Folsom RESEARCH

INSTALLATION AND OPERATOR'S MANUAL

Model PM-2002

PresentationMASTER – **Systems Integration A/V Seamless Switcher**

Manual #26-0110000-00 / Revision E

RECORD OF CHANGES

REV #	DATE	ECO #	DESCRIPTION	Approved By
1.0	1/2002		Preliminary	D. Joyce
A	4/18/02	820	Released	D. Joyce
B	6/20/02	855	Added serial protocol menu with RS485, chksum, artem and artep remote commands, and changed some serial menu text.	D. Joyce
C	8/28/02	921	Added "System Save" menu item description, discussion of system state storage in flash,added audio input setup to input menu	D. Joyce
D	03/01/04	1237	Added “Freeze Operation” description	C. Ho
E	06/25/04	1283	Added Keying Feature to the Manual Added the A/V Mode to the Misc Menu	A. Luong

Manual # 26-0110000-00

PresentationMaster™ Quick Start Guide

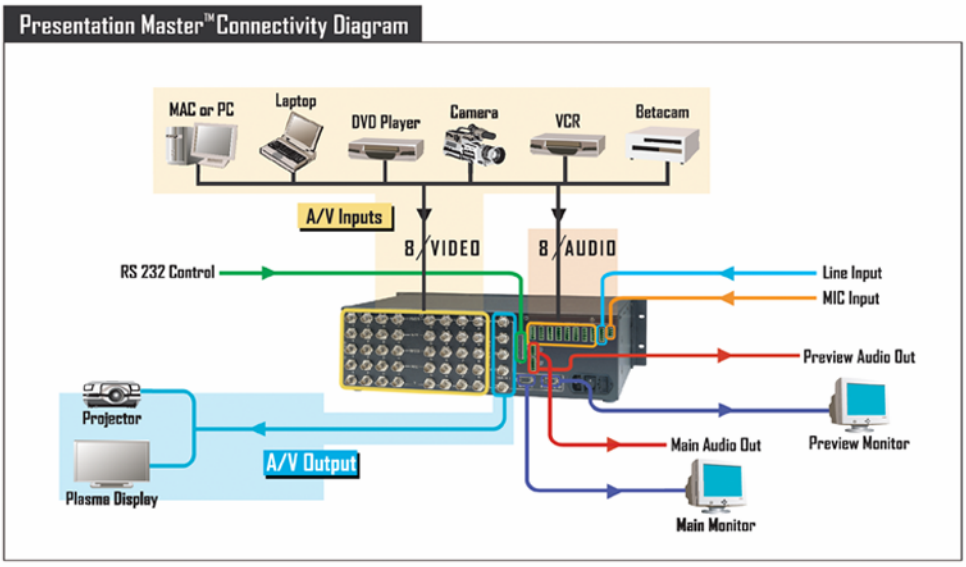


Illustration of Typical PresentationMASTER™ Setup

Step 1: Connect PresentationMASTER™ to Output Devices

Connect one of the two available "Main" video outputs to your projector and the "Main" audio output to a set of amplified speakers. Note that the second main video output may be connected to a local display monitor if the projection screen is not easily viewed by the operator.

Connect the "Preview" video output to a computer monitor and the "Preview" audio output to a second pair of powered speakers. (Note: The preview video output timing is identical to the main video output. If the main video output is set to 1280 x 1024, the preview monitor must be capable of that resolution.)

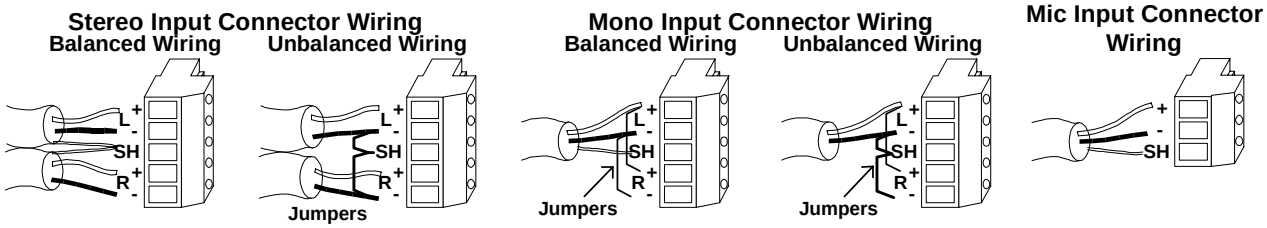
Step 2: Connect Input Sources to PresentationMASTER™

PresentationMASTER™ has eight universal video inputs that accept composite (NTSC & PAL), S-video, component, and computer video sources. Connect each type of video input source to PresentationMASTER™ as indicated in the following table:

Input Connections

Format – RGB *(Typical Devices: Computers)*		Format – YUV or Y Pr Pb (Betacam) *(Typical Devices: DVD Player or Betacam Deck)*	
Source to PresentationMASTER™		Source to PresentationMASTER™	
R	R/CR	Y	G/Y
G	G/Y	Pr	R/CR
B	B/CB	Pb	B/CB
H	H/C	or	
V	V	Y	G/Y
Format – S-Video (Y/C) *(Typical Devices: S-Video VCR)*		U	R/CR
		V	B/CB
Source to PresentationMASTER™		Format – Composite/PAL *(Typical Devices: NTSC/PAL VCR)*	
Y	G/Y	Source to PresentationMASTER™	
C	B/CB	NTSC/PAL	G/Y

PresentationMASTER™ has nine audio inputs that accept balanced and unbalanced signals for audio Sources 1 through 8 and a single Line input. A tenth input accepts several types of microphones. Connect each type of audio input source to PresentationMASTER™ as indicated in the following diagram:



Step 3: Power Up

Connect PresentationMASTER™ to 115 VAC power using the power cord supplied with the unit. Locate the power switch on the power entry module at the rear of the unit and turn the power on. The unit will flash all of the front panel illuminated keys in unison, first with red, then green, and then white. While the main board is initializing, "please wait" will be displayed. The front panel display will show the main menu which indicates the unit has powered up successfully.

Step 4: Power Up Display

The default power-up condition is to set the video to BLK (black screen input) as the "Main" source, Source 1 as the "Preview" video source, MUTE as "Main" audio source and Source 1 as the "Preview" audio source. The keys for the video and audio input sources currently selected for the main outputs will be red. The keys for the video and audio input sources currently selected for the preview outputs will be green. The remaining source selection keys will be yellow.

Step 5: Source Selection and Dissolve

The user can easily select any of the video and audio input sources as the current preview sources simply by pushing the corresponding video or audio source select key. Each time a new video and audio preview source is selected, the key for the selected source will turn green and the video and audio on the preview monitor and speakers will display output video and audio derived from the newly selected preview source. The currently selected preview source can be dissolved seamlessly to the main output by pressing the DSLV key. The preview video and audio sources automatically and seamlessly switch to the main video and audio outputs. See the manual for the "Audio Breakaway" feature.

Step 6: Select Desired Video Output Format

Set the video output from PresentationMASTER™ to match the projector or other display device. Enter the Output Setup menu by depressing the OUTPUT SETUP key. The OUTPUT SETUP key will turn from white to red. An arrow ">" will be displayed next to "FORMAT." Press the "Select" key. A solid block will start to flash in the arrow location. Rotating the encoder dial will scroll through the available output resolutions. Stop on the desired output resolution and press "Select." The output is now set to the desired output format. Press the OUTPUT SETUP key to leave the Output Setup menu.

Step 7: Projector Adjustments

Proper projector setup is critical to optimize the quality of the output image. Once PresentationMASTER's output is set to match the native resolution of the projector, the scaling engine in the projector should be disabled. The methods used to disable the internal scaler within the projector vary from manufacturer to manufacturer. PresentationMASTER's Output Setup menu allows the user to select test patterns that are used during projector adjustment. Please consult the operator's manual for your equipment.

Step 8: Configure Video and Audio Input Sources

PresentationMASTER™ will automatically lock to video applied to the eight universal inputs and will make a "best guess" at the video format (RGB, YUV, S-Video, NTSC/PAL) and all associated video parameters. While the "best guess" approach generally leads to an acceptable output image, it is ***strongly recommended*** that the user set up a configuration file to precisely define the video and audio parameters associated with each video and audio input pair before running a show. The use of configuration files provides consistent, repeatable operation and allows the user to adjust video and audio parameters for each source to optimize image and sound quality. Up to 64 configuration files can be stored for use. Each time a video or audio source is selected with the Source Selection keys, the configuration file associated with that source is automatically reloaded.

Setting up input configuration files is simple. Proceed as follows for each input:

1. Select the source you wish to work with as the Preview source.

2. Press the INPUT SETUP menu key. Examine the image on the Preview monitor and adjust the video input parameters as desired. The Input Setup menu is described in detail in Section 6.5 of the Installation and Operating Manual. Many of the parameters may require no adjustment, however, be sure that the INPUT TYPE menu item is selected to match the incoming source. Also verify that the type of sync indicated in the PROCESSING submenu matches the incoming source. Press the AUDIO button and enter the audio INPUT SETUP menu and adjust the video input parameters as desired.

3. When the input setup parameters have been set as desired, Press the INPUT SETUP button and enter the SAVE AS submenu to save the setup parameters as a file. The next available file number is automatically shown on the first line of the SAVE INPUT FILE menu. You can use this file number to create a new file or assign another number. The third line in the menu allows you to assign an eight-character file name to the file. Entry of a file name is optional. When the file number and name have been entered, select SAVE to save the configuration. The file is saved in memory and automatically assigned to the source used for the input setup process. The input configuration file will automatically be recalled for use each time the source is selected.

Once changes have been made to the system state, be sure to press the MISC button and select System Save. This will store the current system state in flash memory for retention after the system is powered down.

This is a quick reference guide. For detailed information on the PresentationMASTER™, please refer to the Installation and Operating Manual supplied with your unit.

Folsom Research, Inc. • *11101-A Trade Center Drive, Rancho Cordova CA 95670 • (916) 859-2500 • www.folsom.com*

Operators Safety Summary

The general safety information in this summary is for operating personnel.

Do Not Remove Covers or Panels
There are no user-serviceable parts within the unit. Removal of the top cover will expose dangerous voltages. To avoid personal injury, do not remove the top cover. Do not operate the unit without the cover installed.

Power Source
This product is intended to operate from a power source that will not apply more than 230 volts rms between the supply conductors or between both supply conductor and ground. A protective ground connection by way of grounding conductor in the power cord is essential for safe operation.

Grounding the Product
This product is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective-ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Use the Proper Power Cord
Use only the power cord and connector specified for your product. Use only a power cord that is in good condition. Refer cord and connector changes to qualified service personnel.

Use the Proper Fuse
To avoid fire hazard, use only the fuse specified on the rear panel for this product and having identical type, voltage rating, and current rating characteristics. Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres
To avoid explosion, do not operate this product in an explosive atmosphere.

CAUTION

Danger of explosion if battery is incorrectly placed.
Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Attention: Il y a danger d'explosion s'il y a remplacement incorrect del la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usages conformément aux instructions du fabricant.

WARNING

The rear panel ON/OFF switch does not disconnect the unit from input AC power. To facilitate disconnection of AC power, the power cord must be connected to an accessible outlet near the unit. Building Branch Circuit Protection: For 115 V use 20 A, for 230 V use 8 A.

WARNING

When the PresentationMASTER is used in the 230-volt mode, a UL listed line cord rated for 250 volts at 15 amps must be used and must conform to IEC-227 and IEC-245 standards. This cord will be fitted with a tandem prong-type plug.

Terms In This Manual

WARNING *Highlights an operating procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.*

NOTE *Highlights an essential operating procedure, condition, or statement.*

CAUTION  *The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.*

AVERTISSEMENT!  *Le point d´exclamation dans un triangle equilatéral signale à alerter l´utilisateur qu´il y a des instructions d´operation et d´entretien tres importantes dans la litérature qui accompagne l´appareil.*

VORSICHT  *ein Ausrufungszeichen innerhalb eines gleichwinkeligen Dreiecks dient dazu, den Benutzer auf wichtige Bedienungs-und Wartungsanweisungen in der Dem Great beiliegenden Literatur aufmerksam zu machen.*

Terms As Marked on Equipment

WARNING *Highlights an operating procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.*

CAUTION  *The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.*

AVERTISSEMENT!  *Le point d´exclamation dans un triangle equilatéral signale à alerter l´utilisateur qu´il y a des instructions d´operation et d´entretien tres importantes dans la litérature qui accompagne l´appareil*

VORSICHT  *ein Ausrufungszeichen innerhalb eines gleichwinkeligen Dreiecks dient dazu, den Benutzer auf wichtige Bedienungs-und Wartungsanweisungen in der Dem Great beiliegenden Literatur aufmerksam zu machen.*

NOTE *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the users own expense.*

Table of Contents

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CHAPTER ONE
Introduction

What you will find in this chapter…

- *About the PresentationMASTER™*
- *Features*
- *Technical Description*

Introduction

About the PresentationMASTER™

PresentationMASTER is an Audio/Video seamless switcher designed specifically for Systems Integrators. The unit provides truly seamless transitions to support professional quality audiovisual presentations. PresentationMASTER features eight universal A/V inputs that accept composite (NTSC/PAL), s-video, component, computer, and HDTV video as well as associated stereo audio signals. Folsom's Auto Signal Lock (ASL™) technology simplifies setup by automatically locking to the incoming video signal and scaling to the native resolution or "sweet spot" of the display device to optimize image quality. The operator can seamlessly transition between video sources. Audio sources can be configured to automatically follow video source selection or can be switched independently (audio breakaway with cross-fade).

PresentationMASTER also accepts two non-switched audio sources (LINE and MIC) that can be mixed with the audio from the selected input channel. Main and Preview A/V outputs are provided. An RS-232 serial interface is provided to support remote control operation.

