

**9725LG, AN9725LG & HD9725LG
Logo Inserters
&
9725LGA & HD9725LGA Media Keyers

Instruction Manual**

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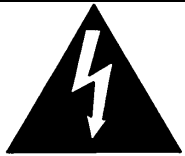

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IMPORTANT SAFETY INSTRUCTIONS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	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 product.

- Read these instructions
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE”

WARNING

DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT”

WARNING

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE”

WARNING

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE”

INFORMATION TO USERS IN EUROPE

NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. 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 his own expense.

INFORMATION TO USERS IN THE U.S.A.

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WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

REVISION HISTORY

<u>REVISION</u>	<u>DESCRIPTION</u>	<u>DATE</u>
0.1	Preliminary	Aug 05
0.2	Updated Safety Instructions, added Block diagrams	Dec 05
0.3	Updated diagrams, video standards, and screenshots	Oct 06
0.4	Updated GPI/O diagram, added new menu items	Nov 06
1.0	Released	Jan 07

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CHAPTER 1

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1. OVERVIEW

1.1. OVERVIEW

The Evertz 9725LG Series Logo Inserters and Media Keyers provide a complete range of HD, SDI and Analog Logo and Audio Insertion solutions for today's television plant. The Logo Inserters will key 1 to 16 simultaneous static or animated logos over a full bandwidth program video signal. These units incorporate the best switching technology with the proven channel branding techniques that has brought Evertz to the forefront of digital television technology. Add to this, time and temperature logos, and optional Emergency Alert System support, and you have the most advanced Logo Inserters available today. The Media Inserters provide all the features of the Logo Keyer plus the capability of inserting audio voiceovers from external audio or by playing stored audio clips. Audio Clips can be played on their own or played automatically when associated logos are keyed.

The 9725LG Series Keyers are available in versions to support both standard definition and high definition video. Throughout this manual the term *9725LG Series Keyers* will be used to describe the common features of these keyers. The term *9725LG Logo Inserters* will be used to describe the common features of the Logo Inserters and the term *9725LGA Media Keyers* will be used to describe the common features of the Media Keyers. When necessary, the specific model numbers will be used to distinguish features only available on one model.

Model	Description	Video			AES Audio		Bypass Relays
		NTSC/PAL Analog	Std Def SDI	High Def SDI	Input	Output	
AN9725LG	Analog Logo Inserter	√	√ (*optional)	---	---	---	Standard
9725LG	SDI Logo Inserter	---	√	---	---	---	Standard
9725LGA	SDI Media Keyer	---	√	---	2 x 4	2 x 4	Standard
HD9725LG	HD Logo Inserter	---	√	√	---	---	Standard
HD9725LGA	HD Media Keyer	---	√	√	2 x 4	2 x 4	Standard

The 9725LG Series Keyers have been designed to manage and store multiple media objects. Logos and audio clips are stored in non-volatile Flash memory and may be downloaded to the hardware via Ethernet FTP using the Nomad™ or Overture™ software (included).

One animated logo or up to 16 static logos can be keyed simultaneously with independent fade control for each static logo. EAS enabled units have 1 logo reserved for the "crawl" text, thus leaving a maximum of 15 simultaneous logos. The size of each logo is variable and ranges from 1/25th to full screen. The position of the logo, fade rates, clip association and animation rates are also user controllable. The onboard preview allows you to cue your logos for position and content verification prior to going "On Air". On the 9725LGA and HD9725LGA Media Keyers, audio clips are stored as stereo or mono 16-bit, 44.1 & 48kHz WAV format (although all audio clips are played out at 48kHz).

Features – Analog Units

- Supports NTSC and PAL video formats
- 1 input bypass relay for power failure bypass protection
- * Analog units can be upgraded to support standard definition

Features – Standard Definition Units

- Supports 525i, 625i video standards
- Automatic equalisation up to 250m@270 Mb/s (Belden 8281 or equivalent cable)
- Input bypass relays for power failure bypass protection

Features – High Definition Units

- Supports 525i, 625i video standards
- Supports 1080i, 720p, 1035i, 1080psF, 1080psF and 480p video standards.
- Automatic equalisation up to 100m @ 1.5 Gb/s (Belden 1694A or equivalent cable)
- Input bypass relays for power failure bypass protection

Features – All Units

- Full 12 bit linear video keyer with logo fade-in and fade-out processing
- Program and preview outputs
- Timing Reference from input video or Colour black Reference input
- Stores and inserts 1 to 16 static or animated logo with independent control of logo position, transparency and offset. Independent controls of fade in and fade out for static logos.
- Download logos from a standard PC using Ethernet using Evertz Overture™ Software
- Optional support for crawl text logos
- Standard unit has 256 MB of internal media storage.
- Standard unit had 512MB of play out cache
- LTC input for analog or digital 'Breakfast Clock' logos
- Built-in Black Generator and also White Generator
- Multiple control interface options including GPI, RS232/RS422 automation control
- Optional expansion of play out cache up to 8GB
- Optional internal flash storage upgrade available up to 8 GB
- Optional front panel Compact Flash for additional storage from 256MB up to 8GB
- Optional rack mount or desktop remote control panel versions available
- Optional temperature probe for temperature logos
- Optional redundant power supply for broadcast applications

Additional Media Keyer Features:

- Eight AES pair inputs and eight AES pair outputs
- Full 4 pair audio voice over mixing for Dolby 5.1 audio
- Includes embedded audio mixing with 4 AES pair de-embedding and re-embedding for voice over and clip inserts
- Audio bypass mode for passing Dolby E
- Download logos and audio clips from a standard PC using Ethernet using Evertz Overture™

EAS Option:

- Emergency alert crawls
- Interfaces to TFT, DASDEC and Sage EAS decoders.
- Maximum number of static logos reduced to 15

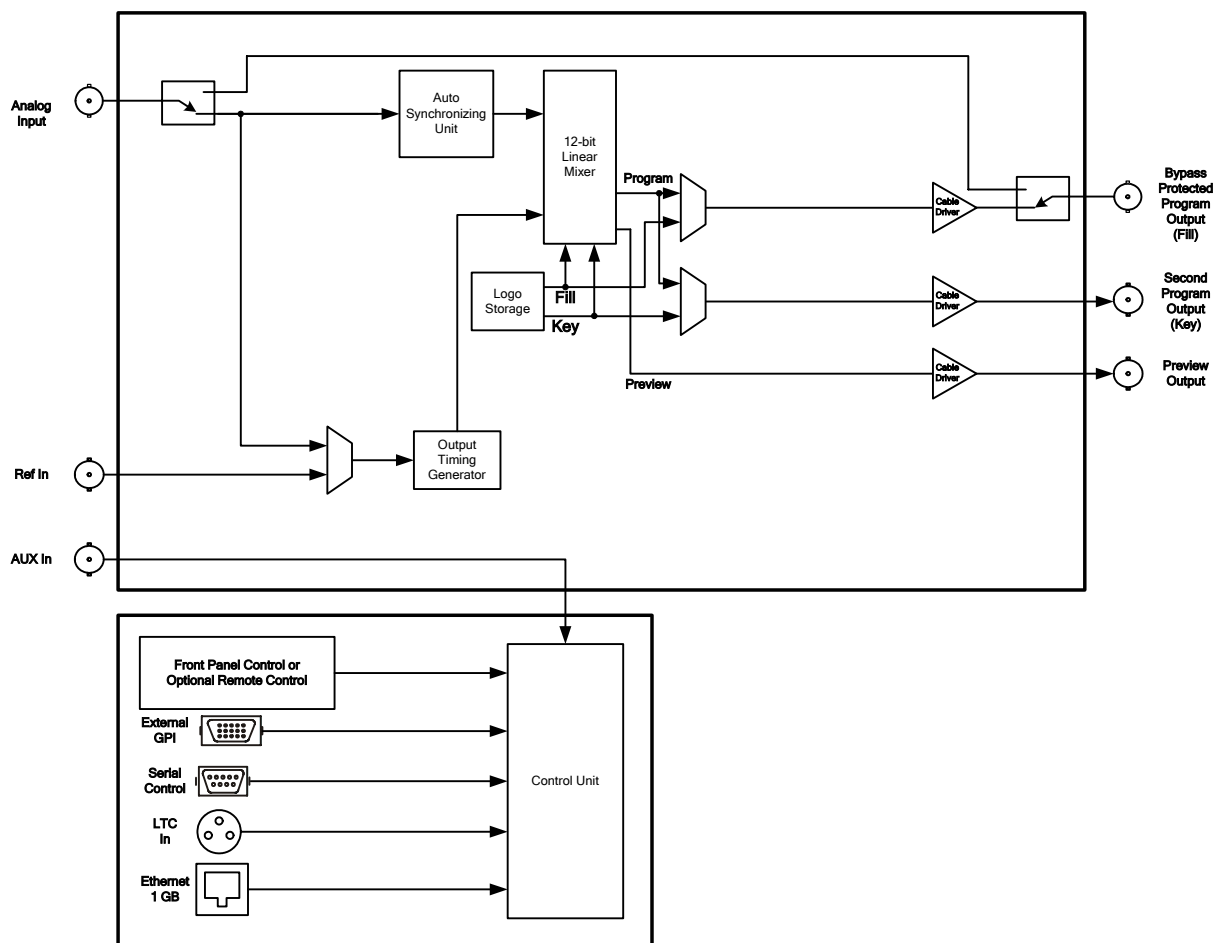


Figure 1-1: AN9725LG Logo Inserter Block Diagram

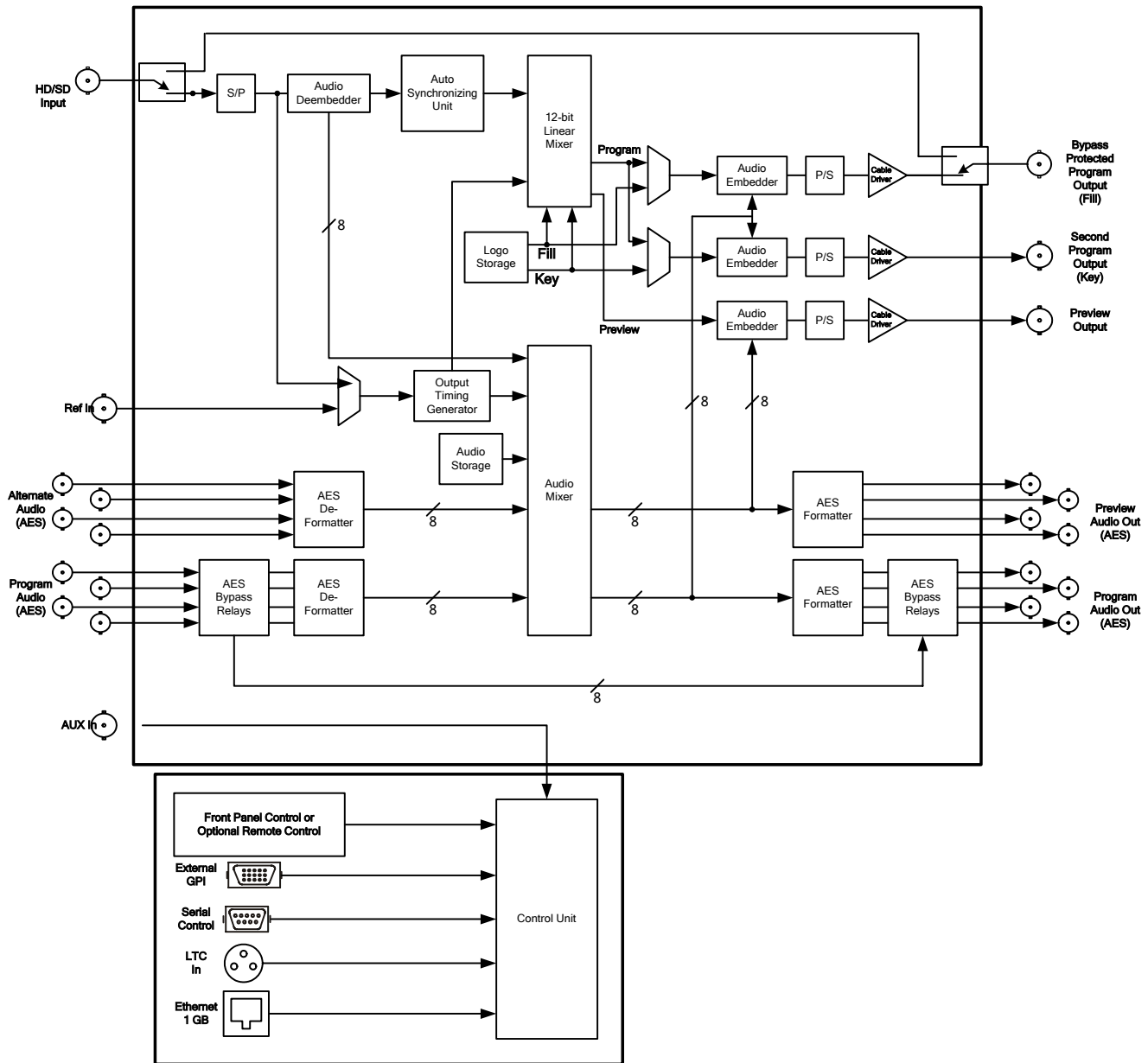


Figure 1-2: 9725LG, 9725LGA, HD9725LG and HD9725LGA Series Logo Inserter Block Diagram

1.2. HOW TO USE THIS MANUAL

This manual is organised into 6 chapters: Overview, Installation, Front Panel Operation, Desktop Remote Panel Operation, Optional EAS Features, and Technical Description. The overview section contains a brief overview of the 9725LG Series Keyers operation and features and a glossary to define concepts and terms used throughout the remainder of the manual. We highly recommend taking the time to become familiar with the terms and concepts described here before proceeding into the rest of the manual.

Chapter 2 provides a detailed description of the rear panel connectors, and how the 9725LG Series Keyers should be connected into your system.

Chapter 3 shows how to operate the 9725LG Series Keyers using the Front panel controls or Rackmount Remote Control Panel. This chapter also includes information on the Setup Menu system and HTML Setup page.

Chapter 4 describes how to control the 9725LG Series Keyers using the Desktop Remote Control panels.

Chapter 5 describes how to set up the 9725LG Series Keyers for use with an EAS decoder (EAS option required).

Chapter 6 provides technical specifications and information on how to update the firmware in the 9725LG Series Keyers.

Chapter 7 provides information on troubleshooting the common errors that may occur while operating the 9725 devices.



Items of special note are indicated with a double box like this.

1.3. DEFINITIONS

4:2:2 The sampling ratio used in the SDTV and HDTV digital video signal. For every 4 samples of luminance there are 2 samples each of R-Y (Red minus Luminance) and B-Y (Blue minus luminance).

16x9 A wide screen television format such as HDTV in which the aspect ratio of the screen is 16 units wide by 9 high as opposed to the 4x3 of normal TV.

AES/EBU: (Sometimes abbreviated as AES) Refers to the digital audio standard (AES3-1992) set by the Audio Engineering Society and European Broadcast Union and used by most forms of digital audio from CDs to professional digital video.

Aspect Ratio: The ratio of width to height in a picture. Theatre screens generally have an aspect ratio of 1.85 to 1, widescreen TV (16x9) is 1.77 to 1, and normal TV (4x3) is 1.33 to 1.

CCIR (International Radio Consultative Committee): An international standards committee. (This organisation is now known as ITU.)

CCIR-601: See ITU-R601.

Cliff effect: (also referred to as the 'digital cliff') This is a phenomenon found in digital video systems that describes the sudden deterioration of picture quality when due to excessive bit errors, often caused by excessive cable lengths. The digital signal will be perfect even though one of its signal parameters is approaching or passing the specified limits. At a given moment however, the parameter will reach a point where the data can no longer be interpreted correctly, and the picture will be totally unrecognisable.

Component analog: The non-encoded output of a camera, video tape recorder, etc., consisting of the three primary colour signals: red, green, and blue (RGB) that together convey all necessary picture information. In some component video formats these three components have been translated into a luminance signal and two colour difference signals, for example Y, B-Y, R-Y.

Component digital: A digital representation of a component analog signal set, most often Y, B-Y, R-Y. The encoding parameters are specified by ITU-R709 for HDTV signals. SMPTE 274M and SMPTE 296M specify the parallel interface.

Composite analog: An encoded video signal such as NTSC or PAL video that includes horizontal and vertical synchronising information.

Composite digital: A digitally encoded video signal, such as NTSC or PAL video that includes horizontal and vertical synchronising information.

D1: A component digital video recording format that uses data conforming to the ITU-R601 standard. Records on 19 mm magnetic tape. (Often used incorrectly to refer to component digital video.)

D2: A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 19 mm magnetic tape. (Often used incorrectly to refer to composite digital video.)

D3: A composite digital video recording format that uses data conforming to SMPTE 244M. Records on 1/2" magnetic tape.

D5: A component digital video recording format that uses data conforming to the ITU-R601 standard. Records on 1/2" magnetic tape.

Drop frame: In NTSC systems, where the frame rate is 29.97002618 frames per second, the drop frame mode permits time of day indexing of the frame numbers by dropping certain frame numbers. Specifically, frames 0 and 1 at the beginning of each minute except minutes 0,10,20,30,40, & 50, are omitted, to compensate for an approximate timing error of 108 frames (3 seconds 18 frames) per hour. A flag bit is set in the time code to signal when the drop frame mode is in effect.

EBU (European Broadcasting Union): An organisation of European broadcasters that among other activities provides technical recommendations for the 625/50 line television systems.

Embedded audio: Digital audio is multiplexed onto a serial digital video data stream.

ITU: The United Nations regulatory body governing all forms of communications. ITU-R (previously CCIR) regulates the radio frequency spectrum, while ITU-T (previously CCITT) deals with the telecommunication standards.

ITU-R601: An international standard for standard definition component digital television from which was derived SMPTE 125M and EBU 3246-E standards. ITU-R601 defines the sampling systems, matrix values and filter characteristics for both Y, B-Y, R-Y and RGB component digital television signals.

Letterbox: Placing a wide screen image on a conventional TV by placing black bands at the top and bottom of the screen.

Linear time code: (Also known as Longitudinal Time Code) A digital code used for timing and control purposes on videotape and associated audio tape machines. It is recorded on a linear track with audio characteristics and is referred to as LTC. Each 80-bit code word is associated with one television frame, and consists of 26 time bits, 6 flag bits, 32 user bits and 16 sync bits. This time code may run at 24, 25 or 30 frames per second depending on the video format. See also SMPTE 12M.

LTC: See Linear Time Code

NTSC: National Television Standards Committee established the television and video standard in use in the United States, Canada, Japan and several other countries. NTSC video consists of 525 horizontal lines at a field rate of approximately 60 fields per second. (Two fields equals one complete Frame). Only 487 of these lines are used for picture. The rest are used for sync or extra information such as VITC and Closed Captioning.

PAL: Phase Alternating Line. The television and video standard in use in most of Europe. Consists of 625 horizontal lines at a field rate of 50 fields per second. (Two fields equals one complete Frame). Only 576 of these lines are used for picture. The rest are used for sync or extra information such as VITC and Teletext.

Pixel: The smallest distinguishable and resolvable area in a video image. A single point on the screen. In digital video, a single sample of the picture. Derived from the words *picture element*.

Serial digital: Digital information that is transmitted in serial form. Often used informally to refer to serial digital television signals.

SMPTE (Society of Motion Picture and Television Engineers): A professional organisation that recommends standards for the film and television industries.

SMPTE 12M: The SMPTE standard for Time and address code. SMPTE 12M defines the parameters required for both linear and vertical interval time codes.

SMPTE 125M: The SMPTE standard for bit parallel digital interface for component video signals. SMPTE 125M defines the parameters required to generate and distribute component video signals on a parallel interface.

SMPTE 259M-C: The SMPTE standard for 525 and 625 line serial digital component and composite interfaces.

SMPTE 272M: The SMPTE standard for embedding audio in serial digital standard definition (SMPTE 259M-C) video signals.

SMPTE 274M: The SMPTE standard for bit parallel digital interface for high definition component video signals with an active picture of 1080 lines x 1920 pixels.

SMPTE 276M: The SMPTE standard for transmission of AES/EBU Digital Audio Signals Over Coaxial Cable

SMPTE 292M: The SMPTE standard for high definition serial digital component interfaces.

SMPTE 296M: The SMPTE standard for bit parallel digital interface for high definition component video signals with an active picture of 720 lines x 1280 pixels.

SMPTE 299M: The SMPTE standard for embedding audio in serial digital high definition (SMPTE 292M) video signals.

TRS: Timing reference signals used in composite digital systems. (It is four words long).

TRS-ID: Abbreviation for "Timing Reference Signal Identification". A reference signal used to maintain timing in composite digital systems. (It is four words long.)

CHAPTER 2

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2. INSTALLATION

2.1. REAR PANEL OVERVIEW

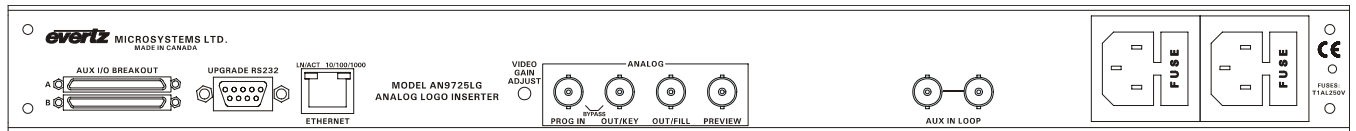


Figure 2-1: AN9725LG Rear Panel

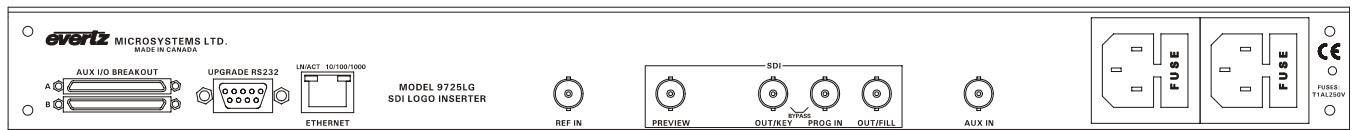


Figure 2-2: 9725LG Rear Panel

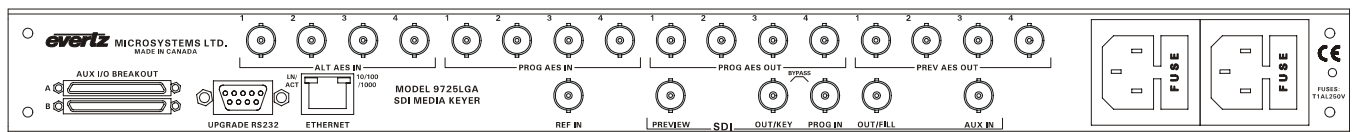


Figure 2-3: 9725LGA Rear Panel

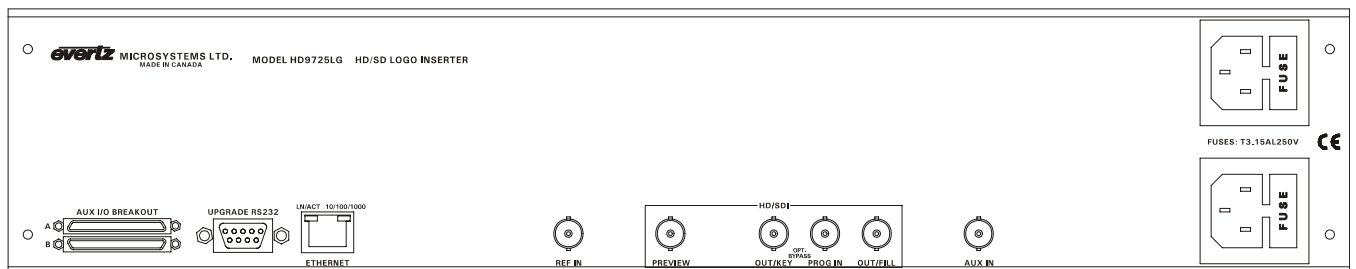


Figure 2-4: HD9725LG Rear Panel

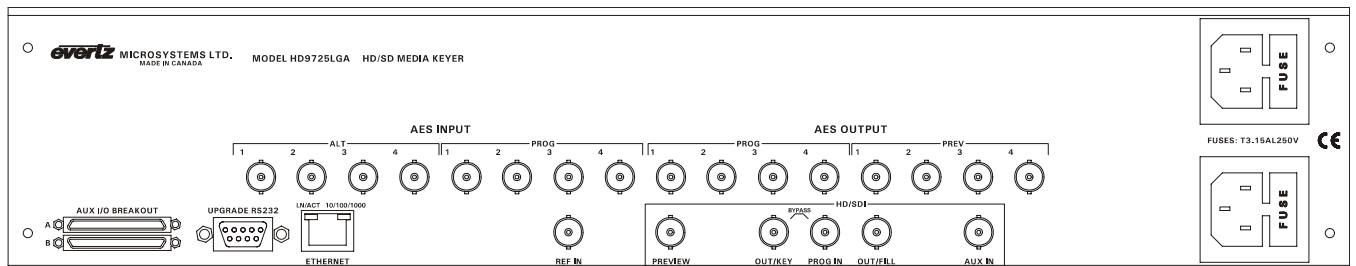


Figure 2-5: HD9725LGA Rear Panel

Figure 2-1, Figure 2-2 and Figure 2-3 show the rear panels of the AN9725LG, 9725LG and 9725LGA units respectively. Figure 2-4 and Figure 2-5 show the rear panels for the high definition HD9725LG and HD9725LGI which are identical to the standard definition versions except for the video standards. Sections 2.1.1 to 2.1.11 describe the specific video, audio, and control signals that should be connected to the 9725LG Series Keyer units. Sections 2.2 to 2.9 describe how to connect them into your system.

2.1.1. Analog Video Connections (AN9725LG Version)

PROG IN This BNC connector is used to connect the program composite analog video signal. This input is protected by a bypass relay to the adjacent **KEY** output BNC. When the bypass relay is activated on power loss to the keyer, the **KEY** output will be a direct relay connection to the **PROG IN** BNC.

