QMG
Quartz Media Graphics

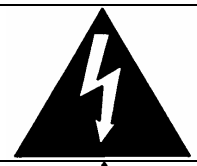
Instruction Manual

EVERTZ MICROSYSTEMS LTD.
5288 John Lucas Drive,
Burlington, Ontario, Canada
L7L 5Z9
Phone: +1 905-335-3700
Sales Fax: +1 905-335-3573
Tech Support Phone: +1 905-335-7570
Tech Support Fax: +1 905-335-7571

Internet: Sales: sales@evertz.com
Tech Support: service@evertz.com
Web Page: http://www.evertz.com

Version 1.2.1, October 2009

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 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.

NOTE

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

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.

This page left intentionally blank

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	Jan 09
1.1	Updated pinout information	Aug 09
1.2	Added QMG-DVE2 Block Diagram	Sept 09
1.2.1	Updated QMG-DVE2 Block Diagram and Rear Plate Drawings	Oct 09

This page left intentionally blank

TABLE OF CONTENTS

Figures

Tables

CHAPTER 1
TABLE OF CONTENTS

Figures

This page left intentionally blank

1. OVERVIEW

1.1. OVERVIEW

The Quartz Media Graphics module is an enhanced Branding Engine used in conjunction with the QMC-2 or independently for media insertion with HD or SD video. The Quartz Media Graphics module, also known as QMG, is similar to and shares the main feature sets as the 9725LG Series Keyer products. The QMG fits into one slot of the QMC-2 balance or unbalanced frame.

The QMG 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, dynamic text crawls; time and temperature logos, and optional Emergency Alert System support (North America only), and you have one of the most advanced Media Inserters available today. The QMG also provides the capability of inserting audio voiceovers from external audio or by playing stored audio clips. Audio Clips can be played by themselves or played automatically when associated logos are keyed.

The QMG module supports both standard definition and high definition video. Throughout this manual the term *QMG* will be used to identify the module. The QMG has 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 Overture™ software (included).

Up to 16 static or animated 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". 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

- Stores and inserts static and animated logos or media clips
- Multiple simultaneous logos can be keyed directly onto the HD or SD video signal
- Multi-layer keying
- Supports 1080i, 720p, 525, and 625 formats
- Full 12 bit linear video keyer with logo fade-in and fade-out processing
- Independent control of logo position, transparency and offset
- Independent control of fade in and fade out of static logos
- Input bypass relays for power failure protection
- Automatic equalization up to 100m @ 1.5 Gb/s (Belden 1694A or equivalent)
- Program and Preview outputs
- Reference to input video or color black
- Gigabit Ethernet interface
- Manage logos from a standard PC using Ethernet and Overture software
- Standard 256MB compact flash storage with 512 MB playout cache
- Optional +TXT feature to support crawls and text teasers/snipes
- Optional +NAS feature for Network Attached Storage support

- Optional +DVE for 2D DVE effects
- Optional 2GB, 4GB or 8GB internal compact flash storage
- Optional additional removable flash memory of 2GB, 4GB or 8GB
- Option to increase playout cache to 2GB, 4GB or 8GB DRAM
- Occupies one slot in 3RU QMC-2 frame
- Two AES inputs and two AES outputs (on unbalanced QMC-2 frame)
- Up to four AES inputs and four AES outputs (on balanced QMC-2 frame)
- Full 4 pair audio voice over mixing for Dolby 5.1 audio (balanced QMC-2 frame)
- Includes eight embedded audio channel mixing with 2 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 over Ethernet using Evertz Overture™

EAS Option (North America only):

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

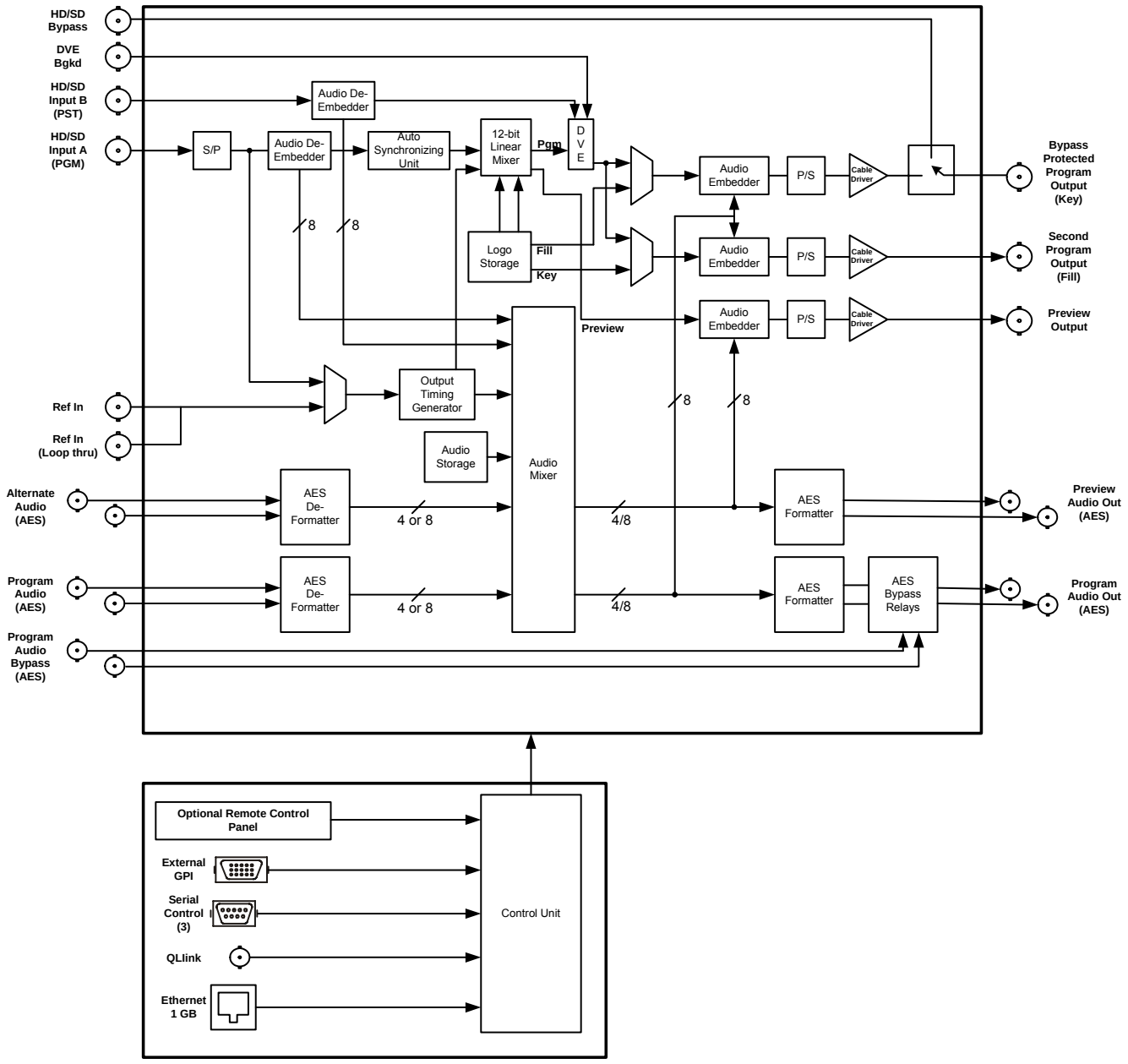


Figure 1-1: Quartz Media Graphics Block Diagram

1.2. HOW TO USE THIS MANUAL

This manual is organized into 9 chapters: Overview, Installation, VistaLINK® PRO operation, Configuration using QMCSetup, Rackmount Remote Control Panel Operation, Configuring a Control Panel using the QMC_Setup, Optional EAS Features, Technical Description, and Troubleshooting the QMG Module. The overview section contains a brief overview of the QMG module operation, 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 QMG module should be connected into your system.

Chapter 3 describes how to operate the QMG module using VistaLINK® PRO.

Chapter 4 describes how to set up the QMG module using the QMCSetup software tool.

Chapter 5 shows how to operate the QMG module using the Rackmount Remote Control Panel. This chapter also includes information on the Setup Menu system and HTML Setup page.

Chapter 6 describes how to configure a control panel to be used with the QMG.

Chapter 7 describes how to set up the QMG module for use with an EAS decoder (EAS option required).

Chapter 8 provides technical information, such as the specifications and how to update the firmware in the QMG module.

Chapter 9 provides information on troubleshooting the QMG Module.

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

1.3. DEFINITIONS

4:2:2 The sampling ratio used in the 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 organization 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 unrecognizable.

Component analog: The non-encoded output of a camera, video tape recorder, etc., consisting of the three primary color 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 color 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 synchronizing information.

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

This page left intentionally blank

CHAPTER 2
TABLE OF CONTENTS

Figures

Tables

2. INSTALLATION

2.1. REAR PANEL OVERVIEW

The QMG module fits into an existing QMC-2 unbalanced or balanced frame. The QMG may co-exist with a QMC-2 in the frame or it can be installed by itself. Each QMC-2 frame can hold up to two QMC-2 modules, or two QMG modules, or a combination of both.

There are two rear panels for both the unbalanced and balanced frames, as shown in the following figures.

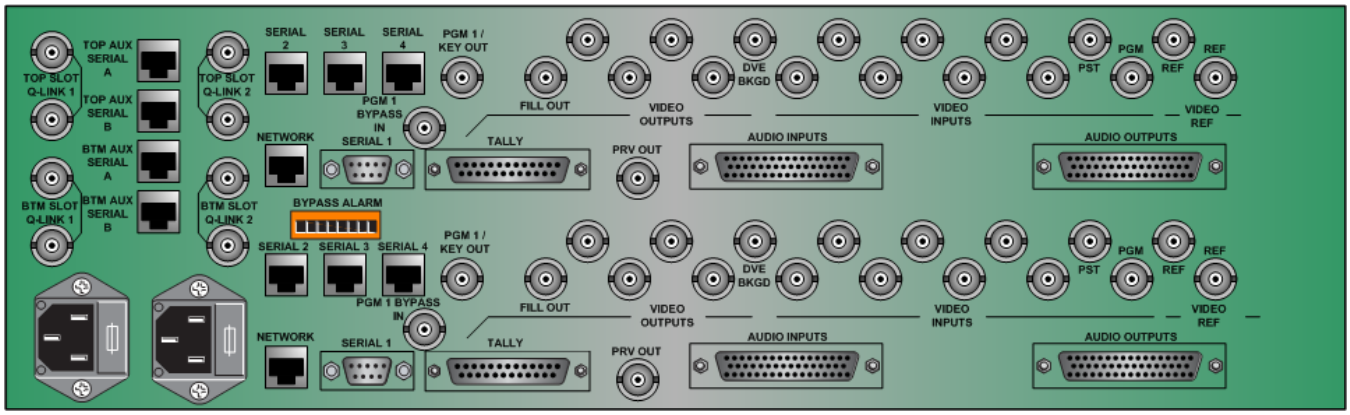


Figure 2-1: Rear Panel – Unbalanced Frame

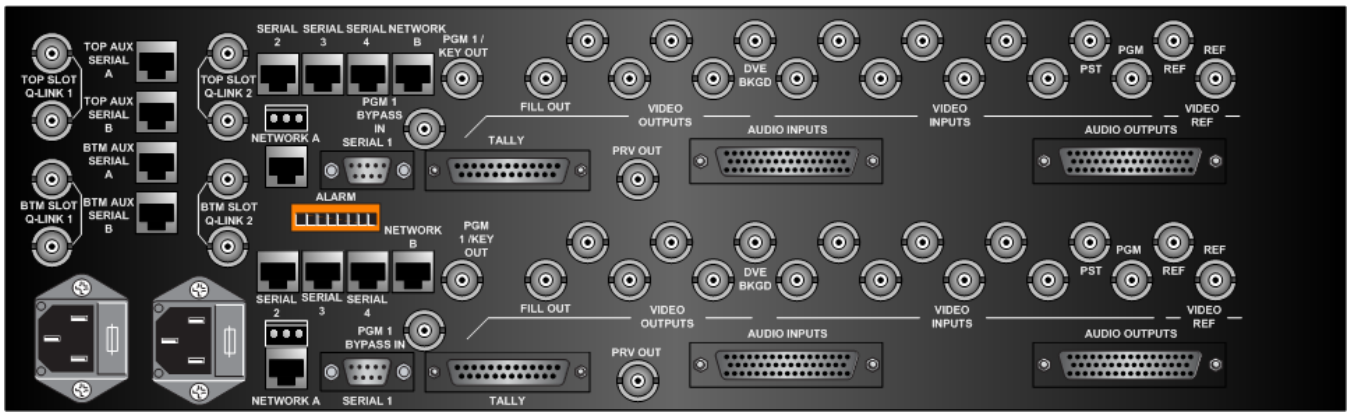


Figure 2-2: Rear Panel – Unbalanced Frame

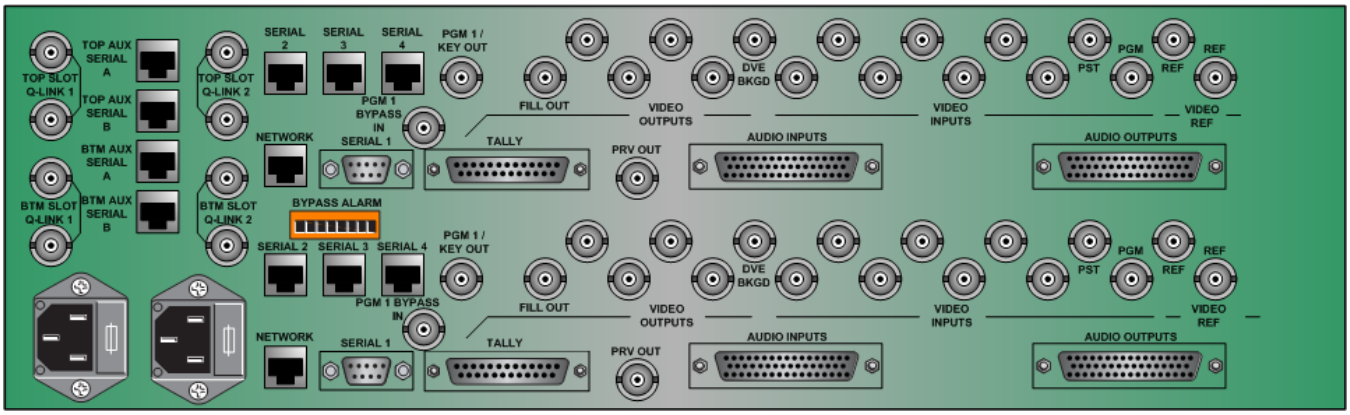


Figure 2-3: Rear Panel – Balanced Frame

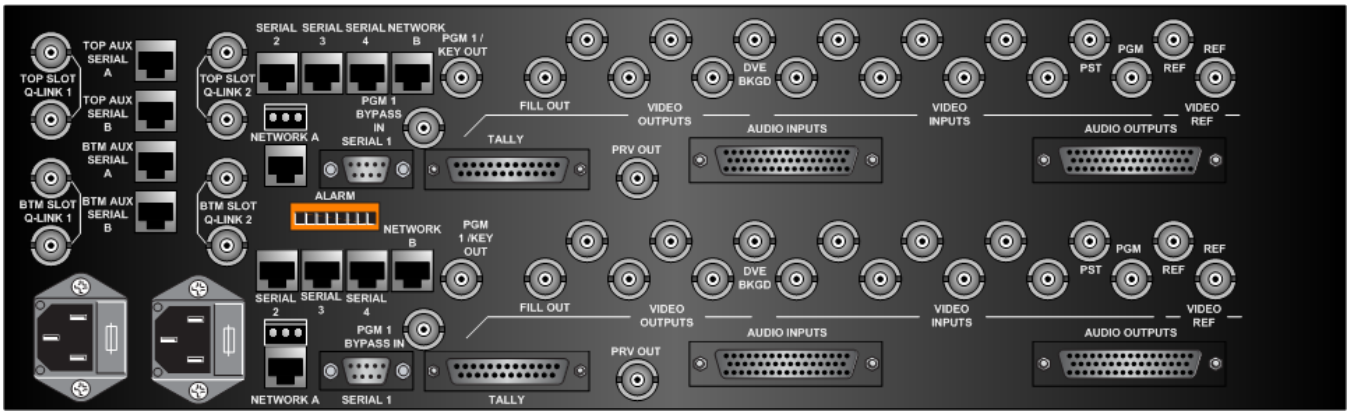


Figure 2-4: Rear Panel – Balanced Frame

Please note that on earlier versions of the rear panel, the bottom Serial 3 and Serial 4 ports were reversed.

Also, the frame that the QMG is fitted in is also used for the QMC-2. The video, audio, and serial labels on the frame correspond to the QMC-2. Figure 2-1 to Figure 2-4 show the inputs for the QMG if the module is inserted in either slot of the QMC-2 frame. Users should use the labels provided to overlay the QMG inputs/outputs over the QMC-2 ones.

2.1.1. Digital Video Connections

PGM: 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 **INPUT** BNC.

PGM 1 BYPASS IN: This BNC connector is for connecting a copy of the program serial digital video component video signal. This input is protected by a bypass relay to the adjacent **PGM/KEY** output BNC. When the bypass relay is activated on power loss to the QMG, the **PGM/KEY** output will be a direct relay connection to the **BYPASS** BNC.

PRV OUT: This output BNC connector is the serial digital component preview video output. This preview output connector is normally connected to an HD/SD preview monitor.

PGM/KEY OUT, FILL OUT: These output BNC connectors are the serial digital component program video output. The **PGM/KEY OUT** output is protected by a bypass relay to the adjacent **PGM 1 BYPASS IN** BNC. When the bypass relay is activated on power loss to the keyer, the **PGM/KEY OUT** will be a direct relay connection to the **PGM 1 BYPASS IN** BNC.

If you are using your QMG 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 the **PGM/KEY OUT** and **FILL OUT** 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 *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 the QMG. See section 5.6.2 for information on selecting the video timing reference signal.

2.1.2. Reference Video Connections

REF: This 75 ohm terminated input is for connecting black burst video reference. Connect the **REF** connector to the reference input sync. The QMG can also be set to derive its timing from the input video connected to the **PGM** BNC using the *REFERENCE* SETUP menu. There are two **REF** inputs on the frame for the QMG. This is a simple loop-through connection. No termination is required as this is a high-impedance connection.

2.1.3. AES AUDIO Connections

2.1.3.1. QMC-2 AES Unbalanced Frame

INPUT PGM1+2, PGM3+4: These 2 input BNC connectors typically provide input for the 4 mono channels of the main program AES audio associated with the video connected to the **PGM** BNC. The use of the **PGM1+2** and **PGM3+4** inputs can also be reassigned using the *HTML Audio Setup* page (See section 5.13.1)

INPUT ALT1+2, ALT3+4: These 2 input BNC connectors provide input for the 4 mono channels 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 **ALT1+2** and **ALT3+4** inputs can also be reassigned using the *HTML Audio Setup* page (See section 5.13.1)

PGM1+2, PGM3+4: These 2 BNC connectors provide outputs for the 4 mono channels of the 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 **BYPASS PGM1+2** and **PGM3+4** input BNCs. When the bypass relay is activated on power loss to the QMG the **BYPASS PGM1+2** and **PGM3+4** will be a direct relay connection to the **PGM1+2** and **PGM3+4** outputs.

PRV1+2, PRV3+4: These 2 input BNC connectors provide outputs for the 4 mono channels of preview AES audio.

2.1.3.2. QMC-2 AES Balanced frame (50 way 'D' type) Input Connections

INPUT PGM1+2, PGM3+4, PGM5+6, PGM7+8: These 4 AES inputs typically provide input for the 8 mono channels of the main program AES audio associated with the video connected to the **PGM** BNC. The use of the **PGM1+2, PGM3+4, PGM5+6,** and **PGM7+8** inputs can also be reassigned using the *HTML Audio Setup* page (See section 5.13.1)

INPUT ALT1+2, ALT3+4, ALT5+6, ALT7+8: These 4 AES inputs typically provide input for the 8 mono channels of the non-program AES audio associated with the video connected to the **PGM** BNC. The use of the **ALT1+2, ALT3+4, ALT5+6,** and **ALT7+8** inputs can also be reassigned using the *HTML Audio Setup* page (See section 5.13.1)

Pin #	Type	Pin #	Type	Pin #	Type
1	Screen	18	PGM 1/2 in -	34	PGM 1/2 in +
2	PGM 3/4 in +	19	PGM 3/4 in -	35	Screen
3	Screen	20	PGM 5/6 in -	36	PGM 5/6 in +
4	PGM 7/8 in +	21	PGM 7/8 in -	37	Screen
5	Screen	22	PST 1/2 in -	38	PST 1/2 in +
6	PST 3/4 in +	23	PST 3/4 in -	39	Screen
7	Screen	24	PST 5/6 in -	40	PST 5/6 in +
8	PST 7/8 in +	25	PST 7/8 in -	41	Screen
9	Screen	26	EMG 1/2 in -	42	EMG 1/2 in +
10	EMG 3/4 in +	27	EMG 3/4 in -	43	Screen
11	Screen	28	EMG 5/6 in -	44	EMG 5/6 in +
12	EMG 7/8 in +	29	EMG 7/8 in -	45	Screen
13	Screen	30	V/O 1/2 in -	46	V/O 1/2 in +
14	V/O 3/4 in +	31	V/O 3/4 in -	47	Screen
15	Screen	32	V/O 5/6 in -	48	V/O 5/6 in +
16	V/O 7/8 in +	33	V/O 7/8 in -	49	Screen
17	N/C			50	N/C

Table 2-1: Input Connections

2.1.3.3. QMC-2 AES Balanced frame (50 way 'D' type) Output Connections

PGM1+2, PGM3+4, PGM5+6, PGM7+8: These 4 AES inputs provide outputs for the 8 mono channels of the 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 **BYPASS PGM1+2, PGM3+4, PGM5+6,** and **PGM7+8** inputs. When the bypass relay is activated on power loss to the QMG the **BYPASS PGM1+2, PGM3+4, PGM5+6,** and **PGM7+8** will be a direct relay connection to the **PGM1+2, PGM3+4, PGM5+6,** and **PGM7+8** outputs.

PRV1+2, PRV3+4, PRV5+6, PRV7+8: These 4 AES inputs provide outputs for the 8 mono channels of preview AES audio.

Pin #	Type	Pin #	Type	Pin #	Type
1	Screen	**18**	PGM 1/2 out -	**34**	PGM 1/2 out +
2	PGM 1/2 Bypass in +	**19**	PGM 1/2 Bypass in -	**35**	Screen
3	Screen	**20**	PGM 3/4 out -	**36**	PGM 3/4 out +
4	PGM 3/4 Bypass in +	**21**	PGM 3/4 Bypass in -	**37**	Screen
5	Screen	**22**	PGM 5/6 out -	**38**	PGM 5/6 out +
6		**23**		**39**	Screen
7	Screen	**24**	PGM 7/8 out -	**40**	PGM 7/8 out +
8		**25**		**41**	Screen
9	Screen	**26**	PRV 7/8 out -	**42**	PRV 7/8 out +
10		**27**		**43**	Screen
11	Screen	**28**	PRV 5/6 out -	**44**	PRV 5/6 out +
12		**29**		**45**	Screen
13	Screen	**30**	PRV 3/4 out -	**46**	PRV 3/4 out +
14		**31**		**47**	Screen
15	Screen	**32**	PRV 1/2 out -	**48**	PRV 1/2 out +
16		**33**		**49**	Screen
17	N/C			**50**	N/C

Table 2-2: Output Connections

2.1.4. Serial I/O Connections

Serial 1: 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 QMG module. The **Serial 1** connector on the rear panel must be connected via a Quartz Serial Comm cable. The pin definitions are shown in Table 2-3. See section 8.2 for more information on upgrading the firmware.

Please note that if you are upgrading the unit via the Serial 1 connector on the front of the card, you must connect a straight through 9-pin cable.

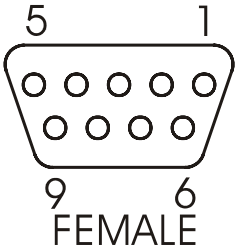
	Pin #	Name	Description
	**1**	GND	Chassis ground
	2	RTS	RS-232 RTS Input
	3	RxD	RS-232 Receive Input
	4		
	5		
	6	Sig Gnd	RS-232 Signal Ground
	7	TxD	RS-232 Transmit Output
	8	CTS	RS-232 CTS Output
	9		

Table 2-3: Upgrade RS232 Port A Pin Definitions – Back Connector of Rear Panel

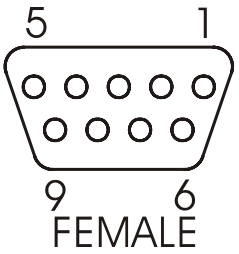
	Pin #	Name	Description
	**1**	GND	Chassis ground
	2	TxD	RS-232 Transmit Output
	3	RxD	RS-232 Receive Input
	4		
	5	Sig Gnd	RS-232 Signal Ground
	6		
	7	RTS	RS-232 RTS Input
	8	CTS	RS-232 CTS Output

Table 2-4: Upgrade RS232 Port A Pin Definitions - Front End of QMG

Serial 2: The **Serial 2** port connector is used to connect the RCP and DCP to the rear panel. This serial connector provides an RS-422 serial interface for connection to the Remote Control Panel. The connection must be made to **Serial 2** using a DB9 to RJ45 adaptor. This port is wired as a SMPTE 207M Tributary as shown in Table 2-5. See section 2.4 for information on connecting the remote control panel.

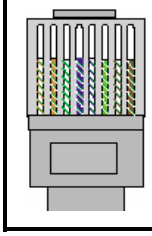
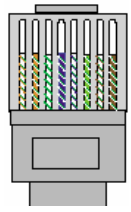
	RJ-45 (Serial 2)		DB9 (PC)
	Pin #	Signal	Pin #
	**1**	GND	4
	2	GND	9
	3	TX+	2
	4	Rx-	3
	5	Rx+	8
	6	Tx-	7
	7	N/C	1
	8	N/C	6

Table 2-5: RS-422 with DB9 Connector

SERIAL Ports A, B, 3, 4: These serial ports provide serial interfaces designed for connection to Automation Systems (using M2100 control protocol, Evertz Automation protocol, or XY protocol). Serial port 3 is also used to interface to the EAS Decoder (EAS optioned units) or optional temperature probe. Serial port 4 is for hardcode configuration uploads only. Serial Ports A and B provide an RS-422 serial interface connection, as shown in Table 2-6, and Serial Ports 3 and 4 provide an RS-232 serial interface connection, as shown in Table 2-7.