Features

The PresentationMASTER™ provides the following features:

- Eight universal A/V inputs accept composite (NTSC/PAL), s-video, component (RGB, Betacam (Y, Pb, Pr)), and computer video sources with resolutions up to 1600x1200. HDTV 480p, 720p, and 1080i formats are supported in RGB color space
- Folsom's Auto Signal Lock (ASL™) technology automatically locks to the selected source and scales it to match the native resolution or "sweet spot" of the projection or display device
- Advanced audio features; Audio Breakaway, Audio Cross-Fade, and Programmable Audio Delay
- Eight stereo audio inputs (one for each A/V input channel) accept Consumer or Professional audio levels
- Re-configurable RS-232 port for remote control; Crestron Controller Compatible
- 30 user-selectable output formats
- High-performance dual-scaler architecture supports seamless switching
- Motion adaptive de-interlacing
- Two non-switched audio inputs (MIC and LINE) can be mixed with audio from the selected input channel
- Professional quality transition effects include cut and dissolve
- Six test patterns for projector set up
- Main and Preview Outputs
- Video Mixing and Graphics Overlay using *Luminance Keying*.
- Ethernet Control (option)
- Backed by a full 3-year parts and labor warranty

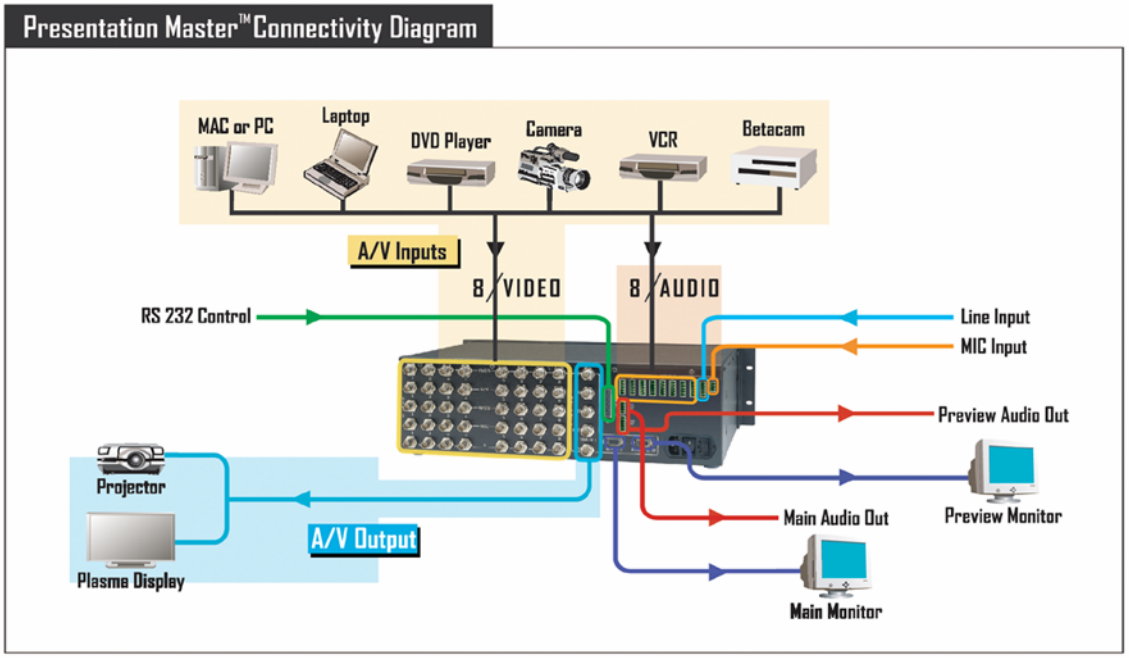
Technical Description

PresentationMASTER is a fully integrated system that simplifies the task of supporting professional-quality audio-visual presentations. The unit combines an eight input A/V router, two high-performance video scalers, an audio processor, and a full-featured control panel in a single integrated package. Eight universal A/V inputs accept composite video, s-video, component, computer and video sources with HDTV timing, as well as associated stereo audio signals. The unit also accepts two non-switched audio sources (LINE and MIC) that can be mixed with the audio from the selected input channel. The input video is converted directly to the native resolution or "sweet spot" of the projection device to optimize image quality. PresentationMASTER supports seamless transitions including cut and dissolve effects when sources are switched.

A *Luminance keying* feature gives the PresentationMASTER a capability to mix and overlay video graphics from one video scaler over the other. Applications include overlaying titles, captions and logos over live video. This feature takes the red, green and blue data from a selected scaler as the “key” or “foreground” and converts it to 8-bits of luminance or brightness information. This luminance data is compared to a user programmable threshold on a pixel-by-pixel basis. If the luminance value of a pixel is below the threshold then the pixel data from the background scaler is displayed. If the luminance value of a pixel exceeds the threshold by 16 counts then the pixel data from the foreground scaler is displayed. If the luminance value is between the threshold value and threshold value plus sixteen, then a linear mix is performed between the two scalers. This linear mix prevents small level changes and/or noise from causing unwanted speckling on the keyed image. The linear mix also allows semi-transparent overlay effects to be performed. If the overlay luminance value is in the linear mix region it will appear semi transparent (nice effect for logos).

The PresentationMASTER™ provides two independently buffered Main video outputs and one Preview video output. The presentation viewed by the audience is provided via the Main outputs. The Preview output is provided to allow the operator to examine the next audio/video source to be displayed. The PresentationMASTER™ user interface has been designed with intuitive, user-friendly menus to simplify system setup and adjustment. User-defined configuration files can be created, stored, recalled, and edited.

A connectivity diagram for the unit is provided below.



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CHAPTER TWO
Installation

What you will find in this chapter…

- *Rear Panel Connectors*
- *Rack-Mount Installation*
- *Power Cord/Line Voltage Selection*
- *Video Input & Output Connections*
- *Audio Input & Output Connections*
- *RS-232 Remote Control Connections*

Installation

Rear Panel Connectors

NOTE: Front Panel features are shown in Chapter 3.

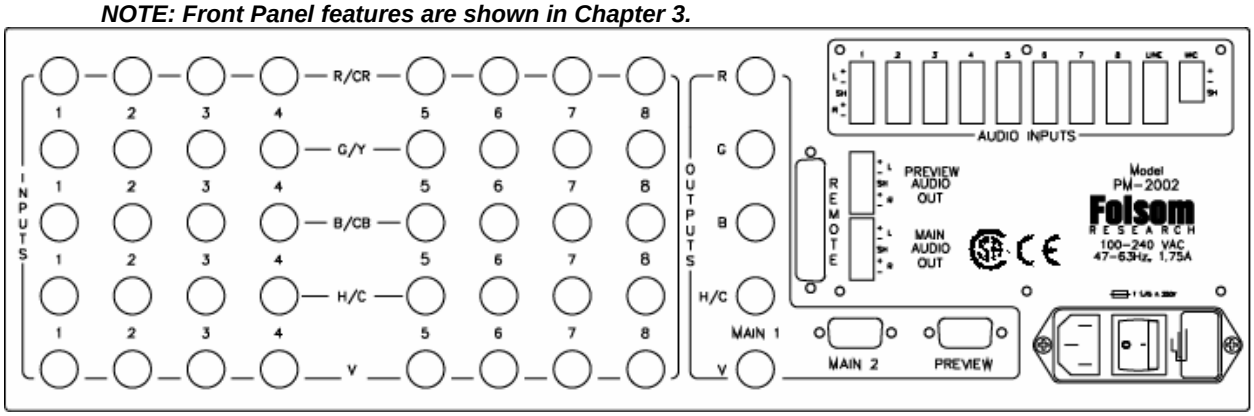


Figure 2-1: PresentationMASTER™ Rear Panel

Rack-Mount Installation

PresentationMASTER™ units are designed to be rack mounted and are supplied with front rack-mount hardware. Rear rack-mount brackets are available as a kit and are recommended for use when units are mounted in transit cases. When rack mounting the unit, remember that maximum ambient operating temperature for the unit is 40 degrees C. Leave at least one inch of space on each side and at the front of the unit to make sure that the airflow through the fan and vent holes is not restricted. When installing equipment into a rack, distribute the units evenly to prevent hazardous conditions that may be created by uneven weight distribution. Connect the unit only to a properly rated supply circuit. Reliable grounding (earthing) of rack-mounted equipment should be maintained.

Power Cord/Line Voltage Selection

PresentationMASTER™ is rated to operate with the following supplies:

Input Power:	85-264 VAC, 47-63 Hz
Power Consumption:	175 watts maximum

The PresentationMASTER™ performs line voltage selection automatically. No user controls are required for line voltage selection.

WARNING

When the PresentationMASTER™ is used with 230-volt supplies, a UL listed line cord rated for 250 volts at 15 amps must be used. This cord will be fitted with a tandem prong-type plug.

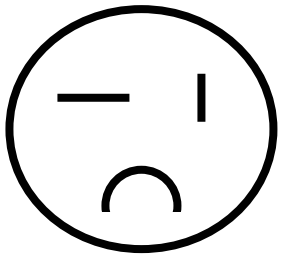


Figure 5-2: Tandem Plug

AVERTISSEMENT!

La choix de la ligne de voltage se realize automatiquement par l'PresentationMASTER™ Transformateur Graphique On n'apas besoin du controller usager pour la choix de la ligne de voltage.

VORSICHT

Das PresentationMASTER™-Gerät mu beim Anschlu an 240V ~ mit einer vom VDE auf 250V/10A geprüften Netzleitung mit einem Schukostecker ausgestattet sein.

Video Input Connections

The video input section on the PresentationMASTER™ rear panel provides eight universal inputs. Each input can accept composite (NTSC/PAL), s-video, component (RGB, Betacam (Y, Pb, Pr)), and computer video signals. The connections for each input channel are made via five BNC connectors. Connection points for each type of video signal are specified below.

Format – RGB *(Typical Devices: Computers)*	
Source to PresentationMASTER™	
R	R/CR
G	G/Y
B	B/CB
H	H/C
V	V

Format – S-Video (Y/C) *(Typical Devices: S-Video VCR)*	
Source to PresentationMASTER™	
Y	G/Y
C	B/CB

Format – YUV or Y Pr Pb (Betacam) *(Typical Devices: DVD Player or Betacam Deck)*	
Source to PresentationMASTER™	
Y	G/Y
Pr	R/CR
Pb	B/CB
or	
Y	G/Y
U	R/CR
V	B/CB

Format – Composite/PAL *(Typical Devices: NTSC/PAL VCR)*	
Source to PresentationMASTER™	
NTSC/PAL	G/Y

Video Output Connections

Main Outputs

Two independently buffered Main outputs (one five wire BNC connection and one HD-15) are provided. Either of these outputs may be used to connect to the display device used for the presentation. The second output is designed to support a local display in the event that the operator is unable to conveniently view the presentation. Both outputs provide RGB video signals. The operator can select the type of output sync to match application requirements (see Output Setup Menu, page 25). Separate C (Composite) or separate H/V (Horizontal/Vertical) sync modes are supported.

Connect the outputs labeled R,G, and B on the rear panel of the PresentationMASTER™ unit to the correspondingly labeled connectors on the output device. Connect the C or H/V sync signals from PresentationMASTER™ to the correspondingly labeled connectors on the output device. If separate H/V sync mode is being used, be sure to connect both the H and V signals.

Preview Output

One Preview output is provided on an HD-15 connector. The Preview output is provided to permit the operator to view the next source video to be displayed prior to initiating a transition. The Preview output provides an RGB video signal. Connect the output on the rear panel of the PresentationMASTER™ unit to the output device.

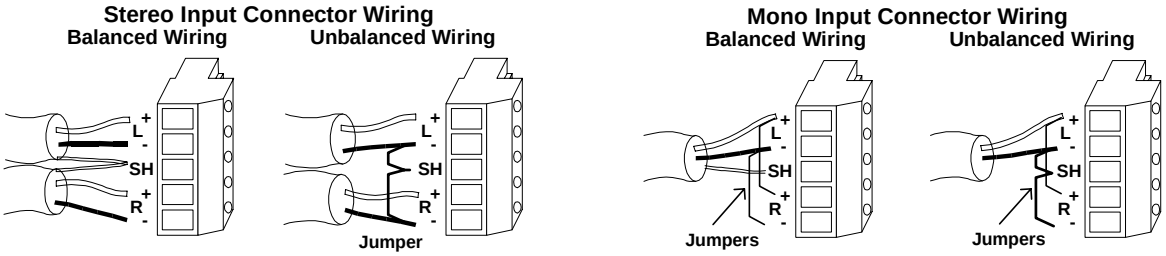
The operator can select the type of output sync to match application requirements (see Output Setup Menu, page 25). Separate C (Composite) or separate H/V (Horizontal/Vertical) sync modes are supported. Connect the C or H/V sync signals from PresentationMASTER™ to the correspondingly labeled connectors on the output device. If separate H/V sync mode is being used, be sure to connect both the H and V signals.