PREV This output BNC connector is the composite analog preview video output. This preview output connector is normally connected to a SDI preview monitor.

PROG OUT (FILL, KEY) These output BNC connectors are the composite analog program video output. The **KEY** output is protected by a bypass relay to the adjacent **PROG IN** BNC. When the bypass relay is activated on power loss to the keyer the **KEY** will be a direct relay connection to the **PROG IN** BNC.

If you are using your 9725LG Series Keyer as a standard on-air device then set the *Output Mode* menu item to *Pvw/Pgm*. In this mode the input video is overlaid with the logo and then output on both the **KEY** and **FILL** BNCs. Connect one of these outputs to the next video device in your output path.

If you have a switcher or a downstream keyer that requires a separate key and fill signal for the logos, then set the *Output Mode* menu to *Pvw/Key/Fill*. In this mode the Program Output BNCs will contain the Logo fill data on the **FILL** BNC and the Logo key data on the **KEY** BNC.

2.1.2. Digital Video Connections (9725LG, HD9725LG, HD9725LGA Versions)

PROG IN This BNC connector is for connecting the program serial digital component video signal. This input is protected by a bypass relay to the adjacent **KEY** output BNC. When the bypass relay is activated on power loss to the keyer the **KEY** output will be a direct relay connection to the **PROG IN** BNC.

PREV This output BNC connector is the serial digital component preview video output. This preview output connector is normally connected to a SDI preview monitor.

PROG OUT (FILL, KEY) These output BNC connectors are the serial digital component program video output. The **KEY** output is protected by a bypass relay to the adjacent **PROG IN** BNC. When the bypass relay is activated on power loss to the keyer the **KEY** will be a direct relay connection to the **PROG IN** BNC.

If you are using your 9725LG Series Keyer as a standard on-air device then set the *Output Mode* menu item to *Pvw/Pgm*. In this mode the input video is overlaid with the logo and then output on both the **KEY** and **FILL** BNCs. Connect one of these outputs to the next video device in your output path.

If you have a switcher or a downstream keyer that requires a separate key and fill signal for the logos, then set the *Output Mode* menu to *Pvw/Key/Fill*. In this mode the Program Output BNCs will contain the Logo fill data on the **FILL** BNC and the Logo key data on the **KEY** BNC.



In the *Pvw/Key/Fill* mode you must supply a valid video timing reference signal to the unit. You can provide either an analog video signal into the REF input BNC or a serial digital video signal to the PROG IN BNC. The input signal must be running the same video standard as required by your downstream switcher or keyer. See section 3.6.2 for information on selecting the video timing reference signal.

2.1.3. Reference Video Connections

REF IN This 75 ohm terminated input is for connecting black burst video reference. Connect the **REF IN** connector to the reference input sync. The 9725LG Series Keyer can also be set to derive its timing from the input video connected to the **PROG IN** BNC using the *REFERENCE SETUP* menu. (Not on AN9725LG Version)

AUX IN This 75 ohm terminated input is for connecting a video source with VBI Triggers. For the AN9725, this is an analog video signal with VBI triggers. For the other 9725LG Series Keyers, this is a SD signal with VBI triggers. Currently, the only application for this input is the CBS Lidia 4 project.



On the AN9725LG, the AUX IN is a high impedance loop. This allows for the analog video source with VBI triggers to be looped through multiple AN9725LG devices. The VBI trigger signal **MUST BE** terminated with 75 ohms at the last device in the loop.

2.1.4. AES AUDIO Connections (9725LGA and HD9725LGA only)

AES PROG IN These 4 input BNC connectors typically provide input for the 4 levels of main program AES audio associated with the video connected to the **PROG IN** BNC. The use of the AES PROG inputs can also be reassigned using the *HTML Audio Setup* page (see section 3.13.1)

AES ALT IN These 4 input BNC connectors provides input for the 4 levels of non-program AES audio. They are typically designed for alternate audio that can be inserted over the normal program audio. The use of the AES ALT inputs can also be reassigned using the *HTML Audio Setup* page (see section 3.13.1)

AES PROG OUT These 4 BNC connectors provide outputs for the 4 levels of main program AES audio and should be connected to the main broadcast chain of your plant. These outputs are protected by bypass relays to the **AES PROG IN** input BNCs. When the bypass relay is activated on power loss to the keyer the **AES PROG OUT** will be a direct relay connection to the **AES PROG** inputs.

AES PREV OUT These 4 input BNC connectors provide outputs for the 4 levels of preview AES audio.

2.1.5. Serial I/O Connections

UPGRADE RS232 This 9 pin female 'D' connector provides an RS-232 serial interface for connection to a computer and is used for firmware upgrades to the 9725LG Series Keyer. The pin definitions are shown in Table 2-1. See section 6.2 for more information on upgrading firmware.

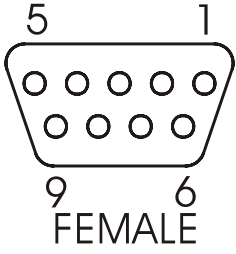
	Pin #	Name	Description
	1	GND	Chassis ground
	2	TxD	RS-232 Transmit Output
	3	RxD	RS-232 Receive Input
	4		
	5	Sig Gnd	RS-232 Signal Ground
	6		
	7	RTS	RS-232 RTS Input
	8	CTS	RS-232 CTS Output
	9		

Table 2-1: Upgrade RS232 Pin Definitions

2.1.6. Breakout Panel

There is one breakout panel provided with each 9725 device. In order to access additional serial I/O connections, connect the breakout panel (using the provided cable) to the **AUX I/O BREAKOUT A** connector of the 9725 device. This will allow the user to access **PORT A, B, C, and D**. See section 2.1.7 for a description of the different ports.

If additional serial I/O connections are required, then a second breakout panel can be connected to **AUX I/O BREAKOUT B** connector. This will allow the user to access **PORT E, F, G, and H**. The second breakout panel can be ordered from the factory. Please contact your Evertz sales representative.



Figure 2-6: Breakout Panel

2.1.7. Serial I/O on the Breakout Panel

REMOTE PANEL (PORT B) This connector is only available on units shipped with the rack mount or desktop remote control panels. This 9 pin female D connector provides an RS-422 serial interface for connection to the Remote Control Panel. This port is wired as a SMPTE 207M Tributary as shown in Table 2-2. See section 2.4 for information on connecting the remote control panel.

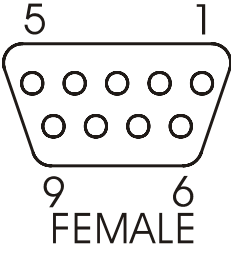
	Pin #	Name	Description
	1	GND	Chassis ground
	2	Tx-	RS-422 Tx-(A) Output
	3	Rx+	RS-422 Rx+(B) Input
	4	GND	
	5		
	6	GND	
	7	Tx+	RS-422 Tx+(B) Output
	8	Rx-	RS-422 Rx-(A) Input
	9	GND	

Table 2-2: Remote Panel Port Pin Definitions

SERIAL CONTROL A, C, D, E, F, G, H These 9 pin female D connectors provide serial interfaces designed for connection to Automation Systems including the Evertz MetaCast 2 software. The ports are also used to interface to the EAS Decoder (EAS optioned units) or optional temperature probe. The ports have the same pinout as shown in Table 2-1.

2.1.8. Linear Timecode

LTC IN This female XLR connector on the breakout panel is an input for SMPTE/EBU linear time code for driving the internal clock for the insertion of “Breakfast” clock style logos. When using an unbalanced input source, the signal should be applied to pin 3 of the LTC IN connector. Normally, the unused input (pin 2) should be connected to ground (pin 1).

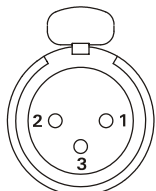
	Pin #	Name	Description
	1	GND	Signal Ground.
	2	LTC IN+	LTC In + input
	3	LTC IN-	LTC in – input

Table 2-3: LTC In Pin Definitions

2.1.9. GPI/O Connections

GPI/O The Breakout panel shown in Figure 2-6 contains the 34 pin terminal block that allows 16 general-purpose control inputs and 8 general-purpose outputs. There is an optional Breakout panel that will allow for 16 additional general-purpose control inputs and 8 general-purpose outputs. The inputs are used to connect manual or automatic triggers for the display or insertion of media. The outputs provide feedback on internal unit status of the keyer. See section 2.9 for information on connecting the general-purpose inputs and outputs. For information on configuring the GPI functions, see the *GPI Setup* menu item on the *PRESET* menu (section 3.8.1)

2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
GND	GPI 1	GPI 3	GPI 5	GPI 7	GND	GPI 9	GPI 11	GPI 13	GPI 15	Vext	GND	GPO 1	GPO 3	GND	GPO 5	GPO 7
GND	GPI 0	GPI 2	GPI 4	GPI 6	GND	GPI 8	GPI 10	GPI 12	GPI 14	Vext	GND	GPO 0	GPO 2	GND	GPO 4	GPO 6
1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33

Table 2-4: GPI/O Logical Connector 34-Pin Definitions

2.1.10. Ethernet Network Connections

ETHERNET This RJ-45 connector is an Ethernet port used for high-speed firmware upgrades as well as FTP logo transfers. See section 2.8 for information on connecting to an Ethernet network. See section 3.6.8 in the *General* menu descriptions for information on configuring the network address for the keyer.

2.1.11. Power Connections

The 9725LG Series Keyer main unit has one or two (redundant supply is optional) universal power supplies that operate on 100 to 240 Volts 50/60 Hz AC. The optional Remote Control panels are supplied with a universal input (100 to 240 volts AC at 50 or 60 Hz) 12 VDC power adapters.

2.2. MOUNTING

The 9725LG Series Keyers are equipped with rack mounting angles and fit into a standard 19 inches by 1.75 inches (483 mm x 45 mm) rack space. The HD versions occupy 3.5 inches (90mm) of rack space. The optional rack mount Remote Control Panel (RCP) is equipped with rack mounting angles and fits into a standard 19 inches by 1.75 inches by 3.75 inches (483 mm x 45 mm x 150mm) rack space. The mounting angles may be removed if rack mounting is not desired. The optional Desktop Remote Control Panel (DCP) is designed to be mounted on a control panel desk and is fitted with rubber feet to keep it from sliding on the desktop.

2.3. POWER REQUIREMENTS

Power requirements are 100 to 240 volts AC at 50 or 60 Hz. The 9725LG Series Keyers have universal power supplies that automatically sense the input voltage. Power should be applied by connecting a 3-wire grounding type power supply cord to the power entry module on the rear panel. The power cord should be minimum 18 AWG wire size; type SVT marked VW-1, maximum 2.5 m in length. If the units are fitted with the redundant power supply there will be an additional IEC-320 connector on the rear panel.

The power entry module combines a standard power inlet connector, two 5 x 20 mm fuse holders and an EMI line filter. See section 6.4.1 for information on changing the fuses.



CAUTION - TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE GROUND PIN OF THE MAINS PLUG MUST BE MAINTAINED

The Remote Control panel is supplied with a universal input (100 to 240 volts AC at 50 or 60 Hz) 12 VDC power adapter. Power should be applied by connecting a 3-wire grounding type power supply cord to the power adapter. Plug the 12 VDC output of the power adapter into the DC power jack on the rear of the Remote panel, and secure it by turning the fastening nut.

2.4. CONNECTING THE REMOTE CONTROL PANEL

The 9725LG Series Keyer is available with a rack mountable or desktop remote control panel. The remote control panel is connected to the **Serial B** input of the breakout panel connector on the supplied Breakout Panel using the straight through cable provided. For longer distances, simply make your own cable of the required length according to the diagram in Table 2-5. Communications to the remote panel is through a standard straight through RS-422 connection, so the panel can be located up to 1000 feet from the main electronics unit.

9725LG Series Keyer End				Remote Panel End		
	9 pin D Male	Pin	Belden 9729	9 pin D Female	Pin	
 MALE		1			1	 FEMALE
	Tx-	2	-----1a-----	Rx-	2	
	Rx+	3	-----2b-----	Tx+	3	
	Rx Gnd	4	---drain 2---	Rx Gnd	4	
		5				
	Tx Gnd	6	---drain 1---	Tx Gnd	6	
	Tx+	7	-----1b-----	Rx+	7	
	Rx-	8	-----2a-----	Tx-	8	
		9			9	
	Frame Gnd	Shield	---drain 1---	Frame Gnd	Shield	

Table 2-5: Remote Control Panel Extender Cable

2.5. CONNECTING THE VIDEO

2.5.1. Video Inputs

The program video source should be connected to the **PROG IN** BNC. The AN9725LG supports composite analog video in the formats shown in Table 2-6. The 9725LG and 9725LGA support standard definition digital video in the formats shown in Table 2-7. The HD9725LG and HD9725LGA supports both the standard definition and high definition digital video in the formats shown in Table 2-7 and Table 2-8. The video standard must be set manually to match the incoming video type using the *Video Standard* menu item on the *General* menu (see section 3.6.1).

Common Name	Total Lines	Frame Rate	Progressive /Interlace
NTSC	525	29.97 (30/1.001)	I
PAL	625	25	I

Table 2-6: Analog Video Input Formats

Common Name	Pixels / Active Lines	Frame Rate	Progressive /Interlace
525i/59.94	720 x 486	29.97 (30/1.001)	I
625i/50	720 x 576	25	I

Table 2-7: Standard Definition Video Input Formats

Common Name	Pixels / Active Lines	Frame Rate	Progressive /Interlace
1080i/59.94	1920 x 1080	29.97 (30/1.001)	I
1080i/50	1920 x 1080	25	I
720p/59.94	1280 x 720	59.94 (60/1.001)	P
720p/23.98	1280 x 720	23.98 (24/1.001)	P
720p/24	1280 x 720	24	P
720p/25	1280 x 720	25	P
720p/29.97	1280 x 720	29.97 (30/1.001)	P
720p/30	1280 x 720	30	P
720p/50	1280 x 720	50	P
720p/60	1280 x 720	60	P
1035i/59.94	1920 x 1035	29.97 (30/1.001)	I
1035i/60	1920 x 1035	30	I
1080p/23.98sF	1920 x 1080	23.98 (24/1.001)	P (sF)
1080p/24sF	1920 x 1080	24	P (sF)
1080p/23.98	1920 x 1080	23.98 (24/1.001)	P
1080p/24	1920 x 1080	24	P
1080p/25sF	1920 x 1080	25	P (sF)
1080p/25	1920 x 1080	25	P
1080p/29.97sF	1920 x 1080	29.97 (30/1.001)	P (sF)
1080p/30sF	1920 x 1080	30	P (sF)
1080p/29.97	1920 x 1080	29.97 (30/1.001)	P
1080p/30	1920 x 1080	30	P
1080i/60	1920 x 1080	30	I

Table 2-8: High Definition Video Input Formats

2.5.2. Video Outputs

The **PROG OUT** BNCs contain the video output from the program bus and should be connected to the main broadcast chain of your plant. The **FILL** output is protected by a bypass relay. When the relay is active, the **PROG** output is directly connected to the **PROG IN** BNC.

If you are using your 9725LG Series Keyer as a standard on-air device then set the *Output Mode* menu to *Pvw/Pgm*. In this mode the input video is overlaid with the logo and then output on both the **KEY** and **FILL** BNCs. Connect one of these outputs to the next video device in your output path.

If you have a switcher or a downstream keyer that requires a separate key and fill signal for the logos, then set the *Output Mode* menu to *Pvw/Key/Fill*. In this mode the Program Output BNCs will contain the Logo fill data on the **FILL** BNC and the Logo key data on the **KEY** BNC. Connect these outputs to the *Key* and *Fill* inputs of the device.



In the *Pvw/Key/Fill* mode you must supply a valid video timing reference signal to the unit. You can provide either an analog video signal into the **REF INPUT BNC** or a serial digital video signal to the **INPUT BNC**. The input signal must be running the same video standard as required by your downstream switcher or keyer. See section 2.5.3 and 3.6.2 for information on connecting and selecting the video timing reference signal.

The **PREV** output contains the video output from the preview and will normally be connected to a SDI monitor to allow you to view the program output before it goes on air. When the bypass relay is active, the **PREV** output will not have any video on it.

2.5.3. Video Timing Reference

For proper timing of the video and audio signals an analog video genlock reference may be supplied. Connect a composite analog NTSC or PAL colour black video signal to the **REF IN** connector. Make sure that the signal type is correct for the video standard in use. (See Table 2-7 and Table 2-8) Alternately you can take the timing reference from the input video. The Video reference source is set using the *Reference Setup* menu item on the *GENERAL Setup* menu. (See section 3.6.2)

The AN9725LG will always take its timing reference from the program video connected to the **PROG IN** BNC. There is no **REF IN** connector on the AN9725LG devices.

2.6. CONNECTING THE AUDIO (9725LGA AND HD9725LGA ONLY)

The 9725LGA Series Media Keyers are capable of working with either embedded audio or discrete AES audio. The *HTML Audio Setup* page is used to select the embedded or discrete AES audio inputs as the background or main audio source for the AES and embedded audio outputs (see section 3.13). The audio available on the AES **PROG** outputs is embedded into group 1 and 2 on the **PROG** video outputs. The audio available on the AES **PREV** outputs is embedded into group 1 and 2 on the **PREV** video output.

The *HTML Audio Setup* page is also used to select the embedded or discrete AES audio inputs as the voiceover audio source for the AES and embedded audio outputs (see section 3.13). The voiceover audio is mixed with the program audio at the mix levels specified on the *HTML Audio Setup* page items

(see section 3.13) when the **VOICE OVER** button is pressed. The voiceover audio sources are also used as the audio inputs for Emergency Alerts when the EAS option is fitted.

2.6.1. Connecting Program Audio

If you are using discrete AES program audio, connect up to 4 channels of AES audio that is associated with the program video input (connected to the **PROG IN** BNC) to the **AES IN PROG** audio inputs. If you are using embedded program audio then you do not need to connect any program audio to the AES inputs. The *HTML Audio Setup* page is used to select the program audio source for each have the Preview and Program audio outputs (see section 3.13).

2.6.2. Connecting Voice Over or EAS Audio

If you are using discrete AES voice over audio, connect up to 4 channels of AES audio to the **AES IN ALT** audio inputs. If you are using embedded voice over audio then you do not need to connect any program audio to the AES inputs. The *HTML Audio Setup* page are used to select the voice over audio source for each of the Preview and Program audio outputs (see section 3.13). This audio will be mixed with the program audio at the mix level specified within the *HTML Audio Setup* page (see section 3.13).

2.6.3. Connecting the Audio Outputs

The **AES PROG OUT** connectors contain the audio outputs from the program audio bus and should be connected to the main broadcast chain of your plant. The **AES PROG OUT** outputs are protected by bypass relays. When the relays are active, the **AES PROG OUT** outputs are directly connected to the four **AES PROG IN** inputs. The audio on the **AES PROG OUT** outputs is also embedded into groups 1 and 2 on the program video outputs.

The **PREV AES OUT** connectors contains the audio outputs from the preview audio bus and will normally be connected to your audio monitoring system to allow you to hear the program audio output before it goes on air. When the bypass relays are active, the **PREV AES OUT** outputs will not have any audio on them. The audio on the **AES PREV OUT** outputs is also embedded into groups 1 and 2 on the preview video outputs.

2.7. CONNECTING THE LINEAR TIME CODE

The 9725LG Series Keyers have a linear time code (LTC) input used to provide time information for the analog or digital clock logos. Connect the LTC output from your house master time code source to the LTC IN XLR connector on the breakout panel. When using an unbalanced input to the reader, the signal should be applied to pin 3 of the LTC input connector. Normally, the unused input (pin 2) should be connected to ground (pin 1).

2.8. CONNECTING TO AN ETHERNET NETWORK

The 9725LG Series Keyers are designed to be used with 10Base-T (10 Mbps), 100Base-TX (100 Mbps) or Gigabit (1Gbps) twisted pair Ethernet cabling systems. When connecting for 10Base-T systems, category 3, 4, or 5 UTP cable as well as EIA/TIA – 568 100Ω STP cable may be used. When connecting for 100Base-TX systems, category 5 UTP cable is required. The cable must be “straight-through” with a RJ-45 connector at each end. Establish the network connection by plugging one end of the cable into the RJ-45 receptacle of the 9725LG Series Keyer and the other end into a port of the supporting hub.

The straight-through RJ-45 cable can be purchased or can be constructed using the pinout information in Table 2-9. A colour coded wiring table is provided in Table 2-9 for the current RJ 45 standards (AT&T 258A or EIA/TIA 258B colour coding shown). Also refer to the notes following the table for additional wiring guide information.

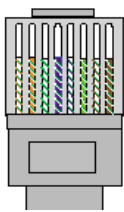
	Pin #	Signal	EIA/TIA 568A	AT&T 258A or EIA/TIA 568B	10BaseT or 100BaseT
	1	Transmit +	White/Green	White/Orange	X
	2	Transmit –	Green/White or White	Orange/White or Orange	X
	3	Receive +	White/Orange	White/Green	X
	4	N/A	Blue/White or Blue	Blue/White or Blue	Not used (required)
	5	N/A	White/Blue	White/Blue	Not used (required)
	6	Receive –	Orange/White or Orange	Green/White or Green	X
	7	N/A	White/Brown	White/Brown	Not used (required)
	8	N/A	Brown/White or Brown	Brown/White or Brown	Not used (required)

Table 2-9. Standard RJ45 Wiring Colour Codes

Note the following cabling information for this wiring guide:

- Only two pairs of wires are used in the 8-pin RJ 45 connector to carry Ethernet signals.
- Even though pins 4, 5, 7 and 8 are not used, it is mandatory that they be present in the cable.
- 10BaseT and 100BaseT use the same pins, a crossover cable made for one will also work with the other.
- Pairs may be solid colours and not have a stripe.
- Category 5 cable must use Category 5 rated connectors.

The maximum cable run between the keyer and the supporting hub is 300 ft (90 m). The maximum combined cable run between any two end points (i.e. keyer and PC/laptop via network hub) is 675 feet (205 m).

Devices on the Ethernet network continually monitor the receive data path for activity as a means of checking that the link is working correctly. When the network is idle, the devices also send a link test signal to one another to verify link integrity. The keyer rear panel is fitted with two LEDs to monitor the Ethernet connection.

10/100

This Amber LED is ON when a 100Base-TX link is last detected. The LED is OFF when a 10Base-T link is last detected (the LINK LED is ON). Upon power-up the LED is OFF as the last detected rate is not known and therefore defaults to the 10Base-T state until rate detection is completed.

LN/ACT

This dual purpose Green LED indicates that the 9725LG Series Keyers has established a valid linkage to its hub, and whether the 9725LG Series Keyer is sending or receiving data. This LED will be ON when the 9725LG Series Keyer has established a good link to its supporting hub. This gives you a good indication that the segment is wired correctly. The LED will BLINK when the 9725LG Series Keyer is sending or receiving data. The LED will be OFF if there is no valid connection.

2.9. CONNECTING THE GENERAL PURPOSE INPUTS AND OUTPUTS

GPI interfacing with the 9725LG Keyer Series is possible through general-purpose inputs and outputs available on the 9000BHP-AUX breakout panels. The GPIs are active low with internal pull-up resistors (4.7k Ohms) to +5 V. To make an input active, lower the signal to near ground potential (i.e. connect to shell or chassis ground). This can be done with a switch, relay, TTL drive, GPO output, or using another similar method. Figure 2-7 shows the input circuit for the general-purpose inputs.

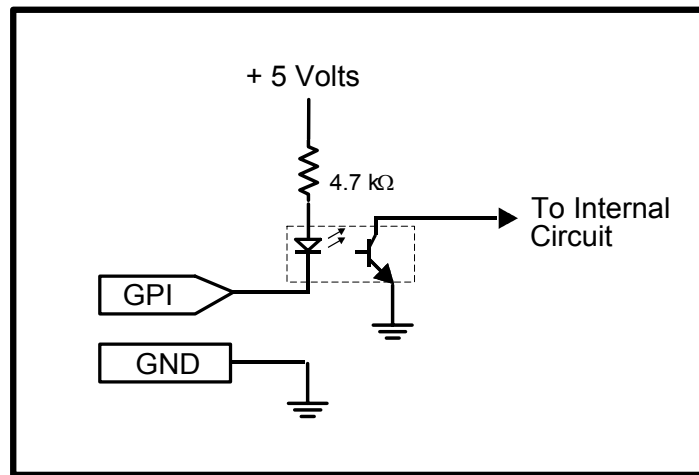


Figure 2-7: GPI Input Circuitry

The GPOs are active low with internal pull-up (10kΩ) resistors to +5 V. When the output goes low, it is able to sink up to 10 mA; when the output goes high, the signal will go high (+5 V). **Do not draw more than 100μA from the output.** Figure 2-8 shows the circuit for the general-purpose output.

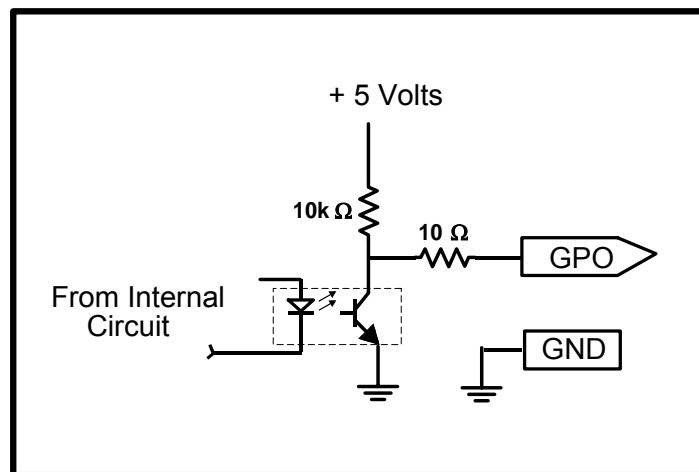


Figure 2-8: GPO Output Circuitry

The GPI to logo allocation is programmable using the *GPI Setup* menu item on the *PRESET* menu. (See section 3.8.1).

