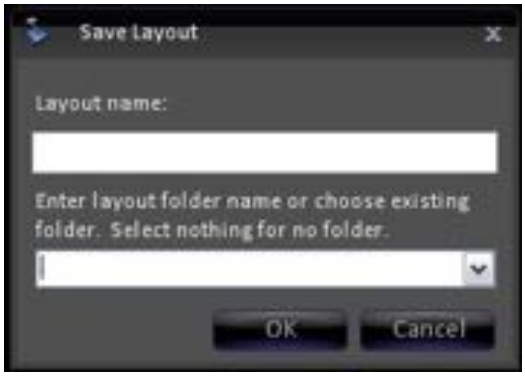
1. Select the **Multi-View** drop down menu from the Menu Bar.

2. Then select **Multi-View Layouts**, and then select **Save layout…** in the right column.

   The Save Layout window will appear as to the right.



3. Enter the name you wish to give the layout in the **Layout name** field. You may also save layouts in different sub-folders. Simply click in the **Layout folder** field to enter the name of the folder, for example 'Saved Layouts'. If no name is entered, then your saved layout will appear in the main menu under the factory-designed layouts .



4. Click **OK** to save it. Now it will appear in the layout templates drop down list where you can recall it in the future.

5. You can also remove/delete a saved layout by selecting **Remove Layout…** in the above list.

2.5.9 Labeling the Multi-View

As described in section 1, sources on the Multi-View may be labeled through the Granite Input Assignments menu. In addition, source names may be entered directly on the Multi-View without opening any menu, for quick changes. Also, all the output monitors (Program/Preview/CleanFeed/PowerAux) may be relabeled to a custom name, useful when using multiple outputs to feed different destinations.

Both the source names and the output names are saved with each show file, and not with the layout.

To rename a source monitor:

1. **Float** the desired source monitor, if not already open, as described in section 2.5.8.

2. **Right-click** on the label name (the bottom label).

3. A white text box will appear, **enter** the desired name, in this example 'Wide Shot'.

4. Press the **[Enter]** key on the keyboard.

5. To rename the top input name, right-click on the top input name and repeat steps 3 & 4 above.

   All the label and input names on each copy of the selected source window will update.



To rename an output monitor:

1. **Float** the desired output monitor, if not already open, as described in section 2.5.8.

2. **Right-click** on the label name.

2. A white text box will appear, **enter** the desired name, in this example 'Stage Left'.

4. Press the **[Enter]** key on the keyboard.

   All the labels on each copy of the selected output window will update.



2.5.10 Multi-Lingual Multi-View

By default the Multi-View labels and menu names are all in English, however if desired the text may be substituted for you own in virtually any language. This feature allows the Multi-View to be international and further assist operators, allowing them to produce in their native language. By default the system comes with English, Portuguese, Spanish and Simplified Chinese, but through the use of the Translation Assistant program, any text and language (including Unicode text) may be used.

Currently the following components are available for Multi-Lingual use:
- Top level menus under the Broadcast Pix logo
- All labels on the Multi-View (i.e. Key and Device Names)
- Right-click contextual menus
- Pop-up and warning messages

Note to enter Unicode or Far East Languages the appropriate international fonts must be installed. On Windows 7 systems they come pre-installed, on Windows XP systems an install CD can be found inside the Accessories box.

To change the language of the Multi-View:

1. In BPswitcher, click on the Broadcast Pix Logo menu and select the **Setup** drop down menu.



2. Click on the **Language** menu item, as shown on the right.

3. In the drop down menu select the desired language, **English Portuguese, Simplified Chinese, Spanish** or one the user defined custom languages.



Now any translated text will change, including the Multi-View labels and the drop down menus, as shown on the right.

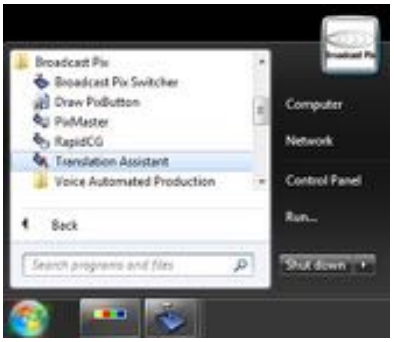
Note only translated text will change, any item not translated will remain in English.



See the next section for creating custom translations.

To create a custom translation:

1. Navigate to the **Start Menu, All Programs, Broadcast Pix,** and select **Translation Assistant,** as shown on the right.



2. Click on the **New** button.

   To modify an existing translation, click on the **Load**… button and select the desired translation file.

3. In the Translation Assistant program, **enter** the desired name of the new language in the Language name: text box.

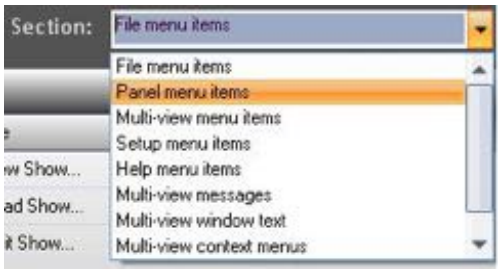
   This example will use 'Italian', as shown on the right.



4. A grid of all the English names and labels will appear, with a blank text entry under the Translation column.

   For each line item, click in the blank Translation section and **Enter** the translated name.

   Note that there are multiple line items and multiple sections. Use the **Section:** drop down menu to select more groups of labels and names, as shown on the right.



5. Once all the text has been entered in the Translation column, click on the **Save…** button to save your custom language translation.

   A Windows Save As window will appear enter the desired name. The name entered will be the name that appears in the Broadcast Pix software.



6. Click on the **Close** button to close the Translation Assistant program.

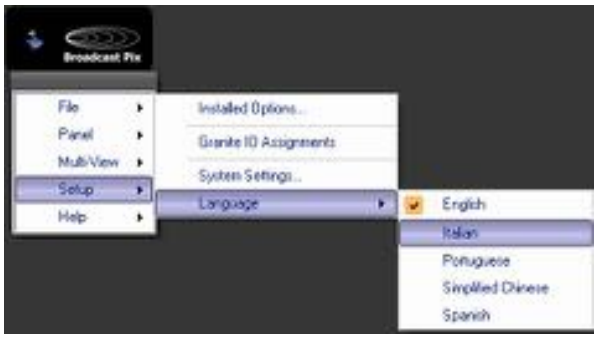
To use a custom translation:

1. In BPswitcher, click on the Broadcast Pix Logo menu and select the **Setup** drop down menu.

2. Click on the **Language** menu item, as shown on the right.

3. The list of default language names will now include any of the created custom translations.

   In the drop down menu **select** the desired language, in this example Italian.



To revert to the default name of a window:

1. When entering a custom name it may become difficult to remember which window is being modified.

   Right-click on a label name, this example will use a PowerAux window.

2. A white text box will appear, **delete/clear** all the letters in the text box, leaving a blank name, as shown on the right.

3. Press the **[Enter]** key on the keyboard.

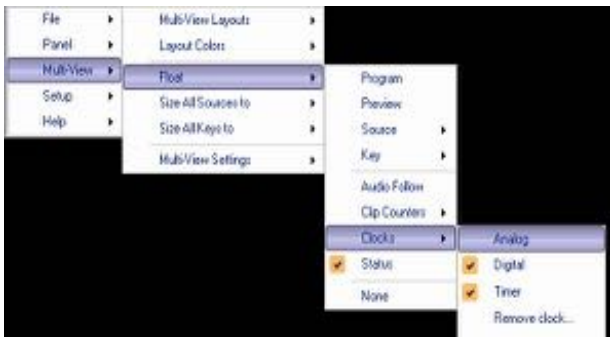
   The custom name will be removed showing the default and translated name if a non-English language is selected.



2.5.11 Clocks on the Multi-View

There are 3 types of clocks on the Broadcast Pix Multi-View: an Analog Clock, a Digital Clock and a Timer. All three options are floatable and resizable, as described in the previous section and all three can be floated at the same time. The analog clock provides a graphical analog clock with a seconds hand in both 12-hour and 24-hour formats and allows for time-shifting and color settings. The digital clock provides a green digital clock that updates every tenth of a second clock in both 12-hour and 24-hour formats. The timer can set to either be a red stopwatch/count up clock or a countdown clock (useful when timing out the end of your production), this timer may also be controlled from the panel and/or Multi-View PixPad as a device. Multiple clocks and timers may be floated. To have multiple timers be synced to each other, place a checkmark next to Sync Timers in the Setup-System Settings-Multi-View tab.

To float a clock:



1. Select the **Multi-View** drop down menu.

2. Select the **Float** option.

3. Select the **Clock** option.

4. From the available drop down menu select **Analog, Digital** and/or **Timer.** A checkmark will appear next to the floating clocks, as shown on the right.

To select between Count Up (Stopwatch) and Countdown Timers:



1. Float the **Timer** clock, as described above. The red Timer window will appear, drag and resize to your liking.

2. **Left-Click** on the blue arrow in the upper right hand corner of the window. This toggle button switches between a Stopwatch and Countdown timer.



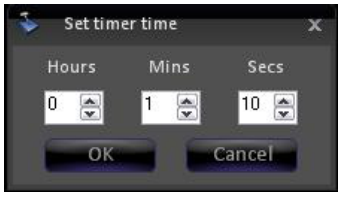
You may also **Right-click** anywhere in the timer window, and a pop-up menu will appear, as shown on the right.
If the Timer window is set to Stopwatch left-click on **Countdown timer.** If the Timer window is set to Countdown left-click on **Stopwatch timer.**

To operate a Countdown Timer:

1. Activate the Timer window and set it as a **Countdown timer,** as described above.

2. **Right-click** anywhere on the timer window and and a pop-up menu will appear.

3. Select **Set countdown time…** from the available list.
   This will open the Set timer time window.



4. In the pop-up window **enter** the hours, minutes and/or seconds, as shown to the right.

5. Click on **OK** to save and exit the window. The time that you entered will now appear in the Countdown timer window.

6. To start and pause the countdown, **left-click** on the **green play/triangle** button in the lower right hand corner of the timer window. You may also double-click in the middle of the timer to start/pause the countdown.



7. To stop the countdown, **left-click** on the **red stop/square** button in the lower left hand corner of the timer window.

To operate a Count Up (stopwatch) Timer:

1. Activate the Timer window and it as **Stopwatch timer,** as described on the previous page.



2. To start/pause the stopwatch, **left-click** on the **green play/triangle** button in the lower right hand corner of the timer window. You may also double-click in the middle of the timer to start/pause the countdown.

3. To stop and reset the stopwatch zero, **left-click** on the **red stop/square** button in the lower left hand corner of the timer window.

To customize an Analog Clock:



1. Float the **Analog** clock, as described above. A blue analog clock window appear, drag and resize to your liking.

2. **Right-click** on the clock, and a menu will appear as shown to the right.

3. Click on **Settings…** and the Clock Setting window will appear.

4. In the Clock settings window you may customize each clock with the following attributes:

   Caption: Assigns a custom name to the clock

   Color: Changes the background/face of the clock to either Blue, Green, Red, White or Gray

   Offset from local time: Time-shifts the clock backwards or forwards, both in hours and or minutes, from the local time the Server is set to.



5. Once customization is complete, click on **OK** to return to the clock.

To save an Analog Clock:

1. Float and customize an analog clock, as described above, right-click on the clock and select **Save clock…**



2. A Save clock dialog box will appear, as shown on the right, **enter** a name in the text field.

3. Click on **OK** to save the clock and its settings. All saved clocks will now be accessed under the Window-Float-Clock menu under the Remove clock setting.

2.5.12 Controlling Timer on the Multi-View

The timer/stopwatch on the Multi-View can also be controlled remotely through the control panel or PixPad. This operation uses a standard device control, which will be explained more in later sections. This section will provide basic operation of the timer control.

To add Timer Control to a show:

1. Select the show to which you wish to add Timer Control by loading a show (or creating a new one) and then opening PixMaster by selecting **File, Edit Show.**

2. Select **Edit Show Settings** and then **More Devices.**

   See section 3.7 for more information about PixMaster and adding a device.

3. In Add Device window, assign the Timer Control device to a Device Button 1-4 by selecting the drop down menu and choosing **Timer Control,** as shown on the right.

4. Click on the **OK** button, then **Close** and then **Save Show** to close PixMaster.



To assign the device controls to Timer Control:

Press the **[Timer]** wildcard [Device Select] PixButton and it will illuminate orange and the following device controls will be appear.

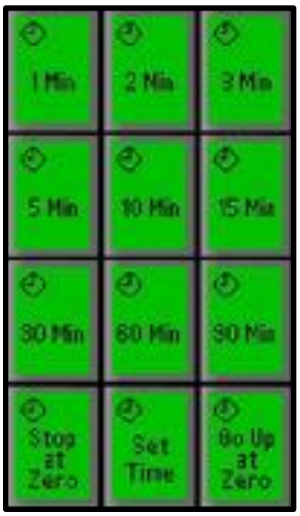


Timer Control device controls:

Display
shows the active countdown timer and current running timer.



Motion Controls
Start, stop and reset timer



PixPad
To select which countdown timer to use

When you press the Timer Control device button, the active timer last used will be selected.

The display indicates 3 pieces of information:

1. The top left corner always shows status (running, stopped and type) of the timer/stopwatch. In this case, the words **Timer: Countdown from 00:01:00** indicates the type of counter/timer. When the timer is stopped, the top right of the display will show the last selected countdown time.

2. The time in the bottom right of the display indicates the running time, either counting up or down, in this case **00:00:11.**

3. The bottom left side displays what the countdown timer will do once it reaches 0 (zero), either stopping at zero or counting back up to show the elapsed time, in this case it will stop at zero.

To select a pre-made timer:

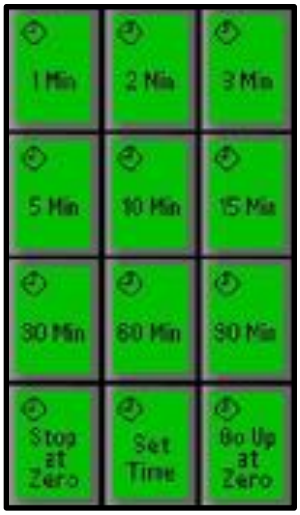
1. In Device Control section, select the **[Timer]** device PixButton, it will illuminate orange.

2. The PixPad will change showing the available pre-made timers, as shown on the right.

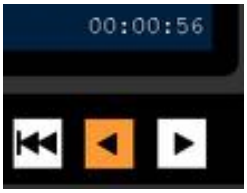
   Select the desired timer unit in the PixPad, either **[1 Min], [2 Min], [5 Min], [10 Min], [15 Min], [30 Min], [60 Min]** or **[90 Min]** PixButton.

   The display will show the selected timer and the timer will **automatically** start playing, updating the Multi-View and display.

   The [<] motion control button will illuminate orange, signifying that the countdown is running, as shown on the right.







To enter a custom timer:

1. In Device Control section, select the **[Timer]** device PixButton, it will illuminate orange.

2. The PixPad will change showing the available pre-made timers.

   Select the **[Set Time]** PixButton, as shown on the right.

3. The PixPad will change showing a numeric pad, as shown on the right.

   Enter the desired time.
   As numbers are selected the display will update, starting with seconds.

   For example to enter 1 min and 30 seconds push [1], [3], [0] or [9], [0] for 90 seconds.







4. Select the **[Enter]** PixButton to apply the countdown time, as shown on the right.



The new time will be shown in the display, as shown on the right.



To control the countdown timer:

1. To start counting down, press the **[<]** motion control button, it will illuminate orange, as shown on the right.



The Multi-View and display will start to update.

2. To pause the countdown, press the **[<]** motion control button, and the timer will stop and the button will no longer be illuminated, as shown on the right.



2. To continue counting down from the paused time, press the **[<]** motion control button, the button will illuminate orange.



3. To reset the countdown to the start, press the **[|<<]** motion control button.



The countdown will stop (if it was playing), and reset automatically to the last countdown time used.

5. When a countdown reaches the end/0, the counter has 2 modes, either stop at zero or start counting up to show the expired time.

To have a countdown timer stop at zero, select the **[Stop at Zero]** PixButton, the display will now read out Count stops at zero, as shown on the right.



To have the counter reverse and start counting up, select the **[Go Up at Zero]** PixButton, the display will now read Count reverses at zero, as shown on the right.



To control the count up (stopwatch) timer:

1. To start counting up, press the **[>]** motion control button, it will illuminate orange, as shown on the right.

   The Multi-View and display will start to update.

2. To pause the stopwatch, press the **[>]** motion control button, and the timer will stop and the button will no longer be illuminated, as shown on the right.

2. To continue counting up from the paused time, press the **[>]** motion control button, the button will illuminate orange.

3. To reset the stopwatch to zero, press the **[|<<]** motion control button.

   The stopwatch will stop (if it was playing), and reset.

   When the timer is set to count up the stop at zero and start counting PixButtons do not function.

2.6 List of Screen Resolutions

Computer monitors should always be square pixels, and the display resolution should have the same ratio as the aspect of the screen. The aspect of screen should never be compensated for, this would distort text and images making them look too wide or skinny. Below is a list of Monitor Resolutions with their native aspect ratios for easy reference. If your monitor is "wide-screen" use a 16:9 or a 16:10 resolution. For normal square screens use a 4:3 resolution. This is important when choosing a monitor to use with your Multi-View to ensure proper viewing/monitoring. You may use any screen resolution for your Multi-View, but it's recommended to use a 1280x1024, 1680x1050 or 1920x1080 monitor.

4:3 Aspect Ratio	16:9 Aspect Ratio	16:10 Aspect Ratio
1024 × 768	1024 × 576	1280 × 800
1152 × 864	1280 × 720	1440 × 900
1280 × 1024	1366 × 768	1680 × 1050
1400 × 1050	1920 × 1080	1920 × 1200
1600 × 1200	2048 × 1152	2560 × 1600

It is important to set your Windows desktop settings prior to starting the Broadcast Pix Switcher application. It is not advised to change the desktop resolutions while the application is running. Be advised that some large LCD/Plasma monitors do not accept high resolutions on the VGA input, but do on a HDMI input. A DVI to HDMI cable or converter may be necessary, refer to your monitors user's manual for more information.

2.6.1 Adjusting the Windows Desktop Screen Resolution

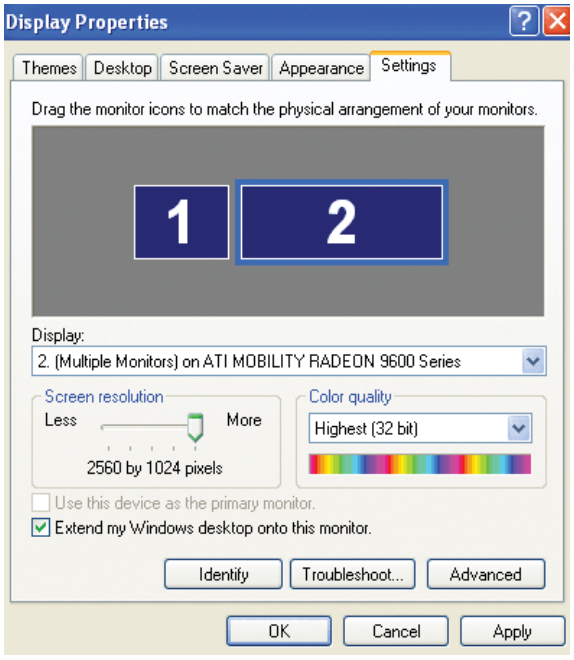
1. **Right-Click** on any blank area of the Windows desktop of the computer (again making sure that BPswitcher is not running).

2. Select **Properties** from the pop up menu. This will bring up the Display Properties Window.

3. Select the **Settings** tab, as shown.

4. Select the monitor which you want to modify, and in the **Screen Resolution** section select the appropriate setting for your monitor.

5. Select **OK** to save your changes.



2.6.2 Optional Quad Monitor Card

As an option you can upgrade the standard dual monitor card to a quad monitor card, which gives you up to four monitor outputs for your Multi-View in DVI-D Single Link. The four monitor outputs break out from a VHDCI to Quad DVI-D male connectors, as shown below. The maximum resolution of each output is 1920x1200, VGA/Analog resolutions are not supported on this graphics card.

When adding monitors to your setup, it is recommended to add the monitors when the Server is turned off. Prior to booting the Server have all the monitor plugged in and powered on for proper detection by the graphics card.



NOTE: The maximum resolution of either monitor card depends on the resolution capabilities of the monitor you are connecting.

Section 3:
PixMaster Show Editor

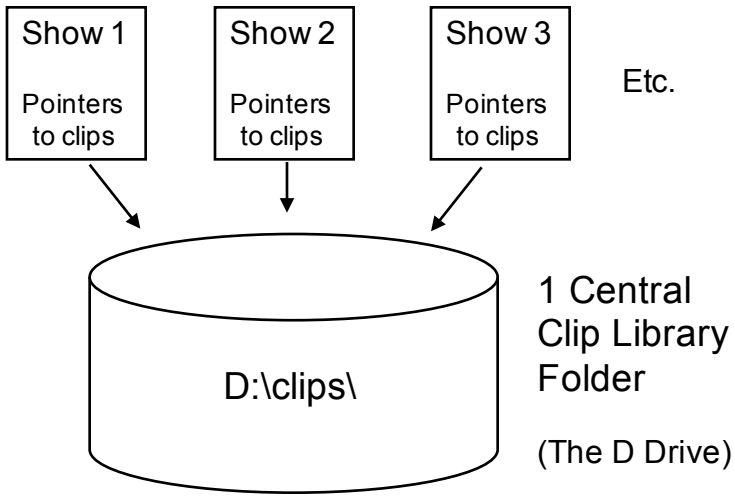


The Broadcast Pix System is designed for the real-time production of live shows to a live audience, or recorded live for viewing later on DVD or other medium. In both scenarios, the PixMaster show editor delivers comprehensive pre-production capabilities, enabling you to stage all of your assets for a smooth production experience. As with most other endeavors, the more preparation, the better.

3.0 PixMaster Storage System

PixMaster is an advanced file system that is pointer based. In PixMaster, all content is kept in large central library folders, and then a show is just a collection of pointers. In this way, you do not have to make copies of the same clip for different shows, which can eat up a lot of disk space.

For example, the central clip library is the clips folder on the systems D drive, and it's formal name is D:\\clips\ as illustrated below. All clips live in this central folder, and editing a show simply means editing your pointers for that show.



There are also three central library folders on the C Drive for graphics, each of which corresponds to a button on the panel. They are:

Stills	C:\\graphics\stills\
CG	C:\\graphics\cg\
Animations	C:\\graphics\animation\

NOTE: You may have up to one sub-folder within the Still, CG, Animations and Clips folders, to assist in organizing your content. Any other folders will not be seen in PixMaster.

3.1 Creating a New Show

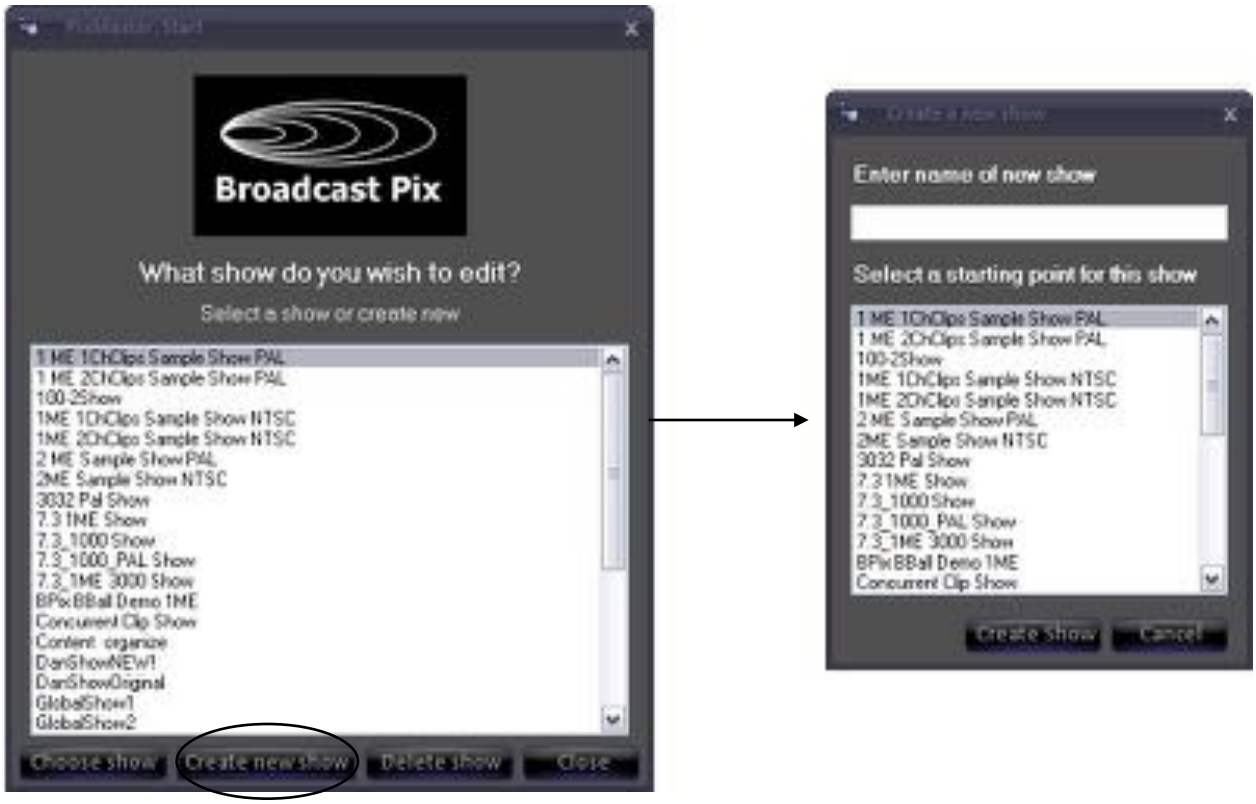
You can create a new show one of two ways, either by launching PixMaster from its desktop icon or from within the BPswitcher application under the File menu. A new show must always reference an existing show as a starting point. For this reason it is recommended to create a "Generic Show" that has all inputs/sources mapped to the switcher, and all devices pointed to the correct folders.

To Create a New Show:

1. Launch PixMaster by double-clicking on the **PixMaster** icon on the desktop, as illustrated at the right. This will open the PixMaster: Start Window as shown below. The main Broadcast Pix Switcher application needs to be closed in order to launch PixMaster.



2. Click on **Create new show**. This opens the Create a new show window, as shown below.



3. Select a **starting point** for this show by selecting one of the previous shows, which could include the Sample Show that shipped with your system. When you select it, it will highlight, as shown at the right.

   The starting point determines how your sources are mapped to the switcher, as well as the content assigned to each source.

   You can then edit from that starting point. You may want to create one or more default shows as your universal starting point.



4. Give the new show a name, by entering it under **Enter name of new show.**

   In the example shown at the right, the new show name is 11pm News and its starting point is the 6PM News.

5. Click on **Create Show** and it will open in PixMaster, as shown in section 3.3.



NOTE: when giving a new show a name, standard Microsoft Windows conventions apply. For example, you cannot use a colon (:) in a name.

3.2 Selecting an Existing Show to Edit

There are two ways to launch PixMaster to edit an existing show, either from the desktop or from within BPswitcher.

From PixMaster:

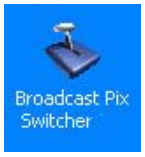


1. Double-Click on the **PixMaster icon** on the Desktop, as shown above, and the PixMaster Start window will appear, as shown at the right.

2. Double-click on the **Show** you wish to open, and it will open in PixMaster as shown in section 3.3. (You can also single-click on the show name and then press the “Choose Show” button.)



From Switcher:



1. Select the **File** menu, as shown at the right, and click on **Edit Show.**

   The show that you have open with now open in PixMaster, (as shown in section 3.3).



NOTE: If you do not have a show open, you can not access the PixMaster Show Editor from the Multi-View, as it will be grayed out.

3.3 Editing a Show

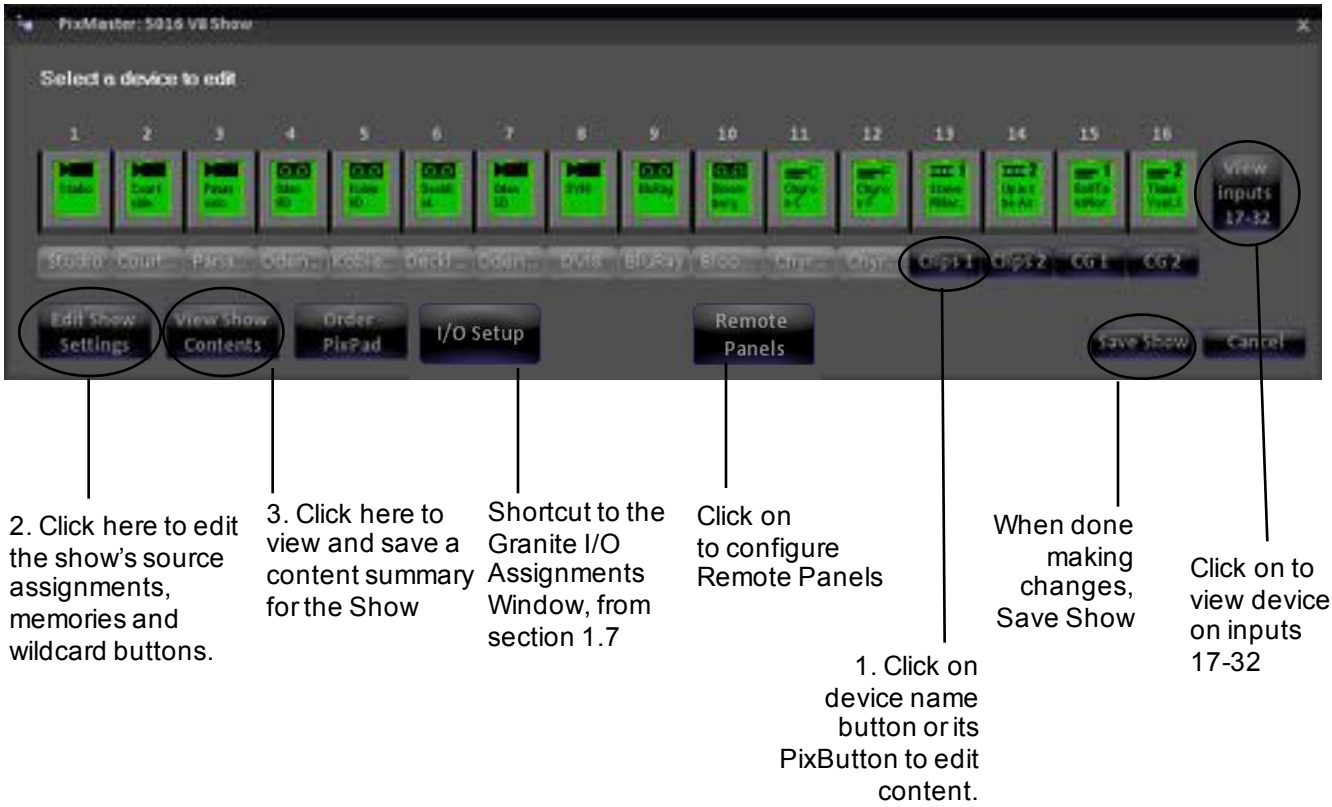
When you select a show to edit, it will open in the PixMaster window for that show. In the illustration shown below, a show called Sample Show has been opened for editing. The primary source row for this show will be shown, complete with the exact PixButtons. In general, there are three things you can do from here:

1. Select which devices' content to edit by clicking on its name or PixButton.

2. Select Edit Show Settings to edit the show's switcher source assignments, memories or extra devices assigned to the 4 wildcard buttons in the upper right corner of the panel.

3. View and save the content summary for the show.

PixMaster Show Editor

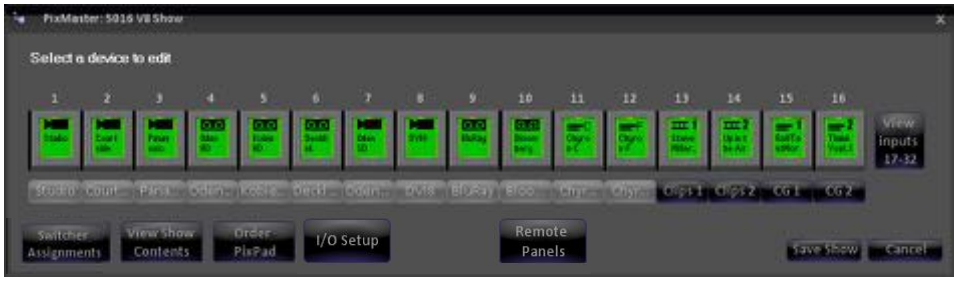


NOTE: It is recommended to restart the Broadcast Pix Switcher application when adding, removing or arranging a lot of content to prevent stability issues, if you are using the PixMaster Show Editor function.

3.4 Editing a Show's Content

Select the device whose content you wish to edit by clicking on its **PixButton** or **name** below the PixButton and its content window will open.

For example, if you click on Clips 1 its Content Window for this show will open.



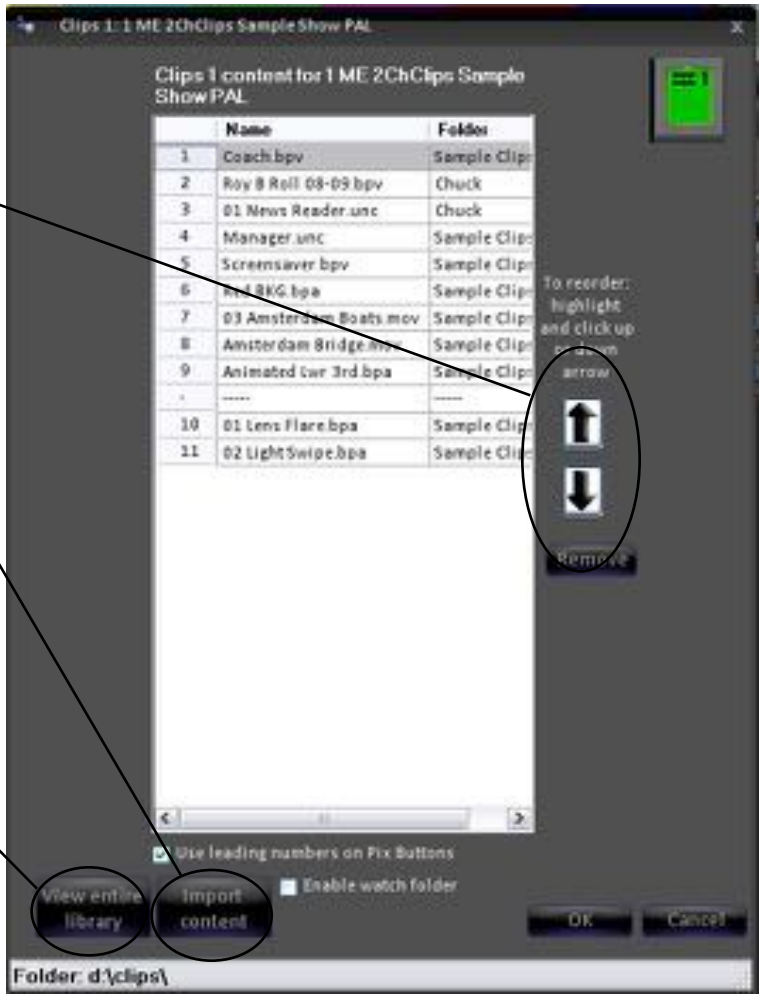
Content Window:

The content window, in this case for the "Clips 1" clip store, enables you to:

Reorder the clips in the show

Import new clips into this show (and into the library from anywhere on your system or network.

Add new clips to this show from the central storage location for clips known as the clips library.



NOTE: the location of the clip library for the show is indicated at the bottom – in this case D:\clips\

3.4.1 Editing a Show's Content from the Multi-View

For quicker access to a specific device, the Multi-View PixPad can be used to open the Content Organizer for the selected device, without the need of going through the Show Editor menus. This method provides an easy way for content to be modified quickly in a production.

1. Select the desired device from the PixPad (either on the Multi-View or Control Panel).

   The device button will illuminate, as shown on the right. In this case Clips 1.



2. On the Multi-View PixPad, click on the **Controls** button.



3. The Controls PixPad will appear, on the bottom right of the PixPad, click on the **Edit** button, as shown on the right.

   The Content Organizer window will appear for the specified device.

4. Continue modifying the content as described in the next sections.

NOTE: For external device control, like camera control, the Edit button will be named Settings. Clicking on the Settings button will bring up the Device Settings menu for the specified device.

3.5 Reordering, Adding, or Removing Content

The flexibility of PixMaster allows you to have many different shows, each with their own unique content. So a "news" show could have its own clips and graphics separate from a "sports" show, allowing for greater ease of use and reassurance that the content will not go on-air in the wrong show. In addition, you can manually sort your content in the order in which it will be played out during the show, again allowing for ease of use. With the use of Fluent Watch-folders, you have the ability to automatically add clips and graphics to any show, even ones that are on air. This greatly enhances your workflow.

3.5.1 To Reorder Content:

1. **Select** the content you wish to move, and it will highlight.



2. Click on the **up arrow** or **down arrow** and the highlighted content will move down or up one position. Each time you click it will move once. In the illustration below, it has been clicked down once, so it moved one position.



3. Press **OK.**

NOTE: If you're doing a lot of editing, you do not have to press OK until you are done with everything.

3.5.2 To Reorder a Group of Content

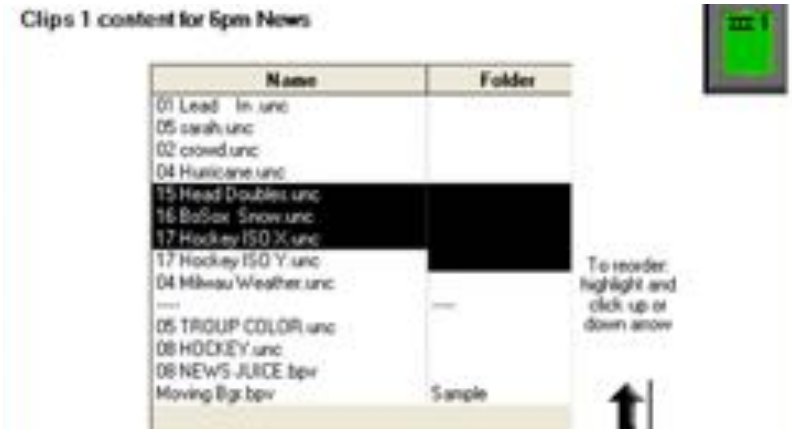
In addition to moving one file up and done the list, you can also move an entire group of elements at once.

To move a group manually:

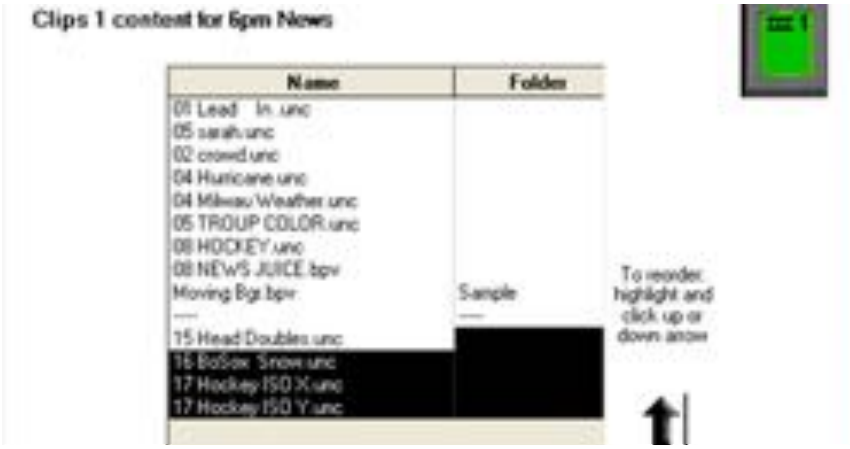
1. **Select** the first item you wish to move with your mouse, and it will highlight.

2. Press **Shift** on your keyboard, and hold it down.

3. **Select the last item** you wish to move, and all the ones in between will highlight:



4. Then click the **up or down** button one time for each position that you want the selected group to move. In this case, four adjacent clips were moved down to the bottom of the list.

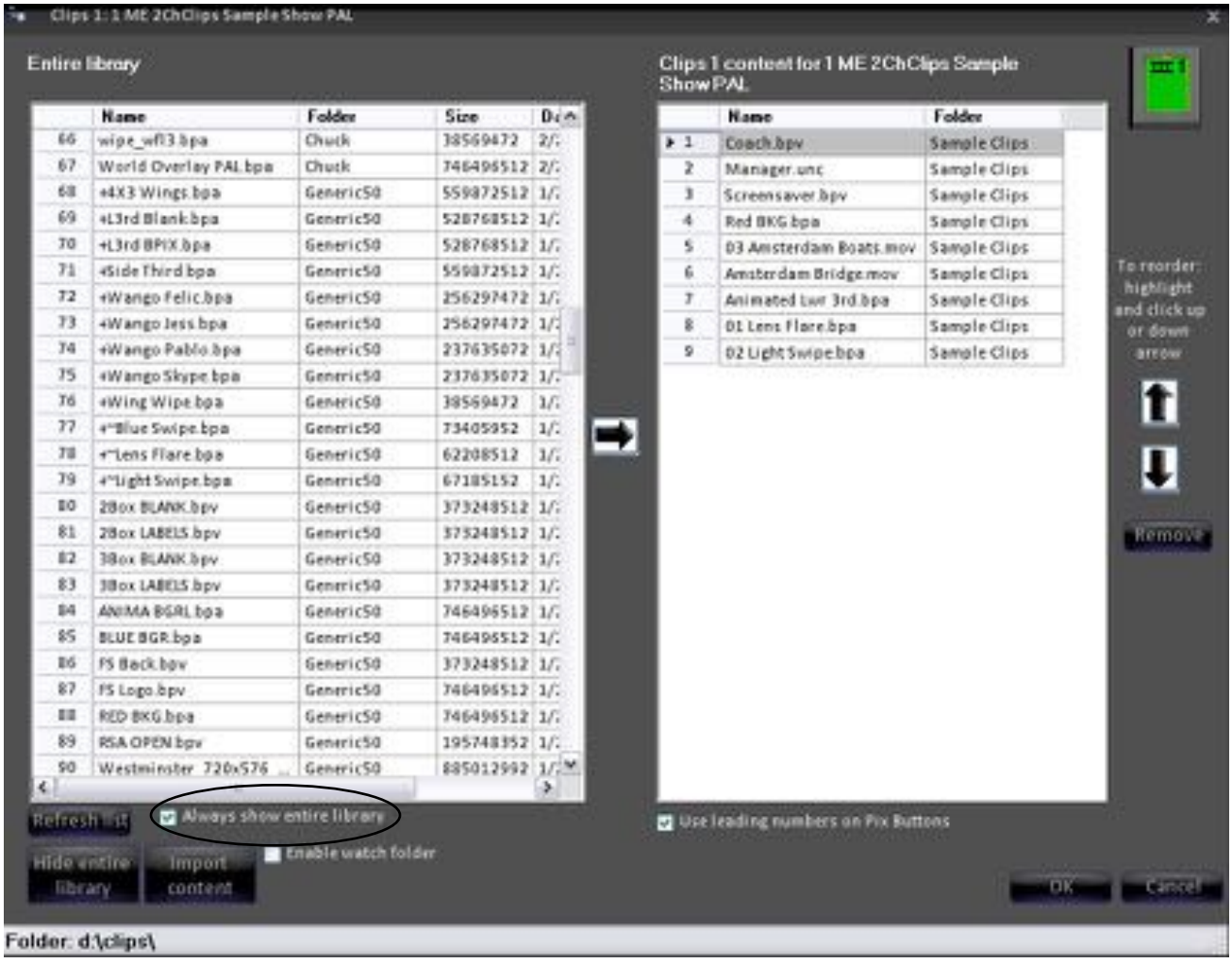


3.5.3 Adding Content From the Central Library

1. Click on **View entire library** button in the content window**.** This will open the complete library/folder that your device is pointing to, as shown below.



To have PixMaster automatically show the entire library, check the **Always show entire library** check box.



NOTE: the Refresh List button is used if you edit a library using Microsoft Windows, then changes made can be seen by clicking on refresh list (or reopening PixMaster).

2. **Select** the clip you wish to move into the show by left-clicking on it (it will highlight).
Items already in the show are grayed out in the library, while the items not displayed in the show are black.



3. Select **where** you wish to insert the new clip into the show's content list on the right side. In the illustration below Hurricane is selected, and so the 04 Milwaukee Weather clip will be inserted after the Hurricane clip.



4. Press the **forward arrow,** in the middle of the screen. The content is now inserted into the desired position in the show.

A shortcut to add content into a show is double-clicking with the mouse, instead of using the forward arrow.



NOTE: The newly added content is now grayed out on the library list to indicate that it is now in the show.

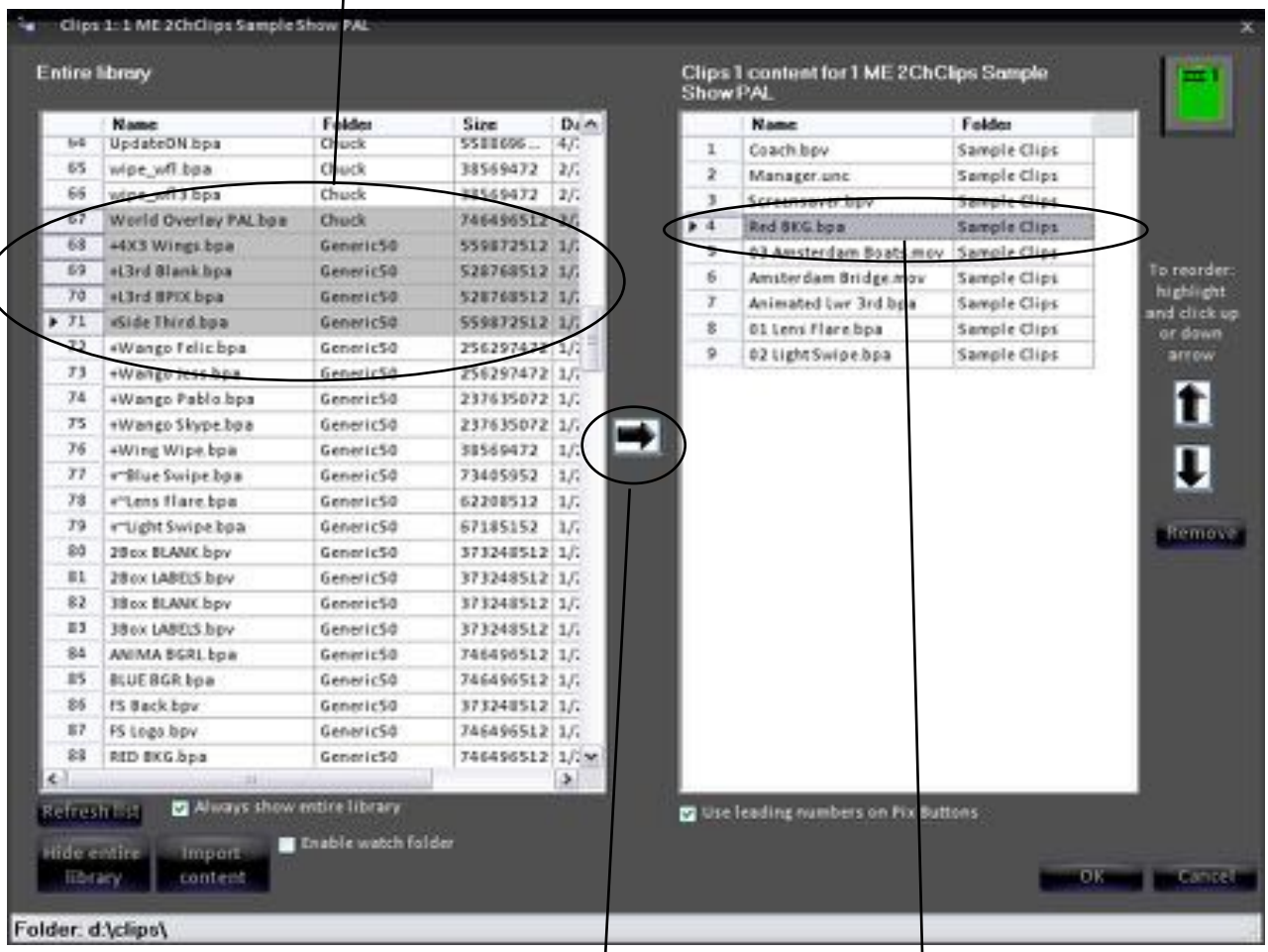
3.5.4 Adding a Group of Content from the Central Library

You don't have to add content one at a time, you can bring in any contiguous group from the library list all at once.

1. Click on the **first item** of the group you wish to move, and it will highlight

2. Hold down **shift** on the keyboard

3. Click on the **last item** of the group you wish to move and it and all the ones in between will highlight.



4. Then, **select** the area in the show list into which you want to insert the selected group of clips.



5. Press the **forward arrow.**

NOTE: You can also select and move non-contiguous material by holding down the Ctrl key while selecting individual items in the library. This is a standard Windows convention, and works in all other areas of the system.

3.5.5 Manually Importing Content

In addition to adding clips and graphics to the show from the central clip library, you can also import clips from other locations on the computer, such as from a hard drive, CD, DVD, external disk, USB flash memory, a computer network, etc.

1. To import a clip into the example Clips 1 store shown on the previous page, click on the **Import Content** button This will open the Import Options window.

2. For Clips, choose whether you want to **move** the clip from where it is now, or make a **copy** of it and place the copy in the existing library. *If you keep all your clips in one central location, then select "Move."* In this example we have chosen to "Copy" the clip into the library. This keeps copies of the clip in two locations.

3. The imported clip with be automatically added to the show upon import, since that box is **checked**, as shown above. If you do not want this, (and instead just want to add it to the library, but not the show), then simply uncheck the box.

4. Press **OK**.
   A browser window opens.

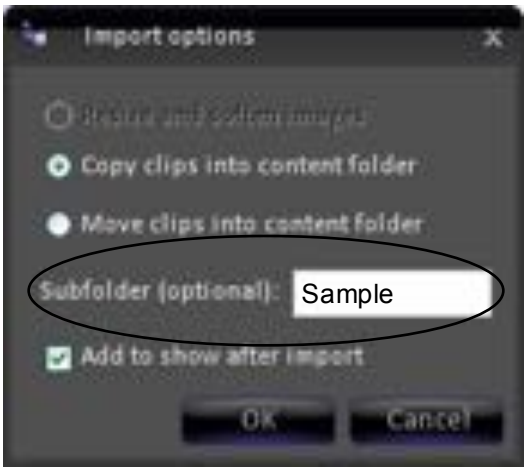
5. Use standard Microsoft Windows navigation to **browse** to the location of the clip you wish to import. **Select** it and it will appear in the File name window.

6. Press **Open**. The clip imports.
   Note: The longer the clip is the longer it will take to import. When files are being imported the bottom left corner of the content window displays "Importing files". Wait unit this message disappears before continuing.



3.5.6 Importing Content into a Subfolder

When importing, if you want to identify a **subfolder** for this clip or group of clips then fill in its name on the blank line before you press OK. This is handy for remembering a series of related clips, especially when it comes time to clean excess media off your drives (remember, uncompressed clips take up lots of space on your drive…approximately 1.4MB per frame!).



In this example we created a subfolder called "Sample." Consequently the word "Sample" was added in the folder column when the clip was imported.



3.5.7 Fluent Watch Folders

Fluent Watch Folders enables content (clips and graphics) to be added to any show automatically, even when on air in a production. Similar to the previous section, clips and graphics can be imported from any location on the computer, such as from a hard drive, CD, DVD, external disk, USB flash memory, a computer network, etc. Once files are copied to the Watch folder, the content is automatically added to your show and loaded into the end of the content PixPad, ready for use. In addition, content may be added to non-active shows for preparation. The "6:00pm News" show may be on air, however an editor has packages ready for the "10:00pm News" show. The editor can simply drag clips to the watch folder without affecting the on air show. When the "10:00pm News" show is loaded, those clips are automatically added to the show. Fluent Watch Folders enhances your workflow throughout your entire facility.

Watch Folders are show-specific and each device and channel may have a watch folder enabled. For any show the maximum number of watch folders that may be enabled is 8, one for Anim 1, Anim 2, Clip 1, Clip 2, CG 1, CG 2, Still 1 and Still 2.

All graphic watch folders are located in c:\watch and all clip watch folders are located in d:\watch. The default for all new shows is with Watch Folders disabled.

To Enable Watch Folders:

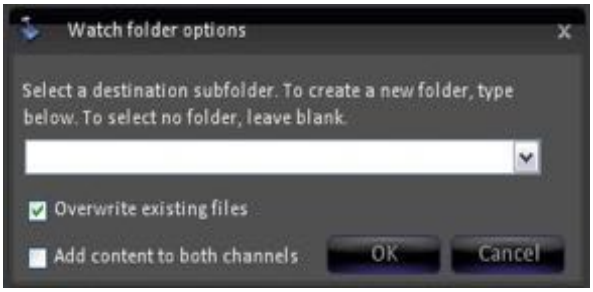
1. In a device's content window, place a **check** next to the **Enable watch folder** checkbox, as shown on the right.



   This will activate a Watch folder options button, as well as display the path of where content should be added to.

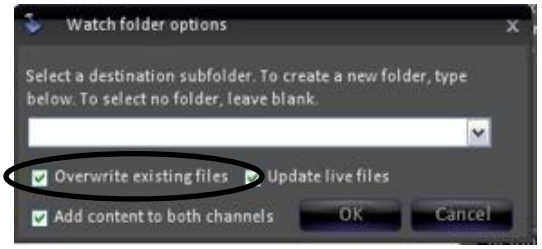
2. Click on the **Watch folder options** button. This will open the Watch folder options window, where you can customize the watch folder.

3. To add content to a subfolder, as described in 3.5.6, **enter** a folder name in the blank space to create a new folder or **select** an existing folder from the pull down menu.



   To not use a subfolder, and to have content added to the central library, leave the pull down menu blank, as shown on the right.

4. If files have already been added to a show or if a file of the same name is in the central library, the **Overwrite existing files** option allows for content to be replaced. The default for this option is on.



   This option may be useful when using generic files that may update over time, like an “Open” or “Bumper”.

5. For graphic content, the **Update live files** option allows for graphic content only to be updated even if the content is on the air. The default for this option is off.

   This option may be useful when updating graphic titles, like a score or a name. If this option is disabled and the Overwrite existing files option is enabled, the graphic content will update once the file is taken off air.

6. Click on **OK** to save the Watch folder options.

7. In the content window, click on **OK** to save and enable the watch folder. This will now create the enable watch folder on the C or D hard drive.



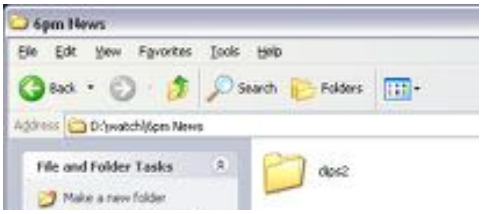
8. Repeat the above steps for the remaining devices, that you wish to enable. Devices that are not enabled will not have the ability to automatically add content.

All Granite systems have the D:\watch\ and C:\watch\ shared for networking purposes, to allow clip editors and graphic design stations in a facility to copy files to the Broadcast Pix system effortlessly. Please note that a maximum of 10 network clients may be connected to the Broadcast Pix Server at any given time.

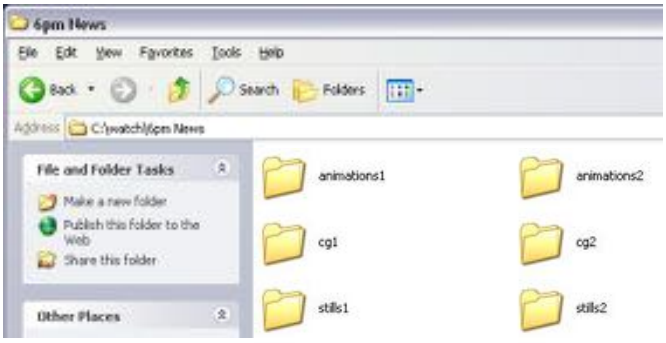
The network settings for all Granite Servers are:

Computer Description: (blank)
Computer Name: (Server Number) GSC1234
Workgroup Name: WORKGROUP

Once all the watch folders have been enabled in PixMaster, the C and D hard drives will show the enabled Broadcast Pix shows in a series of folders. Inside of each show folder will be the active folders, as shown below in the 6pm News show example:



D:\watch\(show name)



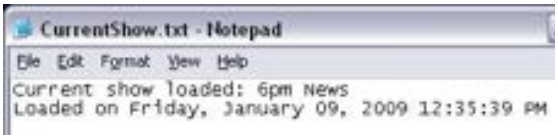
C:\watch\(show name)

To Add Content with Watch Folders:

1. For adding graphics, in Windows, **navigate** to C:\watch\, as show on the right. For adding clips, **navigate** to D:\watch\.



2. To view which show is running Broadcast Pix, **double-click** the **CurrentShow.txt** file. The loaded show will be display, as show on the right. In this example, "6pm News" is the loaded show. This text file is helpful when copying files from remote/networked computers, that may not be near the Broadcast Pix system. This window can be closed after gathering which show is running.



   Content may be added to any show which has watch folders enabled. Copying files to a non-loaded show will add content when that show is loaded in Broadcast Pix.

3. **Double-click** the **show folder** (in this case 6pm News). The active devices and channels will appear, as shown on the right.



4. Copy the desired file to the desired device channel. Once files are finished copying into the Watch Folder, the status bar will display a message of the newly added content.

3.5.8 Cloud-Based Watch Folders

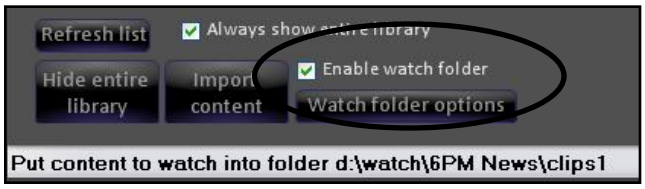
Cloud-based storage providers, like Dropbox, Google Drive and Microsoft OneDrive, provide storage in the cloud for your files and most of them provide some amount of free storage. All Broadcast Pix systems have the ability to tap into these cloud-based hard drives to allow you to transfer clips and graphics for productions from virtually anywhere in the world. Imagine going home and forgetting to upload a graphic for tomorrows production or image a news reporter snapping pictures of breaking news, in both scenarios that content can be pushed directly to a Broadcast Pix watch folder, ready to be accessed by any show. A Dropbox, Google Drive or Microsoft OneDrive account and access to an Internet connection is necessary to use this feature, contact their support for more information.

Similar to the Watch Folders on local Broadcast Pix Server, these secondary watch folders are show-specific and each device and channel may have a watch folder enabled. For any show the maximum number of secondary watch folders that may be enabled is 8, one for Clip 1, Clip 2, Logo 1, Logo 2, CG 1, CG 2, Stills1 and Stills 2.

In addition, this secondary Watch Folder allows any other mappable network folder to become a watch-folder. This is useful for having a screening station on a separate PC scanning for viruses then having the content moved to the Broadcast Pix system, without using extra resources locally.

Both the local and networked watch folders may be active at the same time, however the networked watch folders are only enabled when the local watch folder is enabled in PixMaster Show Editor.

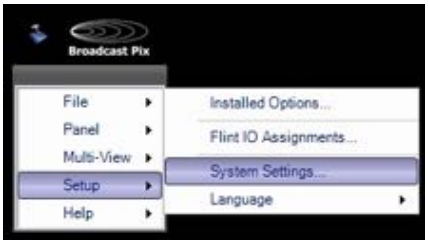
To Enable Additional Watch Folders:



1. In a device's content window, place a **check** next to the **Enable watch folder** checkbox, as shown on the right.

   Now both the local and remote watch folders are enabled.

2. In the content window, click on the **OK** button to close it and click on the **Save Show** button to save the settings.



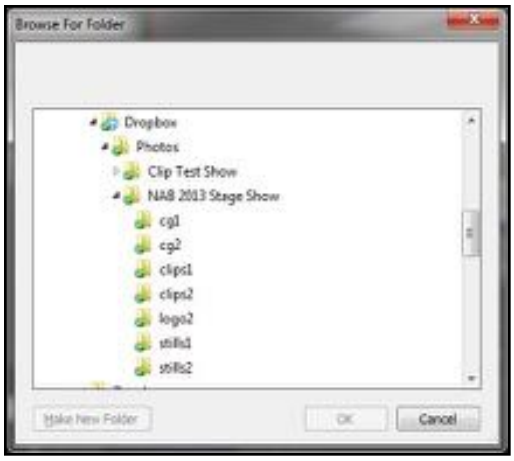
3. Select the Broadcast Pix menu button and navigate to **Setup, System Settings…,** as shown on the right.

4. In the System Setting window, click on the **Other** tab.



5. In the Watch Folder section, place a check mark next to **Use additional watch folder,** as shown on the right.

6. Click on the **Select Folder…** button to choose the path of the desired folder location



7. In the Browse For Folder window, **navigate** to the desired folder location. This location can be anywhere locally or on your network, as shown on the right.

   When connecting to Dropbox, Google Drive or Microsoft Skydrive, navigate to **C:\Users\Broadcast Pix** then select the **Dropbox, Skydrive** or **Google Drive** subfolder. This example will use Dropbox.

   NOTE: For the Dropbox, Skydrive of Google Drive folder to appear, you must have at least one of these services installed on the Broadcast Pix Server and registered with an account to one of those service providers.

   It may also be convenient to create a subfolder on your storage account (i.e. Photos) to separate your personal documents from files you which to transfers through the watch folder. If so, make sure you navigate to that subfolder, for example: C:\Broadcast Pix\Dropbox\Photos, as shown on the right.



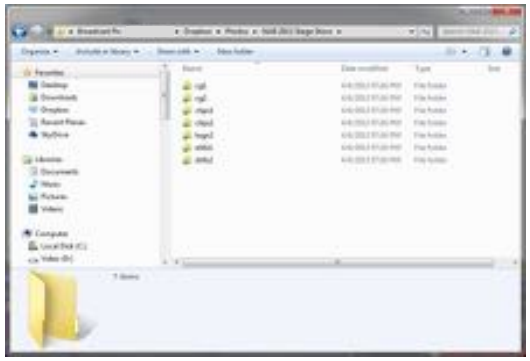
8. Click on the **OK** button and the folder path will be shown in the System Settings window, as shown on the right.



9. For every show that is opened and for every device channel that is enabled, folders will automatically be populated to your account / remote watch folder.



If you open your cloud-based storage with a web browser it should match with the folders on the local system, as shown on the right.



Now, when files are uploaded to the service provider they will be copied to the watch folder and then moved out of it to the appropriate content folder on the local Broadcast Pix Server. Please refer to the individual service providers on how to upload content using their application.

This allows you to upload content from any web browser, from any device, from anywhere in the world. And for many providers a mobile application can be installed on an iPhone or Android device, which provides instant access to your Watch Folders.

In addition, since the final content will be moved out of your service provider, no additional space is ever used, keeping your cloud-based hard drive space preserved.

NOTE: Depending on the connection speed of the Internet on both the transmit and receive ends of the file may take extra time to arrive in the Broadcast Pix Show.

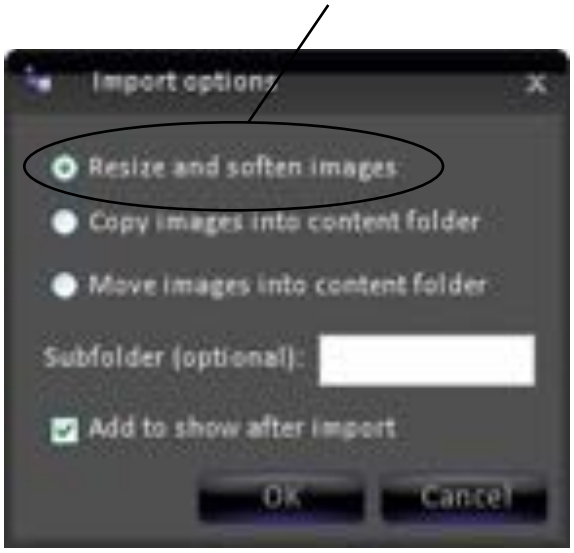
3.5.9 Resizing and Softening Images

When content is imported it can either come in as is, or the images can be resized and softened upon import. This is particularly useful when you are treating graphic images such as PowerPoint slides for video presentation or when importing photos from a digital camera.

To Resize and Soften:

1. Click on **Import Content** button, and the "Import options" window will appear.

2. To resize and soften click on **Resize and soften images**, as shown below.



3. Proceed with the import as before, see section 3.5.5.

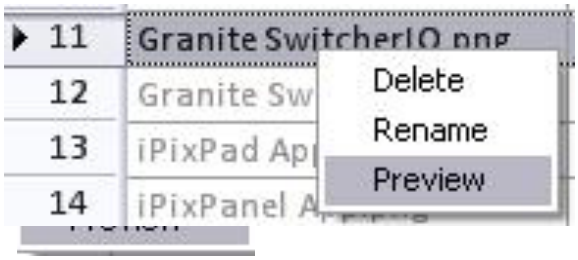
NOTE: When the Resize and Soften function is selected, the file(s) will automatically be copied to the folder, there is no need to select Copy or Move.

3.5.10 Previewing Content

At any time you can see a large thumbnail of any content element in any device. This is handy if the filename doesn't represent what the content is and you would like to verify if the content is correct. All thumbnails are still images, the thumbnail for a clip or animation will show you the first frame of video.

To preview content:

1. In either the Entire Library or Show Contents side of the window, select the item you wish to preview by **right-clicking** on it with the mouse, and the word preview will appear.



2. Click on **Preview**, and a pop-up window with a sill image will appear.



3. To close the still being previewed, click on the **red X** in its upper right corner.

NOTE: If no Preview is shown, then a thumbnail needs to created for that clip, see section 6.1.1

To show all thumbnails:

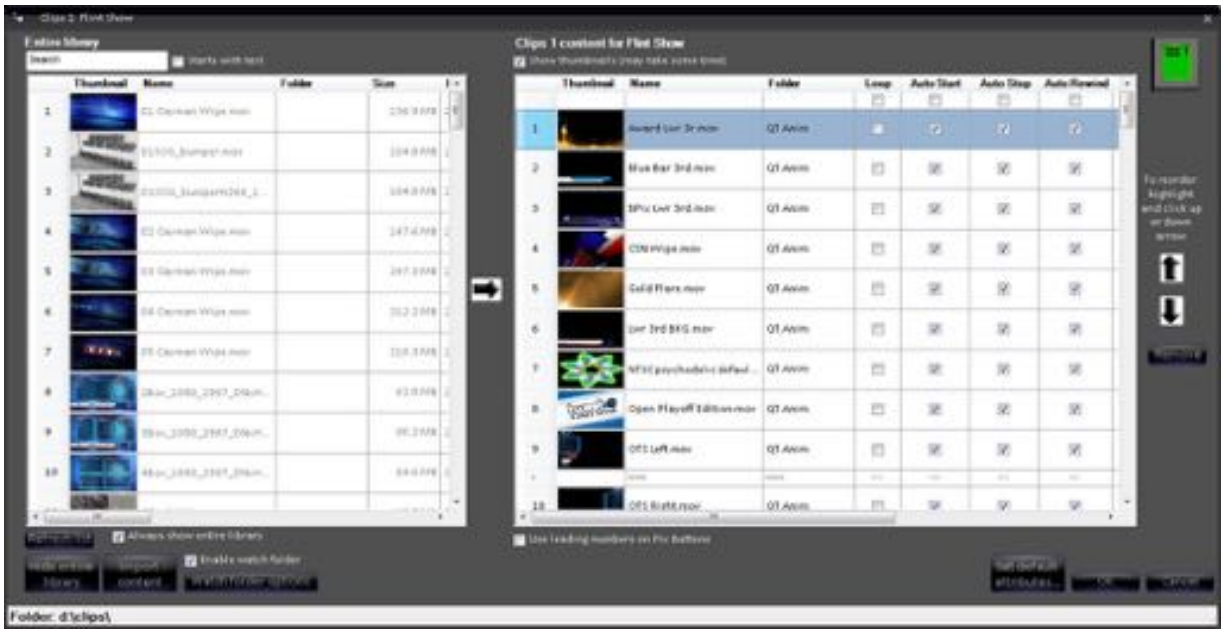
1. In the Show Content section, place a check mark next to **Show thumbnails**, as shown on the right.



   NOTE: This may take several seconds depending on much much content is stored on the system.

   Once complete the grid of content will show a thumbnail for all valid files, as shown below.

2. When you close out of each store re-enter each store to edit content, this option much be rechecked, as it is not remembered.



NOTE: If no Preview is shown, then a thumbnail needs to created for that clip, see section 6.1.1

3.5.11 Renaming Content

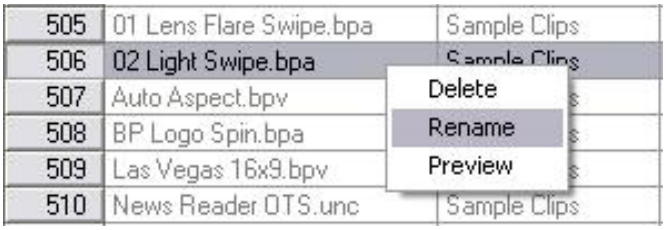
From within PixMaster you can also rename any file at anytime. This lets you change a file to ensure the correct name of the content matches the file and to shorten/modify a name to make the name fit on PixButtons and the Multi-View.

To rename content:

1. Make sure that your are viewing the Entire Library by selecting the **View Entire Library** button.

2. **Select** the item you wish to rename in the Entire Library section of the window.

3. **Right-click** on the file and a drop down menu will appear with 3 options, as shown below.



4. Select on **Rename** and a rename file window will appear, as shown below.



5. **Enter** the desired name and click on **OK.**
   If a number is placed in front of the file (also known as a leading number), for example "02 Light Swipe.bpa", you then can recall the graphic/clip by the number directly from the PixPad for easy navigation, see section 6.3.1.

NOTE: It is important to leave the file extension at the end of the file name for PixMaster to recognize the file.

6. If leadings numbers are being used on content, you have the option to not view the number on the PixButton. When active, this option allows for more characters to be used on the PixButton, instead of space being taken up by numbers. However the number will still appear in the display and Multi-View for your convenience. This setting is not selected as a default.

   To activate the option, in the content side of the window select the check box labeled **Use leading numbers on PixButtons**, as shown below.



3.5.12 Removing Content from a Show

1. **Select** the item you wish to remove, and it will highlight.

2. Click on the **remove** button in the content window, and it will be removed from the show.

   A shortcut to remove content out of a show is double-clicking with the mouse, instead of using the forward arrow.
   The content will still be retained in the central library, as removing a content does not delete it from your system. If you want to delete content from the hard drive, see section 3.5.12.



3.5.13 Permanently Deleting Content from the Library

The best way to ensure that all media and pointer files are deleted properly from the library/hard drive is from within PixMaster. Even though you may manually delete files off the hard drive using Windows, not every file may be deleted, and it is not recommended.

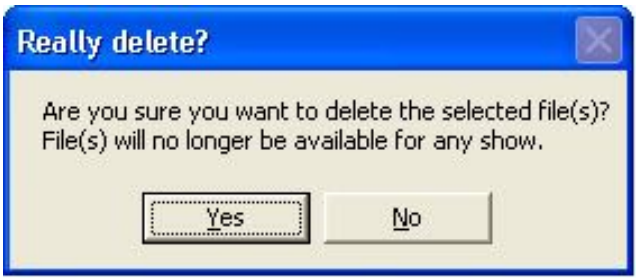
To delete a Clip or Graphic from the library:

1. Make sure your are viewing the entire library by clicking on the **View entire library** button and the content window will expand to show the library.

2. **Right click** on the item you wish to delete, and a drop down menu with 3 options will appear, as shown below.



3. Click on the word **Delete**, and a window will pop up to ask to confirm your decision, as it will completely remove the item from your system so that it will not be usable by any show. This act is not undoable.



4. Click **Yes.** It's gone.

3.5.14 Searching for Content in the Library

Overtime your entire library of clips and graphics may get too large to manage, even when using folders. For this reason there is a search bar that allows you to search and easily find content in the entire library by file name. In addition, the details of a clip and graphic are visible to allow you to find content by their frame size, codec, frame rate and duration.

To Search the Entire Library:



1. Ensure that the Entire Library is visible by clicking on the **View entire library** button, as shown on the right.

2. In the search bar at the top of the window, **type** in a search word.

   As you type, the grid on content will filter out content and show you content that only matches your search, as shown on the right.



3. To search just the beginning of the file name, and not the entire filename, select the **Start with text** checkbox.

4. To view all the content of the library, **delete** the search word in the search box.

To View Content Details:

1. Navigate to the Entire Library section, and **drag** the bottom navigation bar to the right to view more of columns of details, as shown on the right.



2. The Name column will be locked and not move, however as you scroll more details will become visible, including:
   Size, Date, Height, Width, Frame Rate, Length, and Compression (or codec).



3.5.15 Modifying Attributes

As you will read in section 6.3 there are many modifiers for content, especially for clips. In the Show Content section of PixMaster these attributes can be viewed and modified directly from the Show Editor allowing for easier modification when changing multiple attributes. In addition, as new files are added to the system through a Watch Folder the default attributes can be modified, eliminating the step to modify attributes.

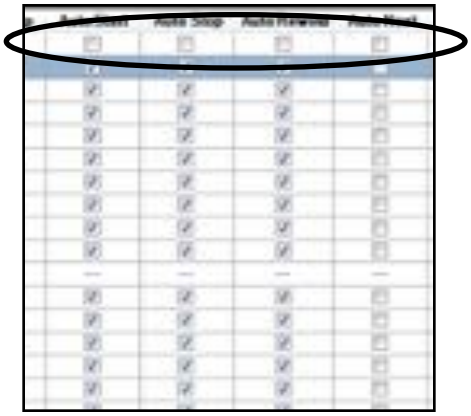
To Modify Attributes:

1. In the Show Content section of PixMaster, all the available modifiers for the select device will be visible. To view more attributes **drag** the navigation bar at the bottom of the screen to expose more options.



2. For every piece of content there is a checkbox for every attribute, allowing you to easily see which attributes are active, in addition to easily modifying them. To change an attribute simply **check** or **uncheck** the desired attribute.

3. To turn a specific attribute on or off for ALL content click on the first check box at the top of the grid under each attribute label, as shown on the right.



   NOTE: Any of the columns in the Content Organizer may be rearranged for better viewing, however when you close the content window that arrangement is no longer remembered.

To Change the Default Attributes:

1. Click on the **Set default attributes…** in the Show Content section, as shown of the right.



2. In the Default content attributes window, place a **check mark** next to the desired attributes, as shown on the right.

3. Click on the **OK** button.
   Now when when content is added to a show those attributes will automatically be selected.



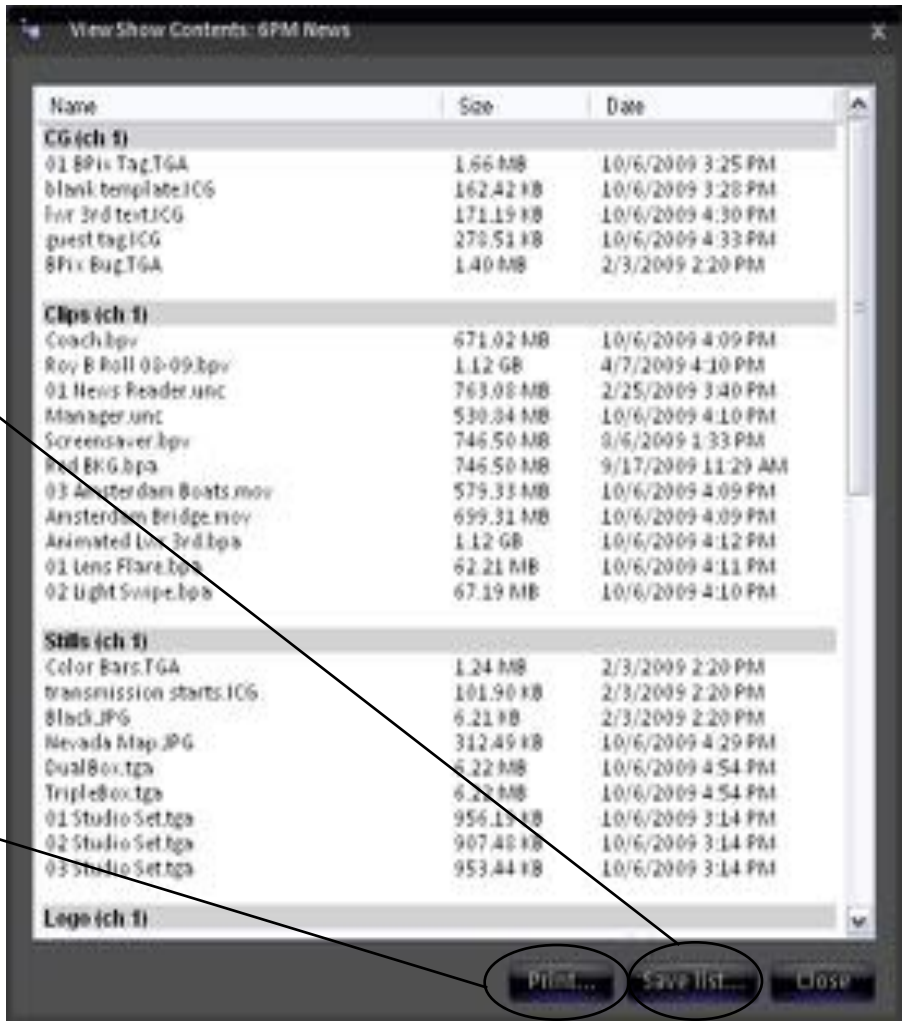
3.6 Show Content Summary

The Content Summary allows you to see, save and print a handy list of all your show's content.

To View a show's Content Summary:

On the PixMaster window for the desired show, click on **View show contents**. The View Show Contents window will open.





To Save the Content Summary:

You can save this by clicking on **Save List**. It is saved as a text delineated file, which can then be opened in columns with a program like excel.

To Print the Content Summary

If you have a printer installed on your system, you can print the list by clicking on **Print.**

3.7 Edit Show Settings

In addition to the content in a show, you can also edit its settings and setups

To access the show settings, click on **Edit Show Setting** and the Settings Windows for the Show will appear.





The Show Settings window enables you to edit:

Switcher Sources for re-mapping, adding and removing sources as well as assigning a fail-safe source.

Memory Rows for assigning SnapShot and Macro Memories to the Macro function row.

More Devices for assigning devices to the 4 wildcard PixButtons in the Device Control, i.e. Camera Control.

Memories for adding, removing, sorting and naming SnapShot Memories or Macros for the MEM device.

3.7.1 Switcher Sources Assignments

Each show can have unique switcher source assignments. To change them:

1. On the Show Settings window, click on the **Switcher Sources** button. The Switcher source assignments window will open showing all 32 mapable input sources.

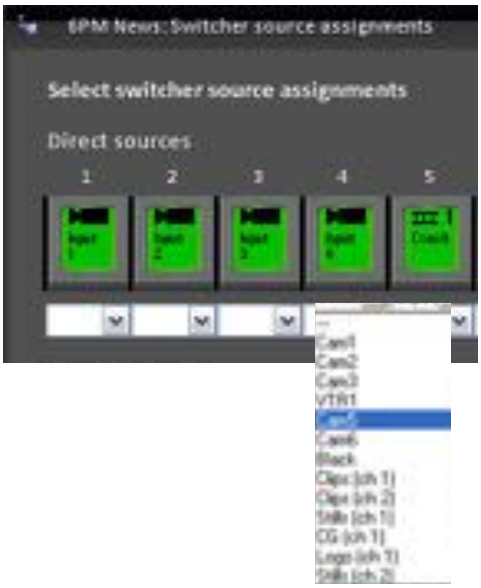




2. Select the source number you wish to change by clicking on its **name**. A drop down menu will appear with all your available source names, created in the Granite Input Assignments window, in addition to all the internal clip and graphic channels.

3. Select the desired **name** to map to the control panel.

4. Click on **OK** when complete.



NOTE: These settings do not take effect until you Save the show in PixMaster, as shown in section 3.3.

3.7.2 Auto Fail-Safe Setting

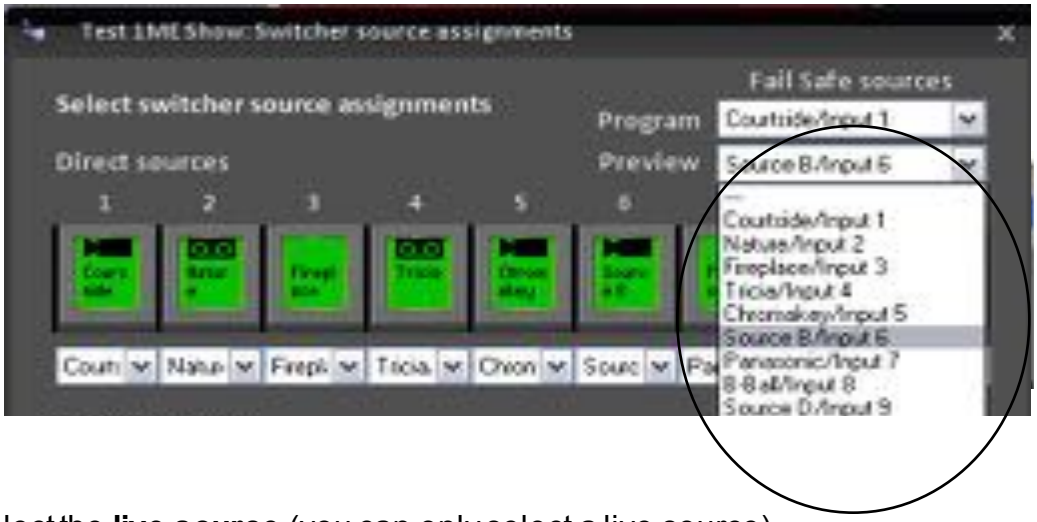
All Broadcast Pix Granite Switchers have extensive fail-safe capabilities that enable you to continue a broadcast uninterrupted even if the Server goes offline, see section 4.13.

If the Server or its network is ever lost, unplugged or locks up in the middle of a show, the system's fail safe mechanism takes over and brings to program and preview whatever Fail Safe source the system is set to. One of the features of this fail safe capability is that you can identify a source to fail-over to, or you can select none if you prefer to do it manually.

To set the auto Fail-Safe source:

1. Navigate to the Switcher Source assignments window, as described in section 3.7.1.

2. Click on the down arrow under of **Fail Safe source** and a drop down menu will appear, as shown below.



3. Select the **live source** (you can only select a live source).

4. Repeat steps 2 & 3 to assign the **Preview** Fail Safe source.

5. Click on **OK.**

NOTE: If you do not wish the system to change sources when it fails, then select the **----** on the drop down menu. Then when it goes into fail safe you can manually select the desired source from the switcher panel.

3.7.3 Adding Wildcard Devices

The Broadcast Pix system has 8 standard content devices: Clips (ch 1), Clips (ch 2), Anim (ch 1), Anim (ch 2), Stills (ch 1), Stills (ch 2), CG (ch 1) and CG (ch 2), which have their own dedicated button in Device Control-A. There are an additional 4 wildcard device buttons in the top right corner of the panel which can be assigned to external camera control and server control.

To add a wildcard device:

1. In the Edit Show Settings window, click on **More Devices** and the Add Device window will open.



2. In the Add Device window, click on the **drop down menu** under the wildcard button you wish to edit. A drop down menu containing available devices appears, as shown on the right.

3. Select the **desired device** from the drop down window.

4. Click on **OK** to return to the Edit Show Settings window.



To remove a wildcard device:

1. Repeat steps 1-2 above.

2. Select **remove** from the drop down list.

3. Click on **OK** to return to the Edit Show Settings window.

3.7.4 Show Memories

The Integrated Memories on the Broadcast Pix enables panel setups to be saved that contain all the classic switcher settings, like key settings, DVEs, sources, etc. as well as the exact content in clip and graphic stores, complete with attributes, like mark points, auto-start, crawl speed, etc. For more on creating memories, see section 4.11. In addition to SnapShot Memories, Macros may also be added and sorted in this menu, if a Macro has a leading number applied to it. See section 4.12 for more information about Macros.

The memory controls in PixMaster enable you to:

1. **Choose** which memories are to be used within a show.

2. Change the **order** in which the memories are displayed on the Mem PixPad

3. **Name** the Memories (globally), and create a custom PixButton image for them

To access show memory controls, on the Show Settings window, click on **memories.**



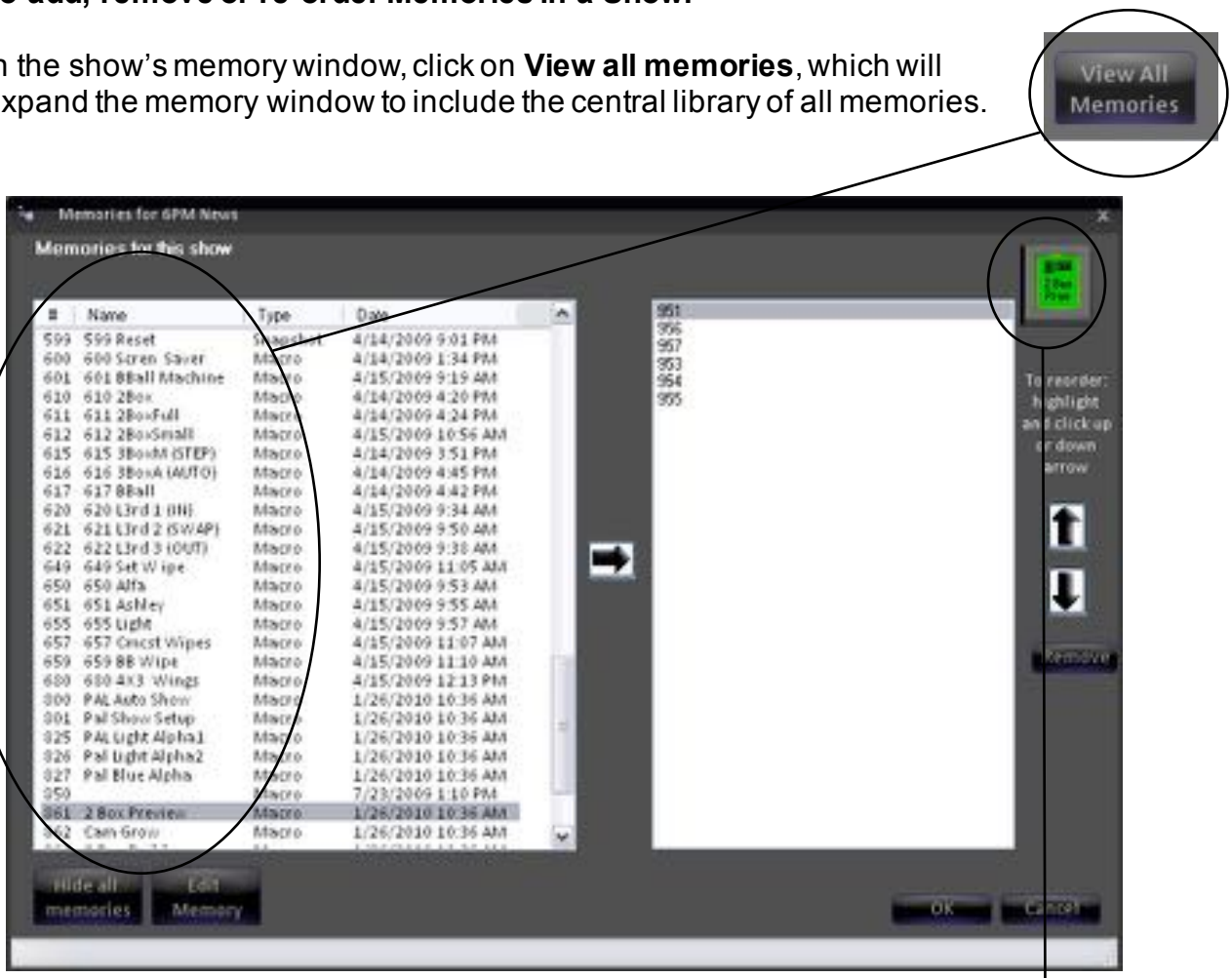
This will open the Memories Window.



NOTE: The third item is a global change, affecting all shows, so whatever name and image you choose will be used in all shows for this memory.

To add, remove or re-order Memories in a Show:

In the show's memory window, click on **View all memories**, which will expand the memory window to include the central library of all memories.



For moving memories into a show and organizing them, this window works same way as the clip or still content window (see section 3.5). The only difference here is that as you select each memory you can see its PixButton in the upper right corner.

3.7.5 Global Naming of Memories

Caution: memory naming is a global function and will affect all memories in all shows. Whatever name and PixButton image you choose will be used on all shows.

To name a memory:

1. Navigate to the expanded Memory window shown on the previous page.

2. Click on **Edit memory.** The Edit Memory window opens. You may also double-click the memory.



3. Fill in the name you wish to give the Memory, in the **Name for memory x** field.

4. If you leave the **Use name on PixButton** box checked, the name you entered will be put on the PixButton and displayed as such on the switcher panel.
   As you type a name, the PixButton icon will update automatically to show a preview.



5. Press **OK**. The Memory will now appear with it's name in Memory list for the show.

3.7.6 Custom Images on Memory PixButtons

In the Edit memory window, If you **uncheck** Use name of PixButton, then you can assign a Custom PixButton by clicking on **Custom button**. This will open the 'Choose custom PixButton image' window, where you can navigate to find a custom image created by the Draw PixButton application, as shown below.



To create a custom PixButton image:

1. **Double-Click** the Draw PixButton application, which can be found on the desktop. And the application will launch, as shown below.



2. Enter text to appear on the button in the **Text** field.

3. Position the text with the **2 arrows**, and the position will show in the white preview window. It is recommended to use the default font, if desired you may select another, by un-checking the **Use default font** box.

4. Select **Apply** and the text will appear in the big green window, which represents the PixButton.

5. If desired you may draw custom icons on the button by **left-clicking** with the mouse and dragging. Custom icons may assist in remembering what the memory is comprised of, in a graphical representation.

6. Erase any part of the button by **right clicking**. At any point you may revert to older versions by clicking on an image in the **Undo** section.

7. When done press **Save…** button. It is recommended to save all your custom icons in one folder on the C Drive.

NOTE: Some examples of custom memory PixButtons are shown in the sample show, see section 1.6.1

3.7.7 Memory Rows Assignments

The 2000 control panel has a Macro row of PixButtons, which can be assigned to trigger SnapShot and/or Macro Memories. There are a total of 16 direct and an additional 16 assignable buttons in the shifted row, for a total of 32 assignable memory buttons.