Audio Input Connections

Audio and Line Inputs

Each video input (1 – 8) has an associated stereo audio input. Mating connectors are provided with the unit to facilitate connection of the audio inputs. The mating connector is FRI P/N 14-9000050-00. The wiring for the connectors is illustrated below:

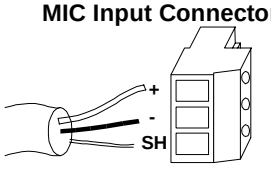
Input Connector Wiring



MIC Input

The MIC Input is a non-switched input designed to accept input from a microphone. The MIC Input may be mixed with audio from the selected A/V source as well as the Line Input. Mating connectors are provided with the unit to facilitate connection of the MIC Input. The mating connector is FRI P/N 14-9000051-00. Connector wiring is shown below:

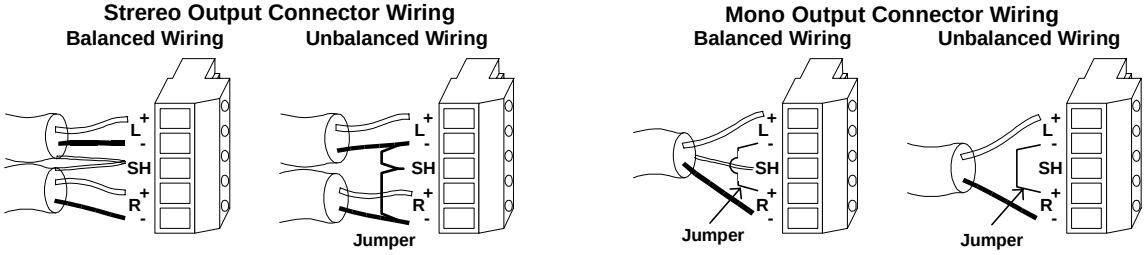
MIC Input Connector Wiring



Audio Output Connections

Main and Preview stereo audio outputs are provided. Mating connectors are provided with the unit to facilitate connection of output devices. The mating connector is FRI P/N P/N 14-9000050-00. Wiring of the connectors is illustrated below:

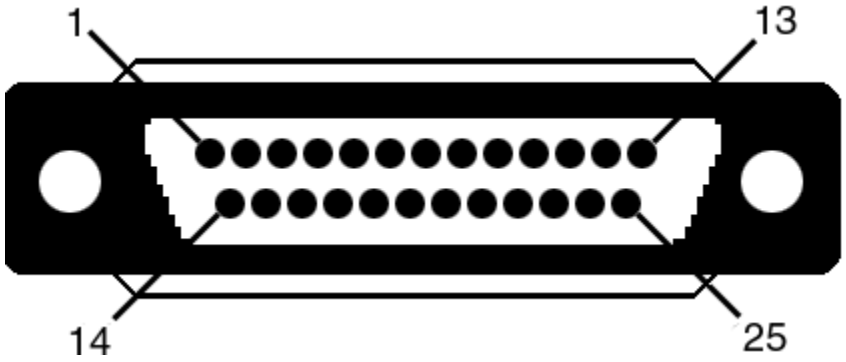
Output Connector Wiring



Remote Control Connections

The serial port can be connected to a computer to support remote control of the PresentationMASTER™ unit with either RS232 or RS485 hardware protocols. Connection points on the remote port connector are specified below.

REMOTE



DB25	RS232	RS485
1	Shield	Shield
2	TxD	T(-)
3	RxD	R(-)
4	RTS	N/A
5	CTS	N/A
6	DSR	N/A
7	Sig Gnd	Sig Gnd
8	DCD	N/A
10	N/A	N/A
12	N/A	N/A
14	N/A	T(+)
15	N/A	N/A
16	N/A	R(+)
19	N/A	N/A
20	DTR	N/A
21-25	N/A	N/A

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CHAPTER THREE
Operation

What you will find in this chapter…

- *Description of Front Panel Controls*
- *Power-Up Initialization*
- *Menu Operation*

Operation

Front Panel Controls

NOTE: Rear Panel features are shown in Chapter 2.

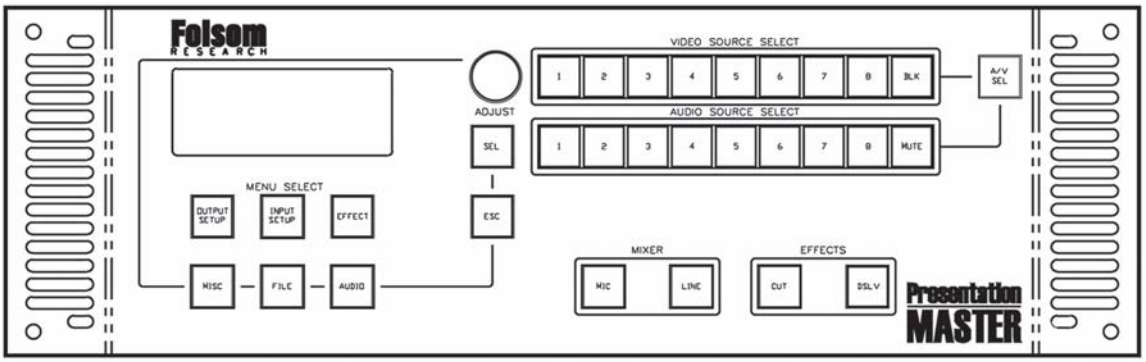
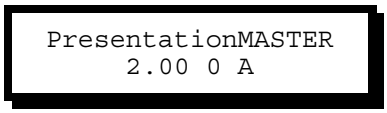


Figure 3-1 PresentationMASTER™ Front Panel

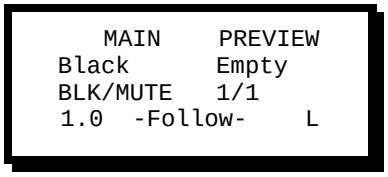
Power-Up Initialization

Locate the power switch on the rear panel and turn PresentationMASTER™ on. While PresentationMASTER™ is initializing: “Please Wait…” displays for 30 seconds then the front panel indicators will cycle red, green, and yellow. The following menu will then display for a few seconds.



This text indicates the version of software that is currently being loaded. The software version number will change as software upgrades are released. The most current software version is available for download from the Folsom Research web site at *www.folsom.com*.

The main menu displays commonly referenced information for the currently selected Main and Preview audio and video channels. Active Main and Preview audio and video channels are indicated, as are the currently loaded input setup filenames. Video dissolve time, audio/video switching mode, microphone, and line active states are also indicated. The startup main menu appears as follows:



This menu indicates the startup state for the PresentationMASTER. The main video output is set to black with the audio output muted. Preview outputs are set for channel one on both video and audio. No input setup files are loaded on main or preview. The video dissolve time is 1.0 seconds, audio/video “Follow” mode is active and the Line output is active on both the main and preview audio outputs. Note that when the microphone is active on the main audio output, an M is displayed to the left of the L.

The power-up state of the keys corresponds to the main menu display. The preview audio and video source selection “1” keys will light green, while the main source selection keys BLK and MUTE light red. The A/V SEL key lights green to indicate “Follow” mode and the LINE key lights green to indicate that the audio line source is active on the main audio output.

VIDEO SOURCE SELECT and AUDIO SOURCE SELECT Keys

The user can easily select any of the input video sources as the current Preview source simply by pushing the corresponding AUDIO or VIDEO SOURCE SELECT key. Each time a new Preview source is selected, the key for the selected source will turn green and the Preview output will change to the newly selected source.

Buttons 1 through 8 are used to select the eight different input sources. The MUTE or BLK key can be selected to provide a muted audio or black video source for fade transitions.

The keys for the audio/video sources currently active on the Main output will be red. The keys for the source currently selected for the Preview output will be green. The remaining source selection keys will be yellow. The default power-up condition is to set MUTE audio and BLK video (black screen input) as the Main source and Source 1 as the Preview source.

FREEZE Operation

The user can freeze and unfreeze the Preview source or Main source of the PresentationMASTER. To freeze the Preview/Main source, hold down the ESC button and then press the VIDEO SOURCE button that is currently used for Preview/Main. To unfreeze, repeat the above steps or switch the Preview/Main to a different input source. Holding

down the ESC button and pressing a VIDEO SOURCE button that is not currently used for Preview/Main has no effect on the system.

For example, if the Preview source is currently input 1 and you want to freeze Preview, hold down the ESC button and press the VIDEO SOURCE button 1. To unfreeze Preview, hold down the ESC button and press the VIDEO SOURCE button 1. Another way to unfreeze Preview is to switch the Preview source out of input 1 (for example, switching Preview source to input 2.)

If the Main source is currently input 5 and you want to freeze Main, hold down the ESC button and press the VIDEO SOURCE button 5. To unfreeze Main, hold down the ESC button and press the VIDEO SOURCE button 5. Another way to unfreeze Main is to switch the Main source out of input 5 (for example, switching Main source to input 7.)

Luminance Keying Operation

The Keying Feature is only available in “Presentation A/V Mode” with “Video” selected. The Presentation Mode is selected in the MISC Menu and the A/V Select is changed by pressing the A/V SEL Key.

The operator will select the source they want as a “key/overlay” and this source will be displayed on the preview monitor. In the Effects Menu, the operator will set the KEY TRANS to either the CUT or the DSLV effect types. The operator will also set the keying threshold from this menu. To transition the “key/overlay” onto the main screen, the operator will press the ESC key and the MIC key simultaneously. The MIC key will blink with a red light if the Keying mode is enabled. To disable the Keying, press the ESC key and MIC key simultaneously again.

If the operator presses < DSLV > or <CUT> keys, the image will transition onto main without keying. If the operator presses < DSLV > or <CUT> keys while the keyed image is on the main output, the key/overlay is transitioned off of main leaving the background image showing.

If the operator presses any of the source select keys while the keyed image is on the main output, the key/overlay is transitioned off immediately using a “Cut”. After the transition, the new source selection is made.

A/V SEL Key

The A/V SEL key toggles between audio “Follow” mode and audio “Breakaway” mode in the Integration A/V Mode. In audio “Follow” mode, the A/V key lights green, whereas in audio “Breakaway” mode, the key lights yellow. The A/V SEL key switches between “Follow” mode, “Video” mode and “Audio” mode in the Presentation A/V Mode. In the “Video” mode, the A/V key lights yellow. In the “Audio” mode, the key lights red.

A/V Follow Mode

This mode provides simple audio/video switching from either the audio source select keys or the video source select keys. If a key from either bus is selected, the corresponding key on the other bus will “follow” and light green. Any transition effected in this mode will be performed on both buses identically, with both audio and video transitioning in the same manner for the same amount of time.

A/V Breakaway Mode

Audio “breakway” mode separates audio and video selections and transitions. A selection from one of the video source select keys will not affect the audio source select bus in any way. Only a selection from the audio source select keys will effect a change of the audio preview output. In this mode, audio can be switched and transitioned without video selection or transition. Also in this mode, video can be switched and transitioned without audio selection or transition. Thus this mode separates the two selection buses and sources so they can be controlled independently.

EFFECTS Keys

The currently selected Preview source can be transitioned seamlessly to the Main output using one of the EFFECTS keys. After selecting a Preview source, simply press either CUT or DSLV. The Preview source will automatically and seamlessly switch to the Main output. Dissolve duration in audio/video “Follow” mode is programmed via the EFFECT menu between 0.0 and 5.0 seconds.

MIXER Keys

Two non-switched audio inputs, MIC and LINE, can be mixed with audio from the selected input channel. When a MIXER indicator is green, the mixer source is active on both Main and Preview. A mixer source is disabled when it's indicator is yellow.

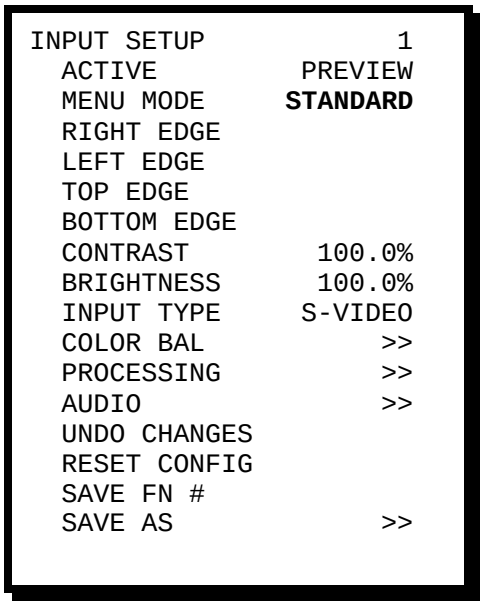
Menu Operation

The Menu Select keys are used to activate menus used to configure the unit for operation. Pressing one of the six Menu Select keys will call up the corresponding menu on the display. The operation of each menu is described in detail in the following sections of this document.

Once a menu is selected with the Menu Select keys, the Adjust control is used to scroll through the menus items. As the user scrolls through the menu items, a pointer at the left of the menu indicates the current position of the scroll bar. When the user reaches the menu item that needs to be changed, the Select key is used to select the menu item. The pointer at the left hand side of the display changes to a # symbol to indicate when a menu item is selected. The Adjust control can then be used to change the parameters associated with the menu item. When the desired parameter has been selected, the operator presses the Select key to enter the new values. The menu parameters are changed and the menu returns to scrolling mode.

The ESC key is used to return to scrolling mode without entering any changes made to a menu item. When this key is used, changes made to the selected menu item are discarded rather than entered as described for the Select key above.

Input Setup Menu—Standard



Active Input

The first line in the menu is used to select whether adjustments will be made for the video assigned to the Main or Preview outputs. The default selection is Preview as this allows adjustments to be made during a show without impacting the Main display. The number of the input channel corresponding to the selected active input is indicated at the top right corner of the menu.

Menu Mode

There are two menu modes, Standard and Advanced. The Standard menus are sufficient for most users. The Advanced menus provide controls for 1:1 pixel sampling features to optimize image quality for critical applications.

Image Size and Position Adjustments

The Right Edge, Left Edge, Top Edge, and Bottom Edge parameters allow the operator to adjust the size and position of the image. To perform adjustments, scroll to the appropriate menu item with the Adjust control, select the menu item with the Select key, and then turn the Adjust control to adjust the position of the selected edge of the image while viewing the active screen. The menu will show '+' or '-' depending on which direction the Adjust control is being turned. Press Select again to enter the new settings or ESC to exit without accepting the changes that have been input.

Contrast/Brightness

The Contrast and Brightness controls allow the operator to adjust the overall contrast and brightness of the image. To perform adjustments, scroll to the appropriate menu item with the Adjust control, select the menu item with the Select key and then turn the Adjust control to perform adjustments while viewing the active screen. The adjustment range is 75.0% to 125.0%. Press Select again to enter the new settings or ESC to exit without accepting the changes that have been input.

Input Type

The Input Type menu item allows the operator to select settings for a specific type of input video. Selection options are S-video, RGB, Beta 50, Beta 60, MII, EBU and Composite (NTSC/PAL). PresentationMASTER™ will attempt to determine the type of input video on the selected input channel and will initially choose the format. The Input Type menu allows the operator to override the selections in the event that an error is made (it is sometimes difficult to automatically distinguish between modes as input image content is unknown). To perform adjustments, scroll to the Input Type menu, select the menu item with the Select key and then turn the Adjust control to select the desired

format while viewing the active screen. Press Select again to accept the newly entered settings or ESC to exit without accepting the changes that have been input.