2.10. CONNECTING THE OPTIONAL TEMPERATURE PROBE

The 9725LG Series Keyer is available with an optional temperature probe that is used to input data for display in a temperature logo. Consult the temperature probe manual for information on installing the temperature probe. Connect the temperature probe power adapter to the probe unit. Connect the temperature probe to either the **PORT A, C, E, G** connector on the Keyer units. The temperature probe ships with an adapter cable to convert its RJ45 connector to a standard 9 pin D connector. The RJ45 plugs into the temperature probe. You will need to create a straight-through 9 pin male to female cable of the desired length according to the diagram in Table 2-5 to connect the probe to the Keyer unit. The serial port on the keyer unit must be set for RS-232 operation as described in section 2.1.5.



The temperature probe cable should not exceed 1000 feet.

In order for the temperature probe to communicate to the Keyer unit you must configure the serial port that you wish to use for temperature for the correct protocol and baud rate. The *PORT X* menu items on the *GENERAL* menu is used to accomplish this (depending on which communications port is used for the temperature probe). Set this menu item to *temperature* in order for the temperature probe to communicate to the Keyer unit. See section 3.6.9 for information on setting the serial port protocol.

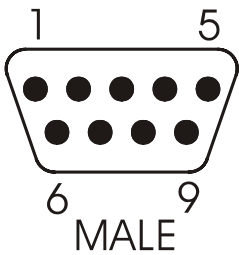
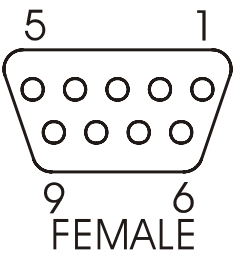
9725LG Series Keyer End				Temperature Probe End		
	9 pin D Male	Pin	Belden 9729	9 pin D Female	Pin	
		1			1	
	TxD	2	-----1a-----	RxD	2	
	RxD	3	-----1b-----	TxD	3	
		4		Rx Gnd	4	
	Gnd	5	---drain 1---	Gnd		
		6			6	
		7			7	
	Power +V	8	-----2a-----	Power +V	8	
		9			9	
	Frame Gnd	Shield	---drain 2---	Frame Gnd	Shield	

Table 2-10: Temperature Probe Extender Cable

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3. HOW TO OPERATE THE KEYSER USING THE RACK MOUNT CONTROL PANEL

The standard 9725LG Series Keyer is a 1 RU chassis with an integrated front control panel. The standard HD9725LG Series Keyer is a 2 RU chassis with an integrated front control panel. The 9725LG Series Keyers are also available as a 1 RU chassis with a separate 1 RU rack mountable or desktop remote control panel. The HD9725LG model is available as a 2 RU chassis with a 1 RU rack mountable or desktop remote control panel. This chapter describes the operation of the 9725LG Series Keyer using either the integrated control panel or the rack mount control panel. For information about controlling the 9725LG Series Keyer using the desktop control panel see section 4. For information about connecting the remote control panel to the 9725LG Series Keyer see section 2.4

When the 9725LG Series Keyer is fitted with the compact flash (+CF) option a different front panel is fitted on the main electronics unit. This front panel provides access to insert the compact flash memory device to allow you to quickly add or remove logos or audio clips to the system.

3.1. AN OVERVIEW OF KEY AND DISPLAY FUNCTIONS

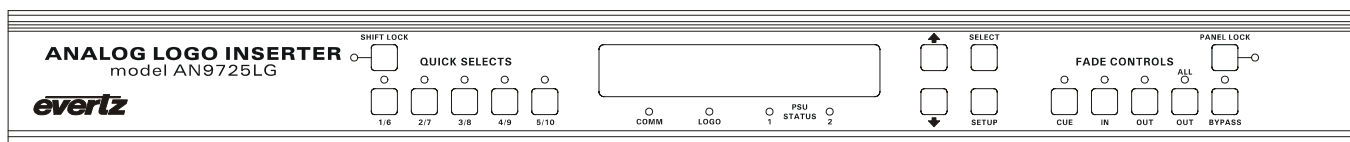


Figure 3-1: AN9725LG - Front Panel Layout

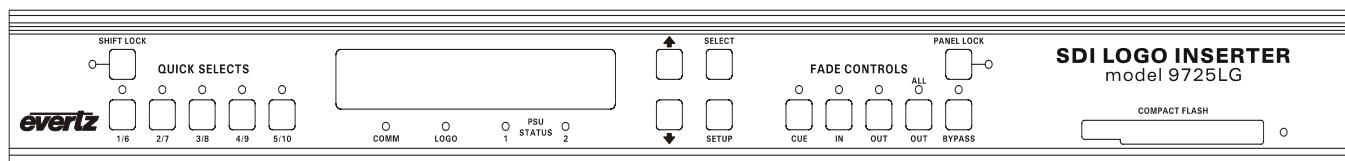


Figure 3-2: 9725LG with Compact Flash - Front Panel Layout

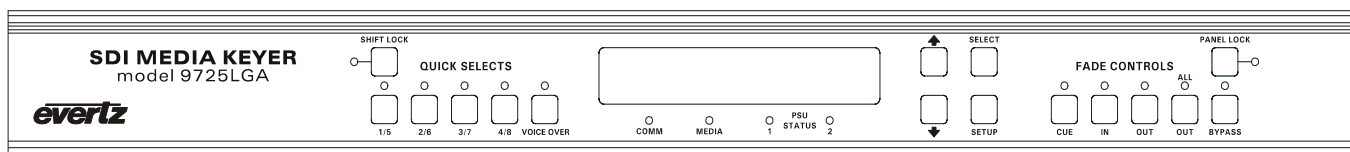


Figure 3-3: 9725LGA - Front Panel Layout

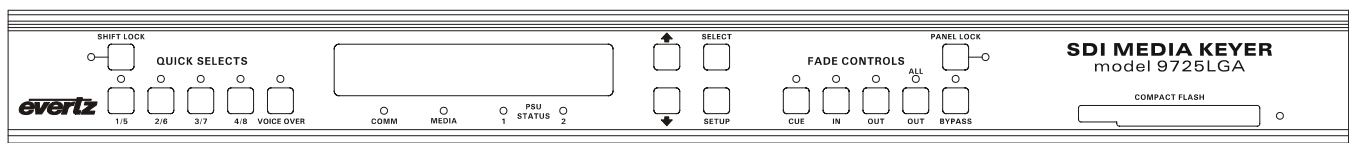


Figure 3-4: 9725LGA with Compact Flash – Front Panel Layout

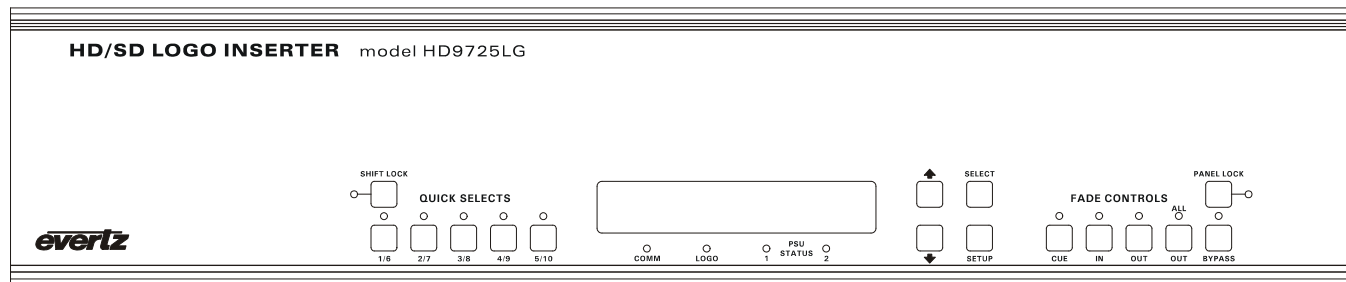


Figure 3-5: HD9725LG – Front Panel Layout

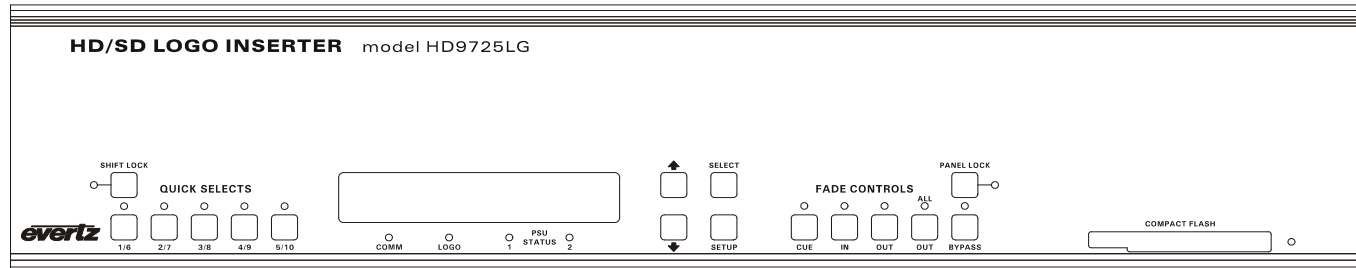


Figure 3-6: HD9725LG with Compact Flash - Front Panel Layout

Figure 3-1 to Figure 3-6 show the front panel layouts for a variety of keyer units. The standard and high definition units' front panels have identical layouts except that the high definition units' front panel has a 2RU height and a different model number. The front panel controls consist of a 16 digit alphanumeric display, 16 buttons and 16 LED status indicators.

The buttons are used to provide control of the 9725LG Series Keyer, to switch the various input sources, and to navigate the front panel *Setup* menu system, a quick and simple method of configuring the 9725LG Series Keyer for your application.

Throughout this chapter the term *Media Item* means logo, audio clip or a playlist that associates a logo and audio clip.

3.1.1. Fade Button Group

CUE This button is used to load a media item into the media keyer memory making it immediately available for fade in. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the logo name while it is loading into memory. Cueing a media item allows it to be viewed on the preview output bus before it is faded in. If the LED is illuminated, the media item has been cued.

Cued animations are loaded into memory and paused on the first frame of the animation until the Fade In command is received. Cued logos may be moved horizontally and vertically on the preview output. Gain level setting changes are visible on the preview output channels. Cued logos will repeat their fade in, hold and fade out sequence over and over again on the preview output. On Media Keyer units, audio clips will play over and over again. If you cue a playlist item on a Media Keyer, the logo and its associated audio clip will both be cued. This allows you to preview the entire logo and audio clip quickly and easily before placing it on air.

- IN** This button is used to *fade in* the currently selected media item onto the Program output channels. Logos are keyed on the program output at their Gain level settings. If the media item has not been previously cued, it must be loaded into memory before it can be faded in. This process may take a few seconds while the item is being cued. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the logo name while it is loading into memory. If you fade in a playlist item on a Media Keyer, the logo and its associated audio clip will both be faded in. If the LED is illuminated, the media item has been faded in. The media item name will flash on the front panel display indicating that it is *faded in*.
- OUT** This button is used to *fade out* the currently selected media item from the Program output channels. If you fade out a playlist item on a Media Keyer, the logo and its associated audio clip will both be faded out. If the LED is illuminated, the media item has been faded out. The media item name will stop flashing on the front panel display indicating that it is *faded out*.
- ALL OUT** This button is used to *fade out* all media items from the Program output channels. If the LED is illuminated, all media items have been faded out.
- SELECT** When you are not in the *Setup Menu*, this button controls whether the selected media item shown on the front panel display is present on the Program output bus. Scroll to the media item required using the **↑** & **↓** buttons. If the media item is currently faded in its name will flash in the front panel display and the IN LED will be On. To fade the media item in, press the **SELECT** button. The media item will fade in according to its programmed fade in time and the media item name display will begin flashing. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the logo name while it is loading into memory. To remove a media item from the output video buses, press the **SELECT** button when the media item name is flashing. The media item will fade out according to its programmed fade out time and its name display will stop flashing.

3.1.2. The Quick Select Button Group

QUICK SELECT These buttons are used as a quick method to *fade in* and *out* often used media items. On the Logo Inserters you can access up to 10 logos using the quick select keys. On the Media Keyers you can access up to 8 media items. Each button can access two different media items depending on the state of the **SHIFT LOCK** LED. When the **SHIFT LOCK** LED is Off the **QUICK SELECT** button access the lower numbered *Quick Select*. When the **SHIFT LOCK** LED is On the **QUICK SELECT** button access the higher numbered *Quick Select*.

Pressing the **QUICK SELECT** button once fades the assigned media item in. Pressing the **QUICK SELECT** button once again fades the assigned media item out. When a *Quick Select* is active the LED above the button is On. The LED's above each button are used to indicate the status of two *Quick Selects*.

To assign a media item to a *Quick Select*, scroll to the media item in the display window using the **↑** & **↓** buttons. Then press and hold the desired **QUICK SELECT** button for 3 seconds. Remember to press the **SHIFT LOCK** button first to access the higher numbered *Quick Selects*. Release the button and the item is assigned to the button.

SHIFT LOCK To access the second bank of *Quick Selects* press the **SHIFT LOCK** button. The LED to the left of the button is On to indicate that *Shift Lock* is on and that the higher

numbered *Quick Selects* are available. To turn *Shift Lock* off press the **SHIFT LOCK** button once again. The LED to the left of the button is Off to indicate that *Shift Lock* is off and that the lower numbered *Quick Selects* are available.

3.1.3. The Function Button Group

PANEL LOCK This button will lock the front panel controls so that changes cannot be made. The **PANEL LOCK** LED will turn on indicating that the front panel buttons are disabled. When any of these buttons are pressed, the front panel display will show the message `Panel Locked` for a few seconds. Pressing the **PANEL LOCK** button again will return the front panel keys to their normal functions and the LED key will go off indicating that the front panel controls are active.



The 9725LG Series Keyers may still be controlled from the GPI inputs or the automation when the front panel is Locked.

VOICE OVER This button (only available on the Media Keyer units) will mix the Voice over audio connected with the background (program) audio. The *HTML Audio Setup* page is used to configure which inputs will be treated as background audio and which inputs are treated as Voice Over Audio. (See section 3.12)

BYPASS This button controls the bypass relays. The LED indicates that the unit is in manual *Bypass* mode when it is on. When the unit is in *Bypass* mode, the program input video is directly connected to the FILL video output. On the Media Keyers, the AES PROG inputs are directly connected to the AES PROG outputs. The other outputs will not have any signals on them. The unit will revert to *Bypass* mode in the event of a power loss also.

3.1.4. Setup Button Group

SETUP This button is used to enter *Setup* menu that is used to configure the operating modes of the 9725LG Series Keyer. (See section 3.3 for an overview of the *Setup* menu.) When you are in the *Setup* menu, this button is also used to back out of menu selections to the next higher menu level or to exit the *Setup* menu and return to normal panel operation.

SELECT When in the *Setup* menu, this button is used to choose a submenu and navigate to the next level down in the menu structure. When you are at the bottom level of the menu system it will also accept numeric values or it will enable you to make the displayed menu choice the active value for that menu item. When not in the *Setup* menu, this button is also used to fade logos in and out on the selected output bus. (See section 3.1.1)

↑, ↓ When in the *Setup* menu, the ↑ and ↓ arrow keys are used to move to various items at the current menu level in the menu system. The ↑ and ↓ arrow keys are also used to enter numeric values for menu choices at the bottom level of the menu system. When not in the *Setup* menu, the ↑ and ↓ arrow keys are used to select a logo to display.

3.1.5. Control Panel Status Indicators

3.1.5.1. Fade Status Indicators

CUE This LED indicates that the media item displayed on the front panel is loaded into memory and available on the Preview output bus.

IN This LED indicates that the media item displayed on the front panel is faded in and available on the Program output bus. The media item name will also be flashing.

OUT This LED indicates that the media item displayed on the front panel is faded out and not available on the Program output bus. The media item name will not be flashing.

ALL OUT This LED indicates that all media items are faded out from the Program output bus.

LOGO, KEYSER This LED (labelled LOGO on Logo Inserters and KEYSER on Media Keyers) indicates that at least one media item is faded in and available on the Program output bus.

3.1.5.2. Quick Select Status Indicators

QUICK SELECT These LEDs indicate that the corresponding *Quick Select* is active, and the media item associated with it is faded in.

SHIFT LOCK This LED indicates that the *Shift Lock* is active and the higher numbered *Quick Selects* are being referenced by the **QUICK SELECT** LEDs and buttons.

3.1.5.3. Function Status Indicators

PANEL LOCK This LED indicates that the *Panel Lock* function is active and the remainder of the front panel buttons are disabled.

VOICE OVER This LED (only available on Media Keyer units) indicates that the audio mix function of the media Keyer is enabled when it is On.

BYPASS This LED indicates that the unit is in *Bypass* mode when it is On. When it is Off it indicates that the unit is in normal operating mode.

COMM This LED is used to signal two types of communication to the 9725LG Series Keyer. When it is flashing On approximately every 1.5 seconds, that indicates that the control panel is communicating with the main microprocessor in the unit. When the 9725LG Series Keyer is under automation control, or logos or other media files are being transferred to or from the unit using the Overture software, the LED will be on when the unit is receiving data from the control source.

If it is Off continuously, that means that the control panel has lost communications with the main unit. In that case, check the cabling if you are using a remote control panel. Otherwise the unit may require a reboot if the control buttons on the control panel are not responding.

3.1.6. Electronics Unit Status Indicators

PSU STATUS 1, 2 These green LEDs indicate that the corresponding power supply is functioning normally. On units fitted with a single power supply the **PSU STATUS 2** LED will be Off all the time. These LEDs are the only ones present on the electronic units of the remote control versions.

3.1.7. Front Panel Display Functions

The 16 character alphanumeric display is used to show the name of the logo that will be cued, faded in or out by pressing the **CUE**, **SELECT**, **IN** or **OUT** buttons. The display is also used to show the *Setup* menu items to configure the 9725LG Series Keyer unit.

3.2. OVERVIEW OF FRONT PANEL OPERATION

Scroll to the media item required using the **↑** & **↓** buttons. If the media item is currently faded in its name will flash in the front panel display. To load a media item into memory and display it on the preview bus, press the **CUE** button. To fade in a media item on the program bus, press the **SELECT** or **IN** button. The media item will fade in according to its programmed fade in time, the **IN** LED will be On and the media item name display will begin flashing. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the media item name while it is loading into memory. To fade out a media item from the output bus, press the **SELECT** or **OUT** button when the logo name is flashing. The media item will fade out according to its programmed fade out time. The **OUT** LED will be On and the media item name display will stop flashing. To remove all media items from the output video bus, press the **ALL OUT** button.

3.3. AN OVERVIEW OF THE SETUP MENU SYSTEM

The *SETUP* menu system uses the 16 digit alphanumeric display and provides a quick, intuitive method of configuring the 9725LG Series Keyer. These items are often only required to be set up at installation time, and do not pertain to the day-to-day operation of the unit. Figure 3-7 gives an overview of the *Setup* menu system.

3.4. NAVIGATING THE SETUP MENU

To enter the *Setup* menu, press the **SETUP** button. This will bring you to the main *Setup* menu where you can use the **↑** & **↓** buttons to move up and down the list of available sub-menus. Once you have chosen the desired sub menu, press the **SELECT** button to select the next menu level.

Once in a sub-menu, there may be another menu layer, or there may be a list of parameters to adjust. If there is another set of menu choices, use the **↑** & **↓** buttons to select the desired menu item and press the **SELECT** button. Continue this process until you get to the bottom of the menu tree where the list of parameters to be adjusted is shown.

To adjust any parameter, use the **↑** & **↓** buttons to move up or down the parameter list to the desired parameter. To view the possible values for that item, press the **SELECT** button. The current value for that parameter will be shown with an asterisk (*). Pressing the **↑** & **↓** buttons allows you to show the possible values for the selected parameter. The various parameter values that are not currently selected will NOT have an asterisk (*). When you have stopped at the desired value, press the **SELECT** button to save your selection. The value will be shown with an asterisk (*), indicating that it is now the current value. To move up one level in the menu press the **SETUP** button.

You can select other parameters from that sub-menu by using the **↑** & **↓** buttons, followed by the **SELECT** button. Alternately you can move up one menu item by pressing the **SETUP** button.

When you have made all the desired changes, press the **SETUP** button one or more times until you return to the top of the Menu tree and exit the *Setup* menu.

Figure 3-7 shows an overview of the setup menu. Each of the menu items, with function explanations, are described in the following sections.

GENERAL <ul style="list-style-type: none"> Select Standard Reference Setup Update Code Output Mode Key Out Mode Time Setup Network Info PORT A PORT C PORT D PORT E PORT F PORT G PORT H Line 21 Protect Up Down Timer Autotmation Debug M2100 Auto Debug 	MANAGE FILES <ul style="list-style-type: none"> Media File To Copy Delete Format 	PRESET <ul style="list-style-type: none"> GPI Setup <ul style="list-style-type: none"> GPI Caction Oaction Logo GPO Setup <ul style="list-style-type: none"> Logo Status 	TEMPERATURE <ul style="list-style-type: none"> Temp Format Temp Source Set Temperature Set Probe Offset
EAS <ul style="list-style-type: none"> Type Vert Pos'n Font Font Height Rate Warning BG Warning FG Watch BG Watch FG Test BG Test FG 	MEDIA (Static Logos) <ul style="list-style-type: none"> H Position V Position Layer Gain Quick Out Fade In Hold Fade Out 	MEDIA (Animated Logos) <ul style="list-style-type: none"> H Position V Position Layer Gain Quick Out 	MEDIA (Crawl Logos) <ul style="list-style-type: none"> H Position V Position Layer Gain Quick Out Fade In Hold Fade Out Rate Repeat Pause Font Hei Font BG Opacity FG Opacity Crawl BG Crawl FG
MEDIA (Playlists) <ul style="list-style-type: none"> Logo Name Audio Name 			

Figure 3-7: Overview of the Setup Menu

3.5. FRONT PANEL SETUP MENU – MAIN MENU

The Front panel *Setup* menu is arranged in a layered structure that groups similar configuration items together. The following section gives a brief description of the first level of menus that appear when you enter the menu. Selecting one of these items will take you to the next menu level. Sections 3.6 to 3.11 provide detailed descriptions of each of the sub-menus. The tables in these sections are arranged in an indented structure to indicate the path taken to reach the control. Menu items or parameters that are underlined indicate the factory default values.

<i>GENERAL</i>	This menu is used to set up the video standard, COM ports, network address, time and other miscellaneous settings and to update firmware
<i>MANAGE FILES</i>	This menu is used to manage logos and other media files – to copy them from one media device to another, to delete them, etc.
<i>PRESET</i>	This menu is used to configure the General Purpose inputs
<i>TEMPERATURE</i>	This menu is used to configure the Temperature settings – source, format, and value
<i>EAS</i>	This menu is used to configure the EAS crawl functions – speed, position, font type and height, and colours (only on EAS optioned units)
<i>MEDIA</i>	This menu is used to position logos and to set their fade in, hold and fade out time



Note that if the 9725LG Series Keyer undergoes a power cycle, any logos or media that are in a cued or faded in state will not be retained.

3.6. GENERAL CONFIGURATION ITEMS

The *GENERAL Setup* menu is used to set up various items related to the overall operation of the 9725LG Series Keyers, such as Video standard, Time settings, Network info, COM port settings and firmware versions. Table 3-1 shows the items available in the *GENERAL Setup* menu. Sections 3.6.1 to 3.6.13 provide detailed information about each of the sub-menus.

<i>Select Standard</i>	Sets the video standard
<i>Reference Setup</i>	Selects whether the timing reference will be the Input video or Genlock
<i>Update Code</i>	Displays the current firmware version, and initiates firmware upgrades
<i>Output Mode</i>	Selects device mode to the Logo Insert or Logo Key and Fill mode
<i>Key Out Mode</i>	Sets the mode of the keyer when the device is in Key/Fill mode
<i>Time Setup</i>	Configures the real time clock and LTC timecode input
<i>Network Info</i>	Configures the Ethernet Network Address for FTP uploads
<i>Port A</i>	Configures the function of the serial Port A
<i>Port C</i>	Configures the function of the serial Port C
<i>Port D</i>	Configures the function of the serial Port D
<i>Port E</i>	Configures the function of the serial Port E
<i>Port F</i>	Configures the function of the serial Port F
<i>Port G</i>	Configures the function of the serial Port G
<i>Port H</i>	Configures the function of the serial Port H
<i>Line 21 Protect</i>	Controls whether logos can be placed on Line 21
<i>Up Down Timer</i>	Configures the countdown (or count up) timer
<i>Automation Debug</i>	Enables log reporting for Automation messages
<i>M2100 Auto Debug</i>	Enables log reporting for M2100 Control Protocol messages

Table 3-1: Top Level of the General Setup Menu

3.6.1. Selecting the Video Standard

GENERAL

Select Standard

16x9 525i
 525i
 625i
 720p/23.98
 720p/24
 720p/25
 720p/29.97
 720p/30
 720p/50
 720p/59.94
 720p/60
 1035i/59.94
 1035i/60
 1080p/23.98sF
 1080p/24sF
 1080p/23.98
 1080p/24
 1080p/25sF
 1080p/25
 1080i/50
 1080p/29.97sF
 1080p/30sF
 1080p/29.97
 1080p/30
 1080i/59.94
 1080i/60

The *Select Standard* menu item is used to set the video standard in use.

For the 9725LG and 9725LGA, only 16x9 525i, 525i, and 625i are available.
For the HD9725LG and HD9725LGA, all the standards are supported.

3.6.2. Selecting the Video Timing Reference

GENERAL

Reference Setup

Type

The *Reference Setup* menu item is used to select the timing reference for the 9725LG Series Keyer.

Select *Input Video* to use the SDI video connected to the **BKG/A** video input as the timing reference.

Select *Ref In* to use the analog video connected to the **REF IN BNC** as the timing reference.

3.6.3. Setting the Video Output Timing

The output stage of the 9725LG Series Keyer contains a line buffer so that the output video can be timed with respect to the reference applied to the **REF IN** input.



The *H and V Phase Offset* adjustment is a REAL TIME ADJUSTMENT and will affect the output video timing immediately. These settings should not be adjusted when the output video is in the broadcast chain.