These buttons are useful for triggering Alpha Wipe transitions and other frequently used effects without having the need to enter the MEM Device PixPad.

To assign MEMs to the Memory Rows:

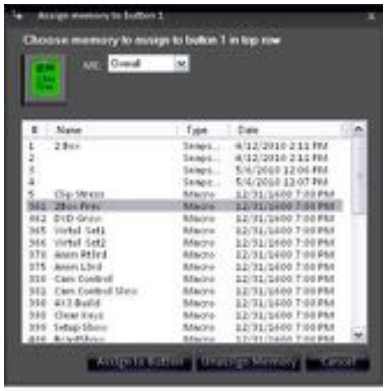


1. In the Edit Show Settings window, select the gray **Memory rows** button. The Memory row organizer window will appear, as shown.



2. Click on the desired **button** to assign a Snapshot or Macro Memory. To assign a memory to buttons 17-32, click on the View inputs 17-32 button.

3. The Assign memory to button window will appear, as shown below, showing a list of created SnapShot and Macro Memories. Click on the desired memory to **select** it.



4. Click on **Assign to button**, the memory is now displayed on the PixButton in the window, and a red bar will appear above the button to represent that a memory is assigned.

5. To have the memory name/icon visible on the PixButton on the Panel/SoftPanel, place a check mark next to **Use memory names on buttons.**

   Deselecting this option will continue to show the source name/icon when in the memory mode.



6. To view source names/icons on unassigned memory buttons, place a check mark next to **Show source names on unassigned buttons.**

   Selecting this option will show a mix of memory icons and sources icons when in the memory mode.

7. To apply these changes to the Memory row, click on **OK.**
   This will close the Memory row organizer window.

To unassign a MEM to the Memory row:

1. Repeat steps 1 through 3 above.

2. In the Assign memory button window, click on **Unassign memory.**



3. Click on **OK** in the Memory row organizer to apply the changes.

3.8 Tally Remapping

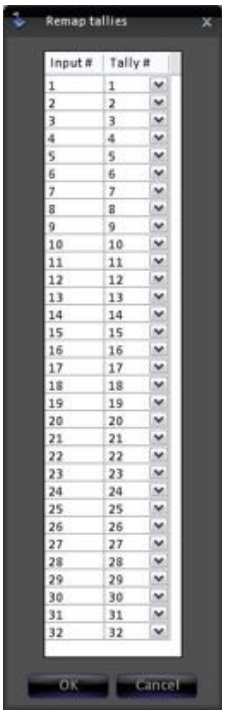
In some larger installations, where multiple signals from many different sources are feeding into the Broadcast Pix Switcher, the tally outputs may need to be reassigned to accommodated other equipment upstream/downstream of the Broadcast Pix system. For example, a large 'house' router may feed not only the Broadcast Pix system but as well as other studio equipment, where source locations can easily be varied. The remapping of tally outputs allows for each source to be appropriately paired with its tally signal from Broadcast Pix. The remap tally feature is only available when the optional external tally box is installed, as described in section 1.4.2. Since this is an advanced feature in large installations, it is advised to contact Technical Support regarding any questions.

To Remap Tally Outputs:

1. Open PixMaster to its first editable screen, **Select a device to edit**, as shown below:



2. Select the **Remap Tallies** button, and the remap tallies window will appear, as shown on the right:



   The Input # column corresponds the source signal coming into the Granite card and the the Tally # column corresponds to the tally output on the external tally box. The default tally mapping is 1 to 1.

3. For the desired input # to be remapped, **select** the corresponding tally # drop down menu and **select** the desired tally # output **1-22.**

4. When mapping is complete, click on **OK** to save the mapping.

5. Click on **Save show** to apply your show settings.

3.9 Show Linking

When a show is loaded, in addition to control panel mapping, content loading and custom source naming, a show can also be set to have a Fluent-View layout and a Fluent Macro linked to each show load. This show linking allows each custom show to start and open exactly how the technical director or producer would like. Macros or Snapshot memories to be used should be more of a setup memory to configure the system to a known good starting point. Note that a layout must be pre-saved and a Macro pre-saved/recorded to be available as a selection.

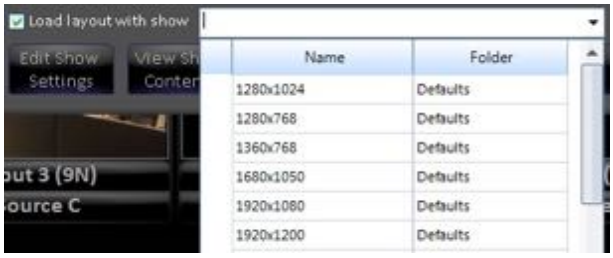
To Link a Layout to a Show:



1. Open PixMaster to its first editable screen, the Select a device to edit, as shown to the right.

2. Place a check mark next to the **Load layout with show.**

3. Click on the Load layout with show drop down menu, and **select** the desired saved layout from the available list, as shown on the right.



   To save a layout to appear in this list, see section 2.5.8.

   On the next show load the Fluent-View will open to the selected layout, regardless of the Startup Layout selected in the System Settings menu. If both a Startup Layout and a Show Layout are set to load, the show may take a little extra time to have the show fully load correctly.

4. To have no layout load at show load, uncheck the **Load layout with show** option.

To Link a Memory/Macro to a Show:

1. Open PixMaster to its first editable screen, the Select a device to edit, as shown to the right.



2. Place a check mark next to the **Load memory with show.**

3. Click on the Load memory with show drop down menu, and **select** the desired saved SnapShot Memory or Macro from the available list, as shown on the right.



   To save a Macro or MEM, see section 4.12.

   On the next show load the selected memory/macro will run.

4. To have no memory load at show load, uncheck the **Load memory with show** option.

3.10 Restoring a Show

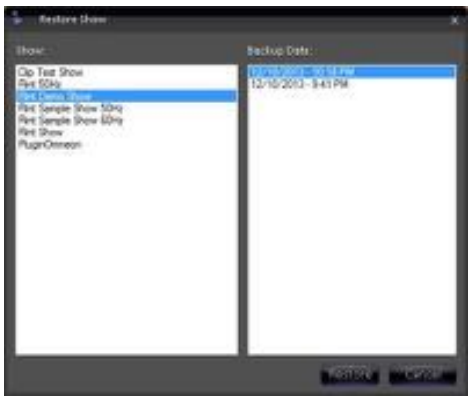
In some rare instances it may be necessary to recover a show or use a previous version of a show, incase the current show gets corrupt. The show file contains how your panel and multi-view are mapped, what content is in each device and what devices are enabled in your show and everything discussed in this section, Section 3.

1. In BPswitcher, click on **Broadcast Pix** menu icon, select the **File** menu and select **Restore Show…,** as shown on the right.



2. In the Restore Show window, a list of all the created shows on the system will appear in the left column, and in the right column all the saved backup versions of the show.

   Select a **show** on the left Show column.

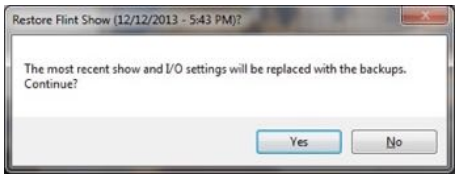


3. In the Backup Date column, select the desired recovery date, as shown on the right.

4. Click on the **OK** button.

5. A Restore Flint Show warning will appear. Click on the **OK** button, as shown on the right.

   The show mapping, content list and IO settings will now be replaced with the backup version.



3.10.1 Restoring System Settings

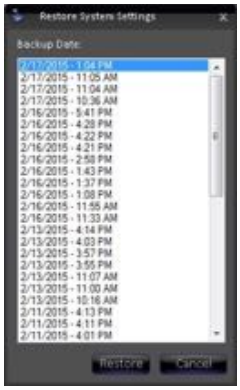
In some very rare instances it may be necessary to recover the settings found in the System Settings menu or use a previous version incase of corruption. System settings include system wide settings and should only be restored when advised from Support or when these settings are clearly unusable. Since these are system-wide settings every show will be impacted.

1. In BPswitcher, click on **Broadcast Pix** menu icon, select the **Setup** menu and select **Restore System Settings…,** as shown on the right.



2. In the Restore System Settings window, a list of all the saved backup versions will appear.

   Select a **date,** as shown on the right.

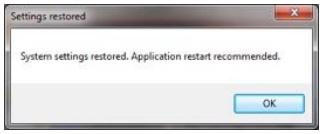


3. Click on the **Restore** button.

4. A Restore System Settings warning will appear. Click on the **Yes** button, as shown on the right.



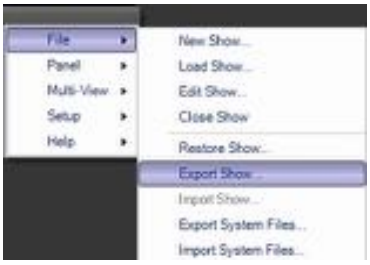
5. Once complete, a Settings restored window will appear, as shown on the right. Click on the **OK** button and **restart** the application.



3.11 Exporting a Show

As shows are crafted and multiple shows are created, it may become necessary to backup shows for protection, to free up hard drive space or export shows to another Broadcast Pix system. The Show Export Utility allows for shows, their settings and any associated content to be exported to one zip file for easy backup and transfer. Note that any images associated with .SCRIBE files will not be exported, these files must be exported and imported manually if desired. This becomes more of an issue when transporting shows between systems.

1. In BPswitcher, click on **Broadcast Pix** menu icon, select the **File** menu and select **Export Show…,** as shown on the right.



2. A browse window will appear to select the destination of the exported files. The destination can be anywhere locally on the hard drive, like on the desktop, anywhere on a network or anywhere on a connected external hard drive through USB.

   Select a **destination** and click on the **OK** button, as shown on the right.



3. In the Export show window, select the desired files. Place a check mark next to **Stills, CG, Logos, Clips, Macros,** and/or **Show Layout,** as shown on the right. The show file is automatically exported even if no file types are selected.

   Selecting any of these options will only export content and settings for the currently loaded show, to load a different show see section 1.8.

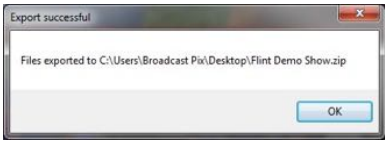
   As file types are included the Size of files to export will increase, in this example 11.2 GB, in addition a Free space indicator for the specified location will be reported. If the file size exceeds the amount of free space the export will not be allowed to continue.



4. Click on the **OK** button.

   A progress bar will appear, depending on how big the content files are the export can take several minutes to hours. In this example 11 GB took around 30 minutes, times will vary.

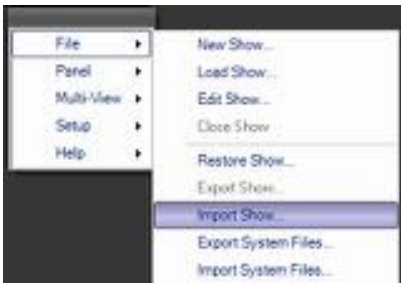
5. When finished, an Export successful message will appear, click on the **OK** button, as shown on the right.



3.11.1 Importing a Show

1. Once a show export has occurred, as described in section 3.11, it can be imported onto the same Broadcast Pix unit or to another unit.

   Ensure that no show is running, click on **Broadcast Pix** menu icon, select the **File** menu and select **Close Show**



2. Click on **Broadcast Pix** menu icon, select the **File** menu**,** and select **Import Show…,** as shown on the right

3. An open window will appear to select the source of the exported files. The exported files will be in a "Show Name.zip" file.

   Navigate and select the **zip file** and click on the **Open** button, as shown on the right.



4. Similar to the Export show window, the Import Options window will appear showing all the exported file types.

   Select the desired files by placing a check mark next to **Show, Stills, CG, Logos, Clips, Macros,** and/or **Show Layout,** as shown on the right.

   If all the options are not listed, then the exported zip file never was told to export those file types.



5. If desired the **Overwrite existing files** option may be check, this will delete any existing file with the same name and replace it with the exported file.

   This option is not undoable.

6. Click on the **OK** button.

   A progress bar will appear, depending on how big the content files are the export can take several minutes to hours.

7. When finished, an Import successful message will appear, click on the **OK** button. It is recommended to restart the application after an import.

3.11.2 Exporting System Files

Unlike show specific files, system files are used system wide and affect every show. For this reason shows and system files have two different export utilities. Usually the system files can be exported or backed up once after an entire system has been configured and running and. Since show files constantly can change, having a fresh versions and multiple versions to restore or import from is more useful for shows.

1. In BPswitcher, click on **Broadcast Pix** menu icon, select the **File** menu and select **Export System Files…,** as shown on the right.



2. A browse window will appear to select the destination of the exported files. The destination can be anywhere locally on the hard drive, like on the desktop, anywhere on a network or anywhere on a connected external hard drive through USB.

   Select a **destination** and click on the **OK** button, as shown on the right.



3. In the Export System Files window, select the desired files. Place a check mark next to **System settings, Multi-View layouts, Virtual Sets, Macros, Macro Banks, Macro names, Device settings** and/or **Registry settings** as shown on the right.



4. Click on the **OK** button.

   A progress bar will appear.

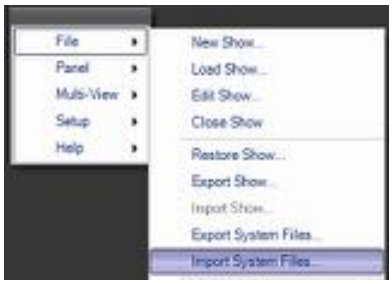
5. When finished, an Export successful message will appear, click on the **OK** button, as shown on the right.



3.11.3 Importing System Files

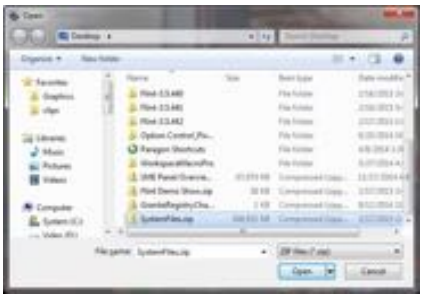
1. Once a system files export has occurred, as described in section 3.11.1, they can be imported onto the same Broadcast Pix unit or to another unit.

   Click on **Broadcast Pix** menu icon, select the **File** menu**,** and select **Import System Files…,** as shown on the right



2. An open window will appear to select the source of the exported files. The exported files will be in a "SystemFiles.zip" file.

   Navigate and select the **zip file** and click on the **Open** button, as **shown** on the right.



3. Similar to the Export window, the Import Options window will appear showing all the exported file types.

   Select the desired files by placing a check mark next to **System settings, Multi-View layouts, Virtual Sets, Macros, Macro Banks, Macro names, Device settings** and/or **Registry settings.**

   If all the options are not listed, then the exported zip file never was told to export those file types.



4. If desired the **Overwrite existing files/settings** option may be check, this will delete any existing file with the same name and replace it with the exported file.

   This option is not undoable.

5. Click on the **OK** button.

   A progress bar will appear, depending on how big the content files are the export can take several minutes.

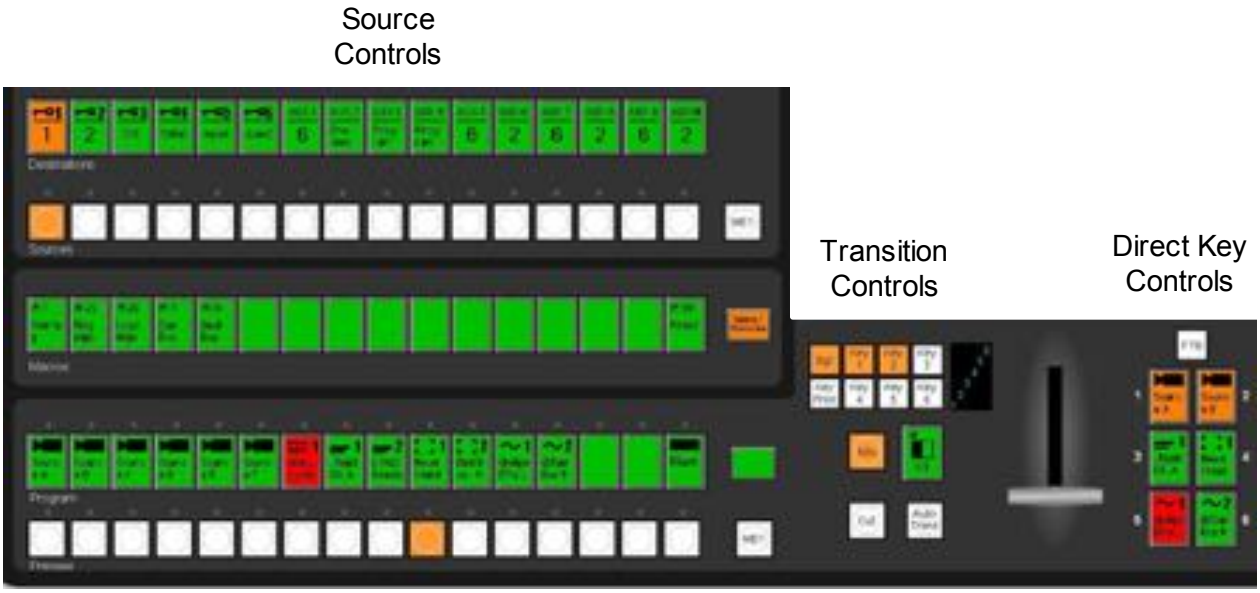
6. When finished, an Import successful message will appear, click on the **OK** button. It is recommended to restart the application after an import.

Section 4:
Digital Production Switcher

The Broadcast Pix Granite 2000 system contains a powerful 1 Mix/Effect production switcher. The switcher's operation is described in this section, including sources, transitions, keyers and fail-safe operation. Operation works the same way from either a physical control panel or a SoftPanel.

4.0 Switcher Controls

When you launch Broadcast Pix Switcher and a show is loaded, see section 1.7, the switcher controls fill in on the panel as shown below.



Source Controls	To select sources for bringing on-air, as backgrounds or key overlays. And for filling keys and auxiliary outputs.
Transition Controls	To change what is on program, with a cut, mix or effect.
Direct Key Controls	To manually turn keys On/Off. They also show key status: device, element and tally.

4.0.1 Tally

Broadcast Pix uses tally to identify at a glance what has been selected. Tally is displayed simultaneously on the panel, Multi-View and Granite Switcher tally output. If the optional tally box is installed, the program tally is also sent out.

Panel Tally

State	Color	Buttons	PixButtons
Selected and on Program	Red		
Selected and on Preview	Orange		
Off/not selected	White (buttons) Green (PixButtons)		

Multi-View Tally

Selected and on Program	Red	
Selected and on Preview	Orange	
Off/not selected	Grey/None	

NOTE: There is not tally status in the PixPad of the control panel. Red simply means that the content is selected. For tally status of content, use the Multi-View PixPad.

4.1 Video Sources

Video sources include external video sources, plus internal video sources for Clips, Stills, CGs, Animations and Black.

The 16 most used video sources are selected with 4 rows of 16 push-buttons, as illustrated below. These 16 sources are arrayed in columns of 4 buttons each. The same source is assigned to all 4 buttons in each column. The displays on the PixButtons in the display row indicate what source and content element is currently assigned to that column of buttons.

Within any one row, only one source may be selected at once. Therefore, only one button in the source or preview rows may be illuminated, and only one in the program row.

Sources Row

Source Controls/Macros Row

Program Row

Preview Row



Program Row

The Program Row indicates which source is on the air/being recorded, which will always be illuminated red. Other available sources will not be illuminated and stay white.

The PixButtons used in this row indicate the contents of the source, including what device is currently assigned, as well as the currently selected content element on the device.

Preview Row

The Preview Row is used to select which source is selected on preview/preset, which will be illuminated orange, during a transition the preview row illuminates red and returns to orange at the end of the transition.

Source Row

The Source Row is used to select which source is used to fill a key, or an auxiliary output, sources will be illuminated orange to signify that they are selected and on preview and turn to red once that source is on program.

Source Controls/Macros Row

The Source Controls/Macros Row is used to indicate the contents of the source, including what device is currently assigned, what channel is selected and what specific content is selected. This row can also be used for other switcher functions like source controls and triggering memories and Macros, see section 4.6.

4.1.1 Accessing Inputs 17-32 with Shift

For shows that consist of more than 16 inputs, the [Shift] button is used to access sources 17-32. This enables the Broadcast Pix panel to control twice as many sources as there are buttons. These "shifted sources" are typically used for sources that are used less frequently than the first 16 sources, such as a rarely used extra tape deck, video feed and black.

To access a source in the 17-32 range on the Control Panel:

To get access to sources 17-32 ⟶



1. In the transition section of Program Bus, press the **[Shift]** button.
   It will illuminate orange and both display rows will change to the names of sources 17-32. There is no need to hold down shift since the panel will stay in the shifted state until it is deselected.

2. Select a button from the Program, Preview or Source rows, as desired**.**
   The selected button will illuminate. To indicate that this button is in a shifted state, on the control panel the button will blink on and off, while on the SoftPanel a small light above the source button will illuminate red.

3. Press the **[Shift]** button again.
   This will turn off the illumination of the [Shift] button and return all source buttons to their unshifted state. The control panel will continue to have the selected source blinking and the small light on the SoftPanel will stay on so you know a shifted source has been selected. Once a direct or unshifted source is selected the blinking will stop.

4.1.2 Lock Shift

The previous section described how to access more sources with the Shift button. The default mode for shift is that it turns off after the first use, called one-shot shift. During some productions it may be desired to access the shifted sources more rapidly without the need of selecting shift every time, for these occasions the shift function may be locked.

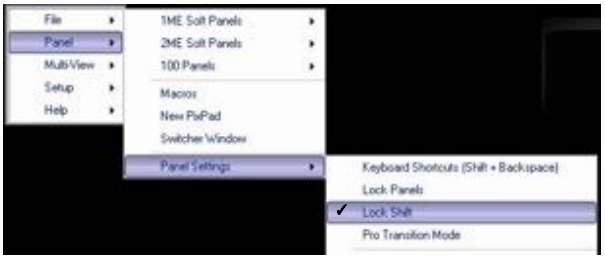
To turn on Lock Shift from the control panel:

1. In the Program Bus Transition section, double-punch the **[Shift]** button (quickly select it 2 times)
   The Shift button will illuminate orange.



To turn on Lock Shift from the application:

1. In BPswitcher, select the **Panel** drop down menu.
2. Select **Panel Settings**
3. Click on **Lock Shift** to place a check mark next to it, as shown on the right.



To turn off Lock Shift:

1. Repeat step 1-3 above or double-punch the [Shift] button.

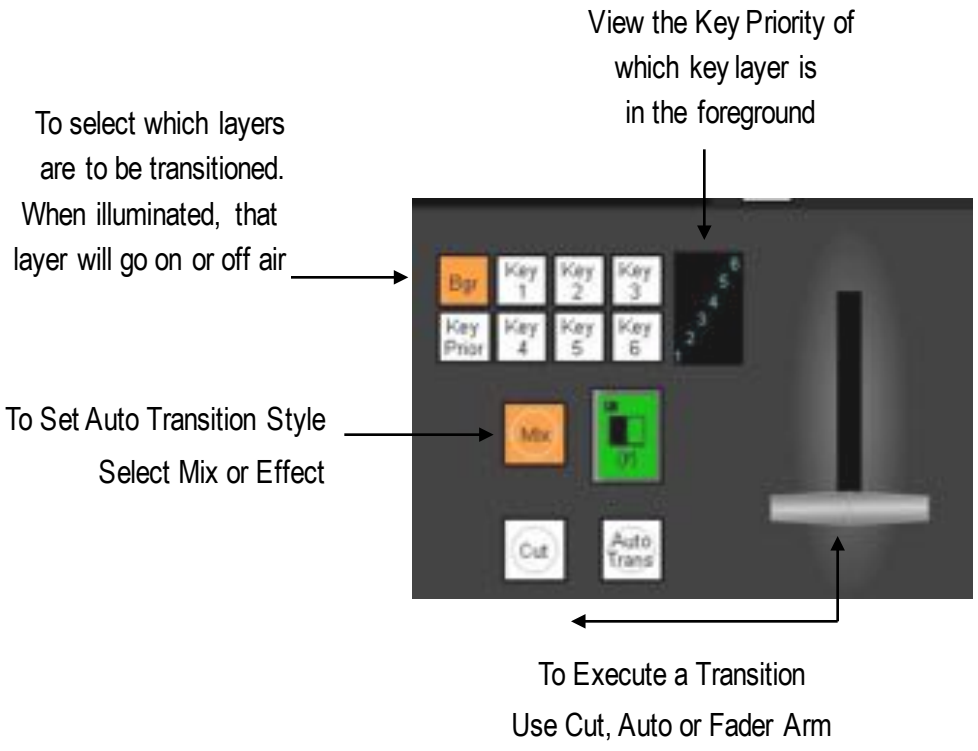
4.2 Transitions

A transition is a change from one picture to another picture. There are three types of transitions:

- Cut A cut is an instantaneous switch from one video picture to another, and is by far the most common type of transition.
- Mix A mix, also known as a cross fade or a dissolve, is a transition in which one picture dissolves into the next.
- Effect An effect is a transition that uses a pattern or special effect to change from one picture to the next. Effects include wipes, pushes, squeezes and other 2D DVE moves.

The Transition Control section of the panel manages all transitions. It is illustrated below, along with the function of each area of its controls

Transition Controls:



4.2.1 Transition Preview

Transition Preview adds confidence by showing the end state of the transition on the Preview Monitor. This is useful when you have keyers on-air, and want to keep them on-air or take them off-air. The Transition Preview acts as a reminder, notifying you exactly what layers will be on air after the next transition. It can also be used to frame your shots in the preview monitor, just in case a keyer or graphic is covering up something important in your shot.

To preview the end state of a transition:

1. Select the **Setup** drop down menu.



2. Click on **System Settings**…, as shown on the right.

3. In the System Settings window, select the **Video** tab.

4. Under the Options section, place a check mark next to **Use transition preview**, as shown on the right.



   Every Granite 2000 system comes with Transition Preview enabled (checked).

5. Click on the **OK** button to save and exit the System Settings window.

6. To turn off Transition Preview, repeat these steps.

4.2.2 Background Cut Transition

A cut is a 'hard' transition that instantaneously switches from one video picture to another.

To perform a cut:

1. The background transition button must be on and illuminated. If it is not already on, press **[Bgr]** and it will illuminate orange.
2. On the preview bus, select the source you wish to transition to by pressing its button. The button will light orange and the selected source is displayed in the preview monitor. In this example input 2 labeled "Cam 2" is on preview and input 1 labeled "Cam 1" is on program.



3. Press the **[Cut]** transition button. This will bring the selected source to program, and whatever was on program to the preview monitor. The illuminated buttons will also "flip-flop" in the program and preview rows, as shown:



4.2.3 Background Mix Transition

A mix is a 'soft' transition that dissolves between two images.

To perform a Mix:

1. The background transition button must be on and illuminated. If it is not already on, press **[Bgr]**, and it will illuminate orange.

2. On the preview bus, select the source you wish to transition to by pressing its button. The button will light orange and the selected source is displayed in the preview monitor.



3. If not already lit, press the **[Mix]** button, which will illuminate orange. (The effects PixButton to the right of it will change to green)

4. Press the **[Auto Trans]** button.

   This will bring the selected source to program, and whatever was on program to the preview monitor. The illuminated buttons will also "flip-flop" on the program and preview rows. During the transition, the color of both the Auto and Preview Source buttons will change from orange to red. You can change the rate at which the mix occurs, as described in the rates section, see section 4.3.3.

5. To execute a manual mix, move the **Fader Arm** up or down.

4.2.4 Background Effects Transition

To execute an Effect transition, including wipes and DVE effects:

1. The background transition button must be on and illuminated. If it is not already on, press **[Bgr]**, and it will illuminate orange.

2. On the preview bus, select the source you wish to transition to by pressing its button. The button will light orange and the selected source is displayed in the preview monitor.

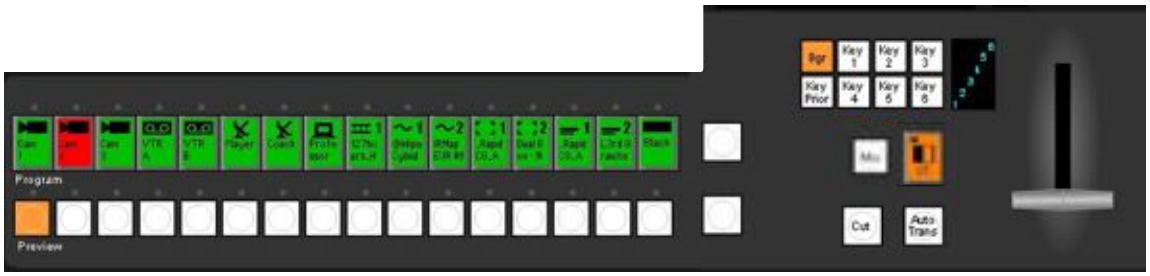
3. If not already selected, press the **[Effects] PixButton,** which will illuminate orange. When the [Effects] PixButton is pressed, the Device Controls will change to effect, including the PixPad, knobs and joystick.

   The effect that is currently selected and ready to execute is shown in the effects PixButton in the transition section. Its corresponding button in the PixPad will illuminated red and its name is shown in the LED display.

4. Press the **[Auto Trans]** button.

   This will bring the selected source to program using the selected transition style, and whatever was on program to the preview monitor. The illuminated buttons will also “flip-flop” on the program and preview rows. During the transition, the color of both the Auto and Preview Source buttons will change from orange to red. You can change the rate at which the mix occurs, as described in the rates section, see section 4.3.3.

5. To execute a manual effect, move the **Fader Arm** up or down.



4.3 Transition Effects

The Transition Control section will execute whichever effect is currently selected, as shown both on the effects PixButton and on the LED display. You can also select a different effect or modify an effect then use the Effects Device Controls.

To select a different Effect:

1. Assign the device controls to effects by pressing the **[Effect] PixButton.** This will cause the following device controls to appear:

Effects Device Controls

LED Display
shows selected device, effect, knob values and numeric keypad value

4 Knobs
for modifying effects



Effects PixButton
to turn on Effects Device Controls, and show which effect is selected

PixPad
12 PixButtons
to select or modify an effect

2. The Effects PixPad displays the first 9 effects, press the desired **[Effect Pattern]** PixButton, and it will illuminate red and the previously selected effect will turn to green. This will also change the selected effect shown in the display and on the [Effects] PixButton.

3. To view additional effects, press the **[Next]** PixButton, and the next 9 will appear.



4. To see the 9 beyond that press the **[Next]** PixButton again. You may press the [Next] button until PixPad runs out of assigned pages.

5. To back up and look at the previous PixPad, press the **[Back]** PixButton



6. To return the the home or first page of the Effect PixPad, press the **[Effects] PixButton.**



4.3.1 Effects Styles and PixButtons

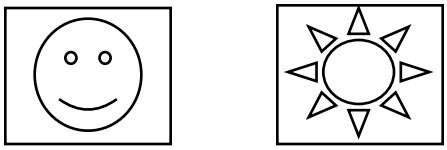
The Broadcast Pix Switcher has over 150 effects. Each effect has a unique number, name and PixButton icon image. The PixButton icons are show the effect style at a glance. The conventions used for these PixButtons are:

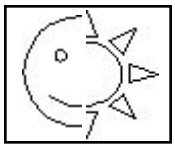
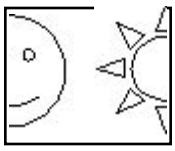
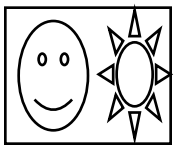
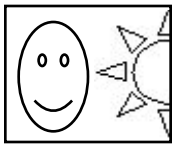
Black shows the foreground, while the background video is blank. For example, in the horizontal wipe, the new foreground enters from the left. (It can also be reversed, see section 4.3.5).



Types of Transition Effects

The Broadcast Pix Switcher supports many types of transitions each has its own style PixButton icon. For example, if there was currently a picture of the sun on-air (background), and you wish to transition to a person (foreground).

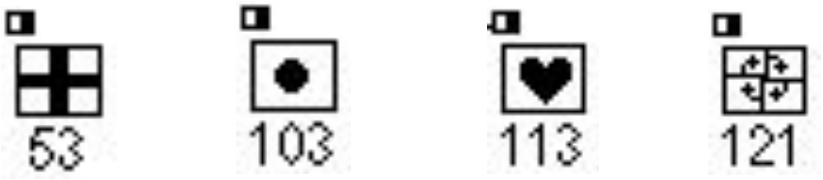


		Example	PixButton
1. Wipes	Both Images stay in place, and one is wiped over the other		
2. Pushes	One or both of the images are moved, as being pushed off-air, or pushed on-air		
3. Squeeze	One or both of the images are squeezed from their current position to an edge.		
4. Combos	The three above styles may be combined. For example, Fx 6 squeezes on the foreground, while pushing off the background.		

5. Gradient Wipes

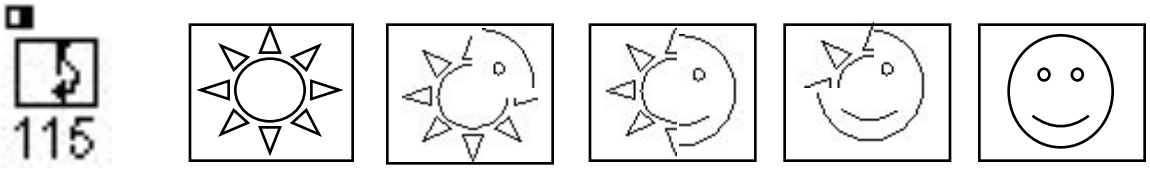
Gradient wipes have a pattern and enable a soft-edge to be applied, as described in section 4.3.5.

Some of the many gradient wipes are:



6. Clock Wipes and Arcs

Many of the wipe patterns are circular clock wipes, which start in one position and then move in a circle. Their icons show a black region where the foreground begins to enter, and then a curved or diagonal arrow with the direction of the clock movement. For example, clock wipe Fx 115 has the following icon and creates the illustrated effect:



An arc wipe is similar to a clock wipe, except that the movement is in a much wider arc, in which the center of movement is off the picture, rather than in the middle of the picture as in most clock wipes.

4.3.2 Selecting a New Effect by Number



1. On the Effects PixPad, press the **[Controls PixButton]**, which will bring up the effects controls PixPad



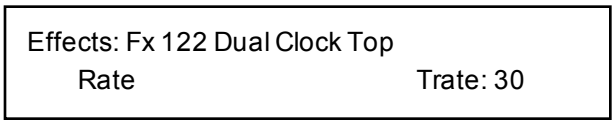
2. Press the **[numeric keypad]** PixButton, and the PixPad will change to the following numeric keypad:



3. Enter the effect **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.
For example Fx # 122, as shown below.

   If you enter a wrong number press the **[UP]** PixButton, which will bring back to the previous PixPad, where you can start again from step #2.

4. Press the **[Enter]** PixButton and the effect will appear in the [Effects PixButton], and its name and number will also appear in the display. The PixPad will change to the effect chosen and it will be illuminated.



Effects
PixButton



4.3.3 Changing Effect Transition Rates

The transition rate of any effect or mix may be changed by either turning the Rate knob, or using the numeric keypad.

The transition rate is displayed on the lower right corner of the display. For example, the illustration below shows a rate of 30 frames. Rates are displayed in frames, with 30 frames being equal to one second 60Hz and 25 being equal to one second in 50Hz. The system defaults to 30 frames until another rate is selected.

To change the transition rate with a knob:

1. If the Device Controls are not already assigned to effects, press the **[Effects] PixButton** in the transition section and the display illustrated below will appear.

2. Turn the **[Rate] Knob (1st Knob)** to the desired rate. The number of frames will be shown in the right corner of the display **TRate: 30**. This rate will be now be used for all transitions until changed.



To change the transition rate with the numeric keypad:

1. Press the **[Mix]** button in the Transition Control section of the panel.

2. The PixPad in the Device Control section of the panel will change to a numeric keypad. Enter the rate **[Number]** in frames.

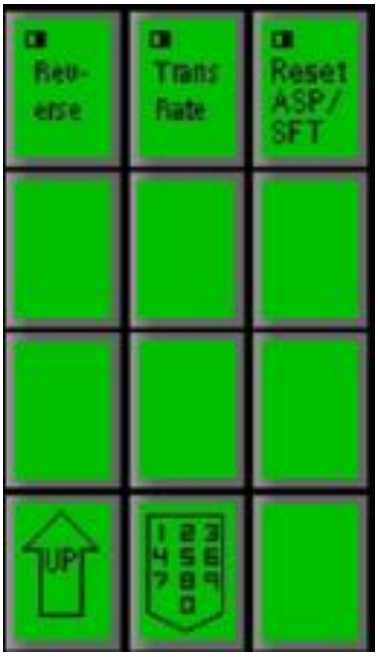
3. Press the **[Enter] PixButton** to save the transition rate.

OR

1. If the Device Controls are not already assigned to effects, press the

   [Effects] PixButton.

2. Press the **[Controls]** button on the effects PixPad, and the following PixPad will appear:



3. Press the **[Trans Rate]** PixButton, and the following numeric keypad will appear:



4. Enter the rate **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.

   If you enter a wrong number press the **[UP]** PixButton and repeat step #3.

5. Press the **[Enter]** PixButton and the rate will appear in the display, and the PixPad will revert to PixPad containing the selected effect.

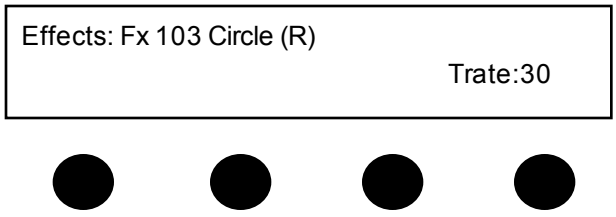
4.3.4 Reversing an Effect

All effects will execute in the reverse direction. A left Push-off will become a right push-off, a circle wipe that starts in the center and goes out, will now start on the outside and go to the center, etc.

To reverse an effect:

To Reverse the direction of all effects, on the Effects PixPad press the **[Controls]** PixButton, then press the **[Reverse]** PixButton.

To indicate that Reverse has been selected, the letter (R) will be appended to every effect name in the display, as shown below:



To remove reverse and return to the normal state, press the **[Reverse]** PixButton again, and the (R) in the display will be removed.

4.3.5 Modifying an Effect

Gradients are effects that use a pattern such a circle, star, pinwheel etc. can be modified for softness and aspect.

To modify an effect:

1. The background transition button must be on (illuminated). If it is not already on, press **[BGR]** and it will illuminate orange.

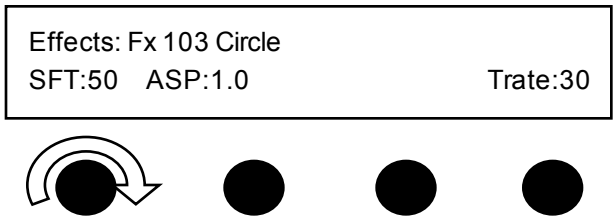
2. The Device Controls needs be assigned to effects, if they are not, press the **[Effects] PixButton** in the transition section.

3. Select the effect you want with either the numeric keypad or one of the **[Effect Pattern]** PixButtons.

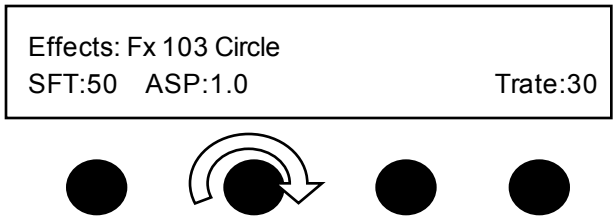
4. Click the **[Controls]** PixButton for a selected transition to modify the softness, aspect and transition rates.

5. To see a transition effect in pre-production, move the **Fader Arm** half way.

6. To change the softness of the edge of an gradient wipe effect, turn the **[1st Knob].**



7. To change the Aspect ratio of a gradient wipe, turn the **[2nd Knob]**.



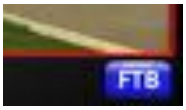
4.3.6 Fade to Black

Fade to Black (FTB) is a master downstream effect which dissolve the program output to black. FTB is typically used to to start a show in black and then fades to the production and at the end of the show to fade all the video, including keyers, to black.

To execute FTB on the Multi-View:

1. Ensure that the Transition Controls are enabled on the Multi-View, as described in section 2.5.7.

2. Click on the **FTB** button on the Program monitor, it will illuminate blue, as shown on the right.



3. The PixPad will change showing a numeric keypad, as shown on the right.



   Enter the desired fade to black rate with the **[Numbers]** PixButtons. As you enter each number it will appear in the display. The rate is in frames with 30 being 1 second for 60Hz systems and 25 form 50Hz systems.

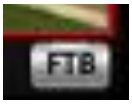
4. Press the **[Enter]** PixButton.

5. Click on the **Program** monitor, and the output will fade at the selected rate and the FTB button will illuminate red, as shown on the right.



   Tally to external inputs and audio follow commands will go off, however the panel and Multi-View source monitors will remain tallied showing what sources are under black for reference.

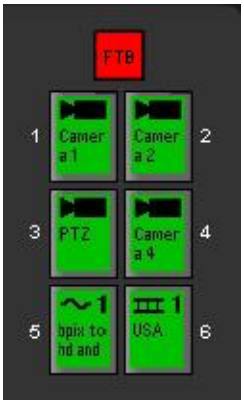
6. To fade from black, click on the Program monitor and the FTB button on multi-view will turn grey, as shown on the right



To execute FTB on the panel:

1. Press the **[FTB]** button in the transitions section, above the Direct Keys, as shown on the right.

   The Program output will fade at the selected rate, and the FTB button will illuminate red and start blinking.



2. To fade from black, press the **[FTB]** button in the transition section, and the button will turn off.

To modify the FTB rate on the panel:

1. Press the **[FX]** button in the transition section, and it will illuminate amber.

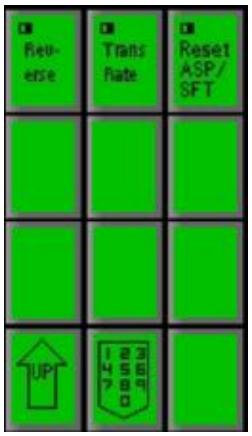
2. Press on the **[Controls]** PixButton in the FX PixPad, as shown on the right.



3. Press the **[FTB Rate]** PixButton and a numeric pad will appear.

4. Enter the desired fade to black rate with the **[Numbers]** PixButtons. As you enter each number it will appear in the display.

5. Press the **[Enter]** PixButton.



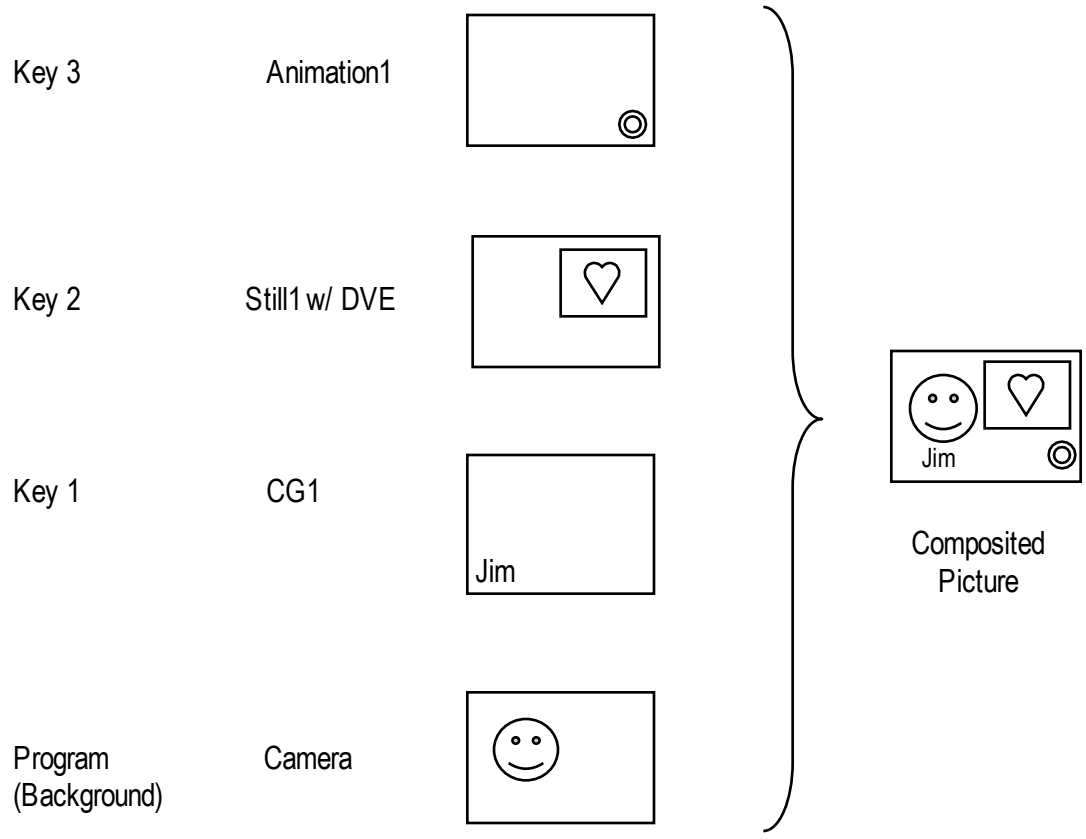
4.4 Keys

The Broadcast Pix Granite system combines multiple layers that can include a background video image and up to six overlays, each of which is known as a key. 6 keyers are standard. All 6 keys can hold a graphic, such as a CG, Still or Animation, or a DVE box (Picture-in-Picture) which can hold a camera, still, clip or any other source.

Any key may hold a Chroma/Luma Key, however only one source at a time may have a Chroma/Luma key applied, as an option multiple sources can have Chromakey/Luma keys controls (useful for virtual sets).

If PowerAux is enabled, then Key 6 can only be assigned to animations or black, and have no DVE functionality.

In the example below the composition includes four layers:

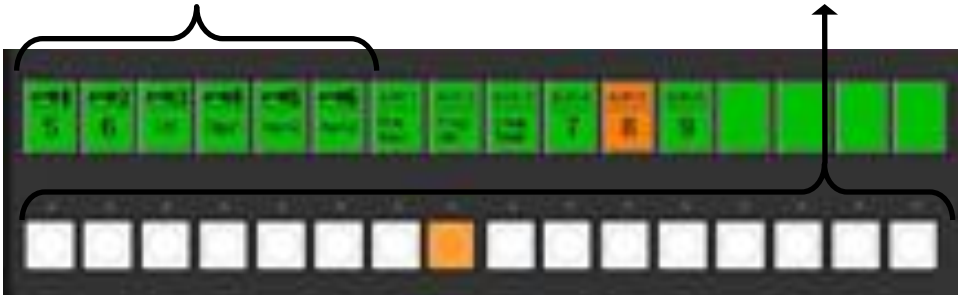


4.4.1 Key Controls

The Broadcast Pix panel provides three groups of buttons for controlling the 6 keys: Key Select Buttons, Direct Key Buttons and Key Transition Buttons. The Source Row and Display Row are also used with the Key Select Buttons.

Key Select Buttons in the Destinations Row:
For assigning the Device Controls to a Key and for use with the Sources Row to change which device is assigned to a Key

Source Row Buttons:
For use with the Key Select Buttons to change which device is assigned to a key



Key Transition Buttons:
For including keys in transitions, also previews a key in Program bus



Direct Key Buttons:
Displays the key content and tally
Manually turn keys on and off on Program

Each of the 6 Keyers is treated as a device, so pressing any one of the six Key Select buttons assigns Device Control-B to that Key, including: Joystick, 4 knobs, PixPad and the LED display.

4.4.2 Assigning a Source to Key 1-6

Each of the six keys may hold a variety of sources, including a cg, animation, still, a DVE box (picture-in-picture) for a camera, etc. Each source is assigned to Key 1-6 by using the Key Selection buttons and Source Row buttons.

To assign a source to a Keyer:

1. Press the desired Key Selection Button in the Destinations Row, either **[Key 1 Select]** , **[Key 2 Select], [Key 3 Select], [Key 4 Select], [Key 5 Select]** or **[Key 6 Select]**.
   The button pressed will illuminate orange (or red if the key is on Program), and one button in the Sources Row will also illuminate. This lit button in the source row will indicate which source is currently assigned to the selected key. For example, in the illustration shown below, Input 1 is fed into Key 1.
   (You can see the input number or device name of the source by looking on the top of the PixButtons in the destination row).

   The lit source button will illuminate red if this key is on program. This will warn you that if you now change to a different source you will be impacting the on-air content. The lit source button will illuminate orange if this key is not on air. If a shifted source (17-32) is currently in the key, it will blink on the Control Panel, and illuminate a small red light above the button on the SoftPanel.

Key Select Buttons in the Destinations Row

Sources Row

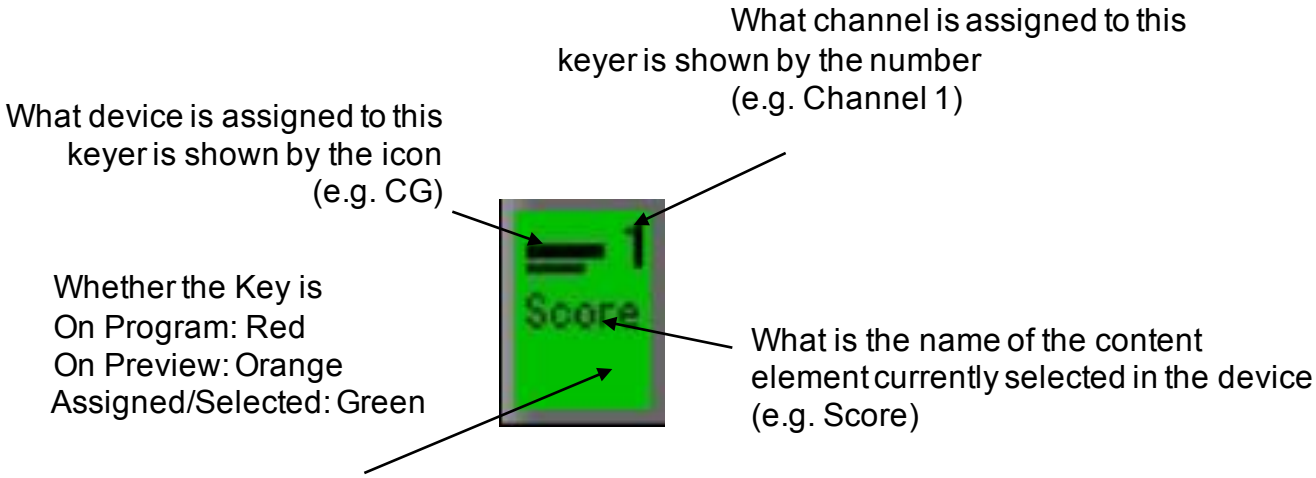
Display in Macro Row



2. Press the desired **[Source Row]** button, for the source you wish to feed into the keyer. The button pressed will illuminate orange (or red if the key is on Program), and the source row button that had been illuminated before will go out.
   Only one button in the source row may be illuminated at a time. The new source, and its current contents, will also appear in the appropriate [Direct Key] PixButton.

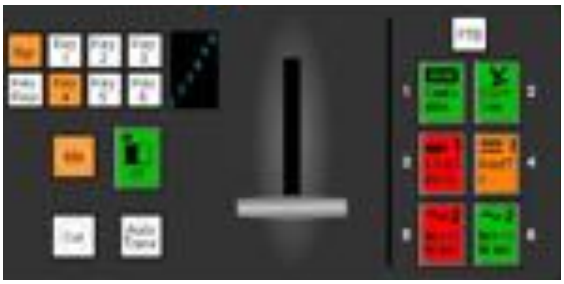
4.4.3 Direct Key Controls

The Direct Key buttons are the six buttons located to the right of each transition section. They correspond to Key 1 through Key 6, as shown below. In addition to On/Off functionality, these buttons provide a handy place to always see key status, including:



To Manually Bring a Key On Program:

1. Any key that is off (green or orange), can be brought on program by pressing its **[Direct Key Button]**. This will cause this key to fade on at the rate for that keyer, and the button will change color to red.



To Manually Take a Key Off Program:

1. Any key that is on-air (red), can be taken off program by pressing its **[Direct Key Button]**. This will cause this key to fade off at the rate for that keyer, and the button will change color, from red to green (or orange if its key transition button is on).

NOTE: If the rate for a Key on the control panel display is set to 1, the Key will cut on/off program. To change the Key rate see section 4.4.7. There are three ways to bring Keys on and off program: by using the Transition Controls, by clicking in the keyer window on the Multi-View or by using the Direct Key buttons.

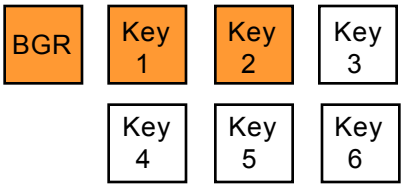
4.4.4 Transitioning Keys with Multiple Keys or with the Background

All six keys can be used with each Transition Controls section. This enables key transitions to be combined with background transitions. This also enables any effects, such as a wipe or push-off, to be used for transitioning keys, either with a background change or without a background change.

Changing a Key with a Background Change:

To add or subtract layers simultaneously with a change to the background video:

1. Press the **[BGR]** button (if it is not already illuminated)
2. Select the keys to transition with the background by pressing one or more of the adjacent **[Key Transition]** buttons.



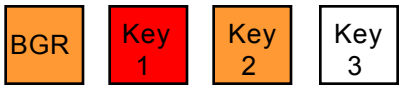
   Each button pressed will illuminate orange (or red if the key is already on program). As each Key Transition button is pressed, the Key content will appear as an addition to the preview monitor. As each of the above [Key Transition] buttons is pressed, its corresponding [Direct Key] button on the panel will also change from green to orange.

3. Press **[Cut]** (or Auto, or use the fader arm) and the background video will change, the illuminated keys will come on program, and their [Direct Key] buttons on the panel will change illumination from orange to red.

In the above example, two keys were brought on program at the same time with the background. If instead the keys are already on program before the transition, and you wish to bring them off program as part of a transition, then the button illumination would be as follows.

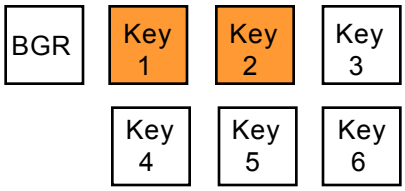
When their [Key Transition] button is pressed it will illuminate red, to indicate on-air keys. The corresponding [Direct Key] PixButton will stay red. Now when [Cut] (or auto or the fader) is pressed, the Key 1 and 2 will come off program as the background video changes, and the [Direct Key 1] PixButton and [Direct Key 2] PixButton will change from red to orange.

You may combine bringing keys on and off program in the same transition. For example, if Key 1 is already on, and you wish to bring it off with a background transition, while bringing on Key 2, the illumination of the [Key Transition] buttons would be:



Changing a Key without a Background Change:

To add or subtract key layers without changing the background video, repeat all of the above steps, except in step one, turn off the **[BGR]** button, as shown below. When [BGR] is turned off, the end state of the transition will be shown on the preview monitor, which will include the same background as currently on program.



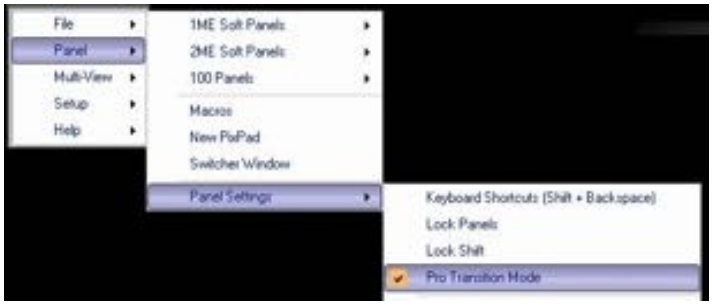
4.4.5 Pro Transition Mode

When the background and key layers are selected in the transition section of the control panel, by default, the buttons/layers are added/selected one at a time leaving the previously selected layers enabled. For most users this method is acceptable, however in some cases where rapid execution is necessary, users may prefer to only have the selected layer active, disabling the previously select layers. This mode is known as Pro Transition Mode.

To enable Pro Transition Mode:

1. In BPswitcher, select the **Panel** drop down menu.
2. Then select **Panel Settings.**
3. Place a check next to **Pro transition mode**, as shown on the right.

   Now, any transition layer that is selected will automatically turn off any previously select layers.
4. To disable Pro transition mode, repeat the steps above.



4.4.6 Modifiers for Keyers

Each Keyer can have several functions applied to it, including the key transition rate, Digital Video Effect (DVE), crop and border. All Keyer Modifiers appear in the PixPad. If PowerAux is enabled, Key 6 may not have DVE, cropping or reposition applied.

To access a modifier for a key:

1. Select the desired Key, by pressing **[Key 1 Select]** , **[Key 2 Select], [Key 3 Select],** or **[Key 4 Select]** button in the Destinations Row. The PixPad will change, for example the Key 1 PixPad is shown below:



2. The Key may be cropped on any side. Press the **[Crop]** PixButton on the above PixPad and the following knob values will appear in Device Control as shown below.

   Twist the **[L Knob]** for left crop, the **[R Knob]** for right crop, **[T Knob]** for top crop and **[B Knob]** for bottom crop.
   Once any side has been cropped, the display and keyer window on the Multi-View will read out Cr next to the key rate, signifying cropping has been applied.

   You can reset the cropping to none/000 by pressing the **[Crop Reset]** button in the Keyer Modifier PixPad.



3. The Key may be positioned any where on screen, even when a DVE is not applied.



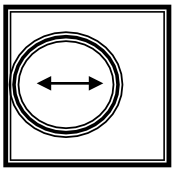
Press the **[Position]** PixButton, as shown on the right, and the following knob values will appear as shown below.



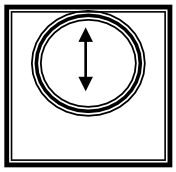
Twist the **[1st Knob]** for X-Axis control and/or the **[2nd Knob]** for Y-Axis control, using the knobs provides fine tuned control.

For quicker control, the Joystick may also be used. Move the **Joystick:**

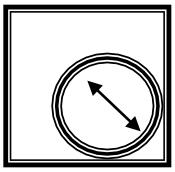
Left - Right



Up - Down



Diagonally

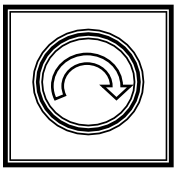


Once a keyer has be repositioned, the display and Keyer window on the Multi-View will read out Rp next to the key rate.



You can reset the position to 0,0 by pressing the **[Posit Reset]** button in the Keyer Modifier PixPad.

Or when no DVE is applied, **twist** the Joystick to reset the position to 0,0.

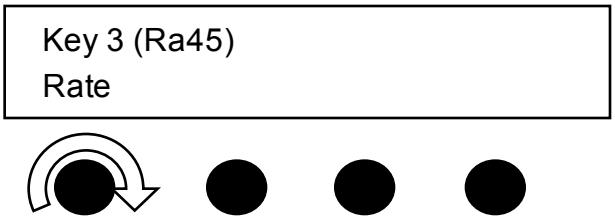


4.4.7 To Change the Key Fade Rate

The fade rate for all 6 Keys can be set with a knob or the numeric keypad in the PixPad. To change the key fade rate:

1. Press the **[Key Select]** button for the desired keyer, to assign the Device Controls to that key (in this example Key 3 is being used).

2. Turn the **[1st knob]** to the desired transition rate, which will be shown after the letters Ra in the display above the knob.



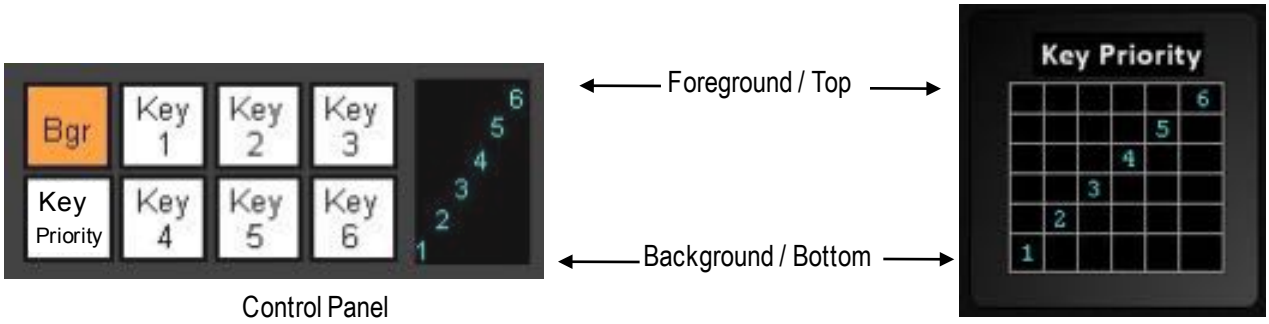
or

Press the **[Key Rate]** PixButton on the Key Modifier PixPad for the desired Key, enter the rate with the **[numeric keypad],** as done for a transition rate, and press **[Enter]** to apply the rate. The display will change to the newly selected rate.



4.4.8 Key Priority

Key Priority allows you to change the layer order of the keyers by bringing a keyer up towards the foreground or down towards the background. This is useful when creating DVE boxes (see next section) and want to zoom a keyer full screen over another. It is also useful in compositing graphics and boxes without the need to reassign sources to different keyers. The Key Priority is controlled from the control panel and each keyer can be moved one layer at a time. The order is visible on the control panel in the Transition Section and on the Multi-View if the Key Priority window is floated, as shown below.



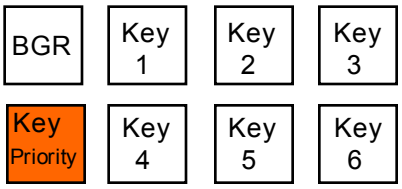
Control Panel
Transition Section

Key Priority Display
on Multi-View

The default key priority is Key 6 on top and Key 1 on the bottom.
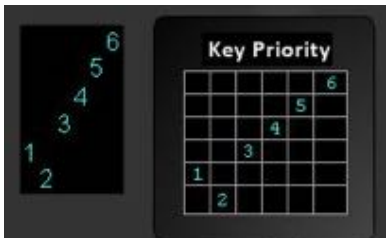
To move a keyer up one layer:

1. In the transition section, press the **[Key Priority]** button, it will illuminate orange, as shown on the right.

   Any Bkg or Keyer buttons in preview or program will turn off.

2. Select the desired key to move up, in this case Key 1, by pressing the **[Key 1]** transition button**.**

   The keyer will move up one layer and the display will update to reflect that, as shown on the right.

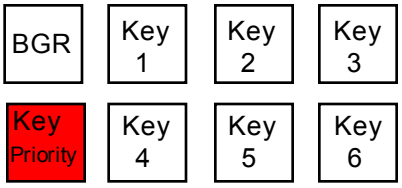
3. To move the same keyer up more layers, continue to select the Key Transition button.

4. To move a different keyer up one layer, repeat step 2.

To move a keyer down one layer:

1. In the transition section, pres the **[Key Priority]** button 2 times, it will illuminate red, as shown on the right.

   Any Bkg or Keyer buttons in preview or program will turn off.



2. Select the desired key to move down, in this case Key 3, by pressing the **[Key 3]** transition button**.**

   The keyer will move down one layer and the display will update to reflect that, as shown on the right.



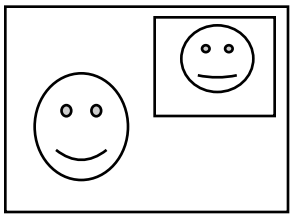
3. To move the same keyer down more layers, continue to select the Key Transition button.

4. To move a different keyer down one layer, repeat step 2.

4.5 DVE Boxes (Picture in Picture)

All 6 Keyer may have a DVE (Digital Video Effect) Box, otherwise known as a Picture-in-Picture, applied to it. In television news shows, the DVE Box is used extensively for "over-the-shoulder" boxes that may contain a still, clip or another camera.

The DVE Box enables one video or graphic to be placed in a smaller picture on top of the background video.



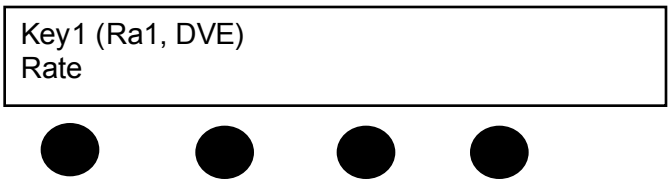
If PowerAux is enabled, Key 6 may not have DVE enabled.

4.5.1 To Create a DVE Box:

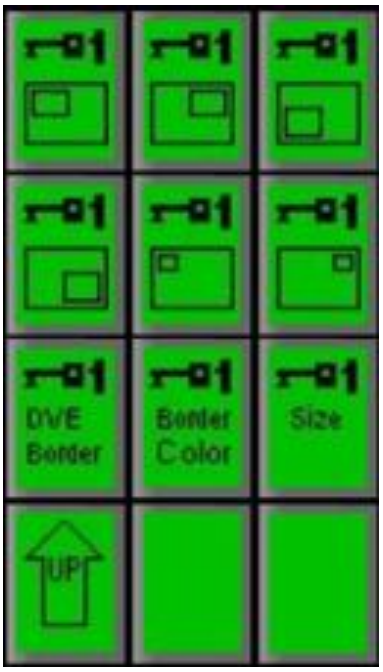
1. Press the Key transition button for the desired keyer, either **[Key 1 Transition], [Key 2 Transition]**, **[Key 3 Transition]**, **[Key 4 Transition], [Key 5 Transition]** or **[Key 6 Transition]** and it will illuminate orange, and the content of the key will appear on the preview monitor. This example will use Key 1.

2. Select the Keyer you wish to use by pressing either **[Key 1 Select]**, **[Key 2 Select], [Key 3 Select], [Key 4 Select], [Key 5 Select]** or **[Key 6 Select]**. This will assign the Device Controls to the Keyer selected, as described in section 4.4.2.

3. Press the **[DVE OnOff]** PixButton on the Keyer Modifier PixPad, which will cause the word (DVE) to appear in the display to let you know the DVE is applied, as shown below:



4. Press the **[DVE Controls]** PixButton on the PixPad, which will bring up the following PixPad of controls:



5. Select the desired DVE Box pattern preset by pressing one of the six **[DVE Box Pattern]** PixButtons. The selected DVE Box pattern will appear on the preview monitor.

6. You can change which source you would like to feed into the DVE Box by pressing another **[Source]** button in the Sources Row. When pressed, the content will appear in the DVE Box on the preview monitor.

7. Bring the previewed DVE Box to air by pressing either the **[Cut]** or **[Auto]** buttons, or using the **[Fader Arm],** or you can manually bring the DVE Box to air by pressing its **[Direct Key Button].**

8. To remove/reset the DVE box and return the Keyer to full screen mode, press the **[DVE OnOff]** PixButton. To return to the main page of the PixPad either select the **[Up]** PixButton or select the [Key Select] button in the Destinations Row.

4.5.2 Modifying a DVE Box

Several parameters of the DVE box can be modified including size, position, crop, border size and border color.

To modify a DVE box:

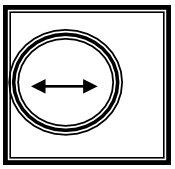
Get the desired DVE Box on the preview monitor by executing steps 1 through 5 above in section 4.5.1.

1. After selecting a Key Select device button, the Joystick will automatically follow.

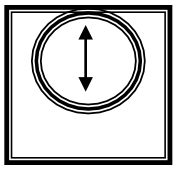


2. The position of the DVE Box may be modified by using the **Joystick**, as follows:

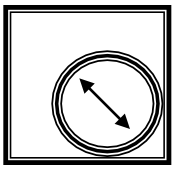
Left - Right



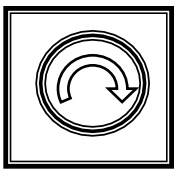
Up - Down



Diagonally



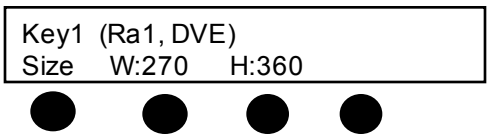
3. The size of the DVE Box may be modified by twisting the **Joystick.**



or

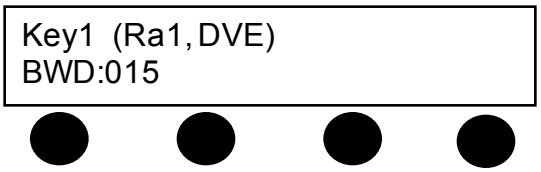


The size may also be changed by pressing the **[Size]** PixButton and using the Knobs in Device Control by twisting the **[1st Knob]** for overall size, and the **[2nd Knob]** and **[3rd Knob]** to individually control width and height respectively. The numbers refer to HD pixels (full screen 16:9, 1920x1080).



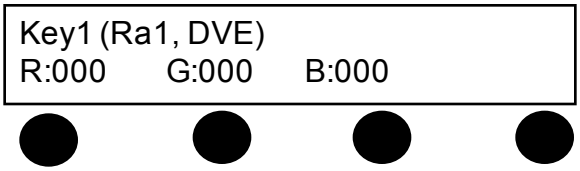
4. The edges of a DVE box may also have a simple colored border. To apply a border press the **[DVE Border]** PixButton on the PixPad in the Device Control. The panel display will read a border thickness above the 1st Knob. Turn the knob to increase /decrease the border thickness.





5. To change the border color, press the **[Border Color]** PixButton on the PixPad. The panel display will read color values for **R**ed, **G**reen & **B**lue. Turn the corresponding knobs until the desired color is reached.





4.5.3 Multiple DVE Boxes

Two DVE Boxes may be used at once, one on Key 1 and the other on Key 2. This is known as dual boxes, or a "Split-back", as shown below. To create dual boxes set one of them up on Key 1, as described above, and then set up another on Key 2 in the same way. In the same way six DVE Boxes can also be created by turning the DVE box command on in each of the six keyers.



NOTE: In the above illustration, the two DVE boxes are placed on an animated background that is playing out from the system's clip store with a crawl placed on the bottom.

4.6 Source Controls

All Broadcast Pix sources, both external live and internal graphics and clips, have various parameters which can be modified known as Source Controls. For external live sources you can set the aspect treatment as well size, crop and position sources prior to using a keyer. For internal source controls you can also set the aspect and DVE treatment, as well as any control that the device has enabled. Source Controls reside on the the actual input, in result wherever that source is outputted to, it will have the associated source controls applied to it.

To activate source controls:

1. Select a **[Source]** PixButton in the Macro Row on the control panel or SoftPanel and it will illuminate orange, as shown below. Ensure that the [Names/Memories] PixButton is not illuminated.



2. The display will read out which source is selected and the source row will have its button illuminated.

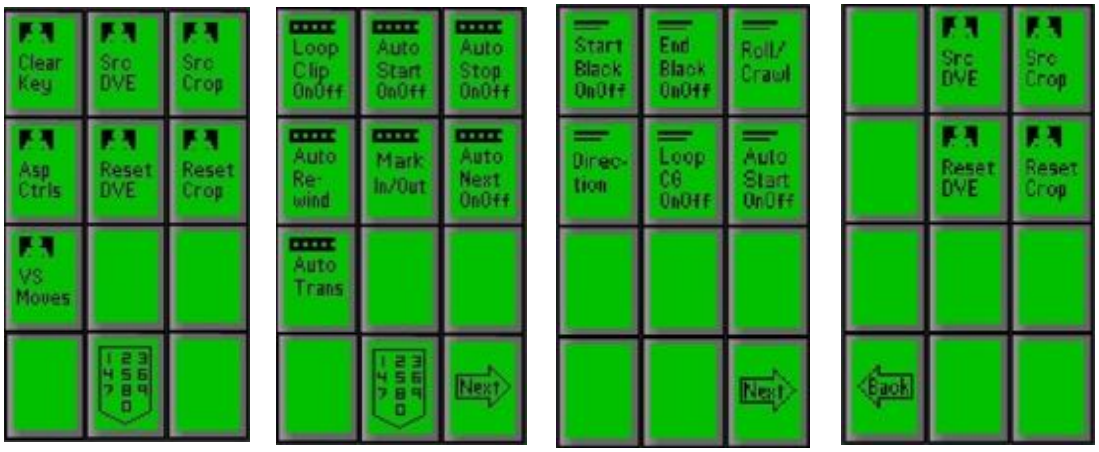
   To effect/modify another source select any mapped source on the switcher's Macro Row.

   The display will read out one of the following:

   (9N): 16:9 source with no treatment
   (9B): 16:9 source with letter box treatment
   (9F): 16:9 source with 14:9 treatment
   (9C): 16:9 source with center crop treatment
   (4N): 4:3 source with no treatment
   (4B): 4:3 source with pillar box, treatment
   (4F): 4:3 source with 14:9 treatment
   (4C): 4:3 source with center crop treatment
   (Cu): Custom aspect ratio



The PixPad will change to show the attributes for source controls, all the external live inputs will have the same PixPad, and each internal device will have its own specific one, as shown below.



External Live Source *Clip Source* *CG Source* *Still Source*

To change the aspect of a source:

1. Select the **[Asp Ctrls]** PixButton in the Source Controls PixPad. For internal sources, select the **[Next]** PixButton then the **[Asp Ctrls]** PixButton, as shown on the right.



2. Select the native aspect ratio of the source, either **[Native 4:3]** or **[Native 16:9]**, in the PixPad.

3. Now select the desired treatment effect, either **[Auto Asp Box], [Auto Asp 14:9]** or **[Auto Asp Crop]**.

   NOTE: that the Multi-View source monitors will only show the native aspect ratio, 16:9 or 4:3 boxed, whereas the Multi-View Preview and Program monitors will also show the applied treatment.



NOTE: The Animation store does not have any Aspect Controls, since all content must be 1920x1080 – 16:9

4. To use a custom aspect ratio, select the **[Cust Asp]** PixButton, as shown on the right.



5. The display and knobs will update to show width and height, default being 1920 x 1080. Turn the **[W]** (1st) and/or **[H]** (2nd) knobs to the desired setting, as shown on the right.



To apply a DVE to a source:

Similar to applying a DVE to a keyer, each source may be scaled, positioned and/or cropped on a source by source basis, without the need of using a keyer. This can compensate for incorrect video directly on the source without the need to remember to apply keyer effects.

1. Activate the source controls, as described in the previous section.

2. In the Source Controls PixPad, select the **[Src DVE]** PixButton, as shown on the right.

3. The display and knobs will update to show the X, Y and Z settings. Turn the **[X]** (1st) and/or **[Y]** (2nd) knobs to reposition the source left and/or right.



4. To scale the source larger or smaller, turn the **[Z]** (3rd) knob

   As the knobs are adjusted the source will be modified, and the final result will appear when the source is applied to Program or Preview, as shown on the right.



   The source monitor will have a DVE label applied to its source control indicators, as shown on the right.



   Similar to a keyer, the joystick on the control panel and/or Multi-View PixPad may also be used to control the DVE once the [Src DVE] PixButton has been selected.

5. To reset the DVE parameters, select the **[Reset DVE]** PixButton.



To apply a crop to a source:

1. Activate the source controls, as described in the previous section.

2. In the Source Controls PixPad, select the **[Src Crop]** PixButton, as shown on the right.



3. The display and knobs will update to show the Left, Right, Top and Bottom crop settings. Turn the **[L]** (1st), **[R]** (2nd), **[T]** (3rd), and/or **[B]** (4th) knobs to crop the sides of the image.



As the knobs are adjusted the source will be modified, and the final result will appear when the source is applied to Program or Preview. The source monitor will have a Cr label applied to its source control indicators, as shown on the right.



4. To reset the cropping, select the **[Reset Crop]** PixButton.

4.7 ClearKey™

ClearKey is Broadcast Pix's precise, highly adjustable chromakeyer. Chromakey is a method of removing a solid background color and replacing it with a different image. The most common application for chromakey (also called green/blue screen) is in news/weather production, where a person in front of a blue wall or a green wall is taped with a video camera, and then using a Chromakey the person is cut out of the image and placed on a different background, such as a weather map.

ClearKey handles challenging visuals, such as glass, smoke or fast-moving out of focus objects and creates more realistic shadow and lighting effects. If a subject casts a shadow on the background, ClearKey can make the shadow appear on the virtual set, if desired. A simple eye dropper tool and automatic functions simplifies color selection, and intuitive controls makes it easy to adjusting lighting, shadow and spill correction. Robust spill suppression removes stubborn spill from the chromakeyed objects, while preserving the natural hues of your foreground image. Source cropping can also be used to confine the keying effect to certain areas of the screen by removing unwanted material.

When using a chromakey, all controls are accessed through the Source or Keyer Controls PixPad or through the Fluent Control window on the Multi-View. Also, when a ClearKey is applied to a source, the chromakey will appear everywhere that source is applied to, i.e. program, preview, key, etc. Only external live sources and clips may have ClearKey applied to them.

The most important element to a successful chromakey is even lighting. Not only do you need to light your subject with standard 3-point lighting (Key, Fill & Back light) it is also important to evenly light your chromakey wall (the background of the subject). Once that is accomplished you are now ready to use the ClearKey feature.

4.7.1 Activating ClearKey from the Control Panel

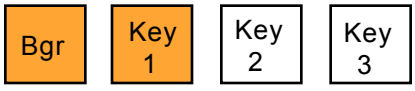
1. Place the video source which is shooting the subject to be chromakeyed in a Keyer by pressing the **[Key Select]** button of that key in the destination row.

   Then select the **[source]** button for the desired camera in the source row, as shown on the right.

   This example will assume Key 1 is the desired location and source 1 as the desired camera. You may Chromakey any external live source, or any clip from within the clip stores.



2. Bring Key 1 onto preview, by pressing the **[Key 1 Transition]** button, as shown on the right.



3. In the PixPad, which should have the Keyer PixPad active, press the **[ClearKey]** PixButton, as shown on the right.

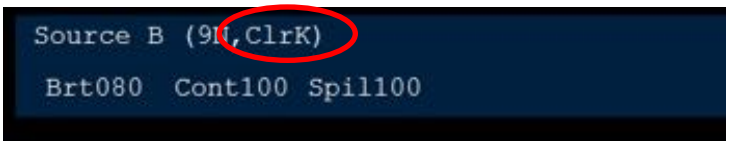


The PixPad will change to show the ClearKey Controls.

4. To turn on the ClearKey chromakey, select the **[ClearKey OnOff]** PixButton, as shown on the right.



The display on the control panel will read out ClrK at the end of the source attributes and the source window on the Multi-View will now display a colored dot in the upper left hand corner. Both of these indicate that ClearKey is on and active for that specific source, as shown below.





5. To automatically remove the colored background and get the keyer adjusted roughly 90% simply select the **[Auto]** PixButton, as shown on the right.



For most keying scenarios the auto settings may be good enough, however for more complex lighting scenarios more advanced settings are available. Please see the next section for adjusting the ClearKey settings.

4.7.2 ClearKey Settings

There are a number of ClearKey settings that may be adjusted to give you greater control of your chromakey. It is important to note that the smallest adjustment can cause a key to look good or bad. When creating a chromakey it is all about creating a wedge of color on the color wheel to generate a matte.
ClearKey has these available controls.

Hue (Hue): Position around color wheel of the wedge, the actual color of the chromakey background. Green = 120, Blue = 240. Range is 0 to 360 in degrees.

Tolerance (Tol): Size of the wedge on the color wheel. Similar to an acceptance angle, the wider the angle the more colors are accepted as transparent. This setting should be used only to slightly increase the colors being keyed out, more as a fine adjusted. Range is 0 to 100.

Brightness (Brit): Is the amount of the background image being keyed out.
Range is -255 to 255.

Contrast (Cont): Is the amount of the foreground image that will be preserved.
Range is 0 to 250.

Spill (Spil): Removes/suppresses any unwanted spill from the background that may be cast onto your foreground where the matte is not totally opaque or transparent. The more spill that is removed the more of the natural hues on the foreground may be removed, resulting in a pink/purple mask over your image. Range is 0 to 250.

Keep Yellow & Cyan (Mode 1): Works with the amount of spill suppression removed, but preserves both the yellow and cyan hues in the opaque areas of the image. If keying on blue, it will preserve both magenta and cyan hues.

Keep None (Mode 2): Works with the amount of spill suppression removed, but both yellow and cyan hues in the opaque areas will be removed from the image. If keying on blue, both magenta and cyan hues will be removed.

Keep Yellow (Mode 3): Works with the amount of spill suppression removed, but preserves yellow hues in the opaque areas of the image. If keying on blue, it will preserve magenta hues.

Keep Cyan (Mode 4): Works with the amount of spill suppression removed, but preserves cyan hues in the opaque areas of the image.

Mask: Shows the matte of the image being keyed out and is useful when adjusting the Brightness and Contrast controls. Dark blue signifies the part of the image that will be completely removed/transparent. Yellow signifies the part of the image that will be preserved as it is opaque. Grey areas will be slightly transparent, allowing you to see through the image, i.e. for smoke, glass or shadows.

4.7.3 Adjusting ClearKey

1. Assuming that all the steps in section 4.7.1 have been completed, the PixPad should display the ClearKey Controls menu, as shown on the right.



   To view the matte of what is being keyed out, press the **[Show Mask]** PixButton, as shown on the right.

   NOTE: This step should only be done in preview or in pre-production, as your output will display the mask.

   The video on the Multi-View and output will display blue, yellow and grey tones, as shown on the right.



2. Press the **[Mask Cntrls]** PixButton, and the display will change to show Brightness (Brit), Contrast (Cont) and Spill (Spil) controls, as shown on the right.

3. Turn the **[1st knob]** for Brightness until the background is as blue as possible, signifying that the background is completely transparent.



4. Turn the **[2nd knob]** for Contrast until the foreground is as yellow as possible, signifying that your subject is opaque and will not be keyed out.

   NOTE: Brightness and Contrast interact with each other, any big change in one control may need to be compensated in the other.

5. To turn off the mask, press the **[Show Mask]** PixButton, and your video will now return and you should see keying over a background in your preview monitor., as shown on the right.



   To change the background, simply change the source assigned to the Preview bus.

6. If you notice too much of the background color being spilled onto your foreground, slowly turn the **[3rd Knob]** to affect the spill suppression, the higher the number the more of the background color will be removed from the foreground. Too much spill removal may result in a pink/purple mask over your video.



7. If you now notice that yellow or cyan colors are being removed, select the **[Hue Cntrls]** PixButton, as shown on the right.

8. The display will change to show Hue (Hue), Tolerance (Tol) and Mode, as shown on the right.



Turn the **[3rd Knob]** to the according setting:
Keep Yellow & Cyan (Mode 1)
Keep None (Mode 2)
Keep Yellow (Mode 3)
Keep Cyan (Mode 4)

When chromakeying against a blue background, yellow is replaced with magenta.

To return to the Brightness, Contract and Spill knobs, select the **[Mask Cntrls]** PixButton.



9. To crop unwanted material from your video, press the **[CKey Crop]** PixButton and the knobs will change to show cropping controls, as shown on the right.



Turn the knob to the right to remove from either side, to the left to reveal more.

To reset the cropping press the **[Crop Reset]** PIxButton.

4.8 Luma key

Similar to chromakey, luminance key or Luma key is a method of removing the dark portions of a video picture and replacing that with another image with a different image. A common application for Luma key is in worship productions, where white song words with a black background from a computer signal input (like PowerPoint), and then using a Luma key the words are cut out of the image and placed on a different background, such as a clip from the clip store or over a camera filming the choir.
One Luma key comes standard with the Broadcast Pix switcher, and as an option multiple sources may have a Luma key assigned to it.
When using a Luma key, all controls are accessed through the Source Controls PixPad. Also, when a Luma key is applied to a source, the Luma key will appear everywhere that source is applied to, i.e. program, preview, key, etc.

4.8.1 Activating & Adjusting the Luma key

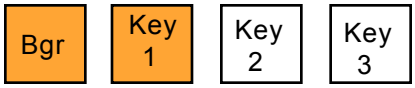
1. Place the video source to be lumakeyed in a Keyer by pressing the **[Key Select]** button of that key in the destination row.

   Then select the **[source]** button for the desired camera in the source row, as shown on the right.

   This example will assume Key 1 is the desired location and source 1 as the desired camera. You may Luma key any external live source, or any clip from within the clip stores.

2. Bring Key 1 onto preview, by pressing the **[Key 1 Transition]** button, as shown on the right.

3. In the PixPad, which should have the Keyer PixPad active, press the **[ClearKey]** PixButton, as shown on the right.

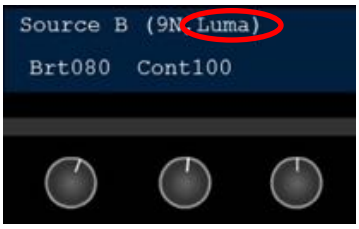
   The PixPad will change to show the ClearKey Controls.

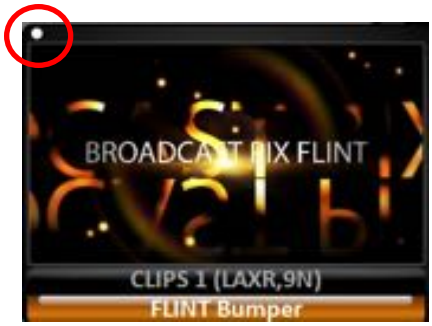
   

4. To turn on the Luma Key, select the **[Luma Key OnOff]** PixButton, as shown on the right.

5. The display on the control panel will read out Luma at the end of the source attributes and the source window on the Multi-View will now display a white dot in the upper left hand corner. Bother of these indicate that Luma Key is on and active for that specific source, as shown on the right.





6. Adjust the **[1st Knob]** Brightness value by turning its knob under the display. The Brightness setting determines the range of the brightness that is cut out/removed. The greater amount of clip the more transparent the source will be.

7. Adjust the **[2nd Knob]** Contrast value by turning its knob under the display. The Contrast setting determines the overall amount of brightness that is cut out. The greater amount of gain the harsher the edges will be, too much gain will make the entire source transparent.

8. To invert the keying, press **[Invert]** PixButton in the PixPad, as shown on the right.



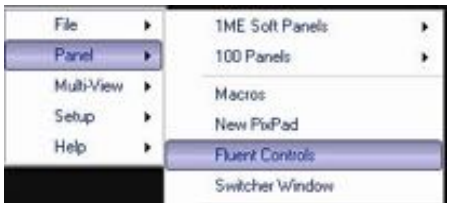
The display will show the letters Inv. Inverting the key reverses the values used in the luminance key. Inverting the key can assist in fine-tuning the key.

4.9 Fluent Controls

The chromakey, lumakey and source control settings may also be modified and controlled from the Multi-View using the Fluent Controls window and adjusting settings with the mouse. Fluent Controls gives you a graphical representation of the color being keyed out and an easier way of modifying settings. All the settings described in the previous sections are available for control inside the Fluent Controls window.

Activating ClearKey on the Multi-View

1. Open the Fluent Controls window by selecting the **Panel, Fluent Controls** menu from the Broadcast Pix menu button, as shown on the right.



2. The Fluent Controls window will appear. Select the **ClearKey** tab, as shown on the right.



Select the desired input to modify by clicking on the **Source:** pull down menu. This example will use Clips 1. Any external or internal source may be selected, however only external sources and clips may have ClearKey or luma key assigned.

You may also select the ClearKey indicator on the source window on the Multi-View to automatically open Fluent Controls and to assign it the selected source.

3. To turn on the ClearKey chromakey, click on the **ClearKey** button and it will illuminate blue, as shown on the right.



4. To automatically remove the colored background and get the keyer adjusted roughly 90% simply select the **Auto** button, as shown on the right.



5. To modify the ClearKey settings, turn each setting wheel based on the description in sections 4.7.2 and 4.7.3.

6. To assist with keying the correct values, each value may be disabled to view how it is affecting the key. To disable a setting, click on the green activator button for any/all of the values, the button will turn red, and shown on the right. To enable the setting click on the red activator button.

7. To copy and paste values from one input to another, configure one input with the desired settings then click on the **Store** button, as shown on the right.



In the Source: drop down menu select a different input and click on the **Recall** button. Now all the values from the previous input are copied to this newly selected input.

To adjust Lumakey controls:

1. Repeat steps 1 through 2 above, by opening the Fluent Controls windows.

2. Click on the **Lumakey** button, and it will illuminate blue.

3. Turn the brightness and contrast wheels to the desired settings.

   Note that all other settings are disabled, as they are not available for Lumakey.

To invert the chroma/luma key:

1. In the Fluent Controls window, select the **Invert** button and it will illuminate blue, as shown on the right.



2. To revert to normal video, reselect the **Invert** button and it will turn black.

To change the aspect ratio:

1. In the Fluent Controls window, select the desired input to modify by clicking on the **Source:** pull down menu.



2. Select the **Aspect** tab, as shown on the right.

3. Click on the native aspect ratio, either **4:3** or **16:9** button, as shown on the right.

4. Select a treatment in the Aspect Correction section, either **None, Box, Crop, 14:9** or **Custom.**



If the input is set to 16:9, then all corrections will be ignored, as systems process video at 16:9

If the Custom correction is selected, enter the **Width** and **Height** values, as shown on the right.



To change the source controls:

1. In the Fluent Controls window, select the desired input to modify by clicking on the **Source:** pull down menu.



2. Select the **DVE/Crop** tab, as shown on the right.

3. As described in the section 4.6, adjust the **Source DVE** and/or **Source Crop** values using the associated text fields, as shown on the right.



4. To reset the the Source DVE and/or Source Crop select the **Reset DVE** and/or **Reset Crop** buttons.

4.9.1 Virtual Studios

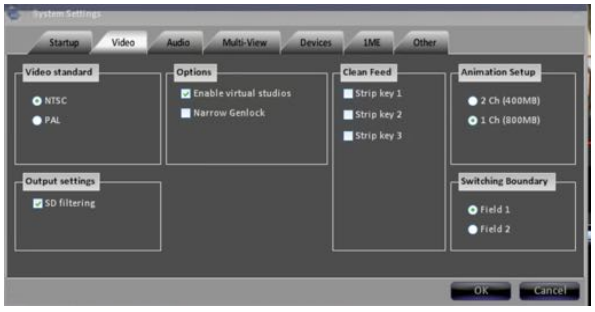
Another standard function of the Fluent Controls window is the ability to marry a background image to a live input with a chromakey, this feature is called Virtual Studios. Virtual Studios allows for up to 8 different angles, which can be assigned to live inputs and the 2 clip stores to be married with a static file, without using any of the resources of the Stills, CG or Animation stores. Each angle can then be saved with up to 4 different moves, allowing for trackless virtual sets, as if a camera operator was moving the camera. Once a background is married with an input, it may be selected on the Preview/Program/Source rows and used as any other input into the switcher and it utilizes Keys 4/5/6. If a system has those keyers enabled, they are temporally hidden from use, until Virtual Studios are turned off. Although there are up to 8 'angles' which can activated, only 3 can be used on Preview, Program or Keyer simultaneously. Virtual Studios is a global attribute which applies to all shows, but can be turned on or off. All assignments and moves are saved in the show for unlimited presets.