Serial 4 will always be used to configure the QMG via the QMCSetup.

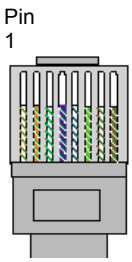
For Serial Ports A and B (RS-422):



QMG Serial A or B	
Pin #	**Signal**
1	GND
2	GND
3	TX-
4	RX+
5	RX-
6	TX+
7	N/C
8	N/C

Table 2-6: QMG RJ-45 Serial A or B Signals RS-422

For Serial Ports 3 and 4 (RS-232):



QMG Serial 3 or 4	
Pin #	**Signal**
1	GND
2	GND
3	Tx
4	CTS
5	Rx
6	RTS
7	N/C
8	N/C

Table 2-7: QMG RJ-45 Serial 3 or 4 Signals RS-232

To connect Serial Port 4 to the PC with QMCSetup, a DB9 dongle is required. The connections are as follows:

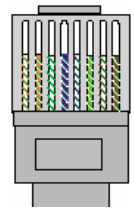
	RJ-45 (Serial 4)		DB9 (PC)
	Pin #	**Signal**	**Pin #**
Pin 1 	**1**	GND	5
	2	GND	5
	3	Tx	2
	4	CTS	7
	5	Rx	3
	6	RTS	8
	7	N/C	1
	8	N/C	6

Figure 2-5: RS-232 PC to QMG

2.1.5. GPI/O Connections

TALLY: The QMG has a 25 way female D-type connector with relay tally outputs and TTL level input/outputs. Use the TTL pins for GPIs. The system works as a contact closure to ground. The setup of the GPI connections for the QMG is performed in the QMCSetup program for the QMG device.

Pin #	Description	Pin #	Description
1	Relay tally 1	**14**	Relay tally 7
2	Relay tally 1	**15**	TTL tally 8 (note 1)
3	Relay tally 2	**16**	TTL tally 7 (note 1)
4	Relay tally 2	**17**	TTL tally 6
5	Relay tally 3	**18**	TTL tally 5
6	Relay tally 3	**19**	TTL tally 4
7	Relay tally 4	**20**	TTL tally 3
8	Relay tally 4	**21**	TTL tally 2
9	Relay tally 5	**22**	+5V 100mA
10	Relay tally 5	**23**	TTL tally 1
11	Relay tally 6	**24**	0V
12	Relay tally 6	**25**	Chassis
13	Relay tally 7		

Table 2-8: GPI/O Connector 34-Pin Definitions

*Note 1: TTL Tally voltage levels; Inputs are Logic 0 = <0.8V, Logic 1 = >3.5V; Outputs are Logic 0 = <1.0V at 10mA, Logic 1 = >3.5V (thru 4K7).

2.1.6. Ethernet Network Connections

ETHERNET: There are two network connectors on the rear panel; Network A and Network B. (Network B is for future use and is currently not supported). These RJ-45 connectors are Ethernet ports 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 5.6.8 in the *General* menu descriptions for information on configuring the network address for the QMG.

2.1.7. Q-Link Connections

Q-Link is a dedicated control system specific to Evertz brand of Quartz products. The Q-Link system works as a single transmission line with devices connected along the length of the cable. It must be terminated at either end in 75Ω. The QMC-2 frame has pairs of looping connectors to allow the frame to sit at one end of the link (with termination) or sit in the middle of the link with cables running off in different directions.

The rear panel has the following Q-Link connections: *Top Slot Q-Link 1, BTM Slot Q-Link 1, Top Slot Q-Link 2*, and *BTM Slot Q-Link 2.*

Q-Link 1 is normally used for direct connection to a manual control panel, QMC-CP, QMC-CP1000, or QMC-CP-FS.

2.1.8. Power Connections

The QMC-2 frame 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 QMC-2 frame is equipped with rack mounting angles and fits into a standard 19 inches by 5.25 inches (483 mm x 90 mm) 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 QMC-2 control panels

2.3. POWER REQUIREMENTS

Power requirements are 100 to 240 volts AC at 50 or 60 Hz. The QMG module has 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 a minimum of 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 8.4.1 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 QMG module is available with a rack mountable or desktop remote control panel. The remote control panel is connected to **Serial 2** port on the rear panel using the straight-through cable and RJ45 to DB9 adapter. For longer distances, simply make your own cable of the required length according to the diagram in Table 2-9. 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.

Please note that the remote control panel is optional. The module serial port can be used to configure the network settings. Please refer to section 2.11 for details.

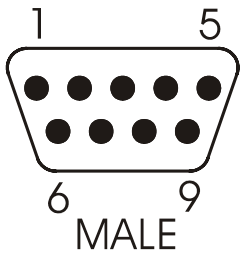
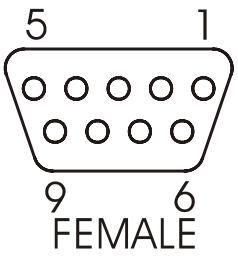
QMG End				Remote Panel End		
	9 pin D Male	Pin	Belden 9729	9 pin D Female	Pin	
		1			1	
	Tx-	2	-------1a------	Rx-	2	
	Rx+	3	-------2b------	Tx+	3	
	Rx Gnd	4	---drain 2----	Rx Gnd	4	
		5				
	Tx Gnd	6	---drain 1----	Tx Gnd	6	
	Tx+	7	-------1b-----	Rx+	7	
	Rx-	8	-------2a------	Tx-	8	
		9			9	
	Frame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

Table 2-9: 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 QMG supports standard and high definition digital video in the formats shown in Table 2-10 and Table 2-11. The video standard must be set manually to match the incoming video type using the *Video Standard* menu item in the *General* menu (See section 5.6.1).

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 2-10: 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
1080i/60			
720p/59.94	1280 x 720	59.94 (60/1.001)	P
720p/50	1280 x 720	50	P

Table 2-11: High Definition Video Input Formats

2.5.2. Video Outputs

The **PGM1 OUT** BNCs contain the video output from the program bus and should be connected to the main broadcast chain of your plant. The **PGM1 OUT** output is protected by a bypass relay. When the relay is active, the **PGM1 OUT** output is directly connected to the **PGM1 / BYPASS IN** BNC.

If you are using your QMG as a standard on-air device in downstream manner, 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 **PGM1 OUT** BNC. Connect one of these outputs to the next video device in your output path.

If you have a master control 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 OUT** BNC and the Logo key data on the **KEY OUT** BNC. Connect these outputs to the *Key* and *Fill* inputs of the next video device in your output path.

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 BNC or a serial digital video signal to the PGM IN BNC. The input signal must be running the same video standard as required by your QMG. See section 2.5.3 and 5.6.2 for information on connecting and selecting the video timing reference signal.

The **PRV OUT** output contains the video output from the preview and is typically connected to a SDI monitor, which enables the user to view the program output before it goes on air. When the bypass relay is active, the **PRV OUT** 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 color black video signal to the **REF** IN connector. Make sure that the signal type is correct for the video standard in use. (See Table 2-10 and Table 2-11) 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 5.6.2)

2.6. CONNECTING THE AUDIO

The QMG module is 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 5.13) 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 PRV outputs is embedded into group 1 and 2 on the PRV 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 5.13). The voiceover audio is mixed with the program audio at the mix levels specified on the *HTML Audio Setup* page items (see section 5.13) 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 **PGM 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 of the Preview and Program audio outputs (See section 5.13).

2.6.2. Connecting Voice Over or EAS Audio

If you are using discrete AES voiceover 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 is used to select the voiceover audio source for each of the Preview and Program audio outputs (see section 5.13). This audio will be mixed with the program audio at the mix level specified within the *HTML Audio Setup* page (see section 5.13).

2.6.3. Connecting the Audio Outputs

The **AES PGM 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 PGM OUT** outputs are protected by bypass relays. When the relays are active, the **AES PGM OUT** outputs are directly connected to the four **AES PGM IN** inputs. The audio on the **AES PGM OUT** outputs is also embedded into groups 1 and 2 on the program video outputs.

The **PRV 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 **PRV AES OUT** outputs will not have any audio on them. The audio on the **AES PRV OUT** outputs is also embedded into groups 1 and 2 on the preview video outputs.

2.7. CONNECTING THE LINEAR TIME CODE

The QMG module has 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. 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).

The QMC-2-MG has a three pin male socket for LTC input, suitable for a RIA Connect part number 31169103 3-pin female terminal block. Table 2-12 provides the LTC pin-out.

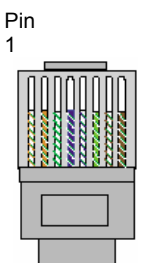
Pin #	Name	Description
1	LTC+	Primary LTC + output
2	GND	Signal Ground.
3	LTC-	Primary LTC – output

Table 2-12: LTC OUT Pin Definitions

2.8. CONNECTING TO AN ETHERNET NETWORK

The QMG module uses 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 QMG module 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 pin-out information in Table 2-13. A color coded wiring table is provided in Table 2-13 for the current RJ-45 standards (AT&T 258A or EIA/TIA 258B color 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 2-13: Standard RJ-45 Wiring Color 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 colors 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 QMG has established a valid linkage to its hub, and whether the QMG module is sending or receiving data. This LED will be ON when the QMG module 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 QMG module 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 QMG module is possible through general-purpose inputs and outputs. 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 2-6 shows the input circuit for the general-purpose inputs.

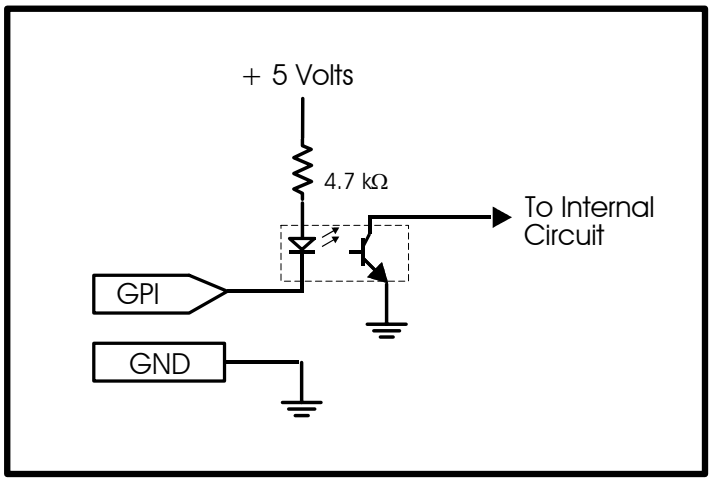


Figure 2-6: GPI Input Circuitry

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 2-7 shows the circuit for the general-purpose output.

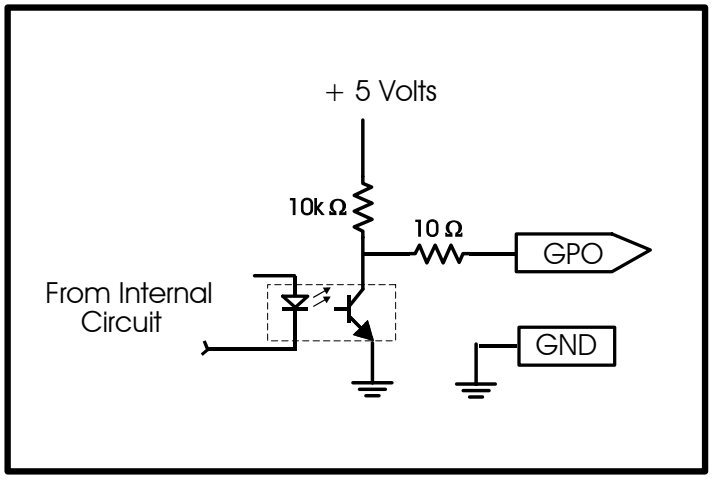


Figure 2-7: GPO Output Circuitry

The GPI to logo allocation is programmable using the *GPI Setup* menu item in the *PRESET* menu. (See section 5.8.1).

2.10. CONNECTING THE OPTIONAL TEMPERATURE PROBE

The QMG module 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 **Serial Port 3**. The temperature probe ships with an adapter cable to convert its RJ-45 connector to a standard 9 pin D connector. Another RJ-45 to DB9 adapter is connected to the existing RJ-45 to DB9 adapter to create a link between the QMG and the remote control panel. The RJ-45 plugs into the temperature probe. If required, create a straight-through 9 pin male to female cable of the desired length according to the diagram in Table 2-14 to connect the probe to the unit. The serial port on the QMG must be set for RS-232 operation as described in section 2.1.4.

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 of the temperature to 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 QMG. See section 5.6.9 for information on setting the serial port protocol.

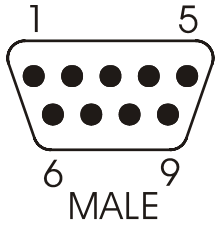
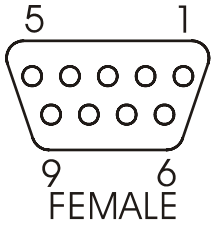
QMG End				Temperature Probe End		
	9 pin D Male	Pin	Belden 9729	9 pin D Female	Pin	
		1			1	
	TxD	2	-------1a------	RxD	2	
	RxD	3	-------1b------	TxD	3	
		4		Rx Gnd	4	
	Gnd	5	---drain 1----	Gnd		
		6			6	
		7			7	
	Power +V	8	-------2a------	Power +V	8	
		9			9	
	Frame Gnd	Shield	---drain 2----	Frame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

Table 2-14: QMG to Temperature Probe – RS232

2.11. CONFIGURING THE QMG USING THE SERIAL PORT

In order to configure the QMG module using the serial port the following equipment will be required to attach the serial console:

- PC with available communications port. The communication speed is 115200 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 (such as HyperTerminal)

2.11.1. Terminal Program Setup

1. Using the serial cable, connect the **UPGRADE RS232** port on the back of the QMG to the RS-232 communications port on the back of your PC.

2. Start the terminal program.

3. Configure the port settings of the terminal program as follows:

Baud	**115200**
Parity	**None**
Data bits	**8**
Stop bits	**2**
Flow Control	**None**

4. Press the <Enter> key twice in the terminal program.

The following menu will appear:

```
 ------------------------------------------------
  |                   Main Menu                  |
  |                ( v2.18 b842)                 |
   ------------------------------------------------
  (1) Network Configuration
  (2) Hardware Debug
```

5. To open a menu item, type the corresponding number from the list, and then press <ENTER>. Select option (**1**) *Network Configuration* from the Main Menu to set the IP parameters for the QMG.

```
 ------------------------------------------------
  |              Network Configuration           |
  |                  ( v2.18 b842)               |
   ------------------------------------------------
   ------------------------------------------------
  ENET: 1  MAC: 00:02:c5:00:1d:7f
   ip address:        192.168.192.153
  netmask address:   255.255.255.0
  gateway:           0.0.0.0
  broadcast address: 0.0.0.0
  DHCP enabled: True
   ------------------------------------------------
  (1) Set IP Address
  (2) Set Netmask
  (3) Set Gateway
  (4) Set Broadcast Address
  (5) Use DHCP
  (6) save any changes and reboot system
  (S) Save and Exit
  (X) Exit
```

6. In the Network Configuration menu item, type the corresponding number from the list, and then press <ENTER>. **Remember to SAVE (S or 6) when a change has been made before exiting the menu**. In the above menu, selecting options (1) through (4) allows the user to set the networking parameters of the QMG.

7. Once changes are completed and saved, the QMG should be power cycled for the changes to take effect.

CHAPTER 3
TABLE OF CONTENTS

Figures

This page left intentionally blank

3. HOW TO OPERATE THE QMG USING VISTALINK® PRO

3.1. WHAT IS *VISTA*LINK®?

*Vista*LINK® is Evertz's remote monitoring and configuration platform which operates over an Ethernet network using Simple Network Management Protocol (SNMP). SNMP is a standard computer network protocol that enables different devices sharing the same network to communicate with each other. *Vista*LINK® provides centralized alarm management, which monitors, reports, and logs all incoming alarm events and dispatches alerts to all the VLPro Clients connected to the server. Card configuration through *Vista*LINK® PRO can be performed on an individual or multi-card basis using simple copy and paste routines, which reduces the time to configure each module separately. Finally, *Vista*LINK® enables the user to configure devices in the network from a central station and receive feedback that the configuration has been carried out.

An SNMP manager, also known as a Network Management System (NMS), is a computer running special software that communicates with the devices in the network. Evertz VistaLINK® Pro Manager graphical user interface (GUI), third party or custom manager software may be used to monitor and control Evertz *Vista*LINK® enabled products.

For more information on connecting and configuring the *Vista*LINK® network, refer to sections 3.2 to 3.9.

3.2. VIDEO TAB

The *Video* tab enables the user to set the parameters for the video connections.

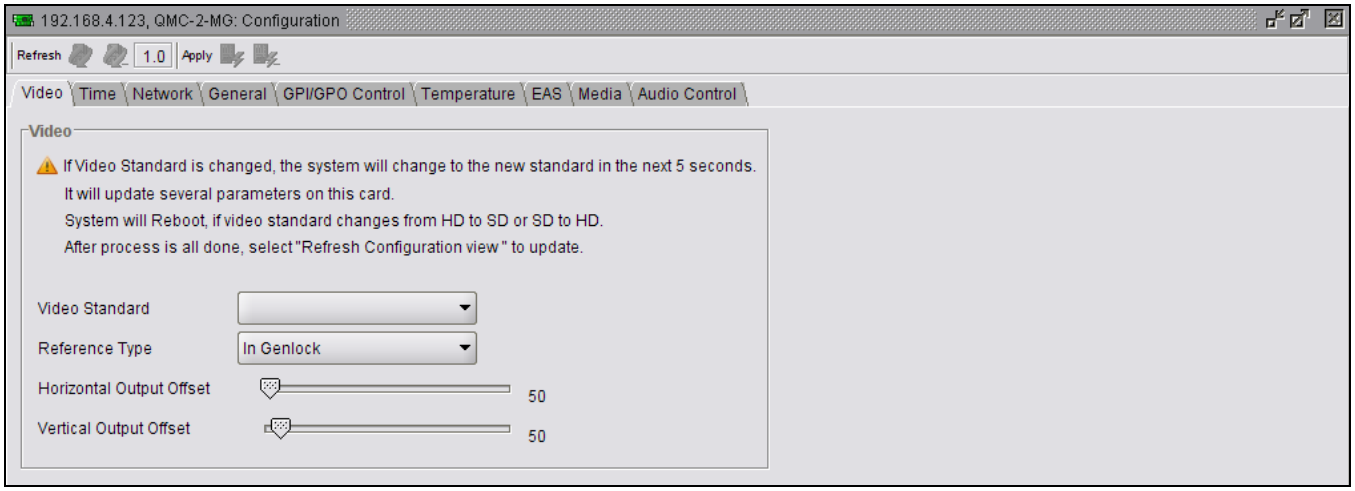


Figure 3-1: Video Window

3.2.1. Video Standard

This option is used to set the video standard in use.

525i/59.94: Select *525i/59.94* for operation with 4 x 3 aspect ratio 525i/59.94 video conforming to SMPTE 125M. (SD Units)

16x9 525i: Select 16x9 525i for operation with 16 x 9 aspect ratio 525i video conforming to SMPTE 125M. (SD Units)

625i/50: Select *625i/50* for operation with 4 x 3 aspect ratio 625i/50 video conforming to EBU TECH 3267-E. (SD Units)

720p/50: Select *720p/50* for operation with 720p/50 video conforming to SMPTE 296M. (HD units only)

720p/59.94: Select *720p/59.94* for operation with 720p/59.94 video conforming to SMPTE 296M. (HD units only)

1080i/50: Select *1080i/50* for operation with 1080i/50 video conforming to SMPTE 274M. (HD units only)

1080i/59.94: Select *1080i/59.94* for operation with 1080i/59.94 video conforming to SMPTE 274M. (HD units only)

Note: If the user wants to set the video standard to 525i or 625i on an HD unit, load the latest SD QMG firmware onto the HD unit.

3.2.2. Reference Type

This option allows the user to set the reference type (*In Video* and *In Genlock*). The QMG can be referenced by the input video or by the source applied to the **REF IN** BNC.

3.2.3. Horizontal Output Offset

This option allows the user 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. In order to advance the horizontal timing of the output video with respect to the genlock video, set the control to the maximum number of samples per line for the output video standard minus the number of samples that you wish to advance the output video. (i.e. for 1080i/59.94 output video the total number of samples per line is 2200, so to advance the output video 5 samples set the value to 2195.)

3.2.4. Vertical Output Offset

This option allows the user 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-line increments. In order to advance the vertical timing of the output video with respect to the genlock video, set the control to the maximum number of samples per line for the output video standard minus the number of samples that you wish to advance the output video. (i.e. for 1080i/59.94 output video the total number of samples per line is 2200, so to advance the output video 5 samples set the value to 2195.)

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.

3.3. TIME TAB

The *Time* tab enables the user to set the time settings for the QMG.

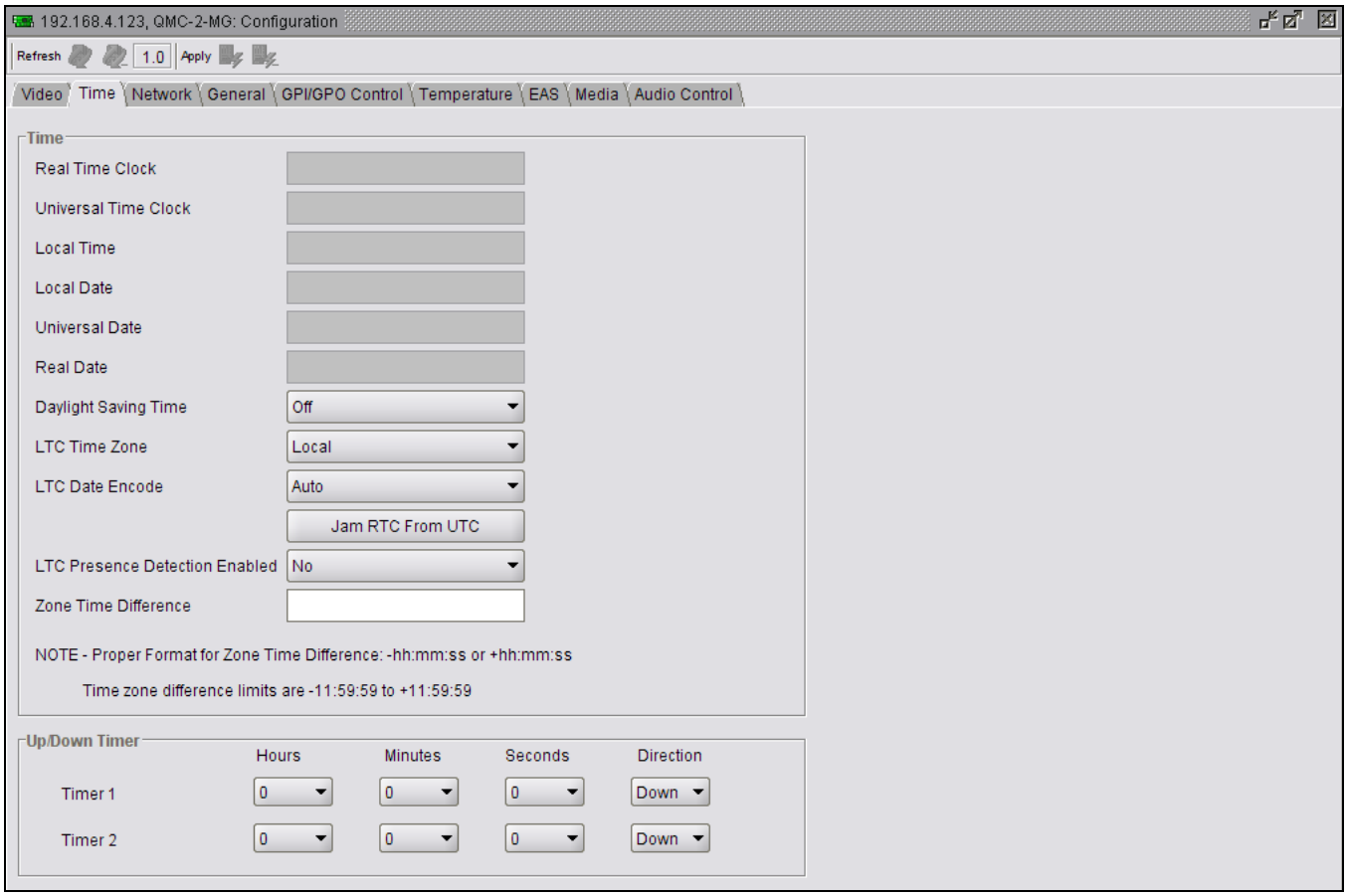


Figure 3-2: Time Window

3.3.1. Displaying Real Time Clock

The QMG contains 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 QMG is powered up with a valid video input, a separate clock (known as the UTC) is initialized from the RTC and maintains Universal Coordinated time (UTC) accurately from the video input so that it will not drift. The QMG automatically updates 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 Coordinated Time (UTC) but can also be adjusted for time zone offsets from UTC and for daylight saving time, and displayed as local time (Local).

3.3.2. Displaying the Universal Time Clock Time

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

3.3.3. Displaying the Local Time

This option 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.

3.3.4. Displaying the Local Date

This option is used to display the local date which is the UTC date adjusted by the time zone in yy:mm:dd format.

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

3.3.5. Displaying the Universal Date

This option is used to display the UTC date in yy:mm:dd format.

3.3.6. Displaying the Real Time Date

This option is used to display and set the real time date in the keyer.

When there is a valid LTC input to the keyer with the date encoded in the user bits, the LTC date will overwrite the Real Time date that has been entered.

3.3.7. Enabling Daylight Saving Time Compensation

This option 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 QMG 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 QMG in sync with the correct local time, connect a source of linear time code that contains local time to the LTC IN connector.

3.3.8. Selecting Whether the Time Code Input is UTC or Local Time

This option 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 *Local*, when the incoming LTC is local time.

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

3.3.9. Setting the LTC Date Format

This option is used to select the format of the date encoded in the user bits of the LTC. Use the drop down menu to choose from the Date Formats.

The **LTC DATA ENCODE** drop down menu lists the following options:

- AUTO
- SKOTEL
- SMPTE MJD
- SMPTE BCD
- Production
- Legacy
- None

For Skotel time code generators, choose *Skotel.* For all other time code generators choose *Auto.*

3.3.10. LTC Presence

The LTC Presence displays whether an LTC connection to the QMG has been made.