Color Balance

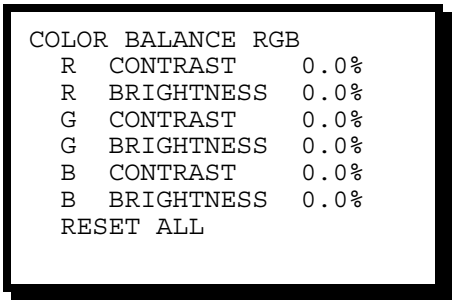
The Color Balance menu line is used to call up a submenu where color balance adjustments are performed. Scroll to the Color Balance submenu line and press the Select key to display the Color Balance submenu. The Color Balance menu corresponding to the current contents of the Input Type field (directly above this menu field) will be displayed.

Color Balance Submenus

There are 3 different types of Color Balance submenus as described below. Each submenu corresponds to a specific type of input video as selected in the Input Type field of the Input Setup menu.

RGB Color Balance Submenu

This menu allows the operator to balance the colors on an RGB input source. Independent Contrast and Brightness adjustments are provided for each color channel. Parameters entered by the operator are saved as part of the input configuration file for the corresponding video input channel.

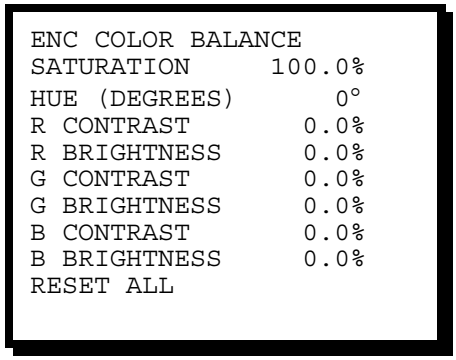


To perform adjustments, scroll to the desired menu line, select the menu item with the Select key and then turn the Adjust control to select the desired contrast or brightness level while viewing the active screen. Press Select to accept the newly entered settings or ESC key to exit without accepting the changes that have been entered. The adjustment for Brightness and Contrast is -25.0% to +25.0%.

The Reset All menu item is used to reset all the fields in this sub menu to the default values (0%). To reset the color balance controls, scroll to the Reset All menu line and select the menu item with the Select key.

S-Video or Composite Video Color Balance Submenu

This menu allows the operator to balance the colors on an S-video or Composite (NTSC/PAL) input source. Independent Saturation and Hue adjustments are provided. Parameters entered by the operator are saved as part of the input configuration file for the corresponding video input channel.

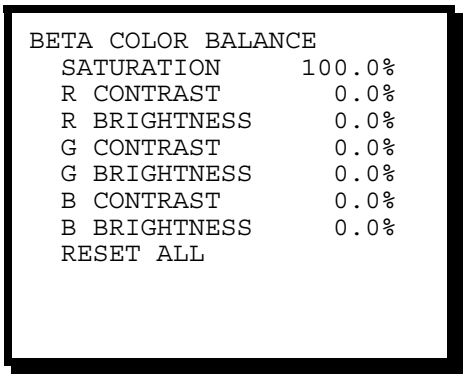


To perform adjustments, scroll to the desired menu line, select the menu item with the Select key and then turn the

Adjust control to select the desired saturation or hue level while viewing the Preview screen. Press Select to accept the newly entered settings or ESC key to exit without accepting the changes that have been entered. The adjustment range for saturation is 75.0% to 125.0%. Hue is adjustable in 1 degree increments from 0 to 360 degrees.
Red, Green and Blue Contrast and Brightness adjustments range from –25.0% to 25.0% in 0.1% increments.
The Reset Color menu item is used to reset all the fields in this sub menu to the default values. To reset the color balance controls, scroll to the Reset Color menu line and select the menu item with the Select key. The saturation parameter will be reset to 100.0% and the HUE field will be reset to 0 degrees.

Beta 50, Beta 60, MII, and EBU Color Balance Submenus

This menu allows the operator to adjust saturation on Beta 50, Beta 60, MII, and EBU input sources. Parameters entered by the operator are saved as part of the input configuration file for the corresponding video input channel.



To perform adjustments, scroll to the Saturation menu line, select the menu item with the Select key and then turn the Adjust control to select the desired saturation level while viewing the Preview screen. Press Select to accept the newly entered settings or ESC key to exit without accepting the changes that have been entered. The adjustment range for saturation is 75.0% to 125.0%. Red, Green and Blue Contrast and Brightness adjustments range from –25.0% to 25.0% in 0.1% increments.

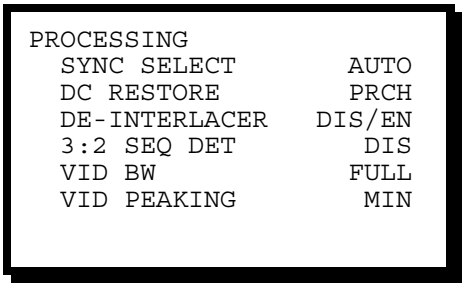
The Reset All menu item is used to reset all the fields in this sub menu to the default values. To reset the saturation controls, scroll to the Reset All menu line and select the menu item with the Select key. The saturation parameter will be reset to 100.0%.

Processing

The Processing menu line is used to call up a submenu to control input sync selection, DC restoration and de-interlace functions. Scroll to the Processing menu line and press the Select key to display the Processing submenu.

Processing Submenus

The Processing menu line is used to call up a submenu. Scroll to the Processing menu line and press the Select key to display the Processing submenus.



Sync Select

The Sync Select menu item allows the user to select one of four different modes (Auto, H/V, Comp or SOG). In Auto Mode, the unit will examine the incoming sync signals and automatically select the active sync source. Auto is the normal default setting. The user can select H/V (separate H and V sync), Comp (separate Composite sync), or SOG (Sync-On-Green) modes to override the automatic sync selection. This is sometimes desirable if the input signals are noisy.

DC Restore

The DC Restore menu item allows the user to select one of three DC Restoration modes (PRCH, PDLY or SYNC). The default mode is DC Restoration to the back porch of the incoming video signal (PRCH). The PDLY Mode is used when a tri-level sync comes in on the input, such as an HDTV signal. The SYNC Mode selects DC Restoration to the sync interval and may be useful for videos without a back porch interval.

De-Interlacer

The De-Interlacer should be on for optimal performance with full-motion video. When the De-Interlacer is enabled, the video processing of an NTSC format introduces a delay of approximately 3.5 field periods, or 58 ms, between video input and video output. The De-Interlacer can be disabled by selecting Disable.

3.2 Seq Detect

This menu item is applicable only for standard video (component, s-video, composite) inputs. The default mode is off. The 3:2 Sequence Detect feature should be turned on to process video derived from film source material.

Video Bandwidth

This menu item is applicable only for S-Video and Composite video inputs. The default mode is Full. The Reduced setting can be used to soften the image by reducing horizontal bandwidth.

Video Peaking

This menu item is applicable only for S-Video and Composite video inputs. The default mode is normal. Increased Video Peaking can be obtained by selecting the Increased or Maximum settings. Reduced peaking is obtained by selecting the Minimum setting.

Audio Input Setup Menu

Input source parameters are adjusted within this menu, which also displays the currently selected audio source.

```
AUDIO INPUT SETUP      1
  LEVEL          CONSUMER
  TRIM                50%
```

The source Level feature allows a user to select between Professional and Consumer input levels. The Trim feature allows user to adjust the input audio gain from 0% to 100%. The default settings are illustrated.

Undo Changes

The Undo Changes menu item allows the user to undo all changes made since entering the Input Setup Menu. Scroll to the Undo Changes menu line and press the Select key to undo all changes and return to the Main menu.

Reset Configuration

The Reset Configuration menu item is used to force PresentationMASTER™ to ignore Input Setup configuration information previously entered by the user. When this function is activated the unit will perform an analysis of the input video to derive and enter new input video default values. To activate this function, scroll to the Reset Configuration menu line and press the Select key.

Save FN#

This menu item provides quick one-button update operation. The input configuration file name and number (FN#)

associated with the source selected for calibration is shown on the menu line. To replace the selected file, simply scroll down to the SAVE menu item and press the Select key. The contents of the selected input configuration file will be replaced with the current parameter settings. Note that if no file has been entered, a default file number and name will be assigned. The configuration file is automatically recalled each time the source is selected.

Save As

The function of the Save As command is similar to the Save command, however, the Save As command allows the user to specify a file number and file name.

The Save As menu line is used to save the input setup parameters as a configuration file. The configuration file being stored is automatically associated with the source used for the input setup process and recalled each time that source is selected. Scroll to the Save As menu line and press the Select key to display the Save Input File submenu, as illustrated below.

```
SAVE INPUT FILE
  FILE NUMBER           1
  FILE NAME      EMPTY
  SAVE
```

The next available file number is automatically shown on the first line of the SAVE INPUT FILE menu. You can use this file number to create a new file or assign another number (1 ≤ ## ≤ 64). The third line in the menu allows you to assign an eight-character file name to the file. Use the Select and Adjust controls to select characters to create the desired file name. Entry of a file name is optional. When the file number and name have been entered, select SAVE to save the current input configuration to a file. This will overwrite a file previously stored with the same file number. The file's input configuration is immediately applied to its associated source.

Input Setup Menu, Advanced Mode

When the Input Setup key is pressed and the Advanced Menu Mode is selected. The Input Setup Menu will appear as illustrated below. Menu items that differ from the standard Input Setup Menu are in bold print.

The Advanced Input Setup Menu is intended for use by experienced operators only. This menu allows the user to configure the unit for 1:1 Pixel Sampling to provide the highest possible image quality. 1:1 Pixel Sampling provides optimal image quality when properly adjusted; however, improper adjustment may produce an inferior image to what is obtained with the Standard Input Setup Menu.

```
INPUT SETUP             1
  ACTIVE          PREVIEW
  MENU MODE      ADVANCED
  AUTO CONFIG
  H TOTAL            1750
  PHASE MAIN            0
  PHASE PREVIEW         0
  POSITION (R)         40
  WIDTH (L)          1327
  TOP EDGE
  BOTTOM EDGE
  CONTRAST         100.0%
  BRIGHTNESS       100.0%
  INPUT TYPE S-VIDEO
  COLOR BAL             >>
  PROCESSING            >>
  AUDIO                 >>
  UNDO CHANGES
  RESET CONFIG
  SAVE FN #
  SAVE AS               >>
```

1:1 Sampling Overview

In order to scale an image it must first be digitized. This is the process of changing the analog graphics signals (Red, Green, and Blue for example) into pixels stored in the PresentationMASTER's™ image memory. The default mode of the PresentationMASTER™ is to over sample the input image producing more samples than there are in the original source material. The over sampled image is then scaled to the final output resolution.

An approach called 1:1 Sampling produces a superior image by sampling the analog graphics signals at exactly the same rate as that of the original source. This allows the image to be reconstructed with the reduced digitizing artifacts. The 1:1 Sampling approach requires very accurate settings and even a small sampling error causes noise on the output image. Both the sample clock frequency and phase must be correct to obtain a properly sampled image. PresentationMASTER™ incorporates automatic adjustments in the 1:1 Sampling mode.

Auto Config

To automatically set-up for 1:1 Pixel Sampling, the input image should have non-black data at the edges and have some amount of text or other graphics. The standard Windows GUI is a good example. With an appropriate image displayed on the active display, scroll to the Auto Config menu item and press Select. When the Auto Config menu item is activated, the unit examines the incoming video and automatically configures the system for 1:1 pixel sampling. Parameters in the H TOTAL, PHAS MAIN, PHASE PREVIEW, POSITION (R), and WIDTH (L) menu fields are calculated and loaded as part of the Auto Config process. In a couple of seconds, the image should return properly adjusted.

H Total

This menu field displays the total number of pixel clock periods during a horizontal line. The parameter is automatically loaded when the Auto Config process is complete. Manual adjustments can be made by scrolling to the H total menu item, pressing select and making adjustments with the Adjust Control.

Phase Main

This menu field displays a number between –16 and +16 which represents phase adjustment for the sample clock on the Main output. Phase is adjustable to the nearest 1/32 of a clock period. This parameter is automatically loaded when the Auto Config process is complete. Manual adjustments can be made by scrolling to the Phase Main menu item, pressing Select and making adjustments with the Adjust Control.

Phase Preview

This menu field displays a number between –16 and +16 which represents phase adjustment for the sample clock on the Preview output. Phase is adjustable to the nearest 1/32 of a clock period. This parameter is automatically loaded when the Auto Config process is complete. Manual adjustments can be made by scrolling to the Phase Preview menu item, pressing Select and making adjustments with the Adjust Control.

Position (R)

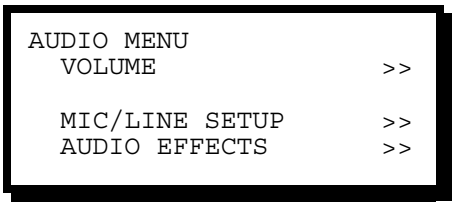
This menu field displays the number of clock intervals assigned to the horizontal back porch. The parameter is automatically loaded when the Auto Config process is complete. Manual adjustments can be made by scrolling to the Position (R) menu item, pressing Select and making adjustment with Adjust Control. Adjustments should be made to move the left edge of the image to the desired location.

Width (L)

This menu field displays the number of clock intervals assigned to the horizontal active area. The parameter is automatically loaded when the Auto Config process is complete. Manual adjustments can be made by scrolling to the Width (L) menu item, pressing Select and making adjustment with Adjust Control. Adjustments should be made to move the left edge of the image to the desired location.

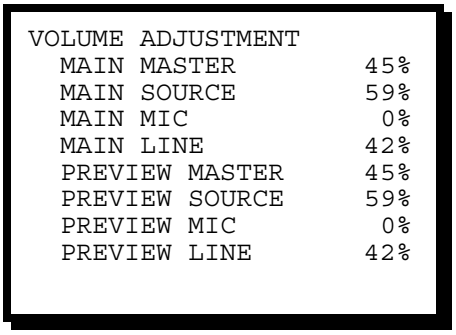
Audio Menu

A top-level audio menu leads to submenus which allow the user to modify parameters such as volume, audio transition time, and variable audio signal delay.