To enable Virtual Studios:



1. Click on the Broadcast Pix menu button.

2. Select the **Setup, System Settings…** option, as shown on the right.



3. In the System Settings window, select the **Video** tab and place a check mark next to the **Enable virtual studios** option under the Options section, as shown on the right.

4. Click on the **OK** button.

   Virtual Sets have now been enabled, system wide.

   Note: The Multi-View and/or the Program output video may flash, this setting should be changed during pre-production and not while 'on-air'.

5. To disable Virtual Sets, repeat steps 1-4 above.

NOTE: Virtual Sets is only available on 1ME systems, systems with the 2ME SoftPanel may not use Virtual Sets.

Virtual Studio Considerations:

Once the ClearKey settings are adjusted, the source is ready to be used as any other source mapped to your show. When ClearKey is enabled for the source, a colored dot will appear on each source window, however the the source window will not show the Virtual Set composition. The composition is only visible when on Preview, Program or PowerAux, as shown below.

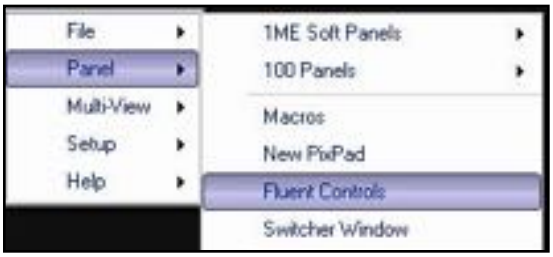


Virtual Studios may be used on any bus on the switcher, allowing them to be used in a keyer with a DVE to create a dual box or routed to PowerAux. However, they may be used in up to 3 buses simultaneously. A Virtual Set is in use when assigned to a Keyer, Preview, Program or PowerAux. When a 4th Virtual Set is attempted to be selected on an output, a warning will appear in the display 'Virtual Set Limit Reached'. The same is true if the same source (i.e. input 1) is used on Preview, Program and Key 1, this uses 3 of the 3 resources. It is recommended to use Memories to clear out the Virtual Set Angle from a keyer when not in use.

When 1 PowerAux is enabled, Key 3 becomes a Graphics Keyer where only Anim 1, Anim 2 or Black can be routed to Key 3 and no DVE is available. Keyers 1 & 2 are full function keyers with DVE.

When 2 PowerAuxes are enabled, Key 3 & 2 become Graphics Keyers where only Anim 1, Anim 2 or Black can be routed to Keys 3 & 2 and no DVE is available. Keyer 1 is a full function keyer with DVE.

To activate angles:



1. Open the Fluent Controls window by selecting the **Panel, Fluent Controls** menu from the Broadcast Pix menu button, as shown on the right.



2. Along the left edge of the Fluent Control window, select the **Virtual Studios** button, it will illuminate blue as shown of the right.

3. The top section, labeled Virtual Angles, designates how many inputs on the system will be used as a Virtual Set input.

   Click on the **Virtual Angles** menu bar, and drop down menu will appear.



4. In the **Angles To Display** menu, select how many inputs to show and use for Virtual Sets, either **1, 2, 3, 4, 5, 6, 7** or **8**, as shown on the right.

   A thumbnail for each angle will appear along the top strip of angles. Some thumbnails may appear grey, these are unassigned angles.



5. To assign a switcher input to an angle, click on the **(Assign…)** button on the bottom of the thumbnail and a pop up window will appear, as shown on the right.



6. In the Assign Angle Source window, **select** which switcher input, Clip 1 or Clip 2, will be used, as shown on the right.

7. Click on the **OK** button.

   The source is now married with an angle.

To assign a background image:

1. Click on the **Images** tab, as shown on the right.



2. Click on the **Images:** menu bar and a drop down menu will appear, showing an image for each folder saved on the hard drive.



All images must live in a folder in the directory C:graphics\Virtual Sets.

Files must be 1920x1080 using a .png, .tga, .jpg or .bmp file extension.

Other frame sizes and formats may not scale correctly, it is recommended to use the Image Editor to save out our Virtual Set background, see section 4.9.2

5 stock sets are provided with each system, users may add or remove to this list using standard Windows conventions of copy/paste/save.



3. **Select** the folder of images to browse using the mouse, in this example Broadcast.

4. The Images pane will update showing you thumbnails of all the files in the folder, as shown on the right.

To change the size of these thumbnails, click on the **Images:** menu bar, then **Image Size** followed by **Small, Medium, Large** or **Extra Large,** as shown on the right.



5. If new images are added while the BPSwitcher application is opened, the Virtual Sets directory must be refreshed.

Click on the **Images:** menu bar and click on the **Re-scan Virtual Sets** option.

6. Click on the desired **Angle** in the Virtual Angles pane, it will highlight blue, like Angle 3 as shown on the right.



7. In the Images pane, select the desired **thumbnail**, a blue frame will appear, as shown on the right.

   The selected image will now be married with assigned source.

   Selecting another angle will not change the Images pane, allowing for quick selection of another background within the same folder.

   To select an image within the folder of the selected angle, **double-click** on the angle thumbnail and the Images pane will change, as shown on the right with Angle 1.



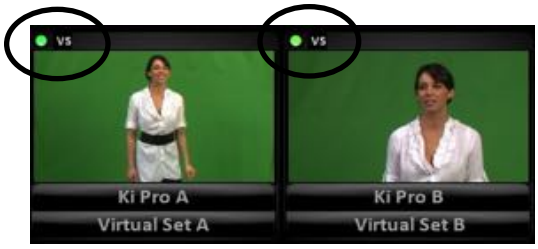
To adjust the chromakey settings:

1. Once a background has been assigned to an angle, all ClearKey controls can be modified from the control panel or Source Settings of the Fluent Controls window, as described in previous section.

2. Selecting the desired angle to modify in the Virtual Studios panel prior to selecting the Source Settings button will automatically change the source drop down menu, allowing for quick ClearKey modification.



   Sources active in Virtual Studios, and not simply enabled with a chromakey, will have a 'VS' icon visible on each source monitor, as shown on the right. Clicking on the VS icon will open Fluent Controls and navigate to the selected angle to the Move Editor tab.



To create moves for an angle:

1. Select the desired Angle to create moves for in the Virtual Angles pane, the Angle will highlight blue, as shown on the right.



2. Click on the **Move Editor** tab, as shown on the right.

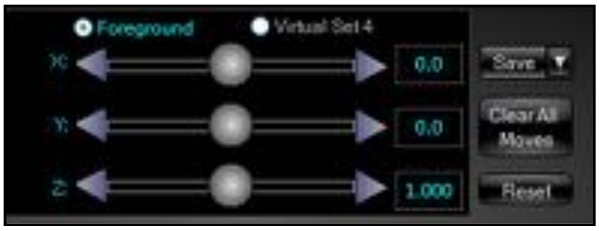


   Since any move is applied to the source automatically, the initial saving of moves should be done in pre-production to avoid any on-air mistakes. Any minor adjustments can be saved in a production.

3. To view the positioning of your foreground with the background, it is recommended to put the source angle in preview to see the composition. Either manually place the source in **Preview** or select the **View On Preview** button in the Move Editor tab, as shown on the right.



4. Depending on the background selected for the Virtual Set, the foreground talent may need to be positioned and sized to fit properly in the set. Click on the **Foreground** radio button, as shown on the right.



5. Position the foreground video using the **X** and **Y** sliders.

6. Size the foreground video using the **Z** slider.

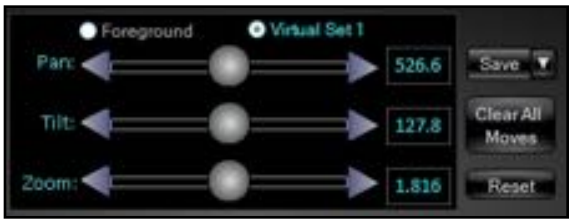
   As the example on the right shows, you can easily move your talent to make the background monitor visible.





7. Once the talent has been properly placed in the set, the entire composition can be linked and then sized, positioned and moved together.

   Click on the **Virtual Set X** radio button, as shown on the right.



8. Similar to the foreground controls, the virtual set can be positioned and scaled.

   To scale the virtual set use the **Zoom** slider to zoom the composition in. Moving the slider to the right zooms into the image and to the left zooms out.

   NOTE: You can not zoom out passed 1.0 as the composition has a max resolution limit of 1920x1080.



9. To position the virtual set, use the **Pan** and **Tilt** sliders to move the set. Moving the slider to the right pans left and tilts up the image and to the left pans right and tilts down.

   NOTE: The composition can not be positioned, until it has been zoomed in.



   As the example to the right shows you can virtually zoom into the composition, as if there was a camera operator.

10. To reset all the scaling and positioning to return to the default state, press the **Reset** button, as shown on the right.



11. As various moves have been scaled and positioned according, moves can be saved for future recall. Click on the **Save** drop down menu.

12. Select **Save A, Save B, Save C** or **Save D**, as shown on the right.



   NOTE: There is no undo, when a move is saved it will overwrite the previously saved move.

To recall moves for an angle:

1. Select the desired Angle in the Virtual Angles pane, the Angle will highlight blue, as shown on the right.



2. Select the desired move rate using the predefined speeds of **Cut** (0), **F** (2 seconds), **M** (5 seconds) or **S** (10 seconds), the button will illuminate blue, as shown on the right.



3. To enter a custom speed, type a number in the **Secs.** text field from 0 to 999 seconds. After entering a number, press **enter** on the keyboard.

4. Click on the Moves: **A, B, C** or **D** button.

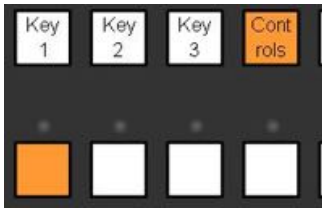
   The Virtual Set will move from the current position to the saved move at the selected rate.



To control Virtual Studios from the Control Panel:

Most of the controls and settings from Fluent Controls can also be controlled from a physical panel or SoftPanel. This provides for a more tactile experience and a quick way to adjust moves and positions smoothly with the joystick.

1. Activate the source controls of the desired source, select the **[Controls]** button in the destination row, and select the desired source in the source row, as shown on the right.



2. The PixPad will change showing the available controls, press the **[VS Moves]** PixButton, as shown on the right.

   The PixPad will update showing the Virtual Studio controls.

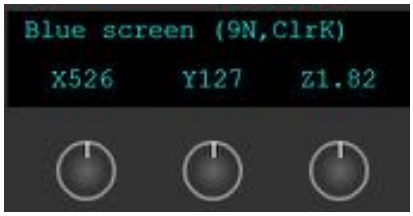


3. To adjust the foreground video, press the **[VS Foreground]** PixButton, as shown on the right.



The display will update showing the X, Y Z controls, similar to the Move Editor.

4. Adjust the **[Knob]** controls to reposition and scale the foreground, as shown on the right.



The joystick can also be used, either on the panel or Multi-View PixPad to adjust the scale and positioning.

5. Once the foreground it set, or to manually adjust/tweak the Virtual Set press the **[VS Set Cntrls]** PixButton, as shown on the right.



The display will update showing the Pan, Tilt and Zoom controls, similar to the Move Editor.

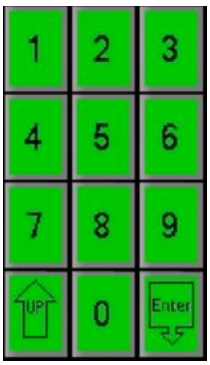
6. Either by using the joystick or **[Knob]** controls, move the Virtual Set.

7. To recall a saved move, select the **[Move A], [Move B], [Move C]** or **[Move D]** PixButton.

8. To select a move rate, press the **[Move Rate]** PixButton, as shown on the right.



9. The PixPad will change showing a numeric pad, **enter** the desired move rate and press the **[Enter]** PixButton, as shown on the right.



10. To save a move, select the **[Save Move]** PixButton, the PixPad with change showing Move A, Move, B, Move C and Move D, **select** the desired Move and the Move will be updated.

4.9.2 AutoFlags

As described in previous sections all Broadcast Pix systems can mix and match 4:3 sources with 16:9 sources each with their own unique and custom aspect ratios, without any additional delay. Traditionally a 4:3 source in a 16:9 production will show black pillar boxes on the left and right of the screen. With AutoFlags, the black sides can now be replaced with a custom image. This image could be as simple as station call letters, to a more complex graphic with the station logo. AutoFlags uses the same techniques of assigning a virtual background, as described in the previous section.

To assign an image for AutoFlags:

1. Activate Virtual Studios and assign a background to a Virtual Angle, as described in the previous section.

2. Be sure to create and save a custom image in a folder in the directory C:graphics\Virtual Sets.

   Files must be 1920x1080 using a .png, .tga, .jpg or .bmp file extension.

3. Ensure that ClearKey is turned off, and the will automatically be removed and replaced with the custom image selected as the background for the Virtual Angle.

4. The AutoFlags will appear on the source when applied on Program, Preview or a keyer, as shown on the right.





4.9.3 Image Editor

The Image Editor of Fluent Controls is designed for quick modification of a still image to create a backdrop for a virtual set, without the need of moving to another system or application. It allows for lower than HD resolution files, like ones from the Internet, to be enlarged to 1920x1080, and it allows higher resolution files, like from a digital camera, to be cropped and scaled down to 1920x1080 and made into variations for different Angles. In addition, other basic photo enhancements are included, like brightness, contrast and blur to give the right depth of field to your Virtual Set.

To import an image:

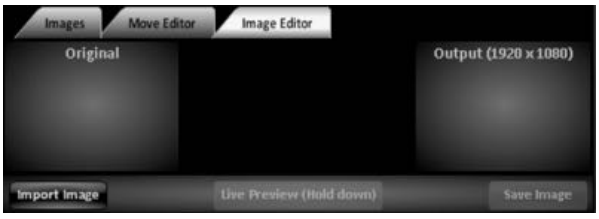
1. Open the Fluent Controls window, if not already open, by selecting the **Panel, Fluent Controls** menu.

2. Click on the **Virtual Studios** button, and it will highlight blue, as shown on the right.



3. Click on the **Image Editor** tab, as shown on the right.

4. On the bottom left edge of the Image pane, click on the **Import Image** button.



5. A Windows open dialog box will appear, **navigate** to the desired location path and click on the **Open** button.

   You may also **drag** a file from the desktop or a Windows Explore window into any section of the Image Editor.

   A thumbnail of the raw image will be shown in the Original Image section and the final cropped and processed output will appear in the Output section.



To modify an image:



1. Depending on the original image size, the image may be zoomed in by **clicking, holding down** and **dragging** the edge of the yellow frame **inwards**, as shown on the right.

   To zoom out, **click, hold down** and **drag** the edge of the yellow frame **outwards.**

   The yellow frame represents the area to be used in the output file.

2. To reposition the newly cropped image, **click** and **drag** anywhere on the original image.

3. In the middle of the Image Editor, there are basic controls to modify the picture.

   Move the sliders to the **right** to increase the Brightness/Contrast/Gamma/Blur.

   The blur slider is useful to add the correct amount of depth of field to your image.

   Move them to the **left** to decrease.



4. Clicking on the individual **label**, i.e. Brighten, will reset the value and remove the effect.

5. To flip the image horizontally, select the **Flip X** checkbox.

6. To ignore the 16:9 aspect ratio and to stretch the image, select the **Ignore Aspect Ratio** checkbox.

7. To restore the image back to the original with no effect, click on the **Reset All** button.

8. After applying the desired effects, the image may be temporally sent to the selected Angle so it may be previewed in the Broadcast Pix Switcher, without the need of saving and importing the file.

   Select the desired **Angle**, then click and hold down on the **Live Preview (Hold down)** button, as shown on the right.



   The Output image will now be sent to the selected angle for previewing, as shown on the right.



   Releasing the mouse, will return the selected Angle back to the assigned image.

Exporting an image:

1. Once the image is modified to your liking, the file can be exported for use in the Images section of the Virtual Set (or the still store of the switcher for use as a background).

   In the Output Image section, click on the **Save Image** button, as shown on the right.



2. A Windows Save as window will appear, navigate to **C:\graphics\Virtual Sets** and either **create** a new folder or **select** an existing folder of images, in this example 'Milan'.

3. **Name** the file, in this example 'Duomo', as shown on the right.



4. Click on the **Save** button.

   A 1920x1080 .png file will be created to the directory.

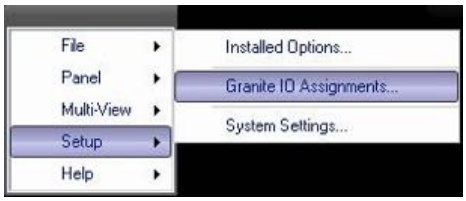
5. The newly created image can now be used in the Images pane of Virtual Sets, as described in section 4.9.1.

4.10 External Key

The Broadcast Pix Granite systems supports 1 external keyer, useful when connecting an external graphics system to use in conjunction with the Broadcast Pix. It supports clip and gain adjustments, unshaped signals and key inversion and may be used on any key layer. For the external key to work properly the external CG machine needs to provide a Key Cut and a Key Fill signal and use 2 inputs on the Granite Switcher. Any input may be used as the Key Fill, however input 11 (K1) must be used for the Key Cut Signal.

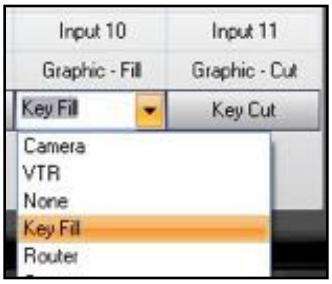
4.10.1 To setup the External Key:

1. Select **Setup, Granite IO Assignments….,** then click on the **Input Assignment** button. To assign the inputs being used for the Cut and Fill channels, this step is usually done in pre-production.



2. **Name** the Cut and Fill channels with a custom name as described in section 1.8 This example will use Graphic-Cut and Graphic-Fill.

3. Under the **Icon Type** drop down menu, select **Key Fill** under the drop down menu for the Fill channel and **Key Cut** for the Cut channel on input 11.
Apply your changes by selecting **OK** in the Granite Input Assignments window.
Click on **OK** in the Granite IO Assignments window, to close.



4. Map the Key Fill input using PixMaster, as described in section 3.7.1. Once the show is saved, the Fill channel will automatically get assigned a custom PixButton, as shown below. The Fill channel has a CG icon with a F next to it.



4.10.2 External Key Operation

The external key may be assigned to any Key, except Key 6 if PowerAux is enabled. When the Key Fill input is assigned to a keyer, the Cut channel is automatically assigned to the keyer as well. When the external keyer is in use, all the Keyer Modifiers discussed in section 4 are still available. Note that the external cut signal is not assignable or visible on the Multi-View. This example will use Key 4.

To operate the external keyer:

1. Select the **[Key 4 Select]** PixButton in the Destinations Row, it will illuminate orange, as shown below.

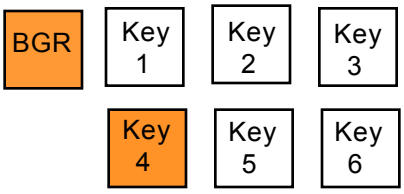


2. Select the **[CG Fill]** button using the Sources Row.
   The PixPad will change, showing the Key 4 Modifiers and the display will change showing Clip and Gain adjustments, as shown below.





3. To preview the external keyer over your background video, select the **[Key 4 Transition]** button.



4. Adjust the Clip by using the **[Clip Knob]** and adjust the Gain by using the **[Gain Knob]**. To invert the key to adjust the clip/gain settings, select the **[X Key Invert]** PixButton. The display will read out **Inv.** To turn off the invert, reselect the [X Key Invert] PixButton.

4.11 Auxiliary Output Control

Auxiliary (Aux) outputs are additional outputs of individual inputs that can be sent to various locations for secondary use, like an external monitor for engineering or a slo-motion device for sports applications. All Granite Auxes route the input signal to the outputs. No format, aspect or timing conversion is done. In addition, only external live inputs (plus Program, Preview & Clean Feed) may be routed, no internal graphics or clips may be sent to an Aux output. The PowerAux option allows for up to 2 outputs (Aux 1 & 2) to convert and allow internal sources, see section 4.11.4.

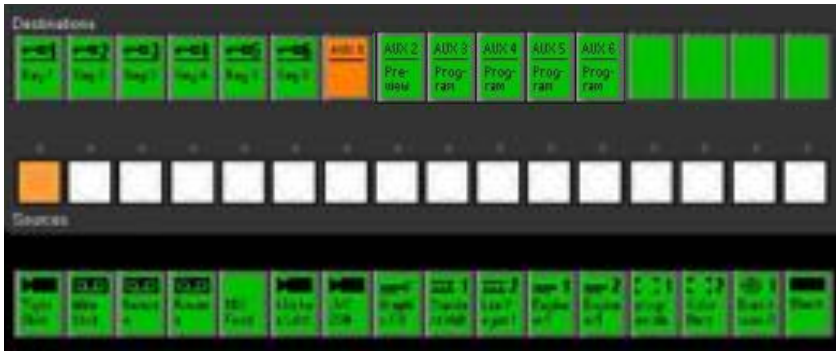
4.11.1 Aux Output on a Granite 2000

Granite 2000 switchers have up to 6 Aux outputs, only the SDI outputs may be used as Aux outputs, and Auxes 1-6 may be controlled from the Control Panel.
Once an output is assigned as an Auxiliary output in the Granite Output Assignments, see section 1.8, they are then available for use.

To operate Aux 1-6:

1. On the Control Panel, press the **[Aux 1], [Aux 2], [Aux 3], [Aux 4], [Aux 5]** or **[Aux 6]** PixButton in the Destinations Row and it will illuminate orange, as shown below.

   The display will also read out what input is currently selected (if any) and the source row will display the currently selected source.



2. Select the source you wish to assign to the Aux by pressing its **[Source]** button in the Sources Row, and it will illuminate orange, and the video will be sent to the selected output. In addition, the Aux Tab of the Multi-View will show the name of the source selected if the Aux/About Tab is selected as a floating window.

   You may select only external lives sources for Aux 1 – Aux 6.

NOTE: Since Aux bus selection is a vertical interval cut, there may be a glitch on the Aux output if switching between different formats (SD to HD) and if switching between genlocked and non-genlocked sources.

4.11.2 Aux Output on Granite 2000+, 2000X

On + and X models up to 12 Auxiliary outputs are available, however only 10 are controllable from the 2000 control panel, as described in section 4.11.1. As described in section 1.8, you may assign Default Aux Sources to the Granite Output Assignments. When a show is loaded, the sources assigned are automatically routed to the outputs. For rapid control of these outputs, optional Remote Panels are needed.

To assign default aux sources:

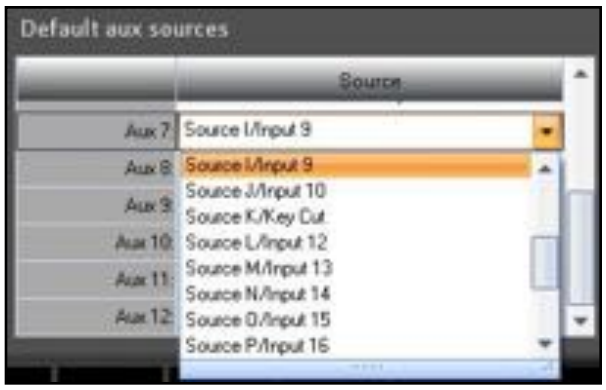
1. Open the Granite Output Assignment window.

   Select **Setup, Granite IO Assignments…** then click on the **Output Assignment** button.



2. In Default aux sources section, select the desired Aux output, and click on the **Source** drop down menu, as shown on the right. The list will show all the available inputs.

   Select the desired **input**.



3. Repeat step 2 for all the Aux outputs.

4. Click on the **OK** button to apply the changes.

5. In the Granite IO Assignments window, click on the **OK** button to close the window.

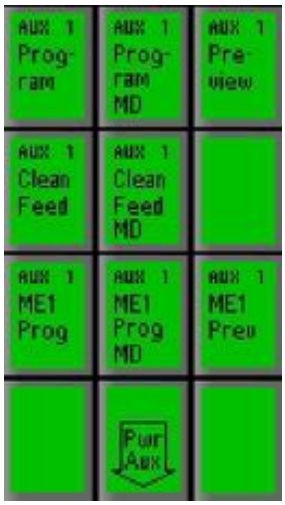


4.11.3 Assigning Output Sources

In addition to routing external live sources mapped to the switcher, you may also assign any output source to an Auxiliary output. Output Sources are Program, Preview and Clean Feed.

1. Setup your Auxes as described in sections 4.11

   When an Aux PixButton is selected in the Destinations Row, the PixPad will show the selectable outputs, as shown on the right.



2. Select the desired [Output] PixButton, either **[Program], [Program MD], [Preview], [Clean Feed]** or **[Clean Feed MD].**

NOTE: The ME1 Prog and ME1 Prev buttons are not selectable, since they dedicated for Granite 2ME switchers or when the 2ME SoftPanel is enabled.

4.11.4 PowerAux Control

For the most part, traditional switchers offer only one layer to be sent to an Auxiliary Output. All Broadcast Pix Granite switchers have the ability to overlay any/all of Keys 1-6 onto one Aux output, this is known as PowerAux. This feature is ideal for producing simultaneous program from the same system for two or three different audiences, without the cost and complexity of a 2ME switcher. In addition, PowerAux converts the selected input to the format assigned in Granite Output Assignments and allows internal clips and graphics to be sent as an auxiliary output. There are up to (3) two PowerAux outputs, which are applied to Aux 1 & Aux 2. Controls are accessed through the Aux Modifier PixPads in the Device Control.

To Enable PowerAux:

1. Click on the Broadcast Pix menu button.

2. Select the **Setup, System Settings…** option, as shown on the right.



3. In the System Settings window, click on the **1ME** tab.

4. Under the 1ME bus mode section, select either the **5 keys, 1 graphic key, 1 PowerAux** option.



   This option will give you 1 PowerAux output, however the DVE capability on Key 6 will be disabled and only animations or black can be assigned to that keyer.

   Or the **4 keys, 2 graphic keys, 2 PowerAux** option.

   This option will give you 2 PowerAux outputs, however the DVE capability on Key 5 & 6 will be disabled and only animations or black can be assigned to that keyer.

   Or the **6 keys** option, which turns off the all PowerAux outputs, and allows for 6 keyers all with DVE functionality.

5. A restart message will appear on the bottom of the window.

   Click on the **OK** button to close the window.



6. Close the Broadcast Pix Switcher application by selecting **File, Quit.**

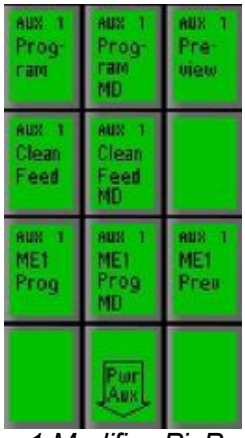
7. Restart the application by double-clicking the Broadcast Pix Switcher icon on the desktop.

To Access PowerAux:

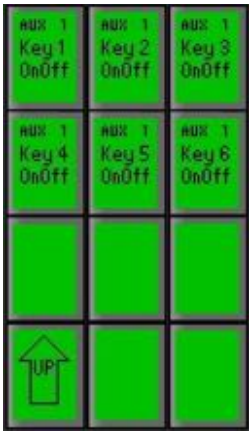
1. Set up an output to PowerAux 1 or PowerAux 2 in Granite Output Assignments, as described in section 1.8.

2. Assign an input to Aux 1 or Aux 2, as described in section 4.11.1.

3. Select the **[Aux 1]** or **[Aux 2]** button in the Destination Row and the PixPad will display the following:



Aux 1 Modifier PixPad



Aux 1 PowerAux PixPad

3. In the Aux Modifier PixPad select the **[Pwr Aux]** PixButton.
The PowerAux PixPad will appear, as shown above.

4. Select the desired Key(s) to be overlaid onto the Aux output either **[Key 1 OnOff]**, **[Key 2 OnOff]**, **[Key 3 OnOff], [Key 4 OnOff], [Key 5 OnOff]** and/or **[Key 6 OnOff].** The display will read out the keys you have on Aux 1. The Keyers will fade on/off based off the Keyer Rate, as described in section 4.4.7.

NOTE: Although you can use PowerAux on the Preview and Program outputs, if a keyer is already on Preview or Program, you can not remove the keyer from only the PowerAux. You can, however, keep the keyer on PowerAux, if you remove it from Preview or Program.

4.11.5 Optional Remote Panels

As an option you may remotely control any Switcher output with Remote Panels. The Remote Panels are 1RU frames that connect directly to the Granite Switcher and to the Granite Server to provide Aux bus selection, as well as act as a Macro Player to trigger premade switcher effects. They are ideal in replay applications where each replay station needs control of an output to select an input or for an engineering station to monitor color and shading adjustments of multiple inputs.

Up to 40 Remote panels may be connected to the Granite System through a 100BASE-T TCP/IP connection. Each panel can be configured with different user modes, which can restrict or allow access of any input or output.

4.11.6 Remote Panel Wiring

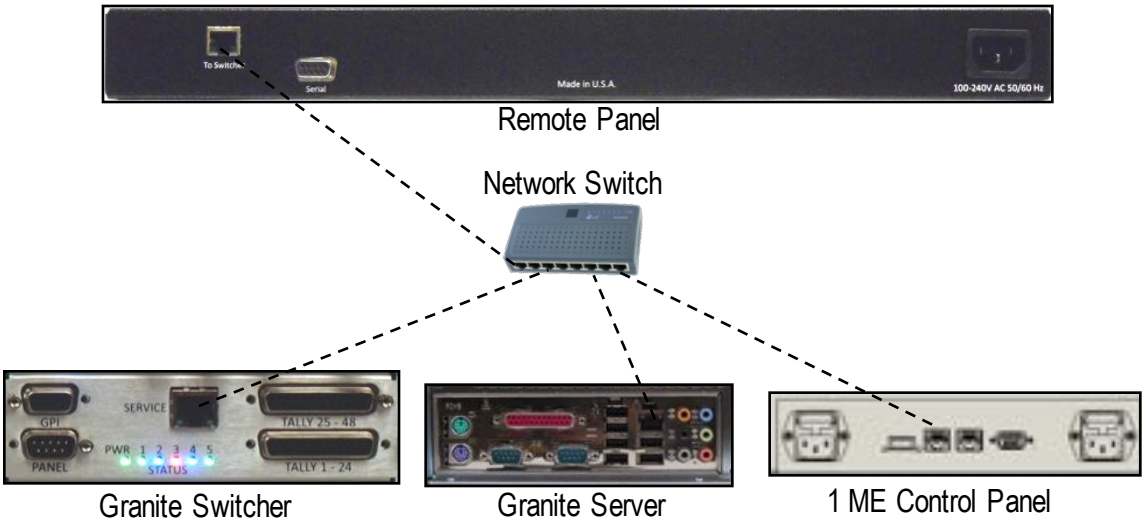
The Remote Panel, Granite Server, Granite Switcher and Control Panel all must be on the same network using a Network Switch using standard straight-through Cat5e cables. The Remote Panels fit into a standard 19" rack, with the integrated rack ears, which are not removable. Wire the Remote Panel(s) as described below:

1. Connect the Remote Panel(s) to a Network Switch using the **To Switcher** connector. (Note the Network Switch is not provided by Broadcast Pix)

2. Connect the Granite Switcher to the same Network Switch using the **Service** connector.

3. Connect the Granite Server to the same Network Switch using the **motherboard** NIC connector.

4. Connect the Control Panel to the same Network Switch using either one of the **Network** connector.



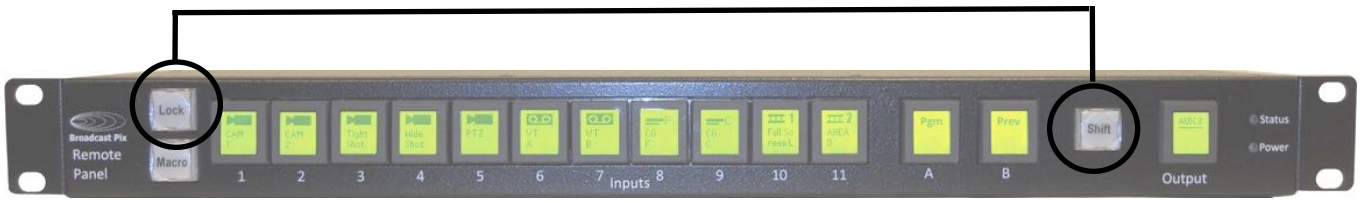
4.11.7 Remote Panel Configuration

Once the Remote Panel(s) are wired and powered on each unit must be set to it's own IP Address. By default each Panel comes shipped with the IP Address of 192.168.53.200. The Granite Switcher, Server and Control Panel are all on the 192.168.53.XXX subnet. In most installations only the last 3 digits of the IP address of the panel need to be adjusted.

Note that there is no on/off switch, simply plug in the AC power to turn the unit on. Once on, the Power LED will illuminate green, with the other buttons not illuminated. If a show is running the Remote Panel will attempt to connect to the Granite System and auto-connect if the Remote Panel has a valid IP address.

To Change the Remote Panel IP Address:

1. On the Remote Panel, select and hold down the **[Shift]** button, it will illuminate yellow. Then select the **[Lock]** button, as shown below.



This will put the Remote Panel into an offline setup mode, as shown below.

Set Mode	Panel IP	Set Svr IP	Set Black	Code Ver	Light Show	Test Pix						Panel Setup	Shift	Join The Show

2. Press the **[2]** input PixButton labeled **Panel IP**, and the PixButtons will change showing the assigned IP address, as shown below.

1	9	2	1	6	8	0	5	3	2	0		0	Exit		Panel IP

3. Press the **[10], [11]** and/or **[A]** input PixButtons to enter the desired address. The numbers will cycle from 0 to 9.

   For example to enter the address 192.168.53.212, press the [11] PixButton 1 time and the [A] PixButton 2 times.

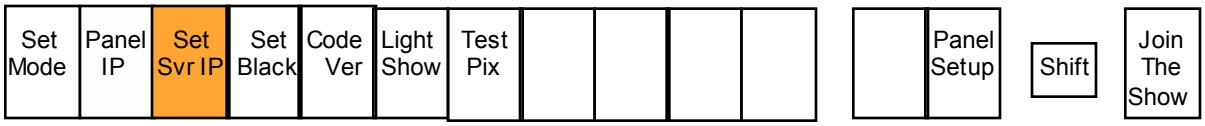
4. Select the **[Output]** PixButton labeled **Panel IP** to apply and exit out of the setup function. If a show is running, the panel will attempt to connect with the new IP address. While the panel connects, the Status LED will blink blue, once connected with a valid IP address the LED will turn to solid blue.

To Change the Server IP Address:

1. On the Remote Panel, select and hold down the **[Shift]** button, it will illuminate yellow. Then select the **[Lock]** button.

2. This will put the Remote Panel into an offline setup mode, as shown below.

3. Press the **[3]** input PixButton labeled **Set Svr IP**, and the PixButtons will change showing the assigned IP address of the Server. It is important that the IP address of the Granite Server and this setup menu match. On most installations this step is not necessary.



4. Press the input PixButtons to enter the desired address. The numbers will cycle from 0 to 9.

5. Select the **[Output]** PixButton labeled **Set Server IP** to apply and exit out of the setup function.

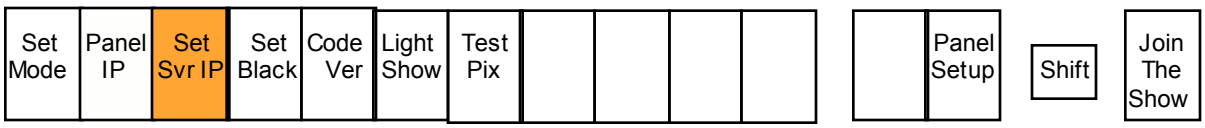
6. Click on the **[Output]** PixButton labeled **Join The Show** to connect to a running show.

To Change the Button Contrast:

1. On the Remote Panel, select and hold down the **[Shift]** button, it will illuminate yellow. Then select the **[Lock]** button.

2. This will put the Remote Panel into an offline setup mode, as shown below.

3. Press the **[4]** input PixButton labeled **Set Black**, and the PixButtons will change showing black squares in green, orange and red buttons. Use these buttons as a reference for legibility.



4. Press the **[Lock]** button to increase the contrast.

5. Press the **[Macro]** button to decrease the contrast.

6. Press the **[Output]** PixButton labeled **Set Black** to apply the changes and to return to the setup menu.

4.11.8 Remote Panel Setup

Each Remote Panel can be setup with up to 22 modes, which allow and/or restrict the ability to assign inputs and/or outputs. In addition, different Macros or SnapShot memories are assignable to each mode. This setup is done in PixMaster Show Editor and every setting is show-based, meaning that all the settings are saved and recalled on a show by show basis.

To Setup the Remote Panels:

1. Launch BPswitcher and load a show, as described in section 1.6.

2. Click on the Broadcast Pix Menu and select **File, Edit Show…**, as shown on the right.



3. In the PixMaster window, select the **Remote Panels** button, as shown on the right.



   This will open the Remote Panel Setup window, as shown below.



4. Select the desired **Mode** to modify either Mode 1 – Mode 11, the PixButton will highlight orange, as shown on the right.

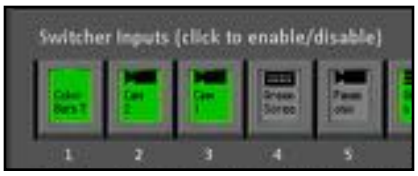


To select Modes 12-22 select the **View Modes 12-22** button, as shown on the right.



5. The bottom window will update to show the current state of the mode.

In the Switcher Inputs section, click on the **input** to enable or disable 1 through 11, the PixButtons will update to Grey or Green, as shown to the right.



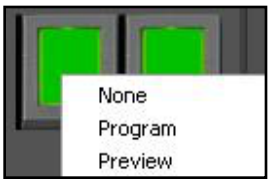
To select inputs 12-22 on + models, click on the **Shift** button, as shown on the right, and the inputs will change showing green input numbers.



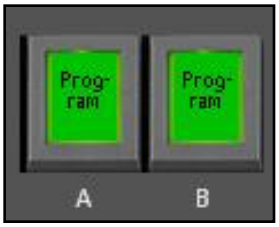
Grey PixButtons signify that the input or output is blocked and not accessible from the Remote Panel. Green PixButtons signify that the input or output is allowed for selection.

The inputs shown are the direct inputs to the Granite Switcher and the names are automatically created from the Granite Input Assignments window. They may not be reordered.

6. To assign a processed output like Program or Preview to the A or B input buttons, click on the **A** or **B** button and a drop down menu will appear, as shown on the right.



The list of available outputs from Granite Output Assignments will appear, select the desired output. The PixButton will update showing the assigned output, as shown on the right



To access buttons C and D click on the **Shift** button and repeat this step.

7. In the Switcher Outputs section, click on the **outputs** to enable or disable 1 through 6, the PixButtons will update to Grey or Green, as shown to the right.



These output are automatically set from the Granite Output Assignments window. If Clean Feed is assigned it will automatically be red/disabled.

To view outputs 7-12 on + models, click on the **Shift** button, as shown on the right.



Enabling these outputs will grant access on the Remote Panel to switch. Even though only one output button is available on the Remote Panel, all outputs may be cycled to.

8. To assign Macro or SnapShot memories, in the Memoires section click on the desired **memory** button either 1 through 11. An assign memory window will appear, as shown on the right.



The list of numbered Macros and SnapShot memories from the memories folder will appear. Only memories with a leading number may be viewed in this list and assigned.

Select the desired **memory** and click on the **Assign to Button** button.

The assign window will close and the PixButton will update showing the number and/or custom name, as shown on the right.



To view/assign memories 12-22 click on the **Shift** button, as shown on the right.



To un-assign a memory, click on an **assigned memory** button, and in the Assign memory window click on the **Unassign Memory** button. The PixButton will now be blank.

9. To configure other modes repeat steps 4 – 8 above.

10. To apply and save the changes click on the **OK** button in the Remote Panel Setup window.



11. In the main PixMaster Show Editor window, click on the **Save Show** button.

4.11.9 Remote Panel Operation

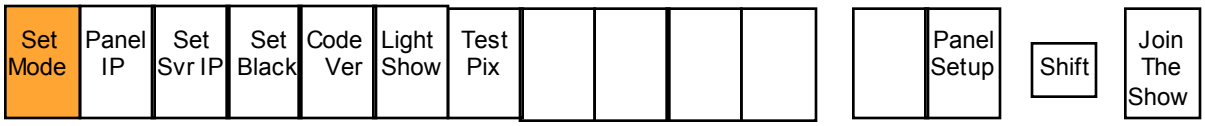
As each Remote Panel connects to a running Broadcast Pix show, the last selected mode for each panel is recalled. Any panel may have access to all 22 modes.

To Set a Mode on the Remote Panel:

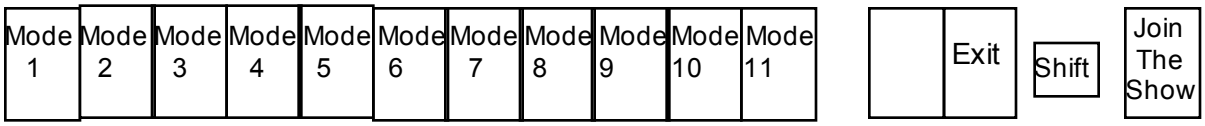
1. On the Remote Panel, select and hold down the **[Shift]** button, it will illuminate yellow. Then select the **[Lock]** button, as shown below.



This will put the Remote Panel into an offline setup mode, as shown below.



2. Press the **[1]** input PixButton labeled **Set Mode**, and the PixButtons will change showing the Modes 1- 11 and an Exit button, as shown below.



3. Select the desired **[Mode]** PixButton 1 through 11, to access modes 12-22 select the **[Shift]** button.

The Remote Panel will automatically connect to a running show with the newly selected mode.

To Change an Output:

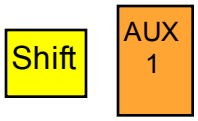
1. On the Remote Panel, select the **[Output]** PixButton, it will illuminate orange and display the selected output, as shown on the right.



2. Continue to select the **[Output]** PixButton until the desired output is reached. If all outputs are enabled in PixMaster, then there are up to 6 (12 on + models) button pushes - one for each output.

3. In the Inputs section, select an **[Input]** PixButton 1 through 11, A or B. The button will illuminate orange (red if Program is the selected output) and the video will be routed to the SDI output on the Switcher.

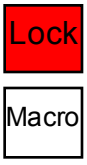
4. To access inputs 12-22, C or D, select the **[Shift]** button, it will illuminate yellow, as shown on the right. Repeat step # 3 to select an input.



   To return to inputs 1-11 select the **[Shift]** button and the button will turn off.

To Lock the Remote Panel:

1. On the Remote Panel, select the **[Lock]** button, it will illuminate red, as shown on the right.



   Now any button push will be ignored by the panel, preventing any accidental switch.

2. To unlock the panel, select the **[Lock]** button, and it will turn off. The Remote Panel is now back in it's normal operational mode.

To Run a Macro:

1. On the Remote Panel, select the **[Macro]** button, it will illuminate green, as shown on the right.



   The A PixButton will turn to a Stop button and the B PixButton will turn to a Play button. Any assigned memories will now appear on the input PixButtons. The Output PixButton is disabled in the Macro mode.

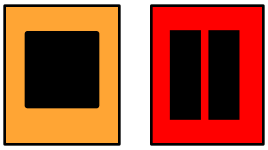
2. To run a Macro or a SnapShot MEM, select the desired **[PixButton],** the button will illuminate red, as shown on the right.



3. If a Macro has a pause point, the PixButton will illuminate orange, as shown on the right. To resume playing a paused macro, re-select the active **[PixButton]** or press the **[B]** input PixButton with the red Pause icon.



   The Macro PixButton will illuminate red and the B PixButton will illuminate orange and turn to a Play icon.



4. To stop running a macro, re-select the macro/SnapShot **[PixButton]** or select the **[A]** input PixButton with the orange Stop icon.

   The memory PixButton will return to a green/not selected state.

5. To access memories 12-22, select the **[Shift]** button, it will illuminate yellow, as shown on the right. Repeat steps # 2-4 to control memories 12-22.



   All shifted memories will blink when selected, playing or paused to signify they are on the shifted row.

   To return to memories 1-11 select the **[Shift]** button and the button will turn off.

6. To return to the output selection mode, select the **[Macro]** button and it will turn off, as shown on the right, and the input PixButtons will show the enabled inputs.



NOTE: Only one Macro at a time may be played out. Selecting a Macro while one is playing will stop the Macro.

4.12 SnapShot Memories

The Broadcast Pix system has a powerful memory system that can combine all devices in the system. It enables the saving and instant recall of a panel's set-ups, or the set-ups plus the sources assigned, or even the individual content element in a device, such as a specific lower third graphic in the CG. The Mem system can save an entire panel, or a portion of it, such as a keyer, effect, preview source, aux, key state, etc.

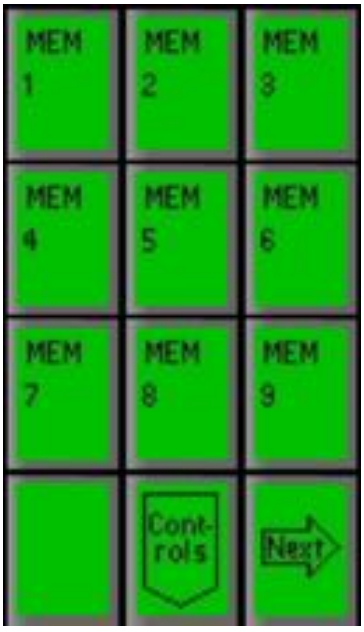
SnapShot Memories, or "Mems" for short, are generally saved during pre-production before a show is on-air. The saving process takes several steps to indicate exactly which portions of the panel to save, and whether to save just the set-ups or the source assignments as well. In contrast, since the recalls of memories happen on air, recall is streamlined and designed to be quickly accessible. There are a total of 999 global memories, which can be sorted in PixMaster, as described in section 3.

4.12.1 To Save a Mem:

1. Begin by putting the panel into the desired state that you would like to save.

2. Press the **[Mem]** button in the Device Select, and the first page of your memories will appear in Mem PixPad.

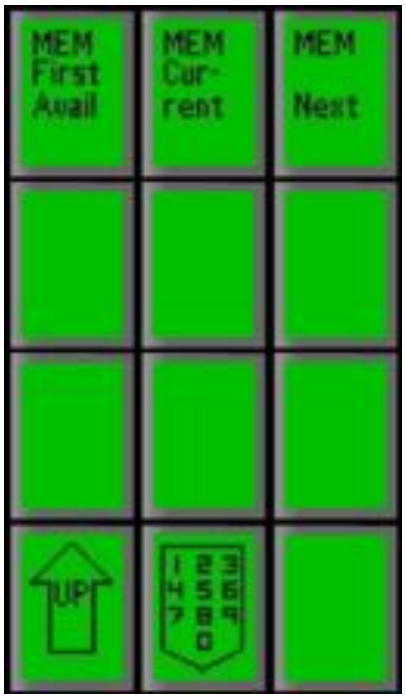




3. On the Mem PixPad, press the **[Controls]** PixButton, and the following Mem controls PixPad will appear.



4. On the Mem controls PixPad, Press the **[MEM Save Snap Shot]** PixButton, and this PixPad will appear, which you can select where you want to save the SnapShot Mem:



For the first unused memory position, press the **[Mem First Avail]** PixButton

To edit a current Mem that you recently opened, press the **[Mem Current]** PixButton

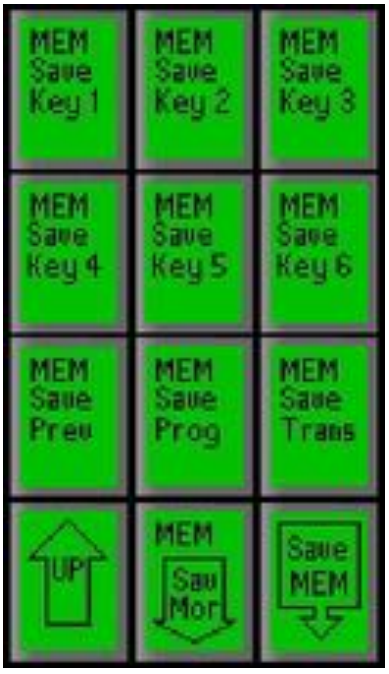
For the next Mem beyond the current one, press the **[Mem Next]** PixButton

For a specific number press the **[Numeric Keypad]** PixButton, and a keypad will appear on which you can enter the Mem number desired.

When selected, the Mem location chosen will appear in the panel display, such as Mem19, and the Mem elements PixPad will appear, as shown below:

5. On the Mem elements PixPad, choose the panel elements you want to save on this mem by pressing the various PixButtons. As you press each, the display will keep track of them, so you know what you saved. For example, to save key 1, press the **[Mem Save Key 1]** PixButton:





Press it once for the key set-up, and the display will say 1k. For example a DVE box set-up.

Press it again to save both key set-up and the source number assigned to it, and the display will say 1s. For example a DVE box set-up, plus which source number to fill it with.

Press it yet again to save the key set-up, plus the source number, plus the content element number within the source, and the display will say 1c. For example a DVE box set-up, plus which source number and content element number to fill it with (like the 4th clip in the first clip store).

If you press it a third time no key 1 information will be saved, and the display will reflect that.

6. For example, if you want to save all three keyer set-ups, and the sources as well on keys 1 and 3, then press the **[Mem Save Key 1]** PixButton twice, the **[Mem Save Key 2]** PixButton once, and the **[Mem Save Key 3]** PixButton twice, and the following will appear in the display:



7. Continue selecting any other elements of the panel you would like to save in this Mem:

   [Mem Save Key 4] PixButton will save the Key 4 keyer set-ups, press again to save a specific source, press once more to save the content. (4k, 4s or 4c)

   [Mem Save Key 5] PixButton will save the Key 5 keyer set-ups, press again to save a specific source, press once more to save the content. (5k, 5s or 5c)

   [Mem Save Key 6] PixButton will save the Key 6 keyer set-ups, press again to save a specific source, press once more to save the content. (6k, 6s or 6c)

   [Mem Save Prev] PixButton will save the preview source, press again to save the content. (Pv or Pvc)

   [Mem Save Prog] PixButton will save the program source, press again to save the content. (Pg or Pgc)

   [Mem Save Trans] PixButton will save the transition selected, as well as any modifiers including softness, aspect and rate. If you press it again it will also save the state of the [Bgr] and key transition buttons. (T or T+)

   [Mem Sav More] PixButton enables saving the state of the direct key buttons 1-6, state of the auxiliary outputs and the iBoB DSK state. It does this individually by bringing up a secondary PixPad that lets you select the each option. When finished press the **[Up Arrow]** to return to the main element selection PixPad. (see next page)

8. **[Mem Save Direct Key 1]** PixButton will save the state (on/off) of Direct Key 1. (D1)

[Mem Save Direct Key 2] PixButton will save the state (on/off) of Direct Key 2. (D2)

[Mem Save Direct Key 3] PixButton will save the state (on/off) of Direct Key 3. (D3)

[Mem Save Direct Key 4] PixButton will save the state (on/off both on preview and program) of Direct Key 4. Useful for quickly brining on/off Key 4. (D4)

[Mem Save Direct Key 5] PixButton will save the state (on/off both on preview and program) of Direct Key 5. Useful for quickly brining on/off Key 5. (D5)

[Mem Save Direct Key 6] PixButton will save the state (on/off both for preview and program) of Direct Key 6. Useful for quickly brining on/off Key 6. (D6)

[Mem Save Direct All] PixButton is a short cut for saving Direct Keys 1 to 6. Press again and it clears all 6 Direct Keys from the display. (D123456 or blank)

[Mem Recall Rate] PixButton sets the amount of time in frames a memory will take to be recalled during a production. Useful for creating on-air DVE moves for push-back animations.

[Mem Save All] PixButton saves the state of all the devices on the control panel. Press it again and it will clear the memory and the display.

[Mem Sav ME 1] This function is only available on Granite 2 M/E systems.

[Mem Sav Mor] PixButton saves the state of the auxiliary outputs. It does this individually by bringing up a secondary PixPad that lets you select the each option. When finished press the **[Up Arrow]** to return to this PixPad. (see next page)



[MEM Save More Keys]

PixPad

9. **[Mem Save iBoB DSK]** PixButton will save the state of the iBoB DSK on a Slate 2100G only. This function is not available on a Granite System.

   [MEM Save Aux] PixButton will save the state of the auxiliary outputs. It does this individually by bringing up a secondary PixPad that lets you select the each option. When finished press the **[Up Arrow]** to return to this PixPad. (see below)

10. **[Mem Save Aux 1]** PixButton will save the source assigned to Aux 1. (A1)

    [Mem Save Aux 2] PixButton will save the source assigned to Aux 2. (A2)

    [Mem Save Aux 3] PixButton will save the source assigned to Aux 3. (A3)

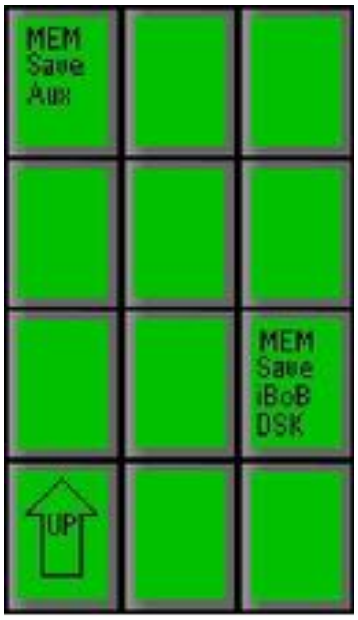
    [Mem Save Aux 4] PixButton will save the source assigned to Aux 4. (A4)

    [Mem Save Aux 5] PixButton will save the source assigned to Aux 5. (A5)

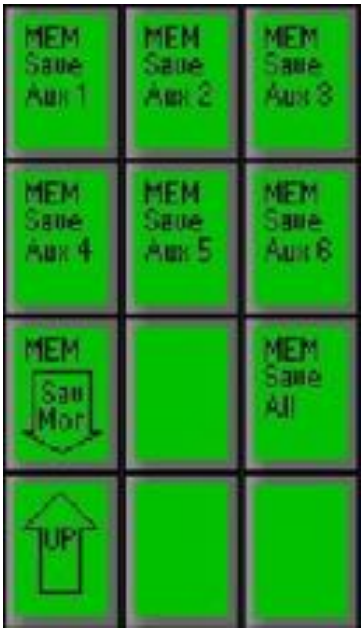
    [Mem Save Aux 6] PixButton will save the source assigned to Aux 6. (A6)

    [Mem Save All] PixButton is a short cut for saving all 12 Auxes. Press again and it clears all 12 Auxes from the display. (A1-12 or blank)

11. On + models, click on the **[Mem Sav Mor]** PixButton to save Auxes 7 - 12. (see next page)



[MEM Save More] PixPad



[MEM Save Aux] PixPad

12. **[Mem Save Aux 7]** PixButton will save the source assigned to Aux 7. Only available on + models. (A7)

    [Mem Save Aux 8] PixButton will save the source assigned to Aux 8. Only available on + models. (A8)

    [Mem Save Aux 9] PixButton will save the source assigned to Aux 8. Only available on + models. (A9)

    [Mem Save Aux 10] PixButton will save the source assigned to Aux 8. Only available on + models. (A10)

    [Mem Save Aux 11] PixButton will save the source assigned to Aux 8. Only available on + models. (A11)

    [Mem Save Aux 12] PixButton will save the source assigned to Aux 8. Only available on + models. (A12)



[MEM Save More Aux] PixPad

13. Once all your options are selected, on the main Mem elements PixPad press **[Save MEM].**

    If the main Mem PixPad is not visible, press the [UP] PixButton until visible.

    Once select the display will read out that your memory is saved, similar to as shown below.




```
M19(1c2c3c4c5c6cPvcPgcT+D123456A1234R20)

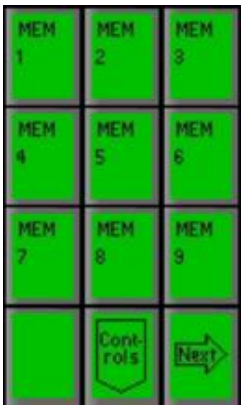
MEM19 saved
```

4.12.2 To recall a Mem



1. Press the **[Mem]** device button, and the Mem PixPad will appear.

2. Press the desired **[Mem x]** PixButton and the memory will be recalled at the frame rate saved in that Mem.



3. If the desired SnapShot MEM is not on this top page, press the **[Next]** PixButton until you reach the page that contains it.

   Once a Memory is recalled the display will read out the memory number and it's attributes, plus the Status Bar on the Multi-View will display which SnapShot MEM was recalled.

4.12.3 To recall a Mem by number



1. Press the **[Mem]** device and the MEM PixPad will appear.

2. Press the **[Controls]** PixButton.



3. Then in the following PixPad select the **[Numeric keypad]** PixButton.

4. **Enter** the number of the desired MEM in the number PixPad.

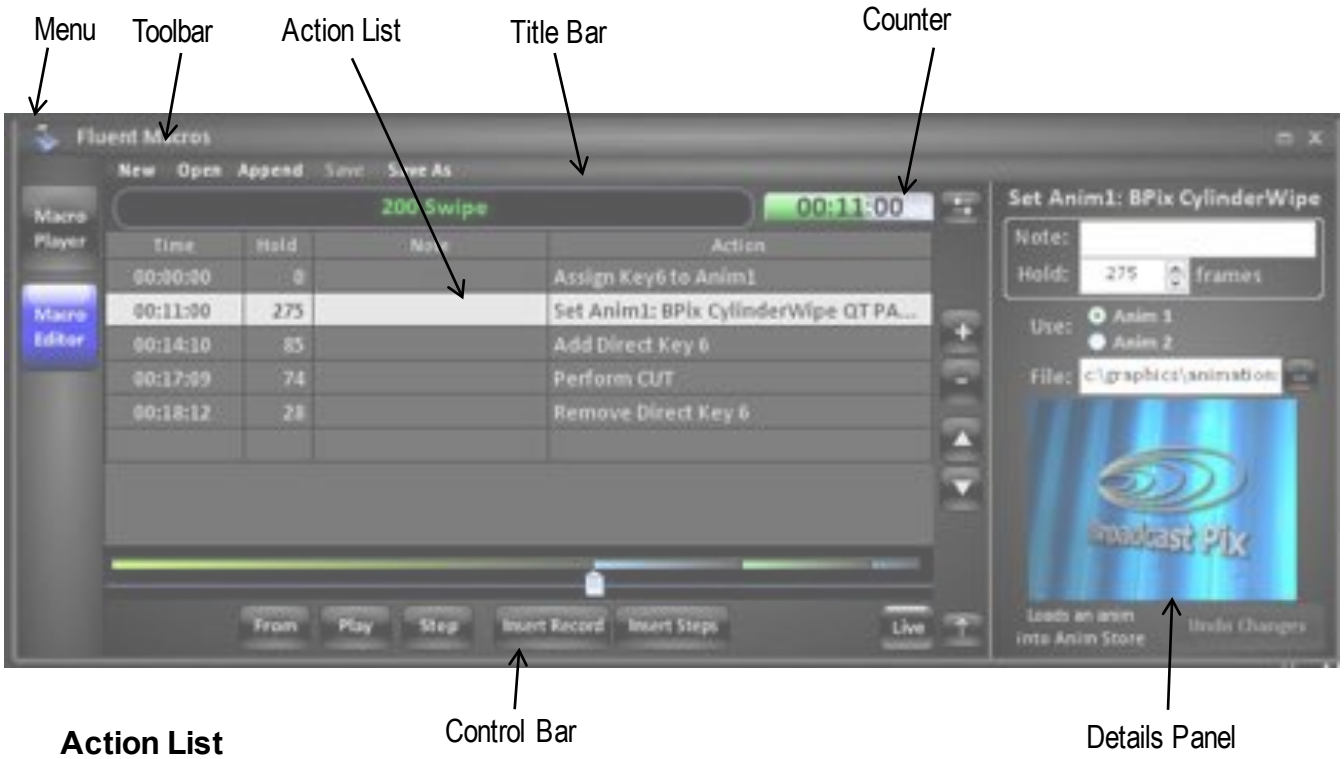
5. Press the [**Enter]** PixButton to recall the MEM.

NOTE: Memories are global, if sources are remapped or content is moved your Mem might not recall correctly. At times the display may read "Mem X failed to fully load". In BPswitcher go to **Logging**, **Error Log** to view what element failed to load.

4.13 Fluent Macros

Fluent Macros is a powerful memory system that takes SnapShot Memories to another level. It enables a sequence of panel button pushes to be recorded and then played at the push of a button. At the heart of the Macros is a file-based architecture that not only remembers button pushes and commands, but more importantly files from the Clip and Graphic stores.
Macros consists of an advanced Editor which is used to record, edit and modify an effect and a Player used to trigger pre-made effects.

Macro Editor Overview:



Action List
Displays the list of commands (steps) in a selected macro. Fields include: *Time* to show duration, *Hold* time to show how many frames a specific action will take to start, a *Note* field for user comments and *Action* to view the command.

Menu
Contains the available settings for Macros.

Toolbar
Contains the available options to to open and save a macro.

Title Bar
Displays the name of the loaded macro file and if it needs to be saved.

Counter
Displays the running/elapsed time of the macro.

Control Bar
Contains the available tools to record and playback a macro.

Details Panel
Displays the available editing options for a specific command selected in the Action List.

Macro Player Overview:



Menu
Contains the available settings for Macros.

Toolbar
Contains available tools to assign and arrange a Macro Bank.

Banks
Contains 4 assignable banks of macros. Banks A, B and C can be renamed, whereas the GPI Bank is designated for Macros to be triggered from an external General Purpose Input trigger. Up to 100 macros per bank can be assigned

Counter
Displays the running/elapsed time of the active macro.

Display
Shows the active macro file name and status information.

Details Panel
Shows user notes that were saved within the Note field of a Macro.

Control Bar
Contains the available tools to playback/control a macro.

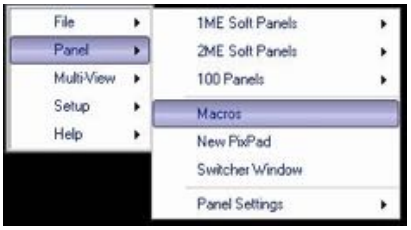
4.13.1 Opening the Macros interface

The Fluent Macros window can be launch from the BPswitcher menu bar. The Macros window does not have to be open/active to playback macros from the control panel.

To open the Macros window:

1. In BPswitcher select the **Panel** drop down menu.

2. Select **Macros,** as shown on the right.



4.13.2 Recording a Macro

Recording a Macro can start from the Macros Editor or directly from the control panel and then controlled by the control panel where all the timing and commands are remembered sequentially. In addition, Macros can manually be created and modified one command at a time with the Insert function. For longer, more involved macros recording from the panel/Macro Editor is recommended, the Insert function is suggested for shorter macros and for editing.

It is recommended to record a macro slowly, to ensure that every step and command is recorded, in the Macro Editor the timing can easily be adjusted afterwards, as described in section 4.13.3

To record a macro from the Macro Editor:

1. **Open** the Macro window, as described in section 4.12.1.

2. If the Action List is blank, proceed to step 3, if not, click on the **New** button in the Toolbar, as shown on the right, or click on the Menu and select **New…**



3. Click on the **Record** button in the Macro Control Bar.



   Macros is now waiting for the first panel operation to occur for the timer to start.

   The Record button will remember every button/command selected and it's timing.

   The Record Steps button will remember a group of commands all in 0 (zero) frames, similar to a SnapShot memory. When using Record steps, the option Add Pause will be available to insert an indefinite pause, which can be modified later.

4. **Select** the desired buttons on the control panel. As new commands are selected the Action List will populate showing the list of commands in the macro.

5. When the macro is finished being recorded, select the **Stop Record** button in the Macros Control Bar.



6. The Smart Start Wizard window will appear, as shown on the right, giving the option to remember the starting next transition and Direct Key states. Click on **Yes** or **No.**



This option is useful to guarantee an effect will occur the same way it was recorded by adding a starting command which remembers the keyer and background next transitions buttons as well as the Direct Key tally states.

Clicking on Yes will insert two commands at the start of the Action List, which can be modified and removed later if desired.

7. The Save As pop-up window will appear, as shown on the right, to save the recorded macro onto the hard drive.
Enter a name and click on **Save**.



All macros will have a .tln file extension and all SnapShot Mems have a .bpm file extension.

In order for Macros to be stored and recalled in the MEM device of the control panel, a 3-digit number must be added to the front of the file name (i.e. 123 Swipe.tln), but may not have the same number as a .bpm file. There are a total of 999 registers that are shared across Overall SnapShot and Macro Memories.

To record a macro from the panel:



1. Select the **[MEM]** button in the Device Control. This will bring up the MEM device PixPad.

2. Click on the **[Controls]** PixButton in the PixPad.

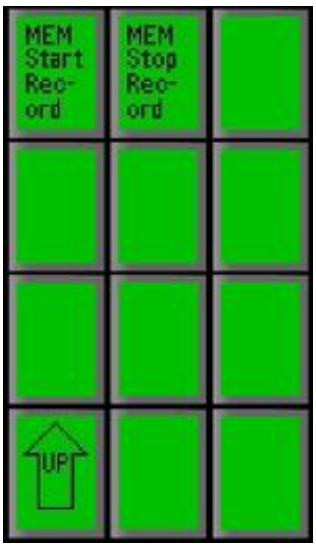
3. In the following PixPad select the **[MEM Save Macro]** PixButton, as shown on the right.



4. Select an available memory, 1-999, as described in section 4.12.1.

NOTE: All Macros must live in the C:\BroadcastPix\memories folder to be accessed by the system.

5. In the following PixPad select the **[MEM Start Record]** PixButton, as shown on the right.



Note that the Macro Editor or Player does not need to be opened for recording to occur. However, if the Macro Player is open a list of commands being recorded will be visible in the Macro Display.

Macros is now waiting for the first panel operation to occur for the timer to start.

The Record button will remember every button/command selected and it's timing sequentially.

6. **Select** the desired buttons on the control panel.

The display will read out that the Macro is recording, the counter in the lower right corner will start to move and the Play motion control button will illuminate red.

7. When the macro is finished being recorded, select the **[MEM]** button in the Device Control, it will illuminate orange.

8. Select the **[Back]** motion control button to stop the recording, as shown on the right.



The Play motion control button will turn off and the display will read out Recording ended.

4.13.3 Editing a Macro

The Macro Editor can display only one active macro at time, allowing for only one macro to be edited at a time. After a macro has been recorded it can be opened in the Macro Editor to be modified. Once in the Editor, the Action List may be reordered and modified, new commands can be inserted and the timing of each command can be adjusted. All the editing is done in the Macro Editor with the keyboard and mouse.

To load a macro in the Editor:

1. In the Macro Menu Bar, click on the **Open** button, as shown on the right, or click on the Menu and select New…



   An Open pop-up window will appear.

2. **Select** the desired macro (.tln file) to edit and click on **Open.**

   Note if you record using the Macro Editor, as described in section 4.13.2, the macro will automatically be opened in the Action List, in this case Steps 1 and 2 are not needed.

To modify a macro command:

1. **Select** a step in the Action list with the mouse, as shown on the right.



   The step will highlight white and the Details Panel will display the editable fields of that command, each command will have slightly different panel.

2. **Modify** the top timing information in the Details Panel.

   The top portion of the Panel is the same for every command, as shown on the right.



   Non-editable *command name*, which appears in the Action field of the Action list

   Editable *Note field,* which appears in the Note field of the Action List.
   This field is useful for adding cue points and reminders in a longer macro.

   Editable *Hold frames* field, which represents the amount of frames the selected action/command will wait until triggered by the macro. 0 (zero) frames signifies the command will happen instantly, if multiple commands are all set to zero, they all will occur simultaneously similar to a SnapShot memory.

3. Depending on what action/command is selected, one of the three main groups of Edit Windows will be available to edit.
Modify the desired effect, as described below.



Switcher selector: displays a drop down list for changing preview, Program, key and aux assignments and for modifying transitions.

To select a different source or cross-point **select** it in the drop down menu.



Content selector: displays a thumbnail and address bar for changing which clip or graphic is loaded in a specified store.

To select a different clip or graphic click on the **Thumbnail** or **… Browse** button to open the Open window.



Keyer selector, displays various buttons/ selectors for changing key attributes.

Depending on the Edit Window, **select** a different Keyer/Attribute button or enter a value in a number field.

If a source or keyer is not available on your system, but is selected in a macro, the Action List will show a red highlight, as shown on the right, to signify that the source/content is not available in your show or system.

0		Perform CUT
0		Set Preview to Router 32
106		Set Preview to Router 10

4. Changes are automatically made to the Action List, to revert back to the recorded action, click on **Undo Changes** in the Details Panel.



5. Depending on what action is being modified, it maybe useful to view the changes on the Program output. This is useful when quickly selecting between Actions to verify the effect.

   Click on the **Live** button, near the bottom on the details panel, and it will illuminate blue.



   Now whatever action is highlighted or modified, the result will occur on Program out. This function should only be used in pre-production, when creating Macros.

   To turn off Live editing, re-click the Live button, and the button will turn to grey.

6. To move a step up or down in the Action List, select a step and it with highlight white, then clock on the **Up** or **Down** button to the right of the Action List.

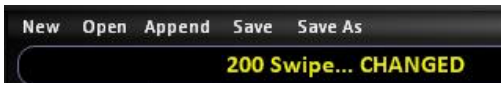


   This will move the highlighted step up or down one step at a time.

To save a macro:

1. Once a macro is modified, the macro name in the Title Bar will change to displaying …CHANGED, as shown on the right.

   To save the modified macro, click on **Save** in the Toolbar.



   Once saved, the word changed will be removed.

2. To save the macro as a new name, click on the **Save As…** button in the Menu Bar.
   This will bring up a Save As window, name the file as described in section 4.13.2, step 7.

4.13.4 Inserting Actions

The previous sections described how to record a macro and how to modify the recorded actions. After a macro has been recorded, or to create a basic macro, the Insert function is available to add one action at a time or to insert a new macro record in the middle of an existing macro.

To insert a new action:

1. **Select** a step in in the Action List, with the mouse. The row will highlight white.

2. Click on the **+** Plus button, to the right of the Action List. A new action will be inserted above the selected row (the last inserted command will appear).



3. The Details Panel will display a list of available command groups, as shown on the right.



Select the desired Command Group and **Action**, based on the description below:

Clicking on the **Command Group** drop down menu will list the available groups. These windows are similar to the groups described in the previous section.

The **Macros & Utilities** command group allows for functions that can not be recorded from the panel, as described below.

Pause: A user-defined delay, set to 0 (zero) to manually advance to the next step. Paused steps will appear yellow in the Action List.

Jump/Loop: Goes to another step number in the macro, and can be set to loop. Set to 0 (zero) for infinite loop.

Note: Displays a short note/message in the Macro Player at the defined time, useful for reminders during a longer macro.

Run a Macro: Recalls a .bpm SnapShot file or a .tln macro file from the memories folder as one step. To insert a macro seeing all the actions, use the Append… function in the Toolbar.

GPO trigger (Int): Triggers the General Purpose Output on the Granite/Mica Switcher (1-24).

GPO trigger (Ext): Triggers the General Purpose Output on the external USB tally/GPO boxes (1-288). Settable to use the selected Pulse Rate, GPO-Hi, GPO-Lo or toggle between Hi and Lo.

Input, Set Name: Allows a Macro to change the Input name (top line) on the Multi-View for a specific source.

Input, Set Label: Allows a Macro to change the Input label (bottom line) on the Multi-View for a specific source.

Note to Status Window: Similar to the Note action, allows a short message to be displayed in the Status bar on the Multi-View.

Source Border Color: Allows a Macro to highlight the window frame color of multiple sources on the Multi-View.

Source Border Color Solo: Allows a Macro to highlight the window frame color of just the specified source on the Multi-View.

Source Border Width: Allows a Macro to change the default border size of multiple sources on the Multi-View.

Source Border Width Solo: Allows a Macro to change the default border size of just the specified source on the Multi-View.

Load Show: Allows a Macro to automatically load a show. Note this is intended for advanced users.

Load Layout: Allows a Macro to load a layout. Note this is intended for advanced users.

Load Default Layout: Allows a Macro to load the default system layout.



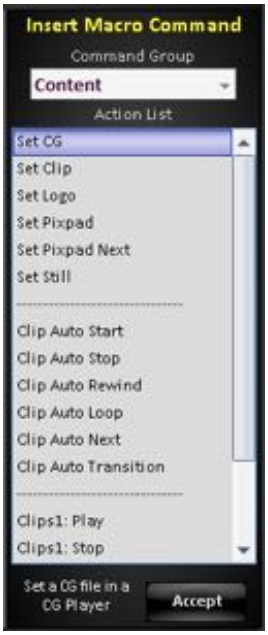


The **Switcher** command group allows for basic switcher functionality such as selecting sources on Preview/Program, turning on/off Direct Keyers and setting transition styles, as shown on the right.



The **Switcher ME 1** command group does the same functionality specifically for the ME. Only available on 2ME systems.

The **Content** command group allows for control of any internal content, such as a clip, and its attributes, as shown on the right. Macros can select content from anywhere on the hard drive, the content does not need to be loaded into the running show.



The **DVEs / Keys** command group allows keyer control including DVE state, key assignment and keyer rate, as shown on the right.



The **Devices** command group allows for control of any Device assigned to the show, such as a camera control, as shown on the right.



Decks: Allows deck control of AJA KiPro and BlackMagic HyperDecks and clip selection by filename, as well as control of PixPlay.

Panasonic, Sony, Telemetrics PTZ Cameras: Allows camera control as well as preset position recalls

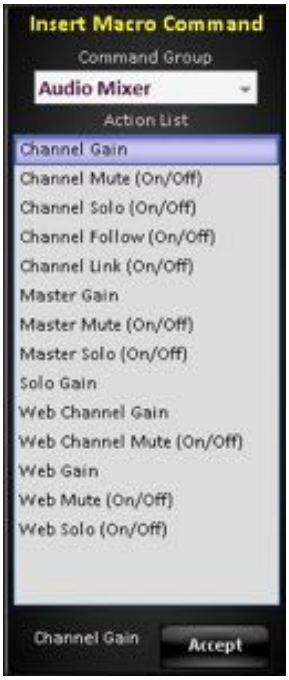
Recorder: Allows for start and stopping of the internal Flint Recording, using the currently selected file name and path.

Streamer: Allows for start and stopping of the internal Flint Streamer or external Matrox Monarch, using the currently selected streaming settings.

Timer: Changes the Multi-View timer to count up or down and triggers play/pause/stop commands.

Timer, Set Time: Sets the time in HH:MM:SS for the Multi-View count down timer.

The **Audio Mixer** command group allows control of the internal Audio Mixer in Flint, as shown on the right.



The **Inputs** command group allows the setting of source settings for DVE and Crop, as shown on the right.



The **Virtual Studios** command group allows the recall of Virtual Moves with a specified move rate, as shown on the right.



The **Rapid CG** command group allows for triggering of commands in Rapid CG, channel A and B. Useful for further automating the Rapid CG application, as described below.



Show Next Content: Selects the next piece of content in the Content Panel of Rapid CG.

Show Previous Content: Selects the previous piece of content in the Content Panel of Rapid CG.

Load RapidCG Project: Loads a previously created and saved project in Rapid CG. The Rapid CG application must be previously open.

Select By Alias Name: Select a piece of content in the Content Panel of Rapid CG by the provided alias name.

To insert a new recording:

1. **Select** a step in the Action List, with the mouse. The row will highlight white.

2. Click on **Insert Record** or **Insert Steps** in the Control Bar, as shown on the right.



   Similar to the Record button, the Insert Record will remember every button/command selected and it's timing, but will start recording above the selected step.

   Similar to the Record Steps button, Insert Steps will remember a group of commands all in 0 (zero) frames, similar to a SnapShot memory. When using Insert Steps the recording will start above the selected step, and the option Add Pause will be available to insert an indefinite pause, which can be modified later.

   Note when inserting in the middle of a macro, the bottom of the macro will be hidden and display "<Inserting into macro>". After the recording is stopped, the rest of the steps will appear in the Action List.

3. When recording is finished, click on **Stop Record** in the Control Bar.



4. The macro is now ready to be edited, as described in the previous section.

To delete a step:

1. **Select** a step in in the Action List, with the mouse. The row will highlight white.

2. Click on **-** Minus button, to the right to the Action List. This will permanently delete the row, there is no undo.



4.13.5 Reviewing Macro

Once a macro has been recorded and modified to your liking, you may review it in the Macro Editor to ensure it will play out correctly. To play out Macros during a production use the Macro Player, as described in the next section.

To review a macro:

1. To start running the macro from the beginning, click on the **Play** button in the Control Bar, as shown on the right.



   The button will illuminate green and turn to a Playing button and the macro will run from the beginning with all the appropriate timing.



2. To play one step at a time, click on the **Step** button in the Control Bar.

   This function will play out one step/action for every button push. Use Play Step for a manual confirmation that the action is occurring, not for timing purposes.

3. To run a macro from the middle, select the step line with the mouse and click on the **From** button in the Control Bar.

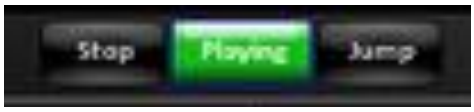
   The macro will start from the selected point and playback all the appropriate timing.



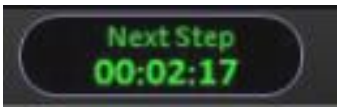
   Once a macro is running the Counter will display the elapsed time in mm:ss:ff, as shown on the right.
   For macros longer than 1 hour the display will automatically add the hours in the display.

   In addition, a progress bar will appear behind the counter representing the progress to the end of the macro.

4. To skip a step or a series of steps click on the **Jump** button in the Control Bar. The macro will ignore the timing/hold duration and continue to the next step.



The Control Bar will also display a timer representing the time until the next step in mm:ss:ff.



5. To pause a macro at the current step, click on the green **Playing** button in the Control Bar.

   The button will turn to a blinking red Pause button, clicking on **Paused** again will resume the macro.

6. To end the macro entirely and return to the editor, click on the **Stop** button in the Control Bar.



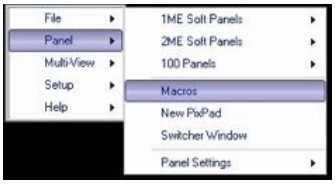
4.13.6 Assigning Macros in the Macro Player

After a macro has been created, edited and saved, it needs to be assigned to the Macro Player to be triggered during a production. There are 4 Macro Banks, the first 3 may hold up to 100 Macros each, while the GPI-Hi and GPI-Lo banks may each hold up to 96 Macros

These Macro assignments are global for the entire Flint system. In addition to using the Macro Player, the MEM device on the control panel may be used to trigger Macros. Macros assigned to the MEM device can be show based, as described in section 3.7.4.

To assign a macro in the Macro Player:

1. If the Fluent Macros window is not already open, in BPswitcher select the **Panel** drop down menu.



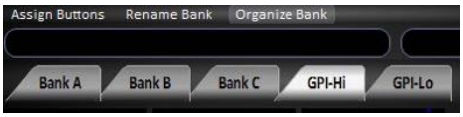
2. Select **Macros**, as shown on the right.

   The Macros window will open.

3. With the mouse, select the **Macro Player** button, it will illuminate blue, as shown on the right.



4. In the Menu Bar, select the desired Bank, either **Bank A, Bank B, Bank C, GPI-Hi** or **GPI-Lo.** The button will illuminate white.



The GPI Banks are used for external devices (like a button) to trigger a specified Macro with the external USB tally boxes.

5. Click the **Assign Buttons** button, in the Toolbar.



6. The Macro Bank will display the available button numbers, click on the desired **button** 1-100.



The select Macro window will open.

7. Select the desired .tln Macro file or .bpm SnapShot MEM file and click on **Open.**

The Assign Button X window will appear.



8. The Assign Button window allows you to:

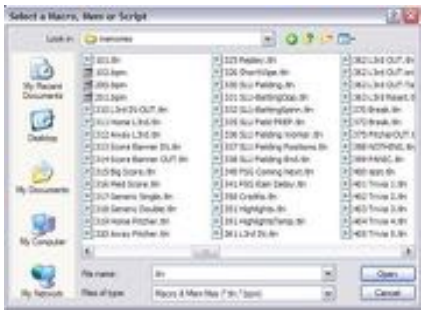
Reassign a different macro, click on the **… browse** button.

Assign a custom image, click on the **… browse** button.

Change button color, click on the **color** button, either White, Gold, Blue, Purple, Green or Aqua.

Add a custom caption to the button, enter a **name** in the Caption field.

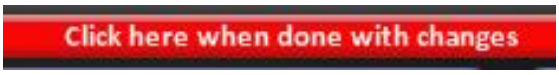
To un-assign the macro button, click on **Remove Button.**



9. Once finished assigning the button, click on the **OK** button.

10. The assigned button will now appear in the Macro Bank. To assign more Macros to buttons, repeat steps 6-10 above.

11. When complete, click on **Click here when done with changes** button, in the Toolbar.



12. To assign more Macros to different banks repeat steps 4-11 above.

To customize a Macro Bank:

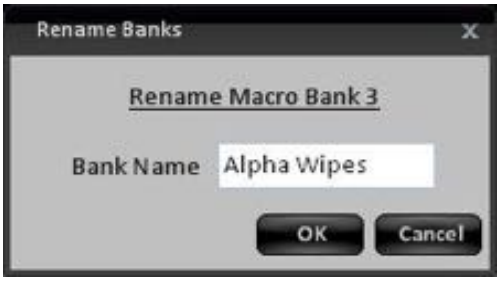
1. Repeat steps 1-4 above to edit a Macro Bank.

2. To assign a custom name to the selected bank, click on the **Rename Bank** button in the Toolbar.



3. In the Rename Banks window, enter the custom **name** in the Bank Name text field, as shown on the right.

   Only the first three banks, A/B/C, may have a custom name. The forth bank is permanently named GPI.



4. Click on the **OK** button to assign the custom name.

5. To change the button size of the Macro bank, select the **Organize Bank** button in the Toolbar.

6. Under the button size section, select either **Small, Medium** or **Large, X Large** or **XXX Large** as shown on the right.

   Now the entire bank of buttons will change to the selected button size.



7. To reorganize the bank, click on the **Organize Bank** button in the Toolbar.



Now select one of the following options:

Clear Bank…: un-assigns all the Macros in the specified bank.

Clicking this button will open a confirmation box, click on **Yes** or **No.**

Compress Bank…: reorganizes the Macro buttons to the top of the bank.

Clicking this button will open a confirmation box, click on **Yes** or **No.**

Group Macros by Color…: organizes the buttons based on their assigned button color.

Clicking this button will open a confirmation box, click on **Yes** or **No.**

8. To show button images in a bank, click on the **Organize Bank** button in the Toolbar.

Click on the **Show Images** button.

Now all the macros, which select content, will show the image of the first content to be selected in the macro, as shown on the right.



To assign a custom image, use the Assign Buttons window, as described in the previous section.

To setup GPI/Os:

1. Select the Macro **Menu,** and select the **Options** menu.

2. Select the **GPI/O Setup** option, as shown on the right.

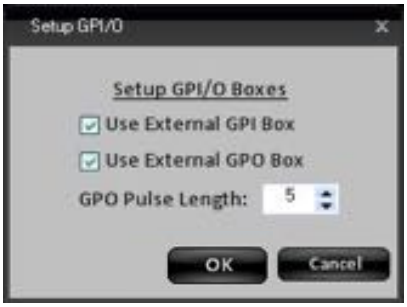


When the external USB Tally Box is connected, as described in section 1.4.5, you have the option to enable GPI and GPO signals.

When no Tally Box is connected the Setup Screen will show a message, as shown on the right. If the tally box was connected after the Bpswitcher application was started, an application restart is necessary.



3. Place a check mark next to **Use External GPI Box**, as shown on the right.



Now, an external device may trigger a macro in the GPI banks from the external USB GPI Box.

To activate General Purpose Outputs (GPOs) on the external tally box, place a check mark next to **Use External GPO Box**, as shown on the right.

Now, a Macro may trigger an external device like a server or CG system. A macro containing a GPO command does not have to be assigned in the GPI bank to be triggered.

To enter how long the GPO is to be closed for, enter a number from 1 to 60 frames in the **GPO Pulse Length** field**.** If an infinite on/off command is needed, create a macro using the GPO-Hi and GPO-Lo actions.

4. Click on the **OK** button to close and save the GPIO settings.

5. Assign a macro to a button, as described in the previous section.

4.13.7 Running Macros

Now that your Macros have been assigned to a button in the Macro Player, they may be used during a production.

To run a macro from the Macro Player:



1. In BPswitcher select the **Panel** drop down menu.

2. Select **Macros,** as shown on the right.

   The Macros window will open.



3. With the mouse, click on the **Macro Player** button, as shown on the right.

4. Click on the desired **Macro Bank**, and it will illuminate white.

5. To run a macro, click on the desired **Macro Button** and the macro will start.

   The Macro button will turn red, and the Macro Display will read out the file being played and the elapsed time, as shown on the right.



To control a macro:



1. Macros and SnapShot MEMs are set to Auto Start by default, to manually trigger the start of a macro, click on the **Auto** button in the Control bar next to Details Panel.



   The button will turn to grey.
   To turn Auto Start back on, click on the **Auto** button and it will illuminate blue.

   The control panel has a similar function for triggering SnapShots and Macros from the panel.



2. If a macro has a user-defined Pause point, the Macro button will turn to yellow and start to blink once the pause point is reached.



To resume a paused macro, click on the **Macro button** in the bank or click on the **Paused** button in the Control Bar.



3. To skip a step or a series of steps click on the **Jump** button in the Control Bar. The macro will ignore the timing/hold duration and continue to the next step.

4 To pause a macro at the current step, click on the **Playing** button in the Control Bar.



The button will turn to a blinking red Paused button, clicking on **Paused** again will resume the macro.

5. To end the macro entirely, click on the **Stop** button in the Control Bar.

To control a macro from the control panel:

1. Select the **[ALL MEM]** button, in Device Control-A. The button will illuminate orange.

The display will read out the active/last triggered SnapShot or Macro memory. See section 3.7.4 to assign Macros to the MEM device.

2. If the macro is paused the display will notify you that it's paused and the Play button will be illuminated orange, like the example to the right.



To resume running the macro, select the **[Play]** motion button in Device Control-A.

The button will illuminate red and the display will notify you that the macro is playing.

NOTE: Only one Macro at a time may be played out. Selecting a Macro while one is playing will stop the Macro.

3. If the macro is running, the display will notify you that it's playing and the Play button will be illuminated red, like the example to the right.



   To pause the macro, select the **[Play]** motion button in Device Control-A.

   The button will illuminate orange and the display will notify you that the macro is paused.

4. To stop running the macro, select the **[Back]** motion button in Device Control-A.

   The display will notify you that the macro has been stopped, as shown on the right.



5. Macros can also be trigger by the numeric PixPad, similar to a SnapShot MEM, as described in section 4.13.2.

To control a macro from the Macro Row:

As described in section 3.7.7, SnapShot and Macro memories can be assigned to the control panel using the Macro Row PixButtons. These rows can be used to trigger and control memories as described above with the motion control buttons in the Device Control.

1. Select the **[Names/Memories]** PixButton in the Macros Row to change the display row to a memories row, the button will illuminate orange.

2. To run a macro or a SnapShot MEM, select the desired **[PixButton],** the button will illuminate red, as shown on the right.



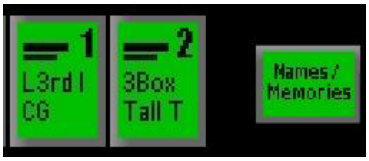
   The Macro Row display will update showing the select memory with name and timing information, as is done in the MEM device control.

3. If a macro has a pause point, the PixButton will illuminate orange, as shown on the right. To resume playing a paused macro, re-select the active **[PixButton]**.
The PixButton will illuminate red.



4. To stop running a macro, re-select the macro/SnapShot **[PixButton]** or select the **[Back]** motion control button in the Device Control, as described in the previous section. The button will return to a green/not selected state.

5. To return the Memory Row back to a Source Control and display row, select the **[Names/Memories]** PixButton.
The button will return to a green/not selected state, as shown on the right.

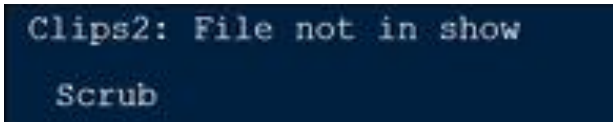


4.12.8 Playing back files not in shows

Due to the file-based architecture of Fluent Macros, it can play back any graphic or clip file that lives in the graphic or clip directory, even if that files is not in the active show. This feature reduces the risk of incorrect content being played back, for example clips for openers, bumpers and alpha wipes. In addition, it allows more advanced users to create Macros for novice users without the worry of incorrect playback.

Since only files in a show can be modified from the control panel, files not in a show are played backed as they were created/modified with a macro. In this case the control panel will provide feedback of files not in a show to advise the user. The Multi-View, on the other hand, will display the correct file name and attributes.
The control panel source PixButtons and display will look similar to the example below:





4.13.9 Alpha Wipes

Alpha wipes are animated transitions, which give your shows a contemporary look and feel. They are created in any graphics applications, and played out of the animation store (as described in section 5.5.2) When designing alpha wipes, as in the example “02 Light Swipe”, at least one frame of video needs to cover up the entire video screen. This ensures an invisible cut in the background between two sources resulting in a clean transition. Once an animation is loaded into your show, Fluent Macros is used to rapidly recall the animation, assign it to a keyer, bring the keyer on air, switch the background (when the animation is full screen) and finally bring the keyer off air. All these steps in a push of a button, giving you a professional looking transition.

Alpha wipes are common in sports production when recalling a slo-motion replay or in news production to grab the audience’s attention. You may also add sound effects to your alpha wipe (as described in section 5.5.2) to give your transition a dramatic effect.