Note: LTC Presence is not included in *Vista*LINK®

3.3.11. Synchronizing the Real Time Clock to the UTC Time

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 option allows the user to synchronize the RTC to the UTC Clock time immediately.

Note: In order to enable this option, the *Jam RTC* from the *UTC* option must be selected.

3.3.12. Setting the Time Zone Offset

This option 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 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 -)

3.3.13. Up Down Timer

3.3.13.1. Setting the Up Down Timer

This option selects which of the 2 timers the rest of the sub-menu items will affect.

HOURS: Sets the hours for the timer. It can be set to values from 0 to 23 hours.

MINUTES: Sets the minutes for the timer. It can be set to values from 0 to 59 minutes.

SECONDS: This menu item sets the seconds for the timer. It can be set to values from 0 to 59 seconds.

DIRECTION: Sets the direction for the Timer.

3.4. NETWORK TAB

The *Network* tab enables the user to view the network settings.

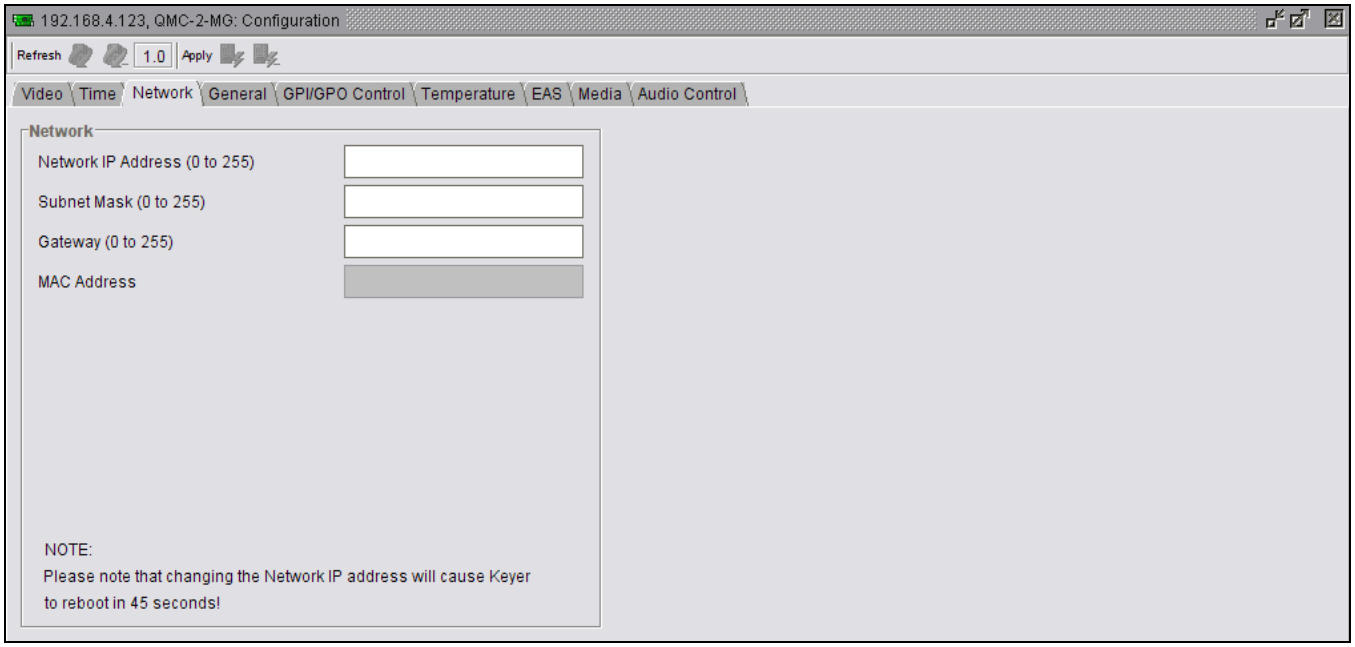


Figure 3-3: Network Window

3.4.1. IP Address

This option displays the unique IP address of the QMG within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network.

3.4.2. Sub Net Mask

This option displays the “subnet mask” of the network. Specifically, this parameter outlines all the IP addresses that can communicate with the QMG.

3.4.3. Gateway

This option identifies the IP address of the “gateway” (commonly referred to as the “firewall”).

3.4.4. MAC Address

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

3.5. GENERAL TAB

The *General* tab enables the user to configure the ports and firmware for the QMG.

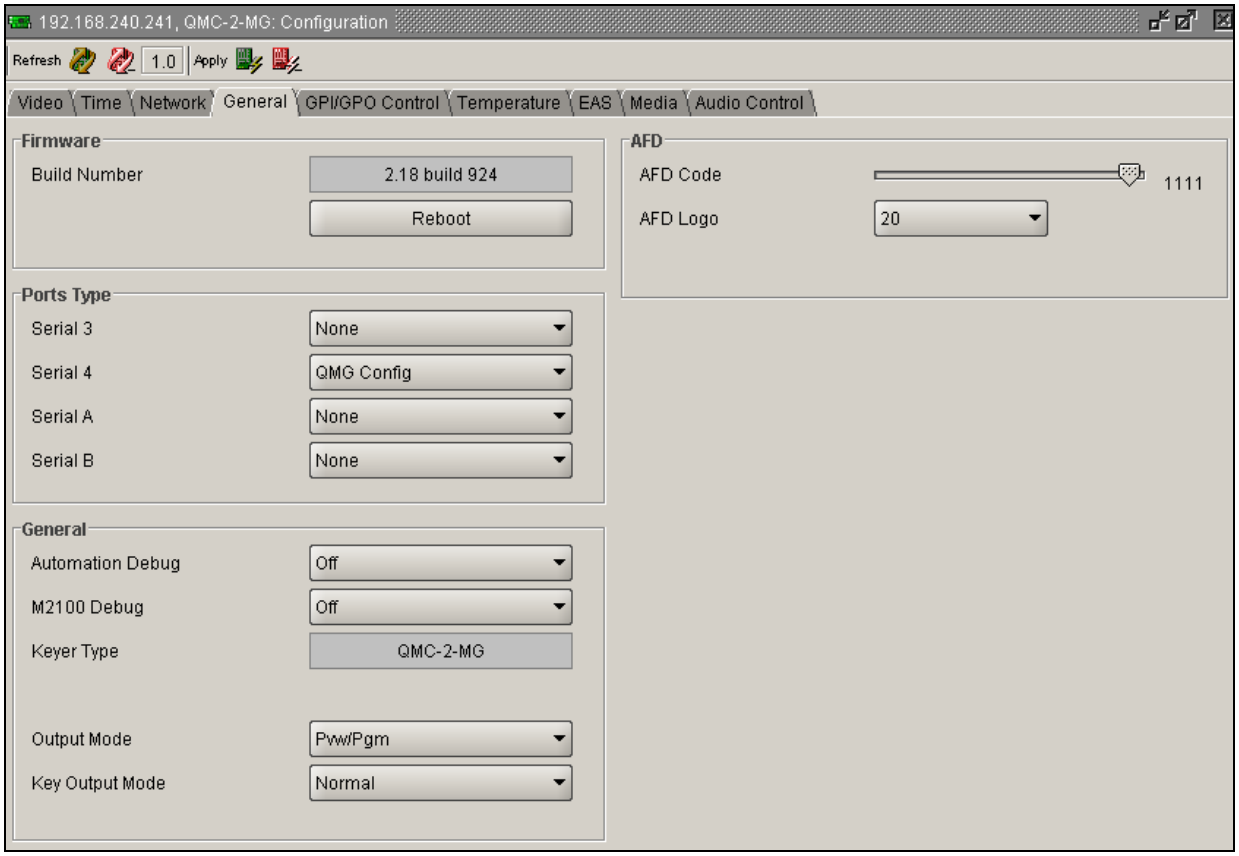


Figure 3-4: General Window

3.5.1. Firmware Version

This parameter informs the user of the build number.

Reboot: This option allows the user to reboot the unit. Once selected, a message will appear in order to confirm whether the user would like to proceed with the reboot.

Note: Firmware upgrades can be performed most easily through Overture Media Manager software provided in the Keyer Tool Kit CD.

3.5.2. AFD

AFD (Active Format Description) is intended to guide video equipment regarding the display of aspect ratio. A logo can be used to mask out areas that are not relevant to a particular aspect ratio of a program shown within an HD format. The AFD feature is VANC based, and therefore, only available when running HD video standard.

AFD CODE: This parameter allows the user to detect a particular AFD code in the HD VANC. The codes are based on SMPTE 2016. Please note that the codes are represented in binary.

Note: To increment the *AFD Code* slider by one, click right of the slider and to decrement, click left of slider. The slider can be selected and dragged across if gross movement is desired.

AFD LOGO: Select the drop down menu to choose the desired logo, under *AFD Logo* tab.

3.5.3. Ports Type

SERIAL 3 and 4 and SERIAL A and B are programmable and can be used for a variety of functions. There are four identical menu items that are used to configure **SERIAL 3, 4, A, and B** ports. For simplicity only **SERIAL 3** items will be shown in the manual.

SERIAL 3: This menu item allows you to set the communications protocol that will be used on serial port 3.

Select **None** to disable the use of COM serial port 3.

Select **EAS CG** when you have the EAS option (+EAS) enabled and have an EAS decoder connected to the port. See section 7.1 for more information about connecting the EAS decoder. See sections 7.2 and 5.9 for information about configuring the EAS functions of the QMG.

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.

Select **QMG Config** to communicate with the QMC_Setup program.

Please note that the only way to configure DVE moves is by using the QMC_Setup program. Currently, it is not possible to configure DVE moves using VLPro, RCP, and Overture.

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

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

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

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

Select **Remote Panel** when you connect a desktop or rack mount remote panel to a QMG device that has a front panel installed. Note: Front Panel will always show up on Port B. This cannot be changed by the user.

3.5.4. General

3.5.4.1. Automation Debug Functions

Two automation debug functions are provided in the *GENERAL* window. One is for the Evertz automation protocol and is called *Automation Debug*. The other is for the M2100 automation protocol and is called *M2100 Auto Debug*. Both work in essentially the same way. When you turn on one of the automation debug functions, the data packets being received from the automation system are output to the Upgrade RS-232 serial port. To view the data, use a terminal program with the following settings: baud rate: 57600, data bits: 8, parity: none, stop bits: 2, flow control: none.

These functions are used to view the commands that are being sent by the automation system. If you are having problems with a unit that is being controlled from automation, Evertz service personnel may ask you to provide a capture of the data being output on the serial port when the debug function is turned on.

Keyer Type: Displays the current product model number.

3.5.4.2. Output Mode

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 5.6.2 for information on selecting the video timing reference signal.

3.5.4.3. Key Output Mode

This menu item allows you to choose the type key that is used when the QMG 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. GPI/GPO CONTROL TAB

The *GPI/GPO Control* enables the user to configure the General Purpose Inputs and Outputs.

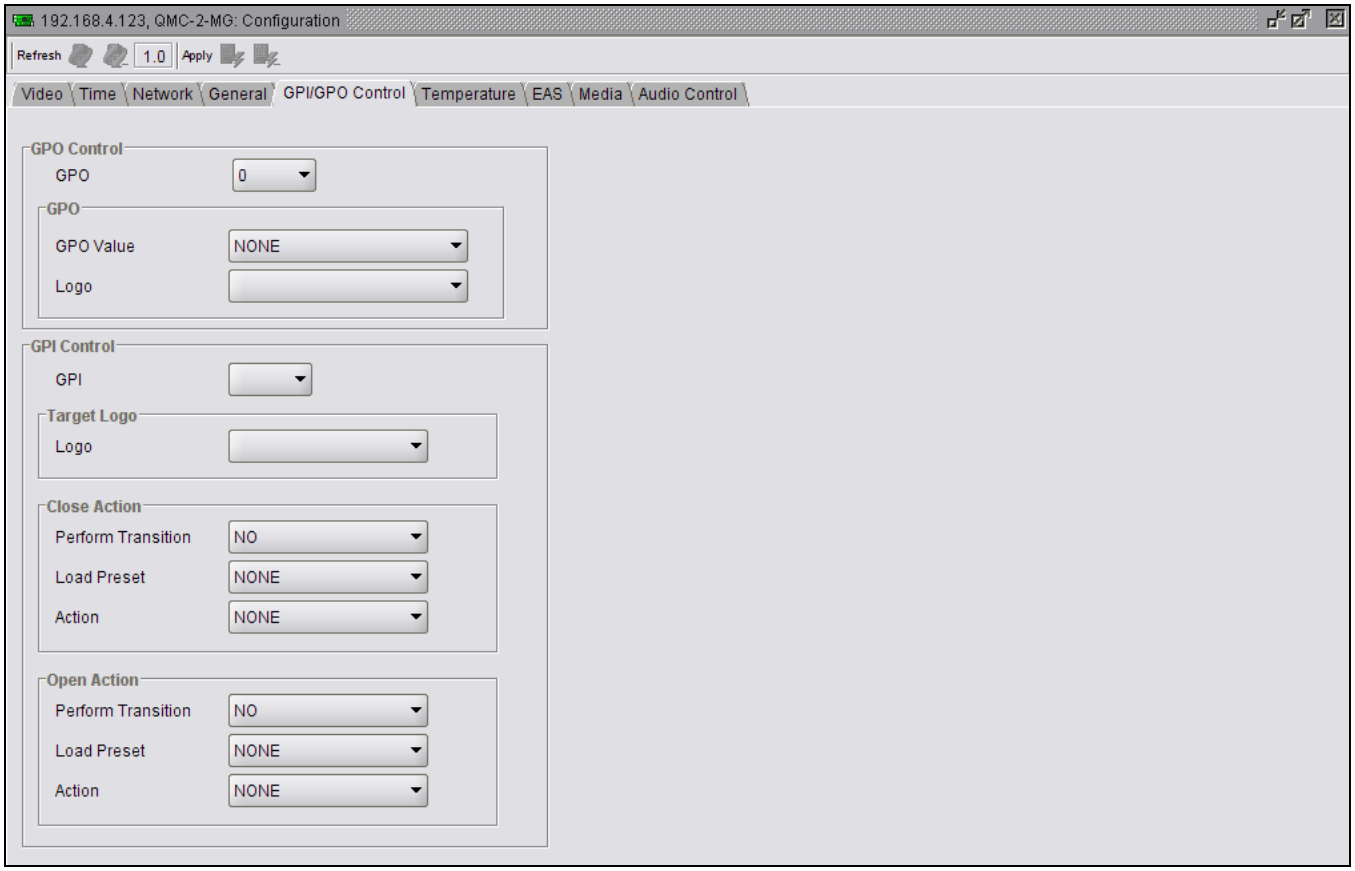


Figure 3-5: GPI/GPO Control Window

3.6.1. Configuring the GPO Outputs

The QMG is fitted with four contact closure general-purpose outputs (GPOs) that can be used as tallies for various functions. There are individual menu items to configure each of the GPOs.

GPO VALUE: This drop down menu is used to select the function of the GPO that is selected. The output will be low when it is active.

None: Enables the user to have the GPO report nothing.

General Logo Status: Enables the user to monitor when logos come on air. Therefore, when any logo comes on air, the GPO will be triggered or the GPO will report the status of the logo.

Bypass-Logo Status: Enables the user to trigger the GPO or report when the unit is running in bypass mode.

A Specific Logo: Enables the user to associate a specific logo file with the logo status action. Therefore, when the specified logo comes on air, the GPO is triggered or the GPO will report that the specified logo is on air.

Reference Signal Present: Enables the user to trigger the GPO when there is a valid video reference present.

PGM Input Present: Enables the user to trigger the GPO when there is a valid program video input present.

PST Input Present: Enables the user to trigger the GPO when there is a valid preset video input present.

DVE Background Present: Enables the user to trigger the GPO when there is a valid DVE background video present.

LOGO: This menu becomes accessible when the user selects the "Specific Logo" option from the *GPO Value* menu. The *Logo* menu will provide a list of logos that are currently on the device. Here, the user can associate a specific logo file with the logo status action.

3.6.2. Configuring the GPI Inputs

The QMG is fitted with 8 general purpose inputs (GPIs) that can be configured to trigger 2 different actions - *On Closure* and *On Open*. For example, the *On Closure* event can be used to load a preset and perform a transition to the Program Bus. The *On Open* event for the same GPI can be used to load a different user preset and perform a transition to the Program Bus. For each event you can configure a preset to load, transition to perform and logo to display.

GPI can also be configured using GPI script files, which are text-based files that can be programmed and sent to your unit by Overture™. The syntax is important as the script represents programming code that will be executed when the allocated GPI trigger event occurs. There are 8 GPI inputs. Each input has 2 events: close and open. You can program scripts for each of these 16 events. If a script file is present on the flash file system then the unit will process the script when the event is triggered. If the script file is not present when a GPI event is triggered, then the internal GPI menu settings will be used.

The GPI script files are text files therefore they can be easily edited in notepad.

GPI CONTROL: This option is used to select one of the GPI inputs that will be configured using the other menu items in the *GPI Control* section.

The Open Action section configures the GPI action that occurs when the GPI opens. The Close Action section configures the action when the GPI closes.

3.6.2.1. Target Logo

The *Logo* option is used to select a logo to be acted on if the open or close action is set to *CUE, IN* or *OUT*. Selecting "None" will disable any logo actions.

3.6.2.2. Configuring the Perform Transition Function

The *Perform Transition* option is used to select whether a transition will occur when the GPI is closed to ground. The following items are available in the drop down menu:

NO: If you do **not** want to perform a transition when the GPI is closed, select the *NO* item.

YES: Select *YES* to perform a transition when the GPI is closed.

3.6.2.3. Configuring the Load Preset Function

The *Load Preset* option is used to select the preset that will be loaded when the GPI input is closed to ground. The following items are available in the drop down menu:

NONE: If you do **not** want to load a user preset when the GPI is closed, select the *NONE* item. If *NONE* is selected then the existing settings will be used.

1 to 10: Select *1* to *10* to load a specific user preset when the GPI is closed.

3.6.2.4. Configuring the Action

The **Action** option is used to select the action that will occur when the GPI input is closed to ground. The following items are available in the drop down menu:

NONE: If you do not wish to perform any action, select *NONE*.

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

IN: Select *IN* to load the logo selected by the *CLogo* menu item into memory and fade it in.

OUT: Select *OUT* to fade out the logo selected by the *CLogo* menu item.

TOGGLE: Select *TOGGLE* when the GPI is closed.

DUCK IN: Select *DUCK IN* to begin a ‘Duck Audio Insert’.

DUCK OUT: Select *DUCK OUT* to end a ‘Duck Audio Insert’.

DUCK: Select *DUCK* to toggle the state of the 'Duck Audio Insert'. If a 'Duck Audio Insert' is in effect it will be stopped or if a 'Duck Audio Insert' is not in effect it will be started. This function is useful if you want to use a momentary contact closure as opposed to a maintained contact closure to trigger a voice-over, but the disadvantage is that the current state of the voice-over is not guaranteed.

ALL OUT: Select *ALL OUT* to fade out all logos.

TIMER1 or TIMER2: Select *TIMER1* or *TIMER2* to initiate a count up or count down function for a time logo.

3.7. TEMPERATURE TAB

The QMG module has the ability to insert a logo that displays the current local temperature. The *Temperature* setup window is used to configure parameters relating to these types of logos.

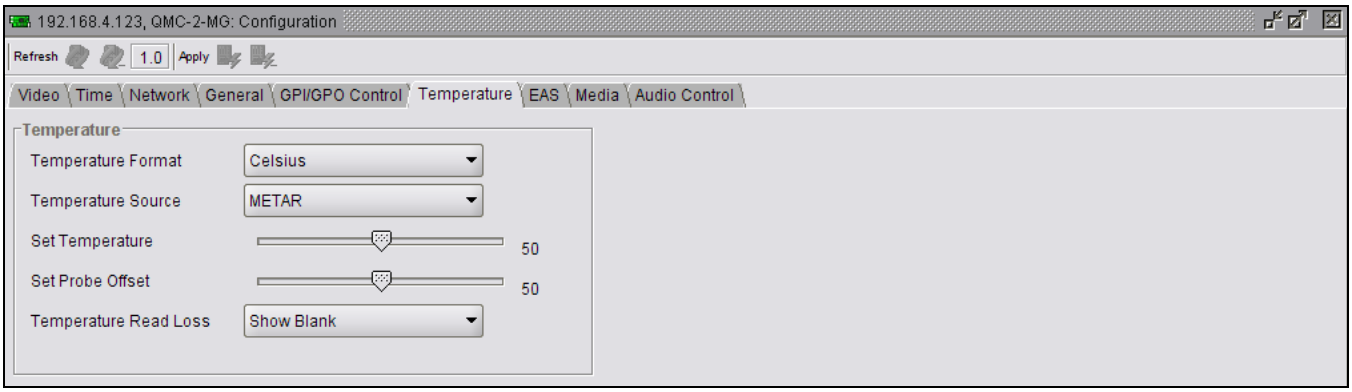


Figure 3-6: Temperature Window

3.7.1. Setting the Temperature Format

This option is used to set the format of the temperature as set by the *Set Temperature* menu item.

Fahrenheit: Select *Fahrenheit* if the temperature entered is in degrees Fahrenheit.

Celsius: Select *Celsius* if the temperature entered is in degrees Celsius.

Note: This option is only used when the *Temperature Source* option is set to "Manual." When you create a temperature logo, you select the format as well. If for example you have created a temperature logo that is formatted for Celsius and you manually set the temperature in degrees Fahrenheit, the QMG will automatically convert the value to degrees Celsius so that the correct value is displayed in the logo.

3.7.2. Setting the Temperature Source

This option is used to select the source of the temperature that will be displayed in temperature type logos.

METAR: Select *METAR* to take the temperature from METAR data acquired via the Internet.

Probe: Select *Probe* to take the temperature from the optional temperature probe. See section 2.10 for more information on using the temperature probe.

Txt File: 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**.

NMEA0813: Select *NMEA0183* to have an NMEA 0183 protocol based device provide the temperature.

Manual: Select *Manual* to manually set the temperature via the *Set Temperature* menu item.

3.7.3. Setting the Temperature

This option is used to set the temperature to be displayed in temperature type logos when the "Temperature Source" is set to *Manual.* The slider provides a range of -40 to 140.

3.7.4. Setting the Probe Offset

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.

3.7.5. Temperature Read Loss

This option is used to set the behaviour when the temperature source is lost.

Show Blank: Selecting *Show Blank* will display nothing.

Last Valid: Selecting *Last Valid* will display the last valid temperature.

3.8. EAS TAB

The *EAS* tab enables the user to configure the EAS parameters.

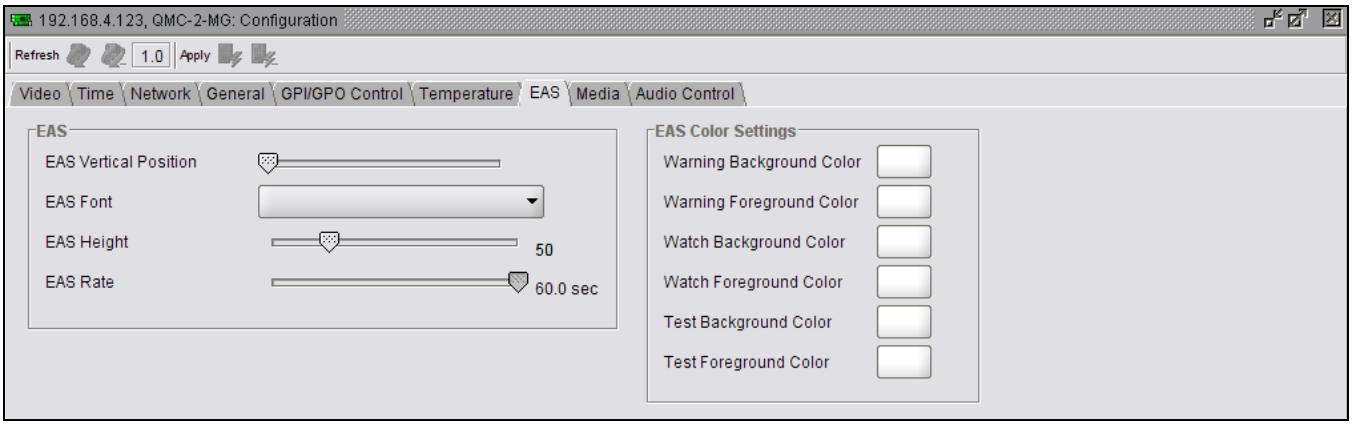


Figure 3-7: EAS Window

3.8.1. EAS

3.8.1.1. Serial

When the EAS option (+E) is added to the QMG, it has the ability to key Emergency Alert messages received from a Sage, TFT, or Trilithic EAS Decoder over a serial connection. The Emergency Alert Messages are inserted over program video and 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 QMG. See chapter 7 for more information on connecting and configuring the EAS decoder.

3.8.1.2. TCP/IP

Alternately, the QMG can be configured to receive EAS messages and audio over TCP. The QMG firmware implements the DVS/168 protocol, referred to informally as EAS over TCP/IP. FTP is used to send text files to insert as crawls and WAV files to play as audio clips. Refer to HTML section 5.13 to configure the playback of the EAS audio.

EAS over TCP/IP (EAS over Ethernet) is supported with Trilithic's EASy Plus box and DASDEC. For further details, refer to the step-by-step instructions in the Trilithic “EASyPlus” Setup Tech Note.

3.8.2. EAS Settings

3.8.2.1. Setting the EAS Vertical Position

The *EAS Vertical Position* option 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.

3.8.2.2. Setting the EAS Font

The **EAS Font** option is used to set the font that will be used for the EAS scrolling text message.

3.8.2.3. Setting the EAS Height

The **EAS Height** option 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.

3.8.2.4. Setting the EAS Rate

The **EAS Rate** option 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.

3.8.3. EAS Colour Settings

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.

In order to change colour settings for the background and foreground parameters, select the colour palette on the right of the EAS screen and the “Choose a Colour” dialog box will appear. In this dialog box the user can select a colour using Swatches, HSB, and RGB formats.

3.9. MEDIA TAB

The *MEDIA* setup window controls all the parameters for individual logos and media. It also controls the Program and Preview bus for the QMG module.