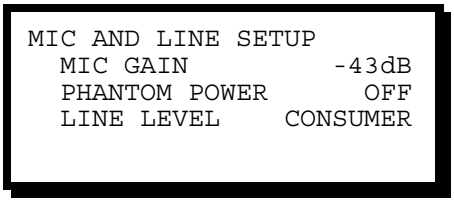
Volume Adjustment Menu

This menu provides the current volume as a percentage of maximum volume. Each of eight volumes is represented by a line in a scrollable menu. The master volume controls the overall volume of the mixed output, while the Source, MIC, and Line controls control the individual inputs to the audio mixer. To change the volume, use the Adjust control to scroll to the appropriate menu item and press Select. The volume is changed as the Adjust control is turned. The following is the default startup state of this menu.



MIC and LINE Setup Menu

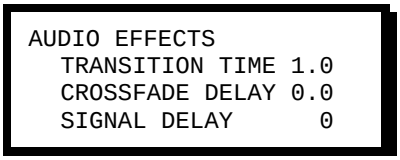
The MIC and LINE Setup Menu allows the user to define the MIC Gain (-43, -50, or –57dB), microphone Phantom Power mode (Off or On), and the LINE input levels (Pro or Consumer). The default settings are illustrated.



Audio Effects Menu

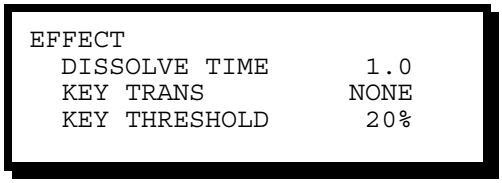
Audio breakaway transition time, breakaway crossfade delay and global audio signal delay are set in this menu. These parameters are only available in A/V breakaway mode. Transition Time refers to the total time required to dissolve audio from one source to another. Audio Crossfade Delay is the amount of time from the beginning of an audio transition to the beginning of the introduction of the second source. Crossfade Delay can never be greater than the transition time, which varies from 0.0 to 5.0 seconds.

The global Signal Delay is used for additional audio delay required to synchronize audio with corresponding video if video delays are introduced by external devices. The default settings are illustrated.



Effect Menu

The Effect Menu allows the user to adjust the transition duration for all video and audio/video “Follow” dissolves and the luminance keying properties. The default setting is illustrated.



Dissolve Time

To control the duration of the dissolve transitions select the Dissolve Time menu item with the Select key and then turn the Adjust control to select the desired transition time. The adjustment range is 0.0 to 5.0 seconds.

Key Trans

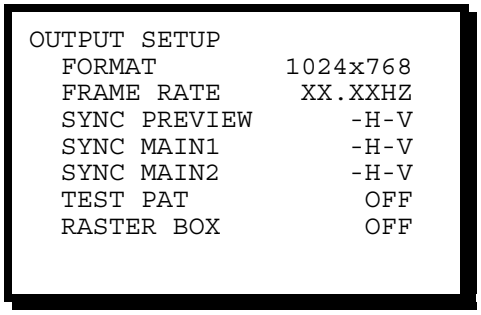
The Key Trans selects either the CUT or the DISSOLVE effect used when the key source is transitioned over the background image.

Key Threshold

To control the pixel luminance value threshold, select the KEY THRESHOLD menu item with the Select key and then turn the Adjust control to select the desired threshold between 0% and 100%. To get an idea of how the threshold affects the final mix, transition the key source over the background image before adjusting the threshold.

Output Setup Menu

The Output Setup Menu allows the operator to select the desired video output format and the output of the internal test pattern generator.



Output Format

The Output Format menu item allows the user to select an output format that matches the native resolution of the projection device in order to optimize image quality. To perform adjustments, scroll to the Format menu line, select the menu item with the Select key and then turn the Adjust control to select the desired output format. The available output formats are; VGA (640x480), SVGA (800x600), XGA (1024x768), SXGA (1280x1024) as well as the following

plasma display formats: 1280 x 720, 1280x726, 1365x768, and 1365x1024. Press Select to accept the newly entered settings or ESC to exit without accepting the changes that have been input. Please note that selections for this menu item do not become active until the Select key is depressed. This differs from the operation of some other menus where changes occur as soon as parameters are changed.

Frame Rate

The Frame Rate menu item allows the user to select the desired output frame rate. To perform adjustments scroll to the Frame Rate menu line, select the menu item with the Select Key and then turn the Adjust control to select the desired output frame rate (50Hz, 59.94Hz or 75Hz).

NOTE: To eliminate the potential for frame rate artifacts it is recommended that the output frame rate be set to match the input frame rate for video sources (59.94 Hz for NTSC, 50 Hz or 75Hz for PAL).

Sync

The Sync menu items allow the user to independently select the desired output sync format for the Preview and for the two Main outputs. To perform adjustments, scroll to the appropriate Sync menu line (Preview, Main1 or Main2), select the menu item with the Select key and then turn the Adjust control to select the desired output sync format. The available output formats are +H+V (active high Horizontal Sync, active high Vertical Sync), +H-V (active high Horizontal Sync, active low Vertical Sync), -H+V (active low Horizontal Sync, active high Vertical Sync), –H-V (active low Horizontal Sync, active low Vertical Sync), and –C (active low Composite Sync). Press Select to accept the newly entered settings or ESC to exit without accepting the changes that have been entered.

Test Pattern

The Test Pattern menu item allows the user to select a test pattern for display. To select a test pattern, scroll to the Test Pattern menu line, select the menu item with the Select key and then turn the Adjust control to select the desired test pattern. The available test patterns include Horizontal Ramp, Horizontal Bars, Burst (2 On-2 Off), Color Bars, Black, White, and Cross Hatch. Press Select to output the selected test pattern. The Off selection is used to disable the internal test pattern generator and return to live conversion mode.

Raster Box

The Raster Box menu item allows the user to overlay a border on the Main or Preview output images. To control the display of the Raster Box, scroll to the Raster Box menu line, select the menu item with the Select key and then turn the Adjust control to select the desired output (Preview, Main, Both, or Off). The Off selection is used to disable the display of the Raster Box. The raster box can be displayed on the test patterns or over live data.

File Menu

The File Menu allows the user to assign one of 64 input configuration files to each of the eight input sources. The input configuration file number and file name associated with each of the eight inputs are show in the menu as illustrated below.

```
FILE MENU
  IN 1            1  DVD1
  IN 2            2  DVD2
  IN 3            3 COMP1
  IN 4            4 COMP2
  IN 5            5 BETA1
  IN 6            6 BETA2
  IN 7            7  YUV1
  IN 8            8 EMPTY
DELETE A FILE          >>
```

IN1 – IN8

To assign an input configuration file to a source, simply scroll down to the desired input source and press Select to

select the menu item. Use the Adjust knob to select the desired input configuration file and then press Select again to complete the file association.

Delete A File

To delete an input configuration file, scroll to the Delete A File menu item and press Select to enter the Delete A File submenu.

Miscellaneous Menu

The Miscellaneous Menu has options for changing serial port configuration and backlight status, as well as performing a factory reset, which clears all user files.

```
MISC MENU
  SYSTEM SAVE
  CONFIG SERIAL           >>
  TECH SUPPORT            >>
  BACKLIGHT               ON
  A/V MODE           PRESENT
  REMOTE PROTOCOL         >>
  FACTORY RESET           >>
```

System Save

The PresentationMASTER stores the state of all variables and files in flash. Select this item to store the system state so it can be recovered the next time the unit is powered on. If this item is not selected after changes have been made to the system, the previous system state will be recalled.

Config Serial

Allows the user to change ECHO from ON/OFF. BAUD RATE can be adjusted from 1200, 9600, 19.2K and 38.4K. DATA BIT has the option of 7 or 8. STOP BIT can be changed between 0 and 1. PARITY supports NONE, EVEN or ODD. RESET will default the settings to Baud = 38.4, Parity = None, Data Bits = 8 and Parity = None. These settings are used for both RS232 and RS485 communications.

```
CONFIG SERIAL
  ECHO                 ON
  BAUD RATE         38.4K
  DATA BIT             8
  STOP BIT             1
  PARITY            NONE
  RESET RS-232
```

Tech Support Menu

Displays the latest version of software and customer service numbers to contact if a problem is encountered.

```
TECH SUPPORT MENU
  SOFT VER      1.06 0 A
  PHONE     916.859.2500
            916.802.6867
```

Backlight Menu

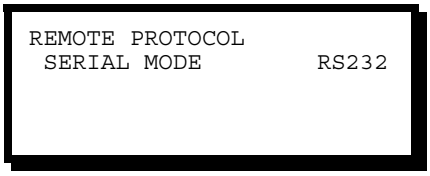
Allows the user to choose whether the display buttons are lighted or not.

A/V Mode

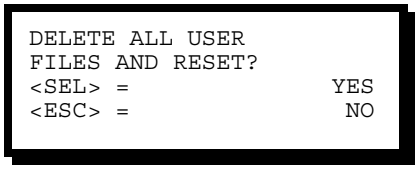
Selects between Presentation Mode and Integration Mode. In Presentation Mode, the program and preview sources are swapped after a transition. In Integration Mode, the preview source is transitioned to program so that both program and preview have the same source after the transition.

Remote Protocol Menu

Provides the user with a means to set the serial communication protocol between RS232 and RS485. If RS485 is selected, the unit's ID can be set to any number from 1 to 32. The front panel is locked when the RS485 protocol is selected.



Factory Reset Submenu



Pressing the SEL key will perform a factory reset after storing the default system state in flash memory. Pressing ESC key will return the user to the previous menu.

4

CHAPTER FOUR

Serial & Remote Command Syntax

What you will find in this chapter…

- *Serial Port Default Configuration*
- *Serial Commands*
- *Remote Commands*
- *PresentationMASTER Command List/Description*
- *Terminal Remote Control*

Serial & Remote Command Syntax

Serial Parameters

The following are the default parameter settings for serial communication:

Baud Rate is 38.4.
Parity is NONE.
Stop Bit is 1.
Data Bit is 8.
Echo is ON or OFF. (Applies to RS232 mode only)

Default settings can be changed with the MISC menu as described on page 26. For RS-232 signal connections, refer to page 10.

Serial Command Formats

RS232 Mode

The Graphics Board will respond with a '**#**' prompt when the command processor is ready for a command.

The command syntax is shown below
cmd arg1 arg2 … argn<CR>

cmd	cmd is any valid Graphics Board command, typically 2 to 6 alphabetic (non numeric) characters.
arg	arg1, arg2, … argn are required or optional parameters depending on the command used.
<CR>	carriage return (ASCII 13) terminates the command

A space (ASCII 32) must be inserted between the command and any arguments that follow. A space must also be inserted between all argument parameters except for the last argument in the chain.

All commands in RS232 mode **must** be terminated with a carriage return (ASCII 13). The carriage return will tell the command processor to begin execution of the command.
If the command is not recognized as a valid command, a '? 4' is returned for unknown command where '4' is a numeric error code for Command Not Available. If the command is recognized but the syntax is incomplete or required parameters are missing then '? 1' will be returned, where '1' is a numeric error code for Command Format Error. See below for a complete description of Error Codes.

Query commands will return the following:
=result number
#

The '=' indicates a result from a command is following. The 'result' will follow directly after the '='. The value of the result will vary depending on the query command used. A new line will be generated and the prompt will indicate the system is ready for a new command.

Error Codes

Command Format Error	1
Command Range Error	2
Command Execution Error	3
Command Not Available	4

RS485 Mode

Single commands will be combined with a prefix, device number, command separator and suffix to form a command string as shown below:

Single Command Format:
<*prefix*><id><cmd arg1 arg2 ..argn><suffix>

Multiple Command Format:

<*prefix*><id><cmd arg1 arg2 ..argn>,<id><cmd arg1 arg2 ..argn>,…,<id><cmd arg1 arg2 ..argn><suffix>

prefix	a single * character (ASCII 42).
id	id is the device number in the range of 1 to 32. This can be a single character for values less than 10, no preceding zero is required.
cmd	cmd is any valid Graphics Board command, typically 2 to 6 characters in length
arg	arg1,2,n is any required or optional parameters needed for the command, separated by spaces (ASCII 32)
,	separates multiple commands
suffix	a single '!' character (ASCII 33).

Example:
**12XYZ A 9,9PDQY 1234,31WX 200 98!*

The command string is started by the prefix character '*'. The first command follows directly after the prefix. The example shows that device 12 should process the XYZ command with A and 9 as parameters. A coma (ASCII 44) separates the commands. Device 9 will process the PDQY command with a parameter of 1234 and device 31 will process the WX command with parameters of 200 and 98. The suffix character '!' follows directly after the last command to end the command string.

Commands received in the command string will not be processed until the suffix character '!' is received. This format allows commands to be stack to the same or multiple devices and executed when the suffix '!' character is received by all units. Any incomplete or unknown commands will be ignored. The maximum number of commands that can be stacked per unit is 16. Each unit will only stack those commands assigned to it, even though all units receive the same command string.

During queue processing, no input buffer processing is performed. Characters sent through the serial port during queue processing are stored in the input buffer. If hardware flow control is not active, it is important to guarantee that the input buffer limit is not exceeded before completion of the last command string. Note: The command queue does not support backspace characters.

To minimize bus traffic the command words will be kept as short as possible. The units will not respond with prompts or any command error conditions. Echo will be disabled when RS-485 mode is selected.

Configuration Load and Save

These commands can be used to store or duplicate various PresentationMASTER™ configuration files (CFG's). The files can be loaded off the PresentationMASTER™ to a disk file on a PC.