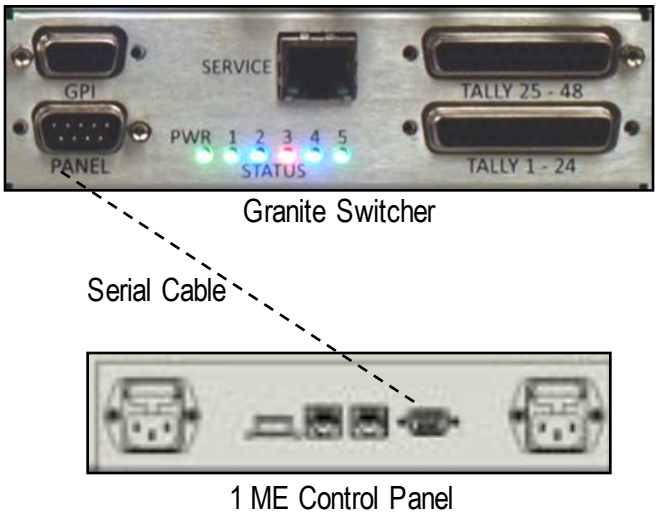
Since Macros are file-based, the transition effect, does not need to be in your show, simply in the clips directory. This ensures that the correct file/effect will play out every time.

Below is a sample alpha wipe macro.



4.14 Fail-Safe

The Granite Server is very reliable, if it should ever lock up a Fail-Safe capability can be set to automatically take over, and keep video on-air until the Server recovers.
On a Granite 2000 / 2000+, a redundant RS-232 connection between the control panel and the Granite Switcher is installed, as shown below. This connection enables any live input to be routed/switched to any output, including Auxiliary outputs. The outputs set in the Granite Outputs Assignments window are remembered when the system is in fail-safe.



Selecting the Fail Safe Device

The fail-safe device is the camera, VTR or other external source that you would like the system to automatically select if there is ever a failure to the Server or network.
The Fail-Safe Device is show specific so that different shows may specify different fail safe sources a source may be defined for Program and/or Preview.

To set the Fail-Safe Device, see section 3.7.2

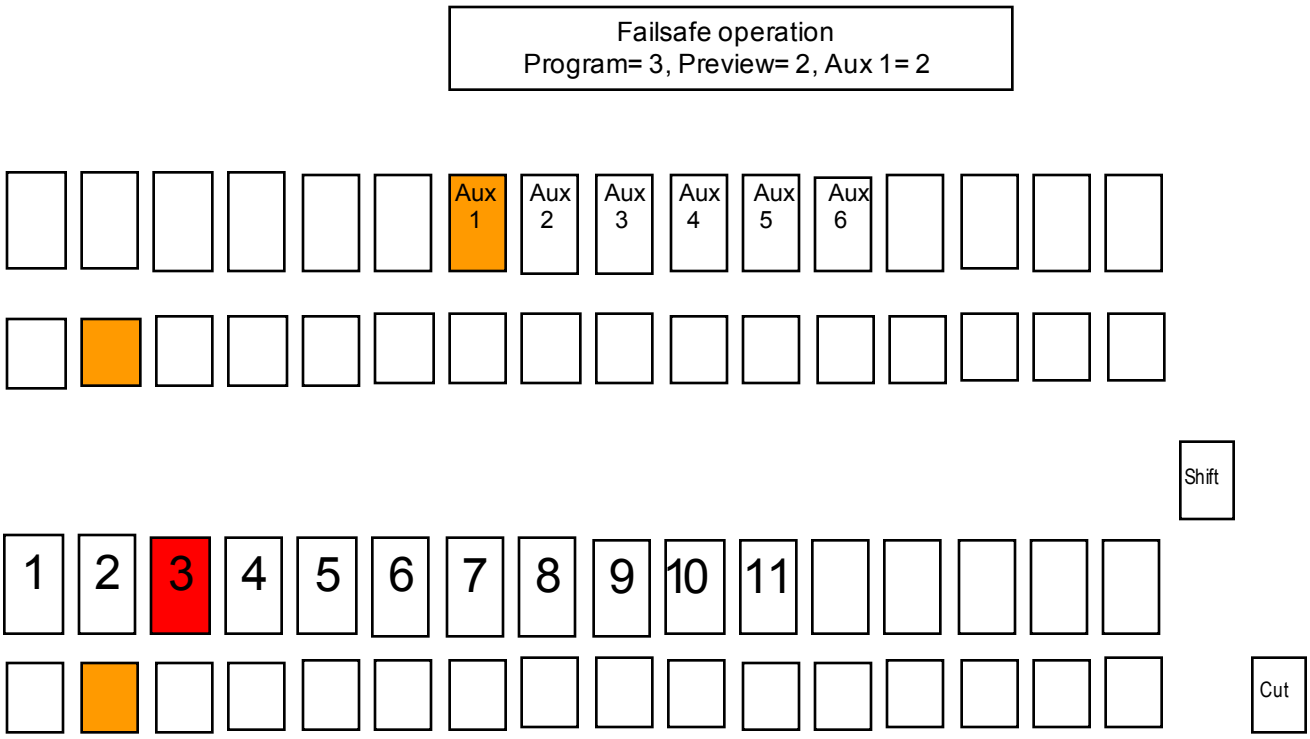
Fail-Safe switching

When the Granite Switcher is in fail-safe, the front Broadcast Pix logo will be glowing slowly, this signifies that the system is in fail-safe. When the system is in fail-safe no format, aspect or timing conversion is done. Whatever the signal coming in is, it will simply be routed to an output. Switching is done on the vertical interval, and depending on your output device, format or timing glitches may be visible. To guarantee seamless switching in fail-safe, ensure that all the inputs are the same format and that they are timed and phased within 1 or 2 pixels of the genlock/reference input.

4.14.1 Fail-Safe Operation on Granite 2000

If during production the Server should lock-up or the network connection should fail:

1. The control panel will **automatically** detect the problem and the Fail-Safe device will appear on the program and preview SDI outputs. At the same time the control panel will drop into Fail-Safe mode, and it's PixButtons will appear in Program bus, as shown below.



2. In Fail-Safe mode, all of the above buttons will still work. You can continue to preview these sources on your external preview monitor and cut them to air with the **[Cut]** button. Note if no Preview is assigned in Granite Output Assignments, then the Preview bus is not selectable.

   These source numbers refer to the Switcher inputs. Inputs 1 through 11 are the cameras and other external sources connected to inputs 1-11 on the back of the Granite Switcher.

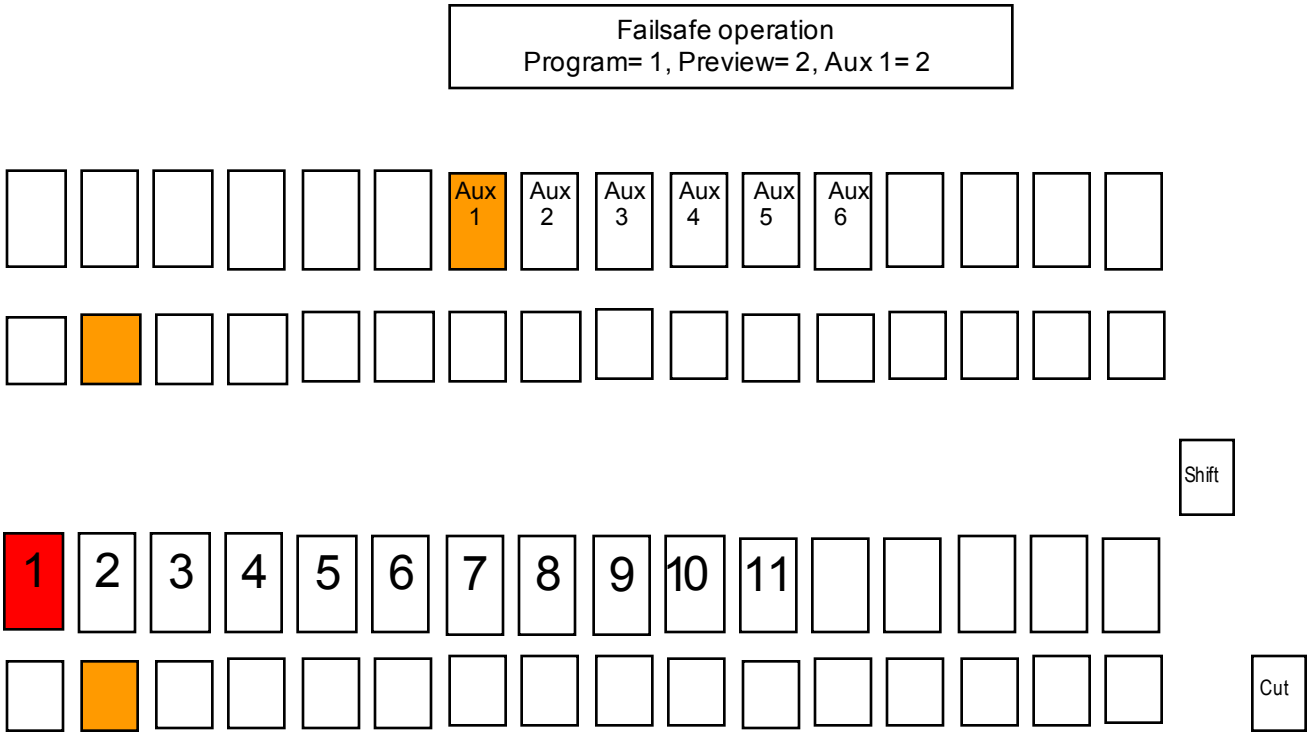
   When the control panel is in Fail-Safe mode, you have no access to any internal content.

   The display will read out the currently selected inputs assigned to Program, Preview and one Aux. The display will update as outputs are switched.

3. To switch Auxiliary outputs, press the desired Aux output, either **[Aux 1], [Aux 2], [Aux 3], [Aux 4], [Aux 5]** or **[Aux 6]** button in the destination row, it will illuminate orange.

   In the sources row select the desired [Source] button, either input 1-11 and the button will illuminate orange. The display will change to show the selected aux. To assign a different Aux output, repeat this step.

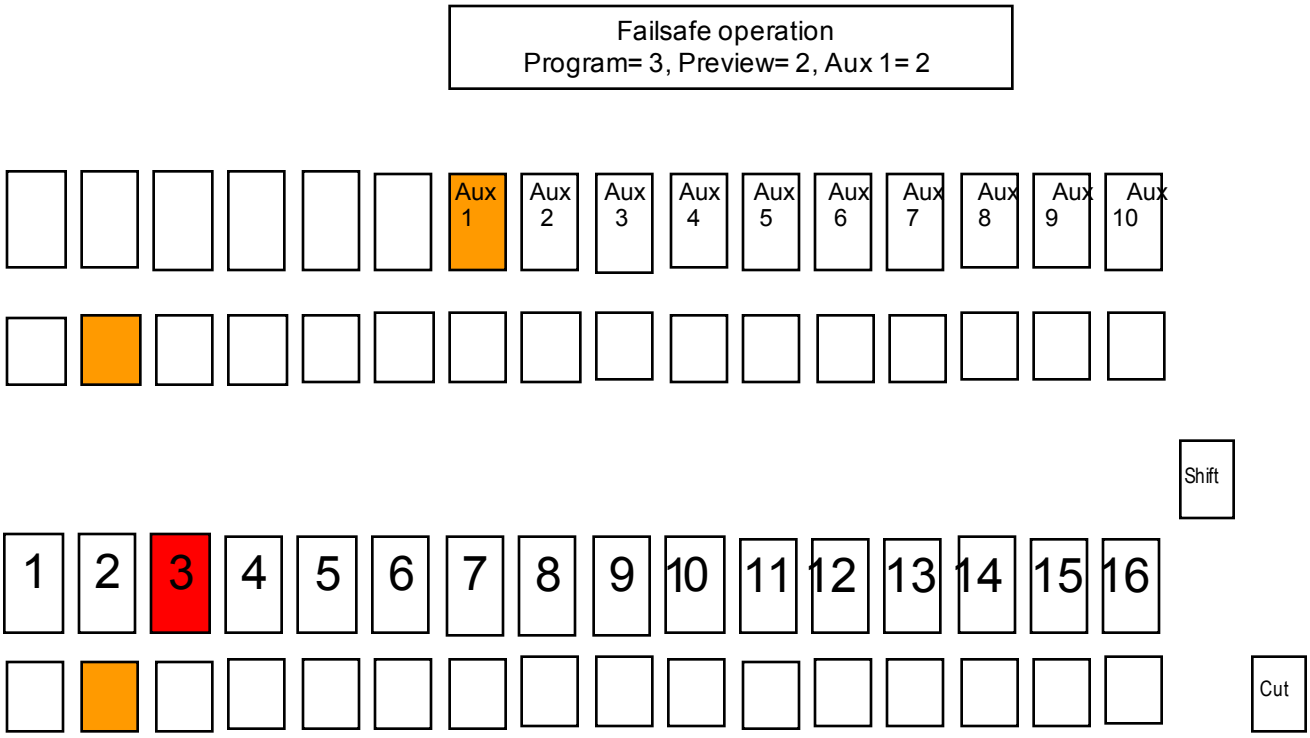
   The Auxiliary outputs correspond to the Switcher outputs assigned the Granite Output Assignments window of the last show that was loaded. If no Aux outputs are assigned, these controls will not function in fail-safe, leaving a '?' in the display next to the Aux.



4.14.2 Fail-Safe Operation on Granite 2000+

If during production the Server should lock-up or the network connection should fail:

1. The control panel will **automatically** detect the problem and the Fail-Safe device will appear on the program and preview SDI outputs. At the same time the control panel will drop into Fail-Safe mode, and it's PixButtons will appear in the Program Bus, as shown below.



2. In Fail-Safe mode, all of the above buttons will still work. You can continue to preview these sources on your external preview monitor and cut them to air with the **[Cut]** button. Note if no Preview is assigned in Granite Output Assignments, then the Preview bus is not selectable.

   These source numbers refer to the Switcher inputs. Inputs 1 through 16 are the cameras and other external sources connected to inputs 1-16 on the back of the Granite Switcher. Press the **[Shift]** button to access inputs 17 through 22.

   When the control panel is in Fail-Safe mode, you have no access to any internal content.

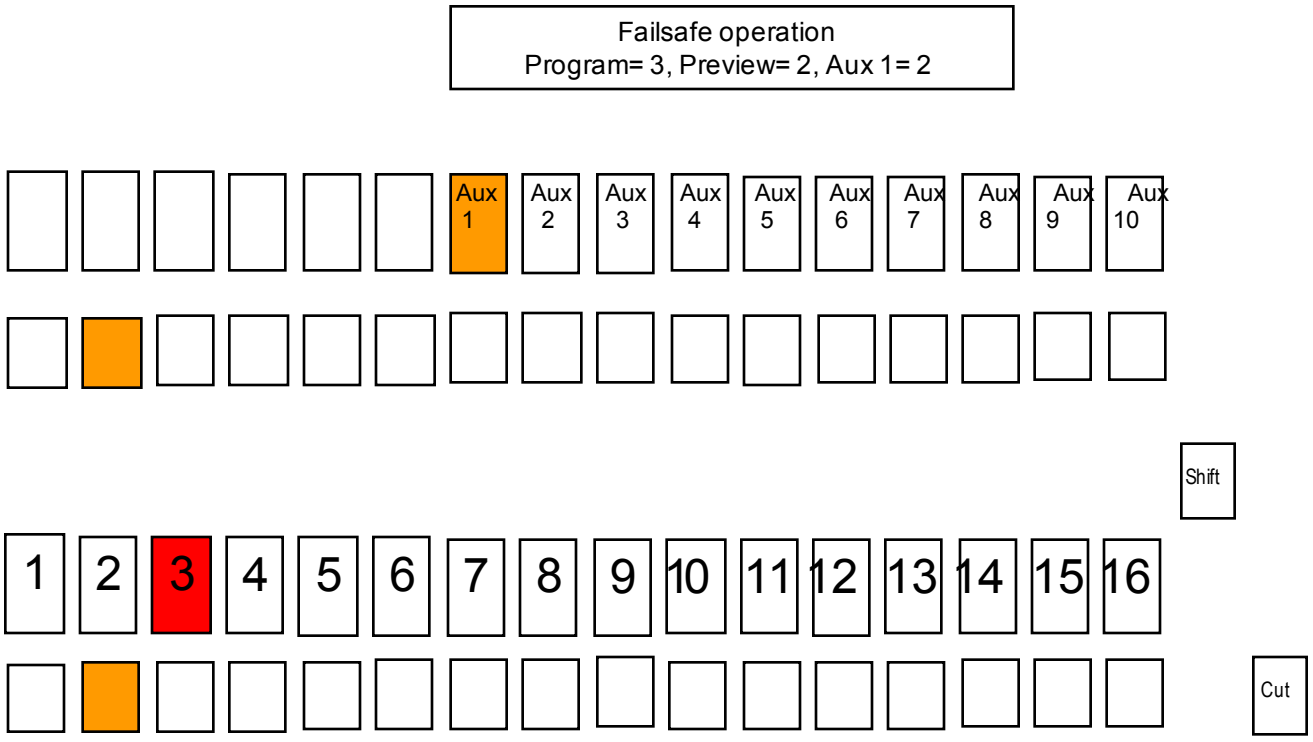
   The display will read out the currently selected inputs assigned to Program, Preview and one Aux. The display will update as outputs are switched.

3. To switch Auxiliary outputs, press the desired Aux output, either **[Aux 1]** through **[Aux 10]** button in the destination row, it will illuminate orange.

   In the sources row select the desired [Source] button, either input 1-16 and the button will illuminate orange. The display will change to show the selected aux. To assign a different Aux output, repeat this step.

   Press the **[Shift]** button to access inputs 17 through 22.

   The Auxiliary outputs correspond to the Switcher outputs assigned the Granite Output Assignments window of the last show that was loaded. If no Aux outputs are assigned, these controls will not function in fail-safe, leaving a '?' in the display next to the Aux.



4.14.3 Returning to Show Mode after the Server Recovers:

1. Start the BPswitcher application and Load a show (if a show is not set to Auto-Load) by selecting **File, Load Show.**

   You will see the processed program and preview outputs of what the Server is outputting in the Preview and Program monitors of the Multi-View. Use the mouse and Multi-View to set up the desired composition.

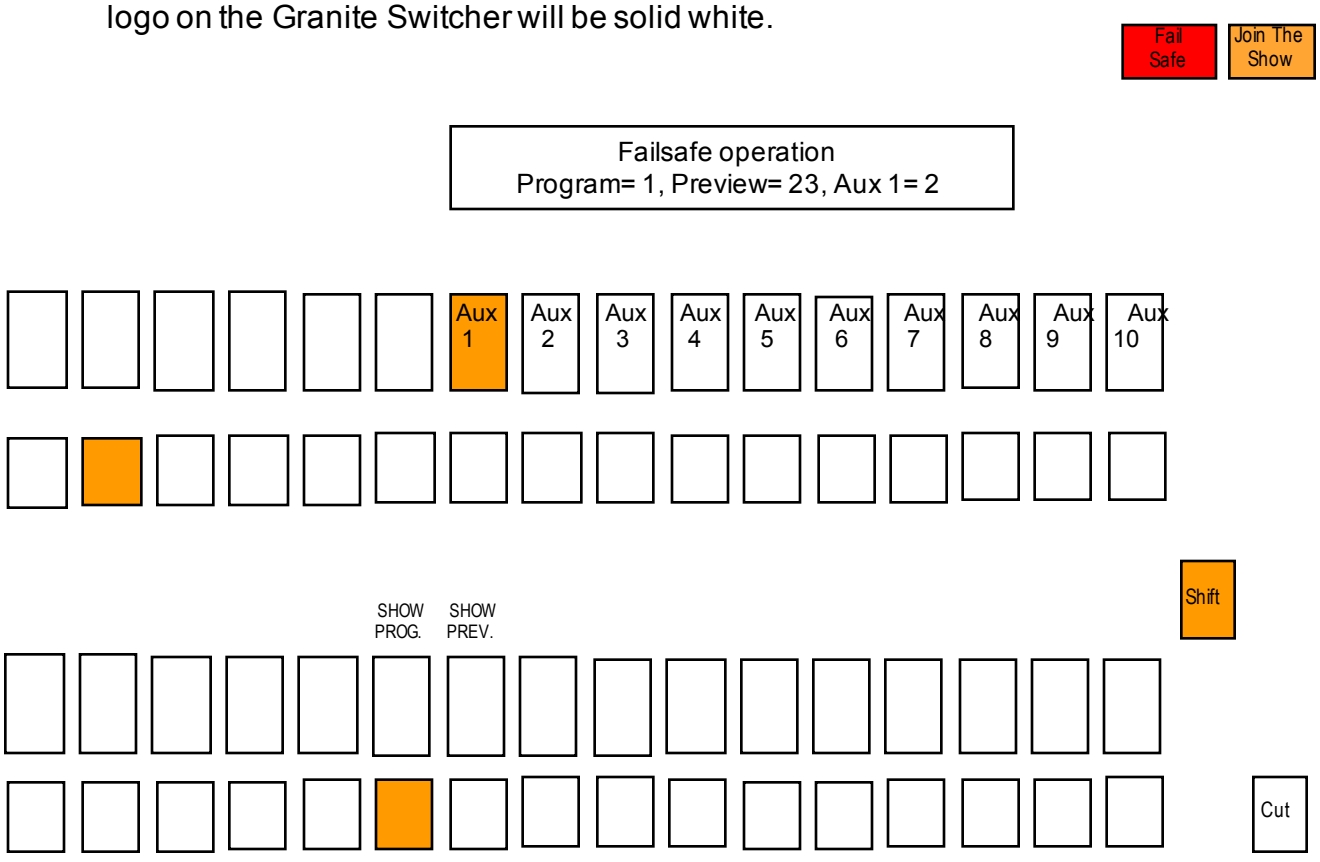
2. On the Control Panel, select the **[Shift]** PixButton, it will illuminate orange. The Program row will change to display the [Show Prog] and [Show Prev] inputs, as shown below. On a 2000+ these are after input 22.

3. Press the **[Show Prog]** preview button, it will illuminate and start to blink indicating that it is on the shifted row.

4. Press the **[Cut]** button, you are now seeing the processed output from the Server. A vertical glitch may occur when switching to the Show Prog/Prev inputs, since inputs are now being converted.

5. If the composition on the Program monitor matches the Multi-View Program output, press the **[Join the Show]** PixButton in the upper right corner in Device Control – A.

   The Control Panel and Switcher now are in normal mode, and the Broadcast Pix logo on the Granite Switcher will be solid white.



4.15 Capture of Stills

Still capture is a feature enabled in a future free software upgrade.

The Broadcast Pix system can capture a still image of the program output or preview output. The still image can then be loaded into a still store and used in a production.

4.15.1 To Capture a Still Image

1. In BPswitcher select the **File** drop down menu, as shown below.



2. Select the **Capture Still** menu**.**

3. Either select **Program**, to capture a still of what is currently on Program.

4. Or select **Preview**, to capture a still of what is currently on Preview.

5. Once captured, a pop-up window will notify you that a still has been successfully captured. It may take a few seconds for this window to appear.
   In result, a file named preview.bmp or program.bmp will be created in the Capture Folder.

NOTE: If it is desired to capture more than one still image, it is necessary to rename the file that is saved to the Capture Folder, since any other captures will overwrite the first one.

4.15.2 Selecting the Capture Folder Destination

1. Click on the **File** menu, **Capture Still** and then **Capture Folder…** option, as shown below



This will bring up the Select Folder window.

2. Use the select folder window to navigate to where you would like to keep your captures. In the example shown below, the Select Folder window has selected a still folder that is used in a show. When you choose the folder you want click on **Select.** The default folder is C:\BroadcastPix\Captures.



2. If it's desired to instantly use a captured still image of preview or program, the use of Watch Folders can automatically add them to a Still store. Simply point the destination of the capture folder to C:\watch\(show name)\Still 1.
See section 3.5.7 for more information on Watch Folders.

Section 5:
Character Generator & Graphics



Every Broadcast Pix Granite system includes a broadcast-quality character generator from Harris called Inscriber TitleMotion GS. The CG has very extensive help menus. No attempt is made here to cover all of the capabilities of the application.

Instead, this section 5 of the Broadcast Pix manual provides a quick overview of how to create CG graphics, and then focuses on how to import them into the Broadcast Pix system, and how to control them on-air from the Broadcast Pix control panel.

TitleMotion GS can create three main types of CG graphics:

1. Still images — see section 5.2
2. Rolls/Crawls — see section 5.3
3. 2D/3D Animations — see section 5.4

5.1 CG Installation

The Broadcast Pix system ships with the Inscriber TitleMotion GS software already installed. The Inscriber box packed with the system includes a copy of the CG software, and a purple application dongle. The dongle must be attached to the system to be able to open and use the application. The dongle attaches to any USB port and on new systems this dongle is installed internally to a USB port on the motherboard. If the dongle is not attached when you attempt to open the application, you will get an error message that reads dongle error.

The included Inscriber CD may be installed on other systems, but will only work when the dongle is moved to them. Additional dongles may be purchased as options.

If the optional Rapid CG software is purchased, it too will come pre-installed on your system. Rapid CG may be installed on other systems, but both TitleMotion GS and Rapid CG need to be installed and have the dongle attached to operate. Additional dongles may be purchased if a second remote PC is desired.

5.1.1 TitleMotion GS Canvas

Before creating any graphics with Inscriber TitleMotion GS, it may be helpful to understand the main window/canvas of the application. Below is a blank canvas with a brief overview of some main buttons, for further information refer to the **Help** drop down menu in TitleMotion GS.

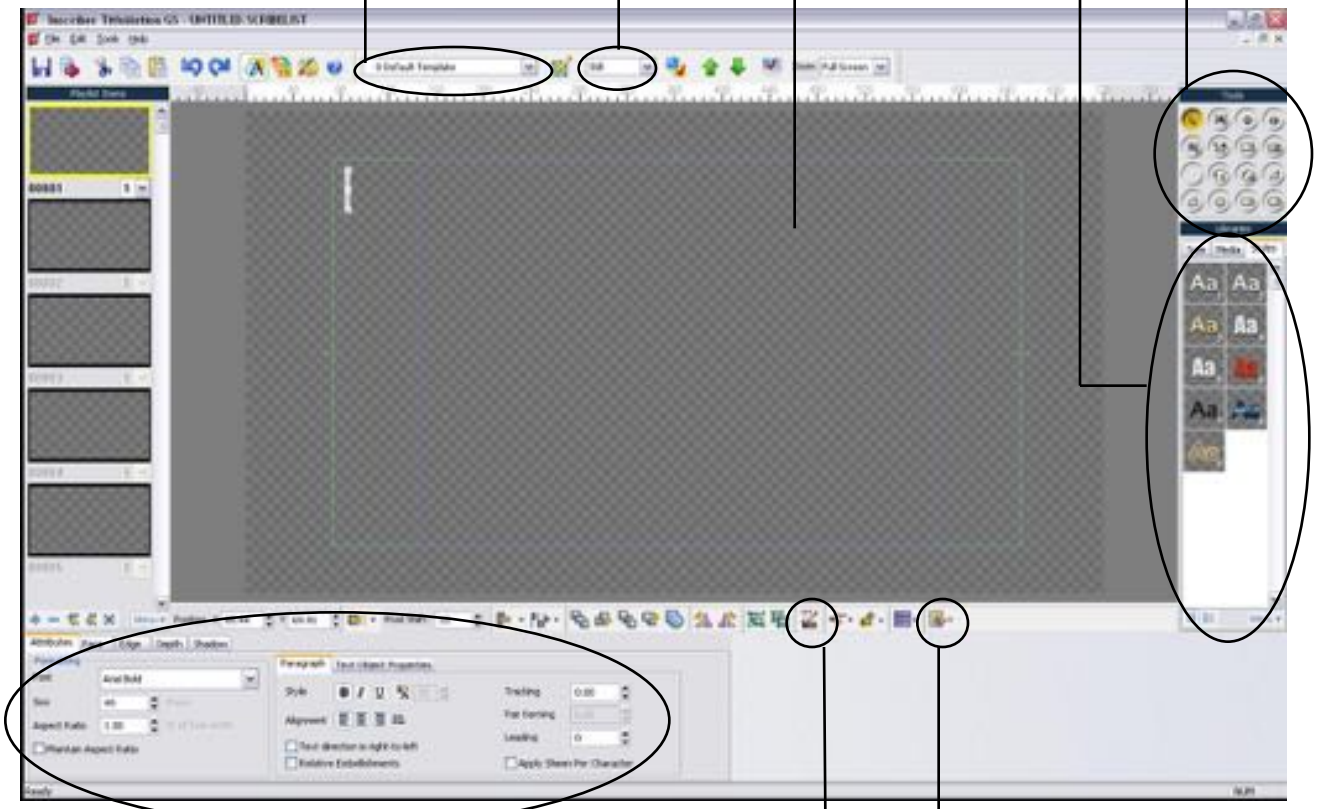
Tools: Select to create various text, logos or custom graphics

Title Types: Select from Still, Roll, Crawl or Animation

Libraries: Shortcut to customizable styles for text/graphics, view/select logos and pictures, and view all layers

Template Manager: Drop down menu to access 200+ pre-designed or user-saved templates

Canvas: Workspace in which you create CGs



Attributes: Change type of font and attributes.
Face/Edge/Depth/Shadow: Change text/graphic's coloring/shading. Can be solid, gradient, transparent or textured.

Background: Add a full-page colored background or graphic. Default is transparent/none.

News Edit: Where RTX Tags are applied for Rapid CG

NOTE: It may be useful to turn on the Title Safe zone, which can be found under the Display options button on the top menu bar (monitor icon with a checkmark). This will act as a guide when creating graphics so your text does not get cut off on the edges of TV screens.

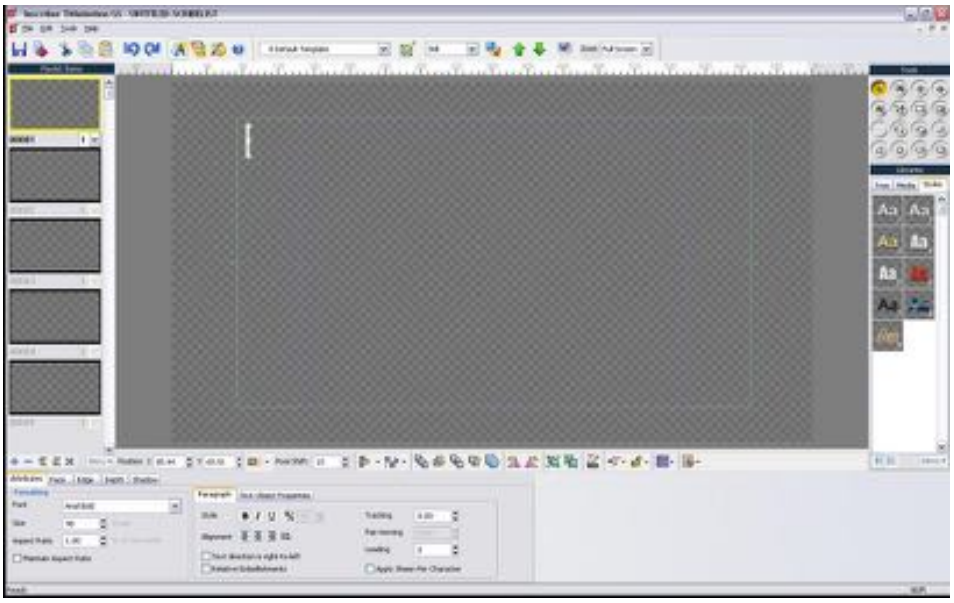
5.2 Creating Still CG Graphics

CG graphics can be created from scratch using all of the tools in TitleMotion. The easiest way to get started however, is to use one of the over 200+ pre-designed CG templates provided by Inscriber. The canvas size of Inscriber is automatically set by Broadcast Pix and is always 1920x1080.

When the Broadcast Pix Switcher application is opened, it will automatically open TitleMotion and minimize it, ready for use. It is recommended not to close TitleMotion and use the minimize button to hide the application, when not in use.

To create a CG using a template:

1. Double-Click on the **TitleMotion Icon** on the desktop to start the Inscriber application and the application will launch a blank canvas, as illustrated below. The application may take a minute to load.

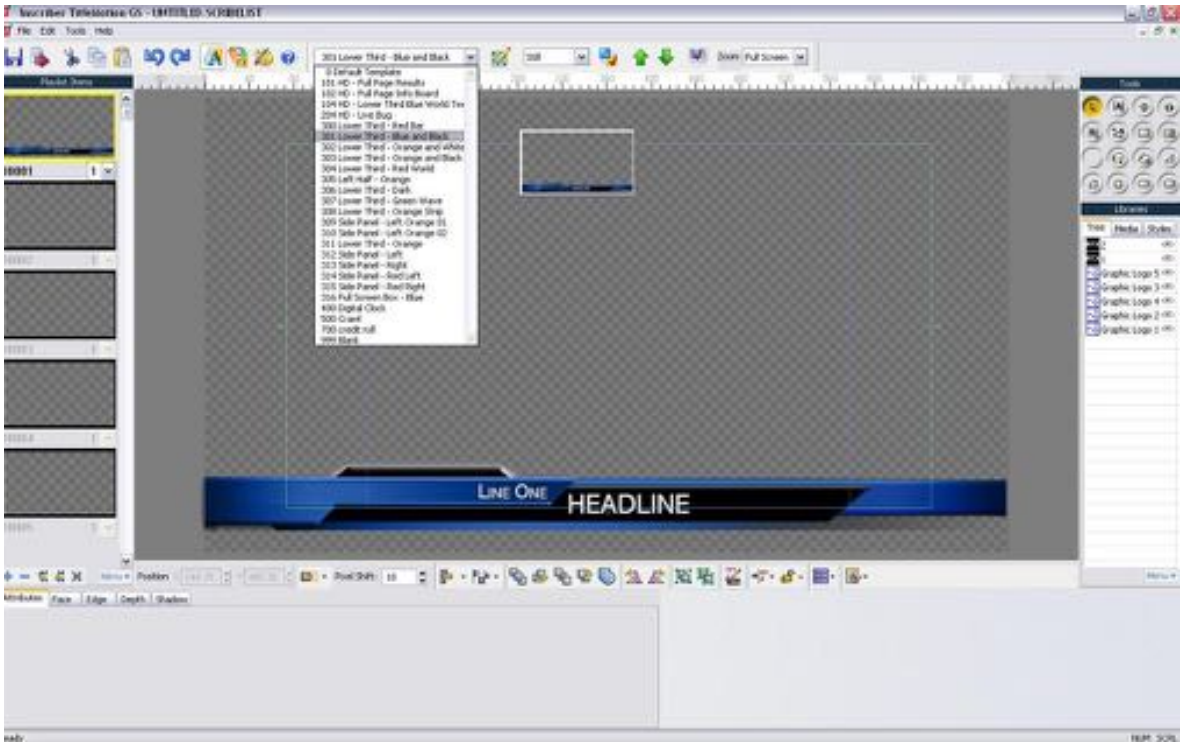


2. At the top of the Inscriber GUI, click on the **Templates** drop down menu.

3. Scroll down through the many templates until you find one you like. As you scroll down a preview of each template is shown as illustrated below.



4. Click-on the desired **Template** and it will be loaded into the canvas, as shown below.



5. Position the cursor over the letters and then type in what you want. That is all there is to creating a professional title.

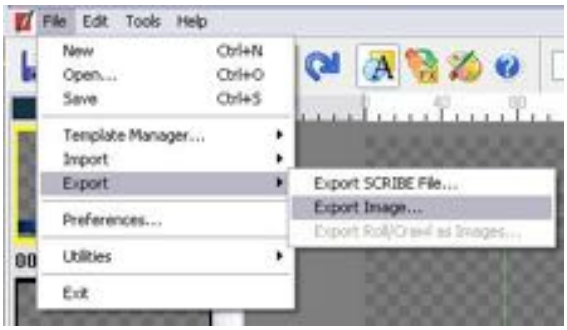
   If desired, you can modify your title by changing the font, point size, position, color, shadow, sheen, glow, transparency, etc. Use the various tabs on the bottom of the canvas to change these attributes. See the Inscriber Manual or help menus for more information.

5.2.1 Exporting a Still Graphic from Inscriber to Broadcast Pix

Once you have created a CG, you then need to export it for the Broadcast Pix system to access it. You can save it to many common files types, such as Bitmaps, JPEGs, Targas, as well as editable Inscriber .Scribe files. It is important to export any graphics that contain a transparency/alpha channel with a 32 Bit Depth, in order for the graphic to key over video. The two commonly used files in Broadcast Pix are Truevision Targa files (.TGA) and Inscriber Scribe files (.SCRIBE).

.Scribe files give you the option to update/change a graphic, that is already in your Broadcast Pix show, quickly and on-the-fly for immediate results, see section 5.4.1.

To Export a Still Graphic:



1. On the Inscriber GUI, at the top left, click on the **File** menu, and a drop down menu will appear.

2. Click on **Export, Export Image…,** as shown on the right. The Save As window will appear.

3. Change the file type to **TGA, Truevision (.TGA)** or any other desired file format.



4. Click on **32 Bit** under Save Options, to preserve the alpha channel (if available)

5. Type in the **File Name**.

6. Change the **Save In** storage location to the folder in which you wish to keep your titles. In general, all CG graphics are kept in the central library on the C drive:
   C:\\graphics\cg\
   (All stills and logos are kept in C:\\graphics\stills\ and C:\\graphics\animations\ respectively).

7. Click On **Save.**

8. You may now add the created graphics to your Broadcast Pix show, as described in Section 3 with PixMaster.

To Export a Scribe File:

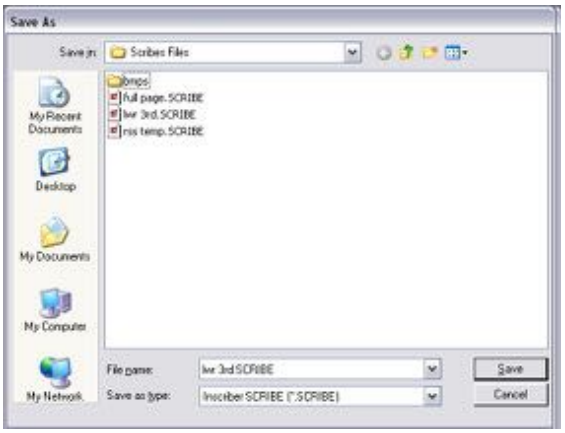
1. On the Inscriber GUI, at the top left, click on the **File** menu, and a drop down menu will appear.



2. Click on **Export, Export SCRIBE File…,** as shown on the right. The Save As window will appear.

3. Type in the **File Name**.

4. Change the **Save In** storage location to the folder in which you wish to keep your titles. In general, all CG graphics are kept in the central library on the C drive: C:\\graphics\cg\
(All stills and logos are kept in C:\\graphics\stills\ and C:\\graphics\animations\ respectively).



5. Click On **Save.**

6. You may now add the created graphics to your Broadcast Pix show, as described in Section 3 with PixMaster.

5.2.2 Exporting Graphics from Photoshop to Broadcast Pix

When exporting from Adobe Photoshop, you may export to many popular file formats, like .JPEG and .BMP, to import into the Broadcast Pix system. Although neither file format supports an alpha channel or transparency layer, a Targa/Truevision, .TGA, file does support a 32 bit alpha channel. Create your graphics using a 1920x1080 canvas, at 72 pixels/inch in an 8 bit RGB color mode and a Pixel Aspect Ratio of square pixels (HD), using a transparent background. Prior to exporting, you will need to prepare your Photoshop document in order for the alpha channel to be recognized in Broadcast Pix

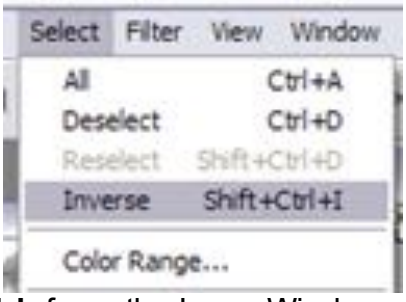
To create an alpha channel:

1. In Adobe Photoshop, select the **Magic Wand Tool** from the Tools Window, or **W** on the keyboard, after you've created and completed your document.



1. Click in the transparent area (the checkered board pattern) of the file. This will select the transparency. A dotted lined will appear around your image.

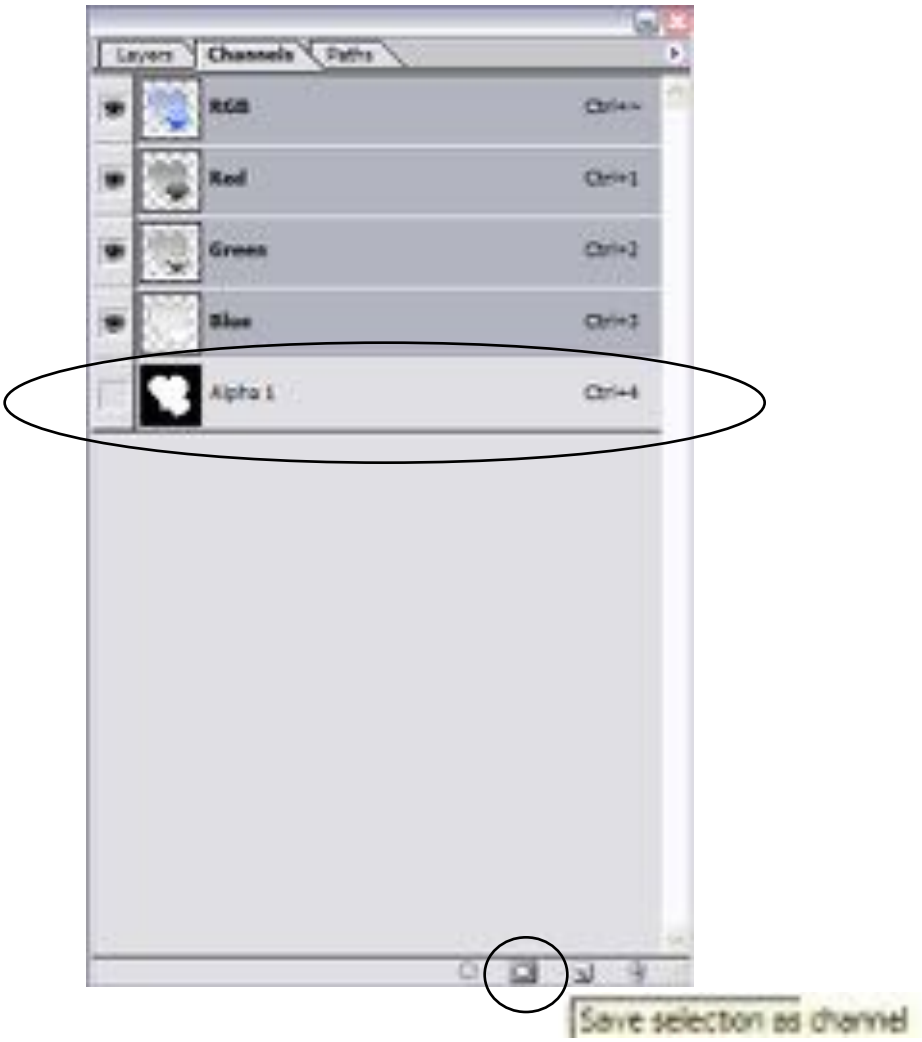
2. Select the inverse of the image by going to the **Select Menu,** then **Inverse.**



3. Select the **Channels Tab** from the Layer Window.



5. In the lower right corner of the Channels Tab, click on the **Save selection as channel** button. You now have created an alpha channel. The Channels Tab will show the new channel, as shown below.



6. Save your file by selecting the **File, Save As…** menu. Change the file **Format** to **Targa.** Select **32 bits/pixel** under the Options Window (so the transparency layer gets saved). **Name** your file, **Choose** your directory where the rest of your Broadcast Pix graphics are saved (C:graphics\) and click on **Save.**

7. Import/Add your file to your show using PixMaster, as described in section 3.

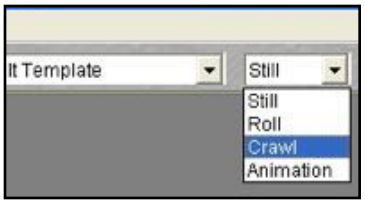
5.3 CG Rolls and Crawls

CG graphics can also be created to roll vertically or crawl horizontally, and then later controlled by Broadcast Pix to a custom speed setting. Ideal for making a credit roll or a ticker at the bottom of the screen.

5.3.1 To create Rolls/Crawls

1. Double-click on the **Inscriber icon** on the desktop to start the Inscriber application. TitleMotion must be started from the desktop/start menu and not from right-clicking an .Scribe file to create Rolls//Crawls.

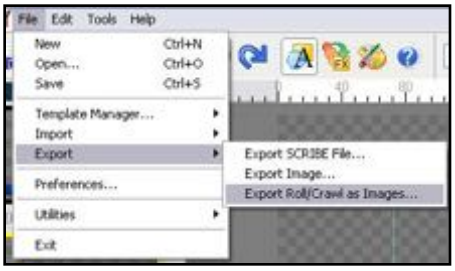
2. Select **Roll** or **Crawl** on the drop-down menu to the right of the template palette menu, as shown on the right.



3. Type in the desired **text**. Note that a scroll bar appears below the text or to the right to indicate where in the crawl/roll you are. The scroll bar appears after you pass the first page. You may also add graphics to your roll or crawl, which will move with your text.



4. Once finished, on the **File** menu select **Export, Roll/Crawl as Images…**, as shown on the right.



5. In the Save As window, change the Save As Type to: **Targa (.TGA)**, and enter a file **name** and save to C:\\graphics\cg\ then click on save **save**. It may be desired to save the images into a subfolder, since individual files will be exported.

6. Add the roll/crawl to your show using PixMaster, as described in section 3. Even though multiple files were created, only one file will be visible/added to your show.

5.3.2 Playing a Roll or Crawl

1. If not already done, assign the CG to the desired keyer by pressing its **[Key Selection]** button and select the CG button in the **[source]** row.

2. Assign the Device Controls to the CG by pressing the **[CG]** button, the button will illuminate orange.

3. Select the desired CG file that you wish to roll or crawl, by pressing its **[PixButton]** on the CG PixPad. Be sure that the file has been added to your show, using PixMaster.

4. Bring the CG page to either preview or program using the keyer control described in section 4, and the first page of the roll or crawl will be shown.

5. The CG graphic will begin to roll or crawl when you press the **[>]** button in the motion control section, and its timecode will show in the display.



5.3.3 Motion Controls for Rolls and Crawls

Ensure that the Device Controls are assigned to CG by checking in the top left corner of the display and seeing if it says CG. (If not, press the CG button). The motion controls will only control the motion of the device assigned to the Device Controls.

To start a CG roll or crawl playing, press the **[>]** button



To pause it, press the **[>]** button again (and its timecode in the display will show the frame paused on)



To start it playing again from a pause, press the **[>]** button again



To rewind it to the beginning, press the **[I<<]** button



To change the speed of the roll or crawl see the next section.

NOTE: If you have a roll on air, and you attempt to switch it on-air to a crawl, then you may get a brief glitch on air. This change should be made off air, or one should define a second channel of CG for the crawls. (Similar issue if you have a crawl on air and attempt to switch to a roll.)

5.3.4 Modifiers for Rolls and Crawls

Modifiers may be applied to rolls and crawls. These include changing a roll to a crawl, adding a blank page at the beginning and/or end, setting it to loop, setting it to auto-start when taken to air, changing the read direction, changing the aspect ratio and changing its speed.

To modify a roll or a crawl:

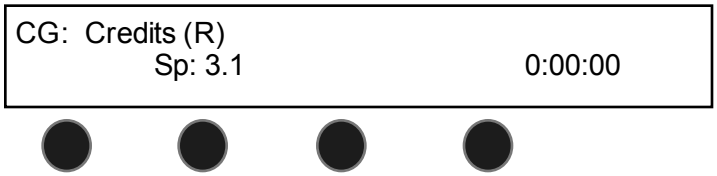
1. Press the **[CG]** button to bring up the top page of CG controls on the PixPad, if they are not already up.

2. Press the **[Controls]** PixButton, which will bring up the following PixPad of Modifiers:



CG Controls PixPad

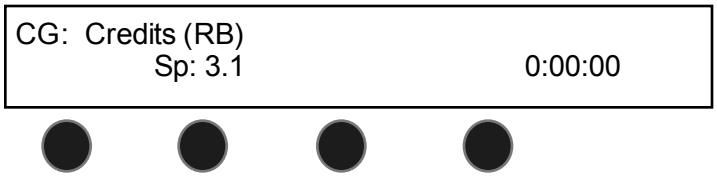
3. You can always view which modifiers are present on the a CG graphic by viewing the display on the control panel (or SoftPanel). These modifiers are always displayed when you select a CG graphic in parenthesis after the name of the selected CG graphic, in the same way that clip modifiers are shown for clips. When the CG graphic is first created it has a (R) for roll, as a default, as shown below for the CG title in this illustration called Credits. These modifiers are also visible on the Multi-View.



4. To change a roll to a crawl, press the **[Roll/Crawl]** PixButton on the CG Modifier PixPad. The (R) in the display will change to a (C)

5. To change a crawl to a roll, press the **[Roll/Crawl]** PixButton on the CG Modifier PixPad. The (C) in the display will change to a (R)

6. Sometimes it is desired to have the roll or crawl start out of view. This way when you bring it to air it is not present, until you start it with the [>] button. To add a blank (black) page to the beginning of a roll or crawl, press the **[Start Black OnOff]** PixButton on the CG Modifier PixPad. The letter (B) will be added to the modifiers in the display to let you know that a blank page has been added to the beginning, as illustrated below:



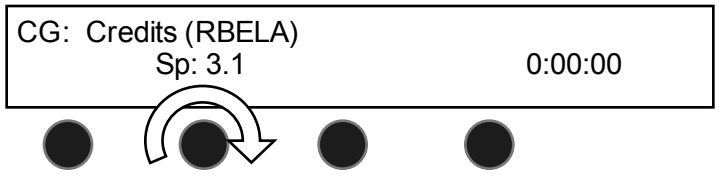
7. To add a blank (black) page to the end of a roll or crawl, press the **[End Black OnOff]** PixButton on the CG Modifier PixPad. The letter (E) will be added to the modifiers in the display to let you know that a blank page has been added to the end. You can add blank pages to both the beginning and end if desired.

8. To set a roll or crawl to continuously loop, press the **[Loop CG OnOff]** PixButton on the CG Modifier PixPad. The letter (L) will be added to the modifiers in the display to let you know that it has been set to loop.

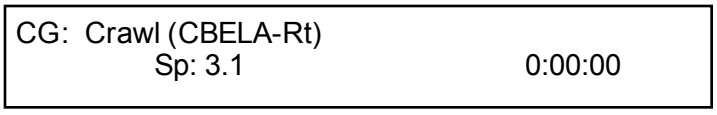
9. On of the most powerful modifiers for rolls an crawls is auto-start. This sets the roll or crawl to auto-start when taken to air, rather than starting it manually with the [>] button. To set a CG graphic to auto-start, press the **[Auto Start OnOff]** PixButton on the CG Modifier PixPad. The letter (A) will be added to the modifiers in the display to let you know that it has been set to auto-start.

10. To change the speed of a roll or a crawl, turn the middle knob marked **Sp** (Speed), as shown below. The speed in pages per second will appear above the knob. This illustration also shows a CG graphic with many

    modifiers set. To make a roll/crawl run faster turn the knob to the right, to make it run slower turn it to the left.
    You can dynamically change the speed on a roll/crawl any time, giving you greater flexibility for your roll/crawls.



11. For international languages that read right to left, the **[Direction]** PixButton may be used to change the read direction. Only crawls may have their direction changed. The default state of the text read direction is to the left, meaning the crawl comes in from the left and the display shows Lt. Changing the direction will also change the display to Rt, to represent that the crawl is coming in from the right, as shown below.



NOTE: When playing a Roll or a Crawl, Broadcast Pix does not auto-detect if the CG is a Roll or Crawl, it will always default to C for Crawl. It will be necessary to manually change your files accordingly.

5.4 Updating CG Graphics On-the-Fly

If you wish to change a CG or other graphic during a live production, such as to change the name of a guest on a talk show, you can overwrite an existing CG in the memory for the show. While this does not always require a second graphics operator to do, frequent changes are best handled by a second operator.
There are three ways of editing titles on the fly:

- .Scribe Editing
- Overwriting a file
- Optional Rapid CG (see section 5.9)

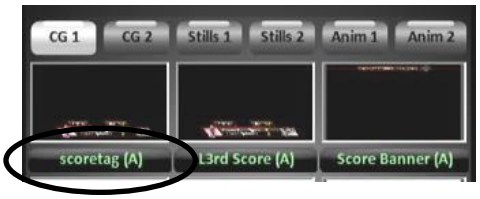
5.4.1 Quick Scribe Editing

A Scribe file is an editable Inscriber file, which preserves all the data and layer information of one graphic file. Scribe editing provides for rapid overwriting of files, even if the file is on program or preview.

To Activate .Scribe Editing:

1. Create an Inscriber file in TitleMotion GS, and export it as a .Scribe file as described in section 5.2.1.

2. On the Multi-View you will notice that the CG/Still/Animation PixPad will have blue text underneath its thumbnail, this represents a .Scribe file. Green text represent an .ICG file. Yellow represents a Chyron .LYR file.

   Right Click on the thumbnail of the graphic you wish to edit, and it will automatically open in Inscriber.

3. In Inscriber, apply your changes as needed.

4. In the menu bar, click on the **Quick Scribe Export** button, as shown on the right.

   The graphic will update with your desired edit, even if it is currently on program/preview and the TitleMotion GS application will remain open.

5. To perform more edits repeat steps 2-4.

6. To minimize the TitleMotion application click on the **– (minimize button)** on the menu bar.

5.4.2 Overwriting a File

Another way to update a file that is currently in your show is to simply overwrite the file using standard Microsoft Windows. This may be desired if you have the Broadcast Pix Server plugged into a separate local network, where files can be shared and saved. The use of Watch Folders can assist in automatically replacing/overwriting graphic files, see section 3.5.7 for more information.

To Overwrite a File:

1. Create a CG in either Inscriber or any other graphics application.

2. Export the graphic with the same file name and file extension as the one you wish to replace, i.e. .TGA, .JPEG, .BMP.

3. Save the file in the same location as the current version. C:\\graphics\cg And click on **Yes** when asked to **Replace/Overwrite** the existing file.

4. The file will automatically update, glitch-free, on program/preview.

5.5 Animation Store

The Broadcast Pix Animation Store plays out native image sequences without the need of conversion. There are up to 2 animation stores that can play uncompressed files in a TGA, BMP, GIF, JPG or PNG image sequence, in addition to the Apple Animation Codec in a .mov file. Channels 1 and 2 can support up to 50 frames per file and per channel of uncompressed files.

In addition, compressed RLE .TGA files may be used to increase the length of the animations. When using RLE files each animation in each store has a maximum of 400mb of data. You may also configure the Granite System to have a 1 channel 100 frame (uncompressed) or 800mb (compressed) animation store. This turns the system into a 1 Animation Store and 1 logo store. Still images/logos may also be loaded in either animation channel.

To Configure the Animation Store:

1. In BPswitcher, select the Broadcast Pix Menu and select **Setup, System Options,** as shown on the right.



2. Select the **Video** tab.

3. In the Animation Setup section, select either the **1ch (800mb)** or **2ch (400mb)** radio button, as shown on the right.



4. Click on the **OK** button to apply the changes.

   A application restart is needed for the change to take effect.

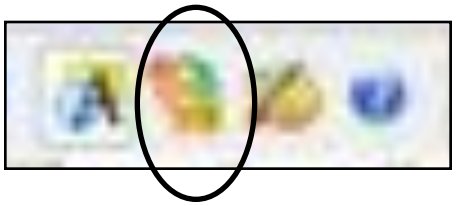
5.5.1 Creating an Animated Graphic

The internal CG supports a complete range of animated titles and effects, including an drop, rumble, squish, topple, flip and many more in both 2D and 3D. These also use handy templates that can rapidly create an animated title, and are easy to customize. The TitleMotion operators manual contains much more detail on animations. The basics are covered here in this Broadcast Pix system manual.

To Create an Animation in TitleMotion:

1. In TitleMotion, select the default template or another template you wish to use, type in your text and perform any modifications to it.

2. Click on the **Animation Editor** button, as shown to the right.



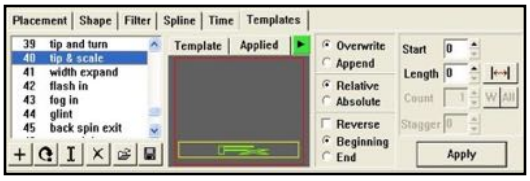
3. A pop-up message will appear asking to convert the layout to an animation, click on **Yes,** as shown on the right.



4. Select an animation template from the **Templates** tab at the bottom of the GUI.

   For example, you might select **tip and scale** as shown to the right.

5. You can sample this animation by pressing the green **[>]** button. If you like it, click on the **Apply** button.



6. If desired, you can move the animation movement points for the chosen animation by clicking on them in the large window showing your text, and dragging them to another location. You can also add key frames and adjust the timing of animations in the various controls tabs on the bottom of the screen.

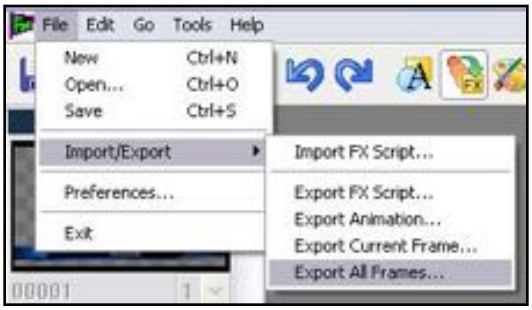
7. You can preview the animation at any time, either using a wire-frame view, which is quicker but does not provide any graphical information. To play click on the green ply from start button, as shown on the right.



To view a full-quality preview, which is slower than real-time but provides and accurate representation of the file animation, click on the **Onscreen Preview** button in the animation palette, as shown on the right.



8. To save the animation, click on **File** menu, then **Import/Export**, and then select **Export All Frames…**, as shown to the right.



9. In the Save As, insure that the file type is set to **TGA, Truevision** and that the **Compression** check box is checked and enter the **file name.**

Save the file to the Animations folder in C:\\Graphics\Animations. It is recommended that you save the animation in a subfolder and that you name the folder according, since the export will create multiple pages with the file names *name*000000. These folders can be created from this window, by clicking on the new folder icon.



10. Click on **Save** and the animation will be rendered (a series of Targa files will be saved) to the folder you have indicated.

After the animation is exported from the Inscriber CG, it can added to the Animation Store, as described in section 3.

5.5.2 Creating Animations in 3rd Party Applications

Inscriber makes great animations, but you can use many popular animation applications including Digital Juice, Art Beats, Adobe After Effects, Apple Motion and others to make animations for the Broadcast Pix system. In general, any animation system that can export a sequence of frames of images will work, as these frames can be brought into the Broadcast Pix Animation store. All files loaded into the Anim store must have a frame size of 1920x1080 with square pixels and a 16:9 aspect ratio. No AutoAspect correction may occur in the Animation Store.

If you are creating animations with alpha channels make sure to save files as 32 Bit Targa files to preserve the transparency layer. In addition, if the application has a compressed setting or RLE setting for Targas, select it to gain longer lengths. There is a maximum file size of 400mb for each animation in each store or 800mb for each when configured as one animation store, as described in section 5.5. QuickTime .mov files using the Animation codec may also be used, however since these files are uncompressed, there is a frame limit of 50 frames for each animation in each store or 100 frames when configured as one animation store. In addition if uncompressed TGA, BMP, PNG or JPEG files are used, they too have a frame limit of 50 or 100 frames. All image sequences need to end with a number starting with "0" in order for the Import Animation function of Broadcast Pix to work properly (i.e. Animation000000 or Animation2_000000).

5.5.3 Basic Animation Operation

All animations must be loaded into Switcher memory prior to playing it on-air. Even though numerous files may be added to the show and viewed on the PixPad, only 2 animations may be loaded for playback at a time, one in each channel. The load time is not real time, each animation takes approximately 2X the duration time to load.

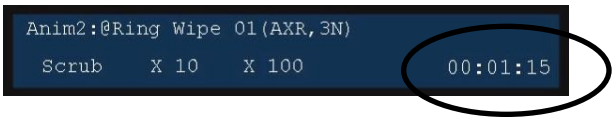
To load an Animation:



1. Assign the Device Controls to an Animations (Anim) channel, select the **[Anim 1]** or **[Anim 2]** button, it will illuminate orange.

2. Select the desired animation file by pressing its **[PixButton]** on the Anim PixPad, it will illuminate red, as shown on the right.

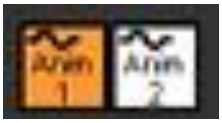
   The Animation is now loading, the Animation counter on the Multi-View and the counter in the display will start to countdown, as shown on the right.



   Once the counters reach 00:00:00, the animation is ready to be used.

Motion Controls for an Animation:

1. Assign the Device Controls to an Animations (Anim) channel, select the **[Anim 1]** or **[Anim 2]** button, it will illuminate orange, as shown on the right.



2. The display will show the 3 scrubbing speeds, as well as the timecode.

   To scrub the animation forward or back, turn the **[1st Knob]** in the motion controls section, as shown on the right.



3. To start playing the animation, press the **[>]** motion control button, and it will illuminate orange. The counter will also begin to countdown.

4. To stop/pause an animation, press the **[>]** motion control button again and the light will turn off.

5. To rewind the animation to the beginning, press the **[|<<]** motion control.

6. To jump to the end of the animation, press the **[>>|]** motion control.

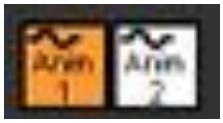
NOTE: If you want audio to play at the same time as your animation, then create a .wav file of the same name as the animation and store it in the same location as the animation file on the C drive, (for example alphawipe00001.tga and alphawipe.wav). If the file name as an _ at the end of the file name, it too must be deleted (for example alphawipe_00001.tga and alphawipe.wav).
The .wav file needs to be PCM Data 16 bit at 48 kHz.

5.5.4 Modifiers for Animations

Modifiers or controls may be applied to animations. The modifiers are similar to the clip store modifies and they include setting it to loop, setting mark points, setting it to auto-start when taken to air, setting it to auto-stop and/or auto-rewind when taken off-air.

To modify an Animation:

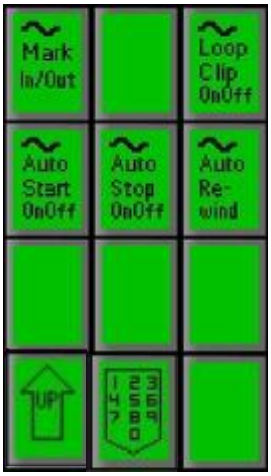
1. Assign the Device Controls to an Animations (Anim) channel, select the **[Anim 1]** or **[Anim 2]** button, it will illuminate orange, as shown on the right.



2. In the PixPad, select the **[Controls]** PixButton. The PixPad will change to show the Animations Controls, as shown on the right.

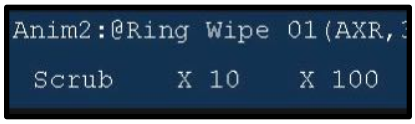


   You can always view which modifiers are present on the the Animation by viewing the display on the control panel (or SoftPanel) and on the Multi-View. These modifiers are always displayed when you select an Anim in parenthesis after the name of the selected file, in the same way that clip modifiers are shown for clip.



   In the example to the right the '@Ring Wipe' is set to Auto-Start, Auto-Stop and Auto-Rewind.

3. To set an animation to continuously loop, press the **[Loop Anim OnOff]** PixButton on the Anim Controls PixPad. The letter (L) will be added to the modifiers in the display to let you know that it has been set to loop.



4. To set an animation to auto-start when taken to air, rather than starting it manually with the [>] button, press the **[Auto-Start OnOff]** PixButton. The letter (A) will be added to the modifiers in the display to let you know that it has been set to auto-start.

5. See section 6.3 for more information on clip/animation controls.

5.6 Basic CG & Stills Operation

The unified control architecture of the Broadcast Pix system manages all content devices the same way. For example, once you learn how to control CGs, you have also learned the basic elements of how to control Stills, Clips and Animations.
CG, Animations and Clips have more modifiers/controls since they involve motion, where as Stills only have aspect ratio controls.

To operate the Character Generator or Still Store, substitute CG/Still for Clip and read:

Section	To learn how to
6.2	Assign the device controls to the CG/Stills
6.3	Select a CG/Still graphic by Name
6.3.1	Select a CG/Still graphic by Number
6.3.2	Select CG/Still graphics with a mouse
6.3.3	View more CG/Still graphics in the Multi-View

Up to 2 channels of CG and up to 2 channels of Stills may be added to a show.



CG PixPad



Stills PixPad

5.7 Preparing Still Content

The system will accept still graphics in several formats, which can be saved out of Inscriber or any other graphics application:

Windows Bitmaps, which are picture files ending in .bmp
Targas, which are picture files ending in .tga
Portable Network Graphics, which are picture files ending in .png
Graphics Interchange Format, which are picture files ending in .gif
Joint Photographic Experts Group (JPEG), which are picture files ending in .jpg

The system accepts full screen stills in 1920x1080, 1280x720 square pixels in a 16:9 aspect ratio for 50 and 60 Hz systems. In addition, standard definition graphics at 720x486 for NTSC and 720x576 for PAL may also be used in the Still and CG stores.

The bit depth of a graphics must be 24bits or higher. The bit depth of a .tga/.bmp still must be 32bits to use a key/alpha channel. The system will also accept smaller pictures or larger ones and either retain their size or modify them to fit the screen, see the import function of the PixMaster section (Section 3).

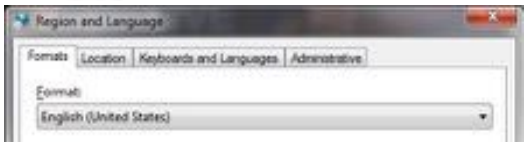
5.8 Using International Characters with Inscriber

You may use international characters, such as Arabic and other right-to-left fonts, with Inscriber TitleMotion GS. All the international settings are handled through Windows and come pre-installed on systems. The CG automatically detects the region text-entry method from Windows, however the correct keyboard needs to be added from the Windows Control Panel.

1. Navigate to the **Region and Language** control panel by going to the **Start Menu, Control Panel, Region and Language,** as shown on the right.



2. Select the **Keyboard and Languages** tab, as shown on the right.



3. To set up your keyboard, select the **Change keyboard…** button.

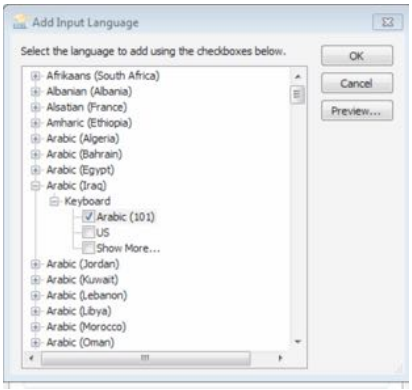


4. In the Text Services and Input Languages window, click on the **add** button.



5. In the Add Input language menu, select the desired **language** and open the tree view. Then select the appropriate keyboard by placing a **checkmark** next to the appropriate keyboard, as shown on the right.

6. Click on **OK** to close the window.



7. In the Text Services and Input Languages Window, click the **Language Bab** tab, as shown on the right.



8. Ensure that the **Docked in the taskbar** radio button is selected in the Language Bar section, as shown on the right.

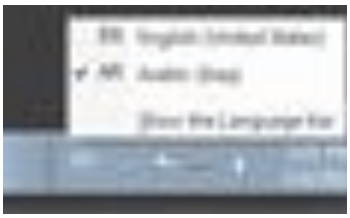


9. Click on the **Apply,** then the **OK** buttons to close the window.

10. In the Regional and Language window, click on the **OK** button to close the window.

    This will place a Language Bar in the Windows Taskbar, which is application specific. As you move from one application to another it will change your settings.

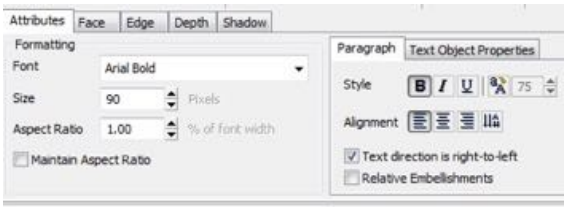
    In normal operation, it will display **EN** for English. When Arabic is enabled it will display **AR**, as shown on the right. (or whatever other language you have installed)



11. To change the Language Bar, Left-Click on the **EN** and choose **Arabic** (or whatever other language you have installed).

    You must first select the appropriate language prior to launching TitleMotion GS.

12. To use right-to-left characters, launch TitleMotion GS, under the **Attributes** tab for a text field place a checkmark next to **Text direction is right-to-left**, as shown on the right.



5.9 Optional Rapid CG Software

Rapid CG provides an interface for linking TitleMotion GS with external data sources. It inserts text and images into .SCRIBE template files and then updates and displays them on the Broadcast Pix Switcher. Text and images can be updated manually or automatically from XML (locally stored or on the web), Microsoft Access database (.MDB, .ACCDB), Excel (.XLS, .XLSX, .XLSM, .XLSB) or Comma-separated Values (.CSV) files. Note that certain Excel sheets with grouped tables may not appear/link correctly in Rapid CG.

Clocks, timers, dates, RSS and Twitter feeds may also be added to any template file. In addition, Daktronics or OES controllers may be connected serially to link the 'TV Feed' information to a graphic. These options are ideal for sports production, where data is constantly changing, (i.e. game clock and/or scoreboard) or for using as a simplified graphics station in a news or government production.

In addition, EZNews (.EZN) project files from Automated Data Systems and Rundown Creator scripts (.RCI) may be imported into Rapid CG. This allows users of EZNews or Rundown Creator to create their news script with graphical elements, then with a simple import function import graphics in show rundown order based off of pre-defined templates. This offers a simple, low-cost graphic automation.

There are 2 versions of Fluent Rapid CG: Rapid CG LT and Rapid CG (Full). The 2 versions offer similar functionality, however only in the full version of Rapid CG do you have the ability to output 2 channels, connect to external databases, connect to scoreboards and integrate with news automation software. This section will cover the full version of Rapid CG. When using Rapid CG LT, the same instructions may be followed, ignoring features only available in the full version.

5.9.1 Rapid CG Installation

To launch and operate Rapid CG, both TitleMotion GS and Rapid CG software must be installed and the USB activation dongle must be plugged into an available USB port on the Server. To operate the full version of Rapid CG a option code is also required to be entered in the BPSwitcher application. On new systems Rapid CG is pre-installed on the Server, on existing systems it may be installed using the installer program provided by Broadcast Pix. Contact technical support for more information. Rapid CG may not be installed on a remote PC.

When installed a Rapid CG icon will be present on the desktop, as well as a RapidCG folder will be created in C:\BroadcastPix.

5.9.2 Rapid CG Setup

Rapid CG allows for multiple Scribe files to be loaded in a project, which then can be used to output 2 files, labeled RapidCG_A and RapidCG_B. To output both of these files, 2 instance of Rapid CG must be opened, one instance will run channel A and the other B. Both output files can be added to the CG, Stills or Logo device of a Broadcast Pix show using PixMaster Show Editor. This method replicates a 'traditional' CG where only one or two outputs from a 'CG' is sent to a switcher and pages of CGs are selected on Rapid CG. Rapid CG LT can only output 1 file, labeled RapidCG_A.

The Rapid CG files are only visible to the Switcher and update when the BPSwitcher application is open and running. If this connection is not made, then you will notice that the thumbnail on the Multi-View PixPad says 'RapidCG Offline', as shown below:



To Modify Rapid CG output Settings:

1. Double-click the **Rapid CG** icon on the desktop, as shown on the right. Rapid CG will begin to launch, this process may take a few minutes as it searches for an Internet connection.



2. Ensure that the **RapidCG_A** and/or **RapidCG_B** files are added to your show in PixMaster Show Editor on the Broadcast Pix Switcher, as described in section 3.

3. To turn off rendering of the output files, click on the **Content Panel Menu**, select **Output** and deselect **Live Buffer,** as shown on the right. The Status Bar will display Live buffer output: OFF.



This is useful when the selected file in Rapid CG is on air with Broadcast Pix, but modifications need to be made to other files in Rapid CG.



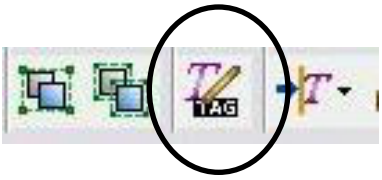
5.9.3 Adding the RTX Tags

Rapid CG updates text fields and logo objects in the CG layout, these text fields and logo objects must be assigned a RTX tag within TitleMotion GS. A RTX tag serves as a label for identifying the text fields and logo objects in Rapid CG to be updated. Only the fields that will be updated in Rapid CG must be tagged, all other images and fields that are not tagged will not be editable with Rapid CG.

To add RTX Tags:

1. Create your CG template in TitleMotion GS, as described earlier in this section.

2. Click on the text field or logo object to highlight it, then click the **News Edit** button at the bottom of canvas window, as shown on the right.

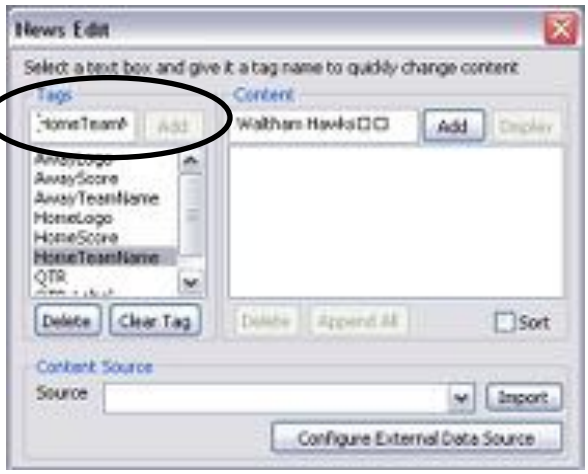


This will open the News Edit window, as shown on the next page.

3. In the News Edit window, enter the desired tag name in the **Tags** text field. Every tag field must have its own unique name, with a 43 character limit.

   Click on the **Add** button, or enter on the keyboard to apply the RTX tag.

   Continue to enter other tag fields by selecting other text fields or logos with the mouse on the canvas window and repeating this step.



4. Once all the RTX tags have been entered, click on the **Red X** button in the News Edit window, to close the window.

5. To view all the enabled RTX tags, click on the **Display Options** button (monitor with a checkmark) on the top of the canvas window and a drop down menu will appear, as shown on the right.
   Select the **News Tags** option.



   All the RTX tags will now appear in a small black box on the bottom center of the text field or logo object on the canvas, as shown on the next page.

   To modify the color and location of the tags click on the **Edit News Tags…** option and modify the settings in the News Tag Editor window, as shown on the right. Click on the **Done** button to apply the changes.

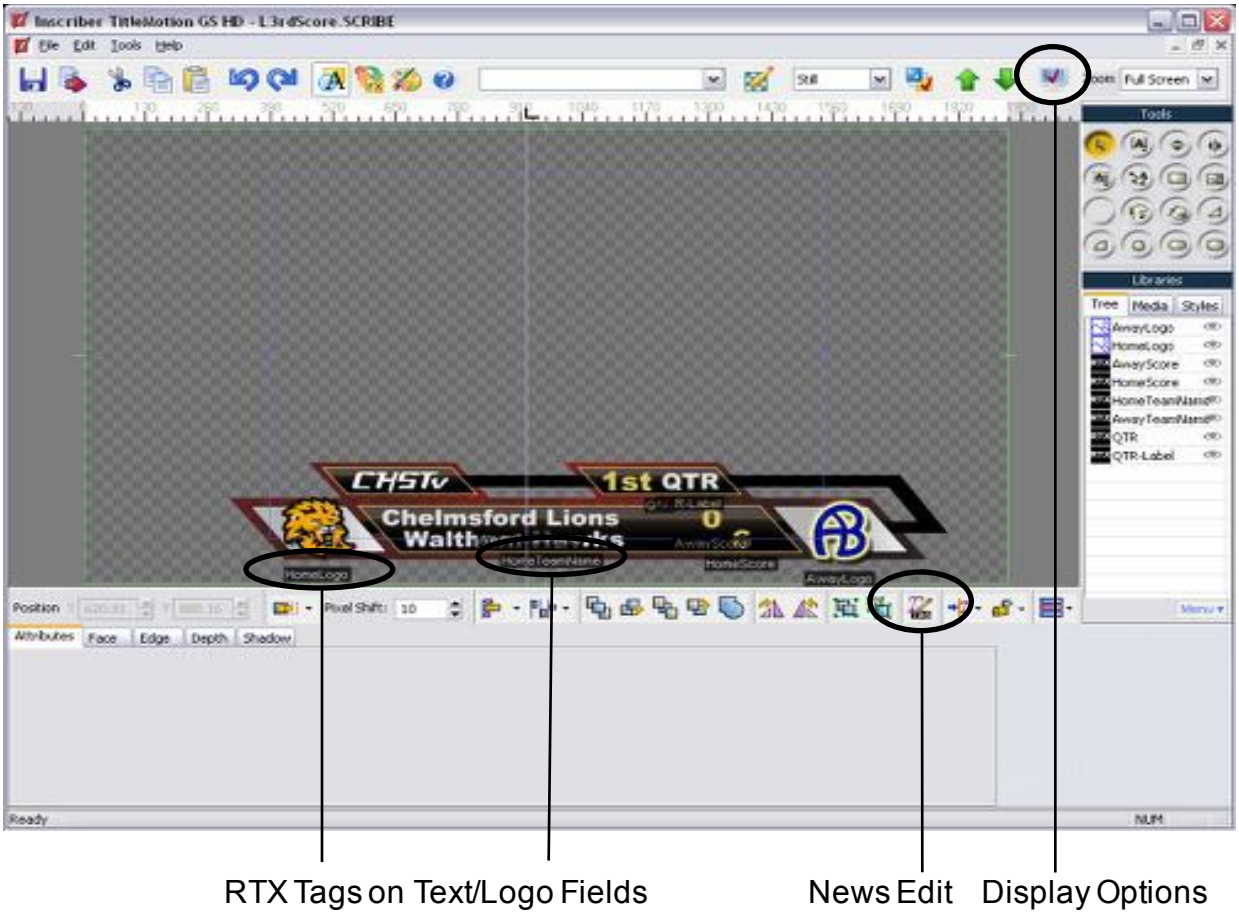


6. Export your CG layout as a .Scribe file, saving it in the **graphics** folder on the C drive with the rest the CG graphics for Broadcast Pix.



NOTE: It is important to create your CG Layouts in the way you would like them to appear on air. The only content that Rapid CG will change are the RTX Tag values. No color, font or sizing attributes will be affected.

TitleMotion GS Canvas Window



5.9.4 Rapid CG Overview

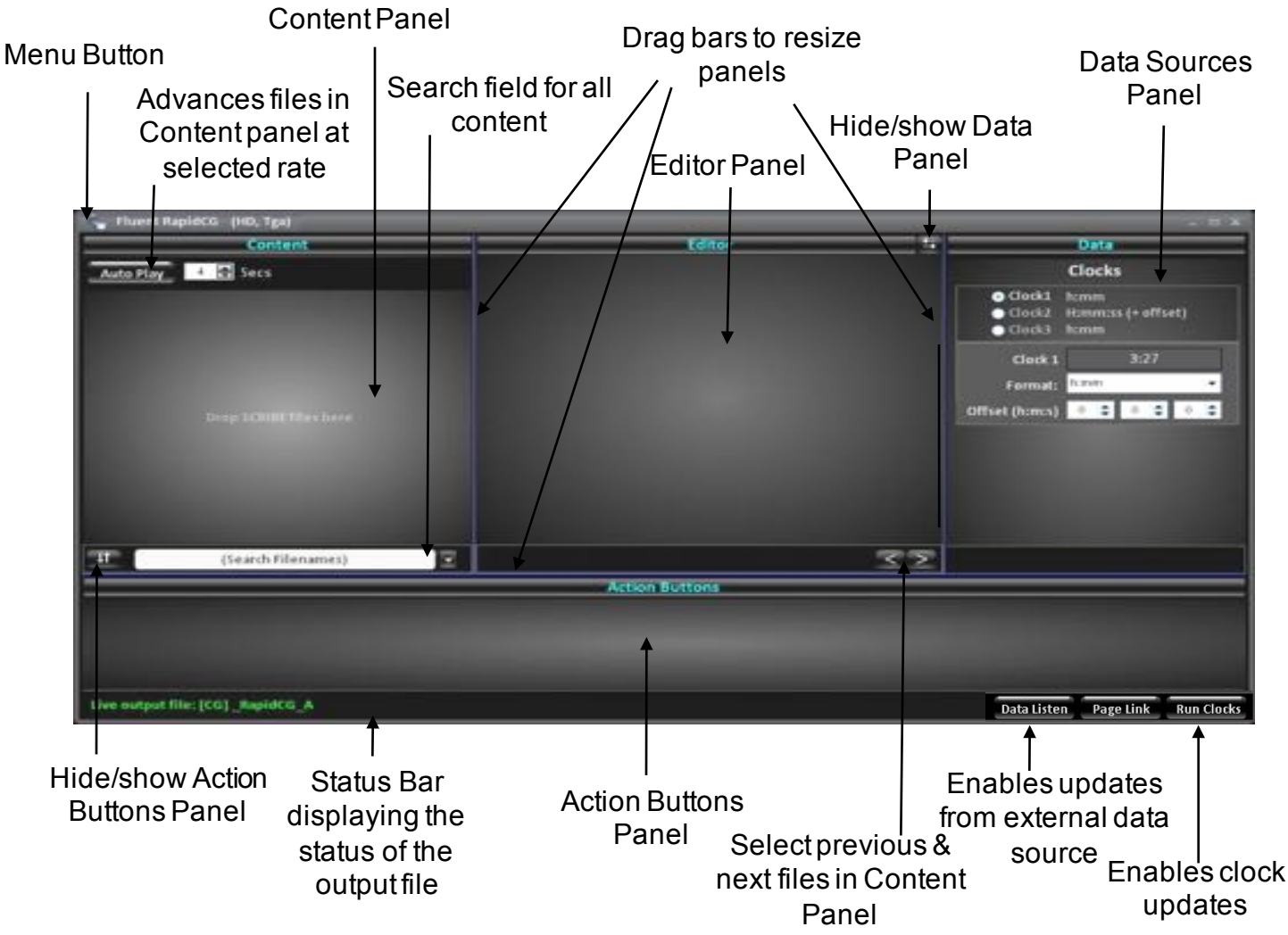
Rapid CG consists of 4 main panels, as shown below. The entire Rapid CG window is scalable.

Content: A bin where .Scribe template files can be added/removed and allows for playback of all files in the bin.

Editor: A preview window to view the selected Scribe file from the Content panel and where tag fields are linked to data sources. Also the output of Rapid CG to Broadcast Pix Switcher.

Data: Where all custom data sources are viewed, as well as where Clocks, Timers, Dates, RSS Feeds, Twitter Feeds and Scoreboard data are configured.

Action Buttons: A section to create custom shortcut buttons for text and logo entry. Up to 96 Action buttons may be assigned per project.



5.9.5 Content Panel

.Scribe files may either be dragged into the Content Panel or imported through the Content panel menu. Once in the Content panel, files can be selected and viewed in the Editor to assign tag fields or set to auto-advance through all the files in the bank.

To Add Content:

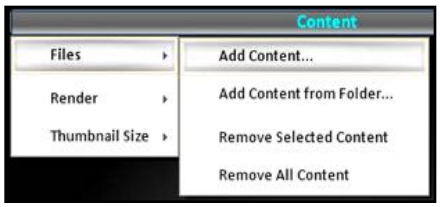


1. In a Windows Explorer window select a .Scribe file and **drag** it into the Fluent Rapid CG Content panel.
   Or

   Select the **Content Menu** and a drop down menu, as shown on the right.

   Click on **Add Content…** to add Scribe files.
   Click on **Add Content from Folder…** to clear the bank and to add a folder of files.

   The newly added files will appear in the bank, showing its thumbnail and file name.



To Sort Content:

1. **Right-click** on a file, and a pop-up menu will appear, as shown on the right.

2. To move the selected file one space to the right, select the **Move to Next** option.

3. To move the selected file one space to the left, select the **Move to Previous** option.



To Search for Content:

1. On the bottom of the Content Panel select the **search by** drop down menu, as shown on the right.

2. Select either **Search Filenames** to search by the beginning name of the file (useful when searching by number), **Search All Text** to search by all the text in the tag field or **Search Text Start** to search by the first word of a tag field.



3. In the text field, **enter** the desired search term.

4. On the keyboard, press the **enter** button.

   The first file with a positive match to the search term will be selected in blue in the Content panel.

5. To find the next file with a similar search term, click in the **Search** text field and press **enter** on the keyboard.

6. To enter a new search term, repeat steps 1 - 5.

To Remove Files from the Content Panel:

1. Select the desired file to be removed, and it will highlight blue.

2. **Right-click** on the thumbnail, and a drop down menu will appear, as shown on the right.



3. Select the **Remove From Bin** option and the file will be removed.

To Clear all Files from the Content Panel:

1. Click on the **Content Menu,** and a drop down menu will appear, as shown on the right.

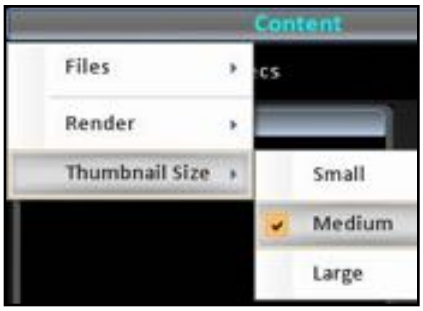


2. Select the **Files** option.

3. Select **Remove All Content.** The bin will now be empty.

To Change the Thumbnail Size:

1. Click on the **Content Menu,** and a drop down menu will appear, as shown on the right.



2. Select the **Thumbnail Size** option.

3. Select either **Small, Medium** or **Large.**
   A checkmark will appear on the selected size, and The thumbnails will resize within the Content Panel.

To modify the alias name:

The alias name is the name that appears on the bottom of the thumbnail in the Content panel, for example 'Locator' as shown below. The name above the thumbnail is the first word(s) of the of the entered data in the first RTX tag, in this example 'Massachusetts'. By default the alias name is the name of the .Scribe file, however since multiple files with the same file name may be imported into the Content panel, the alias name may be modified allowing for a more descriptive name. If no alias name is entered and other files with the same file name are imported, then the alias name will sequentially be numbered, i.e. 'Locator (2)'.

1. Click on the desired **thumbnail** in the Content panel, and it will highlight blue.



2. Right-click on the thumbnail and a drop down menu will appear. Select the **Edit Alias Name** option, as shown on the right.



3. In the Rename Alias Name window that appears, **enter** the desired name in the New Alias text box, for example 'Lwr 3rd' in the example to the right.

4. Click on the **OK** button, and the new alias name will appear on the bottom of the thumbnail.



To export files:

When templates are linked to databases, it may be handy to export the graphic and save it as a permanent/non-editable .TGA file, and not a .Scribe template file.

1. Click on the desired **thumbnail** in the Content panel, and it will highlight blue.

2. Right-click on the thumbnail and a drop down menu will appear. Select the **Export Image** option, as shown on the right.



3. A Windows Saves As window will appear, **enter** the desired file name and navigate to the desired file path.

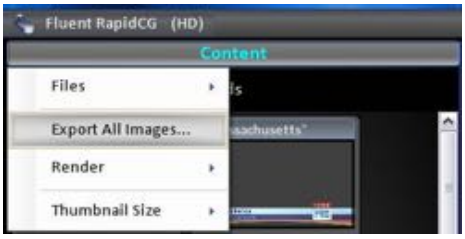
4. Click on the **Save** button, as shown on the right.



   A single .TGA file has been created.

5. To export all the files in the Content panel, click on the **Content** panel menu bar.

6. In the drop down menu that appears, select **Export All images…**, as shown on the right.



7. In the Browse For Folder window that pops up, navigate to a desired folder path or create a **new folder**, as shown on the right. All the images will be saved to this one folder using the assigned alias name, when exported.

8. Click on the **OK** button.



   All the .Scribe files in the Content panel will now be converted to a 32-bit .TGA file in the order in which they appear in the Content panel. This process may take several minutes depending on how many files are in the Content panel.

5.9.6 Editor Panel

The Editor Panel is the output of Rapid CG, and is what the RapidCG_A and RapidCG_B files are outputting to Broadcast Pix Switcher. It displays a larger image of the selected file from the Content panel and is an edit window to link the RTX tags assigned from TitleMotion with data sources.

To Modify Content Manually:

1. Click on a file in the Content Panel. This will open the file in the Editor Panel as shown on the right.



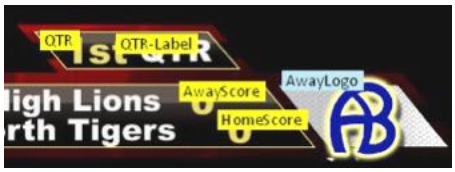
2. To view the assigned RTX tags, click on the **Editor Menu** and a drop down menu will appear.

3. Select the Show tag Names option, as shown on the right. This will show all the assigned RTX tags from TitleMotion GS.



   All assigned text fields will appear in yellow and all assigned logo fields will appear in blue, as shown on the right.

   This step provides a quick way to view all the tags. Moving the mouse over each field will also pop up the data of each tag, even with this option deselected. In addition, the TagName will appear at the bottom of the Editor Panel.



4. To enter new text or to modify it, click on the desired tag field and the value will appear in a text field. **Enter** the new value and click on the **enter** button on the keyboard, as shown on the right.



   If a logo tag is selected, a Windows Explorer window will appear to select a new image. Note that the image will size to fit the original size of the logo in the template.

   The new change is written automatically and the file is updated if live output is turned on.

5. To view all the properties of the selected file, click on the **Editor Menu** and select the **Show Tag Grid,** as shown on the right.



A grid will appear below the image in the Editor Panel showing all the assigned TagNames, TagText and TagLink. The TagNames are the assigned RTX tags from TitleMotion, the TagText is current text or image path for the tag and the TagLink will display the data source for each tag.



6. To modify a new file, either click a different file in the Content Panel or use the **Back** and **Forward** navigation buttons at the button of the Editor Panel, as shown on the right.

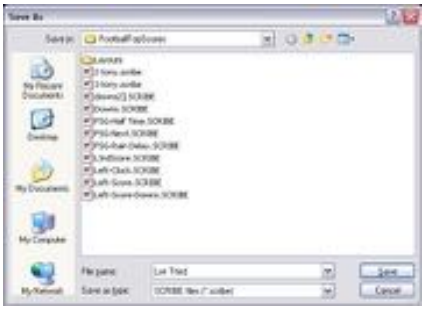


Selecting a new file will also update the output to the selected file if live output is turned on.

7. To create a new Scribe file based off the selected image, click on the **Editor Menu** and select the **Clone Page As…** option, as shown on the right.



A Save As dialog box will appear, **enter** a filename and click on the **Save** button, as shown on the right. The file may be saved anywhere on the System C drive.



The new file will be saved and automatically added to the end of the content in the Content Panel and selected for use in the Editor Panel.