GENERAL

Reference Setup

H Offset

0

0 to max samples

This menu item allows you to set the horizontal timing of the output video with respect to the genlock reference input. Setting this control to 0 keeps the output video in time with the Genlock reference.

Increasing the value will delay the output video in one-sample increments.

GENERAL

Reference Setup

V Offset

0

0 to max samples

This menu item allows you to set the vertical timing of the output video with respect to the genlock reference input. Setting this control to 0 keeps the output video in time with the Genlock reference.

Increasing the value will delay the output video in one-sample increments.

3.6.4. Viewing and Updating the Firmware Version

GENERAL

Update Code

HD9725LG

2.06 build 613

boot 1.02 b 2

yes - upgrade now

no – don't upgrade

The *Update Code* menu item allows you to view the firmware version that is installed in the HD9725LG Series Keyer and to update the firmware.

When you press the **SELECT** button, the display shows the device model similar to:

```
HD9725LG
```

Use the **↑** or **↓** buttons to display: the software version which will be similar to:

```
2.06 build 613
```

Use the **↑** or **↓** buttons to display the boot code version which will be similar to:

```
boot 1.02 b 2
```

Select **Yes** to upgrade the firmware in the HD9725LG Series Keyer. For information on completing the firmware upgrade see section 6.2.

Select **No** to simply return to the top menu.

3.6.5. Setting the Output Mode

GENERAL
Output Mode
Pvw/Pgm
Pvw/Key/Fill

This menu item allows you to choose the output video style for the logo insertion.

Select *Pvw/Pgm*, if you are using your logo inserter as a standard on-air device. In this mode the logo is keyed over the input video according to the associated key information and is available on the **PREV OUT** BNC and the both **PROG OUT** BNCs.

Select *Pvw/Key/Fill* if you have a switcher or a downstream keyer that requires a separate key and fill signal. In this mode the logo is keyed over the input video according to the associated key information. Program Output BNCs will contain the Logo fill data on the **FILL** BNC and the Logo key data on the **KEY** BNC. In this mode you must supply a valid video timing reference signal to the unit. You can provide either an analog video signal into the **REF** input BNC or a serial digital video signal to the **PROG IN** BNC. The input signal must be running the same video standard as required by your downstream switcher or keyer. See section 3.6.2 for information on selecting the video timing reference signal.

3.6.6. Setting the Key Out Mode

GENERAL
Key Out Mode
Normal
Inverted

This menu item allows you to choose the type key that is used when the 9725LG are in Key and Fill mode.

Select *Normal*, the 0% key will be represented by black, and 100% key will be represented by white.

Select *Inverted*, the 100% key will be represented by black, and 0% key will be represented by white.

3.6.7. Configuring the Real Time Clock

The 9725LG Series Keyers contain a real time clock that is used to drive the clock display logos that can be placed on the screen. This battery backed up real time clock (known as RTC) free runs on an internal oscillator and can be set from the front panel. When the 9725LG Series Keyer is powered up with a valid video input, a separate clock (known as the UTC) is initialized from the RTC and maintains Universal Co-ordinated time (UTC) accurately from the video input so that it will not drift.

The 9725LG Series Keyers automatically update the RTC clock from the UTC clock to minimize long-term time drift. In order to keep the UTC clock in sync with your house master time code it should also be locked to incoming linear time code connected to the LTC IN connector. The UTC clock time is internally maintained as Universal Co-ordinated time (UTC) but can also be adjusted for time zone offsets from UTC and for daylight saving time, and displayed as local time (Local). The *Time Setup* sub-menus of the *General* setup menu are used to configure the real time clock and display the UTC and Local times.

3.6.7.1. Displaying the Local Time

GENERAL

Time Setup

Local 12:34:50

This menu item is used to display the clock time as local time. (UTC time adjusted for the time zone offset and DST adjustment) The time displays are always shown in the 24-hour time format.

3.6.7.2. Displaying the UTC Time

GENERAL

Time Setup

UTC 12:34:50

This menu item is used to display the UTC time clock. The time displays are always shown in the 24-hour time format.

3.6.7.3. Setting the Real Time Clock

GENERAL

Time Setup

RTC 12:34:50

This menu item is used to display and set the hardware real time clock in the 9725LG Series Keyers. The time displays are always shown in the 24-hour time format.

When you press the **SELECT** button, the display shows the current real time clock time which will look similar to the following:

12:34:50

To set the real time clock press the **SELECT** button and the hours digits will be flashing to indicate that they are in entry mode. Use the **↑** or **↓** buttons to change the hours to the desired value. Then press the **SELECT** button and the minutes digits will be flashing to indicate that they are in entry mode. Set the minutes and seconds in the same way. When you have entered the correct time, press the **SELECT** button to update the hardware real time clock. The seconds digits will stop flashing and the time will begin incrementing indicating that the Real Time Clock has been set. When you set the hardware real time clock the UTC clock time will automatically be adjusted.



When there is a valid LTC input to the 9725LG Series Keyer, the LTC time will overwrite the Real Time clock that has been entered.

3.6.7.4. Setting the Time Zone Offset

GENERAL
Time Setup
Zone -05:00:00

This menu item allows the user to set a time zone offset between the UTC time and the Local time. This time zone offset will be added to the UTC time along with the Daylight Saving time correction (see section 3.6.7.5) to obtain the Local time. Time zones are normally in one hour or 30 minute increments and can be + or – from UTC. (Time zones east of Greenwich are +, and time zones west of Greenwich are -)

To set the time zone press the **SELECT** button and the hours digits will be flashing to indicate that they are in entry mode. Use the **↑** or **↓** buttons to change the hours to the desired value. To set negative time zone offsets continue pressing the **↑** or **↓** buttons until the hours values show a negative sign. Then press the **SELECT** button and the minutes digits will be flashing to indicate that they are in entry mode. Set the minutes and seconds in the same way. When you have entered the correct time press the **SELECT** button to set the time zone offset. The seconds digits will stop flashing to indicate that the time zone offset has been set.

3.6.7.5. Enabling Daylight Saving Time Compensation

GENERAL
Time Setup
DST Active
Off
On

This menu item allows the user to control whether Daylight Saving Time (DST) compensation will be applied to derive the local time.

When set to *off*, Daylight Saving Time compensation will not be applied.

When set to *on* Daylight Saving Time compensation will be applied and the local time will be adjusted back by 1 hour.



The 9725LG Series Keyer must be manually changed from Daylight Saving time to Standard time using this menu setting. If you want to automatically keep the time clock in the 9725LG Series Keyer in sync with the correct local time, connect a source of linear time code that contains local time to the LTC IN connector. See section 3.6.7.6

3.6.7.6. Selecting Whether the Time Code input is UTC or Local Time

GENERAL
Time Setup
LTC Time Zone
Local
UTC

This menu item allows the user to select whether incoming time code will be in UTC or local time. This information is necessary to correctly update the RTC clock from the time code.

Select *UTC*, when the incoming LTC is Universal Co-ordinated time.

Select *Local*, when the incoming LTC is local time.

3.6.7.7. Synchronising the Real Time Clock to the UTC Time

GENERAL
Time Setup
Jam RTC from UTC
SELECT =
Confirm

The hardware real time clock (RTC) will drift slightly from the video rate UTC Clock time under normal operation. When this drift exceeds 5 seconds the RTC will be automatically resynchronized to the UTC time. This menu item allows the user to synchronize the RTC to the UTC Clock time immediately.

To synchronize the RTC time immediately, press the **SELECT** button when **SELECT = Confirm** is shown on the display. The front panel display will show **RTC JAMMED** for 1 second after the time has been synchronized.

3.6.7.8. Displaying the Local Date

GENERAL
Time Setup
LDate 12:34:50

This menu item is used to display the clock time as local time. (UTC time adjusted for the time zone offset and DST adjustment) The time displays are always shown in the 24-hour time format.

3.6.7.9. Displaying the UTC Time

GENERAL
Time Setup
UDate 12:34:50

This menu item is used to display the UTC time clock. The time displays are always shown in the 24-hour time format.

3.6.7.10. Setting the Real Time Clock

GENERAL
Time Setup
RDate 12:34:50

This menu item is used to display and set the hardware real time clock in the 9725LG Series Keyers. The time displays are always shown in the 24-hour time format.

When you press the **SELECT** button, the display shows the current real time clock time which will look similar to the following:

12:34:50

To set the real time clock, press the **SELECT** button and the hour's digits will be flashing to indicate that they are in entry mode. Use the **↑** or **↓** buttons to change the hours to the desired value. Then press the **SELECT** button and the minute's digits will be flashing to indicate that they are in entry mode. Set the minutes and seconds in the same way. When you have entered the correct time, press the **SELECT** button to update the hardware real time clock. The second's digits will stop flashing and the time will begin incrementing indicating that the Real Time Clock has been set. When you set the hardware real time clock the UTC clock time will automatically be adjusted.

3.6.7.11. Selecting Whether the Time Code input is UTC or Local Time

GENERAL
Time Setup
LTC Date Encode
UTC
Local

This menu item allows the user to select whether incoming time code will be in UTC or local time. This information is necessary to correctly update the RTC clock from the time code.

Select *UTC*, when the incoming LTC is Universal Co-ordinated time.

Select *Local*, when the incoming LTC is local time.

3.6.8. Setting Up the Network Addresses

The *Network Info* sub-menus of the *General Setup* menu are used to configure the 9725LG Series Keyers for FTP uploads of logos and other media, firmware upgrades, Overture connectivity, and HTML page access. In most cases you will only have to plug in your Ethernet cable and configure the network IP address (*A*) to contain an unused IP address in the valid range. Entries are made in standard IP address format. Please consult your Network administrator for IP address allocations, netmask and gateway requirements.

To set the various *Network Info* parameters, press the **SELECT** button when the desired parameter is shown on the front panel display (indicated by the letter on the left side of the display). The left group of digits will be flashing to indicate that they are in entry mode. Use the **↑** or **↓** buttons to change this group to the desired value. Then press the **SELECT** button and the next group of digits will be flashing to indicate that they are in entry mode. Set the remaining groups of digits in the same way. When you have entered the correct value for the right group of digits, press the **SELECT** button to set the parameter. The display will stop flashing to indicate that the parameter value has been set.

The settings become active immediately after you return to the *Network Info* menu level. A reboot is not required.

3.6.8.1. Setting Up the IP Address

GENERAL
Network Info
A 196.168.1.1

This menu item sets the unique IP address of the 9725LG Series Keyer within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network.



If connecting multiple 9725LG Series Keyers, a unique IP address must be used for each 9725 device.

3.6.8.2. Setting Up the Sub Net Mask

GENERAL
Network Info
M 255.255.255.0

This menu item sets the “subnet mask” of the network. Specifically, this parameter outlines all the IP addresses that can communicate with the 9725LG Series Keyer. This parameter is usually set to 255.255.255.0 for a private network.

Normally you will not have to adjust this parameter from its default value.

3.6.8.3. Setting Up the Gateway

<i>GENERAL</i>
<i>Network Info</i>
<i>G 192.168.1.1</i>

This menu item identifies the IP address of the “gateway” (commonly referred to as the “firewall”). In its simplest sense the gateway could be the PC directly connected to the 9725LG Series Keyer and running the network application software (i.e. Overture™). In a private network, this gateway could be identified as 192.168.1.YYY.

Normally you will not have to adjust this parameter from its default value.

3.6.8.4. Displaying the Ethernet Hardware Address

<i>GENERAL</i>
<i>Network Info</i>
<i>0:2:C5:01:03:E2</i>

This menu item displays the Network hardware (MAC) address of the unit (which can not be changed).

3.6.9. Setting the Serial Protocol for Serial Ports A - H

The four serial ports (on each breakout panel) on the 9725LG Series Keyer are used for various functions. The REMOTE PANEL (B) port is only available on remote control versions of the 9725LG Series Keyer and is used to connect the remote control panel.

The **PORT A-H** ports are programmable and can be used for a variety of functions. There are seven identical menu items on the *GENERAL* menu that are used to configure the **PORT A, C, D, E, F, G** and **H** ports. For simplicity only one of these menu items will be shown in the manual.

GENERAL

Port A

None
EAS CG
Temperature
Automation
M2100-auto
XY-auto
NMEA0183

This menu item allows you to set the communications protocol that will be used on serial port A.

Select *None* to disable the use of COM port A

Select *EAS CG* when you have the EAS option (+EAS) enabled and have an EAS decoder connected to the port. See section 5.1 for more information about connecting the EAS decoder. See sections 5.2 and 3.9 for information about configuring the EAS functions of the 9725LG Series Keyer.

Select *Temperature* when you have the optional temperature probe connected to the port. See section 2.10 for more information about connecting the temperature probe. The temperature is displayed using a preformatted Temperature logo, which is created using the Overture™ software. See the Overture™ section of the Keyer Toolkit manual or the Temperature Probe addendum which shipped with your temperature probe for information on creating the Temperature logo.

There are three settings that are used when the 9725LG Series Keyer is under automation control. See your automation vendor for information about the protocols that are supported.

Select *Automation* when you want to control the 9725LG Series Keyer using the Evertz automation protocol. This is the setting you should use when you are controlling the 9725LG Series Keyer from the Evertz MetaCast 2 software.

Select *M2100-auto* when you want to control the 9725LG Series Keyer using the Grass Valley M2100 9725LG Series Keyer automation protocol. Select *XY-auto* when you want to control the 9725LG Series Keyer using the XY logo inserter automation protocol. Note that only logo functions of the 9725LG Series Keyer can be controlled using the XY automation protocol.

Select *NMEA0183* when you connect to a GPS or weather device using the NMEA 0183 protocol.

3.6.10. Protecting Line 21 Captions

GENERAL

Line 21 Protect

L21 protect: off
L21 protect: on

This menu item allows the user to control whether logos can be placed on line 21, where closed captions are located in North American television systems. When the video standard is set to one of the 625 line standards, the setting of this menu item is ignored.

When set to *off*, logos can be placed vertically beginning at line 21.

When set to *on*, logos can be placed vertically beginning at line 22, preserving any closed caption information that is encoded on line 21.

3.6.11. Configuring Up Down Timer

GENERAL
Up Down Timer
Timer
Timer 1
Timer 2

This menu item allows the user to set two timers to act as each count down or count up timers. This can be inserted as a logo in place of a normal time logo.

Select *Timer 1*, to set Timer 1 parameters.

Select *Timer 2*, to set Timer 2 parameters.

GENERAL
Up Down Timer
Hour
0
0 to 23

This menu item allows the user to set the hour value. The range is 0 to 23.

GENERAL
Up Down Timer
Minute
1
0 to 59

This menu item allows the user to set the minute value. The range is 0 to 59.

GENERAL
Up Down Timer
Seconds
0
0 to 59

This menu item allows the user to set the second value. The range is 0 to 59.

GENERAL
Up Down Timer
Direction
Down
Up

This menu item allows the user to set the direction of the timer. The two choices are *Up* or *Down*.

3.6.12. Enabling Automation Debug Messages

GENERAL
Automation Debug
Off
On

This menu item allows the user to control whether automation messages are outputted to the **UPGRADE RS232** Port. This would be used to debug issues with an automation system.

3.6.13. Enabling M2100 Debug Messages

GENERAL
M2100 Debug
Off
On

This menu item allows the user to control whether M2100 control messages are output to the **UPGRADE RS232** Port. This would be used to debug issues with an automation system.

3.7. FILE MANAGEMENT CONFIGURATION ITEMS

The 9725LG Series Keyer comes standard with a 256 MB internal flash memory for storing logos and other media files. This can be upgraded to 8 GB of internal flash memory. The 9725LG Series Keyer can also be fitted with a removable compact flash expansion drive that can be used with compact flash memory cards from 256 MB to 8 GB. The *MANAGE FILES Setup* menu is used to set up various items related to the moving logo files between these different media drives. Table 3-2 shows the items available in the *MANAGE FILES Setup* menu. Sections 3.7.1 to 3.7.6 provide detailed information about each of the sub-menus.

<i>Media</i>	Selects the source media for the file operation
<i>File</i>	Selects the media file for the file operation
<i>To</i>	Selects the destination media for the file operation
<i>Copy</i>	Copies the media <i>File</i> from the <i>Source</i> to the <i>Destination</i> media
<i>Delete</i>	Deletes the media <i>File</i> from the <i>Source</i> media
<i>Format</i>	Erases the <i>Destination</i> media

Table 3-2: Top Level of the Manage Files Setup Menu

3.7.1. Selecting the Source Media

<i>MANAGE FILES</i>
<i>Media</i>
<i>[card number]</i>

This menu item is used to select the source media drive that you are working with. Each media drive is identified by the serial number of the compact flash media that is currently in the drive. Units that are not fitted with one of the compact flash expansion drive will only have 1 item in this list.

Use the **↑** or **↓** buttons to display the serial number of the media that will be the source for the file operation and press the **SELECT** button.

3.7.2. Selecting the Media File Name

<i>MANAGE FILES</i>
<i>File</i>
<i>logo name</i>

This menu item is used to select the file name of the logo or other media file that you want to perform the file operation on.

Use the **↑** or **↓** buttons to display a list of all the media files on the drive selected with the *Media* menu item. When you have selected the desired media file press the **SELECT** button.



3.7.3. Selecting the Destination Media

MANAGE FILES

To

[card number]

This menu item is used to select the destination media drive that you are working with. Each media drive is identified by the serial number of the compact flash media that is currently in the drive. Units that are not fitted with one of the compact flash expansion drives will only have 1 item in this list.

Use the  or  buttons to display the serial number of the media that will be the source for the file operation and press the **SELECT** button to choose the displayed item.

3.7.4. Copying a File from one Drive to Another

MANAGE FILES

Copy

This menu item is used to make a copy of the file specified by the *File* menu item from the source media (chosen by the *Media* menu item) to the destination media (chosen by the *To* menu item).

Press the **SELECT** button to initiate the copy function. If a file of the same name already exists on the destination media, it will be overwritten in the copy function. If the target item is active (e.g. the logo is being keyed), the copy function will fail.

3.7.5. Deleting a File

MANAGE FILES

Delete

This menu item is used to delete the file specified by the *File* menu item from the source media (chosen by the *Media* menu item)

Press the **SELECT** button to initiate the delete function. If the file is active (e.g. the logo is being keyed), the delete function will fail.

3.7.6. Erasing all the Files from a Media Disk

MANAGE FILES

Format

This menu item is used to delete all the files from the source media (chosen by the *Media* menu item)

Press the **SELECT** button to initiate the format function. If there are active files on the media (e.g. one or more of the logo files are being keyed), the format function will fail.



Warning, this function is not recommended but is provided as last resort. The FORMAT function will completely remove all Media items, logos etc from the device specified in the MEDIA submenu. There is no undo provided.

3.8. PRESET CONFIGURATION ITEMS

The *PRESET Setup* menu is used to configure the GPI and GPO functions. Table 3-3 shows the items available in the *PRESET Setup* menu. Section 3.8.1 provides detailed information about the sub-menu.

GPI Setup	Configures the actions triggered by the GPI inputs
GPO Setup	Configures the actions reported by the GPO ouputs

Table 3-3: Top Level of the Preset Setup Menu

3.8.1. Configuring the GPI Inputs

The 9725LG Series Keyer is fitted with 32 general purpose inputs (it ships with 16 GPIs standard, with an optional 16 available) that can be configured to trigger 2 different actions for a specific media item - *On Closure* and *On Open*. For example, the *On Closure* event can be used to fade in a logo to the program bus. The *On Open* event for the same GPI can be used to fade out the same logo.

3.8.1.1. Selecting One of the GPI Inputs to Configure

PRESET
GPI Setup
GPI:0
GPI=0 to 31

This menu item is used to select one of the GPI inputs that will be configured using the other menu items in the *GPI SETUP* menu branch.

When you first enter this menu branch the selected GPI input will be shown. To change to configuring another GPI input press the **SELECT** button. The display will show GPI=0 indicating that the GPI input can be changed. Use the **↑** or **↓** buttons to select the GPI input you wish to configure and press the **SELECT** button. You can configure the preset to load, transition to make and logo to display when the selected GPI input is closed and opened using the other menu items in the *GPI SETUP* menu branch.

3.8.1.2. Configuring the GPI Actions

There is one menu item to configure what happens when the selected GPI closes (*CAction*), one menu item to configure what happens when the selected GPI opens (*OAction*), and one menu item to select a media item affected by the GPI (*Logo*). For the sake of simplicity only the *CAction* and *Logo* menu items will be shown in the manual. The *OAction* menu item operates the same as the *CAction*. The applicable GPI is shown on the left of the front panel display. Each GPI can be independently configured by first selecting the GPI using the *GPI* menu item described in section 3.8.1.1.

PRESET
GPI Setup
A CAction
<i>Toggle</i>
<i>Out</i>
<i>In</i>
<i>Cue</i>
<i>None</i>
<i>Timer2</i>
<i>Timer1</i>
<i>All Out</i>
<i>Duck</i>
<i>Duck Out</i>
<i>Duck In</i>

This menu item is used for action to occur when the GPI input is closed to ground.

Select *Toggle* when the GPI is closed.

Select *Out* to fade out the logo selected by the *Logo* menu item.

Select *In* to load the logo selected by the *Logo* menu item into memory and fade it in.

Select *Cue* to load the logo selected by the *Logo* menu item into memory. The logo will not be displayed by this action.

Select *None* to not perform any action

Select *Timer2* to start the Up Down Timer 2.

Select *Timer1* to start the Up Down Timer 1.

Select *All Out* to fade out all logos.

Select *Duck* to begin a 'Duck Audio Insert'. This action is the same as pressing the **EXT AUDIO MIX** button when it is not illuminated (on LGA only).

Select *Duck Out* to end a 'Duck Audio Insert'. This action is the same as pressing the **EXT AUDIO MIX** button when it is illuminated (on LGA only).

Select *Duck In* to begin a 'Duck Audio Insert'. This action is the same as pressing the **EXT AUDIO MIX** button when it is not illuminated (on LGA only).

PRESET
GPI Setup
A Logo:none
<i>None</i>
<i>List of logos</i>

This menu item is used to select a logo to be acted on if the *CAction* or *OAction* menu item is set to *Cue*, *In* or *Out*

Select *none* to disable any logo actions.

Use the **↑** or **↓** buttons to select from the list of available logos and press the **SELECT** button to make this the active logo for the *CAction* or *OAction* menu item.

3.8.2. Configuring the GPO Outputs

<i>PRESET</i>
<i>GPO Setup</i>
<i>00 to 15</i>
<i>None</i>
<i>Logo Status</i>

This menu item is used to set the actions of the GPO that is selected.

When you first enter this menu branch the selected GPO input will be shown. Use the **↑** or **↓** buttons to select the GPO input you wish to configure and press the **SELECT** button.

There are two options that can be configured.

Select *None* to have the GPO report nothing.

Select *Logo Status* to have the GPO report the status of the logo.

3.9. TEMPERATURE CONFIGURATION ITEMS

The *Temperature Setup* menu is used to configure the temperature parameters. Table 3-3 shows the items available in the *Temperature Setup* menu. Section 3.9.1 to 3.9.3 provide detailed information about each of the sub-menus.

<i>Temp Format</i>
<i>Temp Source</i>
<i>Set Temperature</i>
<i>Set Probe Offset</i>

Configures the format of the temperature

Configures the source of the temperature

Sets the static temperature

Sets the static offset for the temperature that is provided by the probe

Table 3-4: Top Level of the Temperature Setup Menu

3.9.1. Configuring the Temperature Format

<i>Temperature</i>
<i>Temp Format</i>
<i>Celsius</i>
<i>Fahrenheit</i>

This menu item is used to set the format of the temperature value.

There are two options that can be configured.

Select *Celsius* to have the temperature represent degrees Celsius.

Select *Fahrenheit* to have the temperature represent degrees Fahrenheit.

3.9.2. Configuring the Temperature Source

Temperature
Temp Source
Manual
Probe
METAR
Txt File
NMEA0183

This menu item is used to set the source of the temperature.

Select *Manual* to have the temperature value manually entered. See section 3.9.3.

Select *Probe* to have a temperature probe (with +TP option) provide the temperature.

Select *METAR* to have a METAR source provide the temperature.

Select *Txt File* to have a text file that is loaded into compact flash to be source that provides the temperature. The text file is a normal ASCII text file that is called "temperature.txt". The filename is **case-sensitive**. The format of the information in the file is a single line of ASCII text as follows:

T, 73, F

T represents this is temperature information, 73 is the actual temperature value, and F represents the units either C (for Celsius) or F (for Fahrenheit). The file content is **case-sensitive**.

Select *NMEA0183* to have an NMEA 0183 protocol based device provide the temperature.

3.9.3. Setting the Temperature

Temperature
Set Temperature
-600 to 600

This menu item is used to set the temperature value.

3.9.4. Setting the Probe Offset

Temperature
Set Probe Offset
-600 to 600

This menu item is used to set a static offset to the temperature that is provided by the probe. This fixed value allows the user to add or subtract degrees of temperature from the value outputted by the temperature probe. This can be used to account for difference between two probes that are located in different areas.

3.10. EAS CONFIGURATION ITEMS (+E OPTIONED UNITS ONLY)

When the EAS option (+E) is added to the 9725LG Series Keyer, it has the ability to key Emergency Alert messages received from a DASDEC, Sage or TFT EAS Decoder over the program video and to insert the emergency audio over the program audio. In order to insert the audio you will have to convert the analog audio from the decoder to AES and connect it to the AES PREV 4 input of the 9725LG Series Keyer. See chapter 5 for more information on connecting and configuring the EAS decoder.

The *EAS Setup* menu is used to configure items related to the EAS option and is only available on units fitted with the option. Table 3-5 shows the items available in the *EAS Setup* menu. Sections 3.10.1 to 3.10.6 provide detailed information about each of the sub-menus.