Download CFG

DL op nn sclr<CR>
Parameters:

Op - [I|P] Download Input library or Program Sequence Steps.

nn Selects the index number of the configuration. When Op = I, this number can be zero for the current configuration or a number between 1 - 64 for a User Library Configuration. When Op = P, this number should always be 1.

sclr – [A|B|M|P] Used only when nn = 0, otherwise parameter not required.

Example: DL I 12<CR>
Downloads the input cfg number 12

This command will download a configuration file from the PresentationMASTER™ to the serial port. The download begins immediately after the command is initiated. The user should verify that the CFG is valid before downloading. The format of the CFG data is
<SOH><LIB><Index><Size><BINARY DATA><Sx>

Where
<SOH> is StartOfHeader (0x01)
<LIB> is the current library type, [I]nput or [P]rogram Sequence
<Index> is the library index of this file, as a byte value.
<Size> is the number of bytes in the binary data field, as a byte value.
<BINARY DATA> is the data library structure in binary format.
<Sx> is a 8 bit checksum in as a byte field, applied to binary data only.

Current file sizes are: *Input Library - 211 bytes (1688 bits)*

All files will have additional 4 bytes (32 bits) of header information added to them and 1 byte (8 bits) of checksum information at the end of the file.

Upload CFG

UL op nn s[8]<CR>
Parameters:

Op - [I|P] Upload Input library or Program Sequence Steps.
nn Selects the index number of the configuration. When **Op = I**, the number can be between 1 – 64 for a User Library Configuration. Use 0 to load the file into the index it originated from. When **Op = P,** the number needs to be 1.

S[8] Optional parameter to override the 8 character description of the file.

Example: **UL O 3<CR>**
Uploads file to the output cfg location 3.

This command will upload a configuration file from the serial port to the PresentationMASTER™. The upload begins once a valid SOH character is detected indicating the start of header. This allows multiple units to receive the UL command and then wait to receive the same CFG file from a PC or source PresentationMASTER™.

Remote Command Format

All commands with *sclr* allow either Scaler [A] or Scaler [B] to be selected. If this parameter is not used, Scaler A is used as the default. Inquiry commands will accept the scaler as an optional parameter. The default is to return information for Scaler A. Additionally, the *sclr* parameter will accept [M]ain or [P]review as valid operands.

ACFG sclr	Auto Input Configuration (1:1 Sampling): sclr[A|B|P|M]
ADBG d	Audio debug: d[0|1]
ADLY d	Audio delay adjustment: t[0..50]
AMTE M L P m l p	Audio mute control: MLPmlp[0|1] (mute=0),
AOIWN n n n n sclr	Area of Interest Window: Right Edge, HWidth, Bottom Edge, VHeight,
AOUT P p h	Audio output control: Pph[0|1]
ARST u	Audio reset control: u[0|1]
ARTE a b	Audio route: ab[0..7]
ARTEM c	Audio route main: c[0..8] where 8 is silent
ARTEP c	Audio route preview: c[0..8] where 8 is silent
ASEN p m l s	Audio sensitivity: pl[0|1] m[1..3] s[0..15]
ASTAT	Audio status: return current status as a sequence of bytes
ASTAV	Audio volume status: return current volume status as a sequence of bytes
ATRM c v	Audio source trim: c[1..8] v[0..51]
ATRN t c	Audio transition: t[0..5000] c[0..5000]
AVOL t i r	Audio volume: t[1..8] i[-1,1] r[10,25,40]
AVS t v	Audio/Video mode set: t=0 (I) m[0,1] B|I, t=1 (P) m[1..3] V|A|B
CHKSUM	Returns the list of flash-stored file checksums
CMDST?	Last Command Status Inquiry,
COMCK op	Communication Check: op[D|U] DOWNLOAD|UPLOAD 128 bytes
DEBUG?	Debug Inquiry
DL op nn sclr	Download CFG: op[I|P] nn[0-64] sclr[A|B|P|M]
ECHO port n	Echo Enable/Disable: port[A|B] COM_A|COM_B n[0|1] DIS|ENA
FREEZ n sclr	Freeze: n[0|1] OFF|ON sclr[A|B|P|M]
FSB n sclr	Force Scaler Black: n[0|1] OFF|ON sclr[A|B|P|M]
HELP I	Help Command: i[A-Z], Help Index
IBRT op nnn sclr	Input Brightness: op[C|R|G|B] (C)n[75 - 125]% (RGB)n[-25 - 25]%
ICDEL nn	Input Configuration Delete: n[1-64]
ICFGN nn	Input Configuration File Name: n[1-64]
ICGTE n sclr	Input Clamp Gate: n[0-2], SYNC|PRCH|PDLY sclr[A|B|P|M]
ICNT op nnn sclr	Input Contrast: op[C|R|G|B] (C)n[75 - 125]% (RGB) n[-25 - 25]%
ICPH op sclr nn	Input Clock Phase: op[A|D|M|I], sclr[A|B|P|M], n[0-31]
ICPHO op sclr nn	Input Clock Phase Offset: op[A|D|M|I], sclr[A|B|P|M], n[-16 to 16]
ICPL op sclr nnnn	Input Clocks Per Line: op[A|D|M|I], sclr[A|B|P|M], n[0-4096]
ICREC nn sclr	Input Configuration Recall: n[1-64] sclr[A|B|P|M]
ICRST sclr	Input Configuration Reset: sclr[A|B|P|M]
ICSAV nn s[8] sclr	Input Configuration Save: n[1-64] s[Name] sclr[A|B|P|M]
ICSP n sclr	Input Colorspace: n[0-6], RGB|B50|B60|MII|EBU|NTSC|SVID
IHRE sclr?	Input Right Edge Inquiry: sclr[A|B|P|M]
IHUE nnn sclr	Input Hue: n[0-360 degrees] sclr[A|B|P|M]
IHW sclr?	Input Left Width Inquiry: sclr[A|B|P|M]
IRSP op nnn sclr	Input Raster Size/Position: op[L|R|T|B] nnn[-999 - 999] sclr[A|B|P|M]
ISAT nnn sclr	Input Saturation: n[50-200]% sclr[A|B|P|M]
ISYNC n sclr	Input Sync: n[0-3], SOG|CSYN|H&V|AUTO sclr[A|B|P|M]
KEY mode sclr thrsh	Luminance Keying: mode[K|X], sclr[A|B|P|M], thrsh[0..100]
KEY <SCLR>?	Luminance Keying Query: sclr[A|B|P|M]
LCK sclr	Video Lock: sclr[A|B|P|M]

LCK sclr?	Video Locked Inquiry: sclr[A|B|P|M]
LOADR	Loader Mode: Place Graphics Board into Loader Mode
MADB n sclr	Motion Adaptive De-interlacing Bypass: n[0|1] DISABLE|ENABLE sclr[A|B|P|M]
MSTAT sclr	FACTORY USE ONLY
OCRECF n	Output Configuration Recall: n[0-7]
OFRATE n	Output Frame Rate: n[0|1|2] 59.94Hz|50Hz|75Hz
OSYNC n op	Output Sync: n[1-5], -C|+H+V|+H-V|-H+V|-H-V op[B|H|P] BNC|HD15|Preview
OTPM m ty iv bx gr	Output Test Pattern: m[0-3], ty[0-4], iv, bx, gr [0|1] OFF|ON
PFSD n sclr	Progressive Frame Seq Det. (3-2 Pulldown): n[0|1] DIS|ENA sclr[A|B|P|M]
PHCAL	FACTORY USE ONLY
PHRST	FACTORY USE ONLY
PHSCAL	Phase Calibration
PHSET	FACTORY USE ONLY
RESET op	Reset System: op[A|F] All|Factory Defaults
RTE n c	Router Switch Command: n[1-9] Input Source Sel - 9=BLK c[M|P] Main|Preview
SSTAT	FACTORY USE ONLY
STAT?	FACTORY USE ONLY
STATS?	Print Log File
T nnn	T-BAR Transition: nnn[0 - 255] where 0 = Scaler B, 255 = Scaler A
TBLS n	Terminal Backlight Status: n[0|1] OFF|ON
TCM n	Terminal Remote Control Mode: n[0|1] FOLSOM/VISTA|FSR
TDI n	Front Panel Display Intensity: n[25|50|75|100]
TDL	FACTORY USE ONLY
TER nnn	Terminal Encoder Rate: n[-100 - 100]
TKC nn	Terminal Key Code: n[01 - 7F]
TLSR	Terminal LED Status
TRCF n nn	Terminal Recall Configuration File: Input Source n[1-8] File Num nn[1-64]
TRN dst dn n.n n	Transition Inputs: dst[A|B|P|M] dn[1-8], n.n[0-5.0]sec n[0-6]
UL op nn s[8]	Upload CFG: op[I|P] Input Cfg|Program Steps nn[0-64] s[8]
VBW n sclr	Video Bandwidth: n[0|1] FULL|REDUCED sclr[A|B|P|M]
VER	Version Information
VPK n sclr	Video Peaking: n[0|1|2|3] MIN|NOM|INC|MAX sclr[A|B|P|M]
VRBOS n	Verbose Mode: n[0|1], OFF|ON

PresentationMASTER™ Command List/Description

Command: ACFG

Description:

Automatically configure one-to-one sampling input configuration.

Parameters:

sclr – scaler value (A,B,P or M)

Example:

acfg A – automatically configure scaler ‘A’.

Command: ADBG

Description:

Toggles led1 on the audio interface board

Parameters:

d - led state, 0=off, 1=on

Example:

adbg 1 - turn led1 on

Command: ADLY

Description:

Audio signal delay adjustment for external video device synchronization

Parameters:

t - signal delay time in milliseconds [0..50]

Example:

adly 25 - add 25 ms of audio delay to all channels

Command: AMTE

Description:

Audio mute control

Parameters:

M - Main microphone mute state (0=mute, 1=active)
L - Main line mute state
P - Main source state
m - preview microphone mute state
l - preview line mute state
p - preview source state

Example:

amte 0 0 0 1 1 1 - mute all main audio outputs

Command: AOIWN

Description:

Allows sizing adjustments of the input source with respect to the output raster.

Parameters:

n – Right Edge
n – Horizontal Width (Pixels)
n – Bottom Edge
n – Vertical Height (Lines)
sclr – Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

AOIWN A? : Returns for Scaler A: =n n n n n, (=Right Edge, Horizontal Width, Bottom Edge, Vertical Height, Clock Samples per Line).

Command: AOUT

Description:

Audio output relay control to enable or disable main, preview and headphone relays.

Parameters:

P - main relay control (0=off, 1=on)
p - preview relay control
h - headphone relay control

Example:

aout 1 1 1 - enable all outputs

Command: ARST

Description:

Audio board reset control

Parameters:

u - reset the audio board uart if 1

Example:

arst 1 - resets the uart

Command: ARTE

Description:

Route audio router inputs to output channels a and b.

Parameters:

a - channel a input [0..8], where 8 is the silent channel
b - channel b input [0..8], where 8 is the silent channel

Example:

arte 0 8 - route input channel 1 to output a and the silent channel to output b

Command: ARTEM

Description:

Route audio main channel

Parameters:

c - input [0..8], where 8 is the silent channel

Example:

artem 0 - route input channel 1 to main

Command: ARTEP

Description:

Route audio preview channel

Parameters:

c - input [0..8], where 8 is the silent channel

Example:

artep 8 - route silent channel to preview

Command: ASEN

Description:

Audio sensitivity settings for audio source inputs, line input, microphone gain and microphone phantom power.

Parameters:

p - phantom power setting (0=off, 1=on)
m - microphone gain settings 1=-43dB, 2=-50dB, 3= -53dB
l - line level setting (0=consumer, 1=professional)
s - source level setting bits (0=consumer, 1=professional)

Example:

asen 0 1 0 0x01 - set the phantom power off, gain to -43dB, line level to consumer and source 1 to professional (notice that the source level setting is an eight bit value)

Command: ASTAT

Description:

Factory use only, returns a number of status bytes indicative of the current audio state.

Parameters:

None

Example:

astat

Command: ASTAV

Description:

Factory use only, returns a number of status bytes indicative of the current audio volume states.

Parameters:

None

Example:

astav

Command: ATRM

Description:

Audio source trim command

Parameters:

c - audio source channel [1..8]
v - audio trim setting [0..51]

Example:

atrm 2 26 - set audio input channel two trim value to 26

Command: ATRN

Description:

Audio transition command.

Parameters:

t - transition time in milliseconds [0..5000]
c - crossfade delay time in milliseconds [0..5000]. It is always less than t.

Example:

atrn 3000 1000 - perform an audio transition of 3 seconds with a crossfade delay of one second.

Command: AVOL

Description:

Audio volume adjustment.

Parameters:

t - volume type
- 1 = main master volume
- 2 = main source volume

3 = main microphone volume
4 = main line volume
5 = preview master volume
6 = preview source volume
7 = preview microphone volume
8 = preview line volume

i - volume decrement or increment (-1=decerment,1=increment]

r - volume rate of change
10 - fast
25 - moderate
40 - slow

Example:

avol 1 -1 10 - reduce the main master volume as quickly as possible

Command: AVS

Description:

Set the Audio/Video Mode.

Parameters:

t – 0 =Integration Mode (Will transition Preview to Program.)
1 =Presentation Mode (Will transition Preview to Program and Program to Preview.)

m – 0 = Breakaway
1 = Follow
2 = Video
3 = Audio

Example:

AVS 1 2 : set to operate in the Presention Video Mode.

Command: CHKSUM

Description:

Returns the list of flash-stored file checksums

Parameters:

None

Example:

CHKSUM: Returns the following.

```
Flash-stored file checksums.

 ab25 - spinc.rbf
 4a6f - spoc.rbf
 d4ec - spmx.rbf
 2b69 - terminal.bin
 57c6 - pm_menu.cs
 d3ff - presentationMaster.dwn
```

Command: CMDST?

Description:

Returns status of the last command that executed

Parameters:

None

Example:

CMDST? : 0 = Completed; 1 = Format Error; 2 = Range Error;
3 = Execution Error; 4 = Command Not Available Error.

Command: COMCK op

Description:

Allows a remote control system to verify communications between itself and the PresentationMASTER.