This feature is handy when new graphics of the same template is needed quickly, for example lower third names for a talk show.

5.9.7 Data Panel

The Data Panel is the workspace to view custom data sources and to configure stock data sources like: Clocks, Timers, Dates, Daktronics & OES Feeds, RSS Feeds, and Twitter Feeds. Custom data sources may be .XML, .MDB, .ACCDB (Microsoft Access Database), .XLS, .XLSX, .XLSM or .XLSB (Excel) database files. The Clocks, Timers and Dates are all based off the computer clock. Daktronics feeds are connected serially to a Daktronics controller through a Daktronics All Sport CG. RSS (Really Simple Syndication**)** Feeds and Twitter are web services that use an Internet connection to retrieve information from websites. If no Internet connection is available these services will not function. Take proper caution when connecting the Server to the public Internet. The Data Panel is used to setup the data sources, which are then linked to RTX Tags inside the Editor Window.

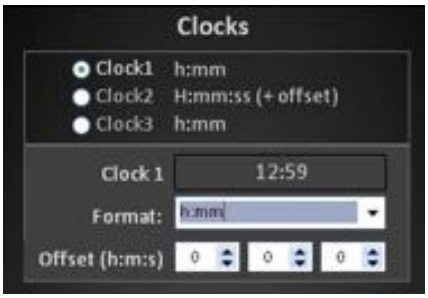
To Configure Clocks:

1. Click on the **Data Sources Menu** and a drop down menu will appear, as shown on the right.

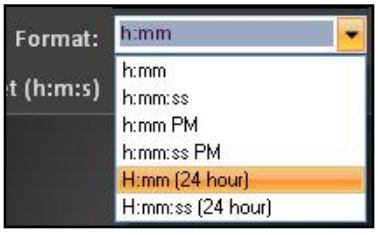


2. Select the **Clocks** option and the Data Panel will change to view the Clocks properties.

3. Click on the **Clock1** radio button, as shown on the right. Up to 3 different clocks may be configured and linked to files.



4. To change the display format, click on the **Format** drop down menu. A list of available display formats will appear, as shown on the right. **Select** the desired format. The Clock 1 display will update showing the new format.



5. Each clock may also be offset by hours, minutes and/or seconds, useful for displaying different time zones.

   In the **Offset (h:m:s)** entry field enter the desired offset, as shown on the right. 0:0:0 will use the default computer clock. The Clock 1 display will update showing the new offset.



6. To configure Clock2 and/or Clock3 repeat steps 3 - 5.

7. To start running the clocks, click on the **Run Clocks** button on the bottom of the Rapid CG window, it will illuminate blue, as shown on the right.



To Configure Timers:



1. Click on the **Data Sources Menu** and a drop down menu will appear, as shown on the right.

2. Select the **Timers** option and the Data Panel will change to view the Timers properties.

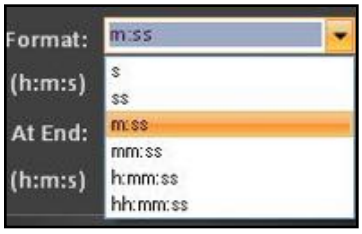
3. There are up to 6 timers that may be configured and linked to files, and any 6 may be either a Countdown or a Stopwatch timer. Stopwatches count up and have the option to not have an end time.

   Click on the **Timer 1** radio button, as shown on the right.



4. In the Timer 1 drop down menu, select either **Countdown** or **Stopwatch** for the type of timer to be used.

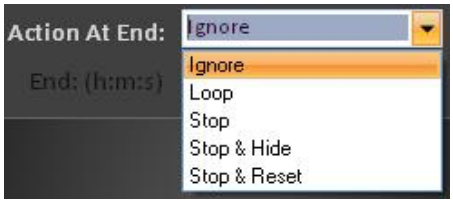
5. To change the display format, click on the **Format** drop down menu. A list of available display formats will appear, as shown on the right. **Select** the desired format. The display will update showing the new format.



6. Each timer can be set with a start time and an end time. To modify the start and end time **enter** the desired time in the **Start: (h:m:s)** and/or **End: (h:m:s).**

7. In addition, each timer has an end action which can be triggered. Click on the **Action At End:** drop down menu and select either **Ignore, Loop, Stop, Stop & Hide** or **Stop & Reset.**

   If a stopwatch is set to Ignore as an end action, the end time field will be disabled.



8. To configure other Timers, repeat steps 3 - 7.

To Configure Dates:

1. Click on the **Data Sources Menu** and a drop down menu will appear, as shown on the right.



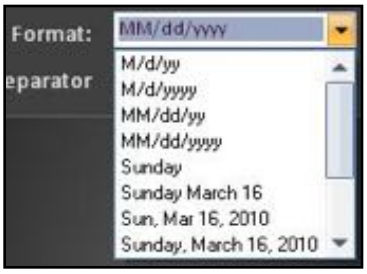
2. Select the **Dates** option and the Data Panel will change to view the Dates properties.

3. Click on the **Date1** radio button, as shown on the right.

   Up to 3 different dates may be configured and linked to files.



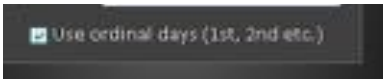
4. To change the display format, click on the **Format** drop down menu. A list of available display formats will appear, as shown on the right. **Select** the desired format. The Date1 display will update showing the new format.



5. In addition, each date may be configured with different separators, based off the selected format. Click the **Separator** drop down menu and select the desired separator. The Date1 display will update showing the new separator.



6. As an option dates may be configured to convert numbers to ordinal numbers to display 1st, 2nd, 3rd, etc.
   Place a check mark next to the **Use ordinal days (1st, 2nd, etc.)**, as shown on the right.



7. To configure Date2 and/or Date3 repeat steps 3 - 6.

A RSS Feed includes 3 data fields: the Date, Title and Text. Most websites, including news sites, that have information that changes on a regular basis can be subscribed to through a RSS reader, in this case Rapid CG. Only 1 RSS Feed may be subscribed to per project. Look for the orange RSS icon on most websites, as shown on the right. If no Internet connection is detected this feature is not available.

To Configure RSS Feeds:

1. Click on the **Data Sources Menu** and a drop down menu will appear, as shown on the right.



2. Select the **RSS Feeds** option and the Data Panel will change to view the RSS Feeds properties.

3. In the **Feed:** text field enter the URL/webpage address of the RSS field. For example: http://rss.cnn.con/rss/cnn_topstories.rss



4. Click on the **Refresh** button to activate the RSS feed.

   The Date, Title and Text field will all update to the current information. The Display tab will show the full RSS feed as a preview. The Taglinks tab is used to link the sources, but may not show all the text in the RSS feed.



5. To select a specific title from the RSS feed, either click on the **Titles:** drop down menu or the **Previous** or **Next** navigation buttons, as shown on the right.



6. To have the RSS Feeds cycle through the entire list of titles, **enter** an update rate between 5 - 60 seconds, at the bottom of the Data Panel, as shown on the right.



7. To activate the advance, select the **Auto Advance** button, it will illuminate blue and begin to countdown and cycle through the titles, as shown on the right. The information in the RSS Feed will update using a cut transition.



Twitter® is a popular free social media tool that many broadcasters are integrating into their productions. A 'tweet' consists of an 140 character message, in addition a person's name, account name and image can also be linked in Rapid CG. A built in editor provides a powerful, yet simple interface to manage, edit and sort tweets as they come in prior to sending them out to air. Multiple Twitter feeds may flow in, however only one tweet per channel may be displayed. A Twitter account is necessary to use this feature, and if no Internet connection is detected this feature is not available.

To Configure Twitter Feeds:



1. Click on the **Data Sources Menu** and a drop down menu will appear, as shown on the right.

2. Select the **Twitter** option and the Data Panel will change to view the Twitter properties, as shown on the right.



3. Click on the **Twitter Editor** button, it will illuminate blue and open an editor window, as shown below.

   The Twitter Editor window is a separate window with separate sizing controls that can remain open and used in conjunction with the rest of the Rapid CG application. There are 6 main sections of the Twitter editor, as shown below:

Tabs Section

Switch between editing tweets and adjusting global settings

Search Bar

Search for hash tags, trends & users

My Feed

View your Twitter Feed & change accounts



Input Section

Displays the search results

Status Bar

Displays how many tweets have been pulled into the Input Section & other status info

Output Section

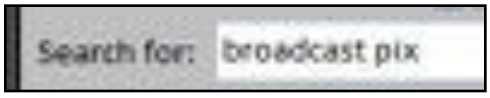
Playlist of Tweets that are available to Rapid CG to be viewed on output

Edit Section

Allows Tweets to be modified prior to going to the Output Section, appear with Edit is selected

4. Click on the **Main** tab in the tab section.

5. In the **Search for:** text field, enter a desired search term; either a trend, hash tag or user name, as shown on the right.



NOTE: Depending on how you type in your search different results will be visible, as spaces in words impact the search results.

Click on the **Search** button or click **[Enter]** on the keyboard.



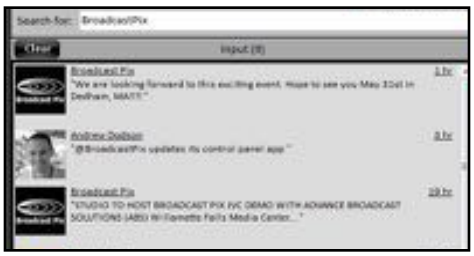
To have the system research the same search words automatically, enter how frequently it will search in minutes from **1 – 60** and click on the **Auto Search** button, it will illuminate blue, as shown on the right, and the status will display how long until the next search.

To pull in tweets from the active Twitter account, click on the **My Feed** button and select **Read My Feed,** as shown on the right. All the various tweets from various followers will appear as listed on your Twitter page.



6. In the Input Section, Tweets will be displayed in the order they were posted, as shown on the right.

Depending on your search terms this may take a few seconds.



7. To view more of the Tweet or to edit it, navigate over the Tweet and 3 pop up buttons will appear, as shown on the right.

Click on the **Edit** button and the Editor pane will appear on the button of the window.





8. In the text box of the Edit Section, **modify** the Tweet. This step is helpful as it can used to format Tweets, as well as screen for improper language.



In addition, there is an option to hide the user image and display the Twitter logo, in case the image is not appropriate. To hide a user's image, **deselect** the Image checkbox, as shown on the right.

In this example the Broadcast Pix logo is replaced with the Twitter logo.



9. Once a Tweet is to your liking, with or with out editing it, click on the **Move to Output** button in the Edit pane or **click & drag** the Tweet from the Input Section to the Output Section.



To move all the Tweets from the Input Section, click on the **Move All** button, and all the searched Tweets will move to the Output Section.

In addition, the pop up buttons in the Input Section can be used to move a Tweet to the Output Section, click on the **Move** button, as shown on the right.



10. Once any Tweets are in the Output Section they are available to be linked in Rapid CG and ready to be advanced/updated on air.

Since the Output Section is used as a playlist for Tweets when they are linked to a template in Rapid CG, the Output Section can also be used as a play out selector.

To jump to a certain Tweet on the output, click on the **Live** button, it will illuminate blue, and now select any Tweet in the Output Section. The selected file, highlight in yellow, will be outputted to the tag link in Rapid CG, as shown on the right.



NOTE: if Auto Advance is turned on, this selection will be overwritten once the duration of the advance passes.

11. To have Tweets automatically advance in the displayed order, in the Status Bar enter the desired advance rate in seconds **5 – 60** and click on the **Auto Advance** button, it will illuminate blue, as shown on the right.



12. If a Tweet is no longer needed in the Output Section, it can be moved back to the Input Section either by dragging the Tweet to the Input Section or using the **Move** button, as described in Step 9.

Removing/Clearing/Blocking Tweets:

1. As you search for Tweets and then use them on air, the need to remove, clear or even block a user may be necessary.

   To remove a signal Tweet from either the Input or Output Section, navigate to the desired Tweet and a group of pop up buttons will appear, click on the **Remove** button, as shown of the right. On in the Edit Section click on the **Remove** button.



   The Tweet will be completely removed from the Twitter Editor. NOTE: If you re-search, that Tweet may reappear in your Input Section.

2. To clear the entire list of Tweets in either the Input out Output Sections, click on the **Clear** button, as shown on the right.



   The entire list will be cleared of all the Tweets.
   If no Tweets are in the Output Section, then no Tweets will be available to go on air.

   The Clear button in the Input Section may be useful after each search, since researching items will add to the list and not clear the existing items.

3. The Block button is designed to block any new Tweets from coming in from a specific user. This is useful if users are not posting appropriate messages. Once blocked no new Tweets will ever come in from the user until the block is removed.

   Once a Tweet is selected to be edited in the Edit pane, click on the **Block User** button, as shown on the right.



Twitter Editor Settings:

1. In the tab section, click on the **Settings** tab, as shown on the right.

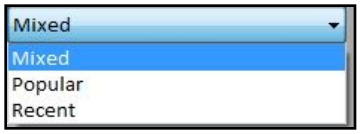


2. In the top general settings section, there are several options that will impact how Tweets are handled on a global level.

   To localize your searches to a specific language, click on the **Language:** drop down menu and select the desired language. Once selected, only Tweets from that country/region will appear. The default is English.



3. The Search Style: drop down menu determines how Tweets are searched, either by how recently there were posted, how popular they are in Twitter or a combination of both. Select with **Mixed, Popular** or **Recent,** as shown on the right. The default is Mixed.



4. The Retrieve option allows you to specify how many Tweets are gathered at each search. The higher the number the longer it may take for all the Tweets to populate in the Input Section.

   Select a number **1 – 100,** as shown on the right.

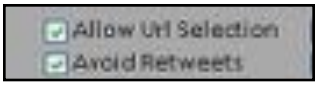
   NOTE: No matter what value is entered, the maximum number of Tweets possible in the Input Section is 100.



5. To keep the list of Tweets manageable for on-air use, the Output Section can be set with a maximum amount, select a number **5-200,** as shown on the right.

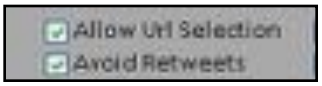
6. Some Tweets consist of a web page that links to story or image, if desired the link can be selectable opening a web browser to copy text or images for use in another graphic .

   To allow selection, place a check mark next to **Allow Url Selection**, as shown on the right.



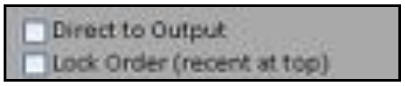
7. Often times users of Twitter simply Retweet a message, which reposts the same content that has been posted by another user. Retweets (RT) can cause duplicate search items and clutter up the Input Section.

   To not display any Retweets, place a check mark next to **Avoid ReTweets**, as shown on the right.



8. Searches can automatically be sent to the Output Section, bypassing the Input Section and screening process. This mode is not recommended as there is no chance to screen Tweets before airing them.

   To do so place a check mark next to **Direct Output.** Now any searches that come in will jump right to the Output Section.

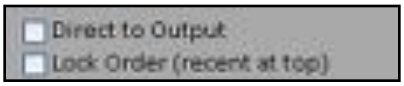


9. As Tweets are searched they can be displayed in the order they were posted, causing multiple search terms to be intermixed, or displayed as a group by each search with each search group jumping to the end of the list in the Input Section.

   In addition, he Output Section can be reordered and not displayed in the order they were posted. This option may be useful to create a custom playlist of Tweets tailored to your production.

   To allow reordering uncheck the **Lock Order (recent at top)**, as shown on the right.

   Now, Tweets in the Output Section can be clicked and dragged up or down in the list.
   The order in which is displayed is the order in which the Tweets will cycle through, if Auto Advance is activated.



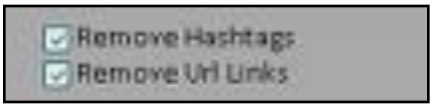
10. In the Auto-Edit section, there are settings to assist in the editing and formatting of Tweets without having to modify each Tweet individually.

As an option, quotation marks may be added to the beginning and end of a Tweet, to do so place a check mark next to **Add Quotes,** as shown on the right.



Similar to how each individual Tweet may not have the user image displayed, all Tweets may have only the Twitter logo displayed. To do so, place a check mark next to **Hide Images.**

A popular way to Tweet is to include hashtags (a # followed by a word). Hashtags provide a means of grouping such messages, since one can search for the hashtag and get the set of messages that contain it.
As on option the hashtag can be hidden from the Tweet so it is not displayed on air. To do so place a check mark next to **Remove Hashtag**, as shown on the right.



As mentioned before, some Tweets may consist of a web page address, although this may be useful in preproduction to find more content, for on-air graphics a URL may not be necessary and clutter the graphics.
To hide the web address completely place a check mark next to **Remove Url Links**, as shown on the right.

11. As users are blocked from the Edit Section, there are listed in the Blockers Users section, as shown on the right.
To allow Tweets from a blocked user again, click on the desired username, it will highlight blue, then click on the **Remove** button.
To allow Tweets from all blocked users, click on the **Clear** button and OK on the pop up message.



Activating & Changing Twitter Accounts:

1. To use the Twitter data source an active Twitter account is necessary and must be authorized to use Rapid CG. Although any number of accounts may be authorized, only one account may be active at a time in Rapid CG.

   Click on the My Feed drop down menu and select the **Open New Acct,** as shown on the right.



2. A pop-up message will appear to authorize Twitter. Clicking on the **OK** button, and a web browser will open.



3. If you are logged into your Twitter account an authorization page from Twitter will automatically open, if not **log into** your Twitter account and then the page will appear, as shown on the right.

4. In the web browser click on the **Authorize app** button.



5. A unique 7-digit authorization code will appear, as shown on the right. **Copy** that number, as it needs to be entered in the Rapid CG application.



6. In the Twitter Editor of Rapid CG, **enter** the 7-digit code in the Verification Pin text box and click on the red **Verify** button, as shown on the right.

7. To switch accounts repeat the steps above, ensuring that you log into the new Twitter account in the web browser in step # 3.



Custom data sources may also be used to link data from external databases. This is ideal for sports productions to update statistics and scoring information during a game. Rapid CG supports well-formed .XML files, cloud-based XML files, Excel files, CSV files, as well as .MDB files from Microsoft Access. The database file can reside on the local sever or any where on the local area network. If the database file, such as Excel, will be opened by multiple users at the same time, it is required to have the proper network sharing preferences enabled in addition to sharing the workgroup from within Excel. The database can recall text or image files, to have images change from a database, the complete path name must be included in the data field. When the database files updates Rapid CG will recognize the changes and automatically update the linked templates.

To Add a Data File:



1. Click on the **Data Sources Menu** and a drop down menu will appear.

2. Select the **Data Watch files…** option, as shown on the right.



3. Select the **Add..** button to select a file on the local computer or a networked computer or **URL…** to select a web-based XML link on the bottom of the data panel, as shown on the right.



4. A Windows Explore window will appear. **Select** the desired file and click on the **Open** button. The files may reside locally or on a remote system. Or a URL loader window will appear to search and navigate to a web-based XML link. Even though you may navigate to and website to preview the link, on only XML files may be accepted.

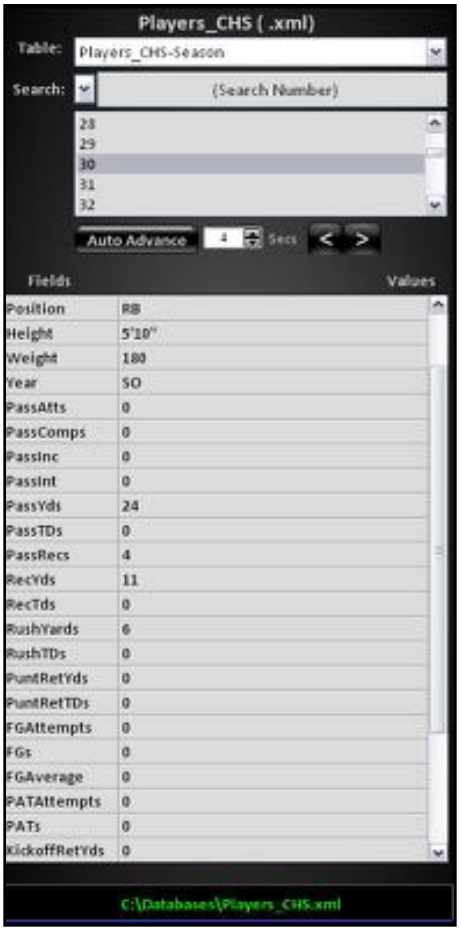
   The database is read-only, no changes may be made to the file from Rapid CG, only from the external source.



5. The database file will appear in the Data Panel in a list with other files, as shown on the right. Click on the desired file, it will highlight blue, then select the **Go** button.

6. To remove a data file from the list of available databases, click on the **Data Sources Menu,** then select the **Data Watch Files…** option and select the the desired data file and select the **Remove** button at the bottom of the Data Panel. To remove all the listed files, select the **Clear All** button.

7. There are several ways to sort/view the data in the Data Panel.



If the database has multiple tables with different names, click on the **Tables** drop down menu and select the desired table.

If the database has multiple tables with the same name, then the **Search:** field may be used to search by a data field. For example, searching by a player number to quickly recall statistics for an individual player, as shown on the right.

In addition, when there are multiple tables with the same name, there is an option to auto advance through all the Search fields. **Enter** an update rate between 5 - 60 seconds, in the middle of the Data Panel, as shown on the right.

To activate the advance, select the **Auto Advance** button, it will illuminate blue and begin to countdown and cycle through the data. The information in the feed will update using a cut transition.

8. To have the database file automatically update when the file changes, select the **Data Listen** button on the bottom of the Rapid CG window. It will illuminate blue, as shown on the right.



NOTE: When creating a custom data file using a program like Excel, the first row of each column is used for your Field names/headers and each row below them is for the actual Value set. This will create a proper table for Rapid CG to use.

Daktronics controllers, like the All Sport 3000, 5000 & 5500, can be connected to RapidCG to have the 'TV Feed' information from the scoreboard link to your on-air graphics. The 'TV Feed' of Daktronics supports basic scoring and timing information for the following sports: Basketball, Baseball, Football, Hockey, Lacrosse, Soccer and Volleyball.

The Daktronics feed is connected using a RS-232 serial connection from a Daktronics All Sport CG interface box, which must be purchased through Daktronics, to the Broadcast Pix Server. You may either use a straight RS-232 to RS-232 Male to Female cable into the Flint system or use an external Edgeport Serial extender, ensure that the Port Flags are set to RS-232C, as described in section 6.5.2. The All Sport CG automatically receives the data feed from the connected Daktronics controller using a ¼ TRS (Stereo) to DB9 pin cable (a wireless option is also available through Daktronics). Note the All Sport CG should be set to the Automatic Mode (refer to the All Sport CG manual for more information) to guarantee proper connectivity.

Only one instance of Rapid CG can update data from a Daktronics feed, however multiple pages may be linked to the same feed.

For any operational or sales questions regarding Daktronics equipment, please contact Daktronics directly at 1-800-325-8766.

To Setup the Daktronics Controllers:



Daktronics Controller - Rear





Daktronics All Sport CG - Rear



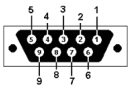
¼ TRS Male to DB-9 Pin Female
(use any J-Port Scoreboard Output)

Broadcast Pix Server - Rear



Straight RS-232 DB-9 Pin Female-Male
(use any port on the Edgeport)





USB A-B Cable
(use any USB 2.0 port)

¼ TRS Male	DB-9 Female
Tip	8
Ring	9
Sleeve	N/C

** Power must be applied to all 3 devices*

To Add a Daktronics Feed:



1. Click on the **Data Sources Menu** and a drop down menu will appear.

2. Select the **Daktronics** option, as shown on the right.



3. Under the Sports drop down menu, select the desired sport, either: **Basketball, Basketball (Pre-2012), Baseball, Football, Football (Pre-2007), Hockey, Lacrosse, Soccer, Soccer (Pre-2011)** or **Volleyball**, as shown on the right.

4. Under the COM drop down menu, select the desired communication port, normally **COM1** or **COM2,** as shown on the right.

   Note: If using an Edgeport USB to Serial extender, more com ports will appear. Ensure to select the correct com port depending on which port the serial cable is connected to, and that the Edgeport is set to RS-232 under the Port Flags.



5. Click on the **Open Port** button, as shown on the right.

6. If all the Daktronics equipment is properly connected and functioning, the data grid will automatically start populating. Depending on which sport is selected, different data will appear.

   Communication is working properly if the sport name is yellow, and if the colon : starts blinking every second at the bottom of the Data panel, as shown on the right.



7. To stop updating the feed, click on the **Close Port** button.

OES Scoreboard controllers, like the ISC-9000-PR, can be connected to RapidCG to have the 'TV Feed' information from the scoreboard link to your on-air graphics. The 'TV Feed' supports basic scoring and timing information for the following sports: Basketball, Baseball, Football, Hockey, Lacrosse, Soccer, Tennis, Track, Volleyball and Wrestling

The OES feed is connected using a RS-232 serial connection from the Game Out 2 port on the controller to the Broadcast Pix Server with a DP-9 pin Female to Female cable. You may either use a straight RS-232 to RS-232 Female to Female cable into the Flint system or use an external Edgeport Serial extender, ensure that the Port Flags are set to RS-232C, as described in section 6.5.2.

Ensure that COM 3 GAME is set to ON in the Configuration Option #8 - ISC Comm. Ports menu of the controller.

Only one instance of Rapid CG can update data from an OES feed, however multiple pages may be linked to the same feed.

For any operational or sales questions regarding OES Scoreboard equipment, please contact them directly at 1-877-652-5833.

To Setup the OES Controller:



OES ISC9000-PR Controller - Rear

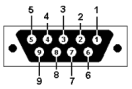


DB-9 Pin Female-Female
(use any port on the Edgeport)

Broadcast Pix Server - Rear







USB A-B Cable
(use any USB 2.0 port)

	DB-9 Female
Data	3
Ground	5

** Power must be applied to all 3 devices*

To Add an OES Feed:

1. Click on the **Data Sources Menu** and a drop down menu will appear.



2. Select the **OES Scoreboard** option, as shown on the right.

3. Under the Sports drop down menu, select the desired sport, either: **Baseball, Basketball, Football, Hockey, Lacrosse, Soccer, Tennis, Track, Volleyball** or **Wrestling**, as shown on the right.



4. Under the COM drop down menu, select the desired communication port, normally **COM1** or **COM2,** as shown on the right.

   Note: If using an Edgeport USB to Serial extender, more com ports will appear. Ensure to select the correct com port depending on which port the serial cable is connected to, and that the Edgeport is set to RS-232 under the Port Flags.



5. Click on the **Open Port** button, as shown on the right.

6. If all the equipment is properly connected and functioning, the data grid will automatically start populating. Depending on which sport is selected, different data will appear.

   Communication is working properly if the sport name is yellow, and if the colon : starts blinking every second at the bottom of the Data panel, as shown on the right.



7. To stop updating the feed, click on the **Close Port** button.

To Add a Condition:

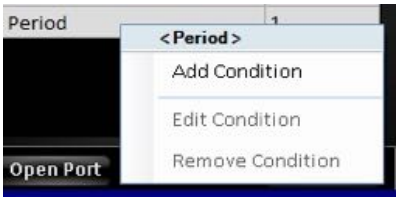
1. A condition converts the data coming from the Daktronics or OES controller or any external data source like an XML file into a better formatted element, either text or an image. There are several reasons for using conditions, for example using images for time outs remaining or displaying a clock depending on its status. Below describes some of them.

   If using a scoreboard controller, ensure that the port is closed by clicking on the **Close Port** button, as shown on the right.



2. Any tag name can have a condition applied to it, and there is no limit on the amount of conditions, however a Taglink can only be set to one condition.

   Right-click on the desired tagname, and a menu will appear, as shown on the right.



3. Click on the **Add Condition** menu.

4. The Condition Editor will open, as shown on the right. On the top of the menu, enter the **Name** and/or a **Description**. This is optional, however becomes very useful when linking and later editing the condition. The name of a condition may not be edited once saved.



5. In the Modify Result tab, there are options to modify the data, this first example will modify the Period data, usually a simple number into an ordinal number with a label.

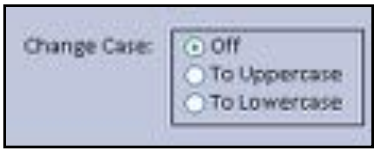
   Place a check mark next to **Convert to Ordinal Numbers**. Now any basic number will be changed to show st, nd, rd, etc after each number (i.e. 1 to 1st).

6. To have text appear before the data, enter the text in the **Add Text at Start** text box. This may be useful to add Home, Away or the team name in front of the score without having to build the element into the template file.



To have text appear after the data, enter the text in the **Add Text on End** text box. This may be useful to spell out the label of the data, like in this example the Period date into Qtr, as shown on the right.

7. To use specific case for text there are options to convert the text so all your text looks similar, click on the **Off, To UPPERCASE** or **to lowercase** radio button, as shown on the right.



8. Once you have entered all the modification for the condition, they can be tested to ensure that any value will work as your have programmed it.



In the example on the right, 3 changes to 3rd Qtr. If 2 was enter it would change to 2nd Qtr.

This feature allows all testing to be performed, even without a connection to the controller.

9. To save the condition and allow it to be linked to a taglink, click on the **Save** button, as shown on the right.



Another example of using a condition is to have a graphic display the amount of timeouts, instead of text. Any value in the data could be substituted for an image.

1. Ensure that there is an image for each element you want to update. If there are 4 timeouts, 4 separate images are needed and named sequentially (i.e. TO1, TO2, TO3, TO4, etc) Images can be .TGA, .BMP, .JPG or .PNG.

   Take note of the exact image path your files are saved to, as it will be entered in the Condition Editor.

2. Repeat steps 1 - 4 above to create a condition.

3. In the Add Text at Start text box, enter the folder **file path of the images**, ideally there are all in one sub-folder.

4. At the end of the file path enter **\filename**. In the example on the right the file name is TO.

5. In the Add Text on End text box, enter the extension of the files, either **.TGA, .BMP, .JPG** or **.PNG**, as shown on the right.



6. In the Test Value text box, you may enter values to see if the correct image path is recalled.

7. To save the condition and allow it to be linked to a taglink, click on the **Save** button, as shown on the right.



In addition to converting data to a more useful element, like previously described, the conditions could also have if/then/else statements for more advanced programming. For example not showing a shot clock/penalty clock when not running or when at 0.

1. Repeat steps 1 - 4 above to create a condition.

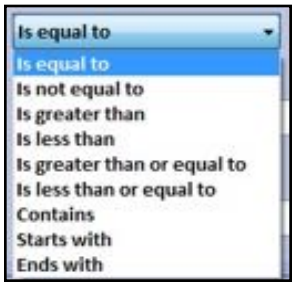
2. Click on the **If, then, else** tab, as shown on the right.



3. Place a checkmark next to **Enable (if, then, else)**

4. In the If field… drop down menu, select the desired if statement either **Is equal to, Is not equal to, Is great than, Is less than, Is greater than or equal to, Is less than or equal to, Contains, Starts with** or **Ends with**, as shown on the right.

   In this example Is greater than is selected



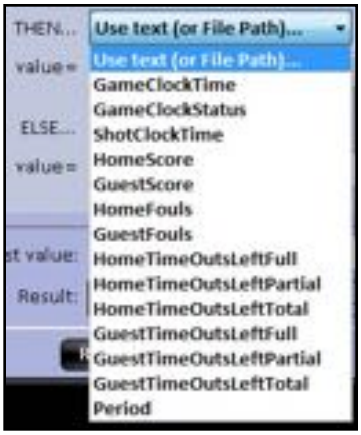
5. In the text field next to the drop down menu, **enter** the desired value.

   In this example we will enter 0 because we want any value greater than 0 to be displayed, but if not no text.

6. In the THEN value drop down menu, select **Use text (or File Path)…** or any of the available fields from the sports controller.

   If a file path is desired, then click on the **… Browse** button to navigate to the image path.

   In this example we will use the same field selected in the condition of ShotClockTime.



7. In the ELSE… drop menu select **Use text (or File Path)…** or any of the available fields from the sports controller.

   In this example we will use text and leave the value blank, to not display any text.

8. In the Value= text box, **enter** the desired text, or leave blank to have not text appear.

   If a file path is desired, then click on the **… Browse** button to navigate to the image path.

9. In the Test Value text box, you may enter values to see if the correct image path is recalled.



   In this example, entering 0 produces a blank result, which is exactly what is desired, since the we programmed the ShotClock field to disappear at 0.

10. To save the condition and allow it to be linked to a taglink, click on the **Save** button, as shown on the right.

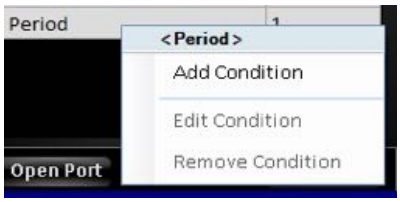


To remove a condition:

1. Once a condition had been created, it is available for that sport in all projects, even if the project has not been saved.

   To remove a condition, **right-click** on the condition field and a menu will appear.

2. Select the **Remove Condition** option, as shown on the right.



   The condition will be removed, please note there is no undo.

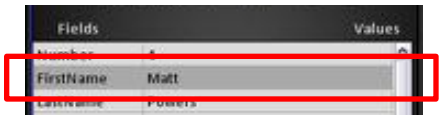
NOTE: Conditions can not be edited while the Com Port is opened/running, and the name & description can not be edited once created.

After any/all of the data sources have been configured, as described in the steps above, it is now time to link each data field to a tag field for each template file in the Editor Panel. One data field may be linked to any number of tags and any number or template files. This is ideal for updating multiple template all at once, for example for a game score. When linking to custom XML/CSV/Access/Excel databases with multiple tables, more linking options will appearing, depending on the type of database you are using.

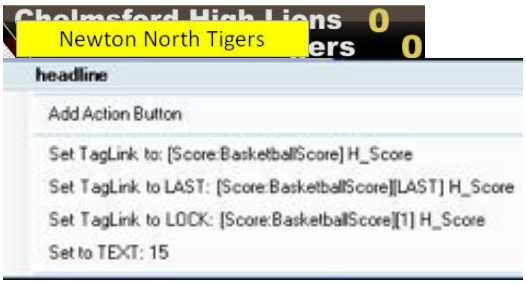
To Automatically Update Content:

1. Select the desired **data source** from the Data Source Menu. In this example a XML file will be used, but all Data Sources link the same way.

2. Find the desired field, in this example 'FirstName' And **single-click** to highlight the field name, as shown on the right.



3. In the Editor Panel, mouse-over the desired tag field and a yellow tag name will appear. **Right-click** on the tag name. A pop up menu will appear, as shown on the right.



4. Depending on how the file is created and how the file is updated there are different ways to link a field in a database to a TagName.

   Set TagLink to: Sets the TagName to the selected field without linking to any search field. As the Search field changes, so too will the value for this tag field. For many databases this will be the default selection.

   Set TagLink to LAST: Sets the TagName to the last entry in the data table. In some files, new entries are automatically added to the end of the database using the same field name. (i.e. Sports play-by-play)

   Set TagLink to LOCK: Sets the TagName to the specific field regardless of the Search selection. Often this is used in sports or election results where the field is indentified generically with a letter or number, like H or V for Home or Visitor. As the Search field changes, the value of the tag field will not change.

   Set to Text: Sets the TagName with the current text from a data table, without marinating a link.

5. The Tag Grid may also be used for quicker access to all the TagNames. Enable the Tag Grid by selecting the Editor Menu and selecting **Show Tag Grid**, as shown on the right.



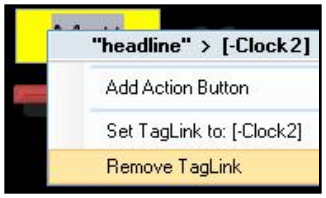
In the TagLink column of the grid, **right-click** and select the **Set TagLink to:** option, as shown on the right.



6. Repeat steps 2 & 4 above to link other data fields. Select other data sources by selecting the Data Panel and selecting another source.

7. To add a TagLink to another template file, select it in the Content Panel, it will highlight blue and repeat steps 1 - 5 above.

8. To remove a TagLink, **right-click** on the TagName either in the Editor Panel or in the Tag Grid and select **Remove TagLink**, as shown on the right.



9. Now that all the Tags have been linked with data sources all the files in the Content Panel will update.

Selecting Data Sources Automatically:

1. When using multiple Data Sources and multiple templates it may become difficult to find files that are associated with particular data sources. To ease in this operation Rapid CG can automatically open data sources based on the content files they are liked to.

   In the Content panel, with the mouse **double-click** a linked file, as shown on the right

   The file will appear in the Editor panel and the data source it is linked to will appear in the Data Sources panel. If multiple data sources are used in the template, the first data source file will be opened.

2. Once a template is selected and loaded in the Editor Panel, each TagLink can be double-clicked to verify it is linked to the correct field in your data source.

   Ensure that the Tag Grid is opened, as described in section 5.9.6.

   If a TagName has a TagLink set, with the mouse **double-click** the TagLink, as shown on the right.

   The Data Sources panel will change to the linked source and select the specific field/table from the data set.

   If a TagLink is set to LOCK, hold down the **ATL** button on the keyboard while double-clicking.

Page Linking

When using external data files, a lot of information may be included in one data source file that may need to be used with different template files. For example a list of players may include coaches, players and referees, and the design of the template graphic may be different for each case. Page Linking allows automatic selection in the Content bin based off an assigned field in a data source and the alias name of a template.

1. Ensure that a template file is loaded into the Content bin, as described in section 5.9.5, and that a Data Source is added and linked to the template, as described in section 5.9.7.

2. In the Data Sources panel, **open** the desired Data Source, this example will use an XML file.

3. Select the desired field to use as the activator, this example will use the Name field. **Right-click** on the field and in the menu select **Set Page Link (XXX)**, as shown on the right.

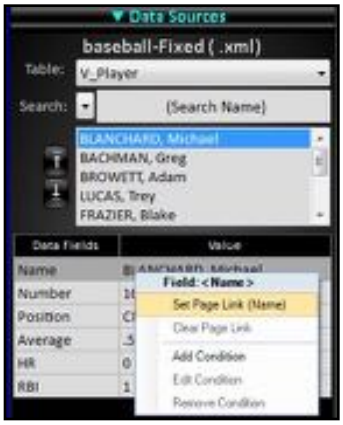
   The Field will highlight red, as shown on the right.

4. On the bottom edge of the Rapid CG window, click on the **Page Link** button, it will illuminate blue, as shown on the right.

5. In the Content bin select the desired template file, **right-click** and select the **Edit Alias Name** option, as shown on the right.

6. In the Edit Alias Name text box **enter** the **value** from the data source which will be used to select the template. This example will use "BLANCHARD, Michael". Then click on the **OK** button, as shown on the right.

   The Alias name must match the desired value for page linking to function properly. Note that this is a case sensitive field.











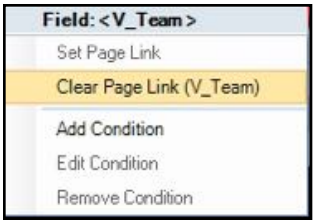
7. Continue creating custom alias names for each desired graphic.

8. Now when each specific value is selected from the data source its corresponding will be selected.

   In the example when “BLANCHARD, Michael” is selected, its graphic will appear and when “BAGGETT, Daniel” is selected its graphic will appear, as shown on the right.



9. Only one Page Link can be set at time, to clear the Page Link **right-click** on the current link and select the **Clear Page Link (XXX)** option, as shown on the right.



10. To simply deactivate the automatic selection and keep the link, deselect the **Page Link** button to turn it off, as shown on the right.



5.9.8 Action Buttons Panel

The Action Buttons Panel is where custom shortcut buttons are saved and then triggered from. Actions Buttons allow for quick automation entry of both text and logo tag fields, for example scoring buttons for a sports game. They may be customized with a label, color and sorted for ease of use. There are a total of 96 user Action Buttons plus up to 4 timer Action buttons to control the Timers configured in the Data Panel, the Timer action buttons are automatically added when Timers are in use.

To Add a Text Action Button:

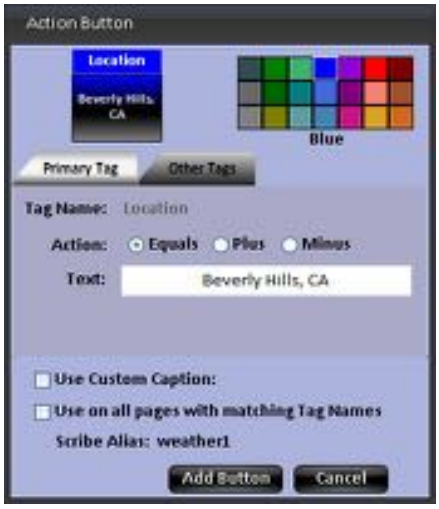
1. In the Editor Panel, **right-click** on a text (yellow tag) TagName either on the image or in the Tag Grid. A pop up menu will appear.

2. Select the **Add Action Button** option, as shown on the right.



3. The Action Button window will appear, as shown on the right, ensure that the Primary Tag tab is selected.

   Each text action button may have a value equal to, added or subtracted from the current text.



   To have a value equal a value, select the **Equals** radio button. In the **Value** text field, enter the desired text or number. For example 'Foul' so every time a foul occurs in a game an action button can automatically add this text.

   To have a number value be added, select the **Plus** radio button. In the **Value** text field, enter the value to be added each time the action button is selected. Only a number value may be entered when Plus is selected as an action. In the example to the right, the value of 1 will be added every time the button is selected. This feature is useful for score board applications.

   To have a number value be subtracted, select the **Minus** radio button. In the **Value** text field, enter the value to be subtracted each time the action button is selected. Only a number value may be entered when Minus is selected as an action.

4. To have a custom caption appear on the Action Button, select the **Use Custom Caption** checkbox. In the text field enter the desired caption, as shown on the right. This is useful to help distinguish between multiple action buttons with the same values, i.e. a home and an away score.



If this option is not selected, the Action Button will show the value entered.

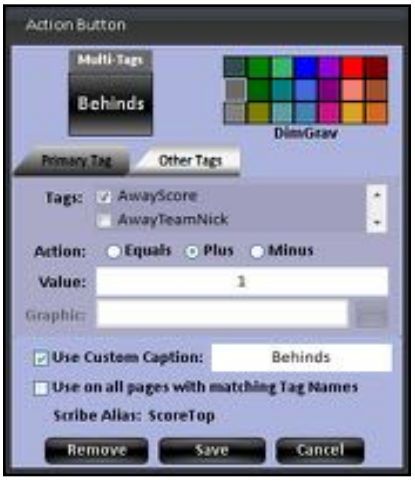
5. If multiple pages use the exact same TagName, the Action Button may be applied to all the template files in the Content Panel. This is useful for updating a score to multiple score pages in a sports production.

Select the **Use on all pages with matching Tag Name** checkbox, as shown on the right.
The word 'All' will appear in the upper left corner of the action button signifying that all TagNames will be updated.



6. In some cases multiple tags need to be updated with one button push. For example in Baseball at the end of an at bat setting the pitch count all to 0 or in Australian Rules Football, having the score and behinds update with the total score.

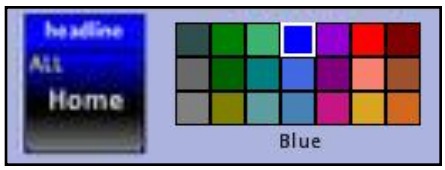
In the Primary Tag tab, enter the desired value for the main tag as described in the previous steps. Then select the **Other Tags** tab where a list of all the remaining tags for the selected template will appear.



Place a **check mark** next to the other tags that need to be linked with any change of the Primary tag. You may update both text and logo tags with one single push.

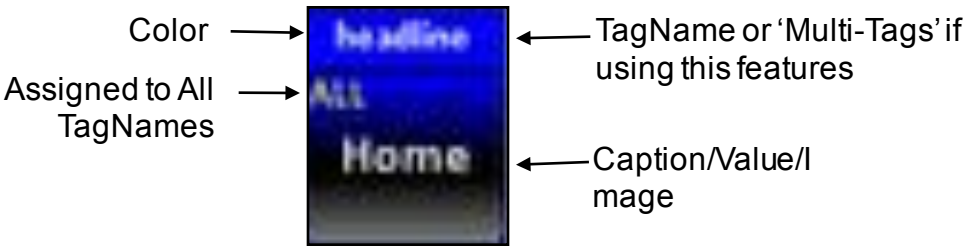
Repeat step 3 above, to have a different Action for the different tag names.

7. To further distinguish between multiple buttons a color may be added to the Action Button. **Select** one of the 21 colors from the color palette, as shown on the right.



8. To save the Action Button click on the **Add Button** button, as shown on the right, and the Action Button will appear at the end of the the Action Button Panel.





To Add a Logo Action Button:

1. In the Editor Panel, **right-click** on a logo (blue tag) TagName either on the image or in the Tag Grid. A pop up menu will appear.



2. Select the **Add Action Button** option, as shown on the right.

3. The Action Button window will appear, as shown on the right.

   Ensure that the Primary Tag tab is selected and select the path of the graphic by clicking on the (…) **Browse** button.

   A Windows Explorer window will appear, **select** the desired file and click on the **Open** button. A thumbnail will appear in the Action Button, this serves as a caption.

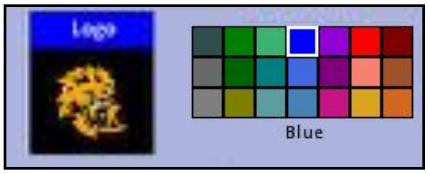
   The image may reside anywhere on the local area network. The image is scaled to fit the size of the original file created in TitleMotion.



4. If multiple pages use the exact same TagName, the Action Button may be applied to all the template files in the Content Panel.

   Select the **Use on all pages with matching Tag Name** checkbox, as shown on the right.
   The word 'All' will appear in the upper left corner of the action button signifying that all TagNames will be updated.

5. To distinguish between multiple buttons a color may be added to the Action Button. **Select** one of the 21 colors from the color palette, as shown on the right.



6. To save the Action Button click on the **Add Button** button, as shown on the right, and the Action Button will appear at the end of the the Action Button Panel.



To Edit An Action Button:

1. In the Action Buttons Panel, **right-click** on an Action Button. A pop up menu will appear.

2. Select the **Edit Button** option, as shown on the right.



3. The Action Button window will appear, with the same options described in the steps above. Modify your settings.

4. When complete click on the **Save** button, as shown on the right.



To Sort Action Buttons:

1. In the Action Buttons Panel, **right-click** on an Action Button. A pop up menu will appear, as shown on the right.

2. To move the Action Button one space to the right, select the **Move to Next** option.



3. To move the Action Button one space to the left, select the **Move to Previous** option.

4. To hide the Action Buttons Panel, click on the **Show/hide** button on the bottom of the Content Panel, as shown on the right.



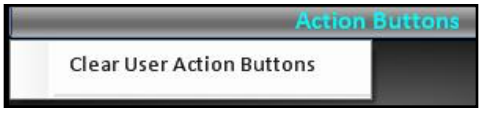
To show the Action Buttons Panel, repeat this step.

To Remove Action Buttons:

1. In the Action Button edit window, click on the **Remove** button, or **right-click** on the Action Button and select the **Remove Button** option, as shown on the right. Once removed there is no undo.



2. To remove all Action Buttons to clear the panel, click on the **Action Buttons menu** and select **Clear User Action Buttons**, as shown on the right.



Using Timer Action Buttons:

1. When a Timer (Countdown or Stopwatch) is assigned to a TagName, Action Buttons for each Timer is automatically added to the beginning of the Action Panel, as shown on the right.



2. Unlike the user Action Buttons, the Timer Action Buttons are multi-functional.

   To start running a Timer click on the **Action Button**, is will illuminate green, as shown on the right.



   To pause a Timer click on the **Action** button again, it will now illuminate orange, as shown on the right.



3. To add or subtract seconds to the Timer, click on the **(–)** or **(+)** buttons.

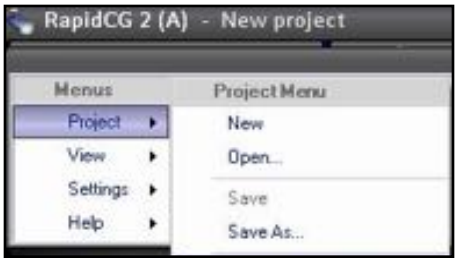
4. To reset the Timer to the start time assigned in the Data Panel, click on the **Reset** button and the Action button will illuminate blue.

5. To modify the running Timer, you may access the Data Panel by **right-clicking** on the Action Button to automatically open the properties in the Data Panel.

5.9.9 Project Files

All the settings described may be saved into one project file, which will remember the content, data configuration and Action Button assignments. This makes for easy switching between different productions with different content. When quitting the application, if changes have been made, a pop up message will appear asking to save the Project.

To Save a Project:



1. Click on the **Fluent RapidCG** menu, and a drop down menu will appear.

2. Click on **Project**, followed by **Save As…**, as shown on the right.

3. A Windows Explorer window will appear, **name** the file and click on the **Save** button.

4. To load the project file, click on **Open…** in the above menu and select a file in the Explorer window.

EZNews, from Automated Data Systems, is a news rundown and script generator application. After a script has been created in EZNews with the appropriate graphic dialog boxes, the entire EZNews project may be exported and manually imported into Rapid CG to automatically generate graphic files in the show rundown order. The selection of the graphics is done manually in Rapid CG.

When creating EZNews Dialog boxes the name of the Dialog box must match the name of the corresponding .Scribe template file. In addition, the name of the Metadata pre-strings must correspond to the RTX Tag names in TitleMotion GS. Without these settings being in place, the EZNews script will not export correctly for use in Rapid CG.

For more information on creating Dialog Boxes in EZNews and for technical support on their products please contact Automated Data Systems directly at 608-785-1415.

To create an EZNews Dialog Box:

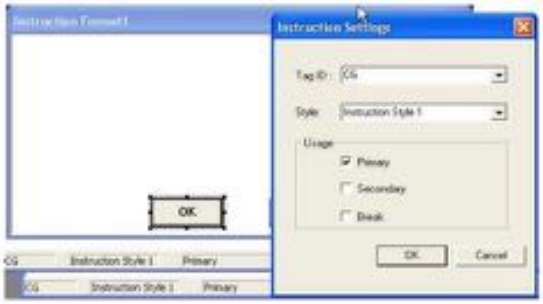
1. Launch **EZNewsAdmin** application on your EZNews system.

2. Select **Instructions** from the top menu bar, and click **New Instruction,** as shown on the right.



   A dialog titled Instruction Format1 will appear in the instruction editor with two buttons (OK and Cancel). DO NOT delete either of these buttons, as they cannot be re-stored.

3. Double-click in an open area of the Instruction Format1 dialog. The Instruction Settings window will appear.



   Under the TagID drop down menu, select **CG,** as shown on the right.

4. Under the Style drop down menu, select the Instruction Style you wish to assign to this dialog, in this example Instruction Style 1.

5. Under the Usage section, select the **Primary** radio button.

6. Click on the **OK** button to apply the changes.

7. On the Instruction Format 1 screen, click the **Inst** button to create a Static Instruction.



8. Double-click the **Static Instruction** you just created to open the Static text properties.

9. In the Default Value text box, enter the **name** of the .SCRIBE Layout/template file that will match this instruction, in this example NameSuper.

   The exact name of the Scribe file saved on the Broadcast Pix system must be used.

   NO SPACES, PUNCTUATION, OR SPECIAL CHARACTERS ARE ALLOWED IN THIS FIELD.

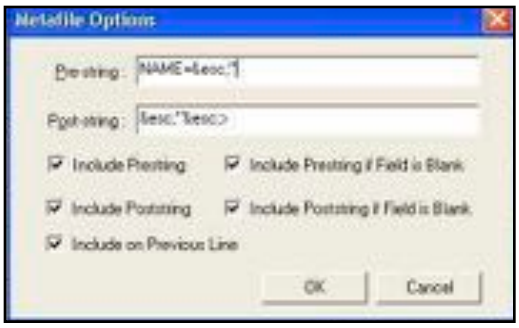


10. In Metafile Options section, check the **Send to Metafile** option.

11. Click on the **Setup** button and the Metafile Options window will appear, as shown on the right.

12. In the Pre-string text field enter **NAME=&esc;"**

13. In the Post-string text field enter **&esc;"&esc;>**



13. Check all five of the available inclusion options, then click on the **OK** button.

14. In the Field section, set Field Type drop down menu to **Text,** as shown on the right.



15. Click on the **OK** button to close the Static Text properties sheet.

17. On the Instruction Format 1 screen, click the **Edit** button to create fields and move them around in the dialog box to provide comfortable working room.



Click the Edit button once for each RTX Tag assign to the Scribe template. For a simple 2 line name graphic which has 2 RTX tags, click the **Edit** button 2 times.

18. For each Edit field, **double-click** the box to open the Text Properties window.



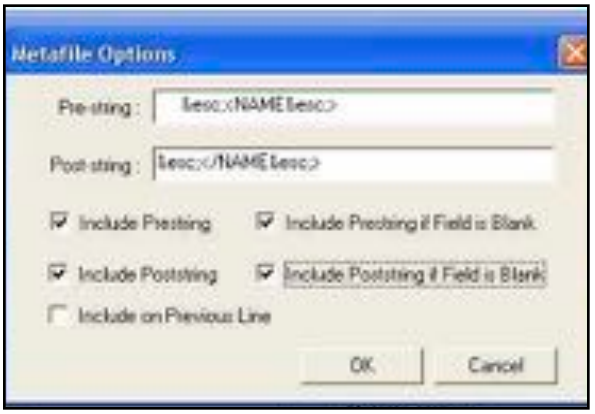
Similar to the previous steps, a Default Name can be entered, but is not necessary.

19. In Metafile Options section, check the **Send to Metafile** option and click on the **Setup** button. The Metafile Options window will appear, as shown on the right.

20. In the Pre-string text field enter five (5) blank spaces followed by **&esc;** followed by **<** followed by the name of the **RTX tag** from TitleMotion GS followed by **&esc;** followed by **>.**

For a RTX Tag name of 'Name' enter
esc;<Name&esc;>

20. In the Post-string field ente r**&esc;** followed by **<** followed by **/** followed by the name of the **RTX tag** from TitleMotion GS followed by **&esc;** followed by **>.**



For a RTX Tag name of 'Name' enter
esc;</Name&esc;>

21. Deselect the **Include on Previous Line** option, and ensure the other Pre and Post string options are checked, as shown on the right.

22. Click on the **OK** button to close the Metafile Options window.

23. In the Field section, set Field Type drop down menu to **Text,** as shown on the right.



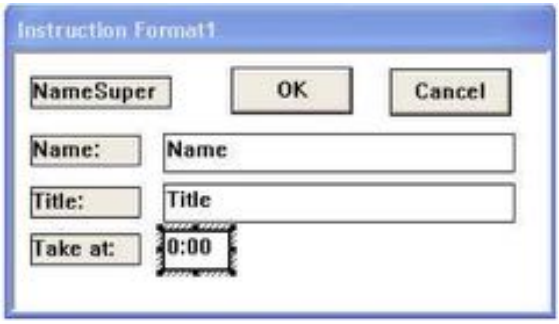
24. Click on the **OK** button to close the Static Text properties sheet.

25. Repeat steps 17-24 above for the other Edit fields ensuring there is one for each RTX tag with the exact tag name.

26. Create a label for each Edit field so the user knows which field is used for which purpose by select the **Label** button in the toolbar, as shown on the right.



Resize and reposition these controls as desired



27. Double-click on an Label control open a Label window allowing you to name the label, in this case Name: and Title: .

28. On the Instruction Format 1 screen, click on the **Save** button on the menu bar, as shown on the right.



29. A Save Format window will appear, enter the desired name you wish to save the Instruction as in EZNews, in this example NameSuper.

All Instruction Dialog Format Names must consist of only UPPER/lower case letters and/or numbers or a combination thereof.

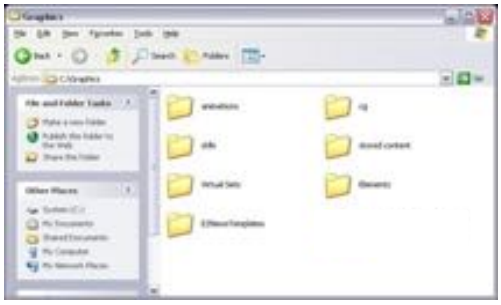


30. Click on the **OK b**utton.

31. For creating an EZNews script and exporting an .EZN file, please refer to the EZNews documentation.

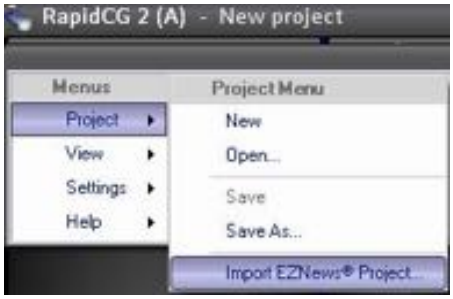
To import an EZNews Project file:

1. Ensure that the .Scribe file are created and saved in the **C:graphics\EZNewsTemplates,** folder as shown on the right.



2. In Rapid CG, click on the **Fluent RapidCG** menu, and a drop down menu will appear.

3. Click on **Project**, followed by **Import EZNews Project…,** as shown on the right.



4. A Load EZ News Project warning box will appear stating that the Content panel will be cleared and replaced with the EZNews contents.

   After ensuring that your Project is safe to be replaced, click on the **OK** button, as shown on the right.

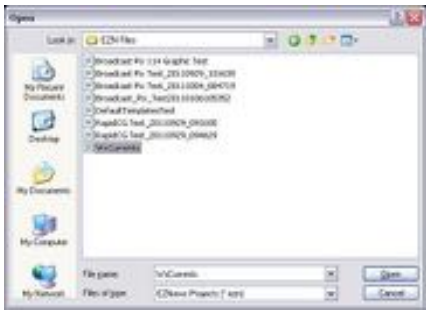


5. In the Windows Open window, **navigate** to where the EZN file lives. This files can live on the Broadcast Pix system or on any remote/networked system.

6. Click on the **OK** button, as shown on the right.

7. Rapid CG will now link the date from the EZN file to the Scribe template files in the EZN Templates folder.

   If any templates are not present the folder or if content is missing, a pop up message will appear at the end of the import notifying you of any offline items.



Rundown Creator is a web-based TV and radio rundown software. After a script has been created with Rundown Creator with the appropriate script templates, the entire playlist be exported and manually imported into Rapid CG to automatically generate graphic files in the show rundown order.
The selection of the graphics is done manually in Rapid CG.

For more information and for technical support on their products please contact Rundown Creator directly at support@rundowncreator.com.

To create a Rundown Creator script template:

1. In Rundown Creator, select the **Settings** link on the top left corner of the browser.

2. Select **Script Templates** on the left hand side, as shown on the right

   Note: This step requires administrator privileges in Rundown Creator.



3. Click on the **+ create a new script template** button, as shown on the right.

   This will create script templates in Rundown Creator for each title or graphic template in TitleMotion. This will allow you to quickly and easily insert them into your scripts in Rundown Creator later.



4. Enter a description in the **Name** field. This example will use 2line-seg, as shown on the right.

5. In the **Content** field enter the following code,

   <cg id="" template="your_template_name">

   Replace "your_template_name" with the filename of your .SCRIBE template, without the .SCRIBE file extension. For example, if your template's filename is 2line-seg.SCRIBE, enter 2line-seg.

   <cg id="" template="2line-seg">



6. In the Content field, add **key/value pairs** for each layer of text or graphics in your template that you might like to replace.

   For example, if your template has two lines of text with the news tags "line1" and "line2", and an image with the news tag "image", then your script template should look like this:

   <cg id="" template="2line-seg" line1="" line2="" image="">

   NOTE: You must use the exact tag names given in TitleMotion.

   In the example above, all of the values are blank, but if you'd like to enter some default values to override those in the template, you can:

   <cg id="" template="2line-seg" line1="Ron Burgundy" line2="Channel 4 News" image="ron.png">

   NOTE: Paths to graphics can be absolute paths like "C:\Graphics\ron.png", or relative paths like "..\ron.png" or "ron.png". When using a relative path, the path is relative to the original image used in the .SCRIBE template.



7. Click the **go** button to save the new script template.

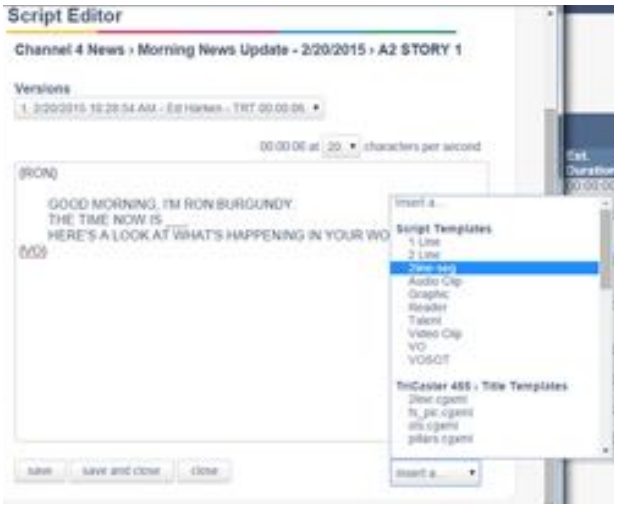


   NOTE: You must repeat these steps for all of your title and graphic templates.

To insert titles into a script:



1. In Rundown Creator, open a script by right-clicking on its row in the rundown, and select **Edit Script** in the drop down menu, as shown on the right.



2. In the Script Editor window, click on the **Insert a…** drop-down menu in the lower-right hand corner.

3. Select one of the script templates created earlier, for example 2line-seg, as shown on the right.

4. Enter the desired data for text or image in the tag placeholders. In this example the information for line1, line2 and image.

   i.e.<cg id="" template="2line-seg" line1="Ron Burgundy" line2="Channel 4 News" image="ron.png">

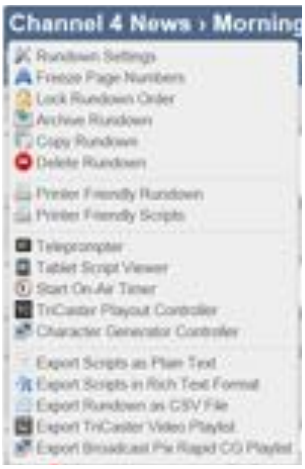
   NOTE: Keep the “ ” at the start and end of your text.



5. Click on the **save** button to save your script.

6. Repeat these steps for each script in your rundown.

Exporting a playlist for Rapid CG:



1. Click on the **title/date** of your rundown to bring up the rundown menu.

2. Click on the **Export Broadcast Pix Rapid CG Playlist** option, as shown on the right.



3. In the **Directory** field, enter the path of the directory where you saved your .SCRIBE templates earlier.

   This could be a subfolder on the Broadcast Pix system, for example

   c:\Graphics\Rundown Templates

   NOTE: If you have administrator privileges, you can save this so you and your team don't have to retype it every time you export by clicking on the **Save these settings as the group's default settings** link.

Importing a playlist into Rapid CG:



1. Open Rapid CG and click on the **Rapid CG** menu button in the top-left corner of the screen.

2. Select the **Project** menu and click on the **Import Rundown Creator** option, as shown on the right.

3. Navigate and select the **.rci** file that was downloaded onto the system.

4. The content pane will populate with the Scribe templates and the tags will automatically be entered with the values provided from the Rundown Creator script.

Section 6:
Clip Store

The Broadcast Pix system contains a multi-definition two channel clip store. Clips are imported into the Server and then selected like a still image for playout. All clips must be compressed as a QuickTime movie file encoded with one of the codecs below and wrapped in a .mov or .mp4 extension. Clips can play with or without audio using Stereo PCM 16 bit 48kHz audio and with or without an alpha channel for transparencies. ProRes 4444, DNxHD and QT Animation are the codecs that can support alpha channels. The QT Animation codec is only supported on systems with a RAID 5 storage.

As an option, the Broadcast Pix system can also control external DDRs/Servers, as described in section 6.7.

Support file formats and resolutions:

Resolution	Frame Rate	Aspect Ratio	Codec	Extension
1920x1080i (HD)	29.97/25	16x9	Apple ProRes PX	.mov
	29.97/25	16x9	Apple ProRes LT	.mov
	29.97/25	16x9	Apple ProRes 422	.mov
	29.97/25	16x9	Apple ProRes HQ	.mov
	29.97/25	16x9	Apple ProRes 4444 (+ alpha)	.mov
	29.97/25	16x9	Avid DNxHD 100 / 85 (+ alpha)	.mov
	29.97/25	16x9	Avid DNxHD 145 /120 (+ alpha)	.mov
	29.97/25	16x9	Avid DNxHD 200 /185 (+ alpha)	.mov
	29.97/25	16x9	QuickTime Animation (+ alpha)	.mov
	29.97/25	16x9	H.264 (max 100 mbits/s)	.mov or .mp4
1280x720p (HD)	59.94/50	16x9	Apple ProRes PX	mov
	59.94/50	16x9	Apple ProRes LT	.mov
	59.94/50	16x9	Apple ProRes 422	.mov
	59.94/50	16x9	Apple ProRes HQ	.mov
	59.94/50	16x9	Apple ProRes 4444 (+ alpha)	.mov
	59.94/50	16x9	Avid DNxHD 100 / 85 (+ alpha)	.mov
	59.94/50	16x9	Avid DNxHD 145 /115 (+ alpha)	.mov
	59.94/50	16x9	Avid DNxHD 200 /175 (+ alpha)	.mov
	59.94/50	16x9	QuickTime Animation (+ alpha)	.mov
	59.94/50	16x9	H.264 (max 100 mbits/s)	.mov or .mp4
720x480i (SD)	29.97/25	16x9 or 4x3	Apple ProRes PX	.mov
	29.97/25	16x9 or 4x3	Apple ProRes LT	.mov
	29.97/25	16x9 or 4x3	Apple ProRes 422	.mov
	29.97/25	16x9 or 4x3	DV/DVCpro	.mov
	29.97/25	16x9 or 4x3	H.264 (max 100 mbits/s)	.mov or .mp4

6.1 Clip Store Playout

Press the **[Clips1]** or **[Clips 2]** button in Device Control-A, and the following will occur:



1. The Clips button will illuminate orange
2. The name “Clips1” will appear in the top left corner of the display
3. The number and name of the currently selected clip will be in the display
4. The PixPad will change to clips, including the first nine clips, which correspond to the nine shown in the clip library portion of the Multi-View
5. The knobs will have their clip data shown in their portion of the display

Clips Device Controls



Multi-View PixPad

PixPad on control panel

Display

```
Clips1: 02 Light Swipe (AXR)
Scrub                        0:00:00
```

Knobs Motion Controls

6.1.1 To Select a Clip by Name

1. Press the **[Clips]** Button if it is not already illuminated.

2. Select the desired clip by name by pressing its PixButton in the PixPad. In the example above, to select the "02 Light Swipe" clip, press the **[Clip 1 Light Swipe]** PixButton, and it will illuminate. The selected clip will appear on the Multi-View in its source window as well as on the PixPad where it will change from grey to orange (red if the Clip Store is on air) and its name will appear in the display and in the Clip PixButton in the program row.

3. Push the **[>]** motion button, it will turn orange, the clip will start to play and its time code will be in the the display as well as the Multi-View.



6.1.2 To Select a Clip by Number

1. Press the **[Clips]** Button if it is not already illuminated

2. On the Clip Store PixPad, press the **[Controls]** PixButton, which will bring up the clip controls PixPad, then press the **[Numeric Keypad]** PixButton, and it will bring up the numeric keypad PixPad, as shown below.



3. Enter the clip **[Number]** you wish using the numeric keypad. As you enter each number it will appear in the display.

4. Press the **[Enter]** PixButton and the selected clip will appear on the Multi-View, its name will appear in the display, and its time code will be shown. The PixPad will change to the Library containing the selected clip, which will be illuminated.

5. Push the **[>]** motion button, and it will turn orange and the clip will start to play, and its time code will advance.

NOTE: To select a clip by number, the clip file name must have digits in front of the name, i.e. "02 Open".

6.1.3 Selecting a Clip with the Multi-View

It may be desired in some situations to select library elements with the mouse or touch screen, rather then using panel buttons. All the modifiers described in this section may be controlled from the Control Panel or the Multi-View PixPad.

To select a clip with the mouse, simply click-on its **Thumbnail** in the PixPad on the Multi-View.

To select a clip not currently shown on the Multi-View, use the **navigation buttons** at the bottom of the PixPad, the left and right arrows.

To modify clip settings click on the **Controls** button to bring up the Clip Controls PixPad, as shown below.



6.1.4 Viewing More Clips in the Library

The clip PixPad displays the 9 clips at a time. To view more clips:



1. Press the **[Next]** PixButton on the control panel and the next 9 will appear. Or use the navigation buttons on the Multi-View PixPad.



2. Press the **[Back]** PixButton, to go back to the previous page. Or use the navigation buttons on the Multi-View PixPad.

NOTE: You can always return to the first page of clips, by pressing the [Clips] device once, and you can jump to the last page by double-punching the [Clips] device button.

6.1.5 Creating Clip Thumbnails

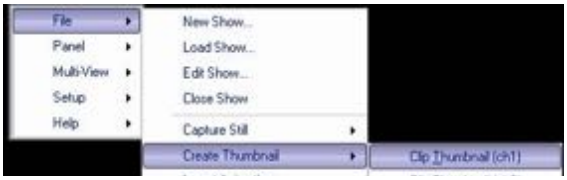
Each clip can have its own thumbnail, which can be viewed on the Multi-View PixPad. By default there is no thumbnail, simply a generic film strip icon. It may be desired to change the clip's thumbnail. Once a thumbnail is created it will be remembered for all shows. In addition, .mov files in the Animation store may also be created.

To create a clip thumbnail:

1. Start the clip playing as described in section 6.3.

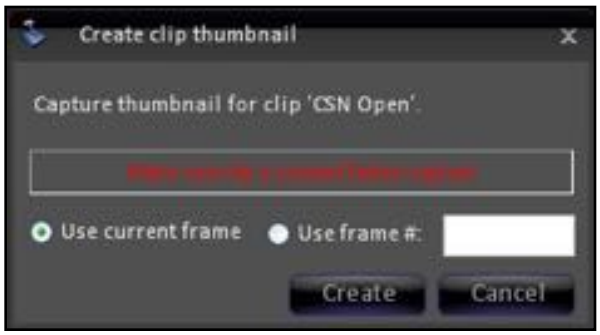
2. Pause the clip when you have reached the desired image you wish to capture by pressing the **[>]** button again on the control panel.

3. Click on the **File** menu in BPswitcher, then click on the **Create Thumbnail** menu.



4. Select **Clip Thumbnail (ch1)**, as shown on the right.

   The Create clip thumbnail window will appear.



5. Click on the **Create** button, as shown on the right.

   As an alternative, you may specify the frame number of the clip you wish to capture by selecting the Use frame # radio button and entering a frame number.

   The desired image will then be captured and appear on the Multi-View. The image will be saved in the same folder with the clip on the Servers D drive, and so if you use the same clip in another show, you will not have to create another thumbnail for it.

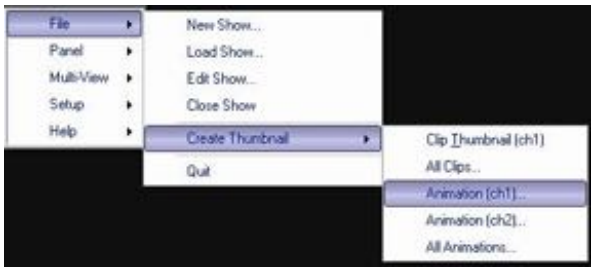


To create an animation thumbnail:

1. Start the animation playing as described in section 6.3, substituting the clip store for the anim store.

2. Pause the anim when you have reached the desired image you wish to capture by pressing the **[>]** button again on the control panel.

3. Click on the **File** menu in BPswitcher, then click on the **Create Thumbnail** menu.



4. Select **Animation (ch1)** or **Animation (ch 2)** depending on which channel you are controlling, as shown on the right.

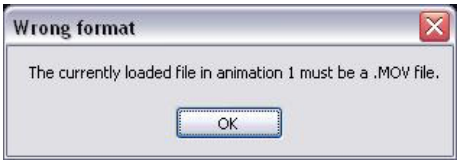
   The Create clip thumbnail window will appear.



5. Click on the **Create** button, as shown on the right.

   As an alternative, you may specify the frame number in the animation you wish to capture by selecting the Use frame # radio button and entering a frame number.

   Note that only .mov files may be captured, and not image sequences. A pop up message will appear if an image sequence is selected, as shown on the right.

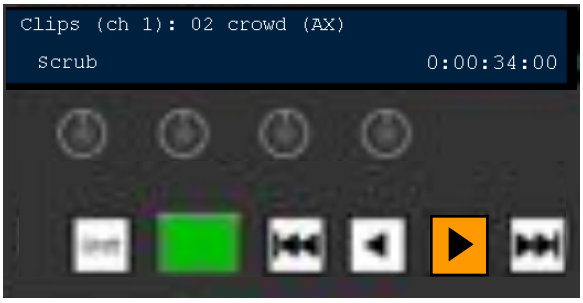


6. Click on the **OK** button on the pop-up confirmation screen.

   The desired image will then be captured and appear on the Multi-View PixPad. The image will be saved in the same folder with the clip on the Servers C drive.

6.2 Clip Motion Controls

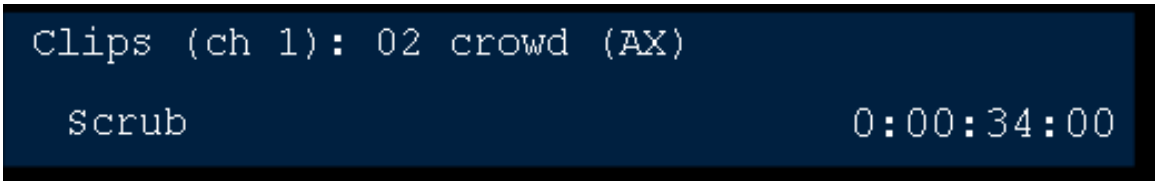
The motion controls provide a range of control over a selected clip.



1. To play a clip press **[>]**, and it will illuminate orange
2. To pause a clip that is playing, press the **[>]** button again.
3. When a clip is paused, pressing the **[>]** button will start it playing again.
4. To return to the beginning of the clip press the **[I<<]** button.
5. To jump to the end of the clip, press the **[>>|]** motion control.

6.2.1 Clip Counter

The runtime of the clip is displayed in lower right corner of the display either on the Control Panel or SoftPanel.
When a clip is playing the timecode shows hours, minutes and seconds.
When the clip is stopped, the time code also displays the frame, as shown below.



Hours : Minutes : Seconds : Frames

The clip's runtime is also shown on the Multi-View, and clips can be set to count up or count down, see section 2.5.6



6.2.2 Clip Motion Controls on the Multi-View

In addition to using the control panel or SoftPanel motion controls, the Multi-View PixPad may also be used with the mouse to control a clip. In order to use the Multi-View PixPad with the control panel, the **Follow Panel** option must be activated, as described in section 2.4.3.

To view clip motion controls:

1. Select the **[Controls]** button on the Multi-View PixPad, either using the control panel or mouse.



   This will bring up the Clip modifiers PixPad, as shown on the right.



2. The motion control buttons work similar as they do on the control panel, as described in the previous section, 6.2.

3. These scrub controls work in the same manor as described in section 6.3.10.

   However since there is only 1 knob/slider, a label above the knob needs to be selected to active the desired control. By default the first knob label (in this case 'Scrub') is selected.

   In addition the knob/slider has 2 nudge arrows at each end for finer control.

6.3 Clip Control Modifiers

Each individual clip can have its own set of modifiers. Modifiers include: Mark In, Mark Out, Aspect Controls, Remove Mark In, Remove Mark Out, Loop Clip, Auto Start, Auto Stop, Auto Rewind, Auto Transition and Auto Next. When a clip is imported and added to a show the clip is set up by default to Auto Start, Auto Stop and Auto Rewind (AXR).

6.3.1 Mark In and Out Points

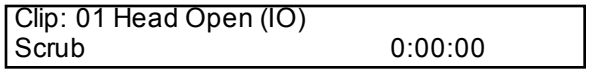
Mark-in and Mark-out enable points to be set at the beginning and end of a segment of a clip. Once set, the [I<<] button will bring the clip to its mark-in point, and the clip will stop playing at its mark-out point. These are helpful for temporarily trimming off unused portions of a clip when ingested.

To set mark points on a clip:

1. Select the **[Clips 1]** button, in the Device Select section of the control panel or SoftPanel, the button will illuminate orange.
2. On any clip PixPad, press the **[Controls]** PixButton, which will bring up the clip controls PixPad, as shown on the right.
3. If the Clip Store is not on preview, then put it there by pressing the Clip Store button on the **preview** row. Or you may use the source monitors in the Multi-View.
4. Press the **[>]** motion button to start the clip playing.
5. Press the **[Mark In/Out]** PixButton, and a new PixPad will appear.
6. When the clip reaches the point you wish for a mark-in point, press the **[Mark In]** PixButton.
7. When the clip reaches the point you wish for a mark-out point, press the **[Mark Out]** PixButton.



To let you know that Mark-In and Mark-Out points have be set for a clip, the letters “I” and/or “O” respectively are appended to the clip name in the display as illustrated below:



To Remove Mark Points:

When setting new in and out points, you first need to remove each point before selecting a new ones. This not only ensures the new points are added, but it also allows you to view/scrub footage beyond the previous in and out points.

Press the **[Rem Mark In]** and/or **[Rem Mark Out]** PixButtons. When pressed, the respective letters “I” and/or “O” that had been appended to the clip name in the display will disappear to let you know that the mark points are gone.

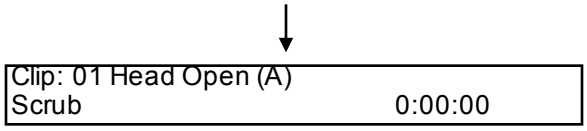


6.3.2 Auto Start

When clips are selected from the Clip Store, they must be manually started with the [>] motion button. Instead, the auto-start function may be set to automatically begin playing from its Mark-In point (or from the beginning if no mark in point is set) when taken to air, by pressing [Cut], [Auto Trans] or using the [Fader].

To turn on Auto Start:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.
2. Press the **[Auto Start OnOff]** PixButton and the letter “A” will be appended to the clip name in the display to let you know that the Auto-Start function has been turned on for that clip. (If other modifiers are turned on they will also appear)



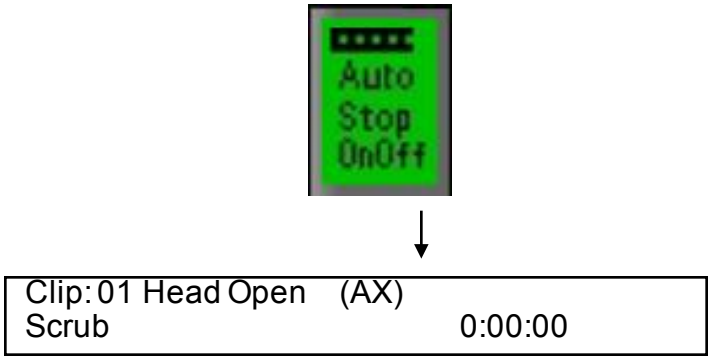
6.3.3 Auto Stop Clips

Just like it is possible to have a clip start on transition to program with Auto Start, a clip can also be set to automatically stop when it transitions off program by pressing [Cut], [Auto Trans] or using the [Fader].

To turn on Auto Stop:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.

2. Press the **[Auto Stop OnOff]** PixButton and the letter "X" will be appended to the clip name in the display to let you know that the Auto-Stop function has been turned on for that clip.



6.3.4 Auto Rewind Clips

A clip can also be set to automatically rewind to the beginning or the set in point of the clip. This is useful when you are using a clip multiple times, and want the clip to always start from that point.

To turn on Auto Rewind:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.

2. Press the **[Auto Rewind]** PixButton and the letter "R" will be appended to the clip name in the display to let you know that the Auto-Rewind function has been turned on for that clip.

NOTE: If a clip has audio associated with it, the audio will cut off once the clip is taken off of program, if it is desired to be able to keep playing the audio once transitioned off, deselect Auto-Stop.

6.3.5 Loop Clips

When a clip reaches its end, it stops. If instead you wish to have the clip return to the beginning and start playing again, then you can turn on the loop function, which will cause the clip to continuously loop. If you have mark points in place, then the clip will loop between the mark points. This is ideal when creating animated backgrounds, instead of creating a long animation (which takes up hard drive space), create a shorter one and have it loop. In addition, looped clips may also have a third mark point, called a Loop Point, which is set between the mark in and mark out points. The Loop Point is useful in animation playback where the initial portion of an animation flies in from off screen, then loops to a point other than the beginning of the file.

To set a clip to loop:



1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



2. Press the **[Loop OnOff]** PixButton, and the letter "L" will be appended to the clip name in the large display to let you know that the Loop function has been turned on for that clip, as illustrated below (if mark-in and out points are also set, then "LIO" will appear).

Clip: 01 Head Open (L)	
Scrub	0:00:00

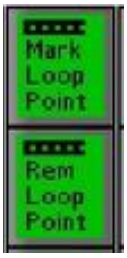
To set a loop point:



1. Play or scrub the clip to the desired loop point.
2. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



3. Press the **[Mark In/Out]** PixButton.



4. Press the **[Mark Loop Point]** PixButton, and the letter "P" will be appended to the clip name in the large display to let you know that the Loop Point function has been turned on for that clip, as illustrated below (if mark-in and out points are also set, then "LIO" will appear).

Clip: 01 Head Open (LP)	
Scrub	0:00:00

5. To remove the Loop point and to enter a new one, select the **[Rem Loop Point]**.

6.3.6 Cut Points

Similar to a loop point, where a point in the middle of a clip may be marked, a cut point can be used to trigger a background transition using a cut. This is useful for creating automatic alpha wipes for transition effects. Simply mark a cut point on an animation, assign it to a keyer, turn on the direct key and the system will cut in the background at the assigned point. When a cut point is assigned, the Loop attribute is automatically turned off. Cut points can also be used on animations in the animation store.

To set a cut point on a clip:

1. Play or scrub the clip to the desired cut point. This is usually when the animation has a full screen image covering the screen, hiding the cut in the background.

2. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



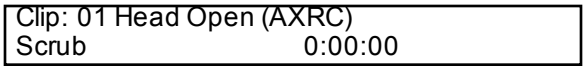
3. Press the **[Mark In/Out]** PixButton.



4. Press the **[Cut Point]** PixButton, and the letter “C” will be appended to the clip name in the large display to let you know that a Cut Point has been turned on for that clip, as illustrated below.



5. To remove the Cut point and to enter a new one, select the **[Rem Cut Point]**. Only one cut point may be marked at a time per clip.



6.3.7 Auto Transition

When a clip reaches the end of the file or out point it stops or can be set to loop, instead if you wish to have the system automatically trigger a background transition it can be a assigned to Auto Transition. There are two auto transition modes, either using a cut or an effect. When set to an effect the selected effect and transition rate in the transition section will be used. Auto Transition is useful in fast-paced productions, like in news where you constantly go between a clip and a live source not having to keep track of clip timing.

To set a clip to Auto Transition:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



2. Press the **[Auto Trans]** PixButton, and the letter "T" will be appended to the clip name in the large display to let you know that an Auto Transition using a cut has been turned on for that clip, as illustrated below.




```
Clip: 01 Head Open (AXRT)
Scrub                    0:00:00
```

3. To use the selected transition, press the **[Auto Trans]** PixButton again, and now a "+" will be appended to the T letting you know that an Auto Transition using an effect has been turned on fro that clip, as illustrated below.




```
Clip: 01 Head Open (AXRT+)
Scrub                    0:00:00
```

   Now when a clip reaches the end, whatever is in preview (including keyers) will flip-flop to program and place the clipstore in preview.

4. To turn off the Auto Trans, select the **[Auto Trans]** PixButton until the display clears the T and T+.

6.3.8 Auto Next

So far this section has described playing one clip at time using various attributes. If you wish to string multiple clips together so they play out one after another the Auto Next attribute may be used. Auto Next allows clips that are in order on the PixPad to automatically sequence to the next clip when the outgoing clip reaches the end of the file or out point. When Auto Next is enabled, Loop is automatically disabled, however you may simultaneously use Auto Next and Auto Trans on the same clip. This allows a clip to play to the end, then automatically transition the program, then automatically select the next clip in the PixPad in preview. Or Auto Trans may be enabled on the last clip of the sequence only enabling a basic clip sequence to play then auto transition to preview. All these tools are useful in sports, news and other applications where clips are constantly in use.

To set a clip to Auto Next:

1. **Order** the desired clips in the PixPad using the Show Editor, as described in section 3.5. Keep in mind that multiple groups of clips may be set to Auto Next no matter where they are located in the PixPad.

2. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



3. Press the **[Auto Next OnOff]** PixButton, and the letter "N" will be appended to the clip name in the large display to let you know that Auto Next has been turned on for that clip, as illustrated below.




```
Clip: 01 Head Open (AXRN)
Scrub                    0:00:00
```

1. To assign more clips in the sequence, select the next clip in the PixPad and repeat steps 2 & 3 above.

5. To turn off the Auto Next, select the **[Auto Next]** PixButton on the desired clips until the display clears the N.

6.3.9 AutoAspect Controls

The clip store, as well all other graphic devices, have the ability to natively change the aspect ratio of content, on the fly with no added delay or morphing.
This is ideal when mixing 16:9 content in a 4:3 show, or vice-versa. Each piece of content in a channel can have its own aspect controls for greater flexibility.

For more information on AutoAspect, see section 1.7.1.

To change a clip's aspect:

1. Select the desired clip, and press the **[Controls]** button on any Clip PixPad.



2. Press the **[Next]** PixButton, and the PixPad will change showing the source controls PixPad, as shown on the right.

3. Press the **[Asp Ctrls]** PixButton, the PixPad will change showing the aspect controls PixPad.



4. Select the native aspect ratio of the clip, either **Native 4:3** or **Native 16:9**.

5. Now select the desired treatment to be applied to the clip. Either **None, Box, 14:9** or **Crop.**

6. To use a custom aspect ratio select the **[Cust Asp]** PixButton and use the knobs to dial in the correct aspect ratio.

7. To reset the custom aspect ratio select the **[Cust Asp Reset]** PixButton.



6.3.10 Scrubbing a Clip

Scrubbing a clip is causing the clip to fast forward very quickly, which is a quick way to preview a clip, and a handy way to move to a desired portion of a clip. It is also helpful when marking and in and out points.

To scrub a clip:

1. If the **[Clip]** button is not illuminated, assign the device controls to clips by pressing the **[Clip]** button, and it will illuminate.

2. Put the desired clip on preview by pressing the Clip Store button in the **Preview** row or can monitor on the clip by using the Multi-View.

3. Turn the **[1st Knob]** and it will scrub the selected clip. You may stop anywhere and the clip will be paused in that location. A clip must be paused in order to scrub through it.

4. To scrub faster through a clip use the **x10** or **x100** knobs to quickly advance through the clip.



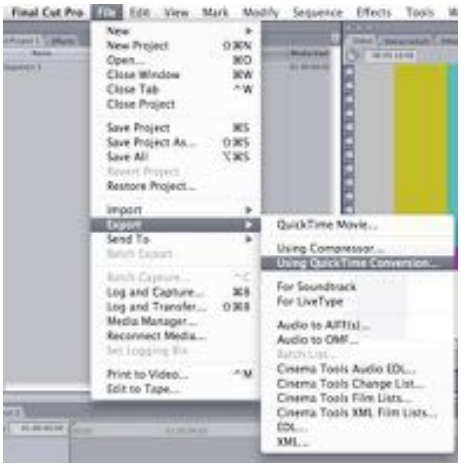
6.4 Exporting Compressed Clips from Final Cut Pro

A popular editing program to export compressed clips from is Apple's Final Cut Pro. Although other programs can be used to export compressed clips, the steps below may be used as the basic exporting settings from QuickTime are similar from application to application.

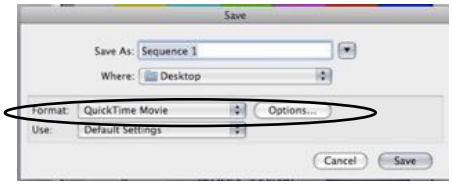
To export from Final Cut Pro:

1. On your Final Cut Pro computer, select the **File** drop down menu.

1. Select **Export->Using QuickTime Conversion…**, as shown on the right.



3. A Save pop-up window will appear, as shown, under Format select **QuickTime Movie** from the drop down menu, then select the **Options…** button.



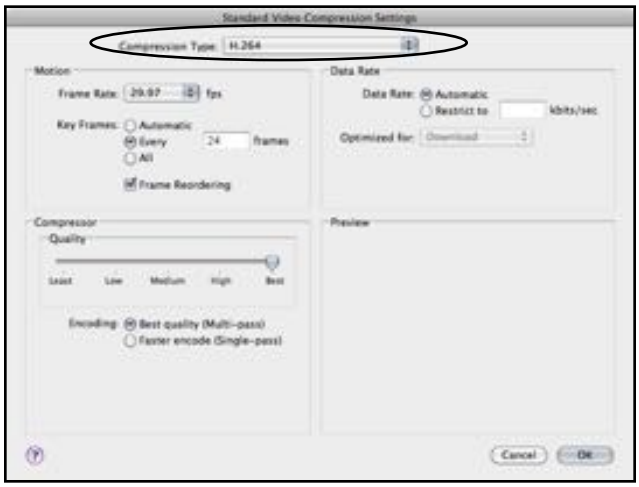
4. The Movie Settings menu window will appear, make sure that both **Video** and **Sound** headings are checked to ensure proper export of both audio and video.

   Select **Settings** under the Video section, to change the video compression settings.

   The Prepare for Internet Streaming setting has no effect for playout in Broadcast Pix.

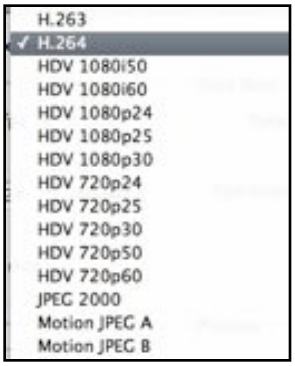


5. The Standard Video Compression Settings window will appear, as shown below.
In this window you will be able to change the **Compression Type,** the **Quality** and **Frame Rate.**

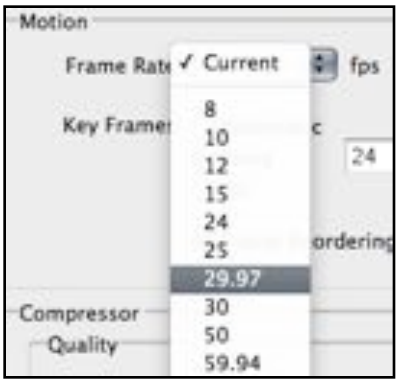


6. Select the **Compression Type** drop down menu, which will bring up a list of possible compression settings.
Select **H.264, ProRes Proxy, ProRes LT** or **ProRes**, as shown on the right.