<i>Type</i>	Selects how the EAS Crawl will transition onto the video
<i>Vert Pos'n</i>	Sets the vertical position of the EAS crawl
<i>Font</i>	Sets the font used to display the EAS crawl
<i>Font Height</i>	Sets the font size used to display the EAS crawl
<i>Rate</i>	Sets the crawl rate of the EAS crawl
<i>Warning BG</i>	Sets the colour of the background for EAS warning messages
<i>Warning FG</i>	Sets the font colour for EAS warning messages
<i>Watch BG</i>	Sets the colour of the background for EAS watch messages
<i>Watch FG</i>	Sets the font colour for EAS watch messages
<i>Test BG</i>	Sets the colour of the background for EAS test messages
<i>Test FG</i>	Sets the font colour for EAS test messages

Table 3-5: Top Level of the EAS Setup Menu

3.10.1. Setting the EAS Display Type

<i>EAS</i>	This menu item is used to select how the EAS message will transition onto the video
<i>Type</i>	
<i>Ramp On</i>	Select <i>Ramp On</i> to have the crawl background appear as the text scrolls from right to left across the screen.
<i>Ramp Off</i>	Select <i>Ramp Off</i> to have the crawl background appear all at once.

3.10.2. Setting the Vertical Position of EAS Crawl Display

EAS
Vert Pos'n
20
20 to 248

This menu item is used to set the vertical position of the EAS scrolling text message. The *Vert Pos'n* value is the video line where the top of the scrolling message will be placed. The range for placement is from 21 to 379 as set by the FCC rules.

When you first enter this menu branch the selected current position will be shown. To change the vertical position press the **SELECT** button. The display will show *vert pos'n=21* indicating that the line number can be changed. Use the **↑** or **↓** buttons to select the line number and press the **SELECT** button. The display will show *vert pos'n:xx* indicating that this is the new the display position.

3.10.3. Setting the Font used for the EAS Crawl Display

EAS
Font
Font Name

This menu item is used to set the font that will be used for the EAS scrolling text message.

When you first enter this menu branch the current font name will be shown. If there are no true type fonts loaded then the display will show *font* as the default font name. To change the font to another true type font press the **SELECT** button. The display will show *font=font* indicating that the font can be changed. Use the **↑** or **↓** buttons to select the from the available true type fonts that have been loaded using the Nomad™ software. When you press the **SELECT** button the display will show *font:fontname* indicating that this is the new the display font.

3.10.4. Setting the Font Size for the EAS Crawl Display

EAS
Font Height
10
10 to 200

This menu item is used to set the font size that will be used for the EAS scrolling text message.

The EAS height is the vertical size of the font measured in lines of video.

3.10.5. Setting the Crawl Rate for the EAS Crawl Display

EAS
Rate
16.0
1.0 to 60.0 seconds

This menu item is used to set the speed with which the scrolling text moves from right to left across the screen measured in seconds.

The default is 16.0 seconds. The parameter is adjusted in 0.1 second increments.

3.10.6. Setting the Colours for the EAS Crawl Display

There are three different levels of EAS messages – warning messages, watch messages and test messages. Each message typically has a different background and foreground colour associated with it so that the viewer will immediately know the severity of the EAS alert. There are six menu items used to set the foreground and background colours. For the sake of simplicity only the menu item for setting the warning background colour will be shown in the manual. The other menu items are used in the same way.

EAS
Warning BG
R:255G:B 0 G: 0

This menu item is used to set the background colour for the warning messages. When you first enter this menu item you will be shown a set of colour values for each of the RGB colour components. The display will show something like:

R:255G:B 0 G: 0

To change the colour value, press the **SELECT** button. The colon (:) after the R will change to an equals (=) sign indicating that you can change the R value. Use the **↑** or **↓** buttons to change the red colour component value. When you press the **SELECT** button the colon after the G will change to an equals sign indicating that you can change the G value. Proceed to set the G and B values in the same way. After changing the B value, press the **SELECT** button and the display will show a value similar to:

R:255G:B 128 G: 128

3.11. MEDIA CONFIGURATION ITEMS

On Media Keyer units the *Media Setup* menu controls all the parameters for logos and audio clips. Table 3-6 shows the items available in the *MEDIA Setup* menu on Media Keyer Units. Sections 3.11.1 to 3.11.11 provide detailed information about each of the sub-menus. Some of the menu items apply to certain media types only. To configure a specific media item exit the *Setup* menu and use the **↑** or **↓** buttons to select a particular logo. If you want to see the logo as you are positioning it then press the **SELECT** or **IN** key to fade the media item in. Then press the **SETUP** button to enter the *Setup* menu. Navigate to the *MEDIA* menu using the **↑** or **↓** buttons, then press the **SELECT** button to enter the *MEDIA* menu.

<i>H Position</i>	Sets the horizontal position of the selected logo
<i>V Position</i>	Sets the vertical position of the selected logo
<i>Layer</i>	Sets the layer level of the selected logo
<i>Gain</i>	Sets the opacity (inverse of transparency) for the selected logo
<i>Quick Out</i>	Sets the duration for a quick out of the selected logo
<i>Fade In</i>	Sets the fade in duration for the selected logo
<i>Hold</i>	Sets how long the selected logo will be displayed
<i>Fade Out</i>	Sets the fade out duration for the selected logo
<i>Crawl Rate</i>	Sets the crawl rate for the selected crawl logo
<i>Crawl Repeat</i>	Sets the repeat count for the selected crawl logo
<i>Crawl Pause</i>	Sets the pause time between repetitions of the selected crawl logo
<i>Crawl Font</i>	Sets the font used to display the text on the selected crawl logo
<i>Crawl Height</i>	Sets the font size used to display the text on the selected crawl logo
<i>BG Opacity</i>	Sets the background opacity for the selected crawl logo
<i>FG Opacity</i>	Sets the text opacity for the selected crawl logo
<i>Crawl BG</i>	Sets the colour of the background for the selected crawl logo
<i>Crawl FG</i>	Sets the font colour for the selected crawl logo
<i>Clip Gain Level</i>	Sets the mix level for the selected audio clip (on LGA only)
<i>Clip Repeat</i>	Sets the repeat count for the selected audio clip (on LGA only)

Table 3-6: Top Level of the Media Setup Menu on Media Keyer Units

3.11.1. Setting the Logo Horizontal Position

MEDIA
<i>H Position</i>
<i>H Position:0</i> <i>0 to max pixels</i>

This menu item is used to set the horizontal position for the current logo. The position is referenced to the left edge of the logo. The range of values depends on video standard in use.

Use the **↑** or **↓** buttons to adjust the position. The logo will move on the screen as you adjust its position.

3.11.2. Setting the Logo Vertical Position

MEDIA
<i>V Position</i>
<i>V Position:0</i> <i>0 to max lines</i>

This menu item is used to set the vertical position for the current logo. The position is referenced to the top edge of the logo. The range of values depends on video standard in use.

Use the **↑** or **↓** buttons to adjust the position. The logo will move on the screen as you adjust its position.

3.11.3. Setting the Layer Level

MEDIA
<i>Layer</i>
<i>0</i> <i>-600 to +600</i>

This menu item sets the layer level of the logo. The user can layer a number of logos over top of each other using the 9725LG Series Keyers. This parameter assigns the layer value with respect to 0 (where 0 is the default layer).

For example, if there are three logos (A, B, C) with the level layer settings of -10 (logo A), 0 (logo B) and 10 (logo C). When the three logos are faded in, A would be at the bottom, B on top of A, and C on top of both A and B. If all the logos have the same layered value, for example 0, the layering order is determined based on the order that the logos are applied and faded in.

3.11.4. Setting the Logo Transparency

MEDIA
<i>Gain</i>
<i>Gain 100</i>

This menu item is used to adjust the opacity (the inverse of transparency) of the logo as a percentage of the original opacity when the logo was first created. When the logo *Gain* is set at its default value of 100 the logo will be displayed at its original opacity.

For example if the logo is created at 10% opaque, adjusting the *Gain* value to 200 will render the logo as 20% opaque. If the logo is created at 50% opaque, adjusting the *Gain* value to 200 will render the logo as 100% opaque. *Gain* values resulting in opacity levels above 100% are ignored.

Use the **↑** or **↓** buttons to adjust the *Gain* and then press the **SELECT** button to make the change.

3.11.5. Setting the Logo Fade In Duration

MEDIA
Fade In
Fade in:30

This menu item is used to set the fade in rate for the current logo. The range of values is 0 to 600 frames. The *Fade In* menu item only applies to static and crawl logos.

Use the **↑** or **↓** buttons to adjust the *Fade In* time and then press the **SELECT** button to make the change.

3.11.6. Setting the Logo Display Time

MEDIA
Hold
Hold:30

This menu item is used to set how long the current logo will be displayed. The range of values is 1 to 600 frames. The logo will automatically fade out after the *Hold* time has been completed. Setting the value to *manual* will cause the logo to be displayed until it is manually faded out. The *Hold Time* menu item only applies to static and crawl logos.

Use the **↑** or **↓** buttons to adjust the *Hold Time* and then press the **SELECT** button to make the change.

3.11.7. Setting the Logo Fade Out Duration

MEDIA
Fade Out
Fade out:30

This menu item is used to set the fade out rate for the current logo. The range of values is 0 to 600 frames. The *Fade out* menu item only applies to static and crawl logos.

Use the **↑** or **↓** buttons to adjust the *Fade Out* time and then press the **SELECT** button to make the change.

3.11.8. Setting the Logo Quick Out Duration

MEDIA
Quick Out
Quick out:0

This menu item is used to set the quick out rate for the current logo. This will take any animated logo, or crawl out (after specified value) by any OUT trigger (i.e. front panel, Overture, or GPI trigger). The parameter range is 0 to 120 frames. A value of 0 frames, will not take logo or crawl out immediately, but follow its fade out value.

Use the **↑** or **↓** buttons to adjust the *Quick Out* time and then press the **SELECT** button to make the change.

3.11.9. Crawl Logo Configuration Items (Crawl Optioned Units Only)

When the Crawl (+TXT or +HTXT) option is added to the 9725LG Series Keyer, it has the ability to key scrolling text messages over the program video. In order to set up the crawl logo and enter the text from the crawl logo you will need to use the Overture™ software. The crawl is rendered by Overture™ into a logo (EVL) file and sent to the 9725LG Series Keyer. See the Overture™ section of the Evertz Keyer Toolkit manual for more information on preparing crawl logos.

The *Media Setup* menu has several items that are used to configure crawl logos, and these items are only available when you select a crawl logo on units fitted with the crawl option. Sections 3.11.9.1 to 3.11.9.7 provide detailed information about each of the sub-menus.

3.11.9.1. Setting the Crawl Logo Horizontal Crawl Rate

MEDIA
Rate
Rate: <u>6</u>
1 to 15

This menu item is used to set the speed with which the scrolling text moves from right to left across the screen measured in samples per field. (samples per frame for 720p video formats)

For example it will take 120 fields for the text to scroll across a 720 pixel wide standard definition image with a scroll rate of 6. This default value of 6 should provide a comfortable rate, however should you change the size of the font, you should also adjust the scrolling speed.

3.11.9.2. Setting the Crawl Logo Repeat Count

MEDIA
Repeat
Repeat: <u>0</u>
1 to 30

This menu item is used to set the number of times the text will scroll across the screen.

If you set the *Repeat* control to 0 the text will scroll continuously.

3.11.9.3. Setting The Crawl Logo Pause Time Between Repeats

MEDIA
Pause
Pause: <u>0</u>
1 to 30

This menu item is used to set the length of time (in seconds) before a new crawl begins. The pause time is measured between the time that the text disappears on the left side of the screen until it appears back on the right side of the screen.

3.11.9.4. Setting the Crawl Logo Text Font

MEDIA
Font
Font Name

This menu item is used to set the font that will be used for the crawl logo scrolling text message.

When you first enter this menu branch the current font name will be shown. If there are no true type fonts loaded then the display will show *font* as the default font name. To change the font to another true type font, press the **SELECT** button. The display will show *font=font* indicating that the font can be changed. Use the **↑** or **↓** buttons to select the from the available true type fonts that have been loaded using the Nomad™ software. When you press the **SELECT** button the display will show *font:fontname* indicating that this is the new the display font.

3.11.9.5. Setting the Crawl Logo Text Font Size

MEDIA
Font Hei
10
10 to 200

This menu item is used to set the font size that will be used for the crawl logo scrolling text message.

The *Crawl Height* is the vertical size of the font measured in lines of video.

3.11.9.6. Setting the Crawl Logo Transparency

There are two menu items used to set the text (foreground) and background opacity (inverse of transparency) of the crawl logo. For the sake of simplicity only the menu item for setting the background opacity will be shown in the manual. The other menu item is used in the same way.

MEDIA
BG Opacity
BG Opacity:0-255

This menu item is used to set the background opacity (the inverse of transparency) for the crawl logo.

Setting the opacity to 255 makes the background completely opaque.

Setting the opacity to 0 makes the background completely transparent.

3.11.9.7. Setting the Crawl Logo Colours

There are two menu items used to set the text (foreground) and background colours of the crawl logo. For the sake of simplicity only the menu item for setting the background colour will be shown in the manual. The other menu item is used in the same way.

MEDIA
Crawl BG
R:255G:B 0 G: 0

This menu item is used to set the background colour for the crawl logo. When you first enter this menu item you will be shown a set of colour values for each of the RGB colour components. The display will look similar to the following:

R:255G:B 0 G: 0

To change the colour value press the **SELECT** button. The colon (:) after the R will change to an equals (=) sign indicating that you can change the R value. Use the **↑** or **↓** buttons to change the red colour component value. When you press the **SELECT** button the colon after the G will change to an equals sign indicating that you can change the G value. Proceed to set the G and B values in the same way. After changing the B value, press the **SELECT** button and the display will look similar to the following:

R:255G:B 128 G: 128

This indicates that the background colour value has been changed.

3.11.10. Audio Clip Configuration Items (Media Keyer Units Only)

The 9725LGA and HD9725LGA Media Keyers, have the ability to insert audio clips into the program audio path. These clips can be played by themselves or associated with logos in a playlist. In order to set up a playlist will need to use the Overture™ software. See the Overture™ manual for more information on preparing playlists.

The *Media Setup* menu has several items that are used to configure audio clips, and these items are only available with the 9725LGA and HD9725LGA Media Keyers. Sections 3.11.10.1 to 3.11.10.2 provide detailed information about each of the sub-menus.

3.11.10.1. Selecting the Audio Clip Mix Level

MEDIA
<i>Clip Gain Level</i>
CL Gain: 50%

The *Clip Gain Level* menu item is used to set the mix level that the selected audio clip will have as a percentage of the total audio when it is being played.

The audio clip will be at the percentage specified. The normal program audio will be at 100% - the *Clip Gain Level*. To have the audio clip completely replace the normal program audio, specify a *Clip Duck Level* of 100%.

3.11.10.2. Setting the Audio Clip Repeat Count

MEDIA
<i>Clip Repeat</i>
Repeat: <u>1</u>
1

This menu item is used to set the number of times the audio clip will play.

Currently the repeat count is fixed at 1.

3.11.11. Playlist Configuration Items (Media Keyer Units Only)

The 9725LGA and HD9725LGA Media Keyers, have the ability to run playlists that insert logos and associated audio clips. In order to set up a playlist will need to use the Overture™ software. See the Overture™ manual for more information on preparing playlists.

The *MEDIA Setup* menu has two items that are used to view the logo and audio file that will be played when the playlist is faded in. These items are only available when you select a playlist from the front panel. Sections 3.11.11.1 and 3.11.11.2 provide detailed information about each of the sub menus.

3.11.11.1. Showing the Logo Name for a Playlist

MEDIA
<i>Logo Name</i>
LN: none
LN: Logo name

The *Logo Name* menu item is used to show the logo name for the playlist. In order to change the logo name for a playlist you will need to use the Nomad™ software.

3.11.11.2. Showing the Audio Clip Name for a Playlist

MEDIA
Audio Name
AN: none
AN: Logo name

The *Audio Name* menu item is used to show the audio clip name for the playlist. In order to change the audio clip name for a playlist you will need to use the Nomad™ software.

3.12. AUDIO CONFIGURATION ITEMS (MEDIA KEYER UNITS ONLY)

On the Media Keyer units, the *HTML page* is used to set up various items related to the configuring the audio operation of the 9725LGA and HD9725LGA.

Output
Background Source
Voice Over Source
Duck Level

Sets the audio output for the remainder of the Audio menu items

Selects the background source for each audio output

Selects the Voice Over source for each audio output

Sets the mix levels for voice over and EAS operations

Table 3-7: Top Level of the Audio Configuration Menu

3.12.1. Selecting one of the Audio Outputs to Configure

AUDIO
Output
Output: PVW 1L
Output: PVW 1R
...
Output: PVW 4R
Output: PRG 1L
...
Output: PRG 4R

This menu item is used to select one of the audio outputs that will be configured using the other menu items in the *AUDIO* menu.

When you first enter this menu branch the selected audio output will be shown. To change to configuring another audio output press the **SELECT** button. The display will show OUTPUT=PVW 1L indicating that the Preview 1 Left Channel output can be configured. Use the **↑** or **↓** buttons to select the audio output you wish to configure and press the **SELECT** button. You can configure the background, voice over sources and the duck level for this output using the other menu items in the *AUDIO* menu.

Preview 1 and 2 audio (PVW 1 and PVW 2) is available on the PREV 1 and 2 AES outputs and is also embedded into group 1 on the Preview video output. Preview 3 and 4 audio (PVW 3 and PVW 4) is available on the PREV 3 and 4 AES outputs and is also embedded into group 2 on the Preview video output.

Program 1 and 2 audio (PRG 1 and PRG 2) is available on the PROG 1 and 2 AES outputs and is also embedded into group 1 on the program video output. Program 3 and 4 audio (PRG 3 and PRG 4) is available on the PROG 3 and 4 AES outputs and is also embedded into group 2 on the program video output.

3.12.2. Configuring the Audio Outputs

There are 3 menu items that configure that the sources and levels for the selected audio output. The applicable audio output is shown on the left of the front panel display. Each audio output can be independently configured by first selecting the output using the *Output* menu item described in section 3.12.1. For the sake of clarity only the configuration items for the Preview output 1 Left (PVW 1L) channel will be shown.

3.12.2.1. Configuring the Audio Background Source

AUDIO
PVW 1L BG
Alt 1L ...4R
Prg 1L ...4R
EA1 1L ...2R
EA2 1L ...2R
EA3 1L ...2R
EA4 1L ...2R

The *Background* menu item is used to set the program audio source for the selected audio output.

Alt 1L, Alt 1R, Alt 2L, Alt 3L, Alt 4L etc. refers to the respective left or right channels of the ALT 1 through Alt 4 AES inputs.

Prg 1L, Prg 1R etc. refers to the respective left or right channels of the PROG 1 through PROG 4 AES inputs.

EA1 1L, EA1 1R, EA1 2L, EA1 2R refers to the left or right channels of the AES pairs 1 and 2 embedded in group 1 of the video input. *EA2 1L, EA3 1L, EA4 1L* etc. refers to the respective left or right channels of the AES pairs 1 and 2 embedded in groups 2, 3 and 4 of the video input.

3.12.2.2. Configuring the Audio Voice Over Source

AUDIO
PVW 1L Vo
Alt 1L ...4R
Prg 1L ...4R
EA1 1L ...2R
EA2 1L ...2R
EA3 1L ...2R
EA4 1L ...2R

The *Voice Over* menu item is used to set the voice over audio source for the selected audio output.

Alt 1L, Alt 1R, Alt 2L, Alt 3L, Alt 4L etc. refers to the respective left or right channels of the ALT 1 through Alt 4 AES inputs.

Prg 1L, Prg 1R etc. refers to the respective left or right channels of the PROG 1 through PROG 4 AES inputs.

EA1 1L, EA1 1R, EA1 2L, EA1 2R refers to the left or right channels of the AES pairs 1 and 2 embedded in group 1 of the video input. *EA2 1L, EA3 1L, EA4 1L* etc. refers to the respective left or right channels of the AES pairs 1 and 2 embedded in groups 2, 3 and 4 of the video input.

3.12.3. Selecting the Voice Over Audio Mix Level

AUDIO
PVW 1L Duck
Duck: 50%

The *Duck Level* menu item is used to set the level that the voice over audio will have when a voice over operation is being performed. There are separate Duck level controls for each Audio output.

The voice over audio will be at the percentage specified. The normal program audio will be at 100% - the voice over audio level. To have the voice over audio completely replace the normal program audio, specify an *Audio Duck Level* of 100%.

3.13. HTML SETUP PAGE

The 9725LG Series Keyers have a built in web server which allows the user to set various parameters such as audio, time and METAR server, via a HTML page. The user can access the HTML setup page by launching your Internet browser and entering the IP address of the 9725LG Series Keyers in the address bar. The following sections provide a description of the features available on the HTML setup page.

3.13.1. HTML Audio Setup Page (Media Keyers only)

HD9725LGA Audio Setup

[Index](#) · [Audio Setup](#) · [Media List](#) · [Font List](#) · [File List](#) · [Set Time](#) · [METAR Server Setup](#) · [Reboot](#)

Layer	Black		Input	
	Source	Gain (dB)	Source	Gain (dB)
1L	AES1L	0.0	AEMB1L	0.0
1R	AES1R	0.0	AEMB1R	0.0
2L	AES2L	0.0	AEMB2L	0.0
2R	AES2R	0.0	AEMB2R	0.0
3L	AES3L	0.0	AES7L	0.0
3R	AES3R	0.0	AES7R	0.0
4L	AES4L	0.0	AES8L	0.0
4R	AES4R	0.0	AES8R	0.0

Layer	Audioclip			Voiceover		
	Source	Gain (dB)	Duck (dB)	Source	Gain (dB)	Duck (dB)
1L	CLIP1L	0.0	0.0	AESSL	-5.0	-5.0
1R	CLIP1R	0.0	0.0	AESSR	-5.0	-5.0
2L	Silence	0.0	0.0	AESSL	-5.0	-5.0
2R	Silence	0.0	0.0	AESSR	-5.0	-5.0
3L	Silence	0.0	0.0	AESSL	-5.0	-5.0
3R	Silence	0.0	0.0	AESSR	-5.0	-5.0
4L	Silence	0.0	0.0	AESSL	-5.0	-5.0
4R	Silence	0.0	0.0	AESSR	-5.0	-5.0

Source	Non-PCM
AEMB1L	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB1R	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB2L	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB2R	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB3L	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB3R	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB4L	Yes <input checked="" type="radio"/> No <input type="radio"/>
AEMB4R	Yes <input checked="" type="radio"/> No <input type="radio"/>

Submit Update Revert

Figure 3-8: HTML Audio Setup Page

Layer: This represents the output audio channel for both the AES outputs and the embedded audio out.

Black: This column is used to configure the audio, which is to be used when the 9725LG Series Keyer is outputting black. The black function is only accessible via automation commands.

Input: This column is used to configure the audio, which is to be used when the 9725LG Series Keyer is passing the video, which is connected, to the **PROG IN** BNC connector.

Audioclip: This column is used to configure which channel(s) the audio clip audio is to be inserted into. You can also specify the desired mix levels for audio clips here.

Voice Over: This column is used to configure the input source, which is to be used for voice overs as well as the output channel(s), which the voice over audio is to be inserted into. You can also specify the desired mix levels for voiceovers here.

Source: Specifies the input source for the output audio channel. The following is a description of each of the choices.

AES1L - left channel of AES audio connected to PROG AES IN 1
AES1R - right channel of AES audio connected to PROG AES IN 1
AES2L - left channel of AES audio connected to PROG AES IN 2
AES2R - right channel of AES audio connected to PROG AES IN 2
AES3L - left channel of AES audio connected to PROG AES IN 3
AES3R - right channel of AES audio connected to PROG AES IN 3
AES4L - left channel of AES audio connected to PROG AES IN 4
AES4R - right channel of AES audio connected to PROG AES IN 4
AES5L - left channel of AES audio connected to ALT AES IN 1
AES5R - right channel of AES audio connected to ALT AES IN 1
AES6L - left channel of AES audio connected to ALT AES IN 2
AES6R - right channel of AES audio connected to ALT AES IN 2
AES7L - left channel of AES audio connected to ALT AES IN 3
AES7R - right channel of AES audio connected to ALT AES IN 3
AES8L - left channel of AES audio connected to ALT AES IN 4
AES8R - right channel of AES audio connected to ALT AES IN 4
AEMB1L - group 1 channel 1 of embedded audio on the input video
AEMB1R - group 1 channel 2 of embedded audio on the input video
AEMB2L - group 1 channel 3 of embedded audio on the input video
AEMB2R - group 1 channel 4 of embedded audio on the input video
AEMB3L - group 2 channel 1 of embedded audio on the input video
AEMB3R - group 2 channel 2 of embedded audio on the input video
AEMB4L - group 2 channel 3 of embedded audio on the input video
AEMB4R - group 2 channel 4 of embedded audio on the input video
AES1M - mono mix of AES audio connected to PROG AES IN 1
AES2M - mono mix of AES audio connected to PROG AES IN 2
AES3M - mono mix of AES audio connected to PROG AES IN 3
AES4M - mono mix of AES audio connected to PROG AES IN 4
AES5M - mono mix of AES audio connected to ALT AES IN 1
AES6M - mono mix of AES audio connected to ALT AES IN 2
AES7M - mono mix of AES audio connected to ALT AES IN 3
AES8M - mono mix of AES audio connected to ALT AES IN 4

AEMB1M - mono mix of group 1 channels 1 + 2 of embedded audio on the input video
AEMB2M - mono mix of group 1 channels 3 + 4 of embedded audio on the input video
AEMB3M - mono mix of group 2 channels 1 + 2 of embedded audio on the input video
AEMB4M - mono mix of group 2 channels 3 + 4 of embedded audio on the input video
Silence - the output audio channel will contain silence

Gain: Sets the output gain for the audio channel in question. To pass the audio through at the received level, set the gain to 0. To boost the audio level set the gain to a positive value. To reduce the audio level set the gain to a negative value.

Duck: Sets the gain for the program audio when an audio mix is in effect. To pass the background audio through at the received level, set the duck to 0. To boost the background audio level set the duck to a positive value. To reduce the background audio level set the duck to a negative value.