Parameters:

op – [D]ownload or [U]pload data
n – Amount of data to upload or download. This is an optional parameter that defaults to 128 bytes.

Example:

COMCK U : After the terminating <CR>, the systems waits for 128 bytes to be sent.

COMCK D : The system transmits 128 bytes to the remote controller.

Command: DEBUG?

Description:

Returns the status of Debug Mode.

Parameters:

None

Example:

DEBUG? : 0 = Debug Mode Disabled; 1 = Debug Mode Enabled

Command: DL op n sdr

Description:

Download input file configurations or a Program Sequence from the PresentationMASTER.

Parameters:

op **-** Input configuration or Program Sequence; [I|P]
nn **-** Index Number; [0-64]
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

DL I 2 : Download input configuration at index 2.
DL I 0 A : Download the current information loaded on Scaler A.
DL P 1 : Download the stored program sequence steps.

Command: ECHO prt n

Description:

Enable or Disable ECHO.

Parameters:

port - Com Port; [A|B] *Note: Com A = 25-pin Remote Port*
n - Disable or Enable; [0|1]

Example:

ECHO A 0 : Disable ECHO on Com A.

Command: FREEZ n sclr

Description:

Enable/Disable Freeze.

Parameters:

n - Freeze Enable/Disable; n[0|1], OFF|ON
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

FREEZ 1 A: Enables freeze on the display on Scaler A
FREEZ 0: Disables freeze on the display on Scaler A.

Command: FSB n sclr

Description:

Force Scaler Black.

Parameters:

n - Force Scaler Black Disable/Enable; n[0|1], OFF|ON
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

FSB 1 A: Scaler A will show a black screen
FSB 0 A: Scaler A will show the current input source.

Command: HELP I

Description:

Displays the list of available command on a terminal emulator.

Parameters:

i – Alphabetical Index [A – Z]; Optional Parameter

Example:

HELP?: Returns the command list.
HELP P?: Returns the entire command list starting with the first command that starts with “P”.

Command: IBRT op nnn sclr

Description:

Adjusts the Input Brightness value.

Parameters:

op - Select Brightness Control;
[C|R|G|B] Common, Red Offset, Green Offset, Blue Offset
nnn - Brightness value; C Range 75 - 125%, RGB Range -25 - 25%
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

IBRT C 110.5 A: Adjusts the Input Brightness on Scaler A to be 110.5%.
IBRT R 10 M: Adjusts the Red Offset to 10% for the Input on Main.

Command: ICDEL nn

Description:

Deletes a specified Input Configuration.

Parameters:

nn - Input Configuration Index; n[1 - 64]

Example:

ICDEL 2: Deletes input configuration two.

Command: ICFGN n

Description:

Fetch input configuration file name.

Parameters:

n - File number [1 – 64]

Example:

ICFGN 1: Returns the name associated with file number 1.

Command: ICGTE n sclr

Description:

Adjusts the Input Clamp Gate mode.

Parameters:

n - Clamp Gate Selection; SYNC|PRCH; 0|1|2
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Examples:

ICGTE 0 A: Adjusts the Input Clamp Gate on Scaler A to be SYNC
ICGTE 1 A: Adjusts the Input Clamp Gate on Scaler A to be PRCH
ICGTE 2 A: Adjusts the Input Clamp Gate on Scaler A to be PDLY

Command: ICNT op nnn sclr

Description:

Adjusts the Input Contrast values.

Parameters:

op - Select Contrast Control;
[C|R|G|B] Common, Red Offset, Green Offset, Blue Offset
nnn - Contrast value, C Range 75 - 125%, RGB Range -25 - 25%
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ICNT C 100.8 A: Adjusts the Common Input Contrast value as 100.8%.
ICNT G 15: Adjusts the Green Contrast Offset to 15% on Scaler A.

Command: ICPH op sclr nn

Description:

Adjust the Input Clock Phase.

Parameters:

op - [A|D|M|I] Automatic | Debug | Manual | Increment
Note: Debug Mode is for Factory Use Only
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview
nn – Phase Number [0 – 31] when **op = M**
Number to Increment by when **op = I**

nn – File Number [0 – 64]

Example:

ICPH A P: Automatically adjust the Input Clock Phase on Preview.
ICPH M M 12 0: Set Input Clock Phase on Main to 12 for the currently displayed input.
ICPH M M 12 2: Set Input Clock Phase for File Number 2 to 12.
ICPH I A 3: Increment the Input Clock Phase on Scaler A by 3.

Command: ICPHO op sclr nn

Description:

Adjust the Input Clock Phase Offset.

Parameters:

op - [A|D|M|I] Automatic | Debug | Manual | Increment
Note: Debug Mode is for Factory Use Only
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

nn – Phase Offset Number [-16 – 16] when **op = M**
Number to Increment by when **op = I**

nn – File Number [0 – 64]

Example:

ICPHO A P: Automatically adjust the Input Clock Phase Offset on Preview.
ICPHO M M 12 0: Set Input Clock Phase Offset on Main to 12 for the currently displayed input.
ICPHO M A 12 2: Set Input Clock Phase Offset for File Number 2 to 12. If the scaler A source displayed is derived from File Number 2, it will be updated as well.
ICPHO I A 3: Increment the Input Clock Phase Offset on Scaler A by 3.

Command: ICPL op sclr nnnn

Description:

Adjust the number of Input Clocks per Line.

Parameters:

op - [A|D|M|I] Automatic | Debug | Manual | Increment
Note: Debug Mode is for Factory Use Only
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

nnnn – Number of Clocks per Line [0 – 4096] when **op = M**
Number to Increment by when **op = I**

Example:

ICPL A P:	Automatically adjust the number of Input Clocks per line on Preview.
ICPL M M 1364:	Set Input Clocks per Line on Main to 1364.
ICPL I A 4:	Increment the number of Input Clocks per Line on Scaler A by 4.

Command: ICREC nn sclr

Description:

Recalls a stored Input Configuration.

Parameters:

nn - Input Configuration Index; n[1 - 64]
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview
n - Router input to which the input signal is connected.
Note: Router Input parameter only used on PresentationMASTER Plus.

Example:

(Assuming there is a saved Input Configuration in Index #1)

ICREC 1 M:	Loads the Input Configuration stored in Index #1 to the source on Main.
ICREC 1 A 2:	Loads the Input Configuration stored in Index #1 on Scaler A. In this example the input signal is sourced on router input 2.

Command: ICRST sclr

Description:

Resets the current input configuration of the scaler specified.

Parameters:

sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ICRST A: Reset the input configuration for Scaler A.

Command: ICSAV nn s[8] sclr

Description:

Saves an Input Configuration to a specified index.

Parameters:

nn - Input Configuration Index; n[1 - 64]
s[8] - Input Configuration Name; s[Name] (Up to 8 characters, no spaces)
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ICSAV 1 TEST A: Saves the input configuration currently on Scaler A to Index #1 with the label name TEST.

Command: ICSP n sclr

Description:

Adjusts the Input Color Space mode.

Parameters:

n - Color Space Selection; [0 – 6] RGB|B50|B60|MII|EBU|NTSC|SVID
If n = 254 or 255, then selection will increment or decrement through the list.
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ICSP 0 A: Adjusts the Input Color Space on Scaler A to be RGB.

Command: IHRE sclr?

Description:

Input Right Edge Inquiry.

Parameters:

sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

IHRE A?: Returns the pixel location of the Right Edge.

Command: IHUE nnn sclr

Description:

Adjusts the Input Hue setting.
*(Only applicable if input is a **NON-RGB** source.)*

Parameters:

nnn - Input Hue Selection; n[0 - 360]degrees
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

IHUE 20 A: Adjusts the Input Hue selection on Scaler A to be 20 degrees.

Command: IHW sclr?

Description:

Input Horizontal Width Inquiry.

Parameters:

sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

IHW A?: Returns the total pixel width of the input on Scaler A.

Command: IRSP op nnn sclr

Description:

Adjusts the Input Raster Size/Position.

Parameters:

op - Select Raster Control; [L|R|T|B] Left, Right, Top, Bottom
nnn - Increment/Decrement value; [-999 – 999]
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

IRSP R 10 A: Increments the Right Input Raster Size/Position by 10 on Scaler A.

Command: ISAT nnn sclr

Description:

Adjusts the Input Color Balance Saturation.
*(Only applicable if input is a **NON-RGB** source.)*

Parameters:

nnn - Input Saturation: n[50-200]%
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ISAT 110.0 A: Adjusts the Input Color Balance to 110.0%.

Command: ISYNC n sclr

Description:

Adjusts the Input Sync selection.

Parameters:

n - n[0 – 3], SOG|CSYN|H/V|AUTO
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

ISYNC 0 A: Sets Scaler A to expect SOG on the input channel.

Command: LCK sclr?

Description:

Video Lock Inquiry Command.

Parameters:

sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Returns: =0 for NOT LOCKED
=1 for LOCKED/MATCHED
=2 for LOCKED/MISMATCHED.

Command: KEY c sclr n

Description:

Set the luminous keying properties.

Parameters:

c - K' = Key Mode On, 'X' = Key Mode Off
sclr - 'A','B','P' or 'M'. 'P'/'M' stand for preview and main.
n 0-100%.

Example:

KEY K P 20: Enable Keying on Program with a Threshold of 20%

Command: LOADR

Description:

Places unit into loader mode. This mode is used to perform field upgrades.

Parameters:

None.

Command: MADB n sclr

Description:

Bypass the Motion Adaptive De-Interlacing feature. This will reduce delay thru the system. This feature is particularly effective when using live camera sources.

Parameters:

n - n[0|1], Disable or Enable
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

MADB 0 A: Disable the Motion Adaptive De-Interlacing.

Command: MSTAT sclr

Description:

FACTORY USE ONLY.

Parameters:

None.

Command: OCRECF n

Description:

Select the Output Resolution to use.

Parameters:

n - Output Resolution: n[0 – 7];
VGA|SVGA|XGA|720p|SXGA|1280x768|1365x768|1365x1024

Example:

OCRECF 2: Select output format to be XGA.
OCRECF T?: Translates the query output to return [0 – 7].

Command: OFRATE n

Description:

Select the Output Frame Rate to use.

Parameters:

n - Output Frame Rate: n[0 – 2], 59.94Hz | 50Hz | 75Hz

Example:

OFRATE 0: Select output frame rate to be 59.94Hz.

Command: OSYNC n op

Description:

Adjusts the Output Sync type for any of the three outputs.

Parameters:

n - Output Sync: n[1-5], -C|+H+V|+H-V|-H+V|-H-V
op - Output connector to make the change on: [B|H|P], where
B = BNC Output connector
H = Main HD15 Output connector
P = Preview HD15 Output connector

Example:

OSYNC 3 H: Adjusts the Output Sync value to be +H-V on the Main HD15 connector.

Command: OTPM m typ inv bx gr

Description:

Enables/Disables the Output Test Pattern and selects Test Pattern options.

Parameters:

m - Output TP Enable: m[0-3],
OFF|ON (Main Only)|ON (Preview Only)|ON (Both Scalers)
typ - Test Pattern Type: typ[0-5] H Gray Ramp|H Gray Scale|Burst|Color Bars|Black|Live Mode
inv - Test Pattern Inversion: inv[0|1] OFF|ON
bx - Test Pattern Raster Box: bx[0-3] OFF|ON
gr - Test Pattern Grid: gr[0|1] OFF|ON

Example:

OTPM 2 3 0 1 0: Enables the Test Pattern to be shown on Preview.
Color Bars have been selected with inversion off, raster box on and grid off.

Command: PFSD n sclr

Description:

Progressive Frame Sequence Detection. This command will allow the detection of 3-2 pulldown to be enabled or disabled.

Parameters:

n - n[0|1], Disable or Enable
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

PFSD 0 A: Disable detection of 3-2 pulldown.

Command: PHSCAL

Description:

This command performs a Phase calibration. Refer to the appropriate section in the manual for the procedure on how to setup the PresentationMASTER before using this command.

Parameters:

None.

Example:

PHSCAL: The system will perform a Phase calibration.

Command: RESET op

Description:

Resets the system to factory defaults.

Parameters:

op - Reset operation: op[A|F] All|Factory

Example:

RESET A:	Resets system to factory defaults and deletes all user input configuration files.
RESET F:	Resets system to factory defaults but leaves any user input configuration files intact.

Command: RTE n op

Description:

Switches the router preview input.

Parameters:

n - Select source to route: n[1-9] where 9 = BLK
op - Output to which the source is routed: op[M|P] Main | Preview

Example:

RTE 4 P: Switches the Preview to router input 4.

Command: SSTAT?

Description:

FACTORY USE ONLY

Example:

SSTAT A? : Returns a system status value.

Command: STAT?

Description:

FACTORY USE ONLY

Parameters:

None

Example:

STAT? : Returns a system status value.

Command: STATS?

Description:

Prints a System Status Log.

Parameters:

None

Example:

STATS? : Status log will be printed to the screen of a terminal emulator.

Command: T nnn

Description:

T-Bar command for manual transitions. In order for this command to be activated, the system must be put into Manual Transition mode. This is done by executing the TRN command (see below) with a time of 9.0 seconds.

Parameters:

nnn - [0 – 255] where 0 = Scaler B, 255 = Scaler A

Example:

T 128 : Will display 50% of Scaler A and Scaler B on the Main Output display.

Command: TBLS n

Description:

Enable or Disable the backlighting on the front panel switches.

Parameters:

n - [0|1] Disable | Enable

Example:

TBLS 0 : This will turn off the backlights on the front panel switches.

Command: TCM n

Description:

This command sets the Remote Control mode for the PresentationMASTER. Refer to the Terminal Remote Control section of this document for further information.

Parameters:

n - [0|1] Folsom/Vista | FSR

Example:

TCM 0 : This will place the system into the Folsom/Vista remote control mode.

Command: TDI n

Description:

Sets the display to the specified intensity. Intensity values are 100, 75, 50, or 25 representing a percentage of full intensity.