Choosing any other setting will not create a file recognizable in Broadcast Pix.



7. Under the Motion section, select the **Frame Rate** drop down menu and select **29.97** for NTSC/60hz or **25 f**or PAL/50Hz, as shown on the right.



8. Under the Motion section, select the **Automatic** radio button under Key Frames.

9. Under the Compressor section, select **Best** with the Quality slider and select the **Best quality (Multi-pass)** radio button, as shown on the right.



10. Under the Data Rate section, select the **Automatic** radio button.

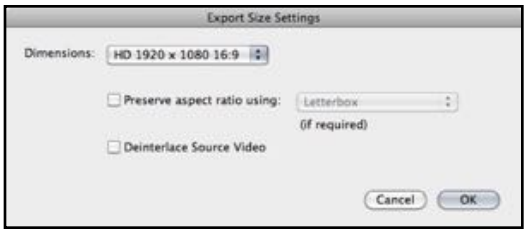
11. Once all these settings have been selected, click on the **OK** button.

12. In the Movie Settings window, click on the **Size…** button, as shown on the right.



12. In the Export Size Settings window, click the Dimensions drop down menu and select the **HD 1920 x 1080 16:9** option, as shown on the right.

13. Click on the **OK** button, to close the Export Size Settings window.



14. Under the Movie Settings window, select the **Settings…** button under the Sound section, to change the audio compression settings.

15. The Sound Settings window will appear, as shown on the right. Under the Format drop down menu, select **Linear PCM.**

12. Under the Channels drop down menu, select **Stereo (L R).**

13. Under the Rate field, select **48.000 kHz** from the drop down menu. The clip store will support any audio sample rate, since it automatically converts all audio to 48.000 kHz.



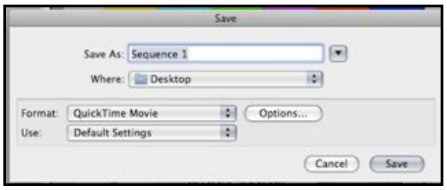
14. Under the Render Settings section, select **Best** under the Quality drop down menu.

15. Under the Linear PCM Settings section, select **16 bits** under the Sample size drop down menu.

16. Click on the **OK** button once all these settings have been selected.

22. In the Movie Settings menu, click on **OK** to save all your video and audio settings.

23. In the Save window, **name** your file in the **Save As:** text field and choose a destination to save the file in the **Where:** drop down menu.



If your Final Cut Pro system is on the same network as the Granite Server, then you may save the final directly to the show's Watch Folder or to the D:Clips directory.

22. Click on the **Save** button to export and save your QuickTime movie.

6.5 Optional Remote Control of an External DDR

Optional control of a remote DDR may be added to the system, to enable the control panel to control up to four channels of an external DDR, by using the Louth VDCP protocol. The option includes software and an Edge Port RS-422 hub. It has been thoroughly tested with an ImageServer from 360 Systems, Nexio from Harris, Mediadeck from Omneon and K2 Solo/Summit from Grass Valley. It may also work with other servers that support the VDCP protocol, however it's not supported.

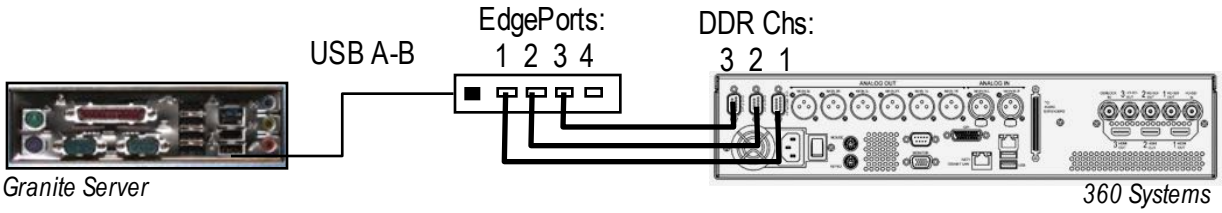
6.6.1 Installing the External DDR Control Option

1. If the option was ordered as part of the system, then the software in already installed. Otherwise the proper Option Control must be installed, see section A.2.

2. Make up RS-422 cables for each of up to the three channels. These cables require the following wiring:

	Male DB-9 360 ImageServer Harris Nexio	Female DB-9 Edge Port 4iRS-422
1	GND	
2	Transmit A (TX-)	8
3	Receive B (RX+)	7
4	GND	
5	N/C	
6	GND	
7	Transmit B (TX+)	4
8	Receive A (RX-)	3
9	GND	5

3. Attach the included Edge Port 422 Hub to a USB port on the Broadcast Pix Server. Then attach the 422 cables from the Edge Port to each channel of the DDR that you wish to control, as shown below, ensuring that you align Channel 1 with Port 1, Channel 2 with Port 2 and Channel 3 with Port 3.



3. Ensure that the external DDR is set to be controlled remotely/serially using the VDCP protocol. Please refer to the 360, Nexio, Omneon, Grass Valley manual for instructions.

360 Systems Configuration:



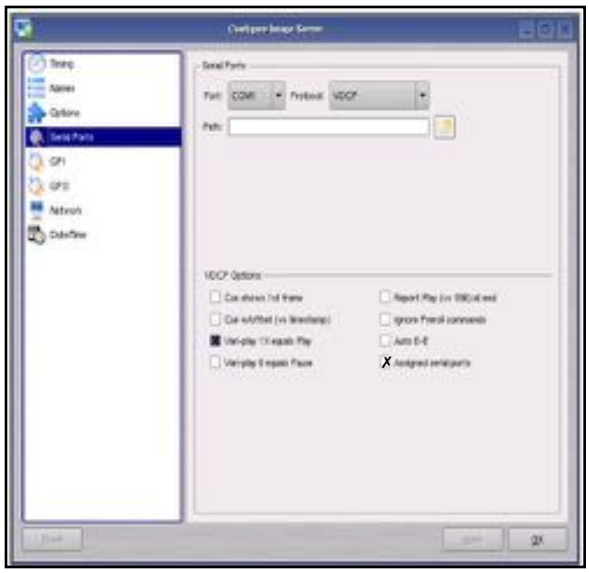
1. On 360 Systems Servers, select the **Edit, Configuration** menu, as shown on the right.

2. Select the **Serial Ports** option.

3. Select **Com1** from the Port drop down menu.

4. In the Protocol drop down menu, select **VDCP**, as shown on the right.

   Repeat steps 7 & 8 for each com port.



5. Under the VDCP Options section, place a check mark next to **Assigned serial ports.**

6. Click on the **OK** button to apply the changes.

7. For each channel window, click on the **Serial Control** check box, as shown on the right.



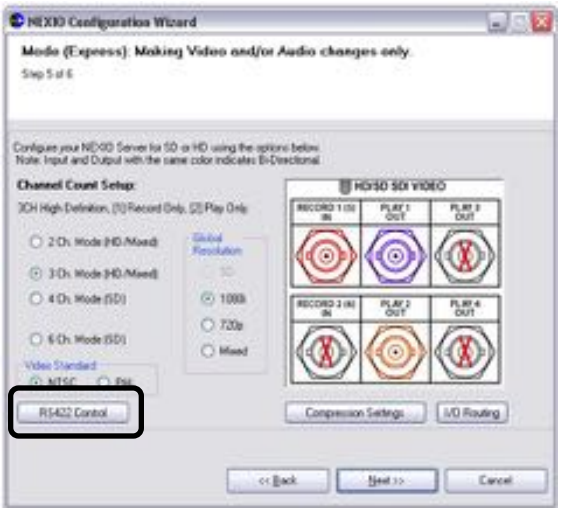
Harris Nexio Configuration:

1. On Harris Nexio Servers, on the desktop double-click the **Nexio Wizard** icon, as shown on the right.



2. In the Nexio Configuration Wizard Main screen, click on the **Next** button.

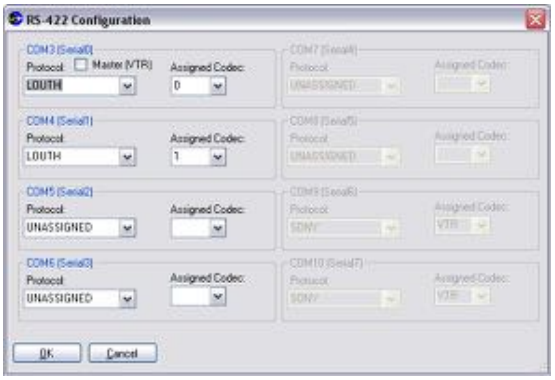
3. In the Video Configuration screen, click on the **RS-422 Control** button, as shown on the right.



4. For each Com Port 1-4, click on the Protocol drop down menu and select the **Louth** option, as shown on the right.

5. For each Com Port 1-4, click on the **Assigned Codec** drop down menu and assign numbers 0-3 to Com Ports 1-4 in order, as shown on the right.

   You must assign the com ports in order for proper operation.



6. Click on the **OK** button to apply the changes.

7. Click on the **Next** button, then click on the **Finish** button.

8. Restart the Nexio Server.

9. Once the system reboots, double-click the **Nexos** icon on the desktop, as shown on the right.



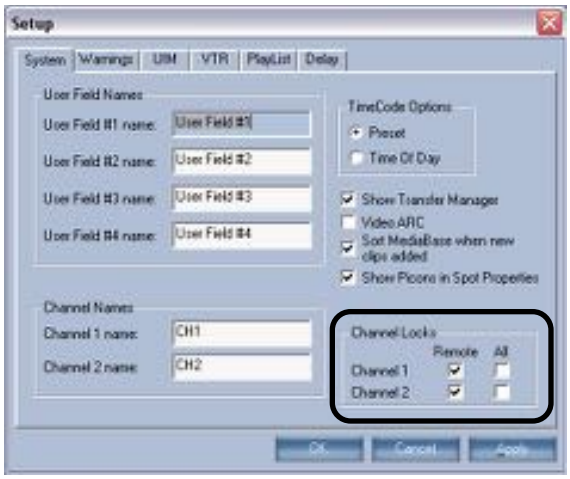
Enter your username and password.

10. Select the **File, System, System Setup** menu, as shown on the right.



11. In the Setup window, place a check mark in the **Remote** column next to each channel under the **Channel Locks** section, as shown on the right.

12. Click on the **Apply** button and then on the **OK** button to save the settings.



Omneon Mediadeck Configuration:

1. On Omneon Mediadeck Servers, log on to the System Manger.



2. Click the **Configuration** menu, as shown on the right.

3. Click on the **Player Configuration** link in the Configuration section, as shown on the right.



4. Select the MediaDirector in the Player Configuration section, as shown on the right.



5. Ensure that the Players are deactivated, by selecting the check box to the right of each player and select on the **Deactivate Selected** button.

6. Click on the **Edit** link for the desired Player, as shown on the right.



Omneon Mediadeck Configuration:

7. In the Player details, select the **VDCP** option under the Control section drop down menu, as shown below.



8. Assign the **Signal Port** number, either 1, 2, 3 or 4.

9. Assign the MediaPort to be controlled under the **MediaPort Name** drop down menu.

10. Assign which channel, A or B, to be controlled under the **Channel** drop drop menu.

11. Click on the **Done** button to return to the list of Players.

12. Repeat steps 6-11 for the rest of the players. Only 4 players may be assigned to a comm port for VDCP control.

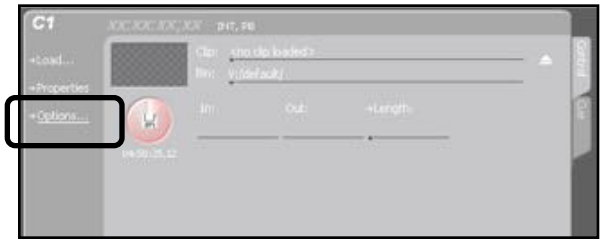
13. Active the modified players by playing a check mark next to each player and click on the **Active Selected** button, as shown on the right.



Grass Valley K2 Configuration:

1. On Grass Valley K2 Server, launch the AppCenter from the desktop and logon with the K2 administrator account.

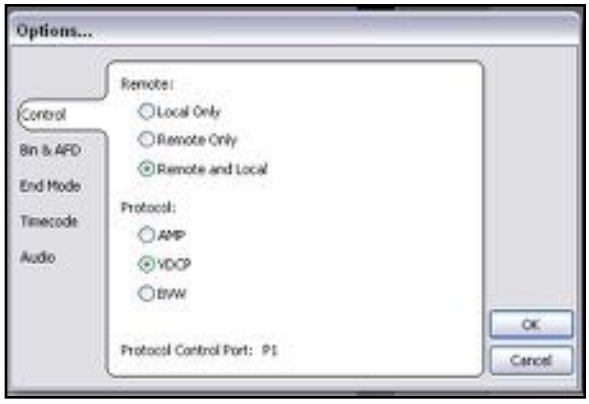
2. For each Channel (C1-C4) click on the **Options…** link in the player section, as shown on the right.



3. In the Options window, click on the **Control** menu.

4. Under the Remote: section, click either the **Remote** or **Remote and Local** radio button, as shown on the right.

   Use Remote only if you want complete automation and no local override.



5. Under the Protocol: section click on the **VDCP** radio button.

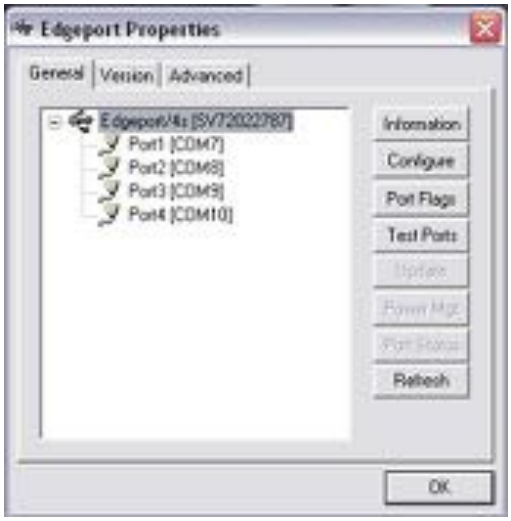
6. Click on the **OK** button to apply the changes.

7. Repeat steps 2 – 6 for each channel.

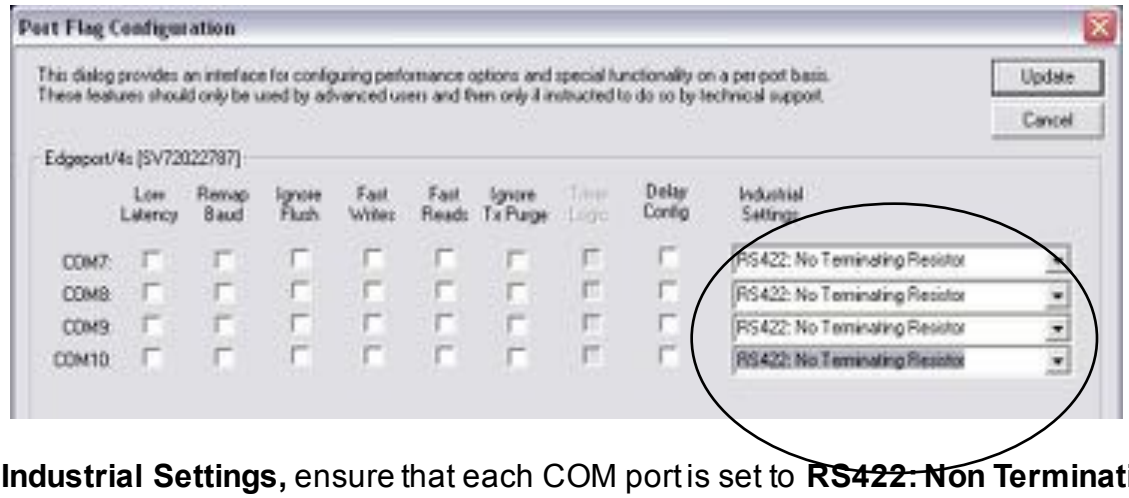
6.5.2 Verifying Installation of External DDR Software

It may be necessary to ensure that the Edge Port RS-422 hub is installed/configured properly. To verify you must use the **Edgeport Configuration Utility,** which was installed on your workstation at the factory.

To access the utility go to the **Start Menu** in Windows, select **All Programs,** followed by **Digi USB**, then **Edgeport Configuration Utility.** This will bring up the window below. If this utility is not installed on your workstation, it may be necessary to install the driver CD which came with your Edge Port, contact technical support for more information.



The Edge Port communicates to your server via a RS-422 connection, to ensure that the Edge Port is configured to do so select the **Port Flags** button, in the Edgeport Properties window, which will bring up the Port Flag Configuration window below.



Under **Industrial Settings,** ensure that each COM port is set to **RS422: Non Terminating Resistor.**

Select the **Update** button to save changes, then close the Edgeport Properties window.

6.5.3 Adding DDR Control to a Show

The use of the external DDR is similar to the use of the internal clip store, as the device must be assigned in the show definition as being included in a show, and then the device controls are used to control it.

To add DDR Control to a show:

1. Select the show to which you wish to add external DDR control by loading a show (or creating a new one) and then opening PixMaster by selecting **File, Edit Show.**

2. Select **Edit Show Settings** and then **More Devices** to open the Add Device window, as shown below.

3. Assign the **DDR Control** device to a Device Button 1-4 by selecting the drop down menu and choosing **DDR Control** or **Omneon Server Control.**



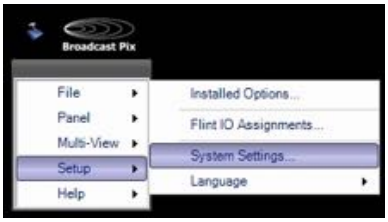
4. Click on the **OK** button, then **Close** and then **Save Show** to close PixMaster.

6.5.4 Selecting Clips to Access

Similar to the internal clipstore in Broadcast Pix, you can select all or just a subset of clips from the external DDR to be accessed in your show. The clips selected in the following menu are the clips accessible through the Broadcast Pix Control Panel.

To select clips from the external DDR:

1. In BPswitcher, select the **Setup** menu, then **System Setting…**, as shown on the right.



2. In the System Settings window select the **Devices** tab.

3. Select either **DDR Control** for 360, Nexio or K2 control or **Omneon Server Control** for Omneon control. It will highlight orange, as shown on the right.



4. Click on the **Settings** button, and the DDR settings window will appear. The [Setup] PixButton from the Controls PixPad may also be selected to access the DDR settings menu.

5. For each server channel assign the communications port under the **Comm Port** drop down menu.

   To see which COM ports are active on the workstation, navigate to the Window's Device Manager, under the Ports COM & LPT section.



6. To have Auto-Start capabilities, enter the switcher input in the **Input Number** text field, as shown on the right.

   This number is the physical input number on the Switcher

NOTE: If an invalid comm port or unable to connect to server message appears, ensure that the cabling is correct and that the external server is set to be controlled remotely through VDCP

7. Click on the **Apply settings** button to verify the communication ports. If all ports are verified correctly, the Select clips… button will activate, as shown on the right.

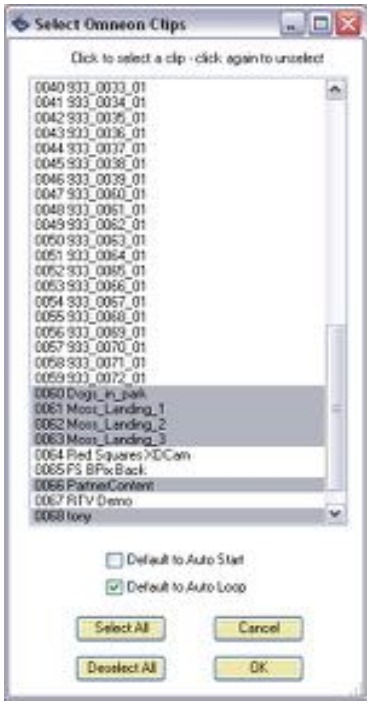


8. For each channel, click on the **Select clips…** button and the Select DDR Clips window will appear, as shown on the right.



Note that the Select DDR Clips windows may take up to several minutes, depending on how many clips are on the external server.

If the DDR/Omneon control is not added to the current show, the Select Clips button will not be visible. See section 6.5.3 for adding the server control to a show.



9. Select the clips you wish to access from the panel by clicking on **each clip** individually, and each it will highlight, as shown.

To deselect a clip, click on it again and it will revert to white.

10. To have all the clips Auto Start, place a check mark next to **Default to AutoStart**, as shown on the right.

11. To have all the clips Auto Loop, place a check mark next to **Default to AutoLoop,** as shown on the right.

12. Click on the **OK** button on the Select DDR Clips window.

13. To have all the channels use the same clip list, check the **All same clips** check box, as shown on the right. To use different clips for each channel, deselect this option and follow steps 8-12 above.

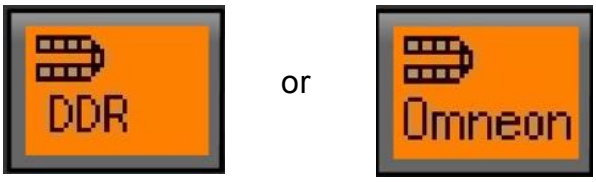


14. Then click on the **OK** button on the DDR settings window, to save your clip settings.

NOTE: When naming your clips on an external server, it is important not to have a name longer than 8 characters long or UTF-8 or Unicode. The VDCP protocol only supports file names with 8 or less characters in ASCII

6.5.5 Controlling External DDR

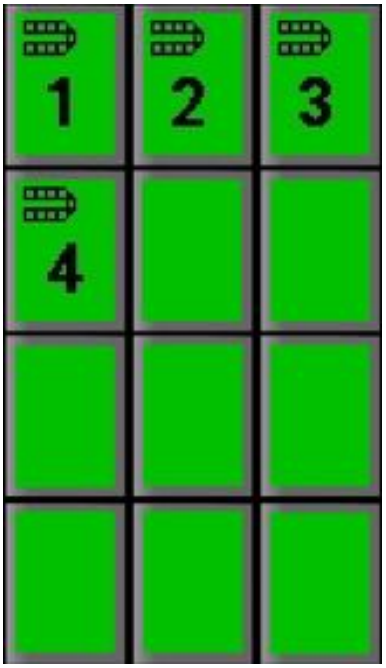
When a show contains the External DDR, one of the 4 wildcard device PixButtons in the upper right corner of the panel will show the DDR as illustrated below.



To Control the External DDR:

1. Press the above **[DDR]** or **[Omneon]** PixButton in the Device Control and it will illuminate orange. The device controls will show the 4 channels for control, as shown below.

   The large display will also say DDR or OMN in it's top left corner, to let you know the device controls are now assigned to this device.

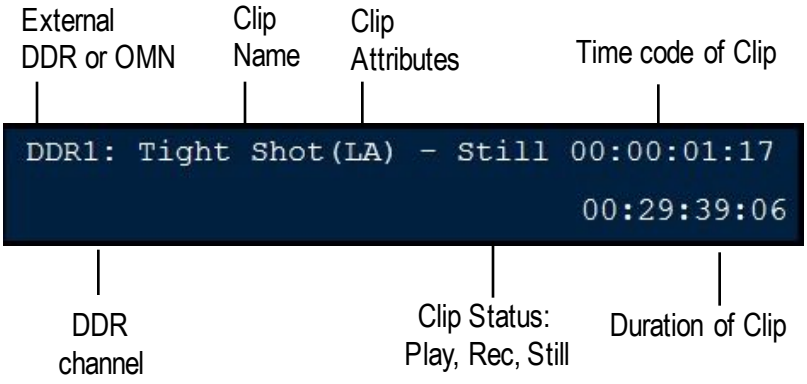


2. To access the first channel of DDR, press the **[1]** PixButton, and the PixPad will change to show the first 9 clips on this channel as shown below, including the name of each clip on the button.

   As with other devices you may select from additional clips by pressing the [Next] PixButton or by using the numeric keypad, see sections 6.1.1 and 6.1.3.

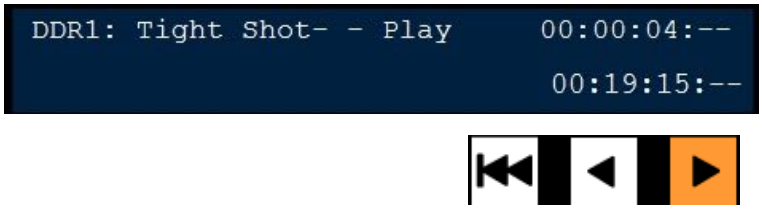


3. Select the desired clip and by pressing its **PixButton**, and the information for that clip will appear in the large display, as shown below.





4. Press the **[>]** Button and the clip will begin to play. The display will show both the status as Play, and the time code will count up and the duration will count down, as shown below.



5. To Pause press the **[>]** button again (and then again to resume playing)

6. To reverse the clip, press the **[<]** button

7. To rewind the clip to the beginning, press the **[I<<]** button

NOTE: When controlling an external DDR, it is important to select commands slowly. There is a slight pause from when you select a command to when that command is executed. Any fast button-pushes may break the communication to your external DDR.

6.5.6 DDR Controls

Similar to the internal Broadcast Pix clip store, each external clip from the DDR/ Server may be set to loop continuously and/or set to Auto-Start when transitioned to Program. In addition, some servers may be configured to record, they may be started and stopped directly from the control panel.

To set a clip to Loop:

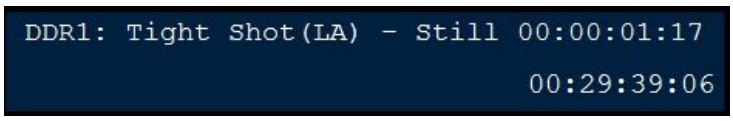
1. Select a clip, as described in section 6.5.5 above

2. Press the **[Controls]** PixButton at the bottom of the PixPad, which will bring up a new PixPad, as shown on the right.



3. Press the **[Loop Clip OnOff]** PixButton. The letter L will be appended to the clip name in the display to let you know that it has been set to loop, as shown below.





4. To turn off looping, press the **[Loop Clip OnOff]** PixButton again, and the L will be removed from the display

To set a clip to Auto-Start:

1. Select a clip, as described in section 6.6.5 above

2. Press the **[Controls]** PixButton at the bottom of the PixPad, which will bring up a new PixPad, as shown on the right.



3. Press the **[Auto Start OnOff]** PixButton. The letter A will be appended to the clip name in the display to let you know that it has been set to auto-start.



   Now when the clip is transitioned to air, the clip will automatically start and when the clip goes off-air, it will automatically rewind back to the start of the clip.

4. To turn off Auto-Start, repeat step 3.

To start recording a new clip:

1. If recording has been configured on channels on the external server (refer to your server's documentation), then the starting and stopping of records may be initiated. Currently recording only functions on Grass Valley K2 servers.

   Ensure that the DDR control is selected and a record channel has been selected.

   Press the **[Controls]** PixButton at the bottom of the PixPad, which will bring up a new PixPad, as shown on the right.



2. Press the **[Start Record]** PixButton.

   The display will change to a generic clip name of 'Clip_XXX' with the status changing to Record.

   The time code will start to count up, showing how long the clip has been recording for.
   The duration will start to count down, showing how much space/time is left on the external server.

   In addition, the [<] and [>] motion control buttons will both illuminate orange to signify that a recording is taking place, as shown on the right.



   Up to 999 clips may be recorded sequentially, however the clip name may be manually changed locally on the external server, allowing for unlimited clip records.



To stop recording a new clip:

1. Ensure that the DDR control is selected and a record channel has been selected.

   Press the **[Controls]** PixButton at the bottom of the PixPad, which will bring up a new PixPad, as shown on the right.

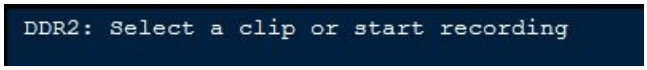


2. Press the **[Stop Record]** PixButton.



3. The display will change to a generic message of 'Select a clip or start recording', as shown on the right

   The new clip WILL NOT appear in the PixPad, as it needs to be added to the clip list.



To add a newly recorded to the PixPad:

1. Ensure that the DDR control is selected and a record channel has been selected.

   Press the **[Controls]** PixButton at the bottom of the PixPad, which will bring up a new PixPad, as shown on the right.



2. Click on the **[Setup]** PixButton, as shown on the right.



3. The DDR Setting window will appear on screen, click on the **Select Clips** button and select the desired clips as described in section 6.5.4.

4. Click on the **OK** button to save your clips.

   The newly recorded clips will now appear in the PixPad.



6.5.7 Accessing More Channels

Control of the other channels (2/3/4) of the external DDR is done in the same manner as the for the first channel, as described in section 6.5.5. To let you know which channel you are controlling, the number of the channel appears in the large display and in the upper right corner of every PixButton, as shown below for channel 2.



6.5.8 DDR Error Message

If there is no wire connection between the RS422 Edgeport and a desired channel, then an error message will appear in the display, for example if you unplug the wire for the first channel, it will say:



If a clip is renamed or deleted on the external server while being controlled by Broadcast Pix selecting an offline clip will display:



To resolve this issue, select the [Setup] button and reselect your clips.

If no communications port has been assigned to a channel, selecting that channel will display:



Section 7:
Optional Device Controls

The Broadcast Pix system may control a number of external devices, one of which is DDR control which was described in the previous section. As an option the switcher can also control robotic cameras, external audio mixers and streamers, for a true one-man production. Prior to using any of the optional devices, including DDR/Server control, the appropriate option code needs to be installed under the Installed Options menu, see section A.2 for more information.

7.1 Camera Control Option

Broadcast Pix offers software for 4 pan/tilt systems: Sony, Lumens, Vaddio, Marshall (through VISCA Control), Hitachi (through Eagle Pan/Tilt Control), Panasonic and Telemetrics. This option enables control of the following features:



Sony/Lumens/Vaddio/Marshall - Control up to 12 cameras with tilt, pan, zoom, focus, iris, up to 16 preset positions per camera, white balance and tally control.



Hitachi - Control up to 9 cameras with tilt, pan, zoom, focus, iris, speed control, up to 32 preset positions per camera and white balance.



Panasonic - Control up to 12 cameras with tilt, pan, zoom, focus, iris, speed control, up to 100 preset positions per camera, white balance, tally and menu control.



Telemetrics - Control up to 10 cameras directly or use the Telemetrics Studio Software with tilt, pan, zoom, focus, iris, speed control, pedestal, dolly and preset positions.

Even though the basic operation of the four camera systems are similar, there are some minor differences between them, as is indicated in the following sections. If desired, you may control all 4 types of cameras or any combination of the 4 in any Broadcast Pix Show.

7.2 Installation of Sony Cameras

Sony VISCA controlled cameras can either be connected using a RS-232 or RS-422 serial connection and are selectable on the bottom of each camera with dip-switches. With a RS-232 connection, the maximum cable length can be extended to 15 meters (50 feet), while the RS-422 connection extends this further to 1200 meters (4000 feet). It is important to set the baud rate of each camera to 9600 bps, for both a RS-232 and a RS-422 connection, this is also selectable on the bottom of each camera with dip-switches.

The COM ports on of the Broadcast Pix Server are RS-232 connections. Depending on which option is purchased, the correct adapter is supplied, either a RS-232 cable or a converter to RS-422 (B&B 422-PP9TB).

Sony PTZ cameras also support daisy chain as well as star configurations using a USB to Serial Edgeport. If using the USB extender (Edgeport) ensure that the port flags are set to RS-422, as described in section 6.5.2.

You may either loop cameras to each other in a 422 daisy chain, have all cameras connect to the Server with several serial ports using a star configuration, or have a combination of both scenarios.

Vaddio cameras lines which are supported are RoboSHOT, PowerVIEW and ClearVIEW all in a star configuration using a RS-232 configuration.

Below is the wiring diagram needed for serial cables connecting Sony, Lumens and Marshall serial cameras to the RS-422 COM ports using a phoenix connector.

----------Server----------			--------First Cameras--------	
B&B 422PP9TB	Edgeport DB-9	Cat5 Cable	Sony BRC-300	Sony EVI-D70
TXD(A) -	3	O	7	3
TXD(B) +	7	OW	6	4
RXD(A) -	8	G	9	1
RXD(B) +	4	GW	8	2
GND	5	B	5	5

7.2 Installation of Sony Cameras Continued

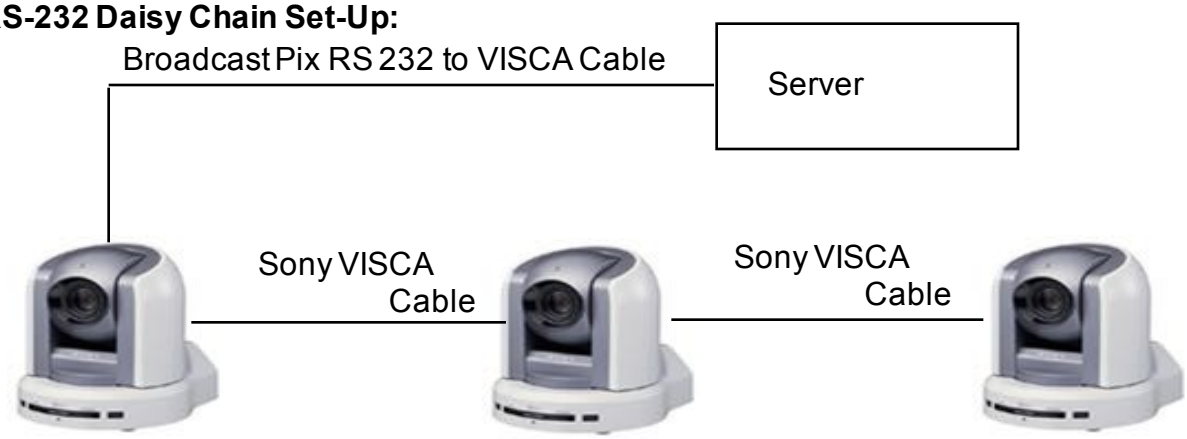
A star wiring configuration is when all camera control cables from each camera are connected to the workstation, through an Edgeport, instead of daisy chaining to each camera. In some installations this will reduce the amount of cable run.

Another option it to have one or several long runs to a set of cameras, then connecting each camera in a daisy chain configuration. In some installations this will reduce the amount of cable run. See diagrams on next page.

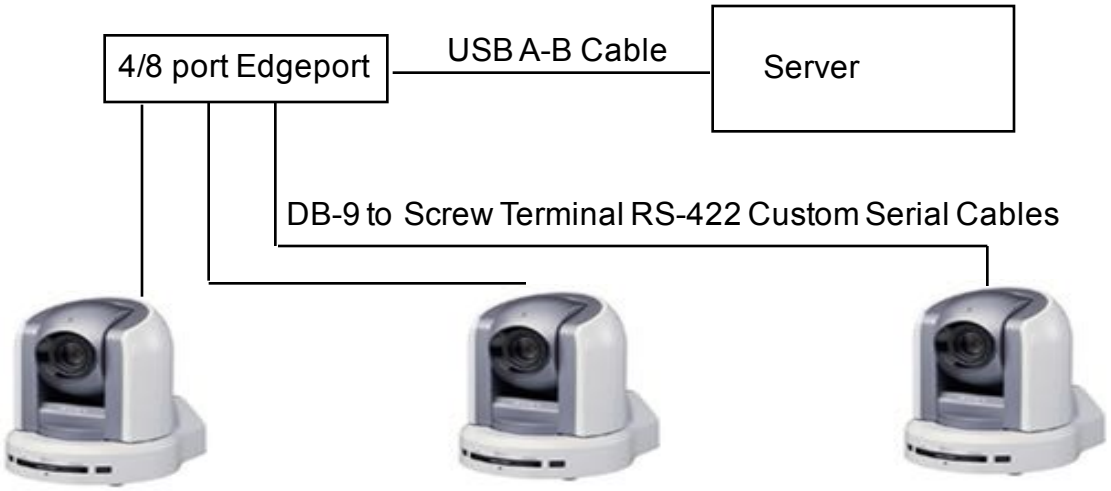
It is important to set each camera to its proper camera address/camera position. This is done directly on each camera and it is recommended to set each camera to 'Auto' or '0', as the Broadcast Pix software will automatically detect the correct settings. On an EVI-70 there is no such setting, as it is internally set to 'Auto', on a BRC-300 the camera address is changed on the bottom of each camera via dip-switches.

7.2.1 Sony Wiring Configurations

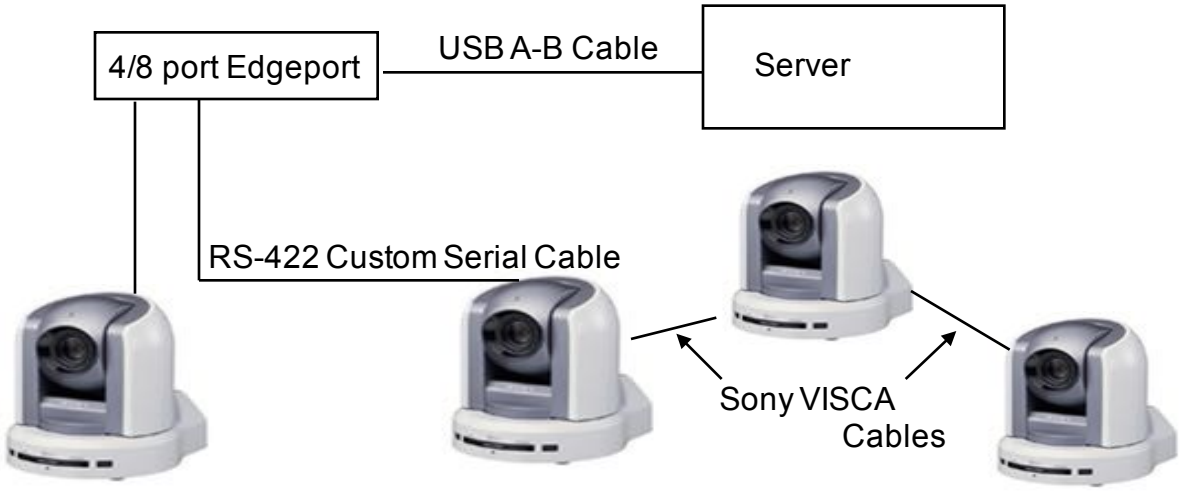
RS-232 Daisy Chain Set-Up:



RS-422 Star Configuration:

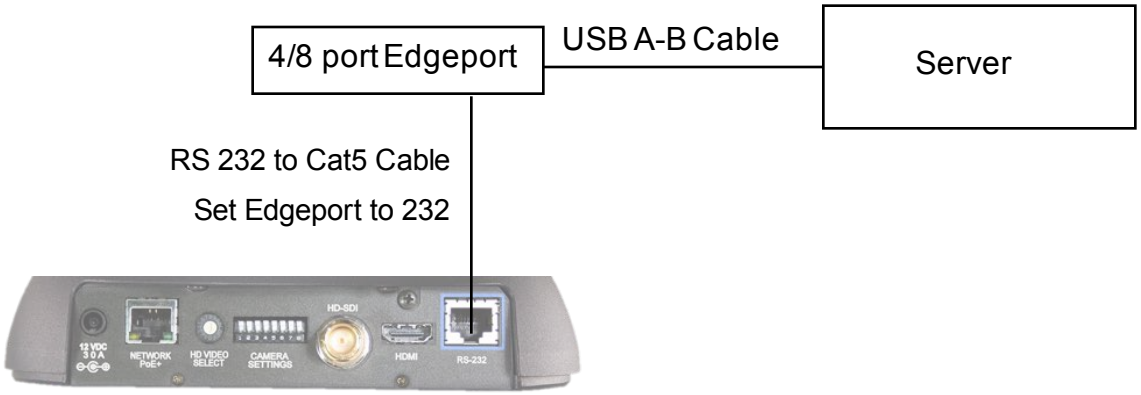


RS-422 Star with Daisy Chain Configuration:



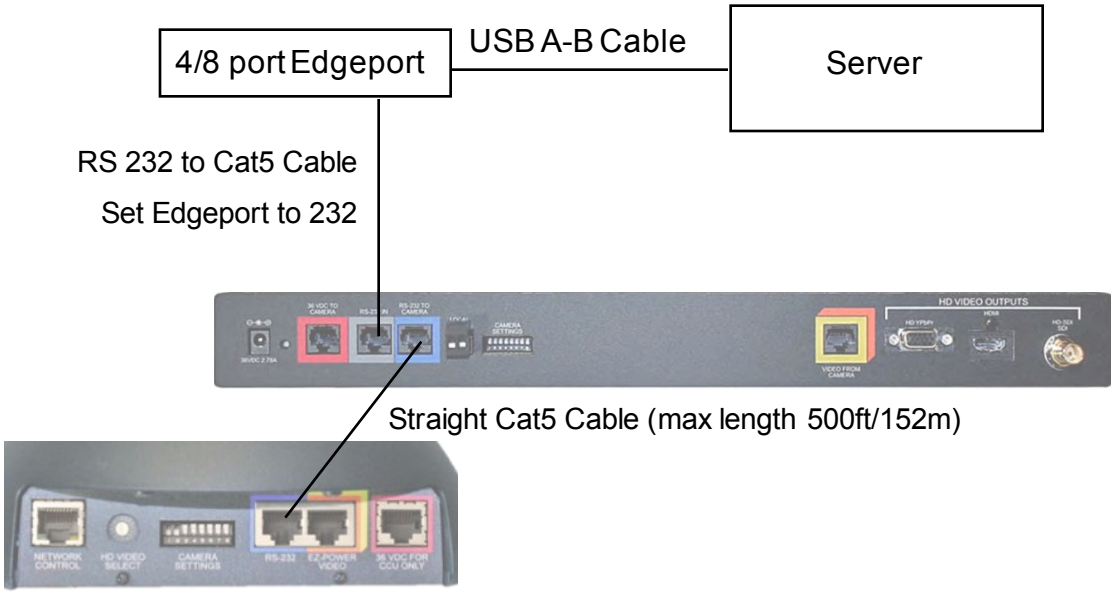
7.2.2 Vaddio Wiring Configurations

Serial Connection w/ video out on Camera:



RoboShot 12 HD-SDI

Serial Connection w/ video out on CCU:



RoboSHOT, PowerVIEW and ClearVIEW.

DB 9-Pin Serial Cable to RJ-45 Pinout:



Pin	Function
2	TXD
3	RXD
5	GND

Pin	Function	Color
8	RXD	Brown
7	TXD	Brown/White
6	GND	Green

7.2.3 IP Configuration of Sony Cameras

The default IP address of IP controllable Sony cameras is 192.168.0.100. In order to have the Broadcast Pix system control these cameras, the IP address must change to be on the same subnet of the Broadcast Pix Server, either on the panel or LAN networks. The IP settings of the Sony cameras are changed through the RM-IP10 Setup Tool application that can be provided from Sony. You may download it here as well:

https://www.servicesplus.sel.sony.com/sony-software-model-RMIP10.aspx

Once downloaded, it can be run locally on the Broadcast Pix Server or on a remote computer. NOTE: The IP Setup tool can only see one network port at a time, if both the Panel and LAN ports have a cable connected, disconnect the LAN cable prior to performing the following steps. For further instructions, please refer to the Sony IP Setup Guide.

To change the IP address of a Sony Camera:

1. Ensure that all the cameras have been powered on and plugged into the Panel network.

2. Once the IP Setup Tool has been downloaded, **double-click** the RM-IP10SetupTool.exe icon, as shown on the right.



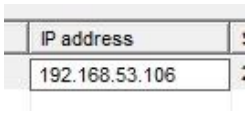
3. In the Camera tab a list of connected cameras will appear, as shown on the right.



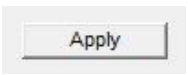
   Note: If not all cameras are visible, ensure that the dip switches on the bottom of each camera is set to LAN. If all cameras are still not visible, it may be necessary to turn off the Windows Firewall.

4. Under the IP Address column, **double-click** the desired camera IP address.

5. **Enter** the new IP address in the text field, ensuring that each camera has a unique IP address that does not conflict with other devices on the same network, as shown on the right.



6. Hit **Enter** on the keyboard and click on the **Apply** button, on the bottom right of the window, as shown on the right.



   The camera will reboot and about 10 seconds later the new IP address will be set. Repeat these steps for each attached camera.

7.2.4 IP Configuration of Vaddio Cameras

The default IP address of IP controllable Vaddio cameras is 169.254.1.1. In order to have the Broadcast Pix system control these cameras, the IP address must change to be on the same subnet of the Broadcast Pix Server, either on the panel or LAN networks. The IP settings of the Vaddio cameras are changed through a web browser which can be run locally on the Broadcast Pix Server or on a remote computer. For more information contact Vaddio directly: 1-800-572-2011.

To change the IP address of a Vaddio Camera:

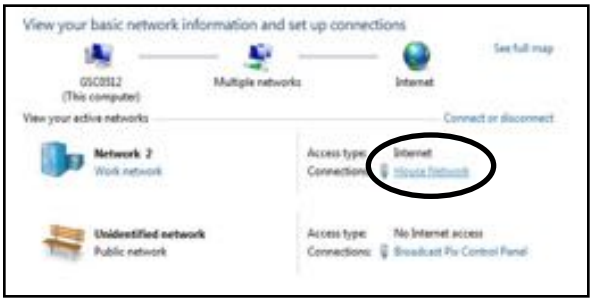


1. Navigate to the Windows Control Panel, **Start Menu, Control Panel,** as shown on the right.



2. In the Windows Control Panel, double-click the **Network and Sharing Center** icon, as shown on the right.

   Note: These instructions follow a Windows 7 Operating System.



3. In the Network and Sharing Center, click on the **'House Network'** link, as shown on the right.

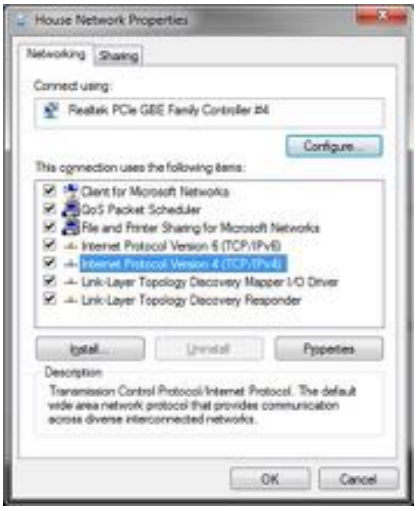
   Note: This network may be renamed, be sure to click on the network that is not labeled 'Broadcast Pix Control Panel'.

   These steps assume that the cameras are connected the LAN port on the Server. If the Panel port is being used then the Broadcast Pix Control Panel link can be used, but the settings must be returned to the factory settings after these steps have been completed.



4. In the Status window that appears, click on the **Properties** button, as shown on the right.

5. In the Properties window that appears, double-click on the **Internet Protocol Version 4 (TCP/IPv4)** item, as shown on the right.



5. In the TCP/IPv4 Properties window, click on the **Use the following IP address** radio button.

   In the IP address: text box enter the following address **169 254 1 250**

   In the Subnet mask: text box enter the following address **255 255 255 0**

   As shown on the right.



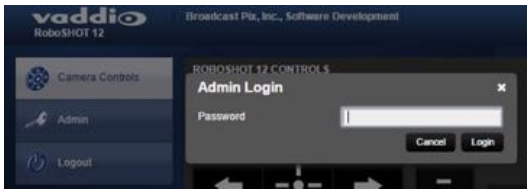
7. Click on the **OK** button.

8. Ensure that your Vaddio camera is powered on and connected to the system you are configuring with. Only connect 1 camera at a time, as a network conflict may occur otherwise.

9. Navigate to a web browser, **Start Menu, Internet Explorer.**

10. In the address bar, type in the address **169.254.1.1** and press **Enter** on the keyboard.

11. The Vaddio camera webpage will appear. On the left navigation bar, click on the **Admin** button.



12. An Admin Login pop-up will appear, as shown on the right. Enter the **Password** in the text field.

    The default Administrator name is **Admin** and the default Password is **password.**

13. Click on the **Login** button.

14. The webpage will refresh, in the left navigation bar click on the **Networking** button.



15. Under the Network Interfaces section, click on the **Static** radio button, as shown on the right.

16. In the IP Address text field, **enter** the new IP address, ensuring that each camera has a unique IP address that does not conflict with other devices on the same network, as shown on the right.

17. In the Subnet Mask text field enter the following address **255.255.255.0**

18. In the Gateway text field enter the first 3 sets of decimal numbers used in your IP address, followed by 001

    This example uses the IP address of 192.168.53.53 so the Gateway would be **192.168.53.1.** If you are using the Panel port, all cameras will use this IP Gateway.

19. Click on the **Save** button to apply the new network settings.

20. Repeat these steps for each connected camera, ensuring to use unique IP addresses.

21. Once all the cameras have been configured, close all the open web browsers and navigate back to the TCP/IPv4 Properties window following steps 1 – 5 above

22. In the Properties window, click on the **Obtain an IP address automatically** radio button, as shown on the right.

    If the Broadcast Pix Control Panel port was used, enter the static IP Address of 192.268.53.250.

23. Click on the **OK** button and close all open Network windows.

    If the IP addresses need to change in the future, repeat these steps using the newly assigned IP address instead of the default Vaddio IP address.



7.3 Installation of Hitachi Cameras

Most of the instructions for how to install this camera control system come from Display Devices, the makers of the pan/tilt head that is being used by Broadcast Pix. Please refer to the Display Devices/Eagle manual for more information, there are various dip switches that must be placed in the correct position depending on the camera model, both in the pan/tilt head and camera. Ensure that the camera is set to communicate through a PC remote control at 9600 baud rate and that internal dip switches are set to RS-232C (not RC-Z3). In addition, each camera must be saved with Travel Limits to ensure proper operation, see section 7.11.1.

Contents of the Broadcast Pix Hitachi Camera Control Option:

Before you start, check that all of the components are present. They fall in two groups: those supplied by Broadcast Pix and parts from Display Devices and others that need to be acquired before installation.

Parts supplied by Broadcast Pix:

- Software Installation CD with option code, comes pre-installed on new systems
- This Operations and Installation Manual
- B&B Electronics 485SD9TB (RS-232 to RS-485 Adapter), two-wire

Parts Needed from Display Devices

- A Pan/Tilt head for each camera, either a PT-50, VT-50, PT-101, VT-101 or similar
- Power supplies for the above heads
- If you are controlling more than one head, you need a splitter, such as a PT-T2
- Power and Control Tee from Display Devices

You also need a camera with a lens for each pan/tilt system that is supported by these heads, including selected box cameras from Hitachi: HV-D30, HV-D25/27, HV-D15, HV-D15AS, HV-D5 or D5W, HV-D20A, Z-2500, Z-3500, Z-4000, DK-H31 or SK-31B/ Sony: DXC-390, DXC-990 or HDC-X300/310. Panasonic: AW-E350, AW-E650, AW-E750, AW-E655, AW-E860 or AK-HC1500G. JVC: KY-F560U.
For an up to date list, visit www.eaglepantilt.com.

5-Pin Connecter on Pan/Tilt Head:

------Computer------	-----Camera Head------
B&B 485SD9TB	5-pin Connector
TXD(A) -	2
TXD(B) +	3
GND	1
GND	n/a
+12V	n/a

Pin 4 is used for +24V DC from main power supply.

Pin 5 is used fro GND to power supply.

7.3.1 One Camera Installations

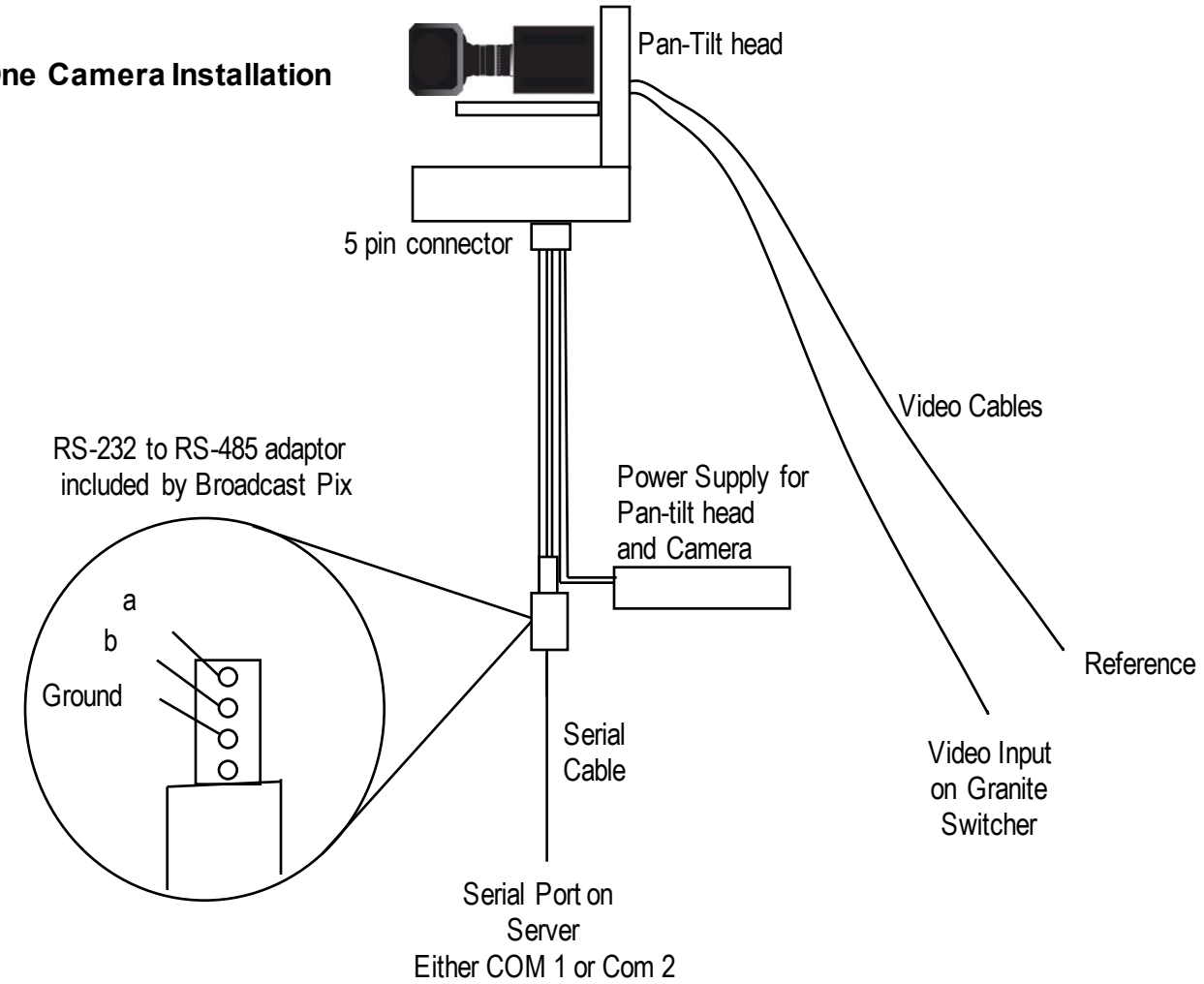
1. Run two video cables to the pan/tilt head: one for video to the Broadcast Pix, and one for genlock/reference.

2. Run a serial cable from the serial port of the Broadcast Pix workstation to the B&B Electronics RS-232 to RS-485 converter, as shown below. It is also possible to plug the converter directly into on the workstation's COM port, if desired.

3. Run a three wire cable from the converter plug to the 5 pin connector on the pan tilt head. If a 24 AWG wire is used, then the maximum length for communication is 4000 ft.

4. Run a power cable from the Display Devices power supply to the same plug at the pan tilt head used in step two.

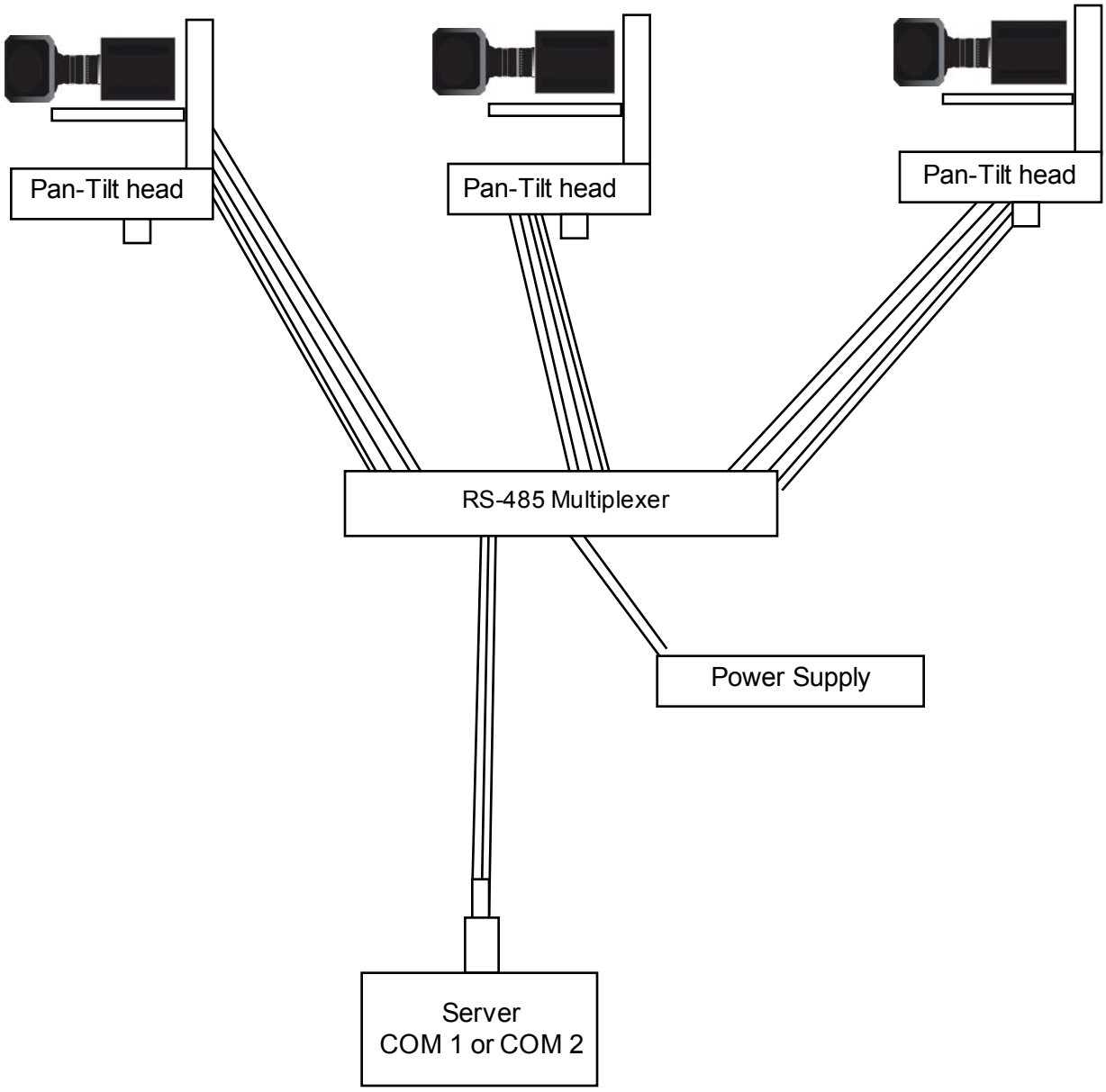
One Camera Installation



7.3.2 Multi-Camera Installations

The difference between single-camera and multi-camera studios is that the three wires leaving the RS-232 to RS-485 converter need to be multiplied to go to each head. This can be done with a multiplexer, or by splicing wires together. The 485 Multiplexer sends all 5 wires to each head, 3 for communication and 2 for power.

The multi-camera set-up is illustrated below:



7.4 Installation of Panasonic Cameras

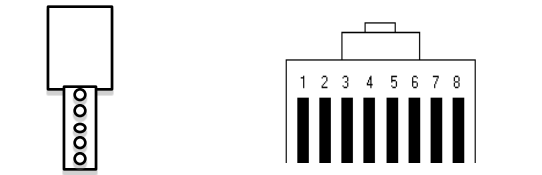
The Broadcast Pix system can control a wide-range of Panasonic cameras in the AW series, including the AW-HE100, AW-PH400 and other Panasonic pan-tilt camera control systems. Panasonic controlled cameras are connected using a RS-422 serial connection, with a maximum connection length of 1200 meters (4000 feet).

If controlling a AW-PH300 or AW-PH300A camera system, the the AW-CA28T9 serial cable needs to be ordered, from Panasonic, for proper operation . These camera systems connect using a RS-232C serial connection, with a maximum connection length of 15 meters (50 feet). If controlling a AW-HE50, the AW-CA20T6 multi-interface cable needs to be ordered from Panasonic, since control is through a serial connection.

The COM ports out of the Broadcast Pix workstation are RS-232 connections. Depending on which option is purchased, the correct adapter is supplied, either a converter to RS-422 (B&B 422-PP9TB) or a 4/8 port USB extender (Edgeport) Panasonic PTZ cameras support star configurations using a USB to Serial Edgeport. You may either connect 1 camera with a RS-422 converter or have all cameras connect to the workstation with several serial ports using a star configuration. If using the USB extender (Edgeport) ensure that the port flags are set to RS-422, as described In section 6.5.2.

Below is the wiring diagram needed for serial cables connecting Panasonic Cameras to Broadcast Pix COM ports.

RS-422 Terminal Connector to RJ-45 Pinout:



Function
TXD (A) -
TXD (B) +
RXD (A) -
RXD (B) +
GND

Pin	Function	Color
3	RXD (A) -	White/Green
6	RXD (B) +	Green
4	TXD (A) -	Blue
5	TXD (B) +	White/Blue
1	GND	White/Orange

DB 9-Pin Serial Cable to RJ-45 Pinout:



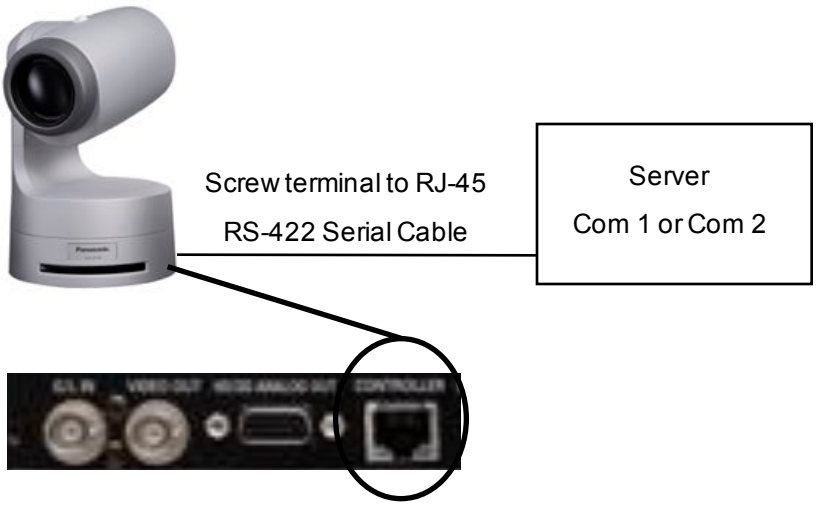
Pin	Function
3	TXD (A) -
7	TXD (B) +
8	RXD (A) -
4	RXD (B) +
5	GND

Pin	Function	Color
3	RXD (A) -	White/Green
6	RXD (B) +	Green
4	TXD (A) -	Blue
5	TXD (B) +	White/Blue
1	GND	White/Orange

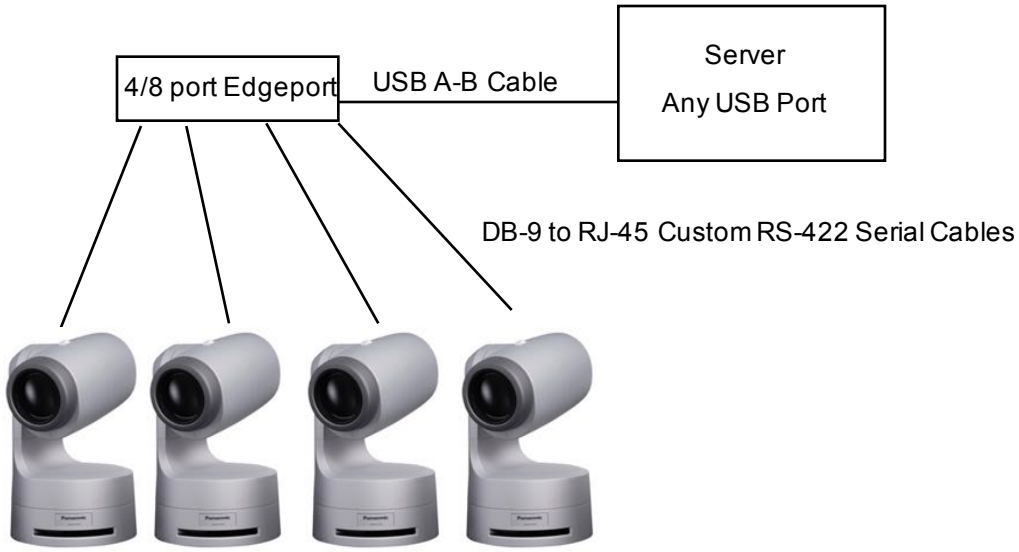
A star wiring configuration is when all camera control cables from each camera is connect to the workstation, through an Edgeport, instead of daisy chaining to each camera. See diagrams on next page.

7.4.1 Panasonic Wiring Configurations

Single Panasonic RS-422 Configuration:

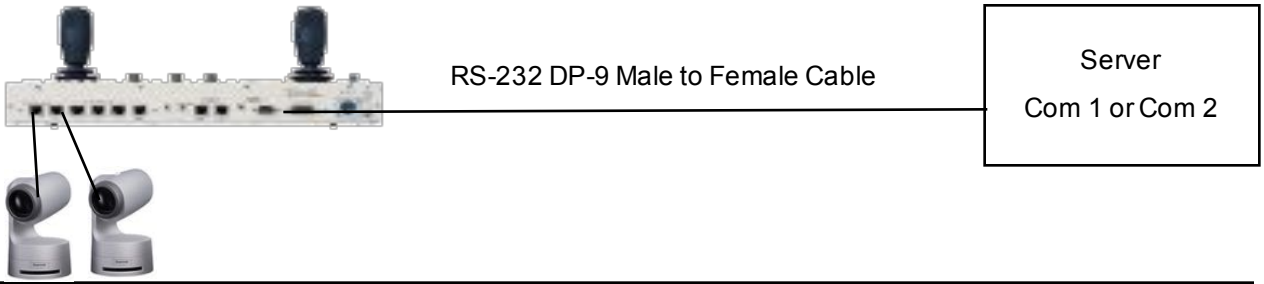


Multiple Panasonic RS-422 Configuration:

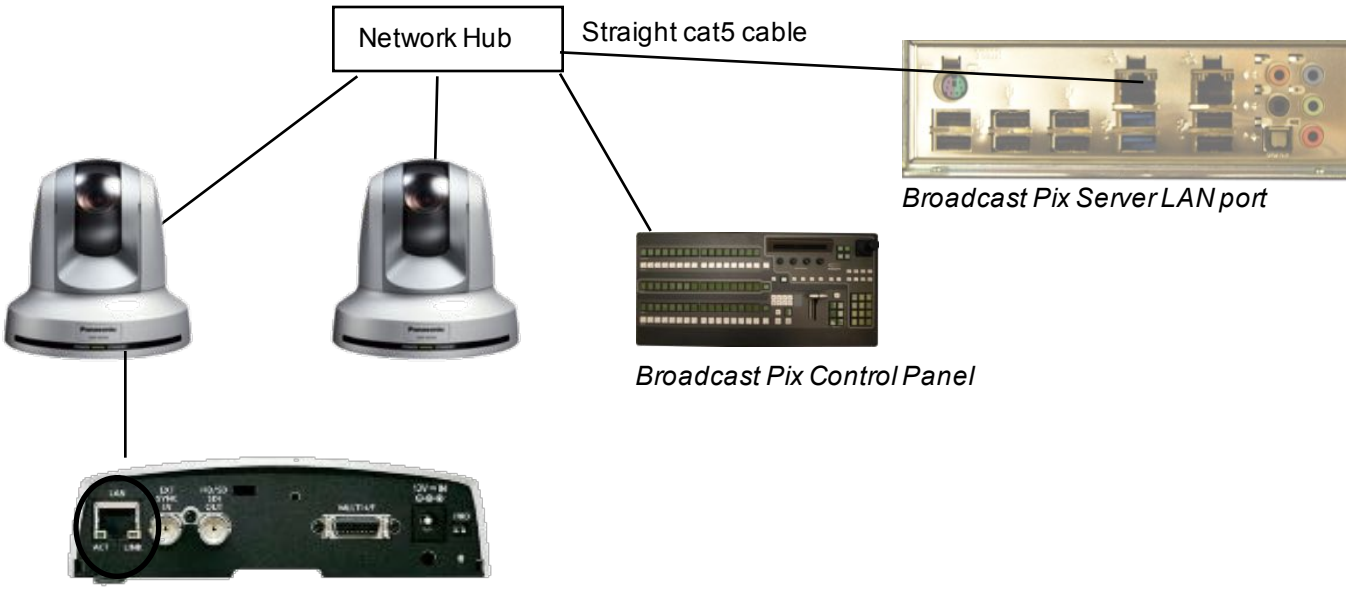


Panasonic Controller Configuration:

Connect up to 5 cameras through the AW-RP655, then connect to the Broadcast Pix with a RS-232 serial cable.



Single or Multiple Panasonic IP Configuration:



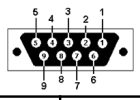
Cable Consideration:
When connecting through a hub, a straight cat5 or higher rated STP (shielded twisted pair) cable is recommended. There is a maximum distance of 100 meters (328 feet).

When connecting directly to the Server, a crossover cat5 or higher rated STP (shielded twisted pair) cable is recommended. There is a maximum distance of 100 meters (328 feet).

IP & Serial Control of Panasonic Cameras:

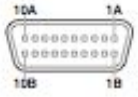
In some installations it is desired to have a Panasonic controller for a dedicated operator and have the Broadcast Pix system used to trigger Macros or to control other cameras. In this type of installation the IP control would be connected to a Panasonic controller, like the AW-RP50, and the serial control using the AW-CA20T6G breakout cable would connect to the Broadcast Pix System.

DB 9-Pin (Edgeort)



Pin	Function
3	TXD (A) -
7	TXD (B) +
8	RXD (A) -
4	RXD (B) +
5	GND

Centronics/Hirose 20-pin (Panasonic)



Pin	Function
6 B	RXD (A) -
6 A	RXD (B) +
10 B	TXD (A) -
10 A	TXD (B)+-
8 A	GND

7.4.2 IP Configuration of Panasonic Cameras

The default IP address of the AW-HE50 and other IP controllable Panasonic cameras is 192.168.0.10. In order to have the Broadcast Pix system control these cameras, the IP address must change to be on the same subnet of the Broadcast Pix Server. The IP settings of the Panasonic cameras are changed through a web browser, this can be done locally on the Broadcast Pix Server or on a remote computer.

To change the IP address of a Panasonic Camera:

1. Navigate to the Windows Control Panel, **Start Menu, Control Panel,** as shown on the right.



2. In the Windows Control Panel, double-click the **Network and Sharing Center** icon, as shown on the right.

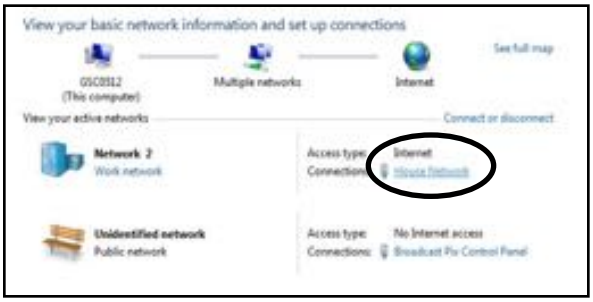
   Note: These instructions follow a Windows 7 Operating System.



3. In the Network and Sharing Center, click on the **'House Network'** link, as shown on the right.

   Note: This network may be renamed, be sure to click on the network that is not labeled 'Broadcast Pix Control Panel'.

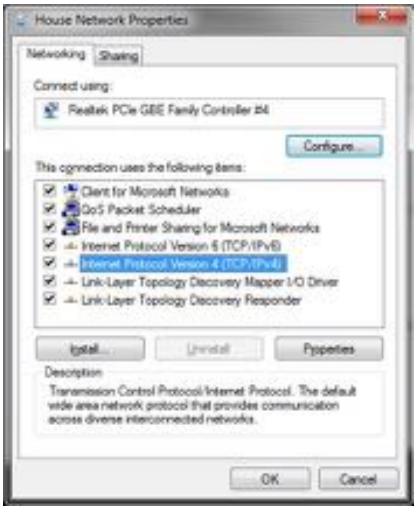
   These steps assume that the cameras are connected the LAN port on the Server. If the Panel port is being used then the Broadcast Pix Control Panel link can be used, but the settings must be returned to the factory settings after these steps have been completed.



4. In the Status window that appears, click on the **Properties** button, as shown on the right.



5. In the Properties window that appears, double-click on the **Internet Protocol Version 4 (TCP/IPv4)** item, as shown on the right.



5. In the TCP/IPv4 Properties window, click on the **Use the following IP address** radio button.

   In the IP address: text box enter the following address **192 168 0 1**

   In the Subnet mask: text box enter the following address **255 255 255 0**

   As shown on the right.



7. Click on the **OK** button.

8. Ensure that your IP Panasonic camera is powered on and connected to the system you are configuring with. Only connect 1 camera at a time, as a network conflict may occur otherwise.

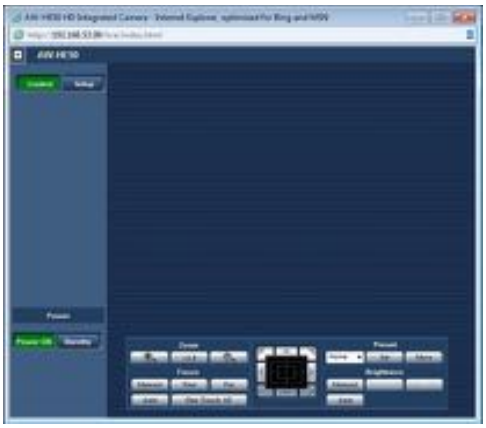
9. Navigate to a web browser, **Start Menu, Internet Explorer.**

10. In the address bar, type in the address **192.168.0.10** and press **Enter** on the keyboard.

11. The Panasonic settings window will appear, ensure to click on the Compatibility View icon to the right of the address bar to view the webpage correctly, as shown on the right.



12. Click on the **Setup** button on the left had side of the web browser, as shown on the right.



13. A Windows Security screen will appear, enter the following credentials

    Username: **admin** (all lowercase)
    Password: **12345**

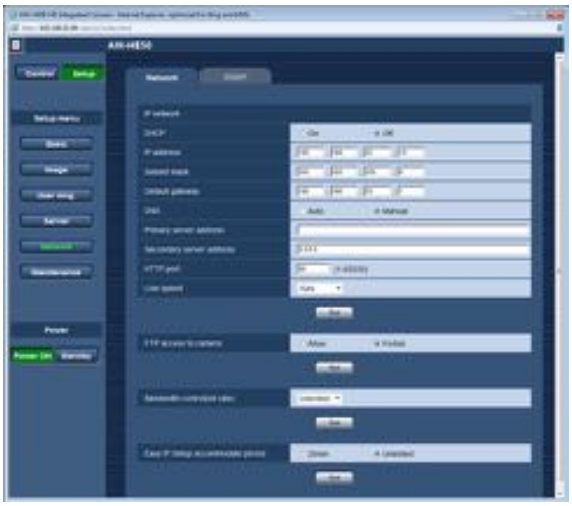
    Click on the **OK** button, as shown on the right.



14. A pop-up message will appear, click on the OK button, as shown on the right.



15. Click on the **Network** button on the right side of the web browser, as shown on the right.



16. In the Network tab enter the address **192.168.53.10** in the IP Address text box.

    Note: Any IP address in the 192.168.53.XXX subnet may be used, as long as no other device (including Broadcast Pix Control Panels) has that IP address.

17. Click on the **Set** button (below the Line speed text box) to save the settings.

    The page will refresh and the camera will automatically power off. Please wait up to 2 minutes for the camera to cycle back on.

18. Plug in each additional camera and repeat steps 8 – 17 above, ensuring to setup each additional camera individually using different IP addresses.

19. Once all the cameras have been configured, close all the open web browsers and navigate back to the TCP/IPv4 Properties window following steps
1 – 5 above.

20. In the Properties window, click on the **Obtain an IP address automatically** radio button, as shown on the right.

21. Click on the **OK** button and close all open Network windows.



7.5 Installation of Telemetrics Camera Systems

The Broadcast Pix system can control the full line of Telemetrics camera systems, including the PT-CP-S4, Televator and TeleGlide. Broadcast Pix offers basic support for Telemetrics Systems. For detailed wiring information and technical support, contact Telemetrics, Inc. at +1-201-848-9818.

There are 2 main ways to configure a Telemetrics systems with Broadcast Pix control:

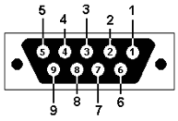
- Direct control from the Broadcast Pix to the Telemetrics camera head.
  This configuration allows for up to 10 cameras to be controlled by Broadcast Pix. No shading/white balance control is offered when controlled directly, camera/lens manufacturers remote panels may be needed for shading. When controlling more than 1 camera, the Telemetrics Serial Transfer Switch, STS-12, is needed to connect multiple serial cables.

- Broadcast Pix control of the camera systems through the Telemetrics Studio Software, CPS-ST-S.
  This configuration allows for up to 50 cameras to be controlled through the Telemetrics CPS-ST-S software application. Full shading/white balance control is provided by the CPS-ST-S, and not by Broadcast Pix. A single serial cable from the Broadcast Pix workstation to the CPS-ST-S is needed.

The control for both configurations can can either be connected using a RS-232 or RS-422 serial connection and are selectable in the Camera Control Settings menu in BPswitcher. With a RS-232 connection, the maximum cable length can be extended to 15 meters (50 feet), while the RS-422 connection extends this further to 1200 meters (4000 feet).

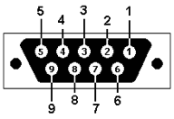
The COM ports out of the Broadcast Pix workstation are RS-232 connections.

RS-232 DB 9-Pin Serial Cable Pinout:



Pin	Function
2	TXD
3	RXD
5	GND

RS-422 DB 9-Pin Serial Cable Pinout for Edgeport:



Female (Edgeport end)

Pin	Function
3	TXD -
4	RXD +
5	GND
7	TXD +
8	RXD -

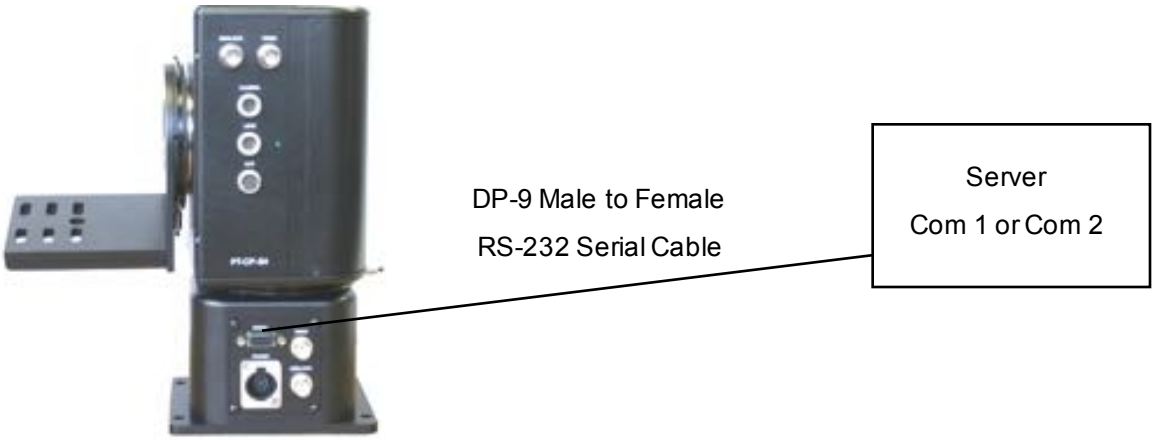
➡

Male (Telemetrics end)

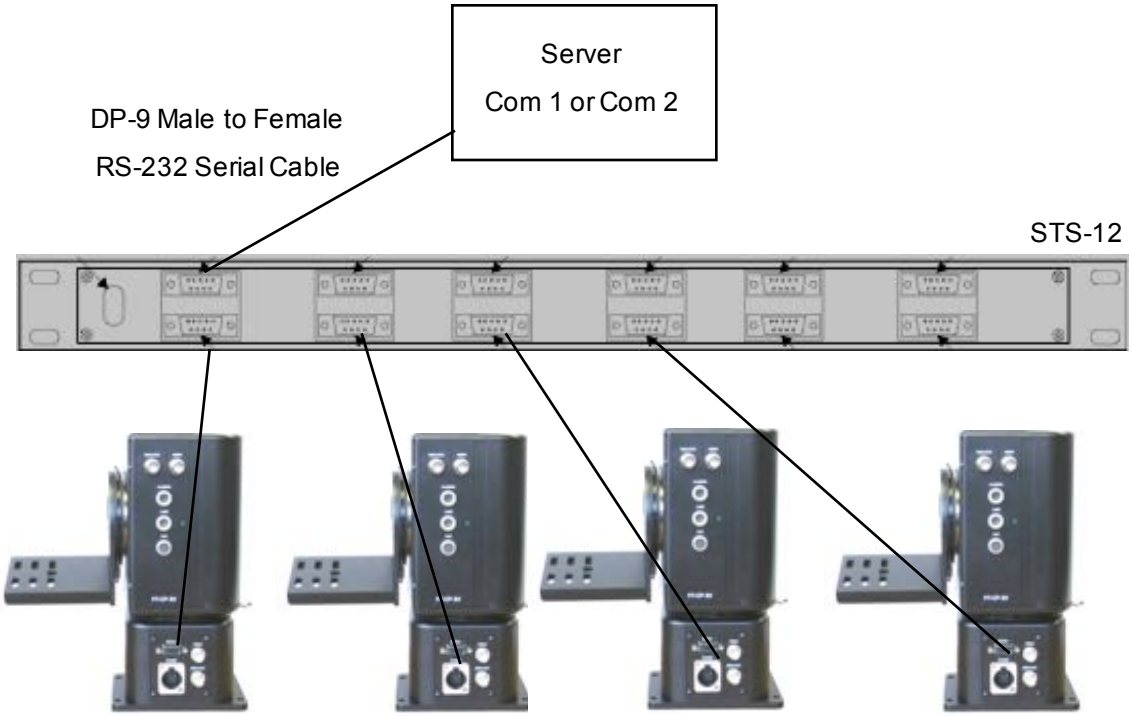
Pin	Function
3	RXD -
1	TXD +
5	GND
4	RXD +
2	TXD -

7.5.1 Telemetrics Wiring Configurations

Single Camera Telemetrics Configuration:
To connect Lens and other Camera Control cables, refer to the Telemetrics owners manual.

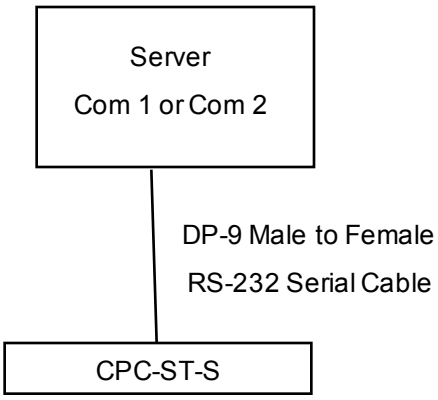


Multiple Camera Telemetrics Configuration:
The Telemetrics STS-12 Control Transfer Switch is needed. The STS-12 must be ordered with at least (1) RS-232 port if connecting directly to the Broadcast Pix workstation, as shown below. If using a RS-422 connection, then a RS-232 to RS-422 convertor must be used on the Broadcast Pix end.



7.5.1 Telemetrics Wiring Configurations

Telemetrics Studio Software Configuration:
To connect Lens and other Camera Control cables, refer to the Telemetrics owners manual. All cameras connect to the CPC-ST-S system.



7.5.2 Telemetrics Dip Switch Settings

On some Telemetrics pan/tilt heads, if the controller board 53915 has a letter P or higher as a revision number, dip switch settings must be set for RS-232 or RS-422 control.

The Controller Board is located on the same side as the connecters on the pan/tilt head. Unscrew the 2 screws, and the board will swing open.

Dip switch labeled S2, as shown on the right, must both be set to Off (down) for RS232 control or On (up) for RS422 control.



7.6. Adding the Camera Control Option to an Existing System

If you purchased your Granite system with the Camera Control option, the software was installed at the factory, and so you can skip the following section. If you purchased the camera control option after the fact, then you need to enter the System Options Key Code, which was supplied once you ordered the Camera Control Option.

See section A.2 for more information about Installing System Options.

7.7 Changing Camera Control Device Settings

It is possible to change various settings in the Camera Control Settings window. For Sony Camera Control you may change the COM port assignment or IP address for each camera, as well as where the camera is located on the daisy chain, in addition to the input number for tally output on supported camera models. Although the control supports up to 16 presets, each Sony camera has a fixed number of presets, i.e. an EVI-HD1 has 6 available presets where as a BRC-H700 has 16. Depending on some IP camera models, you may store over 100 presets, however if the camera power is lost those presets are also lost and need to be resaved.

7.7.1 Sony Camera Control Settings

1. In BPswitcher go to the **Setup** menu and select **System Settings…,** as shown on the right.



2. In the System settings window, select the **Devices** tab.

3. In the list of enabled devices select **Sony Camera Control** and select the **Settings…** button.

   The Camera Control Settings window will appear as shown on the right.



4. Click the **Camera Number** drop down menu to select a camera 1-12 and change the **Comm Port** number to the appropriate communications port.

5. If the camera head has built-in tally, enter the Flint Switcher input number in the **Input Number** text field. Enter 0 to have no tally.

   This setting is also used to capture thumbnail images of presets for the Multi-View PixPad.

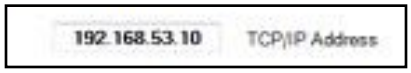


6. If using a daisy chain configuration, under the **Daisy Chain Position** drop down menu, select where the camera is located in the daisy chain either **Position 1** to **Position 7**. If no daisy chain is being used, select **Position 1.**

7. Under the **Camera Type** drop down menu, select which style of Sony camera the com port is using, either **other, EVI-D70, EVI-D100, EVI-HD1, EVI-HD3V, BRC-300, BRC-Z330, BRC-H700 BRC-Z700, Sony BRC-H900, Lumens other, Lumens VC-G30, Vaddio** or **Marshall CV620,** as shown on the right.



If an IP camera is selected, a TCP/IP address text box will appear, as shown on the right, to enter the dedicated IP address for each camera.



8. Some operators prefer the joystick control for tilting to be reversed. To reverse the Up/Down movement place a check mark next to **Reverse Up/Down**, as shown on the right.



In the normal/unchecked mode, moving the joystick up tilts the camera up and moving down tilts down.

9. When using multiple cameras, the Camera Control device can be set to automatically change to select what camera is being controlled off the Preview row of the switcher.



If desired, place a check mark next to the **Follow Current Camera** option, as shown on the right.

The Follow Current Macro Camera option is similar, and follows the camera when triggered by a Macro.

As you select different cameras on Preview, the device will follow without the need of reselecting the correct camera providing an easier method of controlling cameras.

Note: This setting only functions when the Sony Camera Control device is selected in the Device Controls section.

10. During a production, live on-air movement may be necessary. To reduce any unwanted fast movement, the Slow speed setting can automatically be turned on when that camera number is switched on Program.

    If desired, place a check mark next to the **Auto Slow when on Program**, as shown on the right.



11. To save the settings, select the **Close** button. In the System Settings window, click on the **OK** button to close the window.



7.7.2 Hitachi Camera Control Settings

It is possible to change various setting in the Hitachi Camera Control Settings window. The Joystick Speed tab allows for 3 different speed controls for pan, tilt and zoom. The Communication tab allows the select of the proper COM port. The Knob Settings tab allows for focus and iris speed adjustment.

1. In BPswitcher go to the **Setup** menu and select **System Settings…,** as shown on the right.



2. In the System settings window, select the **Devices** tab.

3. In the list of enabled devices select **Hitachi Camera Control** and select the **Settings…** button.

   The Camera Control Settings window will appear as shown on the right.



4. In the Joystick Speed tab, enter the desired values for **Slow, Medium** & **Fast** speeds. You may enter a number from 1-254.

   These speed values are activated depending on which motion control button is illuminated, as described in section 7.9.1.



5. To change the COM port being used, click on the the **Communications** tab and select the appropriate comm port under the **Comm Port** drop down menu.



6. To change the Focus and Iris speed controls, select the **Knob Settings** tab and enter the minimum and maximum values for Focus (knob 1) and Iris (knob 2).



You may enter a number from 1-254 for focus and 1-10 for iris. These values dynamically change, the faster the knob is turned the maximum number is used, the slower the the knob turns the minimum value is used.

7. To save and apply these settings, click on the **Accept** button.



You can return to factory speed settings by clicking on the **Defaults** button.

8. In the System Settings window, click on the **OK** button to close the window.

7.7.3 Setting Camera Numbers for Hitachi Camera Control

After installation is complete, you need to set the address of each Pan/Tilt head. All Eagle Pan/Tilt heads are set at the factory to have the addresses remotely programmed. If you have trouble with anything in this section, go to the Display Devices Operations and Instruction Manual and be sure your head is set to remote address control.

To assign numbers to each camera:

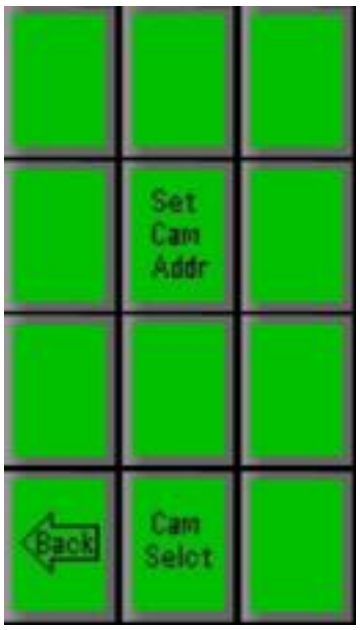
1. Create a Broadcast Pix show, as described in section 3.

2. Add camera control to that show, as described in section 7.8.

3. Decide what address each Pan/Tilt Head is going to be. In order to set the address of the head, the panel sends out a command to all connected heads. So in order to get the correct address to just one head, all of the other heads not being programmed need to be powered down, by unplugging them.