Non-PCM: Selects whether the embedded audio is PCM. If the audio is PCM set Non-PCM to No. If the audio is not PCM, such as Dolby-E, set Non-PCM to Yes.

3.13.2. HTML Media Page

The HTML Media page allows the user to cue, fade in and out, enable, disable and delete various media files from the device.

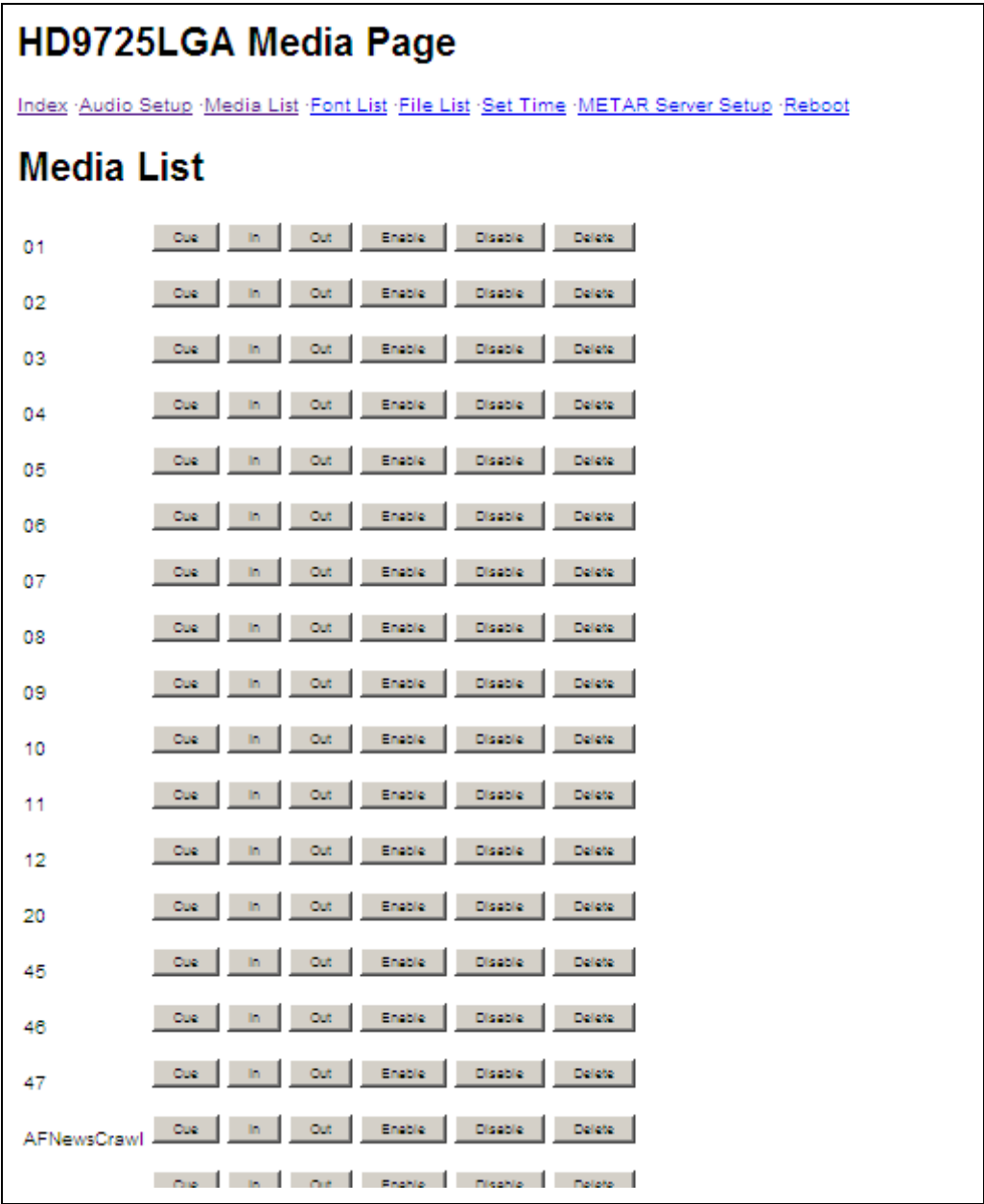


Figure 3-9: HTML Media Page

3.13.3. HTML Font List Page

The HTML Font List page allows the user to display the font files that are present on the device.

HD9725LGA Font Directory			
Index · Audio Setup · Media List · Font List · File List · Set Time · METAR Server Setup · Reboot			
Face (PS)	Face (TT)	Face (TT family)	Filename
Utopia-Regular	Utopia Regular	Utopia	[boot]font
ArialMT	Arial Regular	Arial	[card1]arial.ttf
Arial-BoldMT	Arial Bold	Arial	[card1]arialbd.ttf
Arial-BoldItalicMT	Arial Bold Italic	Arial	[card1]arialbi.ttf
Arial-ItalicMT	Arial Italic	Arial	[card1]ariali.ttf
ArialMT	Arial Regular	Arial	[card1]arial.ttf
Arial-BoldMT	Arial Bold	Arial	[card1]arialbd.ttf
Arial-BoldItalicMT	Arial Bold Italic	Arial	[card1]arialbi.ttf
Arial-ItalicMT	Arial Italic	Arial	[card1]ariali.ttf
Index · Audio Setup · Media List · Font List · File List · Set Time · METAR Server Setup · Reboot			
Evertz HD9725LGA 2.02 build 75 on 2006 Aug 25 18:51:20.			

Figure 3-10: HTML Font List

3.13.4. HTML File List Page

The HTML File List page allows the user to display all the files that are present on the device. This information includes system, font, and media files. Also, the HTML File List displays the size in bytes of the various files on the various storage devices (such as boot, card0, and card1).

HD9725LGA File List

[Index](#) · [Audio Setup](#) · [Media List](#) · [Font List](#) · [File List](#) · [Set Time](#) · [METAR Server Setup](#) · [Reboot](#)

[boot]	
boot	65536
preset	65536
nvrnm	32752
app	16646144
runtime	1448004
u128-xc2s150e	141812
hd-u1000-xc2vp50	2377668
sd-u1000-xc2vp50	2377668
font	72354
pwr_fan_temp	5162
10 files, 23232636 bytes	

[card1]	
HDEMaple2	96360
HDEStation2	287112
MLogo	10224088
SDELine	205976
SDEMaple	13160
SDEStation	83672
Evertz	7779136
01	36196
02	36196
03	36196
04	36196
05	36196
06	36196
07	27748
08	36196
09	36196

Figure 3-11: HTML File List

3.13.5. HTML Set Time Page

The HTML Set Time page allows the user to set the system date and time of the 9725LG Series Keyer.

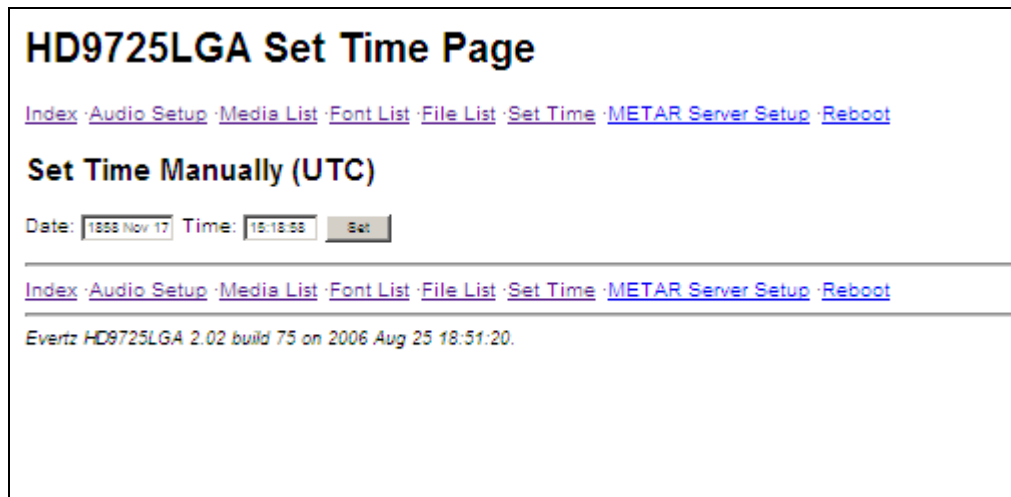


Figure 3-12: HTML Set Time Page

3.13.6. METAR Server Setup Page

METAR is widely used in the aviation industry to obtain meteorological data from airports. The 9725LG Series Keyers can extract the temperature from the data and use it for temperature logos. The use of this feature requires a connection to the Internet.

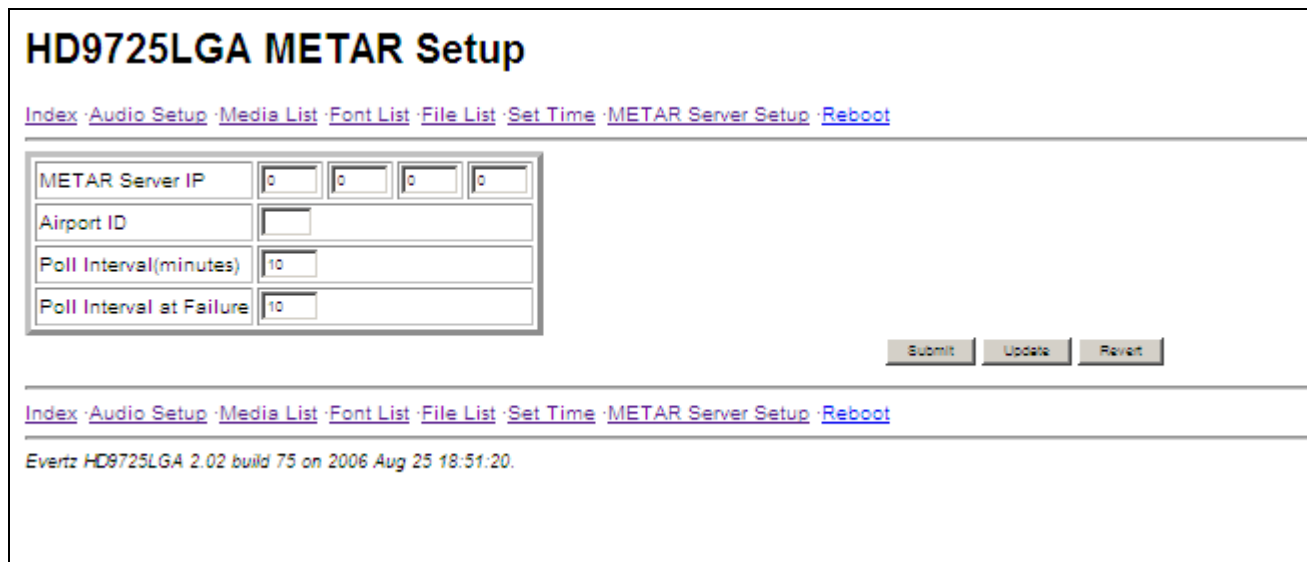


Figure 3-13: HTML METAR Setup

METAR Server IP: Enter the IP address of the METAR server you would like to use. A known IP address for one METAR server is 205.156.51.200.

Airport ID: Enter the airport code for the airport you would like to obtain the temperature from. The *Airport ID* must be entered in all upper case letters. For example for KIAG (Niagara Falls International Airport), the following file gets downloaded to the device:
ftp://205.156.51.200/data/observations/metar/stations/KIAG.TXT



NOTE: The airport call letters **MUST BE** in capitals. The METAR site is case sensitive.

Poll Interval: Enter how often you would like the 9725LG Series Keyer to obtain the temperature. Temperature logos will be immediately updated each time the temperature is retrieved from the METAR server.

Poll Interval at Failure: Enter how long you would like the 9725LG Series Keyer to wait before trying to retrieve the temperature from the METAR server after a failed attempt.

3.13.7. HTML Reboot Page

The 9725LG Series Keyers also provide the user the ability to reboot the unit from the HTML page. The user simply selects the Reboot option on the web page. The user then selects the Reboot button to restart the 9725LG Series Keyer.



WARNING: This will reboot the 9725LG Series Keyer and force the device into bypass mode. This **MAY** affect the program path, so this command is to be used with **EXTREME CAUTION**.

HD9725LGA Reboot Confirmation

[Index](#) · [Audio Setup](#) · [Media List](#) · [Font List](#) · [File List](#) · [Set Time](#) · [METAR Server Setup](#) · [Reboot](#)

Please press the Reboot button to proceed with the boot, or press the Back button of your browser to go back to your previous page.

[Index](#) · [Audio Setup](#) · [Media List](#) · [Font List](#) · [File List](#) · [Set Time](#) · [METAR Server Setup](#) · [Reboot](#)

Evertz HD9725LGA 2.02 build 75 on 2006 Aug 25 18:51:20.

Figure 3-14: HTML Reboot Page

CHAPTER 4

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4. HOW TO OPERATE THE KEYER USING THE DESKTOP CONTROL PANEL

The 9725LG Series Keyers are available as a 1RU chassis with a separate desktop remote control panel. This chapter describes the operation of the 9725LG Series Keyer using the desktop remote control panel. For information about connecting the desktop remote control panel to the 9725LG Series Keyer electronics see section 2.4.

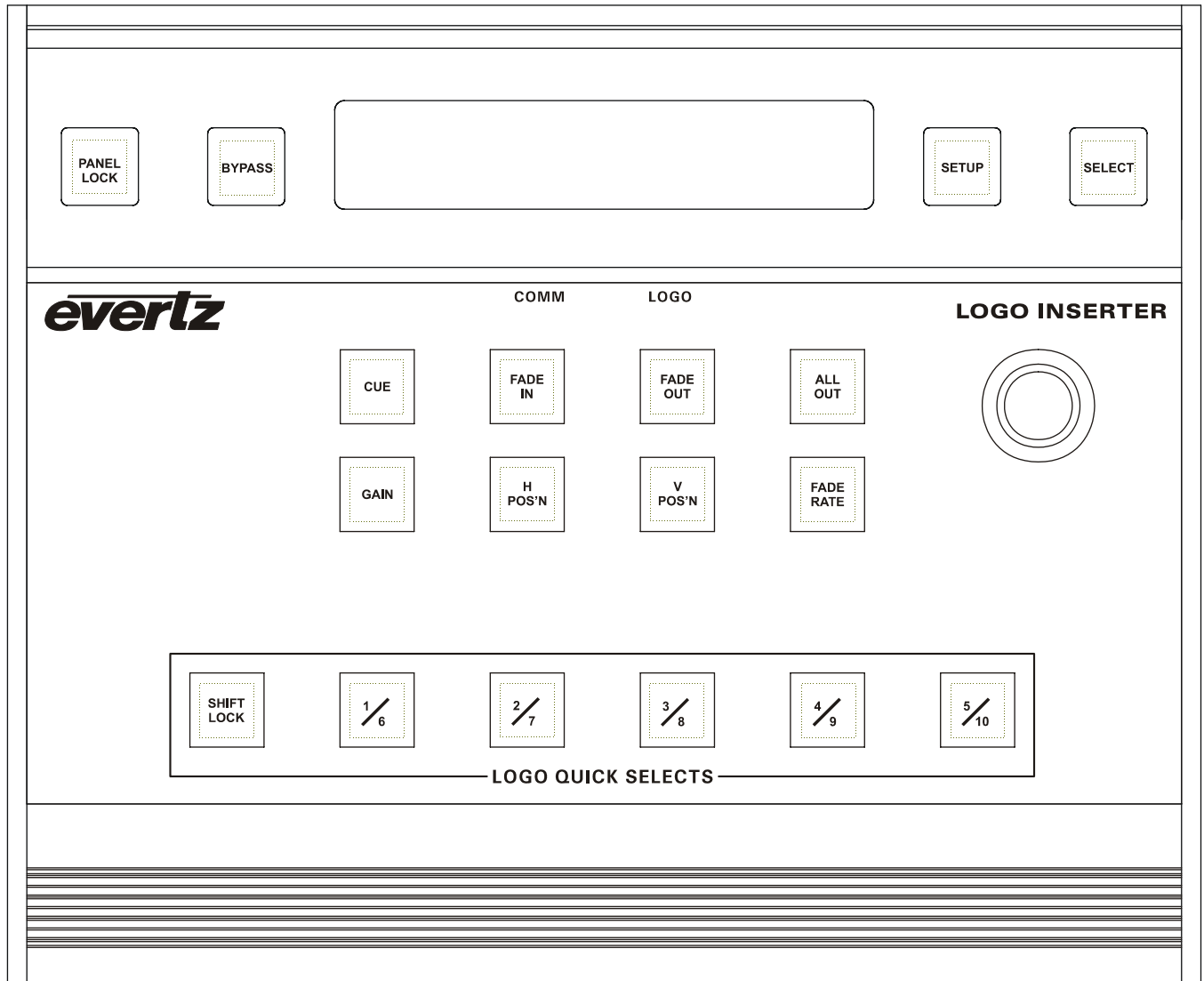


Figure 4-1: Logo Inserter Desktop Control Panel Layout

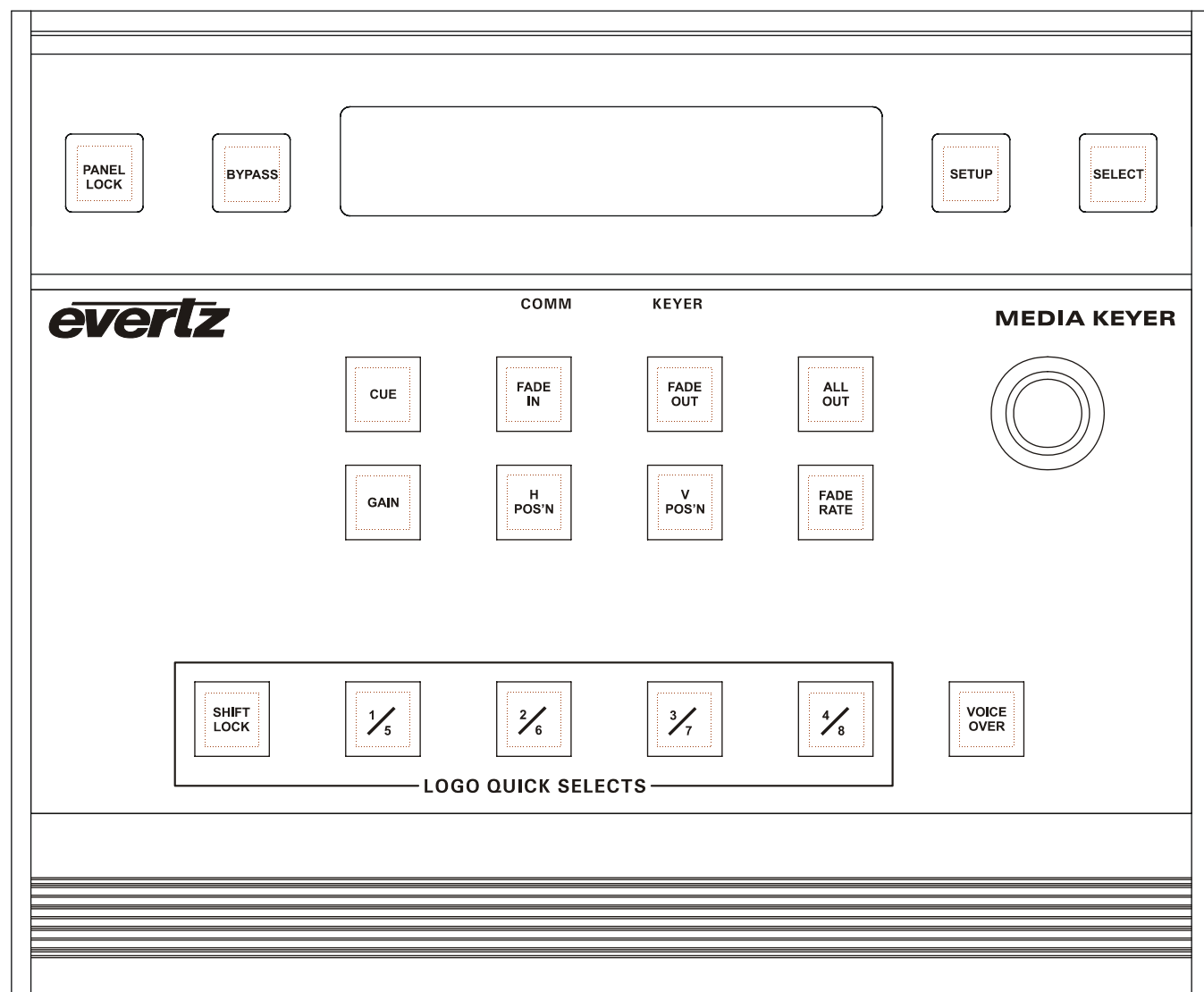


Figure 4-2: Media Keyer Desktop Control Panel Layout

4.1. AN OVERVIEW OF KEY AND DISPLAY FUNCTIONS

The Desktop panel controls consist of a shaft encoder knob, a 16 digit alphanumeric display, and 18 illuminated buttons. The illuminated buttons will light up to indicate that their controlled function is active.

The buttons are used to provide control of the 9725LG Series Keyer unit, and to navigate the front panel *Setup* menu system. The Front panel *Setup* Menu system is a quick and simple method of configuring the Keyer for your application. See sections 3.3 to 3.11 for information on configuring the unit using the *Setup* menu system.

4.1.1. Fade Button Group

CUE This button is used to load a media item into the media keyer memory making it immediately available for fade in. If the media item is not currently loaded into memory, a progress

indicator will appear to the right of the logo name while it is loading into memory. Cueing a media item allows it to be viewed on the preview output bus before it is faded in. If the LED is illuminated, the media item has been cued.

Cued animations are loaded into memory and paused on the first frame of the animation until the Fade In command is received. Cued logos may be moved horizontally and vertically on the preview output. Gain level setting changes are visible on the preview output channels; therefore all Cued logos are keyed at 100%. Cued logos will repeat their fade in, hold and fade out sequence over and over again on the preview output. On Media Keyer units, audio clips will play over and over again. If you cue a playlist item on a Media Keyer, the logo and its associated audio clip will both be cued. This allows you to preview the entire logo and audio clip quickly and easily before placing it on air.

IN This button is used to *fade in* the currently selected media item onto the Program output channels. Logos are keyed on the program output at their Gain level settings. If the media item has not been previously cued, it must be loaded into memory before it can be faded in. This process may take a few seconds while the item is being cued. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the logo name while it is loading into memory. If you fade in a playlist item on a Media Keyer, the logo and its associated audio clip will both be faded in. If the LED is illuminated, the media item has been faded in. The media item name will flash on the front panel display indicating that it is *faded in*.

OUT This button is used to *fade out* the currently selected media item from the Program output channels. If you fade out a playlist item on a Media Keyer, the logo and its associated audio clip will both be faded out. If the LED is illuminated, the media item has been faded out. The media item name will stop flashing on the front panel display indicating that it is *faded out*.

ALL OUT This button is used to *fade out* all media items from the Program output channels. If the LED is illuminated, all media items have been faded out.

SELECT When you are not in the *Setup Menu*, this button controls whether the selected media item shown on the front panel display is present on the Program output bus. Scroll to the logo required using the **SHAFT ENCODER** **↑** & **↓** buttons. If the media item is currently faded in its name will flash in the front panel display and the IN LED will be ON. To fade the media item in, press the **SELECT** button. The media item will fade in according to its programmed fade in time and the media item name display will begin flashing. If the media item is not currently loaded into the memory, a progress indicator will appear to the right of the logo name while it is loading into memory. To remove a media item from the output video buses, press the **SELECT** button when the media item name is flashing. The media item will fade out according to its programmed fade out time and its name display will stop flashing.

4.1.2. The Quick Select Button Group

QUICK SELECT These buttons are used as a quick method to *fade in* and *out* frequently used media items. On the Logo Inserters you can access up to 10 logos using the quick select keys. On the Media Keyers you can access up to 8 media items. Each button can access two different media items depending on the state of the **SHIFT LOCK** LED. When the **SHIFT LOCK** LED is Off the **QUICK SELECT** buttons access the lower numbered *Quick Select*. When the **SHIFT LOCK** LED is On, the **QUICK SELECT** buttons access the high numbered *Quick Select* items.

Pressing the **QUICK SELECT** button once fades the assigned media item in. Pressing the **QUICK SELECT** button once again fades the assigned media item out. When a *Quick Select* is active the LED above the button is illuminated. To assign a media item to a *Quick Select*, scroll to the media item in the display window using the **SHAFT ENCODER**. Then press and hold the desired **QUICK SELECT** button for 3 seconds. Remember to press the **SHIFT LOCK** button first to access the higher numbered *Quick Selects*. Release the button and the item is assigned to the button.

SHIFT LOCK To access the second bank of *Quick Selects* press the **SHIFT LOCK** button. The **SHIFT LOCK** button LED will be illuminated to indicate that *Shift Lock* is on and that the higher numbered *Quick Selects* are available. To turn *Shift Lock* off press the **SHIFT LOCK** button once again. The **SHIFT LOCK** button will be extinguished to indicate that *Shift Lock* is off and that the lower numbered *Quick Selects* are available.

4.1.3. The Function Button Group

PANEL LOCK This button will lock the front panel controls so that changes cannot be made. The **PANEL LOCK** button LED will be illuminated indicating that the control panel buttons are disabled. When any of these buttons are pressed, the front panel display will show the message *Panel Locked* for a few seconds. Pressing the **PANEL LOCK** button again will return the control panel keys to their normal functions and the **PANEL LOCK** button LED will be extinguished indicating that the front panel controls are active.



The 9725LG Series Keyers may still be controlled from the GPI inputs or the automation when the front panel is Locked.

VOICE OVER This button (only available on the Media Keyer units) will mix the Voice over audio with the background (program) audio. The *HTML Audio Setup Page* is used to configure which inputs will be treated as background audio and which inputs are treated as Voice Over Audio. (See section 3.12)

BYPASS This button controls the bypass relays (optional on high definition units). The **BYPASS** button LED will be illuminated to indicate that the unit is in manual *Bypass* mode. When the unit is in *Bypass* mode, the program input video is directly connected to the FILL video output. On the Media Keyers, the AES PROG inputs are directly connected to the AES PROG outputs. The other outputs will not have any signals on them. The unit will revert to *Bypass* mode in the event of a power loss.