Parameters:

n - [25|50|75|100]

Example:

TDI 100 – Sets the display to full brightness.

Command: TDL

Description:

SYSTEM USE ONLY

Parameters:

None.

Command: TER nnn

Description:

Allows a remote control unit to emulate the function of the encoder knob on the front panel.

Parameters:

nnn - [-100 - 100] Absolute value determines the speed at which the knob is rotating and must be greater than 2. Positive values indicate Counter-Clockwise motion. Negative values indicate Clockwise motion.

Example:

TER 4 : “Move” the knob in a Counter-Clockwise motion by a small amount.

Command: TKC nn

Description:

Allows a remote control unit to emulate the function of any switch on the front panel.

Parameters:

nn - [1 – 7F], Each switch has a unique hexadecimal value. This number needs to be transmitted in ASCII format. See the table and example below.

SWITCH NAME	**CODE**
TKC <hex value in ascii> (e.g. TKC 2E)	
CUT	B
DISSOLVE	D
AUDIO [1,2..MUTE]	19, 1a..21
VIDEO [1,2..BLK]	24, 25..2C
A/V MODE	2E
OUTPUT SETUP	11
INPUT SETUP	12
EFFECT	13
MISC	1
FILE	2
AUDIO	3
SEL	18
ESC	15
Virtual Main Switching Keys	
Main AUDIO [1,2..MUTE]	39, 3a..41
Main VIDEO [1,2..BLK]	44, 45..4C

Example:

TKC B: Makes the system respond as if the CUT key has been pressed.

Command: TLSR

Description:

Returns a 46 byte ASCII string indicating the status of the Front Panel LEDs.

Parameters:

None.

Example:

TLSR: Refer to the Terminal Remote Control section of this document for further information on the format of this string.

Command: TRCF n nn

Description:

Sets the File Association table.

Parameters:

n - Input Source n[1 – 8]
nn - File Number nn[1 – 64]

Example:

TRCF 4 2: Sets up Input source 4 to use File 2.

Command: TRN dst dn n.n n

Description:

Use to transition Preview onto the Main output display.

Parameters:

dst - Final Input; dst[A|B|M|P] **n** – 0
dn - Transition Number: 1
n.n - Fade Rate in seconds; n[0 - 5.0, 9.0], where 9.0 = Manual Mode

Example:

TRN P 1 4.9 0: Dissolve Preview onto Main with a fade rate of 4.9 seconds.
TRN A 1 9.0 0: Place system into Manual transition mode. The T-Bar command (see above) will perform the dissolve. The **dst** parameter is ignored when placing the system into manual mode. Executing a TRN command like that in the first example will take the system out of manual transition mode.

Command: UL

Description:

Upload Input File configurations or a Program Sequence to the PresentationMASTER.

Parameters:

op - Input configuration; [I|P]
nn - Index Number; [0-64]
s[8]- Used to override description of file uploaded.

Example:

UL I 2 : Upload input configuration to index 2.
UL I 0 : Upload input configuration to the index it originated from.
UL P 1 : Upload a Program Sequence configuration.

Command: VBW

Description:

Video Bandwidth adjustment.

Parameters:

n - Bandwidth setting; n[0|1] FULL | REDUCED
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview

Example:

VBW 0 P : Set the video bandwidth on Preview to Full.

Command: VER?

Description:

This is a version query. The return format is **nn.nn.a** where:
nn is a two digit software version
nn is a two digit software version
a is an alpha character

Parameters:

None

Example:

VER?: Will return =nn.nn.a to a terminal emulator.

Command: VPK

Description:
Video Peaking adjustment.
Parameters:
n - Peaking setting; n[0|1|2|3] MIN | NOM | INC | MAX
sclr - Scaler [A|B|M|P]; Scaler A | Scaler B | Main | Preview
Example:
VPK 2 P : Set the video peaking on Preview to Increased.

Command: VRBOS n

Description:
Enables or Disables verbose mode for queries.
Parameters:
n - n[0|1], Disable or Enable
Example:
VRBOS 1: Enable verbose mode.

Terminal Remote Control

Emulation of the PresentationMASTER Front Panel is possible via the Remote Control port on the back of the PresentationMASTER. Two remote control protocols are available: the Folsom/Vista protocol used by remote controllers that wish to emulate key presses and knob turns and the FSR protocol which additionally receives front panel LED status.

Folsom/Vista Protocol

Terminal Key Code <TKC KeyCode>

Description: Issued by the Controller to send the "keycode" (see Table 2) for the currently pressed key or key combination.
Note: "KeyCode" is a hexadecimal key code expressed in ASCII format.

Example: TKC 13 – sends DSLV key depression.

Terminal Encoder Rate <TER n [-100 to 100]>

Description: Allows a remote control unit to emulate the function of the encoder knob on the front panel. Absolute value determines the speed at which the knob is rotating and must be greater than 3. Positive values indicate Counter-Clockwise motion. Negative values indicate Clockwise motion.

Example: TER -56 – Rotate the know in a clockwise direction at a medium rotation speed.

FSR Protocol

Front Panel LED Status Request <TLSR >

Description: Issued by the Remote Controller to request that the Graphics board return the current LED status of the Front Panel. The Graphics board returns a 46-byte string that indicates the status of all LEDs as o,y,r,g,b (off, yellow, red, green, blink).

Example: TLSR may return "ooooooooogooooooooooooooogooooooorooogooooooorog" which informs the external device that the A/V LED is green, the video source '1' LED is green,

the audio source '1' LED is green, the video source BLK LED is red, the audio source MUTE LED is red and the LINE LED is green.

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CHAPTER FIVE
PM-2002 Software Upgrade Instructions

What you will find in this chapter…

- *Overview*
- *Preparing to Upgrade PresentationMASTER Unit*

PM-2002 Software Upgrade Instructions

Overview

The PresentationMASTER units built by Folsom Research, Inc. incorporate the system software in Flash memory. Flash memory allows easy upgrades without the need to send the unit back to the factory due to software changes.

The loader utility provides the capability to update the system Flash module with the latest revision of software. The upgrade utility can be run from a hard drive (recommended) or a floppy drive. Running the loader from a floppy drive is discouraged though due to the slow speeds associated with disk access.

Hardware Requirements

- IBM compatible computer with an available COM port
- Serial cable conforming to EIA RS-232 specifications (i.e. Standard Modem cable)
  (The cable should have a DB-25 male connector on one end)
- PM-2002 unit

Software Requirements

- Windows 95/98/NT/2000
- Flash File Loader
- PM-2002 Software files

Connecting to Folsom Research

Folsom Research's FTP site address is: ftp.folsom.com

Using a FTP client, logon to our site using "anonymous" for the user name and your email address as the password (ex. johndoe@somecompany.com).

If you are using a web browser to access our FTP site, point the browser to: ftp://ftp.folsom.com

Downloading Necessary Files

PM-2002 Software Files and Flash File Loader

Directory Location: ftp.folsom.com\products\video\pm2002
File to download: "PresentationMASTER_Rev#####.exe" where ##### is the Revision Number.

Installing the Flash File Loader and PresentationMASTER Files

Before installing the files, it is recommended that all running programs be properly shut down.

1) Click on the Start button and select Run.
2) Click on the Browse button and locate the " PresentationMASTER_Rev#####.exe " file on your hard drive.
3) Double-click on this file and then click OK to start the installation process.
4) Follow the on screen instructions to complete the install.

Starting the Flash File Loader Utility

After the files have been installed the PresentationMASTER Flash File Loader can be selected to run.

1) Click on the Start button and select Programs.
2) Find the Folsom Research folder and select PresentationMASTER Flash File Loader.

After the loader has started running, you can learn more about its operation by going to the Help menu and selecting Help Topics.

Preparing to Upgrade the PresentationMASTER Unit

1) Plug the DB-25 male connector into the port labeled "Remote" on the back of the PresentationMASTER unit.

2) Make sure the other end of the cable is attached to the available COM port on the back of the computer performing the upgrade.

3) In the loader program, click on the Configuration Menu and select RS232 Setup.

4) In the Communication Settings window, select the COM port the PresentationMASTER is attached to by clicking in the Serial Port field.

5) The PresentationMASTER defaults to a baud rate of 38.4K. The Baud Rate field should reflect this.

6) Once this is done, click on the Save button to go back to the main loader screen.

Verifying Communications between the Computer and PresentationMASTER Unit

1) In the loader program, click on the Program menu and select Terminal Window.

2) A terminal window will open. Several status lights are shown at the bottom of the window as well as the communication settings in the lower left corner of the window.

3) Turn the PresentationMASTER unit ON and wait for it to boot.

4) Back at the Terminal window, the CTS and DSR status lights should be RED. Pressing the Enter key a couple of times will allow the system prompt "#" to be displayed on the screen.

5) If the CTS and DSR status lights are GREEN, then check the communication settings in the loader and verify the COM port is correct and the communication parameters match with what is displayed in the CONFIG SERIAL menu on the PresentationMASTER unit.

6) If any of the communication parameters are changed within the loader, it is recommended that the PresentationMASTER unit be powered down and the verification process started over.

Uploading Files to the PresentationMASTER Unit

1) Once communications have been established and verified, click on the Start File Upload button to begin the upgrade process.

2) The RED box next to this button will turn GREEN and two progress bars will show the status of the upload.

3) After several minutes, the loader utility will inform the user that the process is complete.

4) Once this is done, you must power down the PresentationMASTER unit and turn it back on for the software to take effect. You can also close the loader utility at this time.

5) Verify the new software is in the system by looking for the version number in the TECH SUPPORT menu.

6) Once you have verified the version number, it is recommended that a factory reset be performed.

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CHAPTER SIX

Folsom Research Information

What you will find in this chapter…

- *Warranty*
- *RMA Information*
- *Technical Support/General Contact Information*

Folsom Research Information

Folsom Research Warranty

All video products are designed and tested to the highest quality standards and are backed by a full 3-year parts and labor warranty. Warranties are effective upon delivery date to customer. Warranty related repairs include parts and labor, but do not include faults resulting from user negligence, special modifications, lightning strikes, abuse (drop/crush), and/or other unusual damages.

The customer shall pay shipping charges when unit is returned for repair. Folsom Research will cover shipping charges for return shipments to customers.

Return Material Authorization (RMA)

In the unlikely event that a product is required to return for repair, please call 888-414-7226 and ask for a Sales Engineer to receive a Return Merchandise Authorization number (RMA).

RMA Conditions:

a) Prior to returning any item, obtain a Return Merchandise Authorization (RMA) number.
b) Please mark the RMA number on the return-shipping label.
c) RMA numbers are valid for 30 days from issue date.
d) Shipping and insurance charges on units shipped to the factory must be prepaid by the customer.

Folsom Research Contact Information

Sales Contact Information
Direct Sales Line: 916-859-2505
Toll Free Line: 888-414-7226
E-mail: sales@folsom.com

Technical Support Information (24 Hour)
Tech Line: 888-414-7226 (Monday – Friday, 8 - 5 pm PST)
Tech Line #1 - 916-802-6867
Tech Line #2 – 916-719-6867
E-mail: support@folsom.com

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APPENDIX

Technical Specifications

Technical Specifications

A/V Inputs

Universal A/V Inputs: 8 high bandwidth video channels and 8 stereo audio inputs.

High-Resolution Computer Video: Supports conversion of RGB videos with horizontal scan rates up to 100 KHz and resolutions up to 1600x1200. HDTV 480p, 720p, and 1080i formats are supported in RGB color space. Input levels are independently programmable.

Standard Video: Accepts RGB, YUV, S-Video (Y/C), or NTSC/PAL video formats. Input levels are independently programmable for RGB and YUV sources. Programmable luminance and chrominance levels are provided for S-Video, and Hue and Saturation controls are provided for NTSC/PAL inputs.

Synchronization: The unit automatically locks to the incoming video source.

Input Sync Signals: Sync-on-Video; Separate C or H/V

Connectors: BNC

Video Output

High Resolution RGB Video: User programmable output formats; VGA (640x480), SVGA (800x600), XGA (1024x768), SXGA (1280x1024), For plasma displays, 832x624, 848x480, 852x480, 1280x768,1365x768, 1365x1024. Also provides HDTV 480p and 720p output rates.

Connectors:

Main Outputs: Two independently buffered outputs
- (1) RGBHV with an HD-15 connectors.
- (1) RGBHV with five BNC connectors.

Preview Output: (1) RGBHV with an HD-15 connector.

Output Sync Type: Separate C or H/V

Audio Inputs

Universal A/V Inputs: (8) stereo audio channels, 5-pin MCO Male connector.

Microphone Jack: MIC input, 3-pin MCO Male connector.

Line Input: LINE input, 5-pin MCO Male connector.

Audio Levels: Accepts Consumer or Professional signal levels.

Audio Mixing: MIC and LINE audio are mixed with audio from the selected A/V input.

Audio Outputs

Output: (2) stereo audio channels, Main and Preview, each on 5-pin MCO Male connectors.

Audio Levels: Consumer or Professional signal levels.

User Controls

Video Source Selection: (9) illuminated keys support selection of 8 video inputs or black screen.

Video Source Selection: (9) illuminated keys support selection of 8 audio inputs or mute.

Audio Breakaway: Audio may be switched independently of video or set to video follow mode.

Audio Volume/Muting Control: Independent control for Master Volume, LINE Volume, MIC Volume and each of the eight A/V inputs for both Main and Preview outputs.

Video Transition Effects: Cut and Dissolve with programmable duration.

Set-up Controls: Electro-luminescent display, control knob, and 8 keys provide a menu-based front panel interface to simplify set-up.

Remote Control

RS-232 port for real-time control.

Physical

Height: 5.25" (13.3 cm); Width: 17" (43.2 cm) or 19" (48.3 cm) with rack-mount option;

Depth: 13" (33 cm); Weight: 22 lbs (10 kg); Shipping Weight: 30 lbs (13.6 kg).

Input Power

100-240 VAC, 47-63 Hz, 1.75 A max.

Environmental

Temperature: 0-40 degrees C; Humidity: 0-95% non-condensing