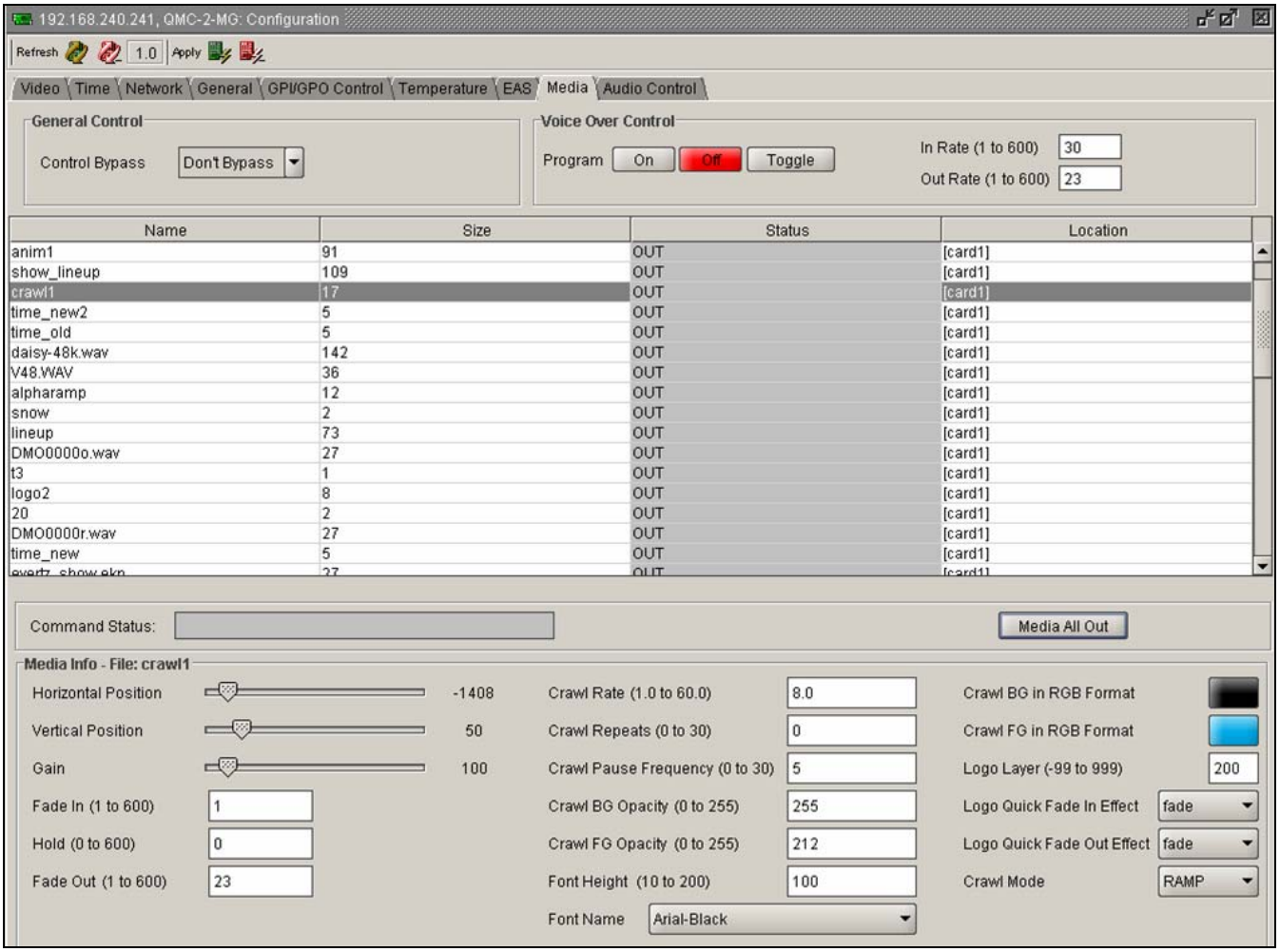


Figure 3-8: Media Window

3.9.1. General Control

3.9.1.1. Setting the Control Bypass

The **Control Bypass** option controls the bypass relay. When the *Don't Bypass* option is selected, the unit will run in normal operation mode. When the *Bypass* option is selected, the unit will run in bypass mode.

3.9.2. Voice Over Control

The Voice Over control allows the user to adjust the Voice Over options.

Figure 3-9: Voice Over Control Options

On: Selecting the *On* tab (on the Preview or Program bus) will enable the Voice Over control in preview and program outputs.

Off: Selecting the *Off* tab will disable the Voice Over control.

Toggle: Selecting the *Toggle* tab will enable the user to toggle between Voice Over controls.

Voice Over In Rate: The rate at which Voice Over fades in with program audio and is measured in fields.

Voice Over Out Rate: The rate at which Voice Over fades out with program audio and is measured in fields.

3.9.3. Standard Logo Configuration Settings

A standard logo refers to an image, an animation, or a *CG*. A *CG* refers to paginated text, i.e. TV program listing. In order to configure a standard logo, click on a logo name in the media list (as illustrated in Figure 3-10) and the media control menu will appear at the bottom of the view.

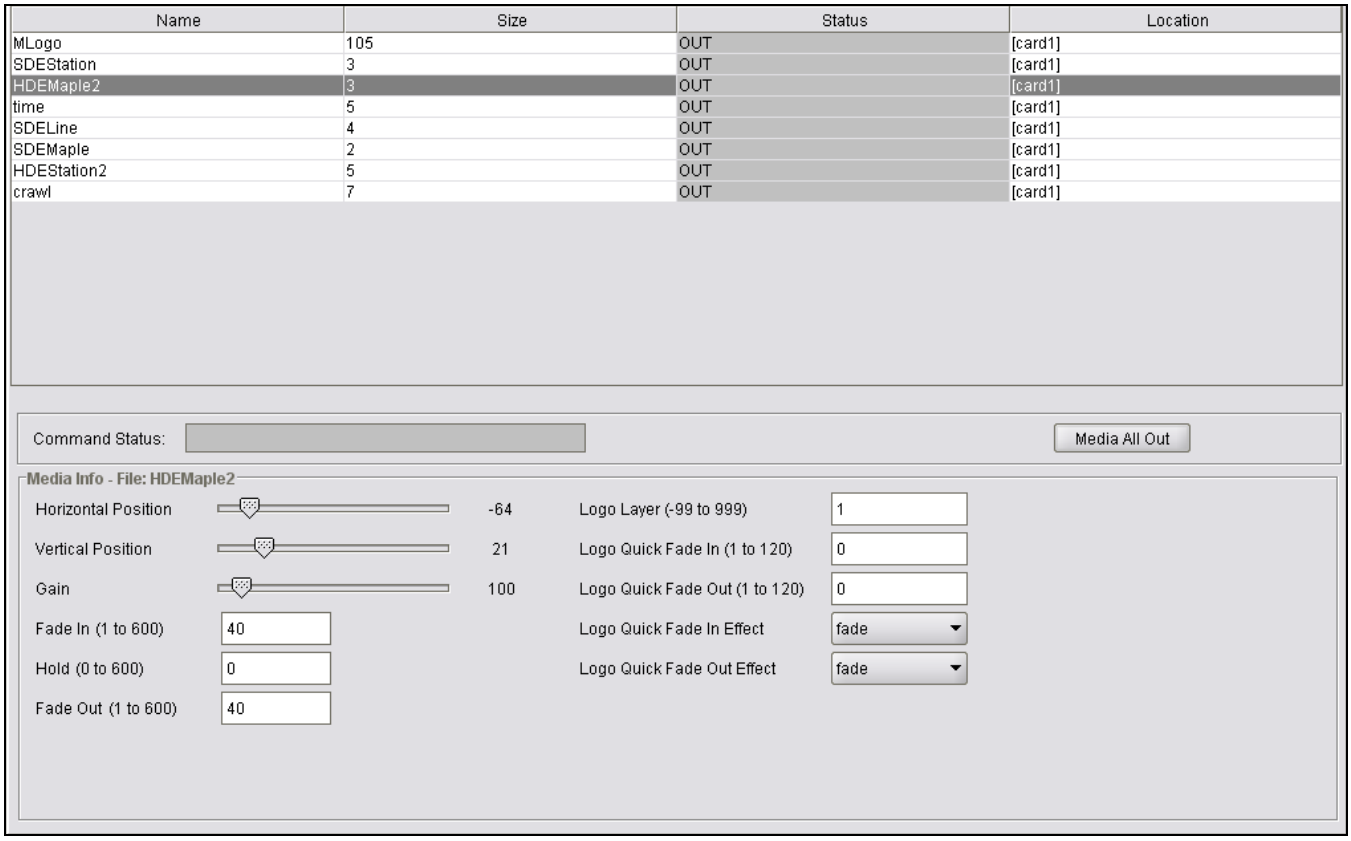


Figure 3-10: Standard Logo Configuration Settings

3.9.3.1. Setting the Logo Horizontal Position

This option 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.

3.9.3.2. Setting the Logo Vertical Position

This option 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.

3.9.3.3. Setting the Logo Transparency (Gain)

This option is used to adjust the opacity (the inverse of transparency) of the logo as a percentage of the original opacity when the logo was created. When the *Gain* value 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.

3.9.3.4. Setting the Logo Fade In Duration

This option is used to set the fade in rate for the current logo. The range of values is 1 to 600 frames. The *Fade In* option only applies to static and crawl logos.

3.9.3.5. Setting the Logo Display Time (Hold)

This option 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* option only applies to static and crawl logos.

3.9.3.6. Setting the Logo Fade Out Duration

This option is used to set the fade out rate for the current logo. The range of values is 1 to 600 frames. The *Fade* option only applies to static and crawl logos.

3.9.3.7. Logo Layer

This field allows the user to set the layer level of the selected logo.

3.9.3.8. Logo Quick Fade In/Fade Out

These fields allow the user to set the logo quick fade in/fade out rate ranging from 1 to 120.

3.9.3.9. Logo Quick Fade In/Fade Out Effect

These drop down menus enable the user to choose a fade in/fade out effect for the selected logo. Both menus provide the following fade in/fade out effects:

Fade	**Wipe t -> b (top to bottom)**	**Push r -> l**
Wipe l -> r (left to right)	**Wipe b -> t (bottom to top)**	**Push t -> b**
Wipe r -> l (right to left)	**Push l -> r**	**Push b -> t**

3.9.4. Crawl Logo Configuration Settings

When the Crawl (+CLH) option is added to the QMG, 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 QMG. See the Overture™ manual for more information on preparing crawl logos.

The *Media tab* 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 3.9.4.1 to 3.9.4.12 provide detailed information about each of the settings.

Click on a logo in the media list and the media control menu will appear at the bottom of the view.

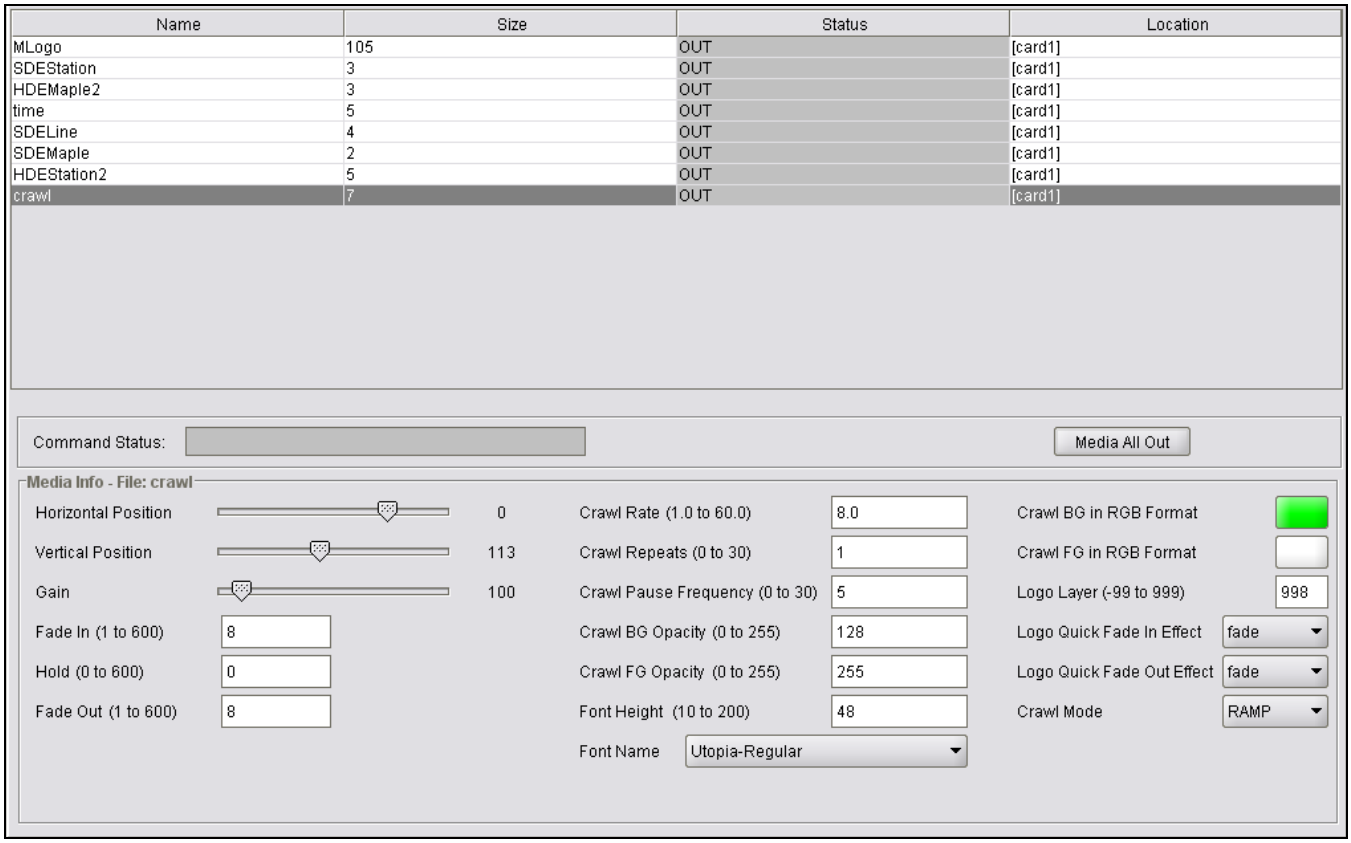


Figure 3-11: Crawl Logo Configuration Settings

3.9.4.1. Setting the Crawl Logo Horizontal Position

This option 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.

3.9.4.2. Setting the Crawl Logo Vertical Position

This option 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.

3.9.4.3. Setting the Crawl Logo Transparency (Gain)

This option is used to adjust the opacity (the inverse of transparency) of the logo as a percentage of the original opacity when the logo was created. When the *Gain* value 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.

3.9.4.4. Setting the Crawl Logo Fade In Duration

This option is used to set the fade in rate for the current logo. The range of values is 1 to 600 frames. The *Fade In* option only applies to static and crawl logos.

3.9.4.5. Setting the Crawl Logo Display Time (Hold)

This option 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* option only applies to static and crawl logos.

3.9.4.6. Setting the Crawl Logo Fade Out Duration

This option is used to set the fade out rate for the current logo. The range of values is 1 to 600 frames. The *Fade* option only applies to static and crawl logos.

3.9.4.7. Setting the Crawl Rate

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

For example, a setting of 8 means it will take a letter 8 seconds to cross the full screen.

3.9.4.8. Setting the Crawl Repeats Count

This option is used to set the number of times that the text will scroll across the screen.

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

3.9.4.9. Setting the Crawl Pause Frequency

This option 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.

3.9.4.10. Setting the Crawl BG Opacity

There are two options used to set the text (foreground) and background opacity (inverse of transparency) of the crawl logo. For the sake of simplicity, only the option for setting the background opacity (*Crawl BG Opacity*) will be discussed in the manual. The other menu item is used in the same way.

The *Crawl BG opacity* menu item is used to set the background opacity (the inverse of transparency) for the crawl logo.

The opacity value ranges from 0 to 255. Setting the opacity to a value of 255 makes the background completely opaque. Setting the opacity to a value 0 makes the background completely transparent.

3.9.4.11. Setting the Font Height

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

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

3.9.4.12. Setting the Font Name

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

3.9.5. 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 described in the manual. The *Crawl FG in RGB Format* is set the same way.

The *Crawl BG in RGB Format* option is used to set the background colour for the crawl logo.

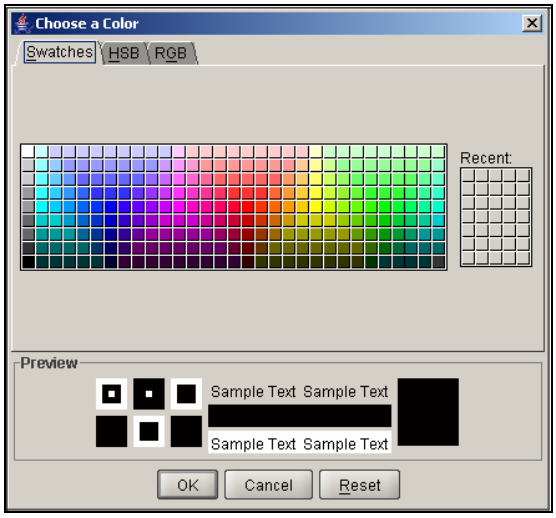


Figure 3-12: "Choose a Colour" Dialog Box

In order to change the colour settings for crawls, select the colour palette on the bottom right of the screen and the "Choose a Colour" dialog box will appear as illustrated in Figure 3-12. In this dialog box the user can select a colour using Swatches, HSB, and RGB formats.

3.9.5.1. Setting the Logo Layer

This field allows the user to set the layer level of the selected crawl logo ranging from -99 to 999.

3.9.5.2. Logo Quick In/Fade Out Effect

These drop down menus enable the user to choose a fade in/fade out effect for the selected crawl logo. Both menus provide the following fade in/fade out effects:

Fade	**Wipe t -> b (top to bottom)**	**Push r -> l**
Wipe l -> r (left to right)	**Wipe b -> t (bottom to top)**	**Push t -> b**
Wipe r -> l (right to left)	**Push l -> r**	**Push b -> t**

3.9.6. Selecting a Logo or Media Item and Issuing a Fade In/Cue/Fade Out

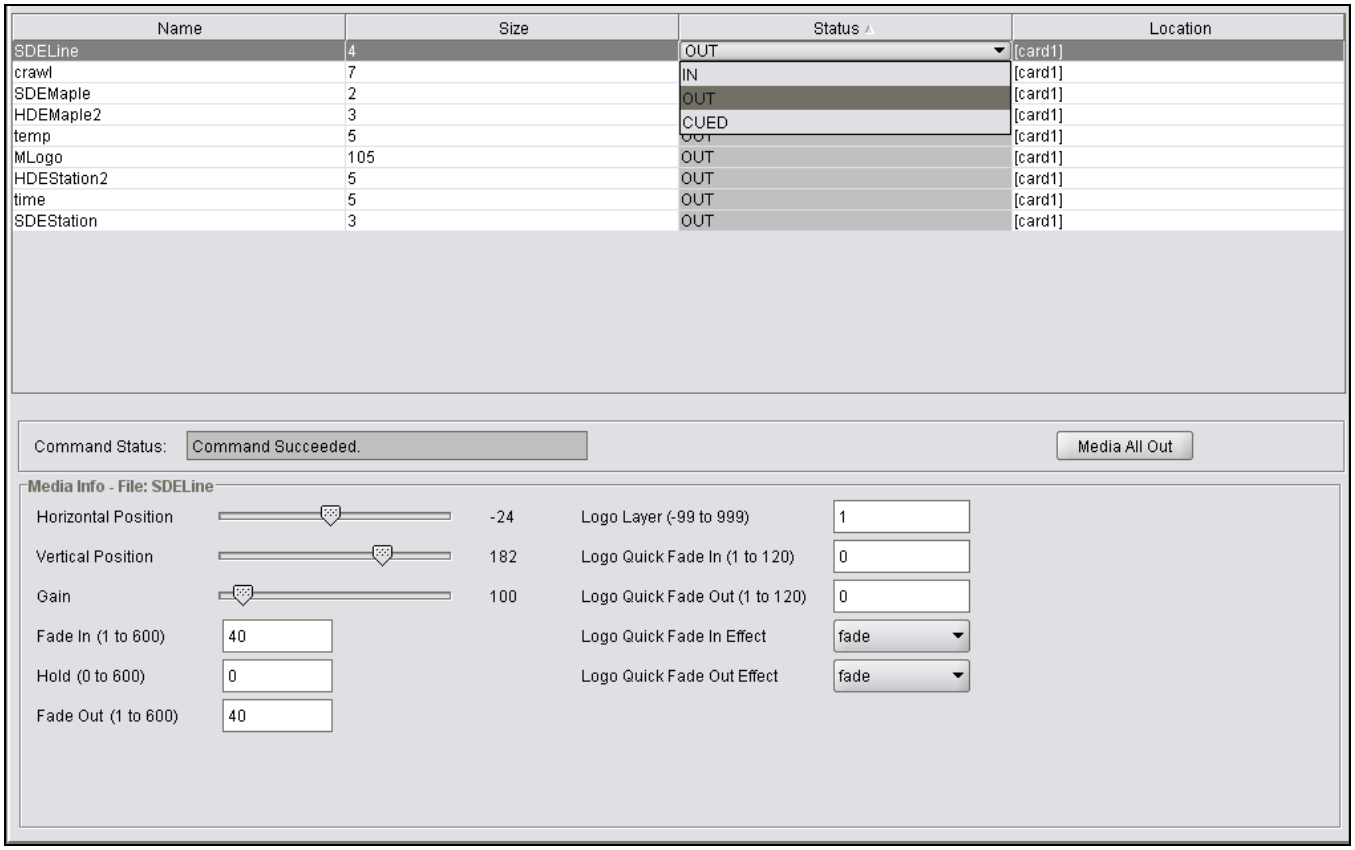


Figure 3-13: Issuing a Fade In/Cue/Fade Out

Upon selecting a logo or media item under the “Name” column, the user can click on the “Status” column, adjacent to the desired logo, and a drop down screen for selecting ‘IN, CUED, OUT” will appear. This will allow user to cue, fade in, and fade out the logo or media item.

Command Status indication will be displayed in the middle of the screen to indicate that the command has been processed and the logo action is successful.

The *Media All Out* button enables the user to fade all of the media files out of the video signal.

Note: The logos or media items can be ordered alphabetically (using the “Name” column), numerically (by “Size”), or by IN/CUE/OUT status (using the “Status” tab). Simply click on one of the three column headings to view logos or media items in the preferred order.

Name	Size	Status	Location
SDELine	4	OUT	[card1]
crawl	7	CUED	[card1]
SDEMaple	2	OUT	[card1]
HDEMaple2	3	IN	[card1]
temp	5	OUT	[card1]
MLogo	105	OUT	[card1]
HDEStation2	5	OUT	[card1]
time	5	OUT	[card1]
SDEStation	3	OUT	[card1]

Figure 3-14: Command Status Table

As shown in Figure 3-14, logos that are “on air” are highlighted in green, and logos that are cued are highlighted in orange.

3.9.7. Audio Clip Configuration Settings

The QMG module has the ability to insert audio clips into the program audio path.

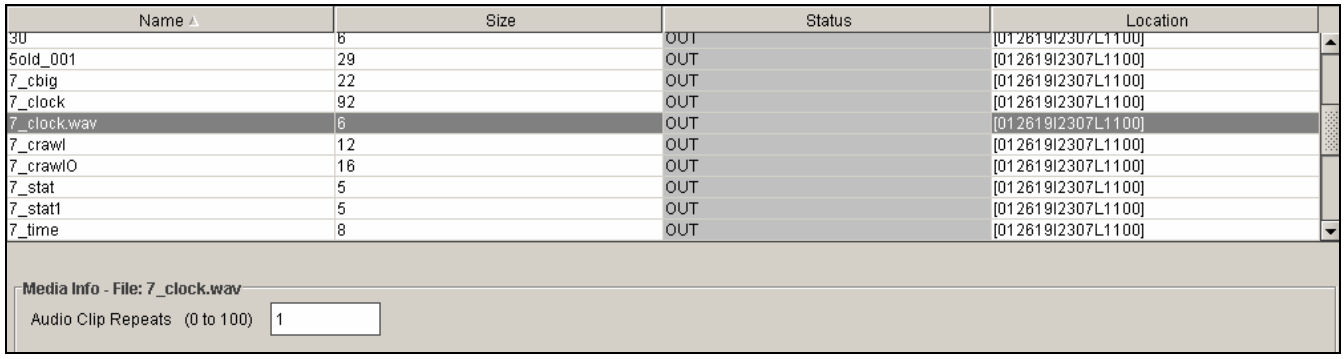


Figure 3-15: Audio Clip Configuration Settings

3.9.8. Setting the Audio Clip Repeat Count

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

- If you set the *Repeat* control to 0 the audio clip will play continuously. Otherwise, enter into the *Audio Clip Repeats (0 to 100)* field, the appropriate number of time which you wish the audio to repeat.

3.10. AUDIO CONTROL TAB

The *Audio Control* tab enables the user to configure audio settings.