4. On the control panel, press the **[Hitachi Camera Control]** device button, and then the PixPad will show 9 Cameras. For this operation it makes no difference which one you press, so press any one of the nine.

5. On the next PixPad press **[Settings]**. On the next PixPad press the **[Cam Cntrl]**. On the next PixPad press **[Next]**. On the next PixPad press **[Next]**, and you should arrive at the following PixPad:



6. On the PixPad shown above, press the **[Set Cam Addr]** PixButton, which will bring up a numeric keypad, as shown below left.





7. Use the numeric keypad to enter the number you wish to assign to this camera, either **1, 2, 3, 4, 5, 6, 7, 8** or **9.** The address you select will appear in the large display. If it isn't correct, press clear and press the desired number.

8. Press the **[Enter]** PixButton, and the PixPad shown in the upper right will appear.

9. Press the **[Change Address]** PixButton and the selected camera number will be assigned to the head that is not unplugged. (If instead you want to cancel at this point, press the [Cancel] PixButton.)

   To verify it was programmed correctly, you can press Cam Select at the bottom of the Pix pad and select the camera you just programmed. Move the joy stick and the head of that camera should move. If the head does move, you can unplug that camera and repeat the process with the remaining cameras, to assign each a number.

7.7.4 Panasonic Camera Control Settings

It is possible to change various settings in the Panasonic Camera Control Settings window. For Panasonic Camera Control you may change the COM port assignment for each camera, tally input number (if the camera supports tally), as well as which model of camera head being controlling. If desired the Broadcast Pix system may control different models of cameras within the same show. In addition to having Broadcast Pix being the camera controller, the first 5 cameras may also be controlled with a Panasonic controller, like the AW-RP655. This type of configuration is useful for having a secondary operator control camera shading, but still have Broadcast Pix control camera presets and camera movements.

1. In BPswitcher go to the **Setup** menu and select **System Settings…,** as shown on the right.



2. In the System settings window, select the **Devices** tab.

3. In the list of enabled devices select **Panasonic Camera Control** and select the **Settings…** button.

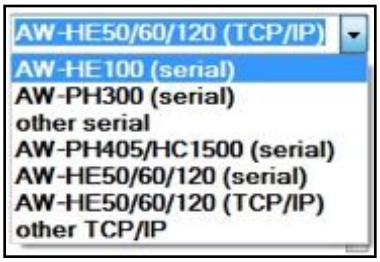
   The Camera Control Settings window will appear as shown on the right.



4. In the Camera Control Settings click the **Camera Number** drop down menu to select a camera 1-12.



5. Under the **Camera Type** drop down menu, select which style of Panasonic camera you are controlling, either **AW-HE100 (serial), AW-PH300 (serial), other serial, AW-PH405/HC1500 (serial), AW-HE50/60/120 (serial), AW-HE50/60/120 (TCP/IP)** or **other TCP/IP**.



The Other option will control any non 100/300 model camera. You may mix and match model numbers within a show. Only the Panasonic AW series may be controlled from Broadcast Pix.

The AW-HE50/60/120 (TCP/IP) will control IP controllable cameras. If selected a TCP/IP address text box will appear, as shown on the right, to enter the dedicated IP address for each camera.

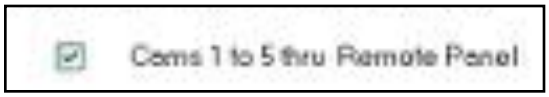


6. If the camera head has built-in tally, enter the Flint Switcher input number in the **Input Number** text field. Enter 0 to have no tally.



This setting is also used to capture thumbnail images of presets for the Fluent-View PixPad.

7. To have dual control with a Panasonic controller, like the AW-RP655, place a check mark next to **Cams 1 to 5 thru Remote Panel** option.



8. Some operators prefer the joystick control for tilting to be reversed. To reverse the Up/Down movement place a check mark next to **Reverse Up/Down**.



In the normal/unchecked mode, moving the joystick up tilts the camera up and moving down tilts down.

9. When using multiple cameras, the Camera Control device can be set to automatically change to select what camera is being controlled off the Preview row of the switcher.

   If desired, place a check mark next to the **Follow Current Camera** option, as shown on the right.



   The Follow Current Macro Camera option is similar, and follows the camera when triggered by a Macro.

   As you select different cameras on Preview, the device will follow without the need of reselecting the correct camera providing an easier method of controlling cameras.

   Note: This setting only functions when the Panasonic Camera Control device is selected in the Device Controls section.

10. During a production, live on-air movement may be necessary. To reduce any unwanted fast movement, the Slow speed setting can automatically be turned on when that camera number is switched on Program.



   If desired, place a check mark next to the **Auto Slow when on Program**, as shown on the right.

11. To save the settings, select the **Close** button. In the System Settings window, click on the **OK** button to close the window.



12. Click on **Close** to save the settings, and to close the window.

13. In the System Settings window, click on the **OK** button to close the window.

7.7.5 Telemetrics Camera Control Settings

It is possible to change various settings in the Telemetrics Camera Control Settings window. For Telemetrics systems you may change the COM port assignment and baud rate for each camera in addition to the Joystick control speed.

1. In BPswitcher go to the **Setup** menu and select **System Settings…,** as shown on the right.



2. In the System settings window, select the **Devices** tab.

3. In the list of enabled devices select **Telemetrics Camera Control** and select the **Settings…** button.

   The Camera Control Settings window will appear as shown on the right.



4. In the Camera Control Settings window click the **Camera Number** drop down menu to select a camera 1-10 and change the **Comm Port** number to the appropriate communications port.

   If connecting to the Studio Software CPC-ST-S, only Camera 1 needs to be configured.



5. Enter the Flint Switcher input number in the **Tally Input Number** text field. Enter 0 to have no tally.

   This setting is also used to capture thumbnail images of presets for the Fluent\-View PixPad.

6. Under the Baud Rate drop down menu select either **9600** when connecting directly to a camera or when using the STS-12 or **38400** when connecting to the Studio Software CPC-ST-S.19200 is reserved for future use.

7. To adjust the custom joystick speed to control the zoom/pan/tilt/dolly/pedestal select **1, 2, 3, 4,** or **6** in the Joystick Speed option. 1 is the slowest and 6 is the fastest.

8. When using multiple cameras, the Camera Control device can be set to automatically change to select what camera is being controlled off the Preview row of the switcher.



If desired, place a check mark next to the **Follow Current Camera** option, as shown on the right.

The Follow Current Macro Camera option is similar, and follows the camera when triggered by a Macro.

As you select different cameras on Preview, the device will follow without the need of reselecting the correct camera providing an easier method of controlling cameras.

Note: This setting only functions when the Telemetrics Camera Control device is selected in the Device Controls section.

9. Some operators prefer the joystick control for tilting to be reversed. To reverse the Up/Down movement place a check mark next to **Reverse Up/Down**.



In the normal/unchecked mode, moving the joystick up tilts the camera up and moving down tilts down.

10. To save the settings, select the **Close** button. In the System Settings window, click on the **OK** button to close the window.



11. Click on **Close** to save the settings, and to close the window.

12. In the System Settings window, click on the **OK** button to close the window.

7.8 Adding Camera Control to a Show

Once setup and installation is complete, you must now add the device to a show using one of the four wildcard devices on the switcher.

1. In BP Switcher, load the show to which you want to add camera control. Select the **File**, **Load Show.**

2. Open PixMaster by selecting **File, Edit Show.**

3. Click on **Edit Show Settings** and the Edit Show Settings window will open.

4. Click on **More Devices** and the More Devices window will open, as shown below.

5. Select the desired **wildcard device button** to which you want to add camera control and a drop down menu will appear.

6. Click on **camera control**, and it will appear on the PixButton, as shown below.

7. Click on **OK**, to apply the Camera Control the show, then **Close** in the Edit Show Settings window and **Save Show** to apply all the settings.



7.9 Selecting Camera Control in a Production

To assign the device controls to Camera Control:

Press the [**Cam Cntrl]** wildcard [Device Selection] PixButton
and it will illuminate orange and the following device controls will be appear.



Camera Control device controls:

Display
shows active camera selected,
and knob values



4 Knobs
Focus, Iris and
CCU Settings

Motion Controls
Change the speed of manual pan/tilt on Hitachi, Telemetrics & Panasonic cameras only



3-Axis Joystick

Positions
the active Camera:

- Left-right: pan
- Up-down: tilt
- Twist: zoom



PixPad
To select which camera you wish to control, and then preset positions and settings

When you press the Camera Control PixButton, the active camera will be whichever camera was last used, or Cam 1 if you are just starting.

To select a different camera to control, press the camera number on the PixPad. For example, to control camera 2, press the [Cam 2] PixButton and the large display will show Cam 2.

The display indicates 3 pieces of information:

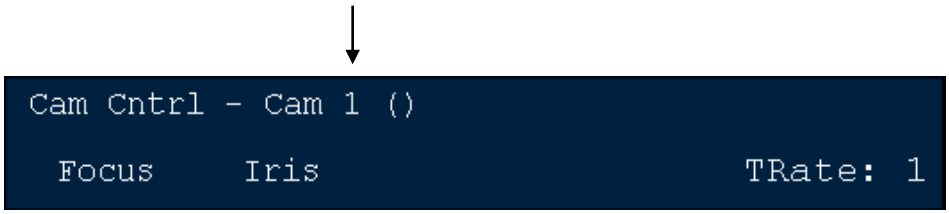
1. The top left corner always shows the device currently assigned to the panel's bank of device controls. In this case, the words **Cam Cntrl** indicate that they are set to camera control.

2. **Cam 1** indicates that Camera 1 is the camera now being controlled.

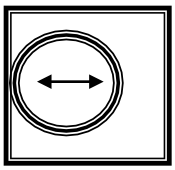
3. The first two knobs are always assigned to focus and iris (even if the words Focus and Iris aren't always present), while the third knob changes to one of many camera control settings, including gain.

7.10 Controlling a Camera Manually

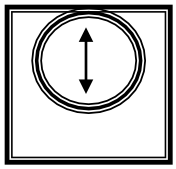
Whichever camera is active may be manually controlled with the joystick and knobs. To control camera 1, the display must show that it is active as follows:



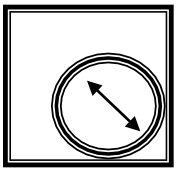
1. To manually control the active camera's pan and tilt position, move the **joystick**



Pan
Left/Right

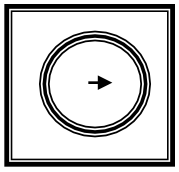


Tilt
Up/Down

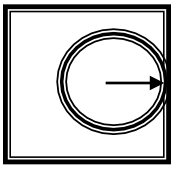


Pan and Tilt
Diagonally

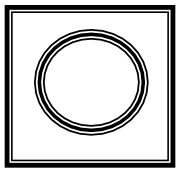
For **Slow** movement, move the joystick **a little**



For **Rapid** movement, move the joystick **a lot**

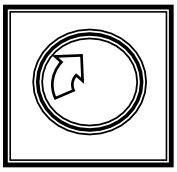


2. To Zoom the Camera **twist** the Joystick.

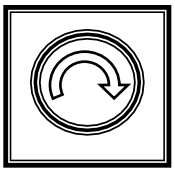


To the right to zoom in
To the left to zoom out

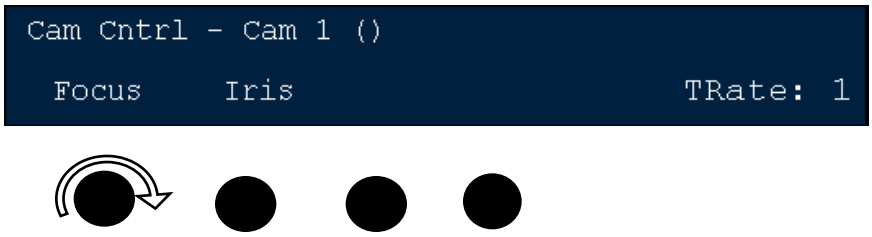
For a **Slow** zoom, twist the joystick **a little**



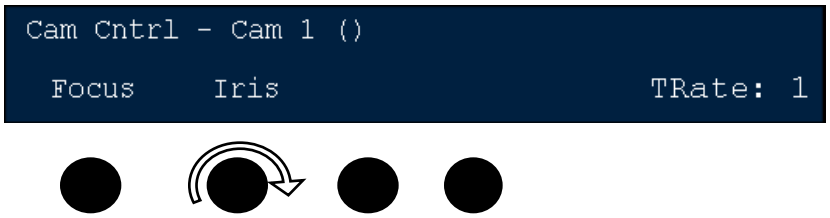
For a fast zoom, twist the joystick **a lot**



3. To adjust the focus of the active camera, twist the **left knob**



4. To adjust the Iris of the active camera, twist the **center knob**



7.10.1 Motion Controls for Hitachi Cameras

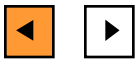
The pan, tilt and zoom functions for all cameras have built-in motion controls. The more you move the joystick the faster the camera will move, and the less the joystick is moved, the slower the camera will move. In addition, the Hitachi camera control have more customizable settings for Fast, Medium and Slow controls for pan, tilt and zoom functions. These controls apply only to the Hitachi Camera Control and not to Sony, Panasonic or Telemetrics cameras. These speed controls do not apply to Focus and Iris adjustments.

To control the speed of manual camera functions:

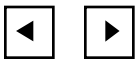
Fast
If you wish to move faster, before touching the joystick, press the **[>]** motion button and it will illuminate. Now when you move the joystick the motion will be at the fast speed specified in Camera Control Settings window under the Joystick Speed tab. To return to the Medium/Normal mode, press the [>] motion button, and it will turn off.



Slow
If you wish to move slower, before touching the joystick, press the **[<]** motion button and it will illuminate. Now when you move the joystick the motion will be at the slow speed specified in Camera Control Settings window under the Joystick Speed tab. To return to the Medium/Normal mode, press the [<] motion button, and it will turn off.



Medium (Normal)
This is the default speed for the joystick. To manually set the speed back to Medium, simply deselect the **[<] or [>]** motion button and they will go off.



NOTE: All three of the above speed setting may me adjusted, as described in section 7.7.2

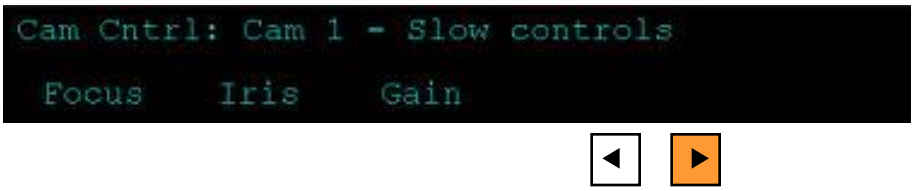
7.10.2 Motion controls for Panasonic Cameras

Similar to the Hitachi Camera Control, Panasonic cameras have two motion controls, Fast and Slow. Although the range may not be set, as can be done with Hitachi, the motion controls not only affect pan, tilt and zoom joystick functions, they also affect the focus, iris and gain knob functions. These controls apply only to the Panasonic Camera Control and not to Sony, Hitachi or Telemetrics cameras.

To control the speed of manual camera functions:

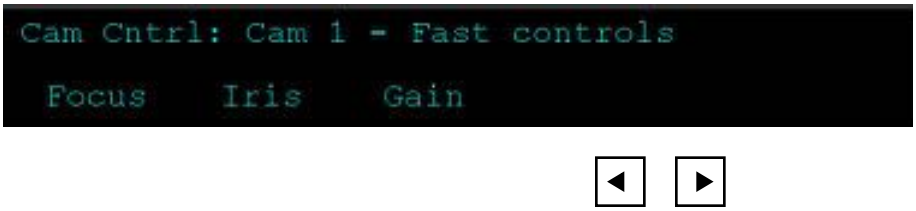
Slow

If you wish to move slower, before touching the joystick or knobs, press the **[>]** motion button and it will illuminate orange. The display will read out "Slow controls", as shown below, now when you move the joystick and knobs the motion will be at a slower rate, compared to the Fast setting. When you let go of the joystick, the [>] button will remain on the slow function. To return to the fast/normal mode deselect the [>] motion button.



Fast

If you wish to move faster than normal mode, before touching the joystick or knobs, ensure that both motion control are not illuminated. If turned on, press the **[>]** motion button and it will turn off. The display will read out "Fast controls", as shown below. Now when you move the joystick and knobs the motion will be at faster.



7.10.3 Motion controls for Telemetrics Cameras

For Telemetrics camera systems all 3 motion control buttons control a setting, either a speed setting or a direction selection for the joystick. The Play > motion control switches from the default/normal speed to the selectable/custom speed set in the Camera Control Settings window. The Rewind |<< motion control changes the joystick speed (1-6) similar to the setting in the Camera Control Settings window. The Back < motion control changes the direction the joystick is used for, either P/T for Pan/Tilt or X/Y for Pedestal Up/Down and Dolly In/Out.
These controls apply only to the Telemetrics Camera Control and not to Sony, Hitachi or Panasonic.

To control the speed of manual camera functions:

Default
If you wish to use the default/normal speed for the joystick, press the **[>]** motion button and it will illuminate orange. The display will read out "Default Speed", as shown below. Now when you move the joystick the motion will be at a medium rate, compared to the Fast setting. When you let go of the joystick, the [>] button will remain on the default function.



Selectable
If you wish to move faster or slower than the default mode, ensure that Play motion control is not illuminated. If turned on, press the **[>]** motion button and it will turn off. The display will read out "Selectable Speed", as shown below. Now when you move the joystick the motion will be at selected speed assigned in the Camera Control Settings window.



Selectable Speed Control

For quick access to the Joystick Speed control from the Camera Control Settings window, the Back motion control button may be used. If you wish to move faster or slower than the default mode, ensure that the Play motion control is not illuminated. If turned on, press the **[>]** motion button and it will turn off. The display will read out "Selectable Speed". Now press the **[|<<]** motion control and the display will cycle through the 6 Joystick Speeds, as shown below. Now when you move the joystick the motion will be at selected speed.

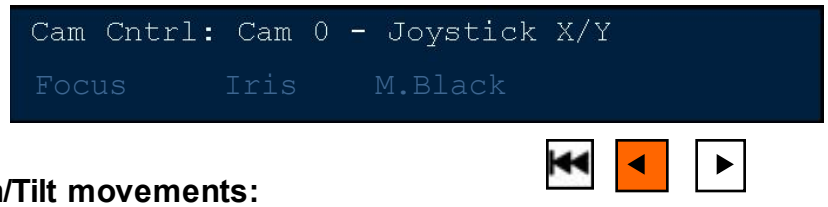


Joystick Functions

Depending on which Telemetrics systems is installed, the joystick may be assigned to control different functions when moved up and down. The default state of the joystick is to control the Pan and Tilt commands on the camera head. If a TelePod or TeleGlide system is install Pedestal and Dolly movements may also be controlled with the joystick.

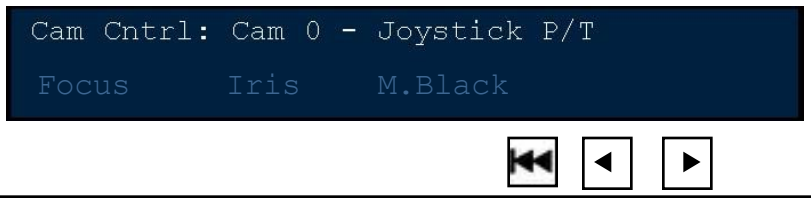
To control Pedestal/Dolly/Track movements:

In the device control, press the **[<]** motion control button and it will illuminate orange. The display will read out "Joystick X/Y", as shown below. Now moving the joystick up or down will control Pedestal commands, and moving the joystick left or right will control track systems left and right. When you let go of the joystick, the [>] button will remain on the default function.



To control Pan/Tilt movements:

To back to the default mode of controlling Pan and Tilt commands, ensure that the Back motion control button is not illuminated. Press the **[<]** motion control button and the display will read out "Joystick P/T", as shown below.

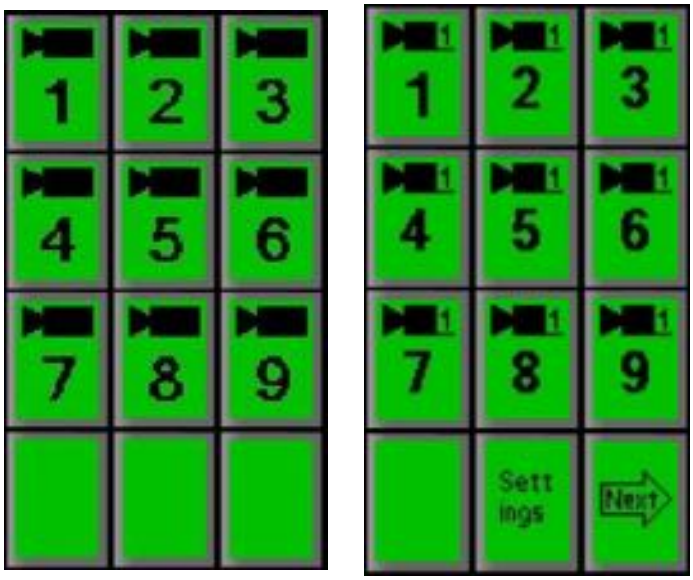


7.11 Setting Camera Preset Positions

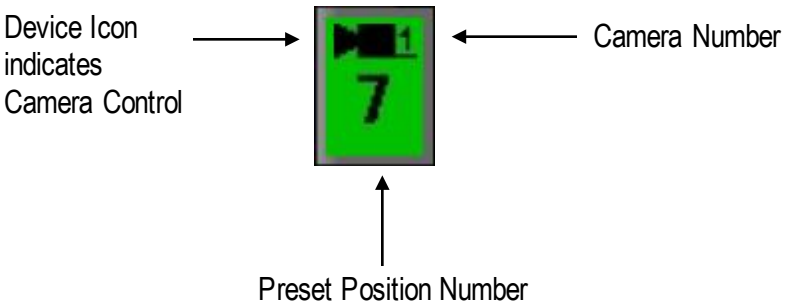
One of the most valuable ways to use camera control is with preset positions. Each Hitachi camera may have up to 31 preset positions, depending on which Sony camera being used there are up to 16 presets, depending on which Panasonic head being used, there are up to 99 presets and depending on which Telemetrics system being used there are up to 255 presets. These presets can be assigned to the PixPad for rapid recall. With Telemetrics systems, timed sequences may not be stored/saved by Broadcast Pix, this function must be done with the Studio Software CTS-ST-S. Only snapshot presets can be saved from the Broadcast Pix.

To assign preset positions:

1. Select the camera you wish to add a preset position for, by pressing the camera number PixButton, as shown on the below left. For example, for Camera 1, press the **[Cam 1]** button and the Presets PixPad for Cam1 will appear as shown on the lower right.



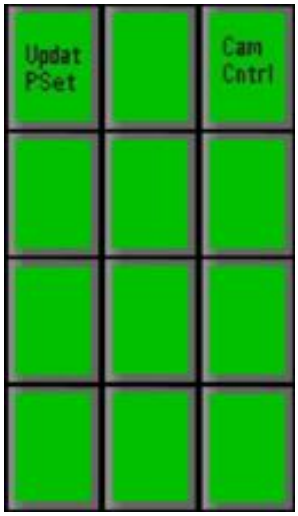
On the above PixPad, the PixButtons for each Preset Position tell you the following information. Note that each camera's preset positions are independent. For example, each camera can have a preset position 7 saved, but none of these preset position 7's are related to each other.



2. Press the **[Settings]** or **[Controls]** PixButton, on the Presets PixPad shown above and one of the following PixPad will appear:



Telemetrics Control



Hitachi Control

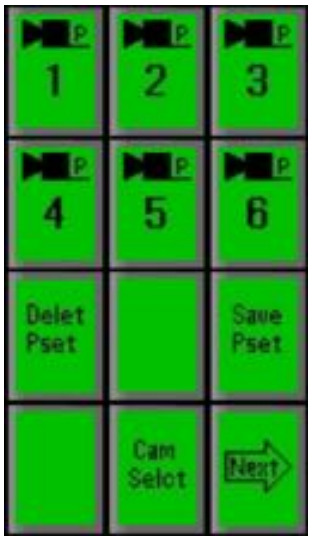


Sony Control



Panasonic Control

3. Press the **[Updat PSet]** PixButton, and the following PixPad will appear:



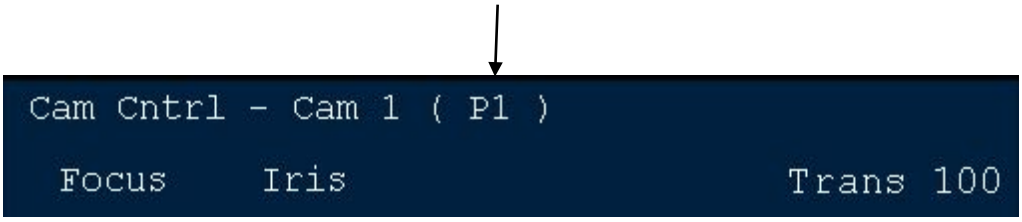
4. Manually move the camera to the desired position you wish to save by using the **Joystick** and the **Knobs,** as described in section 7.10 (Bring the desired camera up on the preview monitor by pressing its source button in the preview row, so you can see its position as you adjust it.)

NOTE: The Preset Position will remember pan, tilt, zoom, focus, gain and other CCU functions. The recall speed is saved on Hitachi cameras only, the recall speed will be captured at whatever speed is set to the camera, see section 7.11.2.

5. When you have the camera positioned where you want it, on the above PixPad press the PixButton for the Preset Position number where you would like to save this camera position. If you wish to save it in a preset Position above 6, then press [Next] button and the following PixPad will appear. If desired keep pressing the Next button until you reach the Preset Position you wish to use. On Panasonic cameras, you may select the [numeric] PixButton to enter a number.



6. Press the **[Save Pset]** PixButton, and now the camera position will be saved in the location you just chose. The display will show the newly saved Preset Position, as shown below, P1.



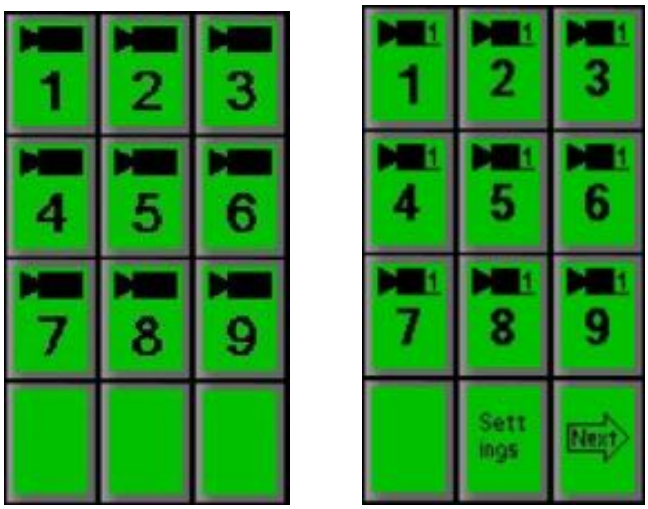
NOTE: If Preset 1 already had a saved preset position, this will now be overwritten with the position you just saved.

7.11.1 Recalling Preset Camera Positions

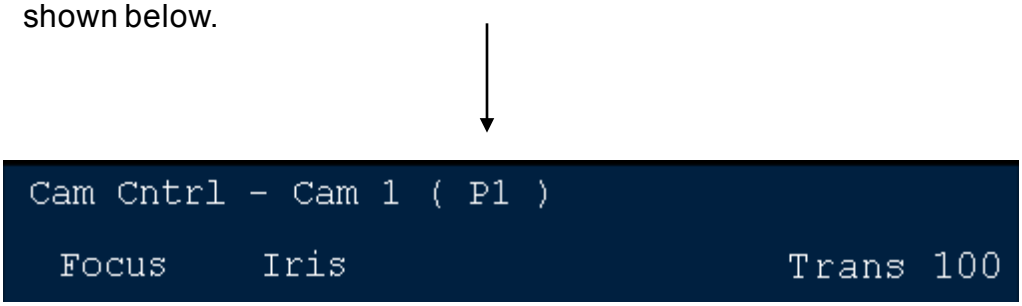
Preset Positions are designed to be recalled rapidly. When using Telemetrics Studio Software, sequences stored in the CTS-ST-S may be triggered by the Broadcast Pix at the stored recall speed.

To recall a preset position:

1. Select the desired camera from the list available on the top level PixPad for camera control as shown on the lower left, such as Camera 1. The Preset Positions PixPad for the selected camera will appear, as shown on the lower right.



2. If you want to recall one of the first 9 positions for this camera, press the desired preset position PixButton and that preset will be loaded, the camera will move to it, and the large display will show that preset position number as shown below.



3. If you wish to recall a preset position that is beyond the first 9, then press the **[Next]** PixButton, and the next 9 will appear, as shown below. On Panasonic cameras, you may select the [numeric] PixButton to enter a preset number.



Keep pressing the [Next] PixButton to reach the preset you desire. You can back up by pressing the [Back] PixButton.

When you reach the desired location press its **[Preset Position]** PixButton. The camera will move to it, and the large display will show this preset position number.

7.11.2 Recall Speed for Hitachi Preset Positions

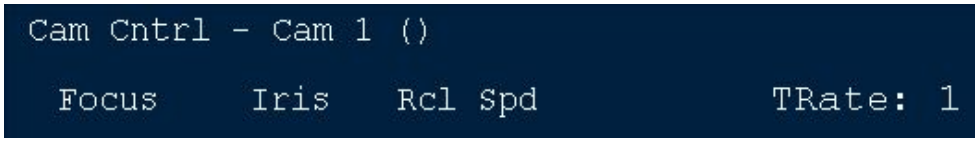
Each Hitachi camera can have 31 preset positions saved. In addition to remembering tilt, pan, zoom and focus, each of these 31 positions can also remember a recall speed: either fast, medium or slow. When each preset position is saved it will automatically set this recall speed at whatever speed the system is currently set to.

To set the Recall Speed:

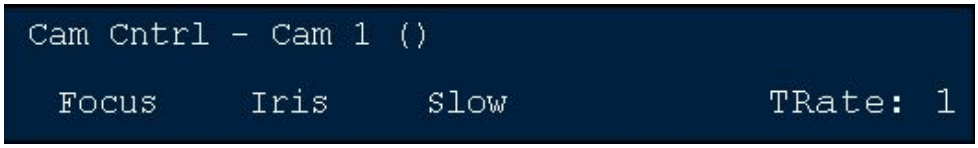
1. On the camera's Preset PixPad, press the **[Settings]** PixButton, and the Settings PixPad will appear:



2. Press the **[Recall Speed]** PixButton and the display will show the current speed at which the recall speed is set to: either: Fast, Medium or Slow



3. Turn the **right knob** to the desired speed and it is set.



7.11.3 Camera Preset Thumbnails

For Sony, Panasonic and Telemetrics camera controls, the Multi-View PixPad can show camera presets, useful to keep track of where the presets go to when operating the system. These thumbnails are automatically captured when the Save Preset function is performed, as described in section 7.11. The image is generated based off the tally input number assigned in the Camera Control Settings menu, as described in section 7.7. The tally number is based off the physical input number the signal is connected to on the back of the Switcher, and not where it is mapped on the control panel.

To view preset thumbnails:

1. Ensure that the camera tally is assigned for each camera under the **Tally Input Number** text box, see section 7.7.



2. **Save** your presets as described in section 7.11

3. As soon as a preset is saved, the Fluent-View PixPad will display the corresponding preset thumbnail, as shown on the right.



   If not already active, click on the **Camera Control device** button on the Fluent-View PixPad, and select the **Camera #.**

To delete a preset thumbnail:

1. In the Controls PixPad, press the **[Update PSet]** PixButton, as show



2. In the Preset PixPad, press the desired [Preset X] PixButton.

3. Press the **[Save Pset]** PixButton 2 times, as shown on the right.



   Note: The Save Preset PixButton will change to a Delete Pset PixButton.

   The thumbnail on the Fluent-View PixPad will be removed showing the generic Camera X, Preset X label.

7.12 Hitachi Camera Control Settings

The Hitachi Camera Control option can adjust many parameters, from panning speed and travel limits to white balance and other camera setups.

7.12.1 Travel Limits of Tilt and Pan

Travel limits are 4 settings for the maximum limit a camera head can move to. This is useful when objects may be obstructing the view or physical movement of each camera to prevent the operator to go past the normal or usable limits.
There are 2 for Tilt (Up and Down) and 2 for Pan (Left and Right), all of which need to be set, prior to saving any camera presets.

Travel limits must be set on each camera/camera head prior to powering off the camera system, as this will ensure that all the communication, iris and other camera settings are properly saved to each head.

To set Travel Limits of Tilt and Pan:

1. Select the camera which you wish to set limits on by pressing the **[Cam #]** PixButton and its first Presets PixPad will appear, as shown below left.

2. Press the **[Settings]** PixButton and the Settings PixPad will appear, as shown below right.

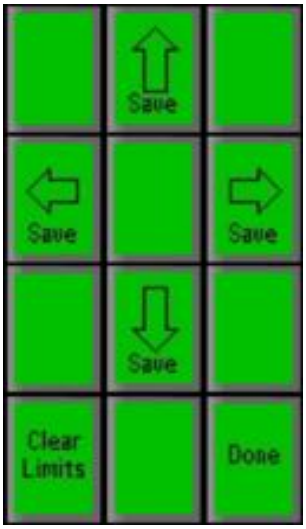


Presets PixPad



Camera Settings PixPad

3. Press the **[Set Limit]** PixButton on the PixPad and the following PixPad will appear:



4. Use the 4 save PixButtons on the above PixPad to save each of the four limits, after using the Joystick to manually move the camera to each position. For example, move the camera to the upper limit you wish to set and then press the **[Save ^]** PixButton. Repeat for any other limits you wish to set. As soon as you press one of the save buttons, the position is saved.

5. To return to the Settings PixPad home page, press the **[Done]** PixButton.

To Clear All Travel Limits:

On the above PixPad, press the **[Clear Limits]** PixButton, and all four limits will be removed for this camera.

7.12.2 Adjusting CCU Functions



The Camera Settings PixPad can be accessed by selecting the [Camera Control] device select PixButton, then selecting a [Camera #] PixButton, then selecting the [Settings] PixButton.

A wide variety of camera control functions can be controlled directly from the PixPad.

1. To change the White Balance preset
   Press the [**White Balance]** PixButton and the display will show what is illustrated below.
   Turn the **3rd knob** to select either **Preset, Memory 1** or **Memory 2.**

```
Cam Cntrl - Cam 1 (V PS8 )
 Focus    Iris   Wht Bal          Trans 100
```

2. To adjust the Shutter Speed
   Press the **[Shutter]** PixButton and the display will show what is illustrated below.
   Turn the **3rd knob** to adjust.

```
Cam Cntrl - Cam 1 (V PS8 )
 Focus    Iris   Shutter          Trans 100
```

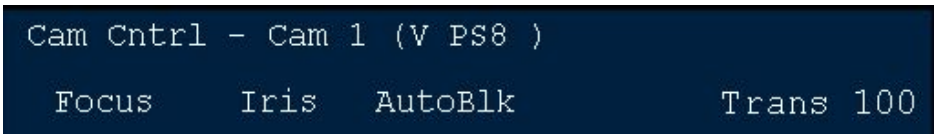
3. To adjust Contrast/Black Levels
   Press the **[Contrast]** PixButton and the display will show what is illustrated below.
   Turn the **3rd knob** to adjust.

```
Cam Cntrl - Cam 1 (V PS8 )
 Focus    Iris   Contrst          Trans 100
```

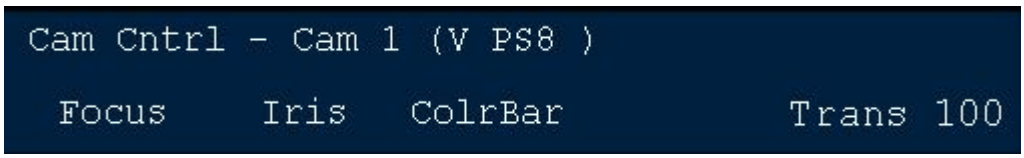
4. To activate Auto White Balance
   Press the **[Auto White]** PixButton and the display will show what is illustrated below. Turn the **3rd knob** to white balance the camera. The setting will be saved in either in Memory 1 or Memory 2 of the above White Balance function.

```
Cam Cntrl - Cam 1 (V PS8 )
 Focus    Iris   AutoWht          Trans 100
```

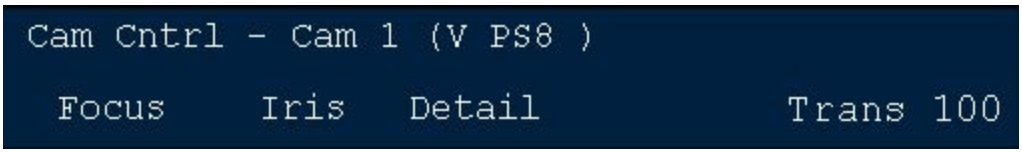
5. To adjust Auto Black
   Press the **[Auto Black]** PixButton and the display will show what is illustrated below. Turn the **3rd knob** to auto black balance the camera.



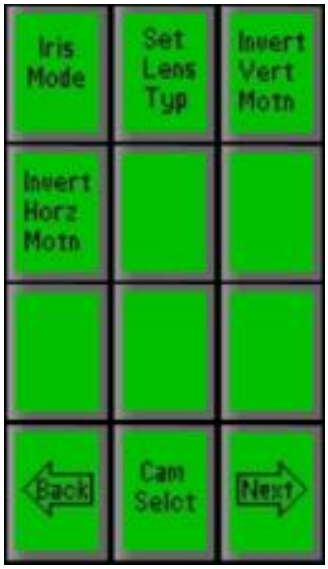
6. To turn on/off color bars in the camera
   Press the **[color bars]** PixButton and the display will show what is illustrated below. Turn the **3rd knob** to display the color bars.

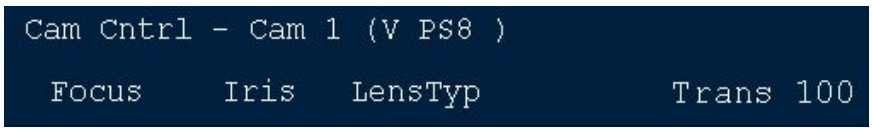


7. To adjust Detail
   Press the [**Set Detail]** PixButton and the display will show what is illustrated below. Turn the **3rd knob** to adjust.

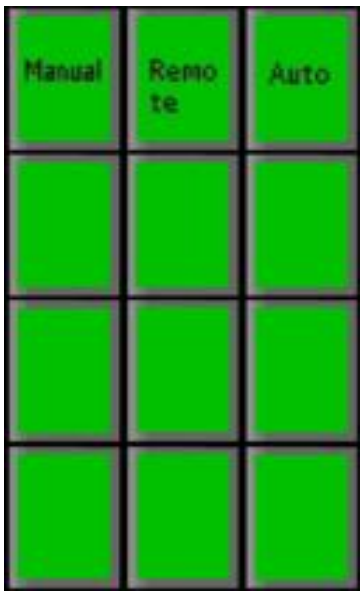


8. To adjust Lens Type
   Press the **[Next]** PixButton and the additional controls will appear as shown below. Then, press the **[Lens Type]** PixButton and the display will show what is illustrated below. Turn the **3rd knob** to adjust, select either **Rainbow** for type 1/C-mount lenses or **Fujinon** for type 2/Bayonet lenses.





9. To Change the Iris Mode
   Some cameras have automated iris capabilities, which you can set on automatic or use manually. To select iris mode press the **[Iris]** PixButton on the above PixPad, and the following PixPad will appear.



Then select either:

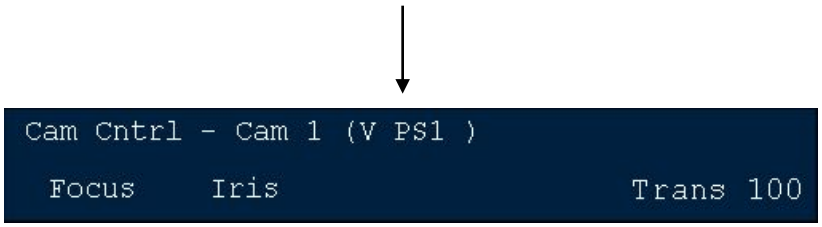
Auto – for the camera to automatically set the Iris

Remote – for the middle knob on the Broadcast Pix panel to control Iris

Manual – for manual control of the Iris by the iris ring on the camera

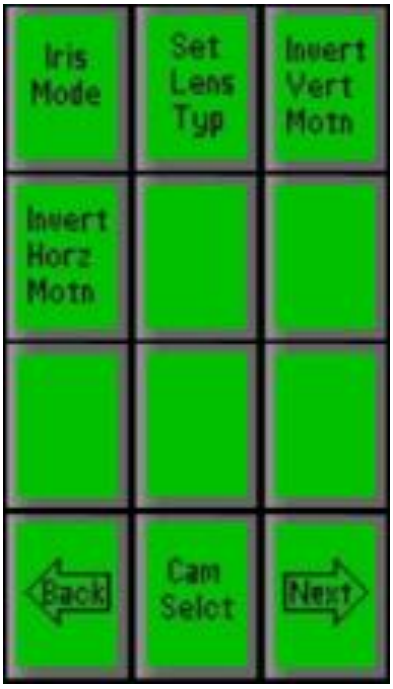
10. To Invert Tilt
    In some installations that Pan/Tilt head is installed upside down. The inverse tilt command flips the joystick around so that pushing it up still makes the camera go up. To Invert Vertical Tilt press the **[Invert Vertical Motn]** PixButton, as shown below, and the large display will add the add V, as shown below.

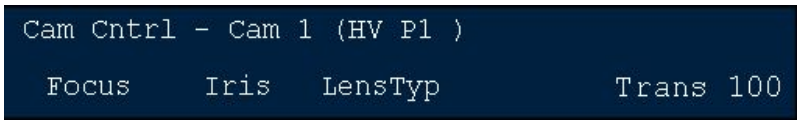




11. To Invert Pan

In some installations that Pan/Tilt head is installed upside down. The invert horizontal command flips the joystick around so the pushing it right still makes the camera pan right. To Invert horizontal pan press the **[Invert Horz Motn]** PixButton, as shown below, and the large display will add the add H, as shown below.





NOTE: When the camera is mounted upside down, and so these two invert commands are applied, care must be taken when setting camera travel limits, as these left/right/up/down limits will now refer to the joystick position, not the camera position (as the camera is upside down). On Sony & Panasonic cameras, you may need to go in to the on line camera menu using the remote control supplied by Sony & Panasonic to invert the camera.

7.13 Sony Camera Control Settings

The Sony Camera Control option has fewer controllable options, compared to the Hitachi Camera Control. There are settings for Focus, Iris and White Balance, as shown below.

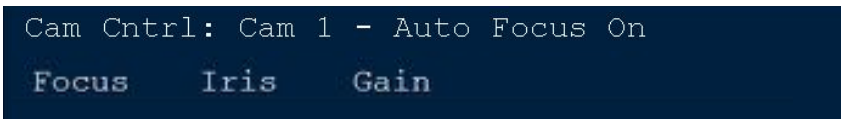


Sony Camera Settings PixPad

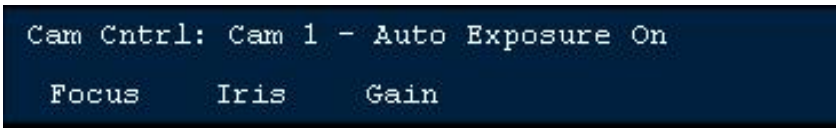
7.13.1 Adjusting CCU Functions

The Camera Settings PixPad can be accessed by selecting the [Camera Control] device select PixButton, then selecting a [Camera #] PixButton, then selecting the [Settings] PixButton.

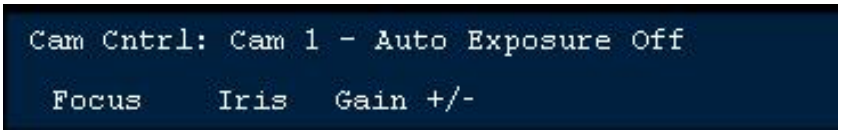
1. To control the Focus:
   Turn the first knob labeled **Focus.** To set the camera to automatic focus, press the **[Start Auto Focus]** PixButton in the PixPad. The display will show **Auto Focus On**, as shown below. To turn off Auto Focus and to manually focus, simply turn the Focus knob.



2. To control the Iris:
   Turn the second knob labeled **Iris.** Turn to the left to close the Iris, turn to the right to open it. To set the camera to automatic exposure, press the **[Start Auto Expos]** PixButton in the PixPad. The display will show **Auto Exposure On,** as shown below. Auto Exposure uses Gain and Iris to adjust the picture. To turn off Auto Exposure and to manually adjust the iris, simply turn the Iris knob.

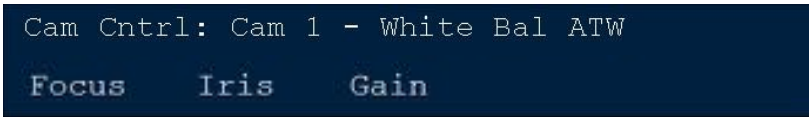


3. To control the Gain:
Turn the third knob labeled **Gain.** Turn to the left to reduce the amount of gain, turn to the right to increase the amount of gain. Depending on the Sony camera the range is -3db to 12db in steps.

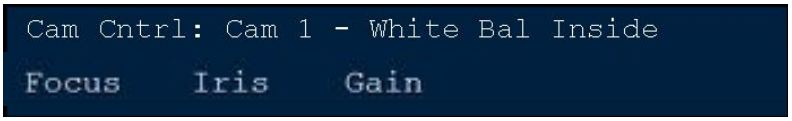


4. To control the White Balance:
There are 4 options for white balance, from preset to manual to automatic.

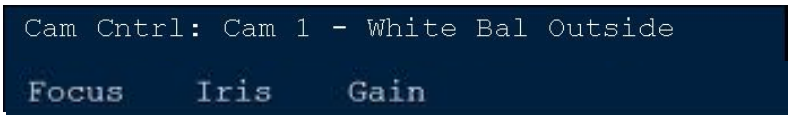
To set the camera to automatically track the white balance for different lighting scenarios, press the **[White Bal A.T.W]** PixButton in the PixPad. The display will show **White Bal ATW**, as shown below.



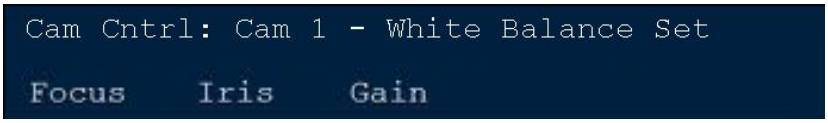
To set the camera to an indoor 3200K color temperature preset, press the **[White Bal Inside]** PixButton in the PixPad. The display will show **White Balance Inside,** as shown below.



To set the camera to an outdoor 5600K color temperature preset, press the **[White Bal Outsid]** PixButton in the PixPad. The display will show **White Balance Outside,** as shown below.



To manually white balance the camera, point the camera to a white area and press the **[One Push W Bal]** PixButton in the PixPad. When the camera has successfully white balanced, the display will show **White Balance Set**, as shown below.



7.14 Panasonic Camera Control Settings

The Panasonic Camera Control option has access to basic CCU functions for Focus, Iris and White Balance, as shown below, in addition to access the camera online menu, which has access to every controllable option for that particular camera.

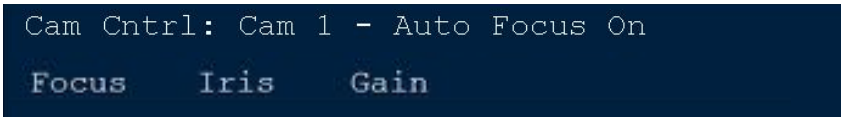


Panasonic Camera Controls PixPad

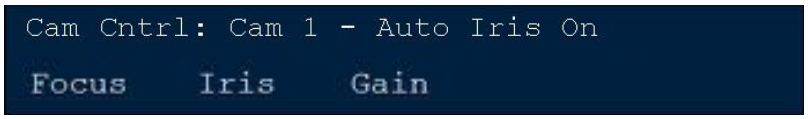
7.14.1 Adjusting CCU Functions

The Camera Settings PixPad can be accessed by selecting the [Camera Control] device select PixButton, then selecting a [Camera #] PixButton and selecting the [Controls] PixButton.

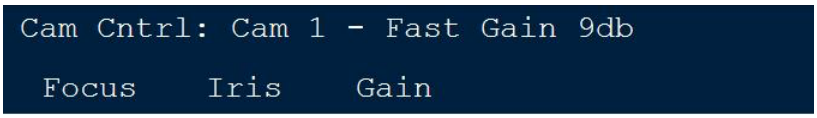
1. To control the Focus:
   Turn the first knob labeled **Focus.** To set the camera to automatic focus, press the **[Start Auto Focus]** PixButton in the PixPad. The display will show **Auto Focus On**, as shown below. To turn off Auto Focus and to manually focus, simply turn the Focus knob.



2. To control the Iris:
Turn the second knob labeled **Iris.** Turn to the left to close the Iris, turn to the right to open it. To set the camera to automatic Iris, press the **[Start Auto Iris]** PixButton in the PixPad. The display will show **Auto Iris On,** as shown below. To turn off Auto Iris and to manually adjust the iris, simply turn the Iris knob.

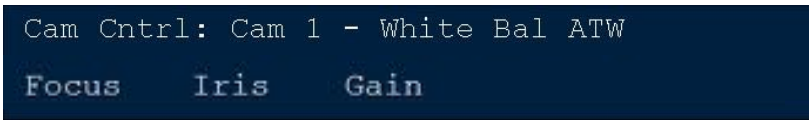


3. To control the Gain:
Turn the third knob labeled **Gain.** Turn to the left to reduce the amount of gain, turn to the right to increase the amount of gain. Depending on the Panasonic camera the range is 0db to 12db in step, 15db, 18db or AGC on.

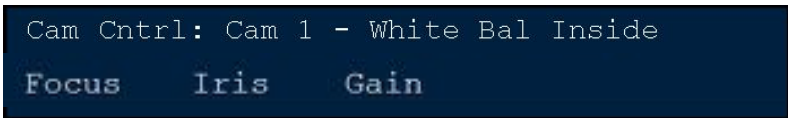


4. To control the White Balance:
There are 4 options for white balance, from preset to manual to automatic.

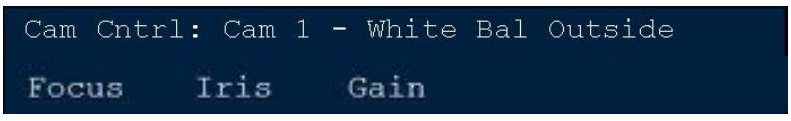
To set the camera to automatically track the white balance for different lighting scenarios, press the **[White Bal A.T.W]** PixButton in the PixPad. The display will show **White Bal ATW**, as shown below.



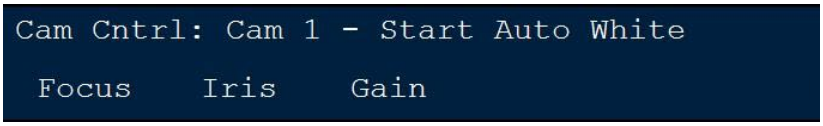
To set the camera to an indoor 3200K color temperature preset, press the **[White Bal Inside]** PixButton in the PixPad. The display will show **White Balance Inside,** as shown below.



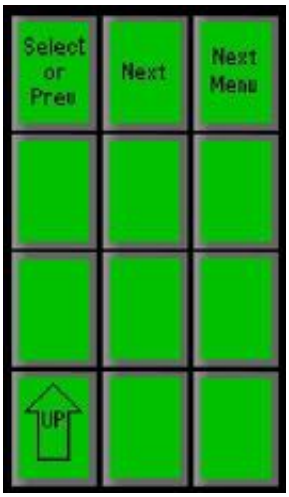
To set the camera to an outdoor 5600K color temperature preset, press the **[White Bal Outsid]** PixButton in the PixPad. The display will show **White Balance Outside,** as shown below.



5. To manually white balance the camera, point the camera to a white area and press the **[Start Auto White]** PixButton in the PixPad. When the camera has successfully white balanced, the display will show **Start Auto White**, as shown below.



6. To access the camera's internal menu, press the **[Online Menu]** PixButton in the PixPad. This will display the camera menu on the camera's video output, which is visible on the Broadcast Pix Multi-View. Assign the camera on the preview row to view the on-screen menu items.
The PixPad will also change to show the menu controls, as shown below. Depending on which Panasonic camera is used, the online menu has access to more advance CCU functions, like color balancing, genlock phasing and output formats.

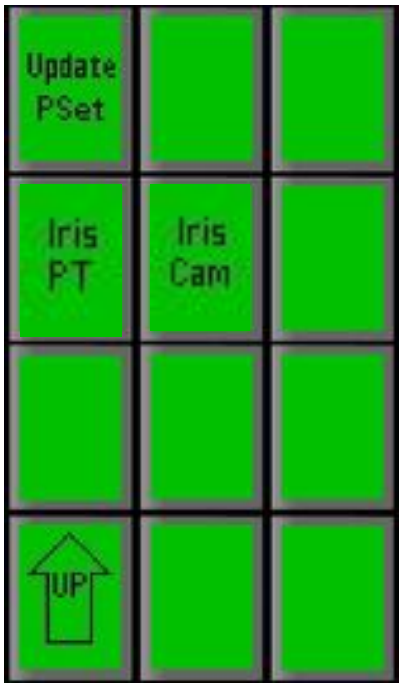


Use the **[Next Menu]** PixButton to select menu categories.
Use the **[Next]** PixButton to change a setting to the next available option
Use the **[Select or Prev]** PixButton to select a sub category and to change a setting to a previous setting option
Press the **[UP]** PixButton to return to the Camera Settings PixPad and to hide the on screen menu on the camera output

7. To remotely put the camera into stand-by mode, press the **[Turn Off Cam]** PixButton. This will put the camera into stand-by mode, resulting in a black/no video output. To turn the camera back on, press the **[Cam Cntrl]** device PixButton in the more devices section of the panel and select the **[Cam Number]** PixButton in the PixPad.

7.15 Telemetrics Camera Control Settings

The Telemetrics Camera Control option has access to basic CCU functions for Focus, Iris and controller selection, as shown below. All shading and white balance control must be done through a 3rd party controller or by using the Telemetrics Studio Software.

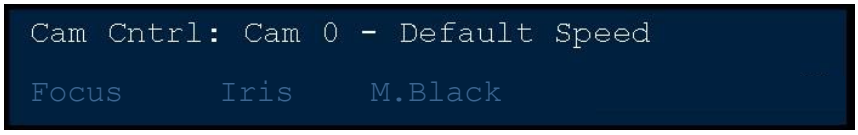


Telemetrics Camera Controls PixPad

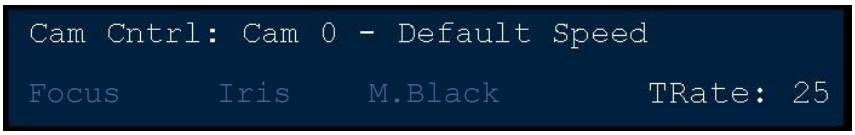
7.15.1 Adjusting CCU Functions

The Camera Settings PixPad can be accessed by selecting the [Camera Control] device select PixButton, then selecting a [Camera #] PixButton and selecting the [Controls] PixButton.

1. To control the Focus:
   Turn the first knob labeled **Focus.** The display will update showing positive or negative Focus numbers.



2. To control the Iris:
Turn the second knob labeled **Iris.** Turn to the left to close the Iris, turn to the right to open it. The display will update showing positive or negative Iris numbers.



3. To control the Master Black:
Turn the third knob labeled **M.Black.** Turn to the left to reduce the pedestal amount, turn to the right to increase the pedestal amount. The display will update showing positive or negative Master Black numbers.
Master black only works when Telemetrics has a controller that can initialize the cameras or when using the Studio Software.

4. To control Iris Commands:
In the Controls PixPad, press the **[Iris PT]** PixButton.
Now the iris controls can be adjusted by the Broadcast Pix control panel or the Telemetrics controller.



To control the iris from a manufactures or 3rd party panel, in the Control PixPad, press the **[Iris Cam]** PixButton. Now all iris control is through the 3rd party controller and not Broadcast Pix/Telemetrics.



7.16 Optional Audio-Follow-Video Control

As an option the Broadcast Pix switcher can provide control of virtually any external audio mixer, digital or analog, through a Musical Instrument Digital Interface (MIDI). Controls can be as simple as turning on a source when it transitions to program, or as complex as calling up scene changes to modify effect parameters like reverb, panning and equalization controls. Audio Follow Video is triggered by the Program status of a source, either when it's on-air or goes off-air.
This option can either use one of the Servers COM or USB ports to communicate data to and from the audio mixer using MIDI commands. Some mixers, such as the Yamaha 01V or 01V96, have a 'To Host' adaptor (either a USB-B and/or 8-pin mini-din connection) and/or a standard 5-pin MIDI connection. You may use any connection to connect the Server to your audio mixer. If using a standard MIDI connection, use the supplied M-Audio Uno USB to MIDI converter.
If using a COM port you will need a 8-pin mini-din to DB9 serial cable (the same which is used for Sony Camera Control). For assistance about which connection to use, please contact technical support.

7.16.1 Enabling Audio-Follow

To use the Audio Follow Video, the System Option needs to be installed. On new systems this is preinstalled, to enable this option after the initial purchase, see section A.2 for more information.

7.16.2 Audio-Follow Activation

Enable your audio mixer to receive MIDI commands on the port in which you have connected to, either MIDI, USB, PC or other depending on the manufacturer. You must also activate your mixer to be able to receive (RX) and transmit (TX) Program Change and Control Change information for Audio-Follow to work properly.
Refer to the MIDI section of your audio mixer's manual on how to select these options, as they may be located in several menus.

It may be necessary to install drivers from your audio mixer, depending on which connection you are using with your audio mixer:

- If you are using a Serial cable to control your audio mixer, no extra drivers are needed.
- If you are using a USB to MIDI converter, drivers are installed automatically using Windows when that device is plugged in.
- If you are using a standard USB cable, you must install the appropriate drivers that came with your audio mixer.

1. Open the Audio Follow window by selecting **Setup** then **Audio Follow**, as shown on the right.

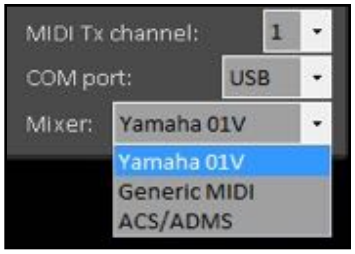


2. The programming interface window will appear.

   In the lower right corner, set the COM port appropriately to an available communication port. Use **USB** when a USB cable is plugged in or **COM X** when a serial cable is plugged in.

   The "Not Ready" message changes to "Ready" when the port opens without errors. If a COM port is in use by another device, like camera control, Audio Follow will not work. You need to disable that port on the device to make it active in Audio Follow.

3. Under the Mixer drop down menu, select the type of audio mixer you are controlling either **Yamaha O1V, Generic MIDI** or **ACS/ADMS,** as shown on the right.



   Yamaha O1V can be used for any Yamaha brand, Generic MIDI can be used for any non-Yamaha brand and ACS/ADMS is for Matrix Switchers from Broadcast Tools.

   Note: When using ACS/ADMS, only control numbers 1 to 99 may be entered with values of 0 for off or 1 for 0. No scene changes are supported.

   VU Metering is support through the Yamaha 01V setting only.

4. Under the MIDI Tx channel drop down menu, select the transmit channel being used on the Audio Mixer, either **1-16.**

7.16.3 Audio-Follow Setup

Each show can have its own set of Audio-Follow commands. Two programming options are available for each table entry; either a single scene change (MIDI Program Change command) or one or more control change (MIDI Control Change commands).
You can not have both a scene change and a control change for one entry. Control changes may differ from manufacturer to manufacturer, so it is important to refer to your audio mixer's manual for a complete list. For example on a Yamaha 01V, control numbers 1-12 effect the fader levels for channels 1-12.

1. Program the **On-Air** and **Off-Air** commands in the table provided.

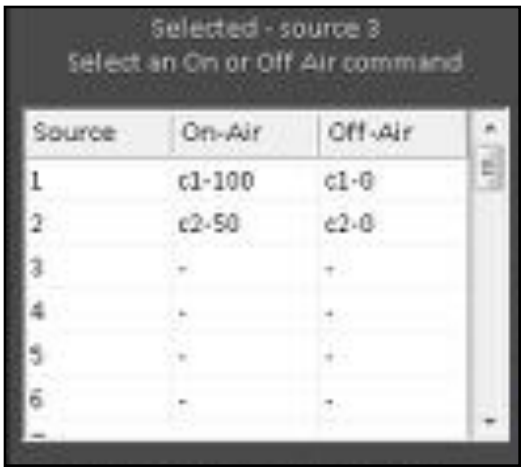
   The sources numbers 1 - 32 refer to the inputs to how they are mapped on the control panel/show in the Show Editor. The first 9 sources are shown, scroll down to reach the shifted sources (10 through 18).

   Each control change is formatted by first typing in a **'c'**, followed by the control number (1 to 127), a hyphen (or minus sign) **'-'** and the desired value to set it to (0 to 127). More commands can be added by adding a space in between commands, leaving out the "c" in front.

   For example to bring fader 1 to 100% volume type: **c1-127** in the **On-Air** column, to bring it off air type: **c1-0** in the **Off-Air** column.
   To bring faders 1 and 2 up at 50% volume type: **c1-63 2-63** in the **On-Air** column.

   If more space is needed, you may type in the bar below the grid, as shown on the right.

   Ensure that you select the **Update Command** button for the command to be entered in the On-Air or Off-Air column.

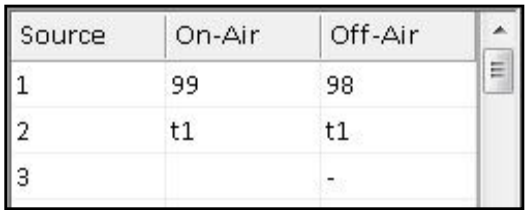




NOTE: 32 sources are available for use on 2000 systems only, normally you have up to 18 source buttons that can be assigned,

2. A scene change is a memory setting inside the audio mixer that can recall virtually any combination of settings. For example a scene change could recall a reverb effect and turn on fader 3. You need to first create and save your memories/scenes from your audio mixer, refer to your mixer's manual on how to save a scene change.

   To recall a scene change (either 0-99) simply type the **number** of the scene change in the On-Air or Off-Air column of the source, as shown on the right.



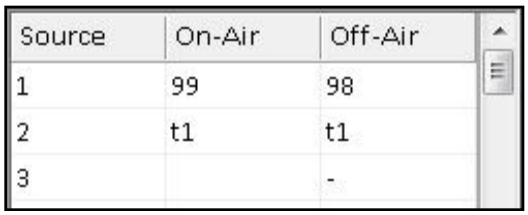
Source	On-Air	Off-Air
1	99	98
2	t1	t1
3		-

   Only one scene change is allowed per source.

3. You may also 'Tie' one or more video sources together. When a source is tied to other sources, the on-air command is executed for all the sources but the command goes off-air only when all the tied sources are off air.

   For example, if you had an interview with 2 cameras and 1 microphone, you could have both camera sources tied to each other so when you transition between the 2 angles the audio does not go off air. The audio would go off air when a different source is transitioned to Program.

   To tie a video source to another video source, simply type: **t** and the **number** of the other source (i.e. t1), as shown on the right.



Source	On-Air	Off-Air
1	99	98
2	t1	t1
3		-

   When one column is set to be tied, the other column will automatically get tied as well.

4. To assist with the programming of commands without knowing command numbers, especially when using control changes, adjustments can be made directly on the audio mixer and then captured by the Audio Follow window.

   In the Audio Follow window, click on the desired channel number in the either On-Air or Off-Air grid, as shown on the right.



   Click on the **Capture Mixer** button, it will illuminate red, as shown on the right.



   On the audio mixer, **adjust** the desired control settings. As settings are changed, the text box will populate all the commands.

   When complete, click on the red **Capture On Press Again to Stop** button.



   You may either manually enter more commands or simply click on the **Update Command** button to move the command to the On-Air or Off-Air column.

5. It is recommended to test these commands by first selecting the desired table entry and then clicking on the **Test** button, as shown on the right.



   As commands are sent to the audio mixer, they are displayed in the header of the Audio Follow window. If everything is connected and programmed properly, the commands should be noticed on the audio mixer.

6. Sometimes it is desirable to disable a command temporarily, without losing its settings.

   This can be accomplished by pressing the **Disable** button, as shown on the right. Disabled commands are shown in the table with leading minus signs **'-'.** When a command is disabled you may still have the option to test the command. To reactivate the settings, click on the **Enable** button.



7. Buttons are also provided for permanently clearing a table entry **Clear** and clearing all table entries **Clear All**. Note these functions are not undoable. Information will be lost when the buttons are selected.

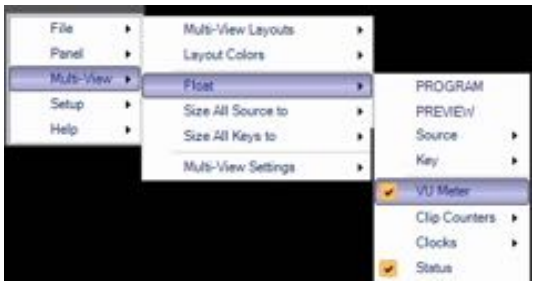
7.16.4 Audio-Follow Operation

Once set up, operation is completely automatic. Whenever a source goes on or off Program, the appropriate command (or commands) is (are) sent. On the control panel and the Multi-View, when sources tally red they are on program and the commands are triggered. The Audio Follow setup window can be closed, but commands will continue to be sent.

In addition, some Audio Mixers, like the Yamaha O1V, can send VU Audio Meters back to the Multi-View to be displayed. This VU Meters can also active some of the programming features of the full Audio Follow menu.

To float the VU Meters:

1. Click on the Broadcast Pix menu button and select **Multi-View, Float** and then **VU Meter,** as shown on the right.

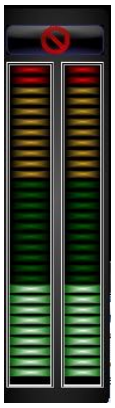


2. The VU Meters window will appear. If audio signals are active on the mixer, and if the mixer is supports VU Metering to Broadcast Pix, you will see the levels, as shown on the right.



3. The green speaker icon represents that Audio Follow Video is active and enabled. To disable operation simply click on the **Speaker Icon** button, and it will turn to a red X, as shown on the right.

Now Audio Follow Video has been disabled.



Similarly when you click on the **Disable** button in the Audio Follow window the icon on the VU meter will also change.

To re-enable Audio Follow repeat this step.

4. Similar to the Capture Mixer button in the Audio Follow window, commands can be updated through the VU Meter, without having to open the Audio Follow window.

When a command is triggered the button on the VU Meter will change to an update icon, as shown on the right. If a parameter is changed on the audio mixer this button can be selected and now the new command value(s) is(are) inserted to the On-Air grid.



This is useful if the volume of a microphone is adjusted, it can then be saved as the new value to be used, instead of having to manually adjust the audio mixer each time the command is triggered.

5. If access to the full Audio Follow menu is needed, simply **right-click** on the button on the VU Meter to open the window.

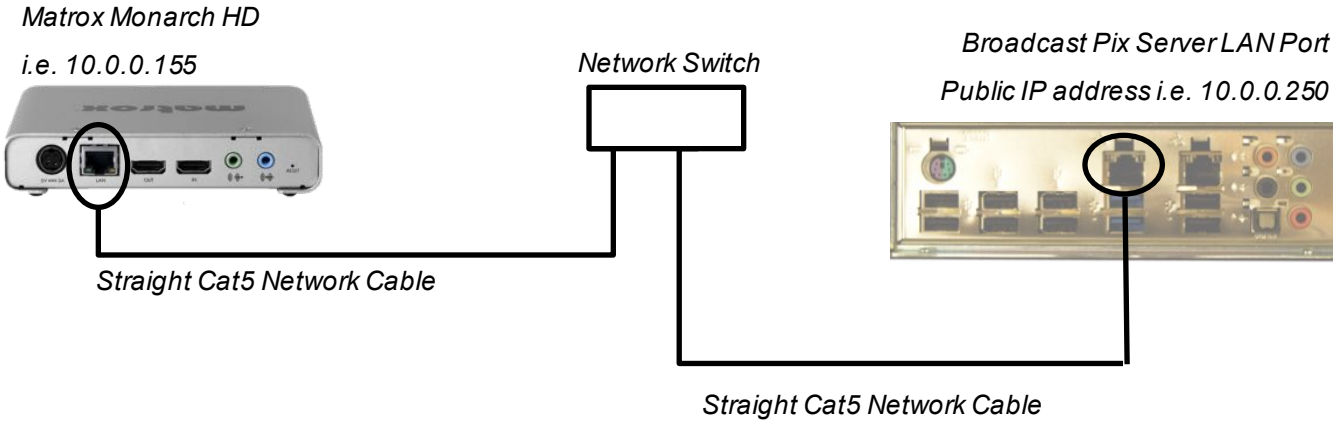
7.17 Steamer Control

Any Broadcast Pix switcher can also provide control of the full line of Matrox Streamer/Recorder devices, like the Monarch HD and Monarch HDX, over a TCP/IP connection. Monarch devices provide streaming settings for using RTSP and RTMP streaming protocols for use on Adobe Media Server, Wowza Media Server, a software video player, such as QuickTime and VLC, or any of the popular Content Delivery Networks (CDNs), such as YouTube Live and Ustream. They also provide settings for recording your input source for video on demand (VOD), high-quality editing, and archiving/previewing purposes. Content can be recorded to .mov or .mp4 file formats on a FAT32 or NTFS file system. The recorded file may also be played back from the Broadcast Pix clip store.

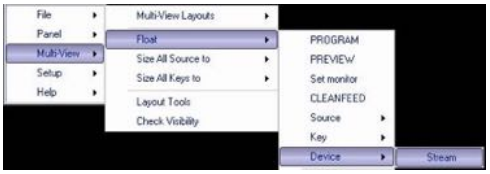
The Streamer device gives you access to start and stop the stream/record and to view status. All the configuration of the Monarch is done on the device through its web interface. For more information on how to configure the Matrox Monarch, refer to its user's manual.

Installing a Matrox Monarch

The control is through the LAN port on the Broadcast Pix Server, using a network switch to connect to the Monarch device. When the Monarch device first boots up, the video output will display a splash screen with the current IP address, usually set to DHCP (this step may take several minutes). Use this IP address to configure the and control the device, this example will use the IP address of 10.0.0.155.



To configure the Matrox Monarch:



1. Navigate to the **Multi-View, Float, Device, Stream** menu, as shown on the right.



2. In the Streamer Settings menu, select the **Matrox Monarch** option under the Current Encoder drop down menu, as shown on the right.

3. Enter the address of the Monarch in the **IP Address** text field.

   This is the address displayed on the splash screen, i.e. 10.0.155.

4. In the **User Name** and **Password** text fields enter the assigned name and password.

   The default User Name is admin
   The default Password is admin



5. To edit the streaming and/or recording settings, click on the **Edit Settings** button.

6. A web browser will open showing the Command Center. Click on the **Settings** drop down menu and select the **Stream** option. You may need to re-enter the User Name and Password.

7. The Steam Settings will appear, as shown on the right. **Configure** the stream and/or Record settings with the appropriate settings specific to your CDN or record scenario. Refer to the Monarch manual for more information.

8. Click on the **Apply** button, to set the settings.

   Whichever profile or settings have been applied will be used once Broadcast Pix starts the stream/record.

9. Close the web browser, by click on the **X** on the top right on the page.

10. In the Streamer Settings menu, click on the **Done** button, as shown on the right.

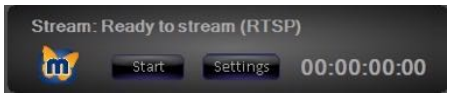


7.17.1 Controlling the Streamer from the Multi-View

1. Once an the Encoder has been selected from the Streamer Settings window, click on the **Done** button to apply the settings.



2. Once a stream is ready, the Stream device window will display **"**Ready to stream", as shown on the right. Click on the **Start** button to start streaming to your CDN/server, using the settings from the Monarch, as shown on the right.



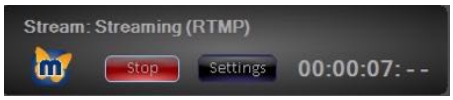
The status will change to 'Starting, please waiting', as shown on the right.



If any of the settings in the profile are not compatible with your CDN or server within 30 seconds to 1 minute the counter will stop and the Stop button will turn off. Check your settings to confirm that they are match the recommended settings.

3. The Start button will change to a Stop button and illuminate red. In addition, the counter will start to count up by the second, as shown on the right.

To stop streaming, click on the red **Stop** button.



7.17.2 Adding Stream Control to a Show

Although you may control the Stream from the Multi-View, it may be desired to use the Control Panel or PixPad to control the stream. In order to do so you must add the device to a show using one of the wildcard devices on the switcher.

1. In BPswitcher, load the show to which you want to add camera control. Select the **File**, **Load Show.**

2. Open PixMaster by selecting **File, Edit Show.**

3. Click on **Edit Show Settings** and the Edit Show Settings window will open.

4. Click on **More Devices** and the More Devices window will open, as shown below.

5. Select the desired **wildcard device button** to which you want to add camera control and a drop down menu will appear.

6. Click on **Stream**, and it will appear on the PixButton, as shown below.

7. Click on **OK**, to apply the Streamer Control the show, then **Close** in the Edit Show Settings window and **Save Show** to apply all the settings.



7.17.3 Selecting Stream Control in a Production

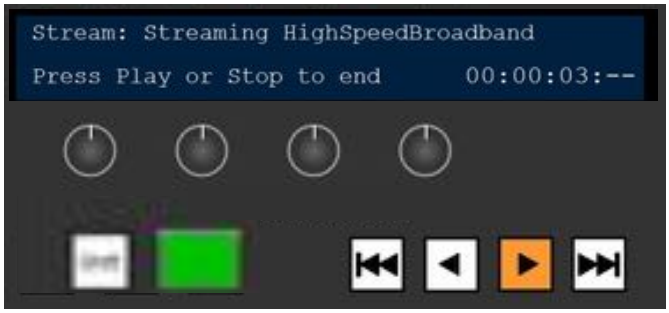
To assign the device controls to Stream Control:



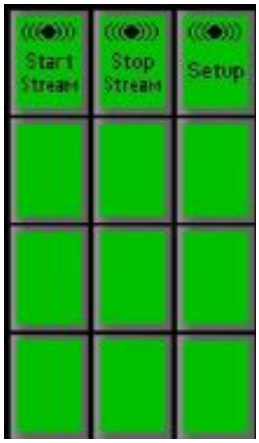
Press the **[Stream]** wildcard [Device Selection] PixButton and it will illuminate orange and the following device controls will be appear.

Stream Control device controls:

Display
shows selected profile name and stream status information



Motion Controls
Start and stop streaming



PixPad
Start and stop streaming and access Streamer Settings

When you press the Stream Control PixButton, the active profile or job will appear.

The display indicates 4 pieces of information:

1. The top left corner always shows that the Stream device is currently assigned to the panel's bank of device controls.

2. **Streaming** or **Ready to Stream** on the top line gives status information with the profile name after it. In this case, High Speed Broadband.

3. The bottom left side indicates how to stop or start the stream.

4. The bottom right side displays a timecode counter for the selected stream. When streaming HH:MM:SS:-- is displayed, when stopped HH:MM:SS:FF is displayed.

7.17.4 Controlling a Stream

To start streaming:



1. In Device Control section, select the **[Stream]** PixButton, it will illuminate orange.

   The display will show the selected profile or job.



2. The PixPad will change showing the available controls. Select the **[Start Stream]** PixButton, as shown on the right.

   The display will update with the words Streaming, the counter will start to advance and the [>] motion control button will illuminate red, as shown on the right.



   The [>] motion control button may also be used to start streaming



To stop streaming:

1. In Device Control section, select the **[Stream]** PixButton, it will illuminate orange.



2. In the PixPad select the **[Stop Stream]** PixButton, as shown on the right.

   The counter will stop, the display will read out ready to stream and the motion control button will illuminate orange, as shown on the right.



   The [>] motion control button may also be used to stop streaming.

   In addition, Macros can be used to start and stop the Stream device, once a Profile has been selected.

7.18 Deck Control

The Broadcast Pix switcher can also provide control of the full line of AJA KiPro and Blackmagic Hyperdeck recorders, over a TCP/IP connection. Up to 12 decks/units may be controlled by Broadcast Pix, controllable functions include selecting recorded clips by clip name on the PixPad to play/fast forward/reverse and starting and stopping new clip recordings. All device configurations and record settings are done on the KiPro or Hyperdeck or through its web interface. For more information on how to configure and operate the KiPro or Hyperdeck, please refer to their manual. As an option, PixPlay can be added to allow for affordable instant replay/review using these decks.

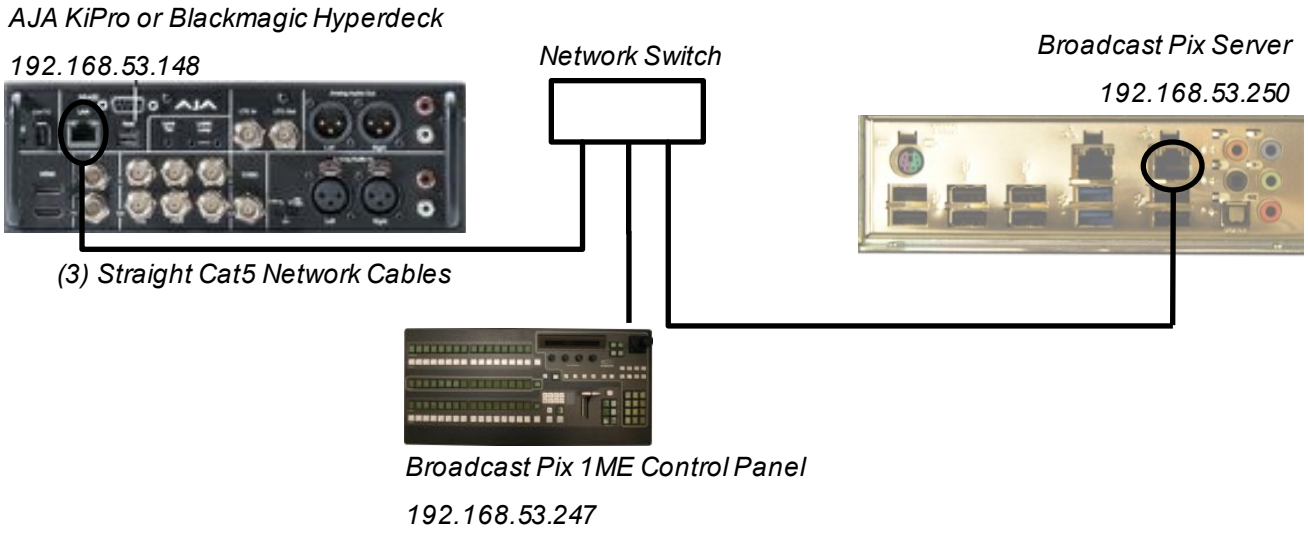
NOTE: Clip selection from the KiPro is delayed, as each clip must be cycled through. This KiPro control is not intended for hot-punching of clips on air, rather it's for selecting clips for review after a record or selecting clips in preview prior to taking them to air.
Clips appear on the PixPad in the order in which they are stored/recorded on the KiPro.

7.18.1 Installing Deck Control

Control of each deck is through individual Cat5 – TCP/IP connections to each device. The control can either be connected to the Broadcast Pix Control network card (with the Server and panel) using a network hub or on the secondary network card with your 'house' network, using a crossover cable (if connecting only one deck) or a network hub with straight through cables if connecting to more network devices.

If connecting to the Broadcast Pix Control (NIC 2 on the Server as shown below), the 192.168.53.XXX subnet must be used. If using the other NIC card, it may be configured with custom network settings.

To configure the KiPro with a valid IP address you may use the front on screen controls, please refer to the KiPro manual on how to change the default Static IP address.



7.18.2 Adding Deck Control to a Show

Once installation is complete, you must now add the device to a show using one of the four wildcard devices on the switcher.

1. In BPswitcher, load the show to which you want to add camera control. Select the **File**, **Load Show.**

2. Open PixMaster by selecting **File, Edit Show.**

3. Click on **Edit Show Settings** and the Edit Show Settings window will open.

4. Click on **More Devices** and the More Devices window will open, as shown below.

5. Select the desired **wildcard device button** to which you want to add camera control and a drop down menu will appear.

6. Click on **Deck Control**, or **PixPlay** (if enabled) and it will appear on the PixButton, as shown below.

7. Click on **OK**, to apply the Deck Control the show, then **Close** in the Edit Show Settings window and **Save Show** to apply all the settings.



7.18.3 Deck Control Settings

1. In BPswitcher go to the **Setup** menu and select **System Settings…,** as shown on the right.



2. In the System Settings window, select the **Devices** tab.

3. In the list of enabled devices select **Deck Control** it will highlight orange and select the **Settings…** button.

   The Deck Assignments window will appear as shown on the right.



4. **Enter** the IP Address of each deck in the IP Address text field, the . (periods) are necessary, as shown on the right.

   Up to 12 IP addresses may be added, as each number is entered the system attempts to verify if the connection is valid, this may result in a slight delay as numbers are entered.



5. For each deck, select the make of the deck under the **Type** drop down menu, select either **None, KiPro** or **HyperDeck**, as shown on the right.

6. For each deck, enter the Flint Switcher input number in the **Input** text field.
   Once entered, the name of input assigned in the Input Assignments will automatically be generated under the Name text filed.

   To enter a different custom name, enter 0 and then enter a name under the **Name** text field.

7. Click on the **Save settings and close** button to save the changes.

8. Click on the **OK** button in the System Settings window to close it.

7.18.4 Selecting Deck Control in a Production

To assign the device controls to Deck Control:

Press the **[Deck Ctrl]** wildcard [Device Selection] PixButton
and it will illuminate orange and the following device controls will be appear.



Deck Control device controls:

Display
shows active deck, selected clip name and status information



Start and stop recording, play, rewind and jump to beginning of a clip



PixPad
To select which deck and clip you wish to control

When you press the Deck Control PixButton, the active device and clip will be whichever clip was last used, or the first device if you are just starting.

The display indicates 4 pieces of information:

1. The top left corner always shows the deck currently assigned to the panel's bank of device controls. In this case, the words **KiPro1** indicate that they are set to KiPro Unit 1.

2. **Clip XXX** indicates the selected clip name. Attributes such as loop, auto start and slot number will appear at the end of the clip name, in this case **(L).**

3. The bottom left side displays status information for the selected clip, if it's playing, recording, rewinding, and other status information like lose of input when recording, in the case **Playing Forward**

4. The bottom right side displays a timecode counter for the selected clip. When playing/recording HH:MM:SS is displayed, when stopped/paused HH:MM:SS:FF is displayed.

7.18.5 Controlling a Deck

To start recording a clip:

1. In Device Control section, select the **[Deck Ctrl]** PixButton, it will illuminate orange, as shown on the right.



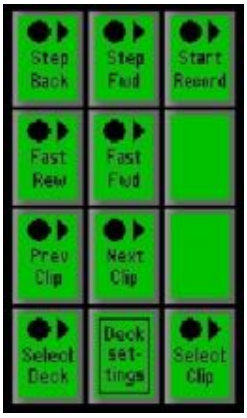
2. If not already selected, select the desired deck in the PixPad by selecting the **[Deck]** PixButton, in this example Hyper Deck. The name in this PixButton is the name assigned in the Deck Assignments menu, as described in section 7.18.3.



   The display will show the selected deck and the current state.

3. Select the **[Controls]** PixButton.

4. The PixPad will change showing the available controls. Select the **[Start Record]** PixButton, as shown on the right.



   The display will update with the words Recording Clip and the [>] motion control button will illuminate red, as shown on the right.

5 To start more clips on different attached decks, repeat steps 1 - 4 above.



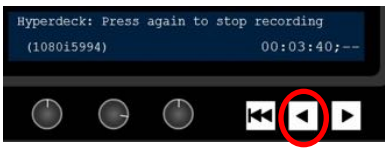
To stop recording a clip:

1. Repeat steps 1 - 3 above.

2. In the PixPad select the **[Stop Record]** PixButton, which will be the same PixButton as [Start Record] as it changes automatically, as shown on the right.



   The counter will stop, the display will read out stopped and the newly recorded clip will be added to the end of the PixPad ready for control



3. To stop recording from the panel, click the **[<]** motion control button 2 times.
   Once a clip has stopped recording the Multi-View PixPad will display a thumbnail of the first frame of video recorded.

To select a clip to control:

1. In Device Control section, select the **[Deck Ctrl]** PixButton, it will illuminate orange, as shown on the right.



2. If not already selected, select the desired deck in the PixPad by selecting the **[Deck]** PixButton, in this example Hyper Deck.

   The display will show the selected unit and the current state.



3. The PixPad will change showing the available controls, select the **[Select Clip]** PixButton, as shown on the right.



4. The PixPad will change showing the available prerecorded clips by filename.
   Select the desired clip by selecting the **[Clip Name]** PixButton.

   The display will update showing the selected clip and timecode and the PixPad will automatically change to show the Controls PixPad.

   NOTE: Clip selection from the KiPro Decks is delayed, as each clip must be cycled through. Hyperdeck selection is instant. The KiPro control is not intended for hot-punching of clips on air, rather it's for selecting clips for review after a record or selecting clips in preview prior to taking them to air.



5. To view more than 9 clips, select the **[Next]** PixButton in the PixPad.

   Once the more than 2 pages of clips are available in the PixPad a [Back] button will also appear for navigation.

6. To quickly jump to the next or previous clip in the clip list, on the Controls PixPad select the **[Prev Clip]** or **[Next Clip]** PixButton, as shown on the right.



To play a clip:

1. Repeat steps 1-4 to select a clip to control.

2. In the motion control section, select the **[>]** motion control button it will illuminate orange, as shown on the right.



   The timecode will start to update and the clip will start to play.

To pause/stop a clip:

1. In the motion control section, select the **[>]** motion control button and the button will turn off, as shown on the right.



   The timecode will stop in the display.

To rewind a clip:

1. Ensue that the desired clip is selected, as described in the previous section.

2. In the Controls PixPad, select the **[Fast Rew]** PixButton, as shown on the right.



   The clip will rewind at 2X speed.

3. Select the **[Fast Rew]** PixButton again.

   The clip will rewind at 4X speed.

4. Select the **[Fast Rew]** PixButton again.

   The clip will rewind at 8X speed.

5. Select the **[Fast Rew]** PixButton again.

   The clip will rewind at 16X speed.

   When the clip reaches the start of the clip, rewind will stop.

6. To pause the clip from rewinding, select the **[>]** motion control button.



To fast forward a clip:

1. Ensue that the desired clip is selected, as described in the previous section.

2. In the Controls PixPad, select the **[Fast Fwd]** PixButton, as shown on the right.



   The clip will fast forward at 2X speed.

3. Select the **[Fast Fwd]** PixButton again.

   The clip will fast forward at 4X speed.

4. Select the **[Fast Fwd]** PixButton again.

   The clip will fast forward at 8X speed.

5. Select the **[Fast Fwd]** PixButton again.

   The clip will fast forward at 16X speed.

   When the clip reaches the end of the clip, fast forward will stop.

6. To pause the clip from fast forwarding, select the **[>]** motion control button, as shown on the right.



7.18.6 Deck Control Settings

Engineering settings can be modified through the Deck Settings window, which is accessible from the PixPad. Settings include changing record settings, format settings and playback setting.

To adjust Deck Settings:



1. On the Controls PixPad select the **[Deck Settings]** PixButton, as shown on the right.

2. The Deck Settings menu will appear, as shown on the right.

   Note that the KiPro and Hyperdeck menus are slightly different based on the available features on the specific deck.

   Under the **Format** drop down menu, select the desired codec for recording and playback.

   Only clips with the selected codec will be visible in the Clips list and be allowed to playback.





3. In the Playback section, apply **Auto Start, Auto Stop, Auto Loop** and/or **Auto Rewind** attributes, which will be applied for all clips.

4. To only play one clip at a time instead of the entire timeline on disk, select the **Play Only the Selected Clip** check box.

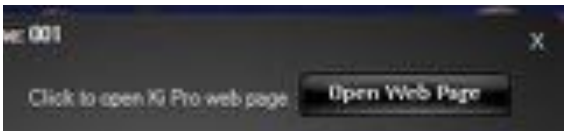
5. In the Record section, enter the record **Name** in the text field as the default record name for each recording. Each recording will auto-enumerate.

   Note that on KiPros, the Use Custom Clip Take option needs to be set to On.

6. Under the **Video** and **Audio Input** drop down menu, select the proper IO settings for your records.

7. If desired, a specific frame number for each record can be specified as the clip thumbnail. Enter a number in the **Frame number for thumbnail capture** text box. Setting it to 0 will use the first frame of the record.

8. The AJA KiPro decks offer a web-based interface to change many more menu settings. To open this page click on the **Open Web Page** button, as shown on the right.



9. To close the settings window, click on the **X** in the upper right corner of the window.

   Note that the settings window can remain open while recording, this provides an easy way to name new clip recordings.

7.18.7 PixPlay

PixPlay is an optional software add-on to Deck Control, which provides an affordable and easy to use instant replay and review system. Decks can be set to gang and while clips are recording or playing back marks can be set during important parts. While controlling a mark on one deck the same mark on other decks are controlled in the same manor providing synced cueing of all your angles. This is ideal in sports for official review stations. PixPlay can be used with one deck or multiple decks. PixPlay can either record or playback clips and marks, it can not do both simultaneously. For PixPlay to be enabled, an option code is required to be entered in the Setup-Installed Option menu. Contact Broadcast Pix Sales for more information.

Ganging Decks:

1. As described in section 7.18.3, open the Deck Assignments menu from the Setup-System Settings-Devices tab.

2. The Deck Assignments menu will appear, as shown on the right.

   In a deck row that is empty, select the Type drop down menu and select the **Gang** option.

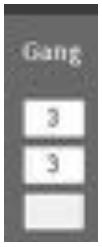
   This example will assume Deck 3, as shown on the right. Any deck row can be used, however either the deck before or after your individual decks is recommended.

   Note that you may have multiple gangs in your list, however the more gangs the fewer decks that may be connected as a gang utilizes a deck position number.



3. In the Name text box enter a custom **name**. This name will appear on the PixPad. By default the name will be **Gang**.

4. For each individual deck to be associated with a gang group, enter the Gang Deck number in the **Gang** text box. Since this example used Deck 3 as the gang, enter 3 for Decks 1 & 2.



5. Click on the **Save** button to apply and close the Deck Assignment window.

   If the System Settings window is open, close it as well.