4.1.4. Shaft Encoder Knob

SHAFT ENCODER When the 9725LG Series Keyer is in one of the *Setup* menus, the **SHAFT ENCODER** knob is used to move to various items in the menu system or change a menu item's parameter value. (See also section 3.2)

When the 9725LG Series Keyer is not in one of the *Setup* menus, the **SHAFT ENCODER** knob is used to select logos and audio clips that are stored in the file system. When the desired logo or audio clip is shown on the display, press the **SELECT** button to fade in the logo or play the audio clip.

4.1.5. Setup Button Group

SETUP This button is used to enter the *Setup* menu, which is used to configure the operating modes of the keyer. (See section 3.3 for an overview of the *Setup* menu.) When you are in the *Setup* menu, this button is also used to back out of menu selections to the next higher menu level or to exit the *Setup* menu and return to normal panel operation.

SELECT When in the *Setup* menu, this button is used to choose a submenu and navigate to the next level down in the menu structure. When you are at the bottom level of the menu system it is also used to accept numeric values or to make the displayed menu choice the active value for that menu item.

When you are not in the *Setup* menu, this button is also used to fade logos in and out on the selected output bus.

4.1.6. Control Panel Status Indicators

The illuminated buttons show operational status of the 9725LG Series Keyer at a glance. When they are On they indicate that the function associated with the button is active.

LOGO, KEYER This LED (labelled LOGO on Logo Inserters and KEYER on Media Keyers) indicates that at least one media item is faded in and available on the Program output bus.

COMM This LED is used to signal two types of communication to the 9725LG Series Keyer. When it is flashing On approximately every 1.5 seconds, it is indicating that the control panel is communicating with the main microprocessor in the unit. When the 9625LG Series Keyer is under automation control, or logos or other media files are being transferred to or from the unit using the Nomad™ or Overture™ software, the LED will be on when the unit is receiving data from the control source.

If it is Off continuously, that means that the control panel has lost communications with the main unit. In that case check the cabling if you are using a remote control panel. Otherwise the unit may require a reboot if the buttons on the control panel are not responding.

4.2. OVERVIEW OF DESKTOP CONTROL PANEL OPERATION

4.2.1. Displaying Logos

Scroll to the media item required using the **SHAFT ENCODER**. If the media item is currently faded in its name will flash in the front panel display. To load a media item into memory and display it on the preview bus, press the **CUE** button. To fade in a media item on the program bus, press the **SELECT** or **FADE IN** button. The media item will fade in according to its programmed fade in time and the media item name display will begin flashing. If the media item is not currently loaded into memory, a progress indicator will appear to the right of the media item name while it is loading into memory. To fade out a media item from the output bus, press the **SELECT** or **FADE OUT** button when the logo name is flashing. The logo will fade out according to its programmed fade out time and the logo name display will stop flashing. To remove all media items from the output video bus, press the **ALL OUT** button.

4.3. AN OVERVIEW OF THE SETUP MENU SYSTEM

The *SETUP* menu system uses the 16 digit alphanumeric display and provides a quick, intuitive method of configuring the 9725LG Series Keyer. These items are often only required to be set up at installation time, and do not pertain to the day-to-day operation of the unit. Figure 3-7 gives an overview of the *Setup* menu system.

4.3.1. Navigating The Setup Menu

To enter the *Setup* menu, press the **SETUP** button. This will bring you to the main *Setup* menu where you can use the **SHAFT ENCODER** to move up and down the list of available sub-menus. Top level menu items are shown in UPPERCASE. Once you have chosen the desired sub-menu, press the **SELECT** button to select the next menu level.

Once in a sub-menu, there may be another menu layer (shown in Title Case), or there may be a list of parameters to adjust (shown in lower case). If there is another set of menu choices, use the **SHAFT ENCODER** to select the desired menu item and press the **SELECT** button. Continue this process until you get to the bottom of the menu tree where the list of parameters to be adjusted is shown.

To adjust any parameter, use the **SHAFT ENCODER** to move up or down the parameter list to the desired parameter. To view the possible values for that item, press the **SELECT** button. The current value for that parameter will be shown with an asterisk (*). Turning one of the **SHAFT ENCODERS** allows you to show the possible values for the selected parameter. The various parameter values that are not currently selected will NOT have an asterisk (*). When you have stopped at the desired value, press the **SELECT** button to save your selection. The value will be shown with an asterisk (*) indicating that it is now the current value. To move up one level in the menu, press the **SETUP** button.

You can select other parameters from that sub-menu by using the **SHAFT ENCODER**, followed by the **SELECT** button. Alternately you can move up one menu item by pressing the **SETUP** button.

When you have made all the desired changes, press the **SETUP** button one or more times until you return to the top of the Menu tree and exit the *Setup* menu.

Each of the menu items, with function explanations, are described in sections 3.5 to 3.11.

CHAPTER 5

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5. OPTIONAL EAS DECODER INTERFACE (EAS OPTIONED UNITS ONLY)

The 9725LG Series Keyer with the EAS option fitted is the perfect solution for on-air insertion of channel branding bugs and Emergency Alert System messages. The 9725LG Series Keyer is designed to receive Emergency Alerts System message data and audio from a Sage or TFT EAS decoder unit and insert it over the program video and audio. This chapter describes how to connect your unit to your EAS decoder, configure the 9725LG Series Keyer and EAS decoder, and perform tests to verify the unit is functioning properly.

5.1. CONNECTING THE 9725LG SERIES KEYER TO THE EAS DECODER

Make sure that the basic video and audio connections are wired as recommended in sections 2.5 and 2.6. You will also have to route the output program video to an appropriate monitor to view the on-screen scrolling messages generated by the 9725LG Series Keyer's built in character generator. Please ensure that your 9725LG Series Keyer is out of the broadcast path when testing functionality. Figure 5-1 gives a simplified connection overview.

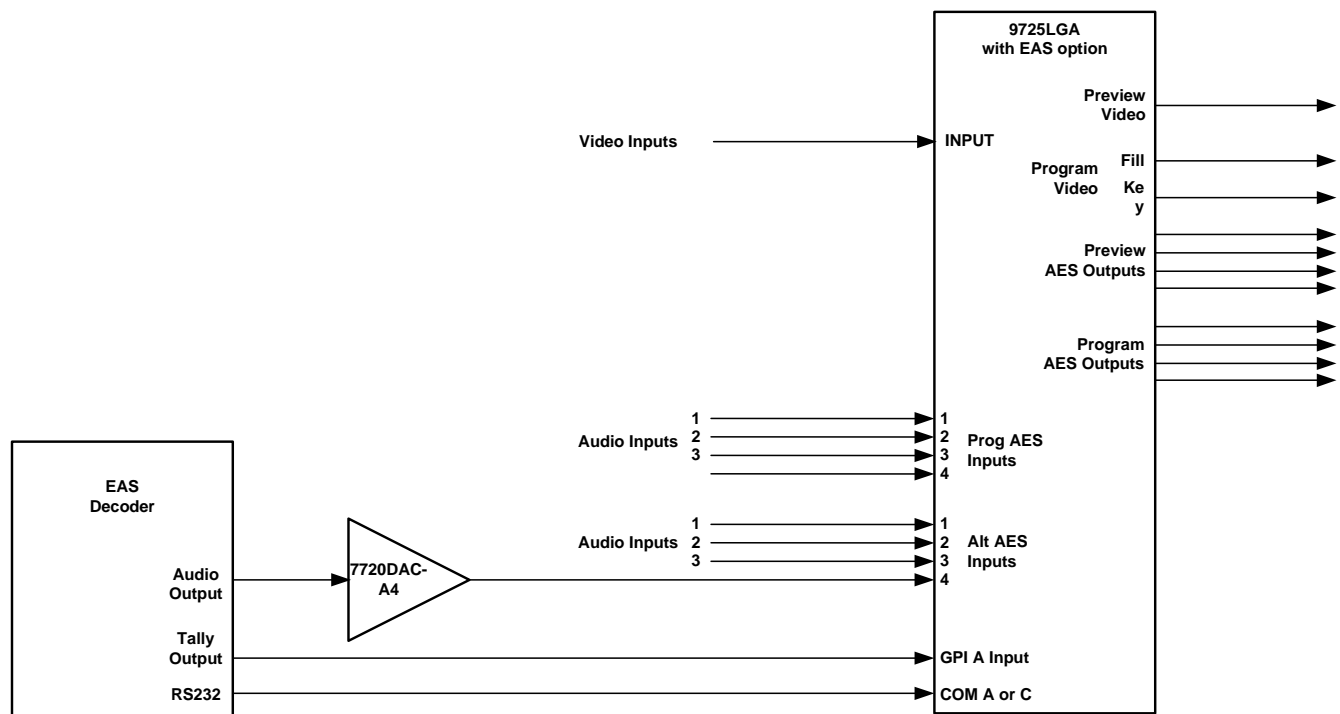


Figure 5-1: EAS Decoder Connection

5.1.1. Connecting The Serial Port

Connect a straight-through RS232 cable (shipped with unit) to either the Serial Control C or COM D serial ports on the keyer unit. The other end of the cable will connect to the EAS decoder. (See the section specific to your encoder manufacturer). For a permanent installation, you will require a custom length cable that fits between the EAS decoder unit and the 9725LG Series Keyer. You can purchase any off the shelf 9 pin straight-through serial cable, or you may make this cable yourself according to

the cable drawing in Table 5-1. This cable should not exceed 50 feet. Note that the serial port on the keyer unit must be set for RS-232 operation as described in section 2.1.5.

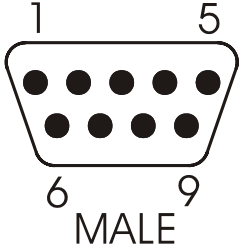
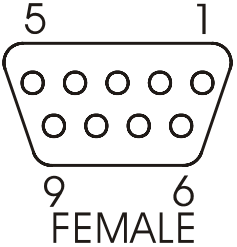
9725LG Series Keyer End			EAS Decoder End		
	9 pin D Male	Pin	Belden 9729	9 pin D Female	Pin
		1			1
	TxD	2	-----1a-----	RxD	2
	RxD	3	-----2b-----	TxD	3
		4		Rx Gnd	4
	Sig Gnd	5	---drain 1---	Sig Gnd	
		6		Tx Gnd	6
	RTS	7	-----1b-----	CTS	7
	CTS	8	-----2a-----	RTS	8
		9			9
	Frame Gnd	Shield	---drain 2---	Frame Gnd	Shield
					

Table 5-1: EAS Decoder Extender Cable

If you are using a Sage model EAS decoder please see section 5.1.2 for port configuration information. If you are using a TFT model EAS decoder please see section 5.1.3 for port configuration information.

5.1.2. Sage Decoder Configuration

The Sage provides six serial ports that can be used for a variety of purposes. Each serial port is wired like a standard PC 9-pin connector. Refer to the Sage manual for specific port pin outs. (They are contained in section 12 of their manual at the time of this writing.) Plug the female end of the straight-through RS232 cable into the COM 2 port of the Sage decoder. If this port is already in use, you may use the COM 6 port.

The Sage port must be configured to output the type of data that the 9725LG Series Keyer unit is expecting. To do this, follow these steps on the Sage unit.

- 1) Press **Menu**
- 2) Scroll down to *Devices*
- 3) Press **Enter**
- 4) Scroll down to *COM2* or *COM6* (depending on the COM port you connected to)
- 5) Press **Enter**
- 6) Scroll down to *Device Type*
- 7) Press **Enter**
- 8) Scroll down to *Generic CGEN*
- 9) Press **Enter**
- 10) Enter *Password*
- 11) Scroll up to *Go Back*
- 12) Press **Enter**

Your Sage is now configured to work with the 9725LG Series Keyer. Proceed to section 5.1.4 to connect the audio and GPI controls, to configure the 9725LG Series Keyer and verify that the connections are functioning as expected.

5.1.3. TFT Decoder Configuration

The TFT unit has a number of communications ports on the rear of the unit marked as COM 1 to COM 3 and J103 and J104. The baud rate is fixed at 9600 within the 9725LG Series Keyer and it is configured to communicate using the *Alternate TFT I/F for Trilithic EAS Systems ALT1 option*. This means you must plug the female end of the straight through RS232 cable into the COM 2 port of the TFT decoder and configure the port accordingly. The serial port is wired like a standard PC 9-pin connector. This will require that your TFT unit be equipped with the Four Port Expander Board option. If your unit is not so equipped, please contact TFT and order this field installable option.

The TFT port must be configured to output the type of data that the 9725LG Series Keyer unit is expecting. To do this, follow these steps on the TFT unit.

- 1) Press **Password**
- 2) Enter *Primary Password*
- 3) Press **Password**
- 4) Enter *Setup Password*
- 5) Scroll down to item 18 *Enable Character Generator Interface*
- 6) Press **Enter**
- 7) Scroll down to *Alt1 Alternate TFT I/F for Trilithic EAS Systems*
- 8) Press **Enter**
- 9) Scroll down to item 27 *Enable CG Text for RWT*
- 10) Press **Enter**
- 11) Scroll up or down to *Yes*
- 12) Press **Enter**
- 13) Press **Exit**

Your TFT unit is now configured to work with the 9725LG Series Keyer. Proceed to section 5.1.4 to connect the audio and GPI controls, to configure the 9725LG Series Keyer and verify that the connections are functioning as expected.

5.1.4. Connecting the Audio

The emergency audio from the Sage or TFT decoders must be converted to an AES audio stream before it can be used with the 9725LG Series Keyer. You can use the Evertz 7720ADC-A4 Analog Audio to AES Converter module, or other suitable device to do this. Connect the AES1 output from the 7720ADC-A4 into the **AES IN ALT** audio input on the 9725LGA Series Keyer, which has been specified as the voiceover input via the *HTML Audio Setup* page. (see 3.13.1).

5.1.5. Connecting the GPI Tally Control

The EAS decoders give out a tally control to indicate when an EAS alert message is being broadcast. This tally output must be connected to one of the GPI inputs on the 9725LG Series Keyer to signal it to 'duck insert' the emergency audio into the program audio. For the sake of simplicity in this description connect the tally output from the decoder to the GPI 0 input on the 9725LG Series Keyer. (See Table 2-4 for a pinout of the GPIO connector on the keyer unit.)

5.2. CONFIGURING THE 9725LG SERIES KEYSER FOR EAS

5.2.1. Configuring the Serial Port

In order for the EAS decoder to communicate to the 9725LG Series Keyer you must configure the SERIAL CONTROL C or COM D port for the correct protocol and baud rate. The *COM D* menu item on the *General* menu is used to accomplish this. Set this menu item to *EAS CG* in order for the EAS decoder to communicate to the 9725LG Series Keyer. See section 3.6.9 for information on setting the serial port protocol.

5.2.2. Configuring the GPI Input

In order to use the GPI to insert the EAS audio you must configure the GPI 0 input as shown in Table 5-2. See section 3.8.1 for information on configuring the GPI inputs.

Menu Item	Setting
CAction	Duck In
OAction	Duck Out
Logo	None

Table 5-2: GPI settings for EAS Tally Control

5.2.3. Configuring the EAS Controls

The EAS menu items are used to configure the EAS crawl position, size, and colours. See section 3.10 for a complete description of these menu items. The brief descriptions of the menu items will guide you in setting up the unit quickly.

Vert Position (V). The default value should be adequate but you need to ensure that the messages fall within the safe area of the video display so that the entire message is legible once the message is broadcast.

Font Hei: Sets the size of the Scrolling text in video lines.

Rate: Sets the speed of the scrolling text message in pixels per field. Rate 1 is the slowest possible scrolling speed and 32 is the fastest scrolling speed. If you adjust the font size you will have to adjust the scroll rate. The smaller the font size the slower you will have to scroll the text box.

5.3. TESTING THE SYSTEM



Please ensure all output video from the 9725LG Series Keyer is out of your on-air broadcast path for this test.

5.3.1. Testing The Sage Decoder

On the Sage decoder.

- 1) Press **Week**
- 2) Enter *Password*
- 3) Press **Enter**

The video monitor should now show a scrolling EAS weekly test message. If you do not see the test message, double check your video connections, ensure that you have the correct video standard selected in the 9725LG Series Keyer. Double check that you have configured the correct Sage port and the correct Device Type for the correct port and that the serial cable is valid and connected to the correct ports. Check the Evertz Web site at www.evertz.com for any new firmware releases for the 9725LG Series Keyer. Check that you are running the most up to date firmware in your Sage decoder at www.broadcast.harris.com.

Evertz tested this configuration with the Sage decoder model 1822 with firmware version 5.111

5.3.2. Testing The TFT Decoder

On the TFT decoder

- 1) Press **Weekly Test** button

The monitor should now show a scrolling EAS weekly test message. If you do not see the test message, double check your video connections, ensure that you have the correct video standard selected in the 9725LG Series Keyer. Double check that you have configured the correct CG Interface Type and that the serial cable is valid and connected to the correct ports. Check the Evertz Web site at www.evertz.com for any new firmware releases for the 9725LG Series Keyer. Check that you are running the most up-to-date firmware in your TFT decoder Phone: 1-800-347-3383.

Evertz tested this configuration with the TFT decoder model EAS 911 with firmware version T.838.

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6. TECHNICAL DESCRIPTION

6.1. SPECIFICATIONS

6.1.1. Analog Video Specifications (AN9725LG)

6.1.1.1. Composite Analog Video Input

Standard: SMPTE 170M
Number of Inputs: 1 (bypass protected)
Connector: BNC per IEC 60169-8 Amendment 2
Impedance: 75Ω (fixed)

6.1.1.2. Composite Analog Video Output

Standard: Same as input
Number of Outputs: 2 Program (1 output bypass protected) and 1 Preview
Connector: BNC per IEC 60169-8 Amendment 2

6.1.2. Standard Definition Video Specifications (9725LG and 9725LGA)

6.1.2.1. SD Serial Digital Video Input

Standard: 270 Mb/sec Serial digital component SMPTE 259M-C standards supported shown in Table 2-7, software selectable
Number of Inputs: 1
Connector: BNC per IEC 60169-8 Amendment 2.
Equalization: Automatic to 100m @ 270 Mb/s with Belden 1694 or equivalent cable
Return Loss: > 15 dB up to 270 Mb/s

6.1.2.2. SD Serial Digital Video Outputs

Standard: SMPTE 259M-C, same as input
Number of Outputs: 2 Program, 1 preview
Connectors: BNC per IEC 60169-8 Amendment 2.
Signal Level: 800mV nominal
DC Offset: 0V ±0.5V
Rise and Fall Time: 750ps nominal
Overshoot: <10% of amplitude
Wide Band Jitter: < 0.2 UI

6.1.3. High Definition Video Specifications (HD9725LG and HD9725LGA)

6.1.3.1. HD Serial Digital Video Input

Standard:	1.485 Gb/sec HDTV Serial component digital SMPTE 292M standards supported shown in Table 2-8 - software selectable
Number of Inputs:	1
Connector:	BNC per IEC 60169-8 Amendment 2.
Equalization:	Automatic to 100m @ 1.5Gb/s with Belden 1694 or equivalent cable
Return Loss:	> 15 dB up to 1.5Gb/s Mb/s

6.1.3.2. HD Serial Digital Video Outputs

Standard:	SMPTE 292M, same as input
Number of Outputs:	2 Program, 1 preview
Connectors:	BNC per IEC 60169-8 Amendment 2.
Signal Level:	800mV nominal
DC Offset:	0V \pm 0.5V
Rise and Fall Time:	200ps nominal
Overshoot:	<10% of amplitude
Wide Band Jitter:	< 0.2 UI

6.1.4. Video Reference

Source:	Menu Selectable from Input Video or Reference Input
Type:	Auto Detect depends on video format NTSC or PAL Colour Black 1 V p-p
Connector:	BNC per IEC 60169-8 Amendment 2.
Termination:	75 ohm

6.1.4.1. AUX IN

Standard:	SMPTE 170M
Number of Inputs:	1 (2 on AN7525LG)
Connector:	BNC per IEC 60169-8 Amendment 2
Impedance:	75 Ω (High impedance loop on AN9525LG)

6.1.5. Audio Specifications (9725LGA and HD9725LGA Only)

6.1.5.1. AES Audio Inputs

Standards:	SMPTE 276M single ended AES
Number of Inputs:	4 for Program, 4 for Alternative
Connector:	BNC per IEC 60169-8 Amendment 2.
Sampling Rate:	48 kHz
Signal Level:	1 V p-p \pm 10%

6.1.5.2. AES Audio Outputs

Standards: SMPTE 276M single ended AES
Number of Outputs: 4 Program, 4 Preview
Background and voice over source assignable for each channel
Connector: BNC per IEC 60169-8 Amendment 2
Sampling Rate: 48 kHz
Signal Level: 1 v p-p
Reference: From Video Reference.

6.1.5.3. Embedded Audio

Standard:
SDI SMPTE 272M
HDSDI SMPTE 299M
De-embedder: Groups 1 and 2 of embedded audio in video input
Embedder: Program audio embedded to groups 1 and 2 on program video outputs
Preview audio embedded to groups 1 and 2 on preview video output

6.1.6. LTC Reader

Standard: SMPTE 12M
Frame Rate: 25 and 30 Fps nominal
Connectors: 3 pin female XLR type connector
Level: 0.2 to 4V p-p, balanced or unbalanced

6.1.7. Control

Upgrade 232 Port: 9 pin female "D", RS-232 57600 baud, 8 bits, no parity
firmware upgrade

Media Transfers: RJ-45 100Base T Ethernet, TCP/IP

6.1.7.1. Control Ports on Breakout Panel

Remote Panel (Port B): 9 pin female "D", RS-422 9600 baud, 8 bits, no parity
Remote control panel interface (only available on RCP or DCP versions)

Serial Control (Port A, C, E, F, G, and H):
9 pin female "D", RS-232/422 8 bits, no parity, baud rate depends on protocol.
Selectable protocols: Automation, EAS Interface, temperature probe interface

6.1.8. General Purpose Inputs and Outputs

Number of Inputs: 32, programmable control functions (using two breakout panels)
Number of Outputs: 16, programmable control functions (using two breakout panels)
Type: opto-isolated, active low (GPI), active high (GPO)
Connectors: 34 Pin Terminal Block
Signal Level: Pulled up to Vext supplied voltage. 3.3V DC provided

6.1.9. Physical

Dimensions:

Electronics: (AN9725LG, 9725LG & 9725LGA)

19" W x 1.75" H x 18.75" D.
(483mm W x 45mm H x 477mm D)

Electronics: (HD9725LG)

19" W x 3.5" H x 18.75" D.
(483mm W x 89mm H x 477mm D)

Rack Mount Control Panel:

19" W x 1.75" H x 4.25" D.
(483mm W x 45mm H x 110mm D)

Desktop Control Panel:

7.75" W x 2.0" H x 6.5" D.
(197mm W x 50mm H x 160mm D)

Weight:

Electronics: (AN9725LG, 9725LG & 9725LGA)

8lbs (3.5kg)

Electronics: (HD9725LG)

10lbs (4.5kg)

Rack Mount Control Panel:

1lbs (0.45kg)

Desktop Control Panel:

2lbs (.9kg)

6.1.10. Electrical

Electronics:

Voltage: Autoranging 100-240 VAC 50/60 Hz

Power:

9725LGA, 9725LG, AN9725LG	40 Watts
HD9725LG, HD9725LGA	80 Watts

Fuse:

9725LGA, 9725LG, AN9725LG	T1AL250V 1 amp slo blow 250V
HD9725LG, HD9725LGA	T3.15AL250V 3.15 amp slo blow 250V

Optional Remote Control Panel:

Voltage: 12 VDC 9 watts,
Autoranging 100-240 VAC 50/60 Hz power adapter provided

Safety:	ETL listed. Complies with EU safety directive
EMI/RFI:	Complies with FCC Part 15 Class A, EU EMC Directive

6.2. UPGRADING THE FIRMWARE – RS232 SERIAL PORT

6.2.1. Overview

The firmware in the switcher units is contained on a FLASH EPROM. From time to time firmware updates will be provided to add additional features to the units. The router unit and the keyer unit each have their own firmware and each must be updated separately if required. The keyer unit update can be initiated using either the front panel or the terminal program method. As the router unit has no front panel it can only be initiated using the terminal program method.

You will need the following equipment in order to update the Firmware

- PC with available communications port. The communication speed is 57600 baud, therefore a 486 PC or better with a 16550 UART based communications port is recommended.
- “Straight-thru” serial extension cable (DB9 female to DB9 male).
- Terminal program that is capable of Xmodem file transfer protocol. (such as HyperTerminal)
- New firmware supplied by Evertz.



After upgrading the 9725LG with new firmware, all presets should be recalled using the *Recall Preset* menu item, the values for new features must be set, and the preset must be saved again using the *Store Preset* menu item.

IF THIS IS NOT DONE, OLD PRESETS COULD BE RECALLED WITH UNDESIRABLE SETTINGS.