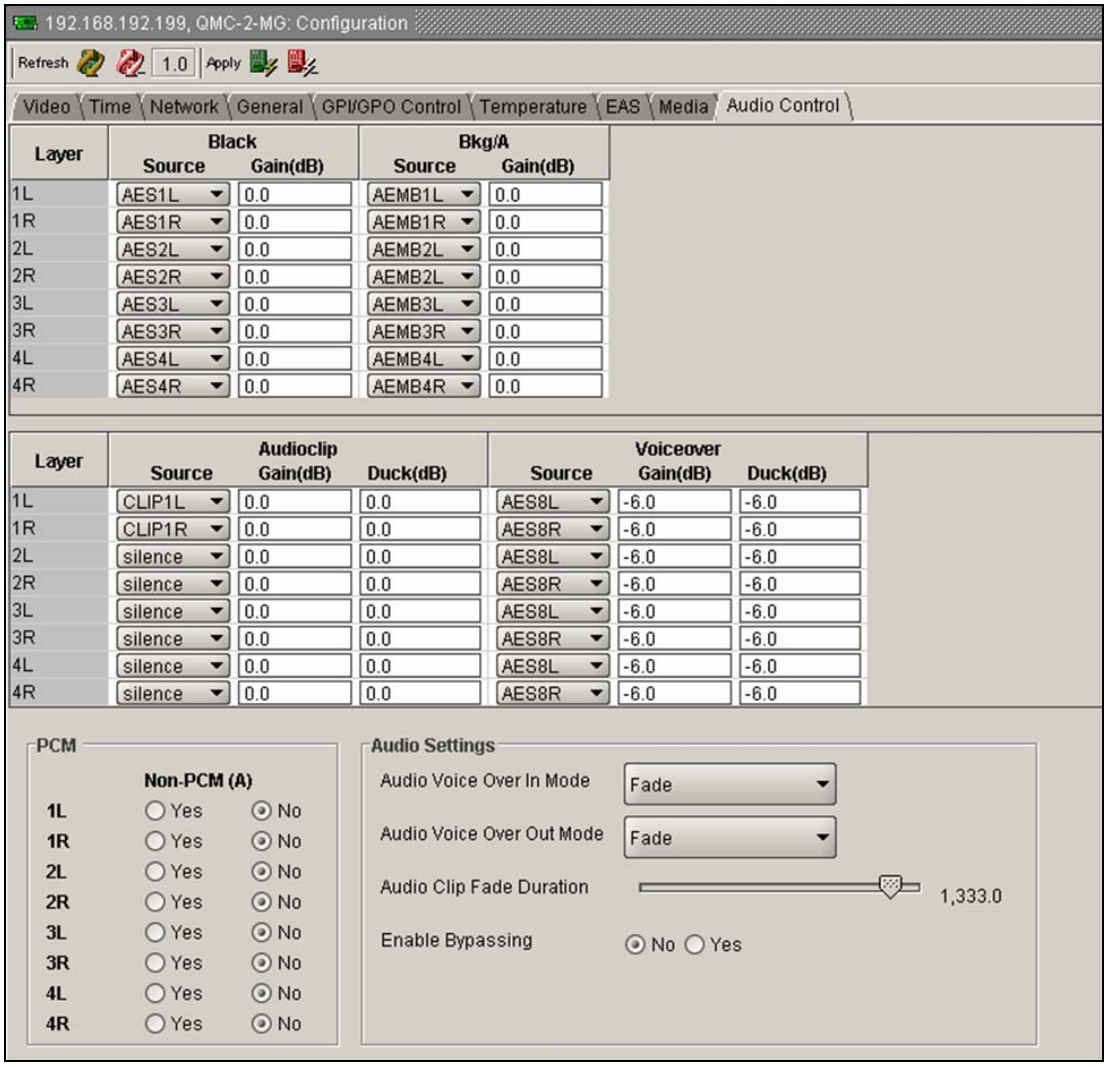


Figure 3-16: Audio Control Window

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

Black: This column configures the audio, which is to be used when the QMG module is outputting black. The black function is only accessible via automation commands.

BKG/A: This column configures the audio that is used when the QMG is passing the video, which is connected to the INPUT BNC connector.

Audioclip: This column configures which channel(s) the audio clip audio is to be inserted into. This layer also enables the user to specify the desired mix levels for audio clips.

Voiceover: This column configures the input source, which is to be used for voiceovers as well as the output channel(s), which the voiceover audio is to be inserted into. This layer also enables the user to specify the desired mix levels for voiceovers.

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

CLIP1L - left audio channel of currently playing .wav file
CLIP1R - right audio channel of currently playing .wav file
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.

Audio Voiceover In Mode: The effect of the voice over audio fading in.

Audio Voiceover Out Mode: The effect of the voice over audio fading out.

Mode Description:

- **Cut:** Performs a cut on the voice over audio.
- **Fade:** Fades in with the voice over audio with the duration set.
- **Cut-Fade:** Performs a cut on the existing audio and fades in the voice over audio.
- **Fade-Fade:** Fades out the existing audio and fades in the voice over with the duration set.
- **Fade-Cut:** Fades out the existing audio and performs a cut on the voice over audio.

Audio Clip Fade Duration: All wav files will be ramped to their full gain in the time specified, and ramped out in the same amount of time. Generally a large setting of one second or more is desirable to avoid harsh sound transitions, but some applications require embedding very short tones for downstream editing.

Enable Bypassing: Setting "Yes" to *Enable Bypassing* allows the Audio Mixer to be bypassed which will only provides embedded audio straight from the source. Disabling this option allows for the Audio Mixer Processor to be active where Embedded Audio, External Audio, Gain, Duck, Voice Over, Audio clips etc, can all be applied.

CHAPTER 4
TABLE OF CONTENTS

Figures

Tables

4. CONFIGURING THE QMG TO WORK WITH THE QMC-2

The QMG can be configured using the RCP or using the QMCSetup program. This section describes how to configure the QMG using the QMCSetup tool (Section 5 provides instructions on how to configure the QMG using the Rackmount Remote Control Panel). Sections 4.1 to 4.6 outlines the steps required to configure the QMG for use with the QMC-2 card.

Please ensure you are using QMCSetup Version 2.84B or later

Equipment Required:

- 1 x QMG DB9-to-RJ45 Dongle (labelled QMG)
- 1 x M2100 short RJ45 cable (labelled M2100)
- 1 x Straight thru serial cable
- 1 x Straight thru Ethernet cable
- 1 x QMCSetup version 2.84 or above

The QMG card is inserted in the top slot of the QMC-2 Frame. The QMC-2 module is on the bottom slot.

4.1. SETTING QMG DIP SWITCHES FOR Q-LINK ADDRESS

The order is LSB to MSB. In other words, DIP switch 1 is the Least Significant bit, and DIP Switch 4 is the Most Significant bit.

For example, the Q-Link address 0x01 is set to DIP Switch 1 and the switches are UP. The other 3 switches are down.

4.1.1. Setting Serial Port 3 on QMC-2 to RS422

To set QMC-2 Serial Port 3 from RS-232 to RS-422, turn off the QMC-2 and pull the module out. Set the jumpers that are associated with P5 on the front of the QMC-2 board (beside the white connector which is used for the Front Panel). Move the RS-232 jumper from the ON to OFF position, and move the RS-422 from the OFF to ON position.

4.2. CONFIGURING QMC-2 WITH THE QMCSETUP TO RECOGNIZE THE QMG

1. Using QMCSetup, open the QMC-2 Channel to which you wish to add the QMG.

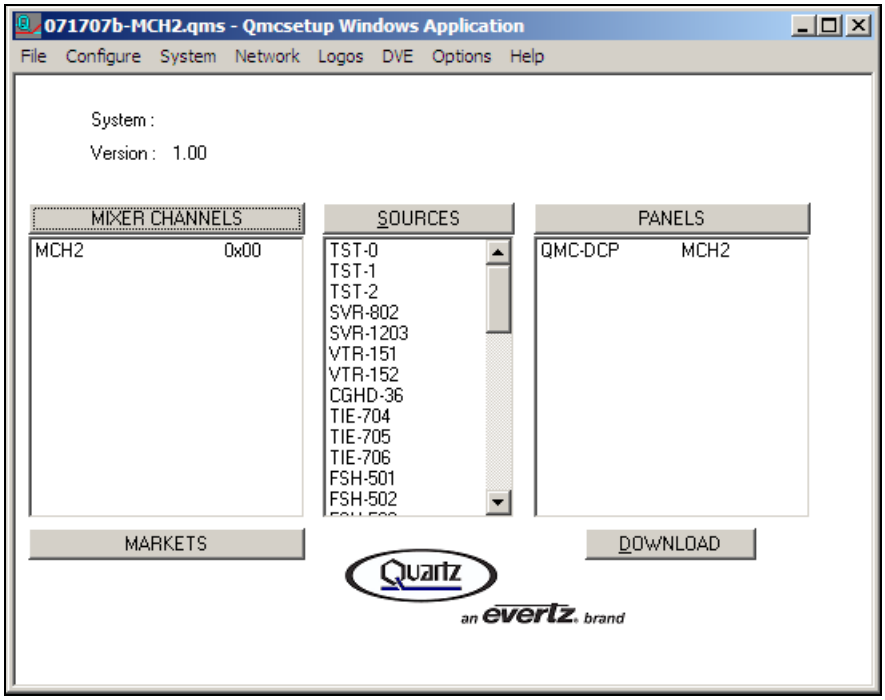


Figure 4-1: QMCSetup Windows Application

2. Under the Main Tab, set the MG Fitted from No to Yes. This allows the QMC-2 to recognize the QMG.

3. Set the MG Mode to MSK (Mid Stream Keyer), which enables the QMG to feed to one of the QMC-2 Keyers.

4. Set the MG Mode to DSK (Down Stream Keyer), which sets the QMG to be downstream of the QMC-2.

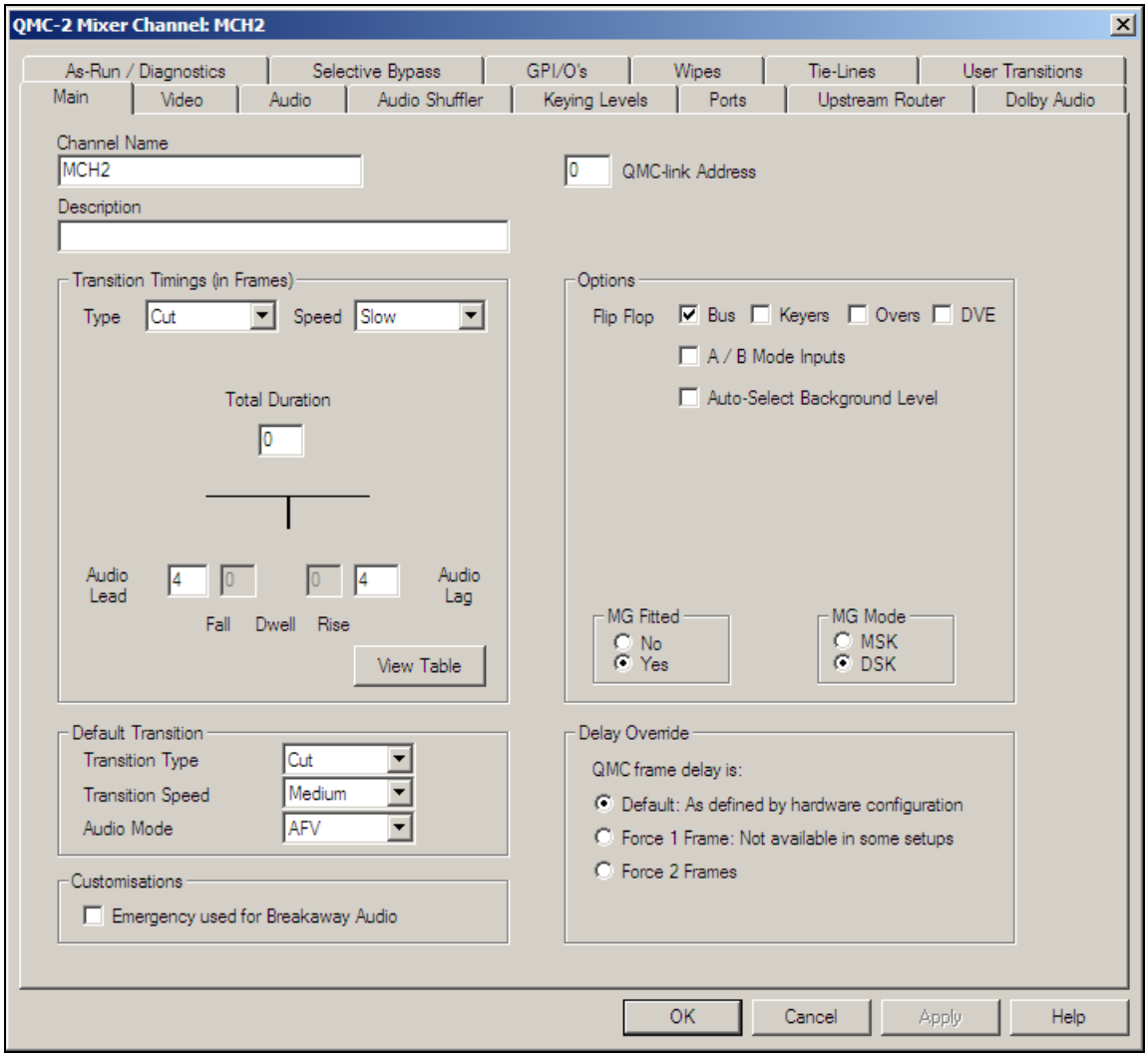


Figure 4-2: 'Main' Tab on the QMC-2 Mixer Channel

4.3. CONFIGURING QMC-2 WITH QMCSETUP TO COMMUNICATE WITH THE QMG

The QMC-2 will communicate with the QMG using GVG M2100 Server Protocol over one of the serial ports.

5. Select an open serial port and set it to the *GVG M2100 Server Protocol,* as shown in Figure 4-3.

6. Select *OK* to apply these settings.

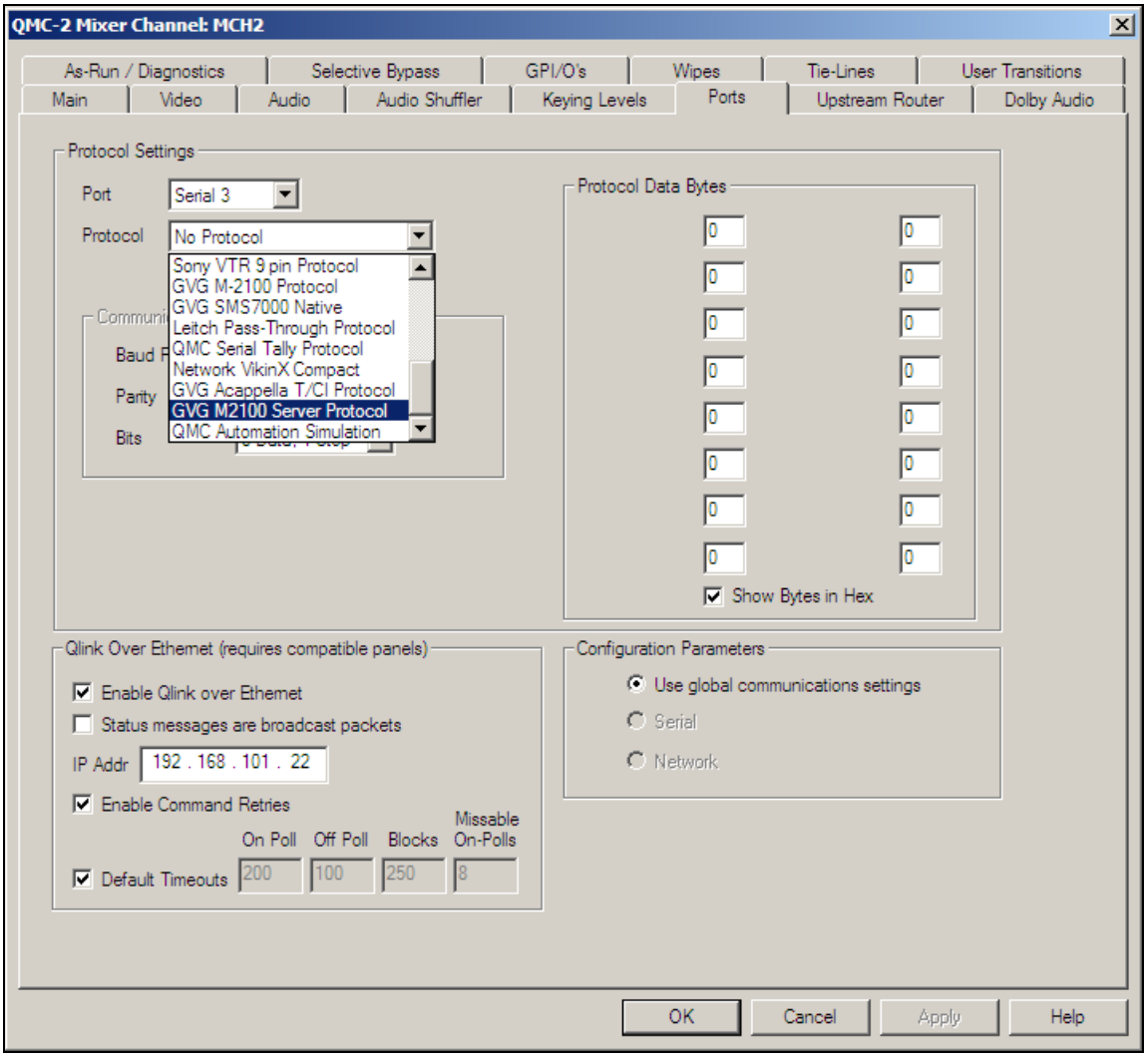


Figure 4-3: 'Ports' Tab on the QMC-2 Mixer Channel

4.4. CONFIGURING QMG WITH QMCSETUP

7. Open the QMCSetup program and select the Mixer Channel button. A System Channel window will appear as shown in Figure 4-4.

8. Select the *New* button to add the QMG frame.

9. Once selected, the *Select Channel's Frame Type* window will appear, as shown in Figure 4-4. Select the QMG using the corresponding radio button and then select *OK*.

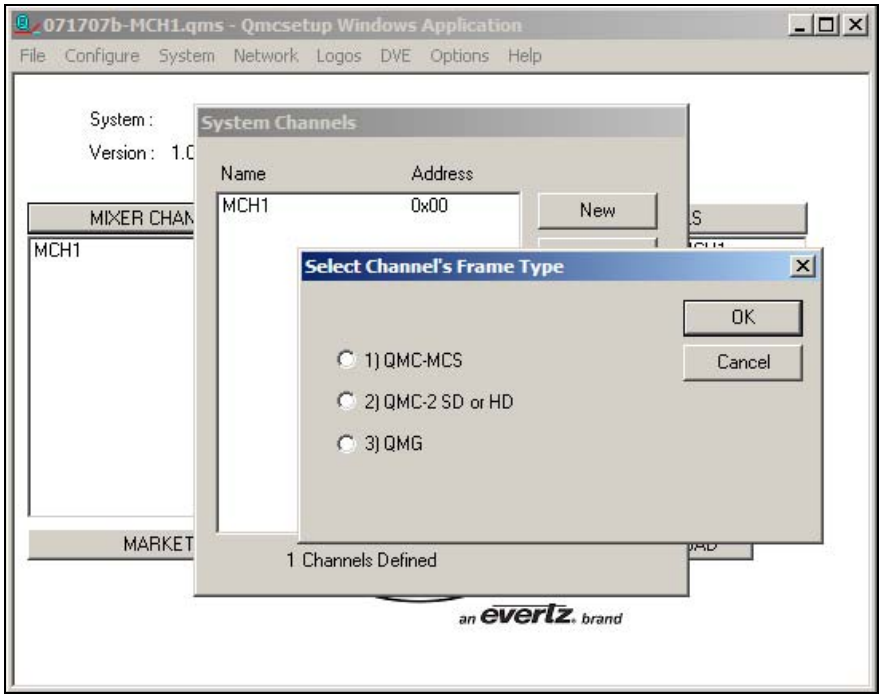


Figure 4-4: System Channel Window

4.5. CONFIGURING THE VIDEO SETTINGS

The QMG Configuration application will appear as shown in Figure 4-5.

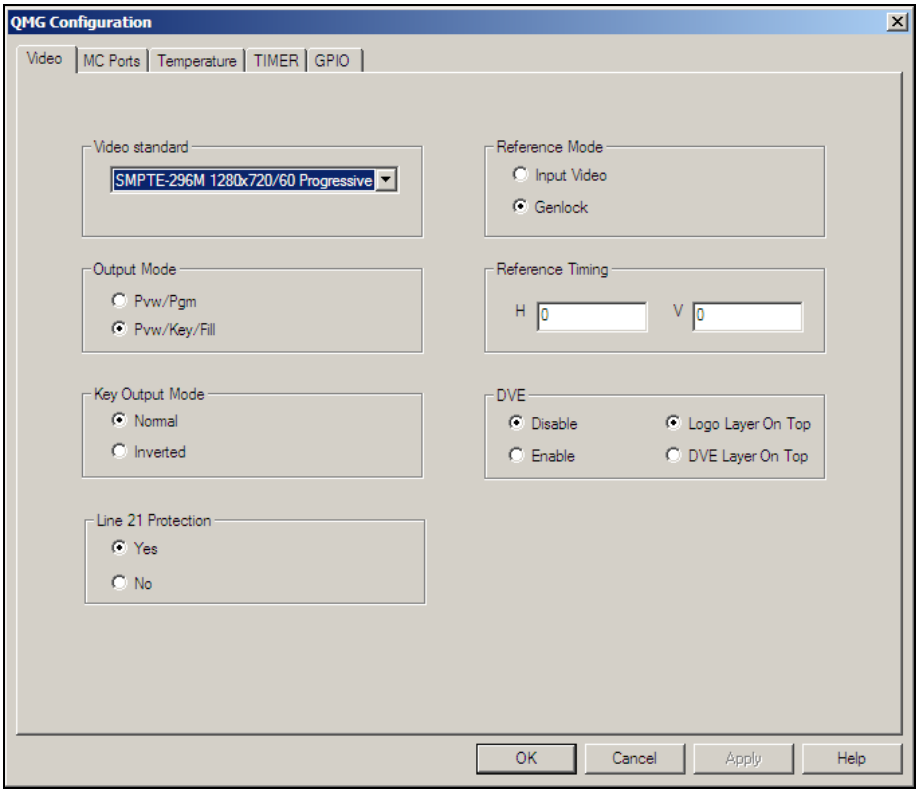


Figure 4-5: Video Tab

Using the *Video* Tab, the user can configure the following settings:

PARAMETER	DESCRIPTION
Video Standard	The video standard must match the QMC-2 video standard. The following options are available: • 1080i/50 • 1080i/59.94 • 720p/50 • 720p/59.94 • 525i • 625i The QMG supports other video standards. These video standards can be selected if the QMG is used independent of a QMC-2. The other video standards are: • 720p/60 • 720p/30 • 720p/29.97 • 720p/25 • 1080i/60 • 1080p/30 • 1080p/29.97 • 1080i/25 • 1080p/24 • 1080p/23.98
Output Mode	This menu item allows you to choose the output video style for the logo insertion. • **Pgm/Prv:** The QMG takes a PGM In and outputs 2 PGM Outputs and 1 PRV Output. • **Prv/Key/Fill:** The QMG takes a PGM In and outputs a Key and Fill video signal with a PRV Output.
Key Output Mode	The QMG can output a Key Signal that is either Normal or Inverted. • **Normal:** The 0% key will be represented by black, and 100% key will be represented by white, when *Normal* is selected. • **Inverted:** The 100% key will be represented by black, and 0% key will be represented by white, when *Inverted* is selected.
Line 21 Protection	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 or HD line standards, the setting of this menu item is ignored. • **OFF**: logos can be placed vertically beginning at line 21. • **ON**: logos can be placed vertically beginning at line 22, preserving any closed caption information that is encoded on line21.
Reference Mode	The following reference type options are available: • **Input Video:** A valid video signal needs to be applied to PGM In of QMG. • **Genlock:** A valid reference signal is applied to REF In of QMG.

Reference Timing	The menu item allows the user to set the horizontal and 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.
DVE	The menu item indicates whether there is a 2-channel 2D DVE module is installed. The menu will also allow the user to indicate where the DVE module should be configured: before or after the Logo insertion. • **DISABLE** will disable the DVE functionality and not insert the module (if installed) into the processing path of the QMG. • **ENABLE** will enable the DVE functionality and insert the module (if installed) into the processing path of the QMG. • **LOGO LAYER ON TOP** will move the DVE module logically after the logo insertion. This allows for logo to be inserted BEFORE the DVE moves. • **DVE LAYER ON TOP** will move the DVE module logically before the logo insertion. This allows for logo to be inserted AFTER the DVE moves.

Table 4-1: Video Features

4.6. CONFIGURING THE MC PORTS SETTINGS

The following screen appears when the user selects the MC Ports tab.

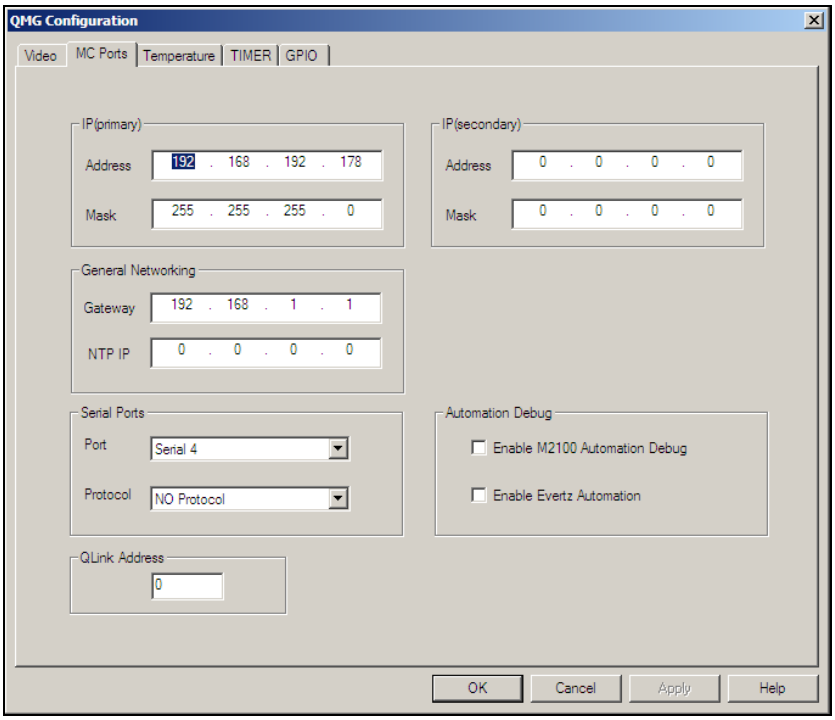


Figure 4-6: MC Ports Tab

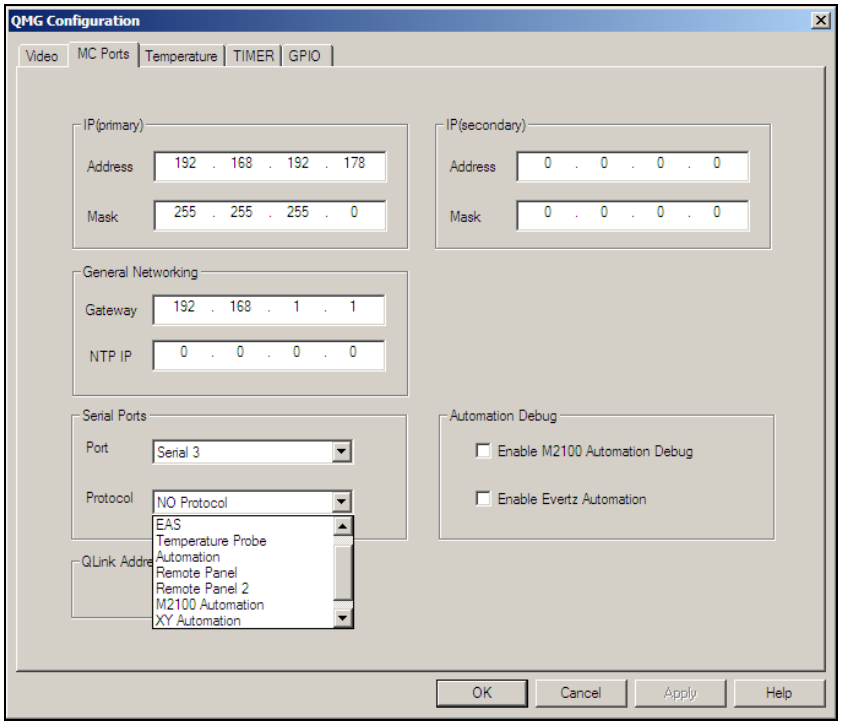


Figure 4-7: Protocol Drop Down Menu

Using the *MC Ports* Tab, the user can configure the following settings:

PARAMETER	DESCRIPTION
IP (primary) Address	This field sets the unique IP address of the QMG module within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network.
IP (primary) Mask	This field sets the "subnet mask" of the network. Specifically, this parameter outlines all the IP addresses that can communicate with the QMG module. This parameter is usually set to 255.255.255.0 for a private network.
IP Gateway	This menu item identifies the IP address of the "gateway" (commonly referred to as the "firewall"). Normally you will not have to adjust this parameter from its default value.
NTP IP	This field sets the IP address of the NTP (Network Time Protocol) server. This can be used for synchronizing the QMG internal clock (for time logo objects) and the station's time over IP.
Serial Port	This field enables the user to select the serial port (Serial port 3, A, or B). Note: Serial port 4 is ALWAYS configured as configuration port via QMCSetup. Its configuration cannot be changed.
Serial Protocol	This field allows the user to set the behaviour of the serial ports. • Select ***No Protocol*** to disable the use of serial ports. • Select ***EAS*** when you have the EAS option (+E) enabled and have an EAS decoder connected to the port. • Select ***Temperature Probe*** when you have the optional temperature probe connected to the port. The temperature is displayed using a preformatted Temperature logo, which is created using the Overture™ software. • Select ***Automation*** when you wish to control the QMG using the Evertz automation protocol. • Select ***Remote Panel*** when you wish to control the QMG using a remote control panel (similar to 9725 series control panels). • Select ***Remote Panel 2*** when you wish to control the QMG using a rack mountable or desktop remote control panel (similar to 9725 series control panels). • Select ***M2100 Automation*** when you wish to control the QMG using the Grass Valley M2100 automation protocol. • Select ***XY Automation*** when you wish to control the QMG using the XY logo inserter automation protocol. Note that only logo functions of the QMG can be controlled using the XY automation protocol. • Select ***NMEA0183*** when you connect to a GPS or weather device using the NMEA 0183 protocol.
Q-Link Address (Hex)	The Hex hardware address is used to distinguish multiple units in a chain.
IP (secondary) Address	This field sets a second unique IP address of the QMG module within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network. ***(NOTE: not all frames support this function)***.