Recording & Marking:

1. Similar to recording a clip on an individual deck, as described in section 7.18.5, select the **[Deck Ctrl]** PixButton, it will illuminate orange, as shown on the right.



2. In the PixPad, select the **[Gang]** group PixButton, as shown on the right.

   If no gang has been created or desired, an individual deck can be selected and the following steps will continue to function.



3. In the PixPad of available clips, select the **[Controls]** PixButton, as shown on the right.



4. The PixPad will change showing the available controls. Select the **[Start Record]** PixButton, as shown on the right.

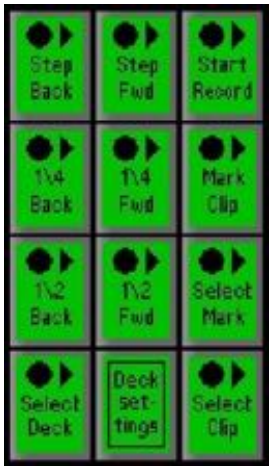
   The display will update with the words Recording Clip and the [>] motion control button will illuminate red. All ganged decks will be recording.



5. As important play/actions start, markers can be entered and named for later use.

   In the PixPad click on the **[Mark Clip]** PixButton as shown on the right.

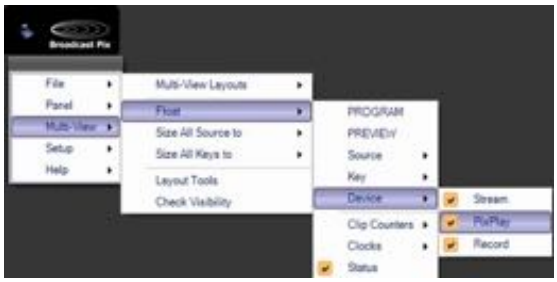
   The [Mark Clip] PixButton can be selected as many times as an important action occurs. It can also be used after a clip has been stopped and while it's being played back.



Viewing & Naming Marks:

1. If desired a graphical list of clips and marks can be viewed for easy selection and mark naming.

   Navigate to the Broadcast Pix menu and select the **Multi-View – Float – Device – PixPlay** window, as shown on the right.



2. The PixPlay window will appear listing all the clips on disk and their associated marks, as shown on the right.

   To select a clip or a mark **left-click** on the desired line and it will highlight white, as shown on the right.

   Clip names are based off the record name set in the Deck Control Settings, as described in section 7.18.6.

   Marks are numbered in parentheses, i.e. (1).

   Note as clips and marks are selected the deck will automatically jump to that location for easy viewing.



3. To name a mark **right-click** on the desired mark, and a text box pop up will appear. Enter a **custom name** and then click on the **OK** button, as shown on the right.



4. It is recommended to float the PixPlay window while recording, both as a visual indicator as well as having a quick way to enter mark names while they are fresh in mind.

   When recording the last line in the PixPlay window will highlight red and the clip timecode will be moving, as shown on the right.



5. To view clips and marks on the PixPad, select the **[Deck Ctrl]** PixButton, it will illuminate orange, as shown on the right.



6. To move a gang of decks simultanisouly select the **[Gang]** PixButton, or if just one deck is desired to be controlled select an individual **[Deck Name]** PixButton, as shown on the right.

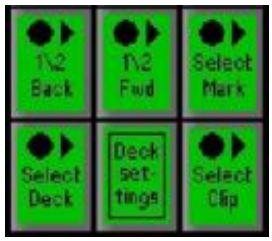


7. The first level on the PixPad shows the clips. On the Multi-View thumbnails will appear along with the clip name.

   Select the **[Control]** PixButton.



8. In the Controls PixPad, select the **[Select Mark]** PixButton, as shown on the right.



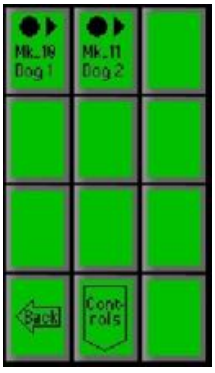
9. The list of all marks on the disk will appear in chronological order, as shown on the right.

   The Multi-View PixPad will show a thumbnail of the mark as well as the mark name in the upper left corner, as shown on the right.

   The [Back] and [Next] PixButtons can be used to navigate to the desired mark.

   Select the **[Mark Name]** PixButton.

   The deck(s) will jump to that specific mark location.





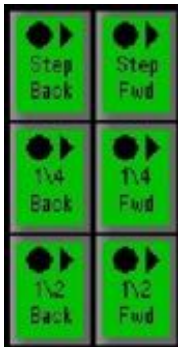
Controlling PixPlay:

1. Once a clip or a mark has been selected on an individual deck or as part of a gang, they can be control using various controls.

   Select a clip or mark as described on the previous page.

2. Use the **[Step Back]** or **[Step Fwd]** PixButtons to move the deck(s) 1 frame backwards or forwards. Each button push will move the deck frame by frame.

   These buttons are useful when wanting to pinpoint an exact play or spot in the action.



3. In addition to the [Step] PixButtons, the **[Jog]** Knob (knob 1) can be used to scrub frame by frame, as shown on the right.

   Turning to the right will scrub the deck(s) forward. Turning to the left will scrub backwards.



4. To move the deck(s) slightly faster the **[1/4 Back], [1/4 Fwd], [1/2 Back]** and **[1/2 Fwd]** PixButtons can be used.

5. In a similar fashion, the **[Shuttle]** Knob (knob 2) can be used to move deck(s) at various speeds.

   Turning to the right will go move forward and to the left will go backwards.

6. At any time the **[>]** motion control button can be used to Play the deck(s) in full motion (100%), selecting it will illuminate the button orange, as shown on the right.



7. At any time the **[<]** motion control button can be used to Play the deck(s) backwards in full motion (-100%), selecting it will illuminate the button orange, as shown on the right.



7.19 VOX Voice Automated Control

Broadcast Pix VOX allows any Broadcast Pix system to be controlled via voice control allowing your talents' voice to switch the production for a completely automated production. VOX utilizes the power of Fluent Macros to trigger virtually any component of the system from cross point switching, clip and graphic selection, to camera control. Once Macros are created they are assigned to the audio inputs and are triggered once level is activated on each input. VOX is ideal for televising Radio Stations, City Council Sessions, Medical Training, Focus Groups, Town Hall meetings, Panel Discussions and more.

7.19.1 Installing VOX

Each VOX unit has 8 line level audio inputs using an XLR/Phono jack combo connecter. Up to 13 units may be cascaded together for control of up to 104 audio inputs. VOX does not do any audio mixing or routing, it is completely separate from your main audio stream to prevent any interference. Your installation may require a Audio Distribution Amplifier (DA) or Audio Mixer with Aux sends in order for the signals to be connected to the VOX unit.

The VOX unit is a 1 Rack Unit (RU) box with integrated rack ears, for convenient installation in an equipment rack. It is connected to a Broadcast Pix system through a standard straight RS-232 serial connection using the **Bpix/Next VOX** port on the rear of the VOX Unit. Ensure that power is connected using the supplied power supply.

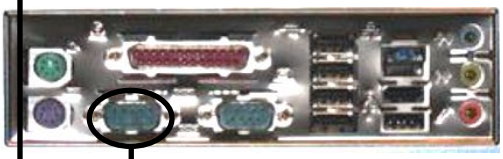
Broadcast Pix VOX - Rear



Power 6-9V

Use XLR or ¼" Phono jack cables

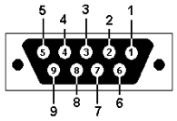
Broadcast Pix Server or other PC



Available Comm Port, either Comm 1 or 2

If using an Edgeport for more communication ports, ensure that the Port Flags are set to RS-232

RS-232 DB 9-Pin Serial Cable Pinout:



Pin	Function
2	TXD
3	RXD
5	GND

Broadcast Pix VOX - Front



Green LED

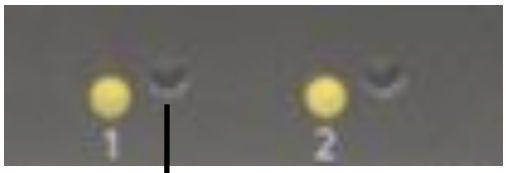
Indicates Power is Supplied

Red LEDs

Indicate that the VOX unit and BPSwitcher Application are communicating with each other, will blink at a fast rate

Yellow LEDs

Indicate that signal is present on the audio inputs



Level adjustment

Use a flat-head screwdriver to adjust audio input so LED pulsates only when someone speaks directly into microphone to reduce any background noise

7.19.2 Installing Host Override Panel

When VOX is running automatically, a user (typically the host of the program) can override the system and run a pre-defined Macro. Each VOX unit comes with an override panel which is connected to the 15 pin **GPI/panel** connecter on the rear of the VOX unit. The panel is designed to be flush-mounted to a desk or to a table top box. A custom overrode button panel may also be made and connected to the same port using the pinout listed below. There are 4 GPI buttons and 4 LEDs, which give status depending if a Marco is defined/running/paused.

Broadcast Pix VOX - Rear



DB 15-Pin Serial Cable Pinout:

Pin	Function
1	GPI 1
2	GPI 2
3	GPI 3
4	GPI 4
5	LED 1 -
6	LED 2 -
7	LED 3 -
8	LED 4 -
9	GND
10	GND
11	GND
12	LED 1 +
13	LED 2 +
14	LED 3 +
15	LED 4 +

7.19.3 Installing Multiple VOX Units

Up to 13 VOX units may be connected for a total of up to 104 cascaded audio inputs. The **Prev. VOX** 9 Pin connector is the loop output from the first VOX unit, which is then connected to the **Bpix/Next VOX** 9 Pin connector on the second unit and following units. You may continue to loop through other units in the same manor. The below diagram shows 3 units connected for a total of 24 audio inputs.

Broadcast Pix VOX 1 - Rear



Straight 9 pin cable

Broadcast Pix VOX 2 - Rear

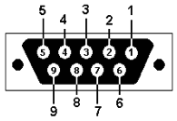


Straight 9 pin cable

Broadcast Pix VOX 3 - Rear



RS-232 DB 9-Pin Serial Cable Pinout:



Pin	Function
2	TXD
3	RXD
5	GND

7.19.4 VOX Software Editor

VOX may be installed on the same Broadcast Pix system or another remote PC. In either installation, to run the VOX unit software must be installed, which is used to configure different show setups. Each setup may have custom parameters including which Macros are used for each input and what timing is used to switch from one input to the next. The VOX software has powerful intelligence to turn a basic production into a compelling production.

When using a remote PC to run VOX, the remote PC and the Broadcast Pix system must be networked together in order for the Macros to be triggered.

Prior to configuring the VOX unit, it is important to create the Macros used for the production, as described in section 4.13. Macros may need to be refined to ensure that each switch is perfectly timed.

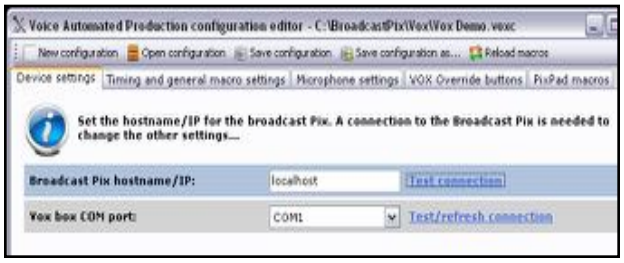
To verify communication:

1. Ensure that the BPSwitcher application is running, and that a show is loaded, as described in section 1.6.

2. Launch the VOX Editor by **double-clicking** on the desktop icon, as shown on the right.



3. The VOX Editor window will appear, select the **Device settings** tab, as shown on the right.



4. In the Broadcast Pix hostname/IP: text field, enter the **IP address** of the system. If the software is installed locally on the Broadcast Pix system, enter the word **localhost**.

5. In the VOX box COM port: drop down menu, select the connected **COM X** port, in this example COM 1.

6. To test each connection click on the **Test Connection** link, a pop up message will appear if the connection failed or is successful.

7. When successful, a Connection established pop up message will appear, click on the **OK** button, as shown on the right.



If the connection fails, ensure that both the serial cable is connected and that a show is running on the Broadcast Pix Switcher.

Once communication has been established, a series of tabs will appear at the top of the window.

To assign Macros to audio inputs:

1. Click on the **Microphone settings** tab on the top of the window.

   A list of all available mic inputs will appear, 1-8 for each VOX unit connected, as shown on the right.



   Each labeled input corresponds to the physical audio input on each VOX unit.

2. Click on the **Pick macros** button, and a pop up screen will appear.

3. In the Add a macro: drop down menu, select the desired **macro**, in this example Mic B Zoom, and click on the **Add this macro to this list** link.



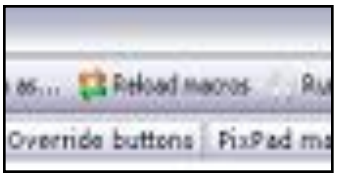
   Each input may have unlimited macros. When an input triggers an assigned macro it will randomly choose a macro from this list. To have a greater chance to run a certain macro, like a close up of the talent, simply add the macro to the list again.

4. To remove macros from the list, click on the **remove** link.



5. Once all the macros have been added to the input, click on the **OK** button, as shown on the right.

6. Repeat steps 1-4 above for the remaining inputs. Only inputs that have microphone connected should have macros assigned to them.



7. If new macros are created when the VOX Editor is opened, they will not appear in the Macros drop down list. To refresh the list and to view the current list of available macros, click on the **Reload macros** button at the top of the window, as shown on the right.

To assign a Title Macro to an input:

In addition to having macros assigned to an input, a Title Macro may optionally be assigned as well. A Title Macro is a macro that runs the first time that input is triggered, then repeated after a user defined amount of time. This macro usually is a simple graphic of the talent's name from the CG store, where it fades on stays on air for a few seconds then fades out.

1. Click on the **Microphone settings** tab at the top of the window.

2. Under the Microphone title macro drop down menu, select the desired **macro**, in this example Mic A Title, as shown on the right.



3. To unassign the title macro, click on the **clear** link.

To change the microphone priority:

When one microphone input is activated a macro is triggered, however when multiple microphones are activated at the same time, which macros are executed? To address this issue, each mic input may be set a priority from most important (1) to least important (8). Inputs with a lower number will be switched to more often than ones with a higher number. This allows for the host, for example to interject and have their macro run. The default mic priority is 1 to 8, with mic 1 having the top level of priority.

1. Click on the **Microphone settings** tab at the top of the window.

2. To the right of each input, select the **Down Arrow** button to move the mic to a lower priority, as shown on the right.

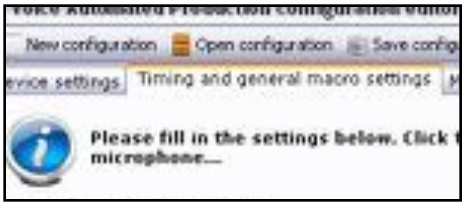
3. To the right of each input, select the **Up Arrow** button to move the mic to a higher priority.



To assign Macros as General Macros:

When microphone inputs are activated the assigned mic macros are triggered, as described in the above section. When no input is active or when an input has been active for too long, a General Macro can be triggered to give a more realistic production feeling. Usually these General Macros are 'wide shots' or 'cover shots', but they can be any macro from the system.

1. Click on the **Timing and general macro settings** tab at the top of the window, as shown on the right.



2. Under the General macro file(s): section, click on the **Pick Macros** button, as shown on the right.



3. In the Add a macro: drop down menu, select the desired **macro**, in this example Wide Shot, and click on the **Add this macro to this list** link.



There is not limit on the amount of General Macros that may be assigned, however at least 1 macro *must* be assigned.

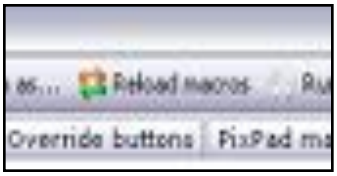
When VOX is first launched, a General Macro will be executed, throughout the production macros will randomly be triggered from this list depending on the time settings configured for the production. To have a greater chance to run a certain macro, simply add the macro to the list again.

4. To remove macros from the list, click on the **remove** link.



5. Once all the macros have been added to the input, click on the **OK** button, as shown on the right.

6 If new macros are created when the VOX Editor is opened, they will not appear in the Macros drop down list. To refresh the list and to view the current list of available macros, click on the **Reload macros** button at the top of the window, as shown on the right.



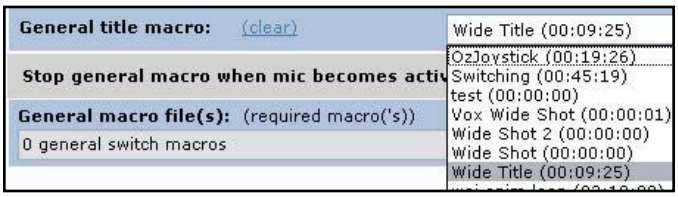
To assign a General Title Macro:

Similar to a Title Macro for a mic input, the General Macro may also have a separate Title Macro. This macro usually is a simple graphic with a locator of the event/ production, call in telephone number or date of the event.

1. Click on the **Timing and general macro settings** tab at the top of the window.

2. Under the General title macro: drop down menu, select the desired **macro**, in this example Wide Title, as shown on the right.

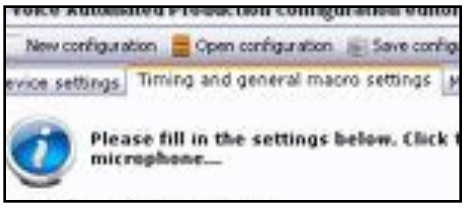
3. To unassigned the general title macro, click on the **clear** link.



To adjust the timing settings of when a Macro is triggered:

What makes VOX run smoothly, as if a real person was operating the system, is the numerous settings to adjust when the assigned Macros, as described above, are triggered. There are settings for when the mic and general titles are repeated, as well settings for how frequent the various Macros are triggered. Adjusting these settings will set the pace or tempo of the production. For quick switches, for a radio broadcast, the timing will be short, for slower productions, like for a government meeting the timing will be longer. Note that no matter what the time settings are set to, each assigned macro must completely finish running prior to switching to another macro. It is important that every macro has been carefully created and varied to ensure proper timing.

1. Click on the **Timing and general macro settings** tab at the top of the window, as shown on the right.



2. Under the Microphone timing settings: section, enter the minutes and/or seconds for when the title macro for the mics are repeated in the **Time to run the mic title macro again** text box, as shown on the right.



3. Under the Microphone timing settings: section, enter the minutes and/or seconds for when the macros for the mics are executed.

   The **Minimum time for a mic macro**, as shown on the right, is how long a source stays on air after another mic input is activated. This setting is the shortest amount of time (after the macro finishes playing) that a source stays on air. If macros are not being executed fast enough when an input interrupts another input, then this setting is too high.



   The **Maximum time for a mic macro**, as shown on the right, is how long a source stays on air when there is no other mic activation and one mic continues to speak for a longer period of time. This setting is the longest amount of time (after the macro finishes playing) that a source stays on air. After the specified time another mic or general macro is randomly triggered. If switching is not happening fast enough, then this setting is too high.



   The difference of 1 or 2 seconds in either direction can impact the pacing of the production, it is important to test these settings with the VOX unit once configuration is complete.

4. Repeats steps 1-3 above for adjusting the timing for the General Macros, as shown on the right.



   Since the General Macros are usually wide shots, these numbers may be slightly longer than the microphone macros.

5. When multiple Macros are assigned to an input, there is an option to not play the same Macro back to back. This option allows for unique Macros to be triggered with every switch giving a more natural look to the production, and not one from an automated system.

   Under the Addition settings: section, place a checkmark next to **Never play the same macro back to back,** as shown on the right.



6. When multiple Macros are assigned to an input, there is an option to switch after the defined minimum time. This option adds a more dynamic and lively look to the production.

   Under the Addition settings: section, place a checkmark next to **Switch through mic macros after minimum time,** as shown on the right.



   Note: if a Macro is using Camera Control to move cameras, having this option checked may show on-air camera moves, if the Macro is not written correctly. To avoid on-air moves, ensure that the Macro first switches to a known good/static source, then move the camera and finally switch to the camera input.

7. To prevent accidental switches when a cough or short response is spoken there are advanced timing settings that filter out the short answers. These settings can be modified under the **Advanced timing settings** section. It is recommended to use the default settings.

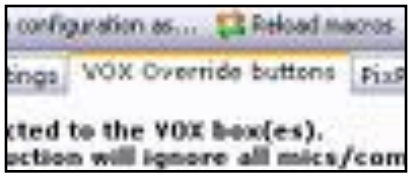


To assign Override Macros:

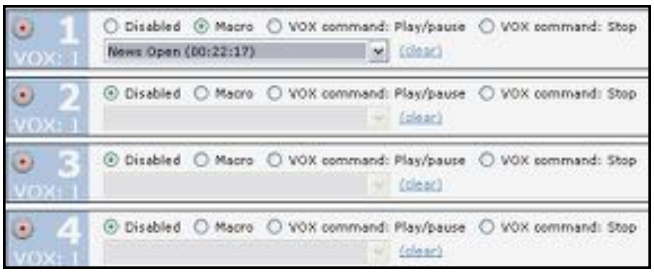
In some installations it may be necessary or handy for the presenter/host to trigger other 'special' Macros manually. This is ideal for running a show open/bumper, going to a commercial break/recess page or for disabling/enabling the automation to take over manual control. There are 4 General Purpose Inputs (GPIs) per VOX unit that are connected through a 15-pin connector, a basic Host Override panel is also provided, but a custom box may also be used.

The LEDs also provide feedback for the panel. When no LED is illuminated then no Macro has been assigned to that GPI button. When the LED is illuminated solid red then a Macro has been assigned. When the LED is flashing slowly, the GPI has been triggered and it is waiting for the previous Macro to end before the new Macro will start. If the LED is flashing quickly then the GPI button has been selected and the assigned Macro is running.

1. Click on the **VOX Override buttons** tab at the top of the window, as shown on the right.



2. For each GPI you may select one of the following 4 radio buttons, as shown on the right.



Disabled: Which assigns no Macro to the button

Macro: Which allows for one Macro to be assigned to the button. Use the drop down menu to select the desired Macro.

Play/Pause: Which is a toggle to momentary pause the VOX automation, then after another push on the same button to continue with the automation. It may also be used as a Start command to re-launch the automata if the VOX has been turned off

Stop: Which completely stops the VOX automation

To assign PixPad Macros:

Similar to the host override buttons, up to 9 more Macros may be assigned to the VOX device control PixPad. This allows for more override for either the host or possibly the audio engineer/technician controlling the audio mix to select pre-defined Macros. This allow for a basic operator to take control at certain points of the production. These Macros can then be selected on a control panel, Multi-View PixPad or the iPixPanel application on the iPad.

1. Click on the **PixPad macros** tab at the top of the window, as shown on the right.



2. For each PixPad button, 1-9, click on either the **Disabled** radio button to have no Macro assigned
or
Macro to assign a Macro.

3. Use the drop down menu radio button to select the desired Macro, as shown on the right.



To save the configuration:

Once all the Macros have been assigned and all the timing settings have been adjusted to accommodate the type of production, the setup needs to be saved. This allows for multiple set ups to be loaded to the VOX system, similar to the Broadcast Pix Show, allowing for custom Macros and timing for each show you produce.

1. Click on the **Save configuration…** tab at the top of the window, as shown on the right.



2. A Windows Save As window will appear, enter a **name** in the File name text box, in this example 'Town Meeting'.

   it is recommended to save these files in one common folder, i.e. C:BroadcastPix\Vox



3. Click on the **Save** button.
   A .voxc file will be created, in the specified location path.

4. Once a configuration file has been created, the **Save configuration** button at the top of the window can now be used to override the setup.

5. To save a new configuration file, repeat steps 1-3 above.

6. To start with a blank configuration, click on the **New configuration** button, as shown on the right.



7. To open a configuration file to modify it, click on the **Open configuration** button at the top of the window, and a Windows open window will appear. Navigate to the specified location path and click on the **OK** button.

7.19.5 Running VOX

For the VOX unit to be actively listening on each input and for it to trigger Macros the VOX Voice Automated Production software must be running.

To run Voice Automated Production:

1. Ensure that the BPSwitcher application is running, and that a show is loaded, as described in section 1.6.

2. Launch the Voice Automated Production software by **double-clicking** on the desktop icon, as shown on the right.



   This software may also be launched from the VOX Editor. On the top window of the VOX Editor, click on the **Run configuration** button, as shown on the right.



3. A window with all the available inputs will appear. The last opened configuration will be loaded, to open a configuration click on the **Browse** link and navigate to the desired location.



4. The Current state status bar will be red, indicating that the VOX automation is not enabled and not running, as shown on the right.

   On the bottom edge there are 2 status indicators, one for the VOX unit being connected and the other for having a connection with the Broadcast Pix software, both need to be in the green state, as shown on the right, for VOX to operate.



5. Click on the **Play** button to start the VOX automation, as shown on the right.



6. The Current state status will turn green indicating that VOX is listening for actions.



By now a General Macro followed by its corresponding General Title Macro should be running. Every time VOX is started for the first time, a General Macro is triggered.

7. As inputs start to receive audio levels, the front LEDs of the VOX unit will illuminate to represent that a signal is active, those LEDs are also visible in the VOX software under the Active row, as shown with input 1 on the right.



A Mic Macro should now be running, followed by its corresponding Title Macro.

As other inputs receive signal their Macros will be triggered.

8. If for some reason an input needs to be muted so that no Macros from that input are triggered, click on the yellow **Enabled** button to disable that input, for example input 4 is not enabled and no Macros will be triggered.



9. To pause the automation, click on the middle **Pause** button, as shown on the right, and it will turn grey.



If the Pause command from the override panels were trigged, then this button would also turn grey.

10. To resume the automaton, click on the **Play** button, as shown on the right, and it will turn grey, re-enabling the Pause button option.



VOX will continue with the automation where it left off.

11. To stop/cancel the automation, click on the **Stop** button, as shown on the right.



If VOX is restarted, then all the timing is reset and VOX starts from the beginning with a General Macro and its Title Macro.

7.19.6 Adding VOX Control to a Show

Once installation is complete, you can add the device to a show using one of the four wildcard devices on the switcher.

1. In BPswitcher, load the show to which you want to add camera control. Select the **File**, **Load Show.**

2. Open PixMaster by selecting **File, Edit Show.**

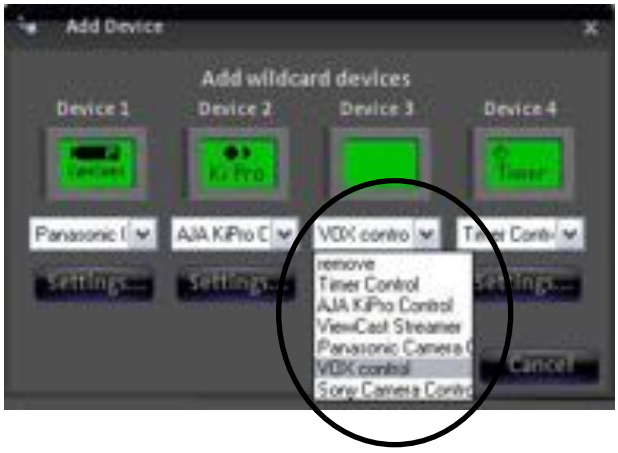
3. Click on **Edit Show Settings** and the Edit Show Settings window will open.

4. Click on **More Devices** and the More Devices window will open, as shown below.

5. Select the desired **wildcard device button** to which you want to add camera control and a drop down menu will appear.

6. Click on **VOX Control**, and it will appear on the PixButton, as shown below.

7. Click on **OK**, to apply the VOX Control the show, then **Close** in the Edit Show Settings window and **Save Show** to apply all the settings.



7.19.7 Selecting VOX Control in a Production

To assign the device controls to VOX Control:

Press the **[VOX]** wildcard [Device Selection] PixButton and it will illuminate orange and the following device controls will be appear.

VOX Control device controls:



PixPad
To select which Macro to run
and to Start/Stop/Pause
automation

Pressing the [VOX Macro 1-9] PixButtons will trigger the assigned Macro from the VOX editor, as soon as a Mic or General Macro finishes. This adds another point of control for the Host/Presenter or Audio technician to override or assist the automated production.

Pressing the [Start VOX] PixButton will start/resume the VOX automation.
Pressing the [Pause VOX] PixButton will pause the automation at the current start.
Pressing the [Stop VOX] PixButton will stop the automation process.

7.20 Router Control

As an option any Broadcast Pix switcher can also provide control of the full line of AJA KUMO SDI video routers, such as the 1604, 1616 and 3232, over a TCP/IP connection. This feature is designed to integrate with house video routers to expand the amount of inputs and outputs the system has access to. One video router is designed to attach to one Broadcast Pix system. Any or all of the inputs and outputs can be used from the router. Control can be through a control panel, the Multi-View or through a Macro.

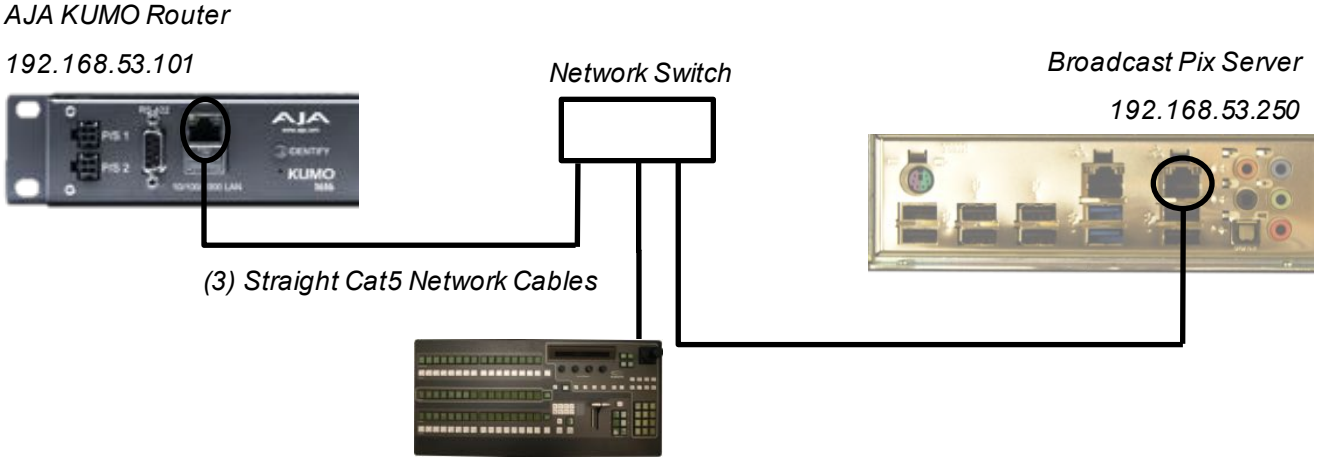
Router outputs/destinations feed into Broadcast Pix inputs and the control allows the attached Broadcast Pix input to be switched to any input available on the router, in addition labels assigned to sources also can be viewed on the Multi-View as under monitor displays. Router Control requires a System Option Code, see section A.2 for more information. For more information on how to configure and operate the KUMO router please refer to their manual.

7.20.1 Installing Router Control

Control is through individual Cat5 – TCP/IP connections to each device.
The control can either be connected to the Broadcast Pix Control network card (with the Server and panel) using a network hub or on the secondary network card with your 'house' network.

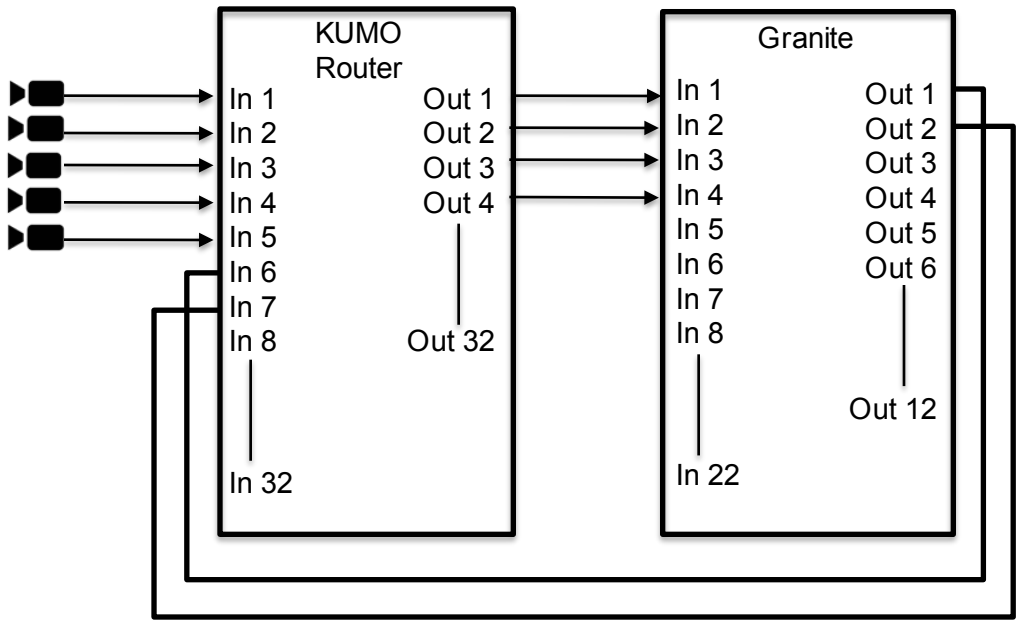
If connecting to the Broadcast Pix Control (NIC 2 on the Server as shown below), the 192.168.53.XXX subnet must be used. If using the other NIC card, it may be configured with custom network settings.

To configure the router with a valid IP address you may use the Broadcast Pix Server to find the IP address using UPnP service in Windows and double-clicking the KUMO in the Network Device list. Please refer to the KUMO manual on how to change the default Static IP address.



Sample wiring diagram:

Not all outputs from the router need to feed into the Broadcast Pix and not all or even any outputs of the Broadcast Pix need to feed back into the router. The installation can be completely customized to fit the production needs. Some sources may feed the Broadcast Pix directly without the need to going into the router, if desired. At least one output from the router needs to feed into a Broadcast Pix input.



7.20.2 Router Control Setup

1. In BPswitcher go to the **Setup** menu and select **Granite IO Assignments…,** as shown on the right.



2. Click on the **Input Assignments** button.

3. In the Input Assignments window, click on the **Router Setup…** button, as shown on the right.



4. A pop-up window will appear, in the **IP Address** text box, enter the IP address of the KUMO router, this example will use 192.158.53.101, as shown on the right.



   If a valid IP address is present, the text box will be white, otherwise it will highlight in red, and the IP address has to be adjusted.

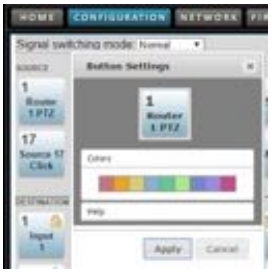
5. Click on the **Open Web Page** button to open the KUMO control webpage, as shown on the right.



6. Here you may control the KUMO router using the Home tab and label inputs and outputs. Click on the **Configuration** tab.

7. To label an input, click on the **source** button and a pop-up window will appear, as shown on the right.

8. Click on the name and type the a custom name on the button and click on the **Apply** button. These names can be carried over to the Broadcast Pix Multi-View if desired.



   Repeat this step for all attached inputs.

9. Close the web browser by clicking on the **x** on the top right of the page.

10. In the Router Setup window, place a check mark next to **Use Router Names.** The custom names just applied on the router webpage will now be applied to the bottom label on the Multi-View and source PixButtons.



11. Click on the **OK** button to close the Router Setup window.

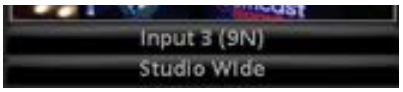
12. In the Input Assignments window, select the **Router Output** drop down menu for the specific Broadcast Pix inputs that have a router outputs attached to it.



Select the router output number 1-32, as shown on the right.

Each router output must use a unique number. Any locked outputs on the router will appear red, not allowing you to change the routed source input.

The bottom name on each source monitor represents the assigned Router Input/Source Name or the Broadcast Pix Label. This name can be updated from the Multi-View or Input Assignments window and will automatically update on the Router. The top name represents the Router Output/Destination name and is automatically feed from the Broadcast Pix to the Router.



13. If desired a startup assignment may be set for each router output, under the **Default Source** drop down menu select the desired router input source to be used for when the application first opens.

14. Click on the **OK** button to save the changes, as shown on the right.



15. In the IO Assignments window, click on the **OK** button to close the window.

7.20.3 Router Control Panel Operation

1. Ensure that the Macros row selector is set to display names by selecting the **[Names/Macros]** PixButton until the source names are displayed, as shown on the right.



2. Select the desired **[Source]** PixButton in the Macros row, it will illuminate orange, as shown on the right.

   Any attached router source will use the router icon automatically.



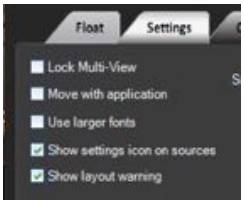
3. The PixPad will update showing all the router inputs, select the desired **[Router Source]** PixButton, as shown on the right. To access higher numbered sources click on the **[Next]** PixButton



4. To select a router source by number, select the **[Control]** PixButton, then the **[Number]** PixButton and enter the desired router input number and select the **[Enter]** PixButton.

7.20.4 Router Control Multi-View Operation

1. Ensure that the gear icon is visible by navigating to **Multi-View, Multi-View Settings, Layout Tools…** menu.



2. In the Layout Tools menu select the **Settings** tab and place a checkmark next to **Show settings icon on sources**, as shown on the right.

3. Now each source monitor on the Multi-View will have a gear icon on the top right corner. Click on the **gear** icon, as shown on the right..



4. The Multi-View PixPad will update showing all the router inputs, select the desired **[Router Source]** PixButton, as shown on the right. To access higher numbered sources click on the **[Next]** PixButton.

5. To select a router source by number, select the **[Control]** PixButton, then the **[Number]** PixButton and enter the desired router input number and select the **[Enter]** PixButton.



Section 8:
Multi-User Operation

While the Broadcast Pix Switcher provides unprecedented control for a single operator, it can be expanded to multi-person operation. Several types of two person operation are covered in this section of the manual:

A Separate Graphics Operator for the CG
Two Panels for Back-Up Redundancy
Two Panels for Two Show Creators
Adding a Remote Panel on-site
Adding a Remote Panel over the Internet
Large Teams with many panels

8.1 Optional Multi-Panel Support

Standard equipment for a Broadcast Pix Switcher includes both a control panel and a SoftPanel. Either can be used to control the show. For example, if the control panel is the one primarily used, and should fail and lose its network connection, then the SoftPanel can be used (or visa versa). Only 1 panel can be used at a time unless optional additional panel-licenses are purchased to support simultaneous multi-panel operation. Each system has 4 Panel Licenses standard, which allow you to run physical control panels, SoftPanels, iPixPads on iPhones/ iPod Touches and/or iPixPanels on iPads.

To see how many panels your system is licensed for, in BPswitcher, click-on the **Help** drop down menu and select **About**, and the About Window will appear.
In this example there are 4 licensed panels.



To see how many panels are connected to your system, the Multi-View status bar shows you how many panels are currently connected, as shown below.



8.2 Opening a SoftPanel

A SoftPanel is a virtual control panel, that can be used in conjunction or in place of the physical control panel. It is displayed on any VGA/DVI monitor output and be resized and zoomed to fit any size screen.

To access a 1ME SoftPanel:



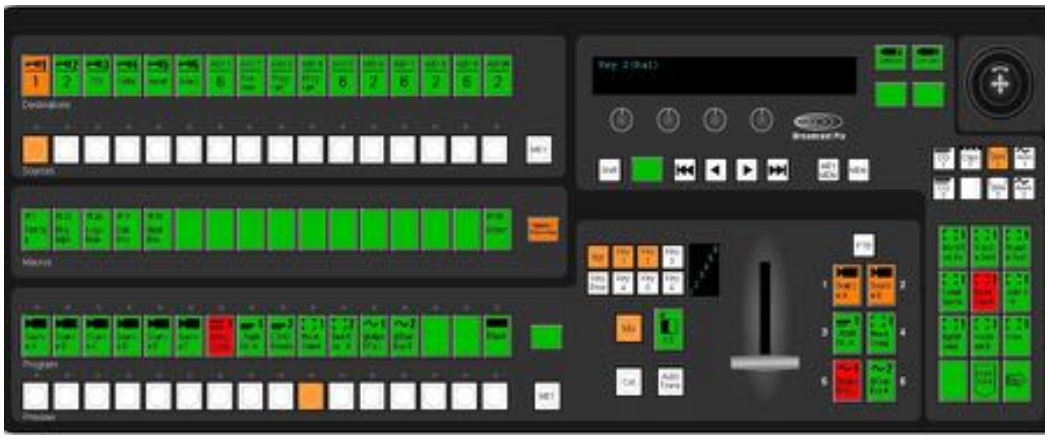
1. In BPswitcher, click on the **Panel** drop down menu.

2. Select **1ME Soft Panel.**

3. In the drop down menu that appears, select either **Internet Explorer** or **Flash,** as shown on the right.

   The 1ME SoftPanel will appear, and your panel indicator will increase by one.

4. The 100 Mini-Panel, 100 Display and 100 PixPad also can be floated, they too will use up 1 panel license each.



NOTE: There is no difference between the Internet Explorer and Flash SoftPanels, either may be used.

8.3 Locking Panels Together

The control panels can either be linked or locked together or unlocked, depending on your needs. The default state of this setting in not checked (unlocked).

Locked: Locks together everything on all panels, so that they will be at identical states at all times. For example, if you press on any button on the control panel, it will now change on all SoftPanels.

Unlocked: The panel's device controls on each panel can be set to different devices, and operated independently, while the fixed switcher control are still locked together. For example, it may be desirable for the graphics person to always be able control the CG, no matter what device the Show Creator happens to be using.

To lock the the panels together:

1. In BPswitcher, click-on the **Panel** drop down menu.

2. Select the **Panel Settings** option.

3. Click on **Locked Panels** and a check mark will appear as shown below.



4. To return to an unlocked state, click on **Locked Panels** again on the same menu.

NOTE: On the above menu, if you select Force Disconnect under Panel settings, a window will appear which shows each of the panels' IP address that are currently connected. You can then select one and force it to disconnect.

8.4 Viewing just a portion of the SoftPanel

You can make a SoftPanel larger or smaller by enlarging or shrinking its window as you would for any Window. In two person operation it is often desirable to shrink not just the overall size of the SoftPanel, but to also reduce the portion of the SoftPanel shown, for two reasons:

1. Space: To conserve real-estate on the VGA monitor. For example, this allows the graphics operator to have the necessary portion of the SoftPanel displayed at all times, without taking too much room away from the Inscriber GUI.

2. Authorization: To avoid the second operator pressing a button on the SoftPanel which the control panel operator may not want them to have access to. For example, if the program and preview sources are not shown on the graphic operators monitor, then they can not be inadvertently pressed in the middle of a live show.

To display just a portion of the SoftPanel:

1. **Position the cursor** in the middle of the area of the SoftPanel you wish to keep.
   For example, you may want just the PixPad, or the PixPad and the Key PixButtons below it.

2. **Right-click**, and the following drop down menu will appear



3. Click-on **Zoom-In**, and then just a portion of the panel will be shown.

The resulting portion of the SoftPanel can then be sized and positioned like any other window. (To return to the full panel, right-click and click-on Show All)

8.5 Adding a Separate Graphics Operator

In some live productions, it may be desirable to have two operators, one for graphics and one for everything else. This may be desirable if graphics are changing during a show such as for a sporting event, or if the show is so complex that the primary operator wants help.

8.5.1 Two Operators with Separate Graphics Operator and 1 Panel

To enable this environment, a second monitor should be added (all Granite systems support two monitors). Then the Multi-View can be displayed on the monitor for the Show Creator and the Inscriber GUI can be displayed on a separate the monitor for the Graphics Operator, as shown below.



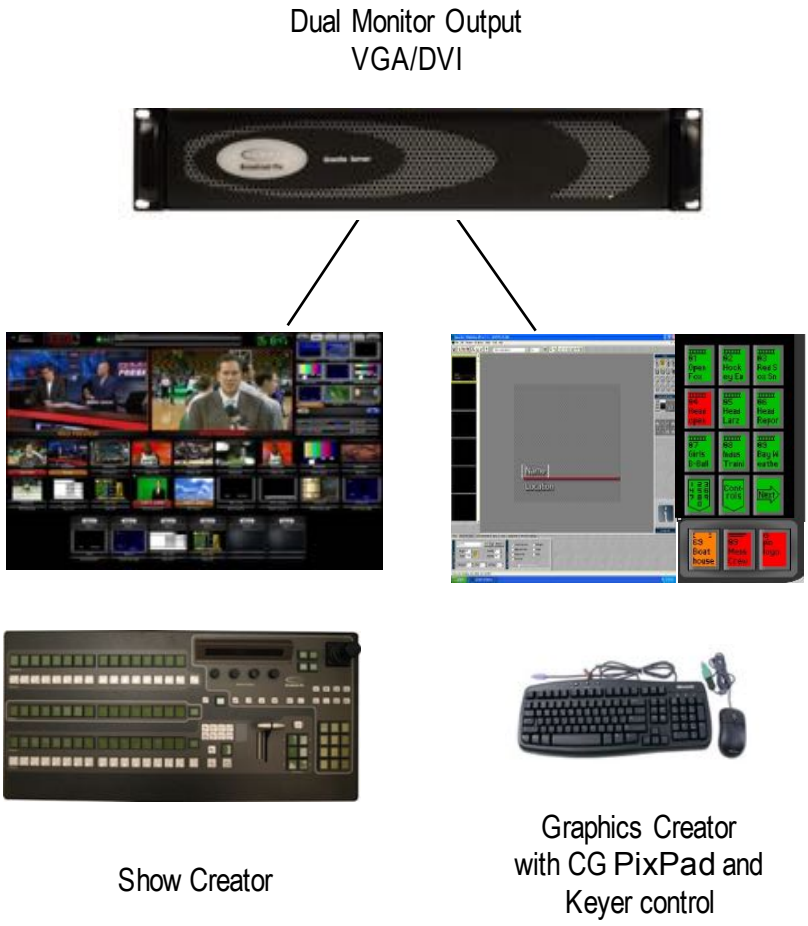
NOTE: Only one keyboard and one mouse can be connected to the workstation at any given time.

8.5.2 Two Operators with Separate Graphics Operator and 2 Panels

If you increase the number of simultaneous panels supported, see section 8.2, then the graphics operator can view a window containing all or a portion of the Broadcast Pix SoftPanel. This enables the graphics person to view exactly what the state of the panel is on the show creator's system. The graphics operator can use the portion of the control panel they see to perform functions normally done by the Show Creator, including selecting the next title to be taken to air, or taking them to air.

The two control panels can either be "locked" together or unlocked, see section 8.3.

If the graphics person does not wish to display the entire SoftPanel, they can just display a portion of it, as illustrated below, see section 8.4.



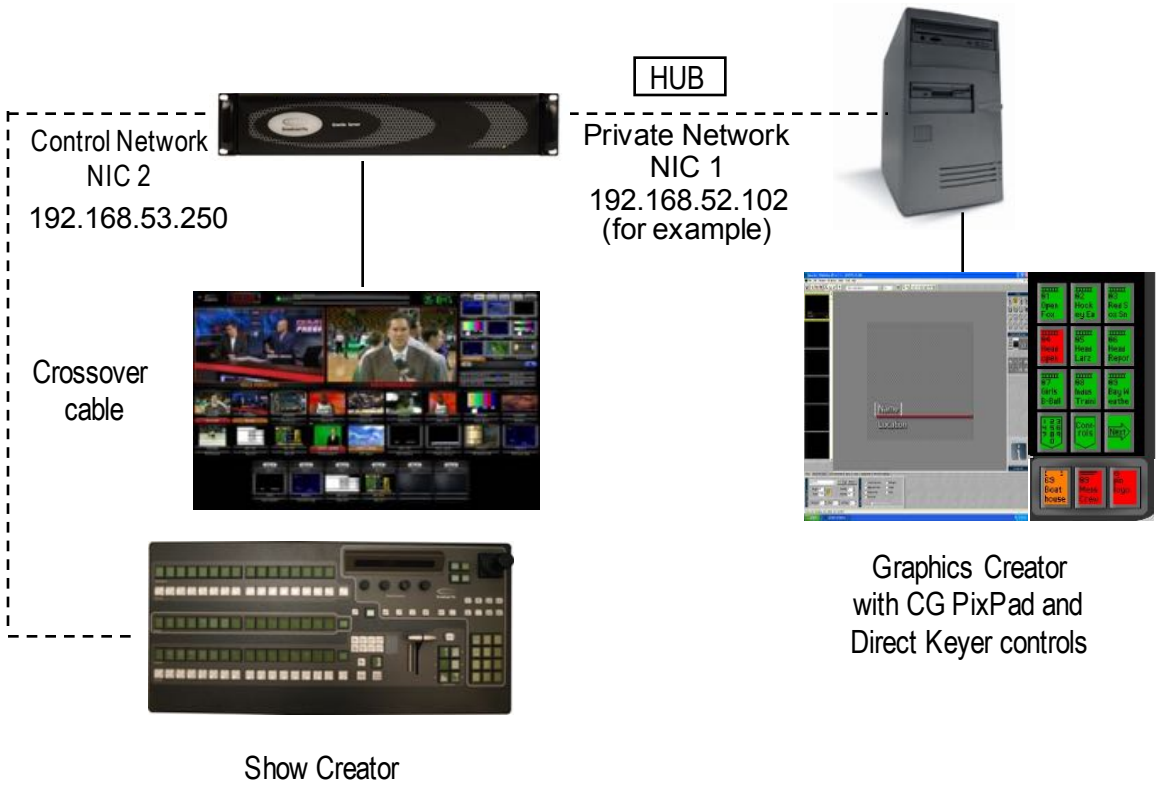
8.6 Two Operators with Two Computers

In some productions it may be desirable to have the graphics person using a different computer than the host PC. This reduces the workload on the host PC, and also provides a wider variety of physical studio layouts. For example, this configuration might look like the following illustration. In this environment the graphics operator has their own computer. To implement this two computer system:

1. Network the two computers together using an additional network hub, which keeps the graphics network traffic from interfering with the control network traffic on the private hub that comes with the system. You will need to set a static IP address to each computer. Do not use the same IP address as the one used for the control network (192.168.53.250) as this will cause performance issues. Go to Control Panel, Network Connections to change the IP address of the network card. NIC 2 is for the Control Network for Broadcast Pix (this is located next to the USB ports) and NIC 1 is used for your local private network (this is located next to the graphics card).

2. Activate Windows file sharing, and share the folders C:graphics and D:clips

3. An additional Inscriber license will be necessary, which can be installed on any Windows PC. Load the Inscriber software on it and select Stand Alone when prompted by Inscriber during the install.



4. On the second graphics computer open a web browser, like Internet Explorer.

5. In the address bar, enter the address of the first NIC card. For the above example, enter **192.168.52.102/softpanel2000.html** This will open a 1ME SoftPanel.

6. Click on **return** on the keyboard to launch the SoftPanel in the web browser.

7. If at any time the SoftPanel loses connection to the main workstation, the words **Reconnect** will appear in the upper right hand corner of the SoftPanel. When the main workstation is back up and connected to a show, clicking on Reconnect will join the show.



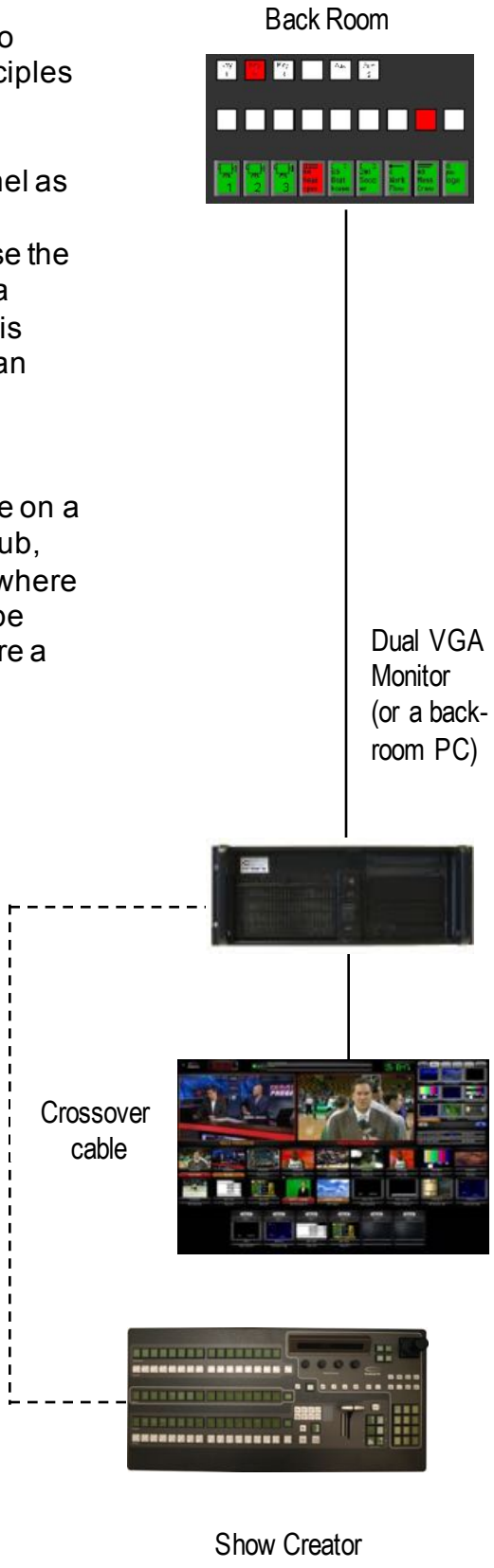
NOTE: There is a maximum of 10 users that may connect and view the Broadcast Pix system at one given time.

8.7 Remote Operator in the Back Room

In section 8.5, two panel operation was described to accommodate a graphics operator. The same principles apply for any second operator.

For example, it may be desirable to have a SoftPanel as a remote-aux-panel that can be accessed by an engineer in the back room. As illustrated below, use the SoftPanel option and dual monitor option to attach a second SoftPanel for the back room operator. In this illustration this SoftPanel has been reduced to just an aux panel, see section 8.4 for how to reduce a SoftPanel.

As an alternative, the back-room SoftPanel could be on a separate computer, and plugged into the network hub, see section 8.6. This provides greater flexibility to where the back room SoftPanel can be located, as it can be anywhere on the network, and is not limited to where a VGA monitor cable can easily run to.



8.8 Dual Panels for Back-Up Redundancy

The proceeding parts of Section 8, discusses using two panels for two operators. Two panels may also be used by one operator for redundancy/backup.

Physical Control Panel and SoftPanels

This capability is standard with every Broadcast Pix Switcher system. If the control panel should fail, then press **Reconnect** on the SoftPanel's web browser to connect it. If you wish it to be always available, you need an optional additional panel license, see section 8.1. All Granite 2000 models come with 4 panel licenses. If one panel should fail, the other one may be used without any interruption.

Dual Physical Control Panels

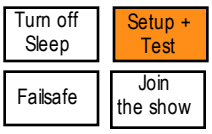
An optional second control panel may be added to any Granite system. The second control panel needs to have a different IP address than the main control panel. This is accomplished with changing the Panel IP address on the control panel, in the Panel Setup & Test mode, while the panel is off line.

The default IP address of a 2000 1ME panel is: 192.168.53.247
The default IP address of a 1000 1ME panel is: 192.168.53.251
The default IP address of a 2ME panel is: 192.168.53.252

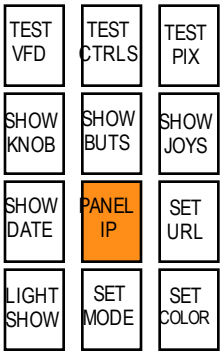
To change the Panel IP address:

1. Make sure the control is if **Offline**, by closing the BPswitcher application.

2. The 4 wildcard device buttons in the Device Control will illuminate, select the **[Setup + Test]** button and it will illuminate orange, as shown to the right.



3. The PixPad in the Device Control will illuminate, as shown below, select the **[Panel IP]** PixButton. The PixPad will change to a numeric PixPad.



4. In the numeric PixPad, **enter** the IP address of **192.162.52.246** (or any other address not in use in the subnet.)

5. When complete, select the **[|<<]** motion button in the Device Control. This will save the new IP address to the control panel and change the PixPad back to the main Setup + Test menu. The panel is now using a new IP address and is ready to use in conjunction with another panel.

Redundant Control Panel and SoftPanel



Redundant 1ME Control Panels

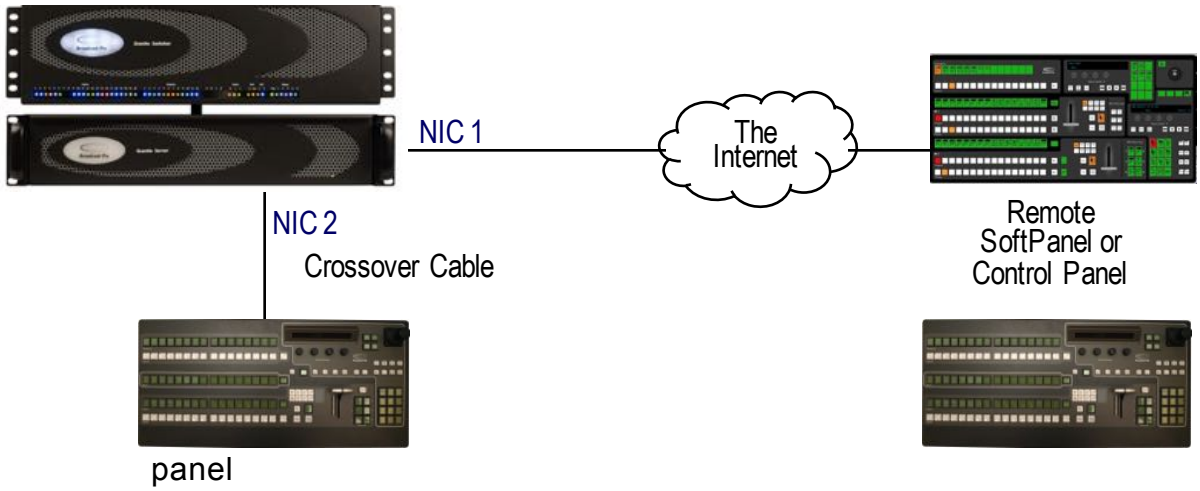


2ME Control Panel & 1ME Control Panel



8.9 Remote Control from a Distance

The Broadcast Pix system may be remotely controlled over the Internet. Remote control is done through the system's second Ethernet port, NIC 1.



To configure remote control a system:

1. Attach the remote panel to NIC1 on the Broadcast Pix Server, which is the 1 GB Ethernet port, via an appropriate Internet connection (DSL is fine).

2. In BPswitcher, select the **Setup** menu.

3. Then select **System Settings…**



4. In the System Settings window, click on the **Other** tab.

5. The Switcher Server Port is the network port used to control the system remotely and the port where Physical Control Panels connect to. This port should never be changed. For more information contact Technical Support. The default is 9999.



6. The Web Server Port is the network port used for SoftPanels, iPixPanels and iPixPads to connect to the system. This port may be changed to accommodate other network ports and devices. The default is 80.

7. After you have entered the proper port numbers, click on the **OK** button to save your changes.

8. For outside users to gain access to the Server, the Internet Router in your network must be configured to forward both the Switcher Server Port (9999) and the Web Server Port (80), as specified above. Refer to your users manual of the router for more information.

9. Once both ports are configured to be forwarded, the Broadcast Pix Server must be set to communicate on that Web Server port.

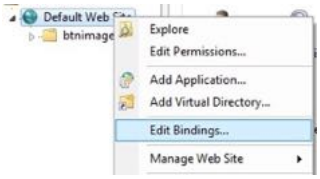
   Click on the **Start** menu of Windows, **right-click** on **My Computer** and select **Manage** in the pop-up menu, as shown on the right.



10. In the Computer Management window, double-click **Services and Applications**, then double-click **Internet Information Services (IIS) Manager,** as shown on the right.



11. Now **right-click** on Default Web Site, and select **Edit Bindings,** as shown on the right.



12. In the Site Bindings window select the Port 80 binding and click on the **Edit** button.

13. In the Edit Site Binding window, enter the new port on the **Port** text field, as shown on the right.

14. Click on the **OK** button to apply the settings and click on the **Close** button in the Site Binding window to close the window.



15. Click on the **Red X** to close the Computer Management window.

NOTE: It is important to consult Broadcast Pix Technical Support prior to changing the Server Ports. Improper setup will cause BPswitcher to not operate correctly.

To control a remote system with a SoftPanel:

1. Open a web browser, like Internet Explorer, on a remote computer, as described in section 8.6.

2. In the address bar, enter the external IP address of the remote Broadcast Pix system. In most causes this is not the assigned IP address on the workstation NIC card. If the external IP address is not known, on the Broadcast Pix workstation go to www.whatsmyip.com.

   Your IP address will be displayed in the web browser, for example 67.152.12.226.

   Enter that IP address followed by the Web Server Port number assigned, for example:



   http://67.152.12.226:26000/softpanel2000.html
   It is important to add the colon : between the IP address and Web Server Port.
   This will open a 1ME SoftPanel.

6. Click on **return** on the keyboard to launch the SoftPanel in the web browser.

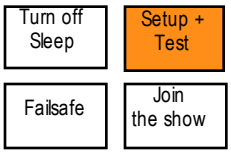
7. If at any time the SoftPanel loses connection to the main workstation, the words **Reconnect** will appear in the upper right hand corner of the SoftPanel. When the main workstation is back up and connected to a show, clicking on Reconnect will join the show.



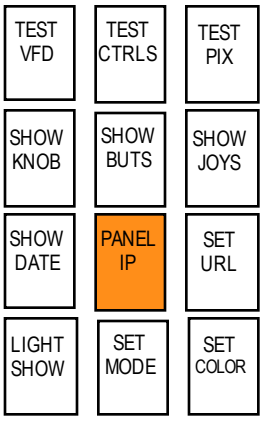
To control a remote system with a Control Panel:

1. Make sure the control is if **Offline**, by closing the BPswitcher application.

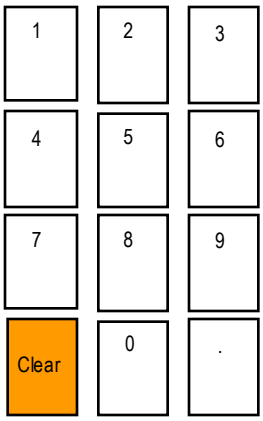
2. The 4 wildcard device buttons in the Device Control will illuminate, select the **[Setup + Test]** button and it will illuminate orange, as shown on the right.

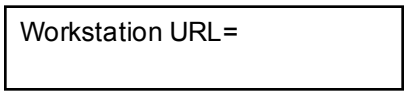


3. The PixPad will illuminate, select the **[Panel IP]** PixButton, as shown on the right.
The PixPad will change to a numeric PixPad.



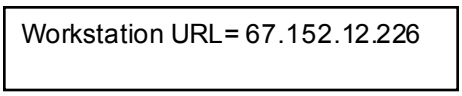
4. Select the **[Clear]** PixButton 14 times, to clear the existing IP address. The display will update accordingly until 'Workstation URL=' is left, as shown on the right.





5. **Enter** the External IP address of the remote Broadcast Pix system, using the numeric PixButtons ensuring that the period . is used.

The above example would be
[6] [7] [.] [1] [5][2] [.] [1] [2] [.] [2] [2] [6]



6. Press the back **[|<<]** motion control button to save the new IP address and the display will update.



Using new URL for Workstation

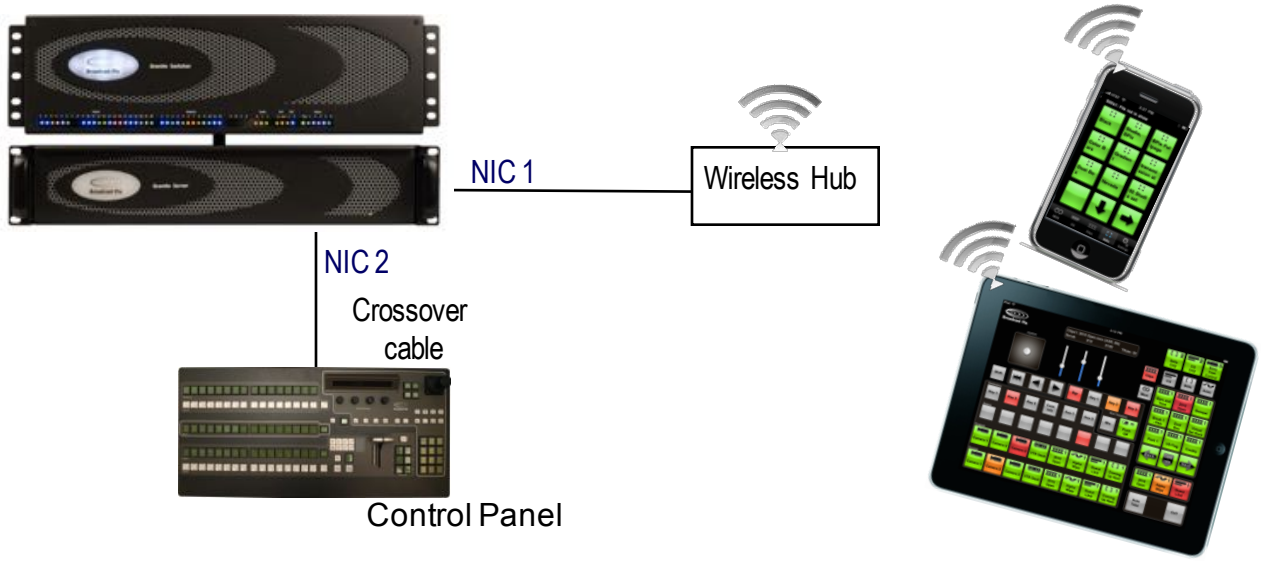
7. If multiple panels are connected ensure that the Panel IP addresses are different, as described in section 8.8.

8.10 Remote Control from an iPhone/iPod/iPad

In addition to controlling a Broadcast Pix system remotely through SoftPanels and additional control panels, an Apple iPhone, iPod Touch and/or iPad may be used. All three devices connect to the Broadcast Pix Server using a wireless connection and each use a panel license. Refer to your wireless hub/router for proper installation.

The iPixPad replicates a Broadcast Pix PixPad with access to Mems, CG 1, Stills 1, and Clips 1 and runs on the iPhone or iPod Touch. The iPixPad is a free download from the Apple Application Store, which can be accessed at http://itunes.apple.com/us/app/ipixpad/id333188743?mt=8

The iPixPanel replicates a Broadcast Pix 1ME control panel with full access to cross points, device controls and PixPad and runs on the iPad. The iPixPanel is a $9.99 download from the Apple Application Store, which can be accessed at http://itunes.apple.com/us/app/ipixpanel/id370845719?mt=8



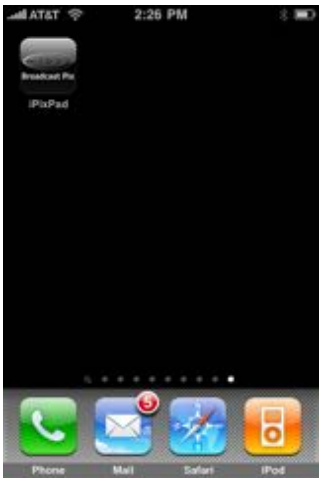
To configure the iPixPad app:

1. Download and install the iPixPad at from the Apple iTunes Application store.

2. Find the IP address of the NIC 1, wireless Connection by navigating to the Network Connections window and double-clicking **Local Area Connection**, as shown on the right. In this case 10.0.0.51.



3. Launch the iPixPad application on the Apple iPhone or iPod Touch by clicking the Broadcast Pix logo on the home screen, as shown on the right.



4. The Broadcast Pix splash screen will appear. **Enter** the IP address of the Broadcast Pix system In the IP Address text box, in this case 10.0.0.51. Click the Done button on the virtual keyboard.

   If the application connects you will receive a 'Successfully Connected' message.

   If no wireless network can be found a message 'Cannot Connect to the Broadcast Pix Studio' will appear. Go to the wireless network settings on the iPhone/iPod to configure the network.



5. The bottom toolbar holds all your available devices: MEMs (for SnapShot and Macro Memories), CG (for CG Channel 1), Clips (for Clips channel 1), Stills (for Stills Channel 1) and Settings to enter the IP address. **Select** the desired device, and a PixPad will appear. Operation is similar to the PixPad on the control panel.

   The top of the iPixPad replicates the display on the control panel.

   There is no access to the second channel of device on the iPixPad.



To configure the iPixPanel app:

1. Download and install the iPixPanel at from the Apple iTunes Application store.



2. Find the IP address of the NIC 1, wireless Connection by navigating to the Network Connections window and double-clicking **Local Area Connection**, as shown on the right. In this case 10.0.0.51.

3. Launch the iPixPanel application on the Apple iPad by clicking the Broadcast Pix logo on the home screen.

4. The Broadcast Pix splash screen will appear. **Enter** the IP address of the Broadcast Pix system In the IP Address text box, in this case 10.0.0.51. Click the Keyboard key on the virtual keyboard to hide the keyboard, as shown right.



   If the application connects you will receive a 'Successfully Connected' message.



   If no wireless network can be found a message 'Cannot Connect to the Broadcast Pix Studio' will appear. Go to the wireless network settings on iPad to configure the network.

5. Click on the **[OK]** button, to close the settings window.

   A full 1ME panel will appear, allowing for 8 direct inputs to be selected (16 with Shift) and access to device controls. Operation is similar to a Broadcast Pix 1ME Control Panel.

6. To lock the orientation of the panel in either portrait or landscape mode, hold the iPad in the desired position and double-click the Home button on the iPad. The multitasking tray will appear, as shown on the right.



Slide the tray to the right until the Lock icon appears. Select the Orientation Lock icon, and a lock will appear, as shown on the right.



To unlock the orientation, repeat this step

7. As buttons are selected, clicks will be heard from the iPad speakers. To mute or lower the volume of the clicks, use the volume controls on the side of the iPad.



Appendix

A.1 Updating the Broadcast Pix Software

Broadcast Pix systems may be easily updated with new enhanced software that may be provided from time to time by Broadcast Pix. It is recommended to download the appropriate software on another workstation and copy the zip file via USB drive, and not connect the Broadcast Pix system to the internet.

To Download New Software:

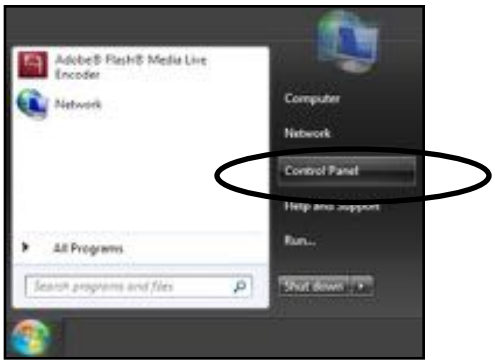
1. Register your unit by going to http://www.broadcastpix.com/support.html, where you will have access to the customer download page.

2. Download the current version of Broadcast Pix Software.

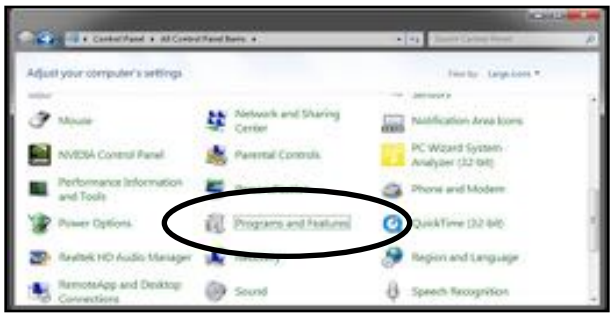
Prior to uninstalling your existing version of Broadcast Pix Software, make sure all Broadcast Pix programs are closed.

To Uninstall the Existing Software:

1. In the start menu, select **Control Panel,** as shown to the right.

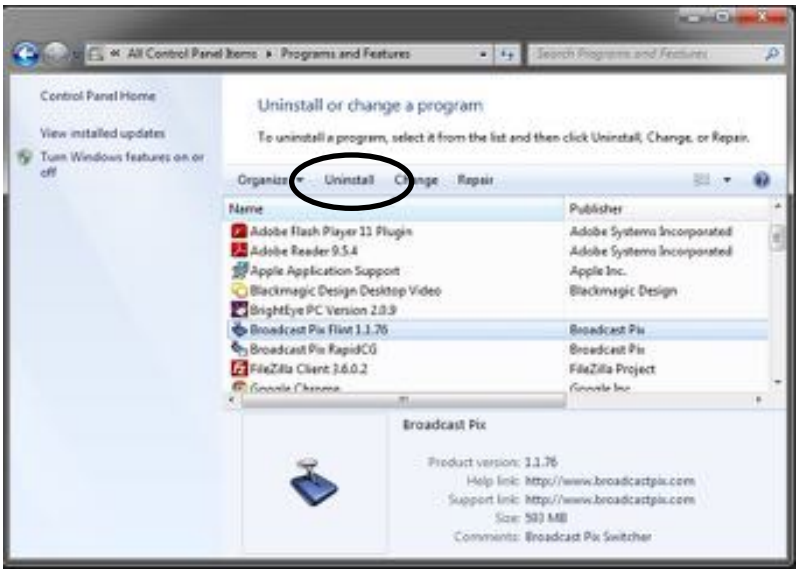


2. The following window will appear. Double-click on **Program and Features,** as shown to the right.



3. On the Add or Remove Programs window, highlight **Broadcast Pix Switcher** as shown to the right, and click on the **Uninstall** at the top of the screen button**.**

   It is important not to remove any other software, as this may effect system performance.



4. A pop-up message will appear asking if you want to remove the application. Click on the **Yes** button**.**



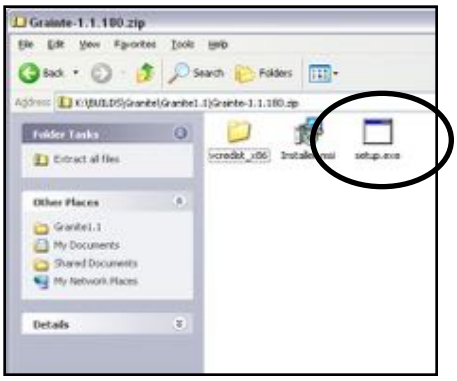
5. It will display a series of progress bars to show Broadcast Pix Software being removed.

   This process may take 2-5 minutes.



To Load the New Version of Broadcast Pix Software:

1. Once the previous version has been uninstalled and the new version has been downloaded, Open the zip file that you downloaded by double-clicking on it.



2. Double-click on **Setup.exe** file, as shown on the right.

3. This will open the Broadcast Pix Software Installation Wizard. Click on the **Next** button.



4. The next screen will ask to add the BPswitcher application to the Startup menu, if desired check the Add Broadcast Pix Switcher to Startup box and click on the **Next** button.



5. Click on the **Next** button to confirm the installation.

   A progress bar will appear and the appropriate files will be installed.

   During major upgrades the hardware code will also be installed, it is important not to interrupt the installation, as harm to the video cards may occur.

   This process may take 2-5 minutes.



6. At the end of the installation, the Switcher Setup window will automatically appear, as shown on the right.



New firmware will now begin to be installed on the various boards in the Granite Switcher. This process may take between 10-20 minutes for proper installation.

Do not interrupt this process, as damage to the hardware may occur.

7. When complete, the Switcher Setup window will change displaying the restart process described below. Please read the instructions and then click on the **Close** button, as shown on the right.



8. An Installation Complete window will be present, click on the **Close** button, as shown on the right.



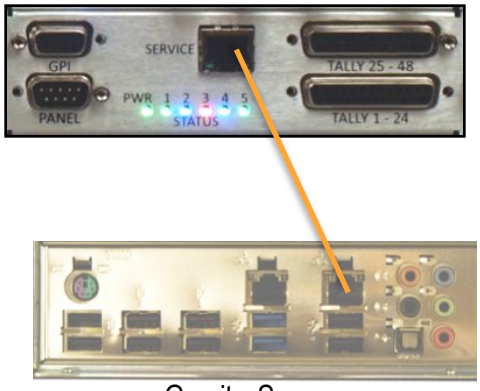
9. **Shutdown** the Server, by selecting the Start Menu and selecting Shutdown.

10 Once the Server is completely turned off, **unplug** the power to the Granite Switcher.

11. Move the supplied orange crossover cat5e network cable from the control panel to the Granite Switcher **Service** port, so that there is a connection from the Granite Server to the Granite Switcher, as shown on the right.

For future upgrades, it is recommended to permanently install a network switch between the Granite Switcher, Granite Server, Control Panel and Remote Panels to eliminate this step.

Granite Switcher



Granite Server

12. Wait approximately 15 seconds, then **reattach** the power to the Granite Switcher.



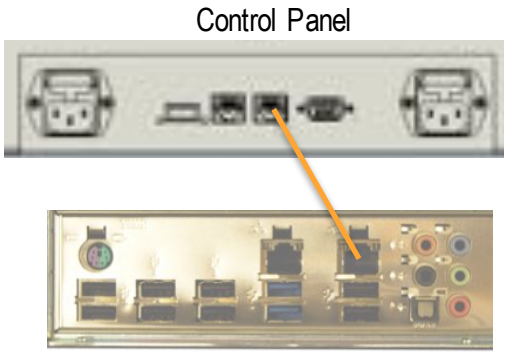
13. Wait approximately 15 seconds, then **Power on** the Granite Server.

14. Double-click on the BPswitcher icon and load a show, as described in section 1.7.

    When a show is loaded, the Granite Switcher processor module (connected through the Service port of the Granite Switcher) will now be updated, a progress bar will appear on screen.

15. Once the progress bar has disappeared, reattach the supplied orange crossover cat5e network cable from the Granite Server to the Control Panel, so that there is a connection from the Control Panel to the Granite Server, as shown on the right.

    For future upgrades, it is recommended to permanently install a network switch between the Granite Switcher, Granite Server, Control Panel and Remote Panels to eliminate this step.



16. If the control panel needs updating, it will automatically be updated when connected to the show, a progress bar will appear.

    Once the progress bar disappeared and the control panel automatically reboots, the Granite System is now upgraded.

    You may now start to use the new features.

A.2 Installing System Options

When System Options are purchased they require a unique number code to activate them for use. On new Granite systems, this code comes pre-installed so no further steps are necessary. On existing systems, where options are purchased after the fact, an activation code will be provided and it is necessary to manually enter this code. This number is unique to your Granite Switcher Board, should you need it again it is available from customer support by providing the Granite board number of your system, which is also displayed on the Installed Options menu.



1. In BPswitcher select **Setup** menu.
2. Then select **Installed Options…**, as shown on the right.
3. In the Options window select the option from the **Select option to enable** drop down list, i.e. Sony Camera Control.



4. **Enter the code** provided, in the Enter option key code text box.
5. Click on the **Enable Option** button.
   To enter more option codes repeat step 3 & 4.
6. When complete, click on the **Close** button**.**
7. A pop up message, stating a restart of the application is necessary for the option to take affect.
8. Close the application (**File, Quit)** and restart BPswitcher.

   Your options are ready to use.

A.3 Control Panel Internal Operation

The Broadcast Pix physical panel is usually under the control of the Broadcast Pix workstation. However if the workstation or the connecting network goes offline, then the panel reverts to internal **"Fail-Safe"** operation, as described in section 4.12. This appendix describes this standalone behavior, and some of the engineering settings that are also accessible from it.

Sequence of Events

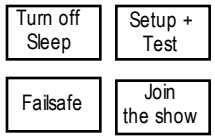
When the panel powers up, it attempts to connect with the workstation at its default IP address of 192.168.53.250. If it fails to find either a workstation with that address or a Broadcast Pix Switcher show open, then it asks the operator what it should do. It does the same thing if a problem develops during normal operation.

During normal operation the workstation communicates with the panel every 5 seconds, even if there is no other traffic, and the panel always responds. These keep-alive ping messages let both the panel and the workstation know that the situation is normal. A watchdog process in the panel software notices if these signals stop. If they do, then the TCP/IP connection to the workstation is closed, the panel buttons are cleared, and three choices are offered to the operator, which are displayed on the PixButtons in the upper right corner of the panel. The control panel display is also updated to notify the operator what is going on.

There is also a way an operator can force this condition. Turn on the [Shift] button, select the [MEM] device button in the Device Control, and then press the right most wildcard PixButton, which will be displaying, [Go Off Line]. This forces the panel to close the communications link to the workstation.

The four choices available in this off-line state are:

1. Join the Show — connects (or reconnects) with the workstation & software
2. Fail-Safe — communicates directly with the Router
3. Setup + Test — brings up an array of additional sub menu options
4. Turn off Sleep — turns off the sleep mode on the control panel



Join the Show

Whenever a panel is not connected to a workstation, it continuously attempts reconnection. If successful, the Join the Show button changes from green to orange.

Pressing this button when it is orange, immediately connects to the current running show on the workstation.

Pressing this button when it is green, causes the panel to reboot itself. This can be useful to recover from an unusual condition.

Fail-Safe

By selecting this option the operator commands the panel to control the Router directly using the serial connection. The program and preview rows of buttons are activated, and the program row PixButtons are labeled appropriately. Inputs 1 through 16/32 are labeled 1 through 16/32, indicating the input channels of the Router. The Show Prog. and Show Prev. are labeled on inputs indicating their use as the connections from the Broadcast Pix workstation running the current show. The Cut button is also illuminated, indicating that it can be used to perform cuts between program and preview.

When entering the Fail-Safe mode, program and preview are automatically connected to the input that the most recently run show defined as the fail-safe source. If no source was so identified, then program is set to Show Prog. and preview is set to Show Prev. For this fall back mode of operation to work most effectively, be sure that the video source connected to fail-safe source is the one that you want to go on air when Fail-safe mode is entered.

Three other PixButtons are illuminated while in fail-safe mode. These are the Join The Show, the Setup & Test and Turn Off Sleep PixButtons. These allow selection of these three modes, as described in the next page.

When in Fail-Safe mode, if the operator wants to switch back to the show running on the workstation, first check on the state of the workstation by calling up on preview the workstation's program output by selecting **[Show Prog.]** on preview. If it looks good, a seamless reconnection to the show can be achieved by first selecting **[Show Prog.]** on the program row (or the [Cut] button) before pressing the **[Join The Show]** button.

Setup & Test

Selecting this option opens a sub menu on the PixPad PixButtons. It also sets up a button labeled “Select Panel Mode” on the effects PixButtons, which instantly terminates any of the sub modes and returns the panel to this Setup & Test mode.
The sub menus are:

Test VFD	displays and scrolls all possible characters through the display
Test Ctrls	allows testing and interpretation of all controls
Test Pix	allows testing of each Pix button display
Show Knobs	displays the raw data from the three rotary encoders
Show Buts	displays the raw data from all the pushbuttons
Show Joys	displays the raw data from the lever and joystick
Show Date	displays the version date of the panel software
Panel IP	allows editing of the IP address of the control panel
Set URL	allows editing of the IP address of the workstation
Light Show	cycles through all the lights in an eye-catching manner
Set Mode	allows selection of which router is connected (see below)
Log Mode	allows selection of the current logging level
Set Color	allows color/contrast editing of the push buttons and PixButtons

Turn off Sleep

Normally the panel falls asleep after 30 minutes of inactivity. While asleep all panel buttons are extinguished, and a single dot scrolls through the display. A press of any button awakens the panel, but is otherwise ignored.
If sleeping is not desired, press Turn Off Sleep to disable it The second line of the display will now say, “Sleep has been disabled.”
When sleep is disabled the Turn Off Sleep button changes to Force To Sleep and if pressed, re-enables sleeping and forces the panel asleep immediately.

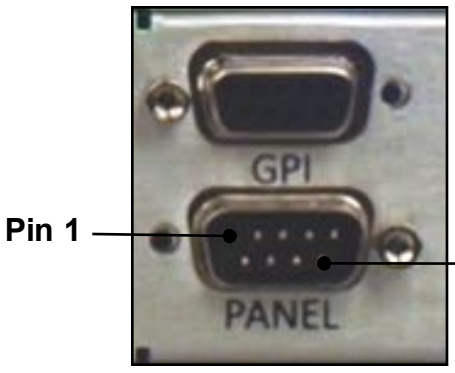
Set Mode

The control panel can control three external routers for Slate Systems: the iBoB, a 16x16 and a 32x32 router, in addition to a Granite Switcher. In doing so, the control panel needs to be told which router/switcher is being used. On new systems this setting is already set, but on existing units this setting needs to be changed. If the control panel version date is 2/26/2008 or later, then this setting is enabled, if not contact technical support about upgrading your control panel’s software. To check which version is installed see the above **Panel Setup & Test** menu and select **Show Date.** When the Panel Mode button is selected, this activates the backwards and forwards motion controls as well as the display. Select the **Granite mode.** Select the **Select Panel Mode** PixButton when the correct mode has been selected.

A.4 RS-232 Serial Pin-Out for Granite Fail-Safe Control

The fail-safe control cable on the Granite Switcher uses a straight Male to Female RS-232 serial cable, a 10 ft cable is provided along with longer thread screws to secure the cable in place on both the control panel Switcher ends. If a longer serial cable is needed, only 3 pins are necessary for operation: Pins 2, 3 and 5.

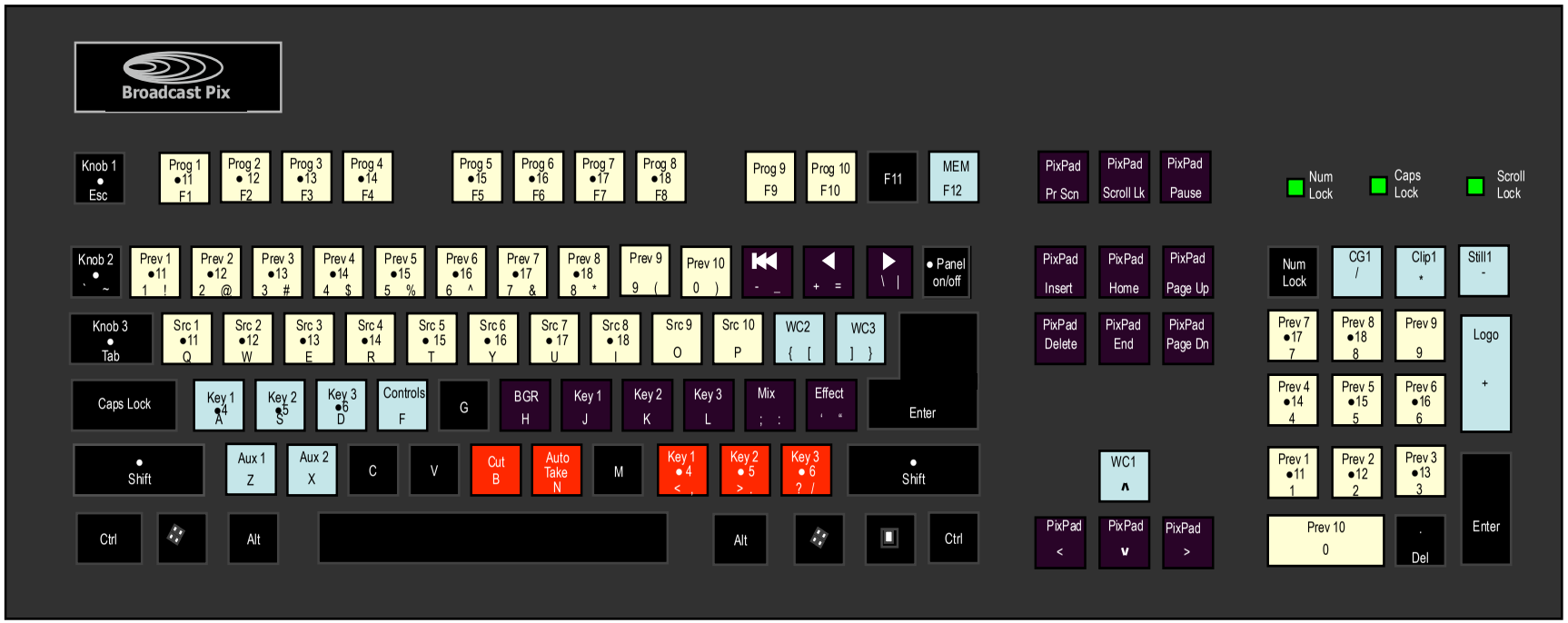
----Granite Switcher---- Panel----		-----Control	
Female		Male	
RXD	2	TXD	2
TXD	3	RXD	3
GND	5	GND	5



Pin 1 **Pin 9**

NOTE: The maximum length for RS-232 communication is 15 meters (50 ft), if a longer distance is required you may need to convert to RS-422 back to RS-232 with a 3rd party converter.

Custom Shortcuts Keyboard Layout



To enable keyboard shortcuts:
Hold down Shift and Panel On/Off (backspace delete on regular keyboards) simultaneously.
or
In BPswitcher select the Panel drop down menu, then select Enable Keyboard Shortcuts, by making sure a check mark is active.

A.6 Granite System Specifications

Granite Switcher Specifications

Dimensions w/o rack ears	Inches: 17.4 x 16.5 x 5.2 Centimeters: 44.2 x 41.9 x 13.2
Rack units	3 RU
Weight	16 Lbs / 7 Kg
Power	350 watts
Power Consumption	Typical: 120VA@240VAC / 410 BTU/hr Max: 185VA@240VAC / 630 BTU/hr

Granite Server Specifications

Dimensions	Inches: 19 x 23 x 3.5 Centimeters: 48.3 x 58.4 x 8.9
Rack units	2 RU
Weight	40 Lbs / 18 Kg
Power	450 watts
Power Consumption	Typical: 132VA@240VAC / 450 BTU/hr Max: 500VA@240VAC / 1700 BTU/hr

1 M/E Wide Control Panel Specifications

Dimensions	Inches: 18.5 x 12.5 x 8 Centimeters: 47 x 31 x 20
Weight	16.2 Lbs / 7.3 Kg
Power	(2) 50 watt internal power supplies 85 – 265 VAC, 47 – 63Hz, -10 to +70 degrees Celsius
Power Consumption	Typical: 26VA @240VAC / 90 BTU/hr Max: 60VA@240VAC / 200 BTU/hr

A.7 Broadcast Pix Contact Information:

Toll Free:	+1-866-914-9484
Phone:	+1-978-600-1100
Technical Support:	+1-978-600-1098
Fax:	+1-978-663-2811
Website:	www.broadcastpix.com
	Register on-line at www.broadcastpix.com/support.html for access to the latest software downloads and support information.
Support E-mail:	support@broadcastpix.com
Mailing Address:	3 Federal Street Billerica, Massachusetts 01821 USA

Broadcast Pix welcomes suggestions to this manual, please send to manual@broadcastpix.com

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Notes