6.2.2. Terminal Program Setup

1. Connect the serial cable to the **UPGRADE RS232** DB9 connector on the keyer unit rear panel. If you are updating the router unit firmware, connect the serial cable to the **REMOTE CTL** DB9 connector on the router unit rear panel.
2. Connect the 9 pin connector on the end of the serial update cable to the PCs' RS-232 communications port
3. Start the terminal program.
4. Configure the port settings of the terminal program as follows:

Baud	115200
Parity	no
Data bits	8
Stop bits	2
Flow Control	None

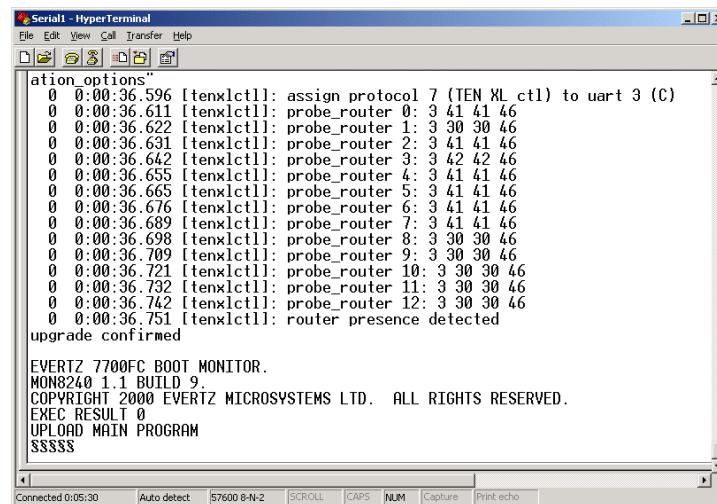
5. Power up the unit.

6.2.3. Initiating Firmware Upgrade Mode Via The Front Panel (Keyer units only)

This is the recommended method of updating the software in the keyer units. It is activated through the *GENERAL* Setup menu branch. If you cannot invoke the upload mode via the front panel as outlined in step 6 then follow the steps in section 6.2.4.

6. You can invoke the Firmware upgrade mode using the front panel Setup Menu. (See section 3 for information on how to operate the front panel menus.) Press the **SETUP** button to enter the top level of the Setup menu. Use the **↑** or **↓** pushbuttons to find the *GENERAL* menu item and then press the **SELECT** button. Use the **↑** or **↓** pushbuttons to find the Update Code menu item and then press the **SELECT** button. Use the **↑** or **↓** pushbuttons to find the *yes-upgrade now* menu item and then press the **SELECT** button.

When you press the **SELECT** button the keyer unit will be placed in programming mode and its serial port is opened to communicate with the terminal software program. The following message will appear on the terminal screen



```

ation options*
0 0:00:36.596 [tenx1ctl]: assign protocol 7 (TEN XL ctl) to uart 3 (C)
0 0:00:36.611 [tenx1ctl]: probe_router 0: 3 41 41 46
0 0:00:36.622 [tenx1ctl]: probe_router 1: 3 30 30 46
0 0:00:36.631 [tenx1ctl]: probe_router 2: 3 41 41 46
0 0:00:36.642 [tenx1ctl]: probe_router 3: 3 42 42 46
0 0:00:36.655 [tenx1ctl]: probe_router 4: 3 41 41 46
0 0:00:36.665 [tenx1ctl]: probe_router 5: 3 41 41 46
0 0:00:36.676 [tenx1ctl]: probe_router 6: 3 41 41 46
0 0:00:36.689 [tenx1ctl]: probe_router 7: 3 41 41 46
0 0:00:36.698 [tenx1ctl]: probe_router 8: 3 30 30 46
0 0:00:36.709 [tenx1ctl]: probe_router 9: 3 30 30 46
0 0:00:36.721 [tenx1ctl]: probe_router 10: 3 30 30 46
0 0:00:36.732 [tenx1ctl]: probe_router 11: 3 30 30 46
0 0:00:36.742 [tenx1ctl]: probe_router 12: 3 30 30 46
0 0:00:36.751 [tenx1ctl]: router presence detected
upgrade confirmed

EVERTZ 7700FC BOOT MONITOR.
MON8240 1.1 BUILD 9
COPYRIGHT 2000 EVERTZ MICROSYSTEMS LTD. ALL RIGHTS RESERVED.
EXEC RESULT 0
UPLOAD MAIN PROGRAM
$$$$$$

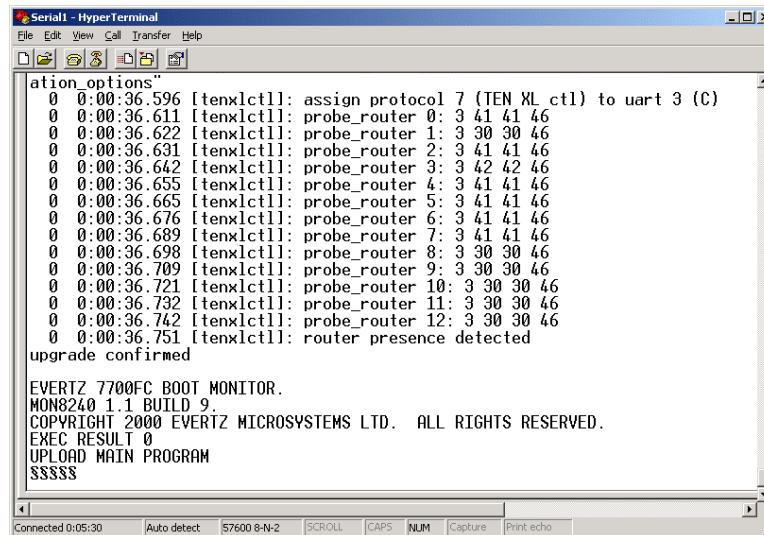
```

You will have approximately 10 seconds to start transferring the file before the unit automatically reboots. Proceed to section 6.2.4 for instructions on uploading the firmware using the terminal program.

6.2.4. Initiating Firmware Upgrade Mode from the Terminal Program

7. Power up the unit. After the unit powers up, a banner with the boot code version information should appear in the terminal window. A series of characters are slowly displayed after the upload main program line. (The symbol displayed may vary from that shown in the figure). The symbol used depends on the font selected for use with HyperTerminal.

For example:

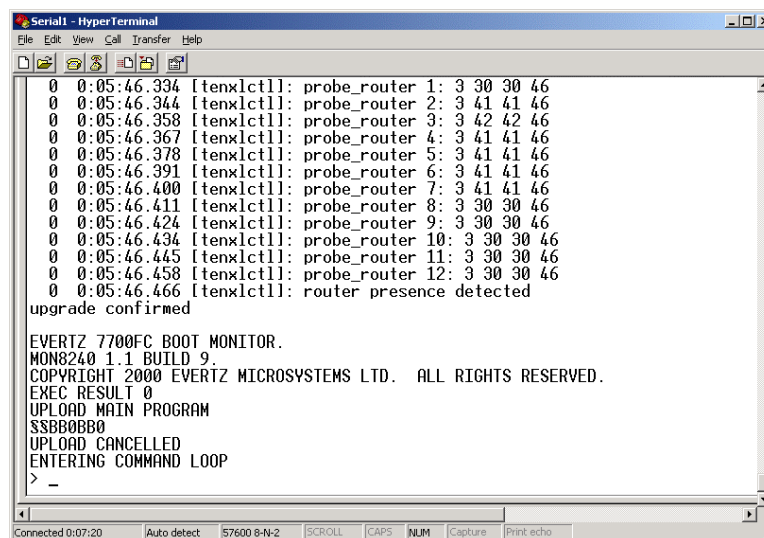


```

ation_options
0 0:00:36.596 [tenxlctl]: assign protocol 7 (TEN XL ctl) to uart 3 (C)
0 0:00:36.611 [tenxlctl]: probe_router 0: 3 41 41 46
0 0:00:36.622 [tenxlctl]: probe_router 1: 3 30 30 46
0 0:00:36.631 [tenxlctl]: probe_router 2: 3 41 41 46
0 0:00:36.642 [tenxlctl]: probe_router 3: 3 42 42 46
0 0:00:36.655 [tenxlctl]: probe_router 4: 3 41 41 46
0 0:00:36.665 [tenxlctl]: probe_router 5: 3 41 41 46
0 0:00:36.676 [tenxlctl]: probe_router 6: 3 41 41 46
0 0:00:36.689 [tenxlctl]: probe_router 7: 3 41 41 46
0 0:00:36.698 [tenxlctl]: probe_router 8: 3 30 30 46
0 0:00:36.709 [tenxlctl]: probe_router 9: 3 30 30 46
0 0:00:36.721 [tenxlctl]: probe_router 10: 3 30 30 46
0 0:00:36.732 [tenxlctl]: probe_router 11: 3 30 30 46
0 0:00:36.742 [tenxlctl]: probe_router 12: 3 30 30 46
0 0:00:36.751 [tenxlctl]: router presence detected
upgrade confirmed

EVERTZ 7700FC BOOT MONITOR.
MON8240 1.1 BUILD 9.
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EXEC RESULT 0
UPLOAD MAIN PROGRAM
$$$$$
  
```

8. The following is a list of possible reasons for failed communications:
 - Defective Serial Upgrade cable.
 - Wrong communications port selected in the terminal program.
 - Improper port settings in the terminal program. (Refer to step 4 for settings). Note that HyperTerminal will not change port settings while connected. Click on HyperTerminal's "Disconnect" Button then click the "Reconnect" button to activate changes to the port settings.
9. While the special character is repeated on the screen press the <CTRL> and <X> keys, this will stop the special character output. The character is repeated for about 5 seconds. You must press <CTRL-X> during this 5 second delay. If the unit continues to boot-up, simply cycle the power and repeat this step.

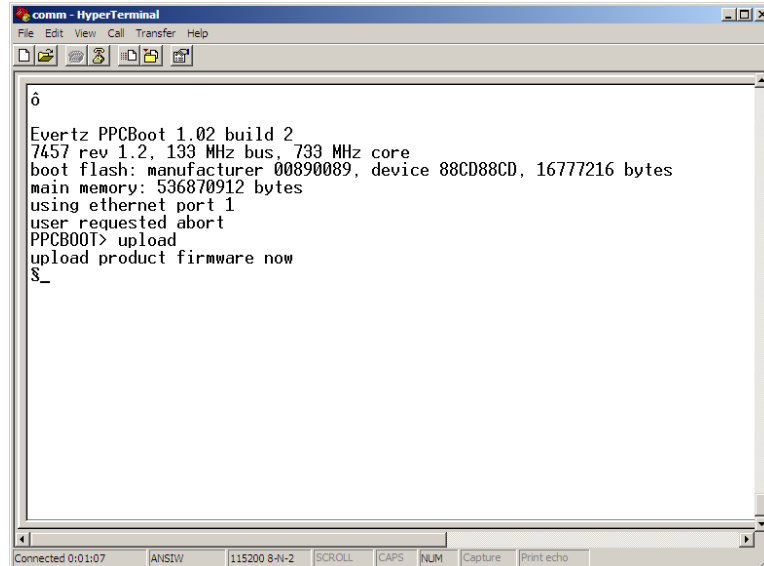


```

0 0:05:46.334 [tenxlctl]: probe_router 1: 3 30 30 46
0 0:05:46.344 [tenxlctl]: probe_router 2: 3 41 41 46
0 0:05:46.358 [tenxlctl]: probe_router 3: 3 42 42 46
0 0:05:46.367 [tenxlctl]: probe_router 4: 3 41 41 46
0 0:05:46.378 [tenxlctl]: probe_router 5: 3 41 41 46
0 0:05:46.391 [tenxlctl]: probe_router 6: 3 41 41 46
0 0:05:46.400 [tenxlctl]: probe_router 7: 3 41 41 46
0 0:05:46.411 [tenxlctl]: probe_router 8: 3 30 30 46
0 0:05:46.424 [tenxlctl]: probe_router 9: 3 30 30 46
0 0:05:46.434 [tenxlctl]: probe_router 10: 3 30 30 46
0 0:05:46.445 [tenxlctl]: probe_router 11: 3 30 30 46
0 0:05:46.458 [tenxlctl]: probe_router 12: 3 30 30 46
0 0:05:46.466 [tenxlctl]: router presence detected
upgrade confirmed

EVERTZ 7700FC BOOT MONITOR.
MON8240 1.1 BUILD 9.
COPYRIGHT 2000 EVERTZ MICROSYSTEMS LTD. ALL RIGHTS RESERVED.
EXEC RESULT 0
UPLOAD MAIN PROGRAM
$$$B00B0
UPLOAD CANCELLED
ENTERING COMMAND LOOP
>
  
```

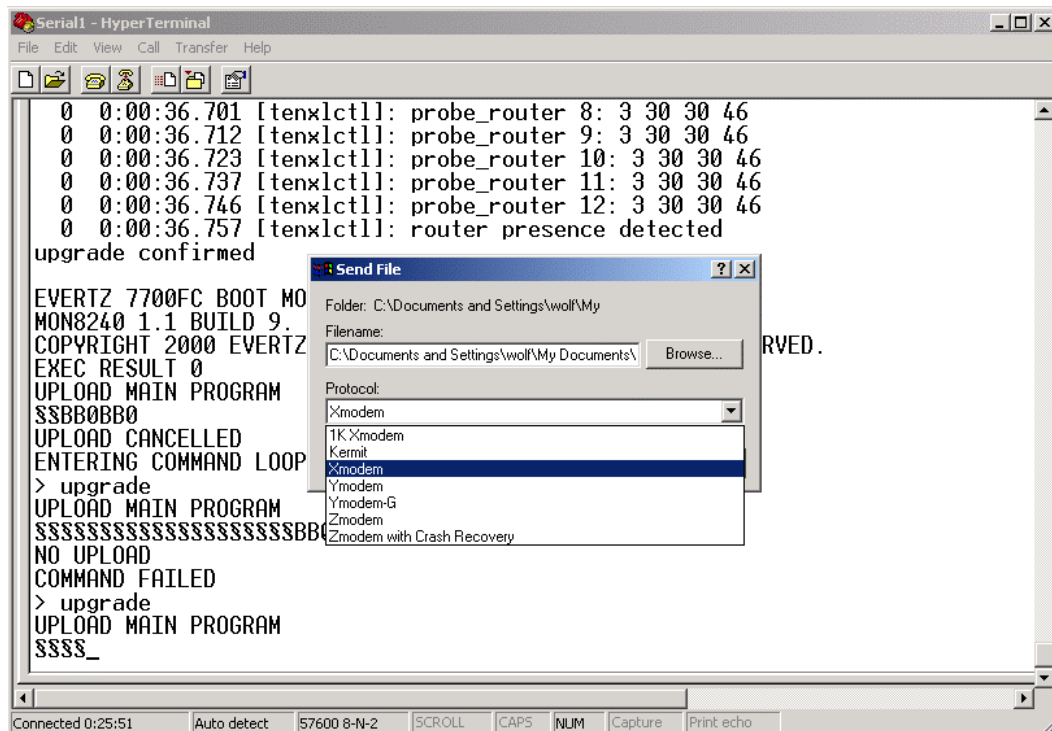
10. Hit the < enter > key on your computer once.
11. Type the word "upload", without quotes, and hit the < enter > key once.



6.2.5. Uploading the new firmware

12. The unit is now waiting for you to start the file transfer.

13. Upload the “*.bin” file supplied using the X-Modem transfer protocol of your terminal program. If you do not start the upload within 5 minutes the unit’s Boot code will time out. You can restart the upgrade process by typing the word “upgrade”, without quotes and press the <enter> key once.



The application firmware is contained in a “bin” file, which will have a name consisting of the version number and the product name.

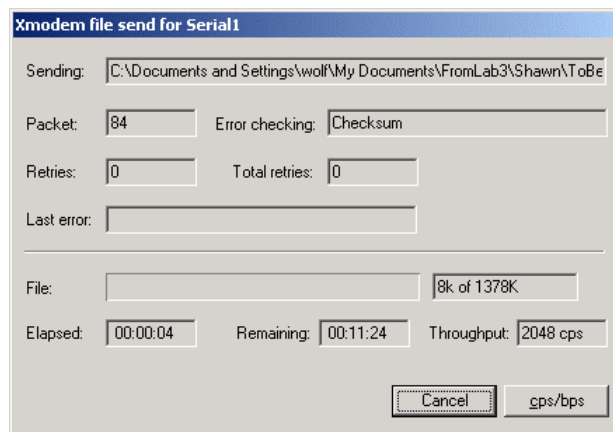
For the 9725LG(A) keyer unit the name will be similar to: 2v06_613_9725LG(A).bin

For the HD9725LG(A) keyer unit the name will be similar to: 2v06_613_HD9725LG(A).bin

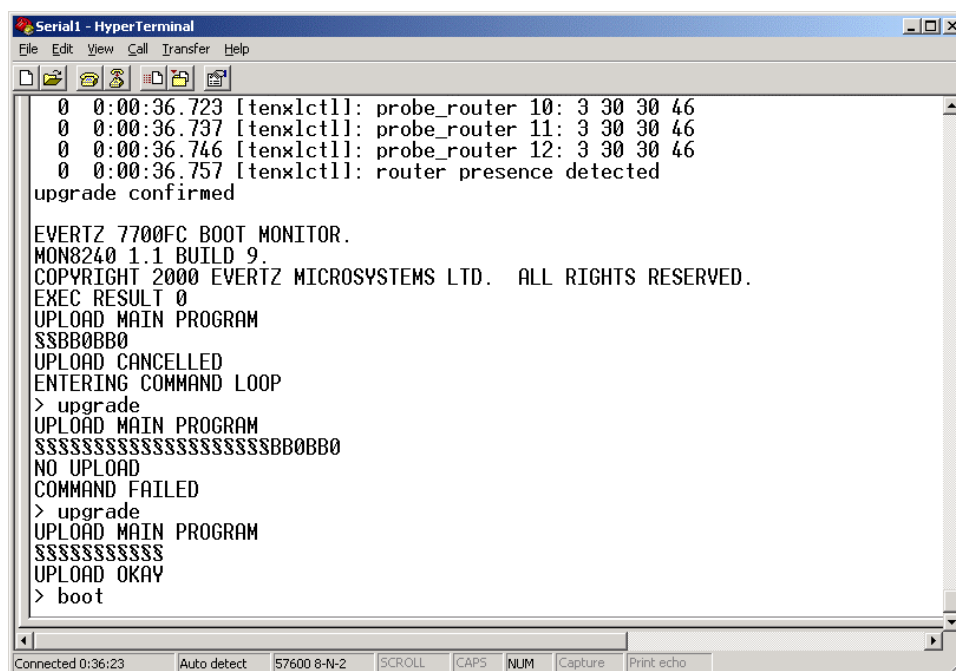
To upload the code, select **TRANSFER** from the HyperTerminal drop down menus and select the **SEND FILE** option.

Select the **BROWSE** button to open a standard file picker window and locate the .bin firmware file. Ensure that the protocol selection is set for *Xmodem* and click the **SEND** button to start the transfer.

HyperTerminal will now start to process the file transfer request and a file transfer progress screen will be displayed.



14. The boot code will indicate whether the operation was successful upon completion of the upload.
For Example:



If the unit does not automatically restart, then type the word “boot”, without quotes, and press the <enter> key once.

15. The following is a list of possible reasons for a failed upload:

- If you get the message "transfer cancelled by remote", you must restart the terminal program and load the bin file.
- The supplied “*.bin” file is corrupt.
- Wrong file specified to be uploaded.
- Wrong file transfer protocol used – make sure you specify Xmodem, not Xmodem 1K.
- The PCs’ RS-232 communications port can’t handle a port speed of 57600.
- Noise induced into the Serial Upgrade cable.

6.2.6. Completing the Upgrade

16. You can now close the terminal program and disconnect the RS-232 serial cable from the PC.

6.3. UPGRADING THE FIRMWARE – FILE TRANSFER PROTOCOL OVER ETHERNET

The Overture™ software can be used to update the firmware in Evertz 9725LG Series Keyer units using File Transfer Protocol (FTP). Overture™ allows you to upload the same firmware to multiple units at the same time and with the same ‘drag and drop’ ease that you use to upload media files to the keyer units. For more information see the Overture™ User manual.

6.4. SERVICING INSTRUCTIONS



CAUTION – These servicing instructions are for use by qualified service personnel only. To reduce risk of electric shock do not perform any servicing instructions in this section of the manual unless you are qualified to do so.

6.4.1. Changing The Fuses



Check that the line fuse is rated for the correct value marked on the rear panel. Never replace with a fuse of greater value.

The fuse holder is located inside the power entry module. To change the fuses, disconnect the line cord from the power entry module and pull out the fuse holder from the power entry module using a small screwdriver. The fuse holder contains two fuses, one for the line and one for the neutral side of the mains connection. Pull out the blown fuse and place a fuse of the correct value in its place. Use slo blo (time delay) 5 x 20 mm fuses rated for 250 Volts with a current rating of shown in Table 6-1. Carefully reinsert the fuse holder into the power entry module.

Model	Fuse Rating
AN9725LG	1 amp
9725LG, 9725LGA	1 amp
HD9725LG, HD9725LGA	1 amp

Table 6-1: Fuse Ratings

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CHAPTER 7
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7. TROUBLESHOOTING THE 9725LG SERIES KEYER

If an error occurs while using the 9725LG Series Keyers, consult the following table for more information. Table 7-1 provides a complete list of error messages with corresponding error descriptions.

Displayed Error Message	Error Description
"Not a logo"	While loading the logo, the firmware found was unable to support the load action. The file is probably corrupt.
"No window avail"	All windows are in use. There is a limit of sixteen active logos, each of which has a window on the display. This error occurs when there is an attempt to load a seventeenth logo. Note that the EAS crawl, whether active or not, takes up a window.
"Bad position"	Indicates that an attempt was made to bring in a logo that would exceed the available playout cache bandwidth on one or more lines.
"Bad logo"	Not a logo. There has been an attempt to load a file that is not a logo file.
"2 clocks already" "Too many objects"	Too many <i>time & temperature</i> or <i>CG</i> logos have been requested. In the case of time, the 9725LG Keyer Series only supports two clocks at one time.
"Bad logo file"	Clock file is corrupt. Error occurs if media is removed.
"Crawl is running"	Too many crawls have been requested. The 9725LG Keyer Series only supports one crawl running at any one time. Similar to "2 clocks already" error, with respect to crawls.
"No logo or audio"	A logo and an audio clip are tied together and one of the elements cannot be loaded.
"Bad audio"	Not an audio file. There has been an attempt to load a file that is not an audio file.
"Stream active"	An attempt to insert an audio clip while another audio clip is in play mode.
"MAL read failed"	Unable to read the media action list. Occurs while reading a media action list file.
"Play cache full"	Attempting to load a file into the playout cache when there is insufficient space available.

"Timeout"	Connection timed out. A <code>connect()</code> request failed because the connected party did not properly respond after a period of time (timeout period varies, depending on the communication protocol).
"No buffers"	No buffer space available. An operation on a socket was not performed because the system lacked sufficient buffer space.
"Host unreachable"	No route to host. A socket operation was attempted to an unreachable host.
"Host down"	Host is down. A socket operation encountered a dead host. Networking activity on the local host has not been initiated.
"Network down"	Network is down. A socket operation encountered a dead network.
"Network unreachable"	Network is unreachable. A socket operation was attempted to an unreachable network.
"Connection refused"	Connection refused. No connection could be made because the target machine actively refused it. This usually results from trying to connect to a service that is inactive on the foreign host.
"Connection reset"	Connection reset by peer. A connection was forcibly closed by a peer. This normally results from a loss of the connection on the remote socket due to a timeout or a reboot.
"Is connected"	Socket is already connected. A <code>connect()</code> request was made on an already connected socket, or, a <code>sendto()</code> or <code>sendmsg()</code> request on a connected socket specified a destination other than the connected party.
"Not connected"	Socket is not connected. A request to send or receive data was disallowed because the socket was not connected.
"Already"	Operation already in progress. An operation was attempted on a nonblocking object that already had an operation in progress.
"Invalid parameter"	Invalid argument. Some invalid argument (such as unmounting a device that is not currently mounted, mentioning an undefined signal in <code>signal()</code> or <code>kill()</code> , or reading or writing a file for which <code>lseek()</code> has generated a negative pointer). Also set by the math functions described in the (3M) entries of this manual.
"Broken pipe"	Broken pipe. Data has been written to a pipe for which the other (reading) end has been closed. This most often occurs when the reading process exits before the writing process. This condition also generates the signal <code>SIGPIPE</code> ; the error is returned if the signal is ignored.
"Connection aborted"	Software caused connection abort. A connection abort was caused internal to your host machine.

"Address in use"	Address already in use. Only one usage of each address is normally permitted.
"Address not available"	Cannot assign requested address. Normally results from an attempt to create a socket with an address not on this machine.
"Would block"	Operation would block. An operation which would cause a process to block was attempted on an object in nonblocking mode
"No protocol option"	Protocol option not available. This may be returned for a <code>getsockopt()</code> or <code>setsockopt()</code> call if the user specified an option that the local system does not support or for any system call that causes the local system to send a network protocol option that a remote system does not support, including a system call that operates on an NFS file.
"Message size"	Message too long. The socket requires that the message be sent atomically, and the size of the message to be sent made this impossible.
"Address family not supported"	Address family not supported by protocol family. An address incompatible with the requested protocol was used.
"Number of files exceeded"	File table overflow. The system's table of open files is full, and temporarily no more <code>open()</code> s can be accepted.
"In progress"	Operation now in progress. An operation that takes a long time to complete was attempted on a nonblocking object.
"Again"	Resource temporarily unavailable. This is likely a temporary condition, and later calls to the same routine may complete normally.
"Input/output error"	I/O error - some physical I/O error. This error may in some cases occur on a call following the one to which it actually applies.
"No such device or address"	No such device or address. I/O on a special file refers to a subdevice that does not exist, or is beyond the limits of the device. It can also occur when, for example, a tape drive is not on line or no disk pack is loaded on a drive.
"No space left on device"	No space left on device. During a <code>write()</code> to an ordinary file, there is no free space left on the device; or no space in system table during <code>msgget()</code> , <code>semget()</code> , or <code>semop()</code> while <code>SEM_UNDO</code> flag is set.

"No such file or directory"	No such file or directory. This error occurs when a file name is specified and the file should exist but does not, or when one of the directories in a path name does not exist. It also occurs with <code>msgget()</code> , <code>semget()</code> , and <code>shmget()</code> when key does not refer to any object and the <code>IPC_CREAT</code> flag is not set.
"Not a directory"	Not a directory. A non-directory was specified where a directory is required, such as in a path prefix or as an argument to <code>chdir()</code> .
"Is a directory"	Is a directory. An attempt to open a directory for writing.
"File exists"	File exists. An existing file was mentioned in an inappropriate context; e.g., <code>link()</code> .

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