IP (secondary) Mask	This field sets the "subnet mask" of the network for the secondary IP address. Specifically, this parameter outlines all the IP addresses that can communicate with the QMG module. This parameter is usually set to 255.255.255.0 for a private network. ***(NOTE: not all frames support this function)***
Automation Debug	This field enables the user to set the automation debug functions. • Placing a check mark in the enable **M2100 Automation Debug** field allows the user to select whether M2100 control messages are output to the **UPGRADE RS232** Port. This would be used to debug issues with an automation system. • Placing a check mark in the enable **Evertz Automation Debug** field allows the user to control whether automation messages are output to the **UPGRADE RS232** Port. This would be used to debug issues with an automation system.

Table 4-2: MC Ports Features

4.7. CONFIGURING THE TEMPERATURE SETTINGS

The following screen appears when the user selects the *Temperature* tab.

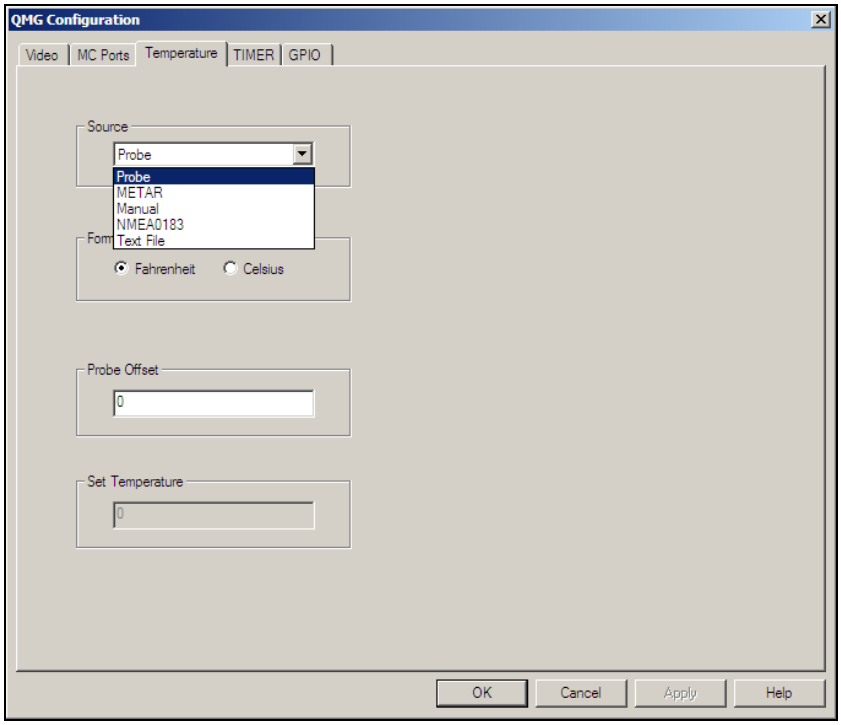


Figure 4-8: Temperature Tab

Using the *Temperature* tab, the user can configure the following settings:

PARAMETER	DESCRIPTION
Source	This menu item is used to set the source of the temperature. • Select **Manual** to enable the temperature value to be manually entered. See section 5.9.3. • Select **Probe** to enable a temperature probe (with +TP option) to provide the temperature. • Select **METAR** to enable a METAR source to provide the temperature. • Select **Text File** to enable a text file that is loaded into the compact flash to be the source that provides the temperature. • Select **NMEA0183** to enable an NMEA 0183 protocol based device to provide the temperature
Format	This menu item is used to set the format of the temperature value. There are two options that can be configured: • Select *Celsius* to set the temperature to represent degrees Celsius. • Select *Fahrenheit* to set the temperature to represent degrees Fahrenheit.
Probe Offset	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 the temperature from the value output by the temperature probe. This can be used to account for the difference between two probes that are located in different areas.
Set Temperature	This menu item is used to set the temperature value.

Table 4-3: Temperature Features

4.8. CONFIGURING TIMER SETTINGS

The following screen appears when the user selects the *Timer* tab.

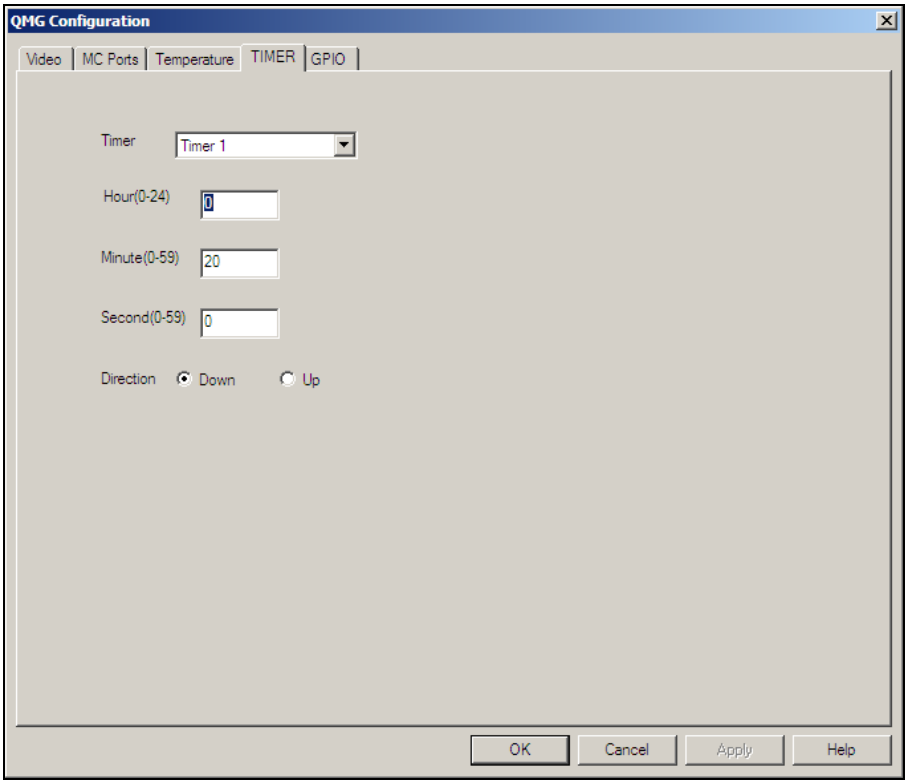


Figure 4-9: TIMER Tab

Using the *Timer* tab, the user can configure the following settings:

PARAMETER	DESCRIPTION
Timer	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.
Hour (0-24)	This menu item allows the user to set the hour value. The range is 0 to 24.
Minute (0-59)	This menu item allows the user to set the minute value. The range is 0 to 59.
Second (0-59)	This menu item allows the user to set the second value. The range is 0 to 59.
Direction	This menu item allows the user to set the direction of the timer. The two choices are *Up* or *Down.*

Table 4-4: Timer Features

4.9. CONFIGURING THE GPIO SETTINGS

The following screen appears when the user selects the *Timer* tab.

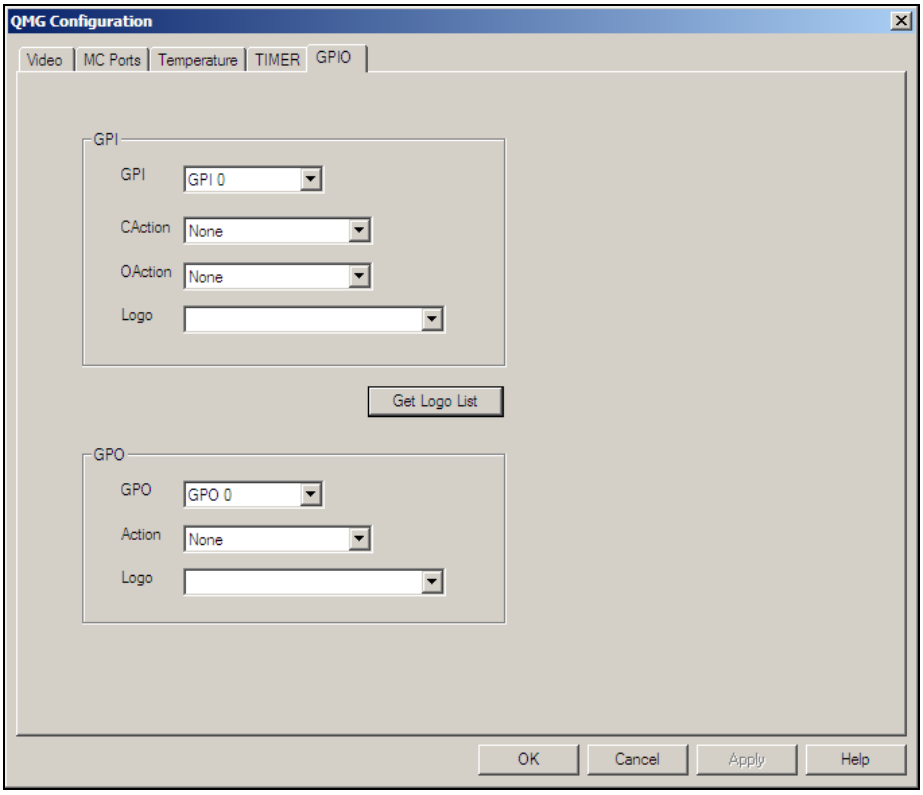


Figure 4-10: GPIO Tab

Using the *GPIO* tab, the user can configure the following settings:

PARAMETER	DESCRIPTION
GPI	This menu item is used to select one of the GPI inputs that will be configured.
CAction	This menu item configures the action when the selected GPI closes • 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 the 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. • 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. • 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.
OAction	This menu item configures the action when the selected GPI opens. • The OAction provides the same options as listed in the CAction menu.
Logo	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. To set a particular logo, ensure you are connected to the QMG and select *Get Logo List*. This will query the QMG for the list of current logos stored on the card.
GPO	This menu item is used to select one of the GPO outputs that will be configured.
Action	This field configures the action of the GPO. • Select ***None*** to disable an actions for a GPO. • Select ***Logo Status*** to trigger a GPO on any logo that appears on-air. • Select ***Bypass Status*** to trigger a GPO when the QMG is in Bypass mode. • Select ***A Specific Logo Status*** to trigger a GPO on a specific logo (see Logo for setting specific logo) that appears on-air.
Logo	This menu item is used to select a logo to be acted on the Action • Select ***None*** to disable any logo actions. To set a particular logo (for *A Logo Status*), ensure you are connected to the QMG and select Get Logo List. This will query the QMG for the list of current logos stored on the card.

Table 4-5: GPIO Features

4.10. CONFIGURING A QMC-CP-1000A TO USE DVES AND LOGOS

4.11. DVE

The QMG has an option for fitting in a DVE module (OPTION +DVE). The DVE module is placed on the main QMG board. It provides two-dimensional Digital Video Effects. There are 3 channels used for the DVE functionality, giving dual DVE effects.

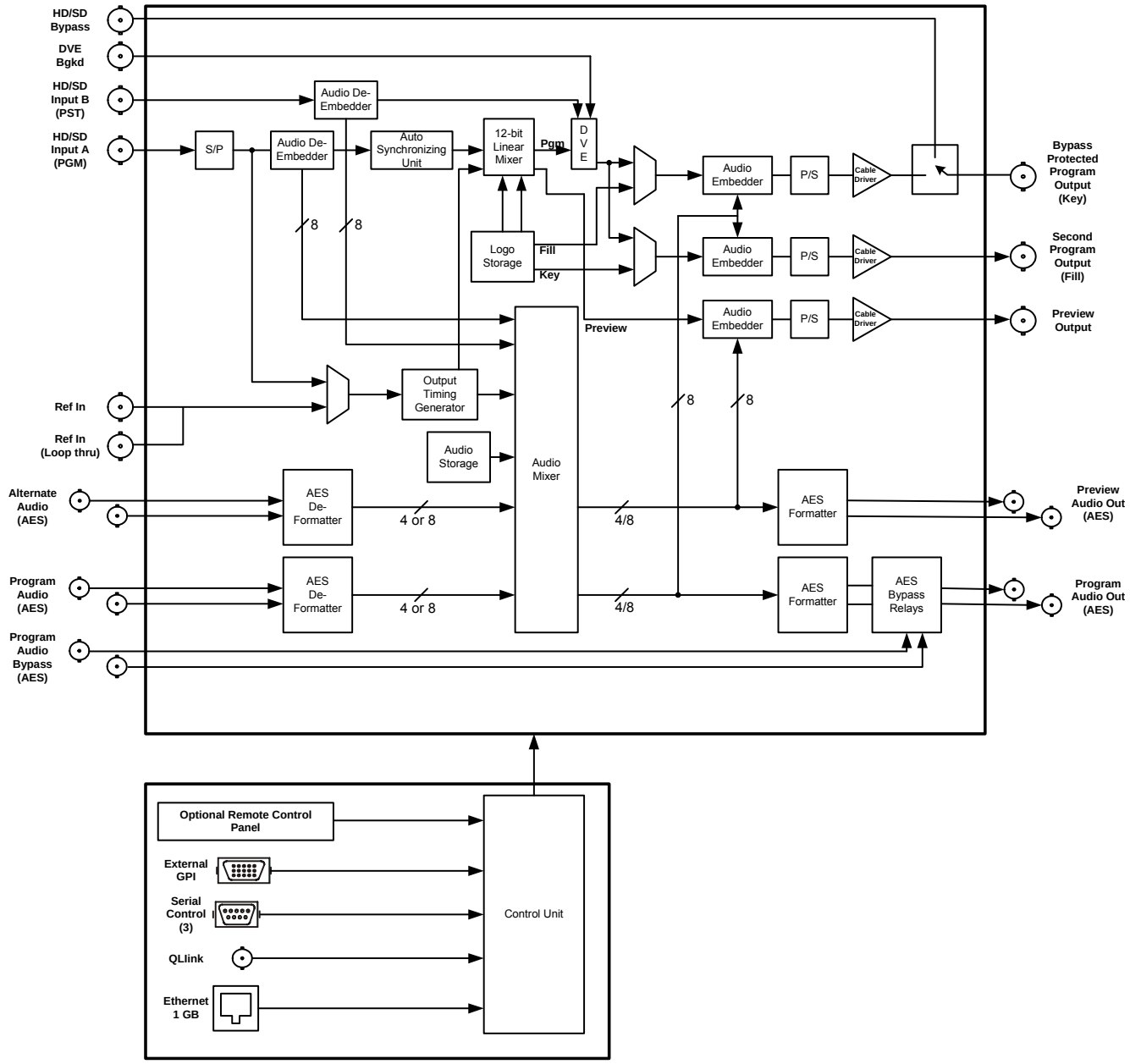


Figure 4-11: QMG-DVE Block Diagram

Digital Video Effects include crop resize, reposition and squeeze. Each DVE move is customizable and there are user defined parameters for each of the moves.

The 3 channels or video inputs used for DVE are PGM, PST, and DVE_BKGND. The DVE moves are displayed on the 2 output paths which include PGM_1/KEY and PGM 2/FILL outputs.

4.11.1. DVE Connections

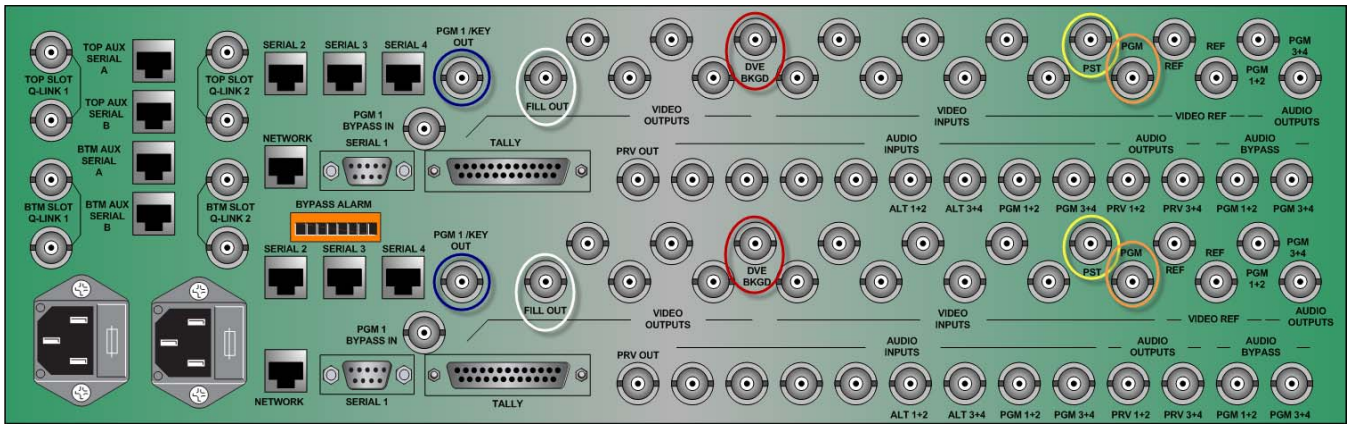


Figure 4-12: Input and Output Connections for DVE

PGM: Primary source of input. (Circled in orange)

PST: Secondary source of input. (Circled in yellow)

DVE_BKGND: Secondary source of input. (Circled in red)

PGM 1/KEY OUT: Output displaying DVE moves. (Circled in blue)

PGM 2/FILL OUT: Output displaying DVE moves. (Circled in white)

4.11.2. DVE Setup

The DVE Setup option is found within the *Video* tab of the QMG Configuration window. When the DVE module is fitted onto the QMG cord, this option must be set to "*Enable*" in order to properly function.

Figure 4-13: QMC Setup Where DVE is Enabled

Disable: This option will disable the DVE functionality and not insert the module (if installed) into the processing path of the QMG.

Enable: This option will enable the DVE functionality and insert the module (if installed) into the processing path of the QMG.

4.11.2.1. DVE Mode Setup

There are two modes: Logo Layer On Top and DVE Layer On Top. When one of these modes are selected, it will define the behaviour of the moves.

Logo Layer On Top: This option will move the DVE module logically before the logo insertion. This allows for logo to be inserted AFTER the DVE moves.

DVE Layer On Top: This option will move the DVE module logically after the logo insertion. This allows for logo to be inserted BEFORE the DVE moves.

4.11.3. DVE Setup Using the Move Manager

All DVE moves are customized using the DVE Move Manager. The defined move will be transferred and stored in the QMG, and a total of 63 moves can be stored.

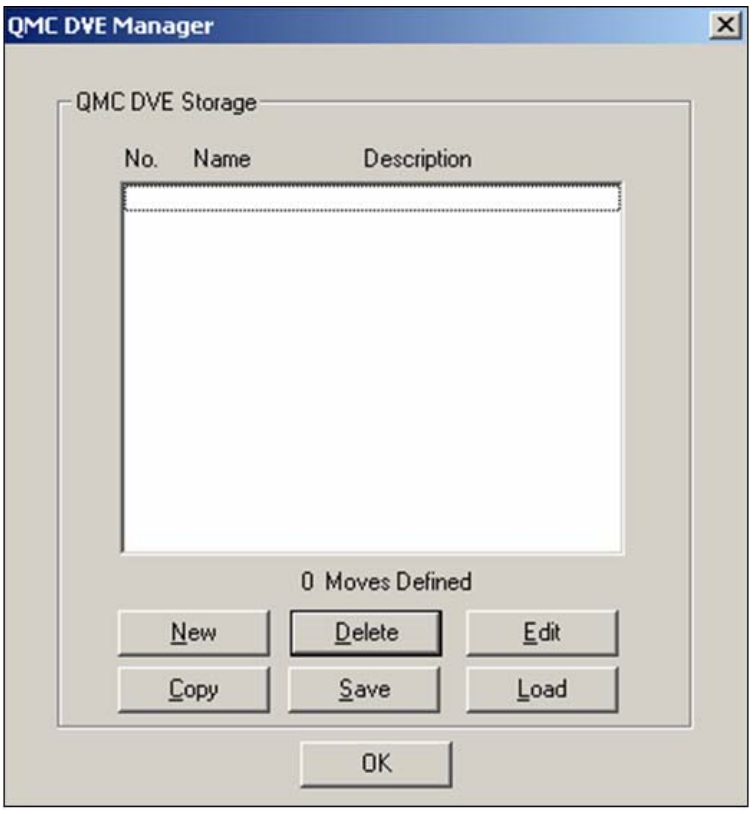


Figure 4-14: DVE Move Manager Dialog Box

New: Opens a new control window where the user is able to define a move.

Delete: If an existing move is selected, this option will delete the selected move.

Edit: If an existing move is selected, this option will allow the user to make changes to the move.

Copy: This option allows the user to copy an already existing move. When a move is highlighted and 'copy' is selected, it will create another duplicate move containing all the information from the move copied from.

Save: This option will enable the user to save all moves to a .DVE file.

Load: This option enables the user to load an existing .DVE file (with predefined moves already stored).

4.11.4. Creating a New DVE Move

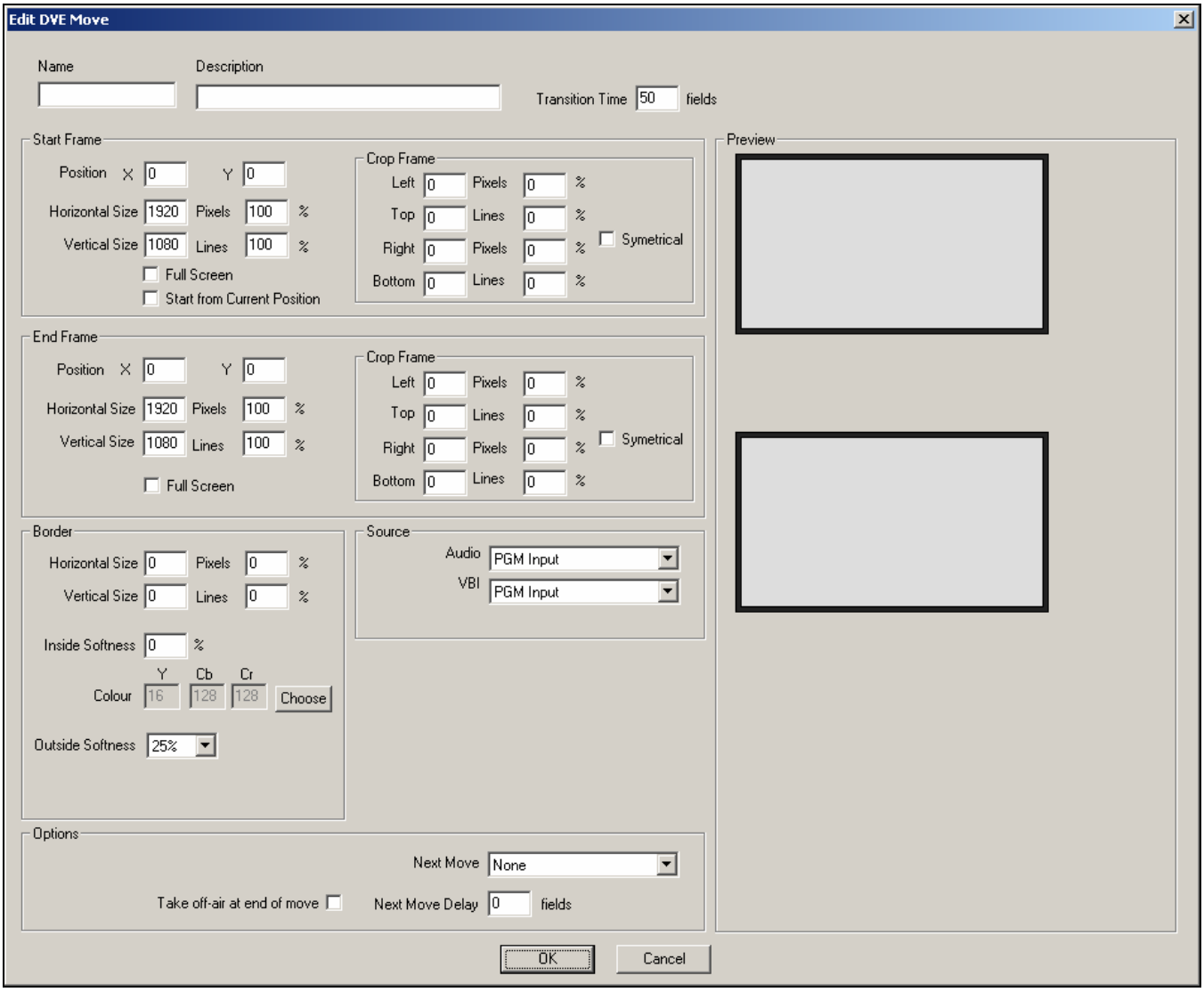


Figure 4-15: Edit DVE Move Manager

Name: This parameter defines the name of the move. (The name can be arbitrary).

Description: This parameter allows the user provide a description for the specific move.

Transition Time: The amount of time it takes for the duration to transition from the start frame to the end fame. The Transition Time is measured in fields. The lower the value, the faster the transition of the move will be.

4.11.4.1. Start Frame

Position X: Sets the horizontal position for the start frame of the move

Position Y: Sets the vertical position for the start frame of the move.

Horizontal Size: Allows the user to set the horizontal size of the start frame. The QMG will detect what standard the unit is running in. The Horizontal Size can be defined in pixels or percent.

Vertical Size: Allows the user to set the vertical size of the start frame. The QMG will detect what standard the unit is running in. The Vertical Size can be defined in either lines or percent.

Full Screen: If selected, the frame will display at full screen capacity. The user will be able to set crop frame parameters.

Start from Current Position: If selected, this option will allow the user to start from 0,0 XY positions.

4.11.4.2. Crop Frame

Left: Allows the user to crop the start frame from the left. This parameter can be defined in pixels or percent.

Top: Allows the user to crop the start frame from the top. This parameter can be defined in lines or percent.

Right: Allows the user to crop the start frame from the right. This parameter can be defined in pixels or percent.

Bottom: Allows the user to crop the start frame from the bottom. This parameter can be defined in lines or percent.

Symmetrical: Allows the user to crop the frame symmetrically. When this option is selected, only the top and left fields need to be entered. The top and left values entered will also be the same for bottom and right values respectively.

4.11.4.3. End Frame

Position X: Sets the horizontal position for the end frame of the move

Position Y: Sets the vertical position for the end frame of the move.

Horizontal Size: Allows the user to set the horizontal size of the end frame. The QMG will detect what standard the unit is running in. The Horizontal Size can be defined in pixels or percent.

Vertical Size: Allows the user to set the vertical size of the end frame. The QMG will detect what standard the unit is running in. The Vertical Size can be defined in either lines or percent.

Full Screen: If selected, the frame will display at full screen capacity. The user will be able to set crop frame parameters.

4.11.4.4. Crop Frame

Left: Allows the user to crop the end frame from the left. This parameter can be defined in pixels or percent.

Top: Allows the user to crop the end frame from the top. This parameter can be defined in lines or percent.

Right: Allows the user to crop the end frame from the right. This parameter can be defined in pixels or percent.

Bottom: Allows the user to crop the end frame from the bottom. This parameter can be defined in lines or percent.

Symmetrical: Allows the user to crop the frame symmetrically. When this option is selected, only the top and left fields need to be entered. The top and left values entered will also be the same for bottom and right values respectively.

4.11.4.5. Border

The Border will affect both the start and end frames of the move.

Horizontal Size: Sets the horizontal size of the border. This parameter can be defined in pixels or percent.

Vertical Size: Sets the vertical size of the border. This parameter can be defined in lines or percent.

Inside Softness: Allows the user to control inside softness border.

Colour: Allows the user to choose colours for the border. The “Y”, “Cb”, and “Cr” parameters will list the selected colour values.

Figure 4-16: Border Colour Palette

Outside Softness: Allows the user to select a percentage of the outside softness of the border.

4.11.4.6. Source

Audio: The user can select PST input or PSM input when triggering a move as a program DVE move. If PGM input is chosen as the audio source during the DVE transition, the audio will come from the main program input. If PST input is chosen as the audio source during the DVE transition, the audio will come the PST input. When the move recovers, the audio source will convert back using the source taken from the program input.

This page left intentionally blank

CHAPTER 5
TABLE OF CONTENTS

Figures

Tables

This page left intentionally blank

5. HOW TO OPERATE THE KEYER USING THE RACK MOUNT CONTROL PANEL

The QMG can be operated via an optional 9700RCP. If the 9700RCP is connected to the QMG, the user is able to control the unit in the same way they would an HD9725LG Keyer.

The standard 9700RCP is a 1 RU rack mountable remote control panel. This chapter describes the operation of the QMG module using either the 9700RCP rack mount remote control panel. For information on connecting the remote control panel to the QMG, see section 2.4

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

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

5.1.1. 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.

5.1.2. 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 will access the lower numbered *Quick Select.* When the **SHIFT LOCK** LED is On the **QUICK SELECT** button will access the higher numbered *Quick Select.*

Pressing the **QUICK SELECT** button once fades the assigned media item in. Pressing the **QUICK SELECT** button another time 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.

5.1.3. 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 QMG module 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 5.12)

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.

5.1.4. Setup Button Group

SETUP: This button is used to enter the *Setup* menu that is used to configure the operating modes of the QMG module. (See section 5.3 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 5.1.1)

↑, ↓ 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.

5.1.5. Control Panel Status Indicators

5.1.5.1. 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, 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.

5.1.5.2. 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.

5.1.5.3. 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 QMG module. 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 QMG module 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 panels are not responding.

5.1.6. 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.

5.1.7. Rack Mountable Remote 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 QMG module.

5.2. OVERVIEW OF RACK MOUNTABLE 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.

5.3. 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 QMG module. 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. Table 5-1 gives an overview of the *Setup* menu system.

5.4. 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.

Each of the menu items, with function explanations, is described in the following sections.

- **GENERAL**
  - 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
  - Panel Enable
- **MANAGE FILES**
  - Media
  - File
  - To
  - Copy
  - Delete
  - Format
- **PRESET**
- **GPI Setup**
  - GPI
  - Caction
  - Oaction
  - Logo
- **GPO Setup**
  - Logo Status
- **TEMPERATURE**
  - Temp Format
  - Temp Source
  - Set Temperature
  - Set Probe Offset
- **EAS**
  - Type
  - Vert Pos'n
  - Font
  - Font Height
  - Rate
  - Warning BG
  - Warning FG
  - Watch BG
  - Watch FG
  - Test BG
  - Test FG
- **MEDIA (Static Logos)**
  - H Position
  - V Position
  - Layer
  - Gain
  - Quick Out
  - Fade In
  - Hold
  - Fade Out
- **MEDIA (Animated Logos)**
  - H Position
  - V Position
  - Layer
  - Gain
  - Quick Out
- **MEDIA (Crawl Logos)**
  - 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)**
  - Logo Name
  - Audio Name

Table 5-1: Overview of the Setup Menu

5.5. 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 5.6 to 5.11 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.

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

Note that if the QMG module undergoes a power cycle, any logos or media that are in a cued or faded in state will not be retained.

5.6. GENERAL CONFIGURATION ITEMS

The *GENERAL Setup* menu is used to set up various items related to the overall operation of the QMG module, such as Video standard, Time settings, Network info, COM port settings and firmware versions. Table 5-2 shows the items available in the *GENERAL Setup* menu. Sections 5.6.1 to 5.6.13 provide detailed information about each of the sub-menus.

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

Table 5-2: Top Level of the General Setup Menu

5.6.1. Selecting the Video Standard

- *GENERAL*
  - *Select Standard*
    - *16x9 525i*
    - *525i*
    - *625i*
    - *720p/50*
    - *720p/59.94*
    - *1080i/59.94*
    - *1080i/50*

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

5.6.2. Selecting the Video Timing Reference

- *GENERAL*
  - *Reference Setup*
    - *Type*

The *Reference Setup* menu item is used to select the timing reference for the QMG module.

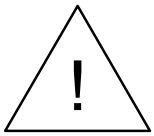
Select *Input Video* to use the SDI video connected to the **BKG/A** video input as the timing reference.

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

HD Tri-level Sync
Analog Bi-Level Sync

5.6.3. Setting the Video Output Timing

The output stage of the QMG module 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 Timing*
    - *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 Timing
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.

5.6.4. Viewing and Updating the Firmware Version

GENERAL
Update Code
QMG
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 QMG module and to update the firmware.

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

```
QMG
```

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 QMG module. For information on completing the firmware upgrade see section 8.2.

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

5.6.5. Setting the Output Mode

GENERAL
Output Mode
Pgm /Prv
Prv/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 **PRV OUT** BNC and the both **PGM 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 **PGM IN** BNC. The input signal must be running the same video standard as required by your QMG. See section 5.6.2 for information on selecting the video timing reference signal.

5.6.6. Setting the Key Out Mode

GENERAL
Key Out Mode
Normal
Inverted

This menu item allows the user to choose the type key that is used when the QMG is in Key and Fill mode.

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

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

5.6.7. Configuring the Real Time Clock

The QMG module contains 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 QMG module 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 QMG module automatically updates 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.

5.6.7.1. 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.

5.6.7.2. 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.

5.6.7.3. 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 QMG module. 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 QMG module, the LTC time will overwrite the Real Time clock that has been entered.

5.6.7.4. 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 5.6.7.5) 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 the set the time zone offset. The seconds digits will stop flashing to indicate that the time zone offset has been set.

5.6.7.5. 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 QMG module 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 QMG module 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 5.6.7.6

5.6.7.6. 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.

5.6.7.7. Setting the LTC Date Format

GENERAL
Time Setup
LTC Date Encode
Skotel
SMPTE MJD
SMPTE BCD
Production
Legacy
Auto

This menu item is used to select the format of the date encoded in the user bits of the LTC.

For Skotel time code generators, choose *Skotel.*
For SMPTE MJD generators, choose *SMPTE MJD*.
For SMPTE BCD generators, choose *SMPTE BCD*.
For Production generations, choose *Production*.
For Legacy generators, choose *Legacy*.
For all other time code generators choose *Auto.*

5.6.7.8. Synchronizing 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.

5.6.7.9. 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.

5.6.7.10. 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.

5.6.7.11. Setting the Network Time Protocol

GENERAL
Time Setup
N 0.0.0.0

This field is used to set the IP address of the NTP server that user wants to be connected to. If NTP is not used, setting it to 0.0.0.0 would disable it.

5.6.7.12. 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 QMG module. 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.

5.6.8. Setting Up the Network Addresses

The *Network Info* sub-menus of the *General* Setup menu are used to configure the QMG module 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.

5.6.8.1. Setting Up the IP Address

GENERAL
Network Info
A 196.168.1.1

This menu item sets the unique IP address of the QMG module within the network. 192.168.1.XXX is an example of an IP address in a private (internal) network.

If connecting multiple QMG modules, take care not to use the same IP address for each.

5.6.8.2. 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 QMG module. 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.

5.6.8.3. Setting Up the Gateway

GENERAL
Network Info
G 192.168.1.1

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 QMG module 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.

5.6.8.4. Displaying the Ethernet Hardware Address

GENERAL
Network Info
0:2:C5:01:03:E2

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

5.6.8.5. Setting Up the Primary and Secondary Servers

GENERAL
Network Info
P: 0.0.0.0
S: 0.0.0.0

Primary and secondary name servers are the IP addresses of the main and backup name servers for the local network. This is a standard network administration construct. The keyer will use these servers, for example, to convert domain names in RSS feed urls to IP addresses.

The "P" option is for setting the IP address of the Primary Name Server (P) and the "S" option is setting for the Secondary Name Server (S).

The Primary and Secondary server controls are optional and setting an IP address of 0.0.0.0 would disable it. Please note that they are optional because only a limited number of keyer items need to convert domain names to IPs.

5.6.9. Setting the Serial Protocol for Serial Ports

There are five serial ports on the QMG module that are used for various functions. The Serial port 2 is only available on remote control versions of the QMG module and is used to connect the remote control panel.

The **Serial ports A, B, 3,** and **4** are programmable and can be used for a variety of functions. For the sake of 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*
  - *Remote Panel*
  - *QMC Config*

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

Select *None* to disable the use of the serial port.

Select *EAS CG* when you have the EAS option (+EAS) enabled and have an EAS decoder connected to the port. See section 7.1 for more information about connecting the EAS decoder. See sections 7.2 and 5.9 for information about configuring the EAS functions of the QMG module.

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 QMG module is under automation control. See your automation vendor for information about the protocols that are supported.

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

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

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

Select *Remote Panel* if you want to use a Rack mount or desktop control panel (orderable options).

Select *QMG Config* to use QMCSetup to configure the QMG card.

5.6.10. 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 line21.

5.6.11. 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.*

5.6.12. Enabling Automation Debug Messages

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

5.6.13. 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.

5.6.14. Enabling Desktop or Rack Mount Remote Control Panel

GENERAL *Panel Enable* *Front Panel Off* *Remote Panel Off* *All Panels ON*	This menu item allows the user to add a desktop or rack mount remote control panel to a device that already has a front panel installed. This allows the user to control the device from two different locations. The controls of the remote panel mimic the controls of the front panel.

5.7. FILE MANAGEMENT CONFIGURATION ITEMS

The QMG module 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 QMG module 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. Figure 5-1 shows the items available in the *MANAGE FILES Setup* menu. Sections 5.7.1 to 5.7.6 provide detailed information about each of the sub-menus.

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

Figure 5-1: Top Level of the Manage Files Setup Menu

5.7.1. Selecting the Source Media

MANAGE FILES
Media
[card number]

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.

5.7.2. Selecting the Media File Name

MANAGE FILES
File
logo name

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.

5.7.3. 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.

5.7.4. 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 (i.e. the logo is being keyed), the copy function will fail.

5.7.5. 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 (i.e. the logo is being keyed), the delete function will fail.

5.7.6. 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 (i.e. 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 sub-menu. There is no undo provided.

5.7.7. Enabling RAID 0

To enable RAID 0, the user must configure this control through the HTML page. Please refer to section 5.13.2.1 regarding local storage for configuration of the RAID 0 parameter.

5.8. PRESET CONFIGURATION ITEMS

The *PRESET Setup* menu is used to configure the GPI and GPO functions. Table 5-3 shows the items available in the *PRESET Setup* menu. Section 5.8.1 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 outputs

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

5.8.1. Configuring the GPI Inputs

The QMG module 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.

5.8.1.1. 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.

NOTE: That GPI 0 is the same as GPI 1 on the breakout panel, GPI 01 is GPI 2, etc.

5.8.1.2. 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 5.8.1.1.

PRESET
GPI Setup
A CAction
Toggle
Out
In
Cue
None
Timer2
Timer1
All Out
Duck
Duck Out
Duck In
Bypass Yes
Bypass No

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).

Select *Bypass Yes* to put the unit into bypass mode when the GPI is pressed.

Select *Bypass No* to bring the unit out of bypass mode when the GPI is released.

PRESET
GPI Setup
A Logo:none
None
List of logos

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.

5.8.2. Configuring the GPO Outputs

PRESET
GPO Setup
00 to 15
None
Logo Status
A Logo Status
Bypass Status

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.

Selecting *Logo Status* enables the user to monitor when logos come on air. Therefore, when any logo comes on air, the GPO will be triggered or the GPO will report the status of the logo.

Selecting *A Logo Status* enables the user to associate a specific logo file with the logo status action. Therefore, when the specified logo comes on air, the GPO is triggered or the GPO will report that the specified logo is on air.

Selecting *Bypass Status* enables the user to trigger the GPO or report when the unit is running in bypass mode.

5.9. TEMPERATURE CONFIGURATION ITEMS

The *Temperature Setup* menu is used to configure the temperature parameters. Table 5-4 shows the items available in the *Temperature Setup* menu. Sections 5.9.1 to 5.9.3 provide detailed information about each of the sub-menus.

Temp Format	Configures the format of the temperature
Temp Source	Configures the source of the temperature
Set Temperature	Sets the static temperature
Set Probe Offset	Sets the static offset for the temperature that is provided by the probe

Table 5-4: Top Level of the Temperature Setup Menu

5.9.1. Configuring the Temperature Format

- *Temperature*
  - *Temp Format*
    - *Celsius*
    - *Fahrenheit*

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.

5.9.2. 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 5.9.3.

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 the 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.

5.9.3. Setting the Temperature

- *Temperature*
  - *Set Temperature*
    - *-600 to 600*

This menu item is used to set the temperature value.

5.9.4. 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 output by the temperature probe. This can be used to account for difference between two probes that are located in different areas.

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

5.10.1.1. Serial

When the EAS option (+E) is added to the QMG, it has the ability to key Emergency Alert messages received from a Sage, TFT, or Trilithic EAS Decoder over a serial connection. The Emergency Alert Messages are inserted over program video and 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 QMG. See chapter 7 for more information on connecting and configuring the EAS decoder.

5.10.1.2. TCP/IP

Alternately, the QMG can be configured to receive EAS messages and audio over TCP. The HD9725LGA firmware implements the DVS/168 protocol, referred to informally as EAS over TCP/IP. FTP is used to send text files to insert as crawls and WAV files to play as audio clips. Refer to HTML section 5.13 to configure the playback of the EAS audio.

EAS over TCP/IP (EAS over Ethernet) is supported with Trilithic's EASy Plus box and DASDEC. For further details, refer to the step-by-step instructions in the Trilithic “EASyPlus” Setup Tech Note.

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 5-5 shows the items available in the *EAS Setup* menu. Sections 5.10.2 to 5.10.7 provide detailed information about each of the sub-menus.

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

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

5.10.2. Setting the EAS Display Type

EAS
- *Type*
  - *Ramp On*
  - *Ramp Off*

This menu item is used to select how the EAS message will transition onto the video.

Select *Ramp On* to have the crawl background appear as the text scrolls from right to left across the screen.

Select *Ramp Off* to have the crawl background appear all at once.

5.10.3. 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 display position.

5.10.4. 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 available true type fonts that have been loaded using the Overture™ software. When you press the **SELECT** button the display will show `font:fontname` indicating that this is the new display font.

5.10.5. 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.

5.10.6. 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.

5.10.7. Setting the Colors 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 color 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 colors. For the sake of simplicity only the menu item for setting the warning background color 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 color for the warning messages. When you first enter this menu item you will be shown a set of color values for each of the RGB color components. The display will show something similar to:

```
R:255G:B   0 G:   0
```

To change the color 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 color 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
```

5.11. MEDIA CONFIGURATION ITEMS

On Media Keyer units the *Media Setup* menu controls all the parameters for logos and audio clips. Table 5-6 shows the items available in the MEDIA *Setup* menu on Media Keyer Units. Sections 5.11.1 to 5.11.13 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.

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

Table 5-6: Top Level of the Media Setup Menu

5.11.1. Setting the Logo Horizontal Position

MEDIA
H Position
H Position:0 0 to max pixels

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.

5.11.2. Setting the Logo Vertical Position

MEDIA
V Position
V Position:0 0 to max lines

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 the video standard in use.

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

5.11.3. Setting the Layer Level

MEDIA
Layer
0 -99 to +999

This menu item sets the layer level of the logo. The user can layer a number of logos over the top of each other using the QMG module. 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, 0 and 10, respectively 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 faded in.

5.11.4. Setting the Logo Transparency

MEDIA
Gain
Gain 100

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.

5.11.5. 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.

5.11.6. 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.

5.11.7. 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.

5.11.8. Setting the Logo Quick In Duration

MEDIA
Quick In
Quick In:0

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

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

5.11.9. 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 the logo or crawl our 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.

5.11.10. Setting the Quick In and Quick Out Effect

This control is used to set the quick in and out effects for the current logo. It enables the user to insert any animated logo or crawl while applying a special effect during the fade in or fade out time.

MEDIA
QInEf
Fade
Wipe (l --> r)
Wipe (r --> l)
Wipe (t --> b)
Wipe (b --> t)
Push (l --> r)
Push (r --> l)
Push (t --> b)
Push (b --> t)

The *Quick In Effect* control enables the user to apply a Quick In effect to the current logo. The following effects are available:
Fade gradually fades in the effect.
Wipe will wipe the logo on from left to right.
Wipe will wipe the logo on from right to left.
Wipe will wipe the logo on from top to bottom.
Wipe will wipe the logo on from bottom to top.
Push will push the logo on from left to right.
Push will push the logo on from right to left.
Push will push the logo on from top to bottom.
Push will push the logo on from bottom to top.

MEDIA
QOutEf
Fade
Wipe (l --> r)
Wipe (r --> l)
Wipe (t --> b)
Wipe (b --> t)
Push (l --> r)
Push (r --> l)
Push (t --> b)
Push (b --> t)

The *Quick Out Effect* control enables the user to apply a Quick Out effect to the current logo. The following effects are available:
Fade gradually fades out the effect.
Wipe will wipe the logo out from left to right.
Wipe will wipe the logo out from right to left.
Wipe will wipe the logo out from top to bottom.
Wipe will wipe the logo out from bottom to top.
Push will push the logo out from left to right.
Push will push the logo out from right to left.
Push will push the logo out from top to bottom.
Push will push the logo out from bottom to top.

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

When the Crawl (+TXT or +HTXT) option is added to the QMG module, 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 QMG module. 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 5.11.11.1 to 5.11.11.8 provide detailed information about each of the sub-menus.

5.11.11.1. Setting the Crawl Logo Horizontal Crawl Rate

MEDIA
Rate
Rate:6
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.

5.11.11.2. Setting the Crawl Logo Repeat Count

MEDIA
Repeat
Repeat:0
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.

5.11.11.3. Setting the Crawl Logo Pause Time between Repeats

MEDIA
Pause
Pause:0
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.

5.11.11.4. 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 Overture™ software. When you press the **SELECT** button the display will show `font:fontname` indicating that this is the new display font.

5.11.11.5. 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.

5.11.11.6. 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.

5.11.11.7. Setting the Crawl Logo Colors

There are two menu items used to set the text (foreground) and background colors of the crawl logo. For the sake of simplicity only the menu item for setting the background color 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 color for the crawl logo. When you first enter this menu item you will be shown a set of color values for each of the RGB color components. The display will look similar to the following:

```
R:255G:B   0 G:   0
```

To change the color 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 color 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 color value has been changed.

5.11.11.8. Setting the Crawl Logo Mode

MEDIA
Crawl Mode
Ramp
Bar
Bar2

This menu item is used to set how the crawl will initially appear on the screen. There are three types of modes:

Selecting *Ramp* enables the crawl background to appear at the same time that the crawl text appears from an edge of the screen.

Selecting *Bar* enables the crawl background to appear across the screen first, followed by the crawl text appearing from an edge of the screen.

Selecting *Bar2* enables the crawl background and the crawl text to appear across the screen.

5.11.12. Audio Clip Configuration Items

The QMG has 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. Sections 5.11.12.1 to 5.11.12.2 provide detailed information about each of the sub-menus.

5.11.12.1. Selecting the Audio Clip Mix Level

MEDIA
Clip Gain Level
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%.

5.11.12.2. Setting the Audio Clip Repeat Count

MEDIA
Clip Repeat
CL Repeat = 1
CL Repeat = 50
CL Repeat = 0

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

The range of the repeat count is 0 to 100.

CL Repeat = 1 (repeats 1)
CL Repeat= 50 (repeats 50 times)
CL Repeat= 0 (loops infinitely or repeats until user manually takes it out)

5.11.13. Playlist Configuration Items

The QMG has the ability to run playlists that insert logos and associated audio clips. In order to set up a playlist you 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 5.11.13.1 to 5.11.13.3 provide detailed information about each of the sub-menus.

5.11.13.1. Showing the Logo Name for a Playlist

MEDIA
Logo Name
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™ or Overture™ software.
* Available on older firmware

5.11.13.2. 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™ or Overture™ software.
* Available on older firmware

5.11.13.3. Showing the Playlist Media Items

MEDIA
Playlist
(all associated playlist items)

The playlist menu will be displayed when the ".ekp" file (playlist file) is accessed on the front panel.

The sub-menu under the Playlist menu will contain all of the media elements listed in the playlist file (logos, crawls, audio clips, etc).

5.12. AUDIO CONFIGURATION ITEMS

Audio setup is available through the HTML page only. Please refer to section 5.13.1 for more information.

5.13. HTML SETUP PAGE

The QMG module has 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 an Internet browser and entering the IP address of the QMG module in the address bar. The following sections provide a description of the features available on the HTML setup page.

5.13.1. HTML Audio Setup Page

Bypass Embedded Audio Processing: Setting "Yes" to Bypass Embedded Audio Processing allows the Audio Mixer to be bypassed which will only provides embedded audio straight from the source. Disabling this option allows for the Audio Mixer Processor to be active where Embedded Audio, External Audio, Gain, Duck, Voice Over, Audio clips etc, can all be applied.

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

Black: This column configures the audio, which is to be used when the QMG module is outputting black. The black function is only accessible via automation commands.

Input: This column configures the audio, which is to be used when the QMG module is passing the video, which is connected, to the PGM IN BNC connector.

Audioclip: This column configures which channel(s) the audio clip audio is to be inserted into. This layer also enables the user to specify the desired mix levels for audio clips.

Voiceover: This column configures the input source, which is to be used for voiceovers as well as the output channel(s), which the voiceover audio is to be inserted into. This layer also enables the user to specify the desired mix levels for voiceovers.

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

CLIP1L - left audio channel of currently playing .wav file
CLIP1R - right audio channel of currently playing .wav file
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.

Voiceover In:

Rate (field): Is the duration of voice over audio fading in with the program audio. (Measured in fields).

Mode: The effect of the voice over audio fading in.

Voiceover Out:

Rate (field): Is the duration of voice over audio fading out with the program audio. (Measured in fields).

Mode: The effect of the voice over audio fading out.

Mode Description:

Cut: Performs a cut on the voice over audio.

Fade: Fades in with the voice over audio with the duration set.

Cut-Fade: Performs a cut on the existing audio and fades in the voice over audio.

Fade-Fade: Fades out the existing audio and fades in the voice over with the duration set.

Fade-Cut: Fades out the existing audio and performs a cut on the voice over audio.

Audio Clip Fade Duration: All wav files will be ramped to their full gain in the time specified, and ramped out in the same amount of time. Generally a large setting of one second or more is desirable to avoid harsh sound transitions, but some applications require embedding very short tones for downstream editing.

5.13.2. Storage Setup Page

The user can configure setting for HTML storage setup. The storage setup page enables the user to setup for Local Storage or Network Attached Storage.

5.13.2.1. Local Storage

Enable RAID 0: *RAID 0* causes the system to stripe the two compact flash cards for improved performance. Each file is stored in stripes, partly on one CF, partly on the other.

Warning: Enabling and disabling RAID 0 requires reformatting the CF cards or system stability can be affected.

To enable RAID 0, perform the following steps:
1. Reformat both CF drives using Overture.
2. Select “Yes” for RAID 0 in the html page.
3. Reboot the keyer.
4. The two CF drives should now appear as a single drive called Array 0.

To disable RAID 0, perform the following steps:
1. Select “No” for RAID 0 in the html page.
2. Reboot the keyer.
3. The CF drives will now appear as card0 and card1.
4. Reformat both CF drives using Overture.

The user should not try to format the array drive. The user must disable RAID and format them individually.

Enable Precaching: The *Enable precaching* control enables the user to preload media into the keyer’s memory prior to being triggered.

To *enable* precaching, place a checkmark beside the “Yes” value.
To *disable* precaching, place a checkmark beside the “No” value.

5.13.2.2. Network Attached Storage Setup

Network attached storage allows connection to any NFS server:

Local Media Name: Enter an identifier name for the media in this field. (Arbitrary)
Server IP: Enter the IP address of the server.
Mount Path: Enter the exact mount path that it exports to.

Please note that it is only necessary to enter a User ID and Group ID if the NFS server requires these parameters.

The user must restart the system for storage server settings to take effect. The NAS device must be operational during boot or the device will never get mounted. Interruptions in NAS service after booting are tolerated and the system does remount.

Note: It is not recommended to use RAID 0 and NAS devices together.

When changes are made to the Storage Setup the bottom submit button on the HTML page must be clicked. Upon waiting 30 seconds, the user should then reboot the unit in order for the changes to take effect.

5.13.3. 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.

5.13.4. HTML Font List Page

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

5.13.5. 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).

5.13.6. HTML Set Time Page

The HTML Set Time page allows the user to set the system date and time of the QMG module.

5.13.7. METAR Server Setup Page

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

Please note that the METAR is a PASSIVE FTP session.

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 QMG module to obtain the temperature information. 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 QMG module to wait before trying to retrieve the temperature from the METAR server after a failed attempt.

Use Proxy: Select Yes if the unit is connected to a proxy server (Proxy Server details under HTTP proxy setup tab), otherwise select No.

5.13.8. HTTP Proxy Setup Page

Note: For this information please contact your IT department.

The QMG HTTP Proxy Setup page enables the user to enter the following settings:

IP Address: Enter the Proxy server IP address.

Port: Enter the proxy server port number (default).

User ID: Enter the user ID to access the proxy server.

Password: Enter the user Password to access the proxy server.

The QMG only supports BASIC Authentication.

5.13.9. HTML Reboot Page

The QMG module also enables the user 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 QMG module.

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

This page left intentionally blank

CHAPTER 6
TABLE OF CONTENTS

Figures

This page left intentionally blank

6. CONFIGURING A CONTROL PANEL USING THE QMC_SETUP

Selecting the *PANELS* button in the QMC_Setup will provide the user with a list of panel options to choose from. For simplicity, this manual will describe how to configure the CP1000A panel to work with the QMG.

6.1. CHOOSING A PANEL TYPE

In the QMC_Setup, select the *PANELS* button and a *System Panels* dialog box will appear. Click on *New*, and a list of panel options will appear in the *New Panel* console.

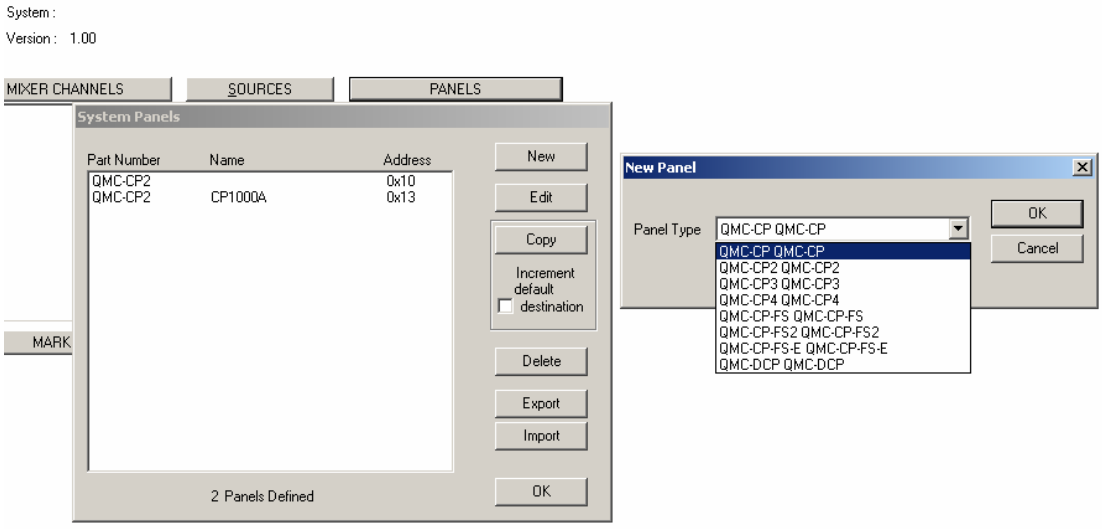


Figure 6-1: *System Panels* Dialog Box in the QMC_Setup

Select "QMC-CP2 QMC-CP2" from the *Panel Type* drop down menu to configure the CP1000A panel.

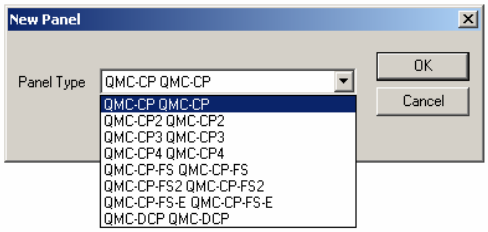


Figure 6-2: *New Panel* Window in the QMC_Setup

6.2. CONFIGURING THE CP1000A PANEL

Once the panel selection is made, double click on the panel name within the *PANELS* tab of the QMC_Setup. This will provide the panel configuration for the CP1000A panel (QMC-CP2 QMC-CP2) as illustrated in Figure 6-3.

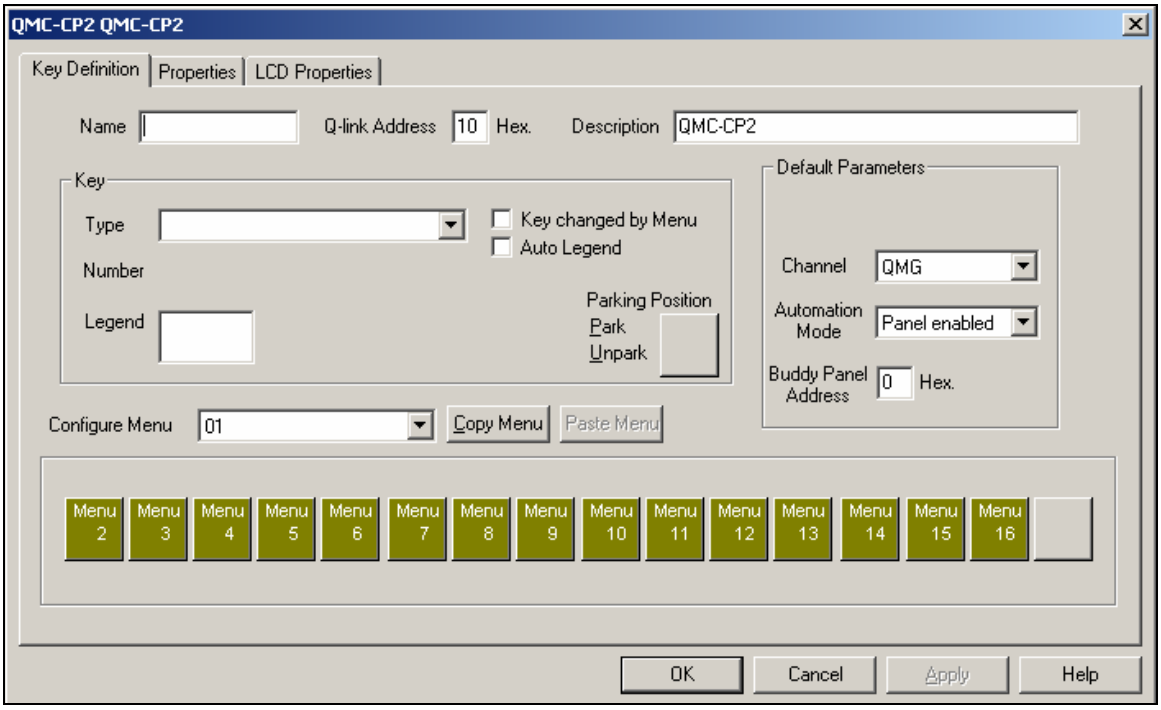


Figure 6-3: Panel Configuration Window for the CP1000A

6.2.1. Key Definition Tab

Name: This field is used to enter the name of the panel. The field requires 16 characters or less.

Q-Link Address: The panel will indicate a Hex Address on the LCD button and this Hex Address must be entered into this field. This field must be filled out in order to ensure proper communication with the panel.

Description: This field is used to provide a description of the panel.

6.2.1.1. Key Parameters

This parameter allows the user to edit the currently highlighted key.

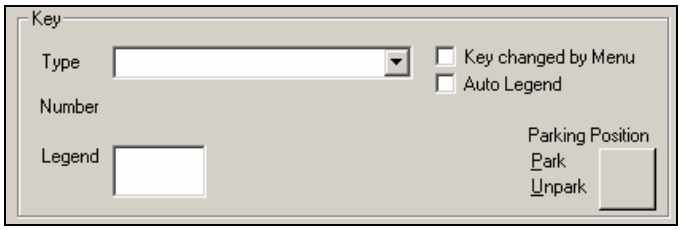


Figure 6-4: Key Fields and Options

When a key such as Menu 2 is selected, the fields in Figure 6-4 will apply.

Figure 6-5: Menu Keys

Type: Specifies the functionality of the currently selected key.

Number: Specifies the number that is associated with the currently selected key.

Legend: The user can provide a name or description of the key, which will be indicated on the LCD button of the panel. This edit box allows a two row 5+5 character legend to be used.

Key Changed By Menu: This checkbox determines if the currently selected key will change when a menu key is pressed; it can only be changed when defining Menu 1.

Note: The number of keys that change affects the number of menus the user can define. It also affects the configuration of ALL menus and should be setup first when configuring the panel.

Auto Legend: When this box is checked, the *Key Legend* edit box will change if the key definition is changed.

Park Position: This key is used as a 'parking' space to reflect and copy the functionality of a particular key. Select a button (i.e. "Menu 7") and press 'p' or 'P' to move the key type and number to the parked key. Please note that this will not affect the original copied key. To assign the parked key to another button, select a new button (i.e. "Menu 14") and press 'u' or 'U' to transfer the parked information. Each time 'u' is pressed, the key number is automatically incremented if the key type is a source key.

6.2.2. Properties Tab

Figure 6-6 illustrates the parameters for the *Properties* tab.

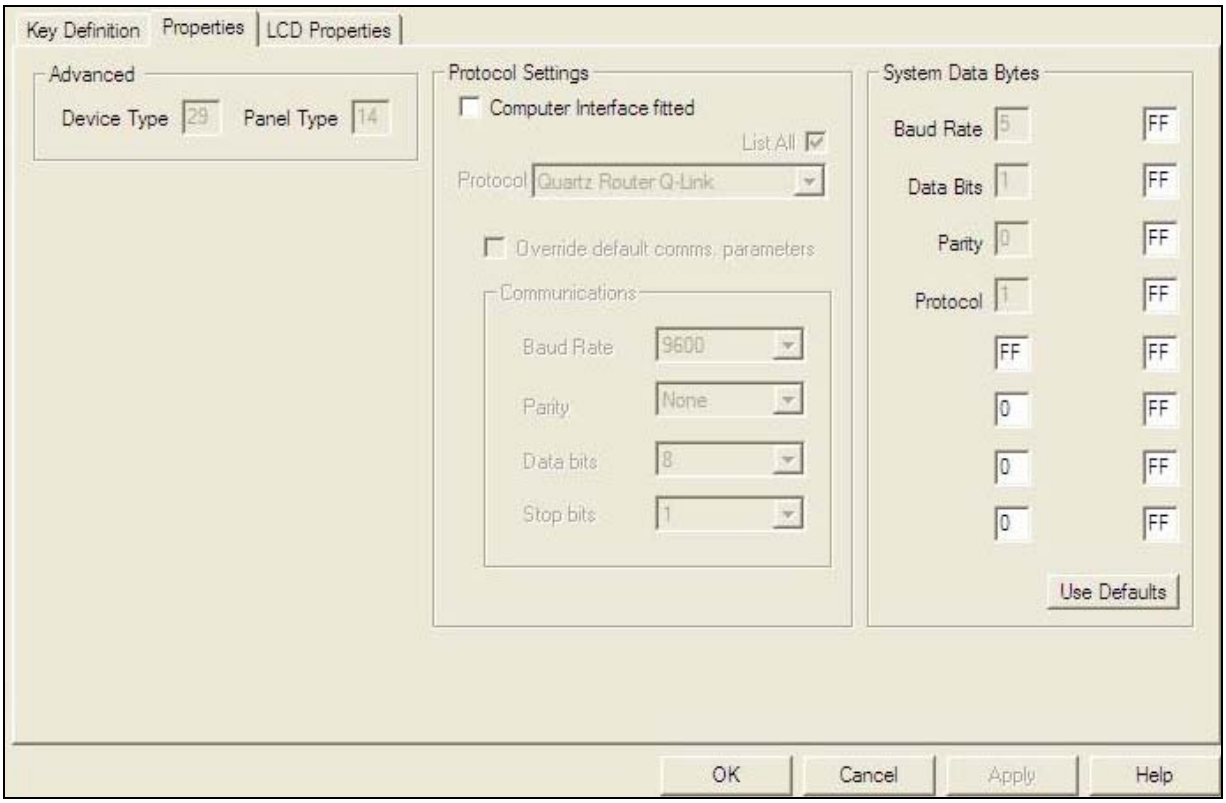


Figure 6-6: Properties Tab

6.2.2.1. Advanced Display

Device Type: The “Device Type” displays a numerical value that defines how the device will operate.

Panel Type: The “Panel Type” displays a numerical value that defines how the panel will operate.

6.2.2.2. Protocol Settings

The *Computer Interface Fitted* box must be checked in order to configure the “Protocol” and “Communications” settings. Please note that some protocols have a fixed baud rate, and, therefore, can not be changed.

Protocol: Use the drop down menu to select the necessary communications protocol to be used. The menu will display all available communication protocols when the “List All” option is checked.

Communications: Use the drop down menus to set the values for “Baud Rate,” “Parity,” Data Bits,” and “Stop Bits.” Check the “Override” option to override all default communication settings.

6.2.2.3. System Data Bytes

This parameter enables the user to enter application-specific data values. The values are measured as two digit hexadecimal numbers. Please note that the greyed out numbers represent values that have been configured elsewhere within the QMC_Setup.

Use Defaults: Selecting this button will reset all system data values back to their default settings.

6.2.3. LCD Properties Tab

Figure 6-7 illustrates the parameters for the *LCD Properties* tab.

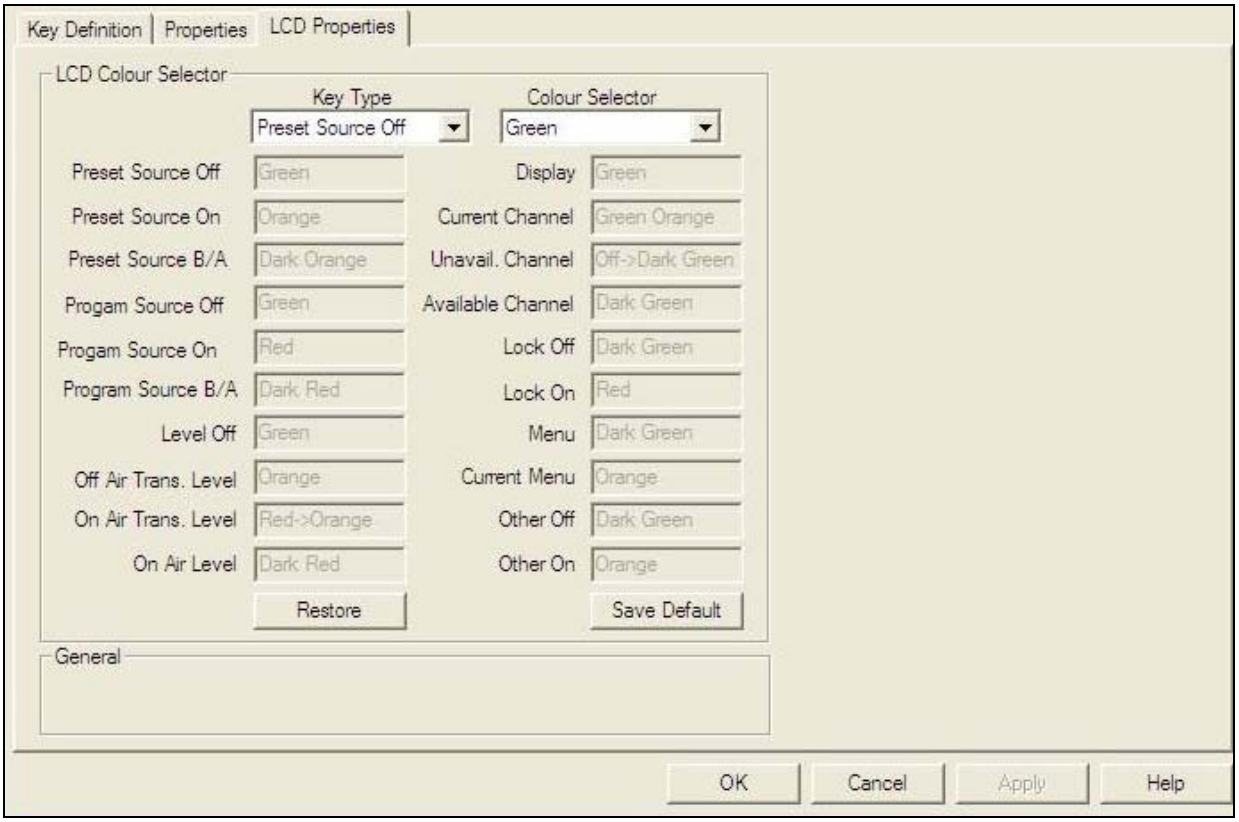


Figure 6-7: LCD Properties Tab

6.2.3.1. LCD Colour Selector

The *LCD Colour Selector* control enables the user to configure each LCD button to display different colours. The greyed out dialog boxes display the colours assigned to the individual key types.

Key Type: This drop down menu enables the user to select a key type that requires a specific colour. Please note that any key types not listed in the drop down menu will be designated to the “Other Off” or “Other On” controls.

Colour Selector: This drop down menu enables the user to assign a colour to the currently selected key type (in the “Key Type” menu). When a colour is chosen, the colour setting in the greyed out dialogue box will change in order to reflect the new colour selection.

Restore: Selecting this button will restore all key type colours to their default settings.

Save Default: Selecting this button will save the current colour selections as the default for any newly created LCD panels to follow.

6.3. CONFIGURING THE CP1000A PANEL

The CP1000A is a 16 LCD button panel. Each of the 16 buttons has the option to change function when that button key is selected. This allows for a total of 256 (16x16) virtual keys to be configured.

6.3.1. Configuring the Logo Selection

For a highlighted key, choose *Menu* as an option for *Key Type*. The *Legend* can be typed in as ‘LOGO’, or any other preferred notation. When this ‘LOGO’ key is selected, it will allow the user to configure 16 keys in the sub-menu of ‘LOGO’.

Figure 6-8 shows the sub-menu of the ‘LOGO’ Key. The *Key Type* is defined as “Logo Selection.” Each ‘Logo’ key is specified by a *Number*. The first ‘Logo’ key uses ‘Logo1’ for *Number*, the second ‘Logo’ key uses ‘Logo 2’, and the last logo Key uses ‘Logo 13’. When this configuration is made, the logos present on CF of QMG will appear in each of the ‘Logo’ Keys.

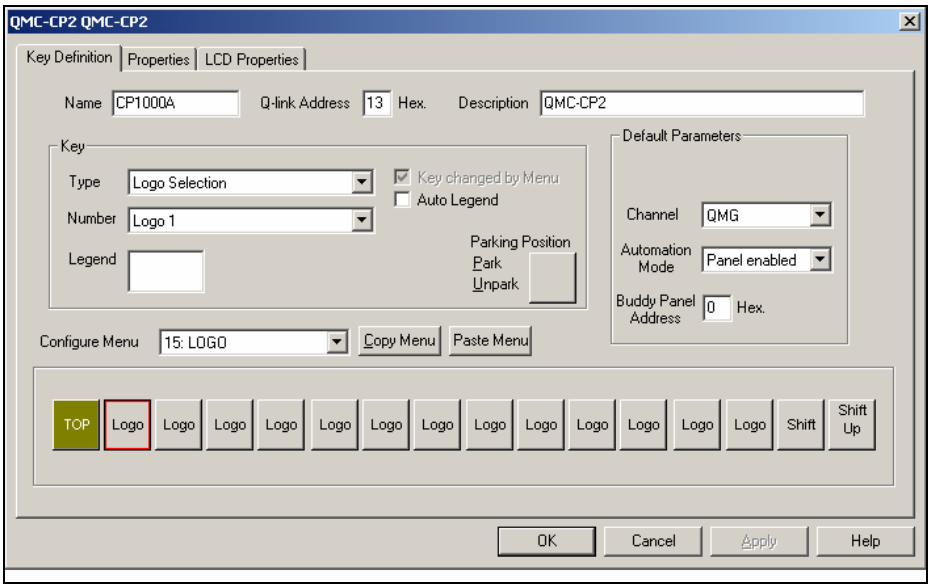


Figure 6-8: ‘LOGO’ Key Sub-Menu

The last two keys are 'Shift' and 'Shift Up'. The 'Shift' buttons allow the user to navigate through the entire logo list of the QMG. In this example, 'Shift' and 'Shift Up' keys use a Decimal 'Number' of 208 given that 13 logo keys are present. This will give access to 208 (13x16) logos.

6.4. CONFIGURING LOGO ACTION IN 'MG CONTROL KEYS 1'

When a logo is selected, the 'MG Control Keys 1' can be used to perform the logo action. Please refer to Figure 6-9 below where the 'MG Control Keys 1' is used. The *Key Type* is defined as 'MG Control Keys 1'. The *Number* field allows the user to choose from 'Cue Logo', 'Fade In', 'Fade Out', 'Fade All Out', 'Select Logo', and 'Current Logo'.

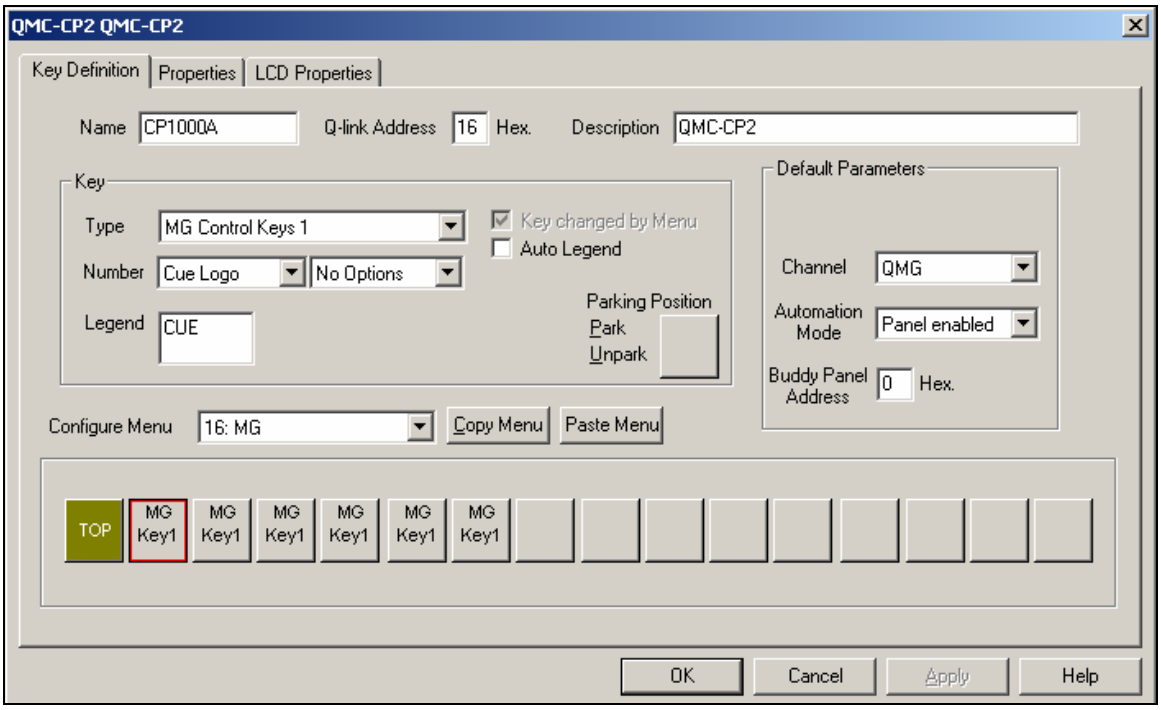


Figure 6-9: 'MG Control Keys 1' Option

6.4.1. Logo Action Definitions

Cue: This key allows the logo to be loaded into memory making it immediately available for fade in. Cueing a media item allows it to be viewed on the preview output bus before it is faded in.

Fade In: This key is used to fade in media items onto the program output channels.

Fade Out: This key is used to fade out media item that is currently selected from program channels.

Fade All Out: This key is used to fade out all media items from program channels.

Current Logo: This key is selected to show the status of last selected logo or currently selected logo.

Select Logo: This key is used to select the logo that user wants to cue, fade-in, fade-out or apply

other changes to the logo.

Note: When a 'Key' button is highlighted in green, it indicates that the logo is available but not loaded. Orange indicates that the logo is loaded into the video RAM, and red indicates an On-Air logo.

6.5. CONFIGURING LOGO PROPERTIES IN 'MG CONTROL KEYS 2'

Selecting 'MG Control Keys 2' in the *Key Type* drop-down menu will allow the user to change layer and gain properties for logos. Figure 6-10 illustrates that the *Key Type* is set to 'MG Control Keys 2' and *Number* is set to 'MG Logo Gain Up/Down' (or 'MG Layer Up/Down').

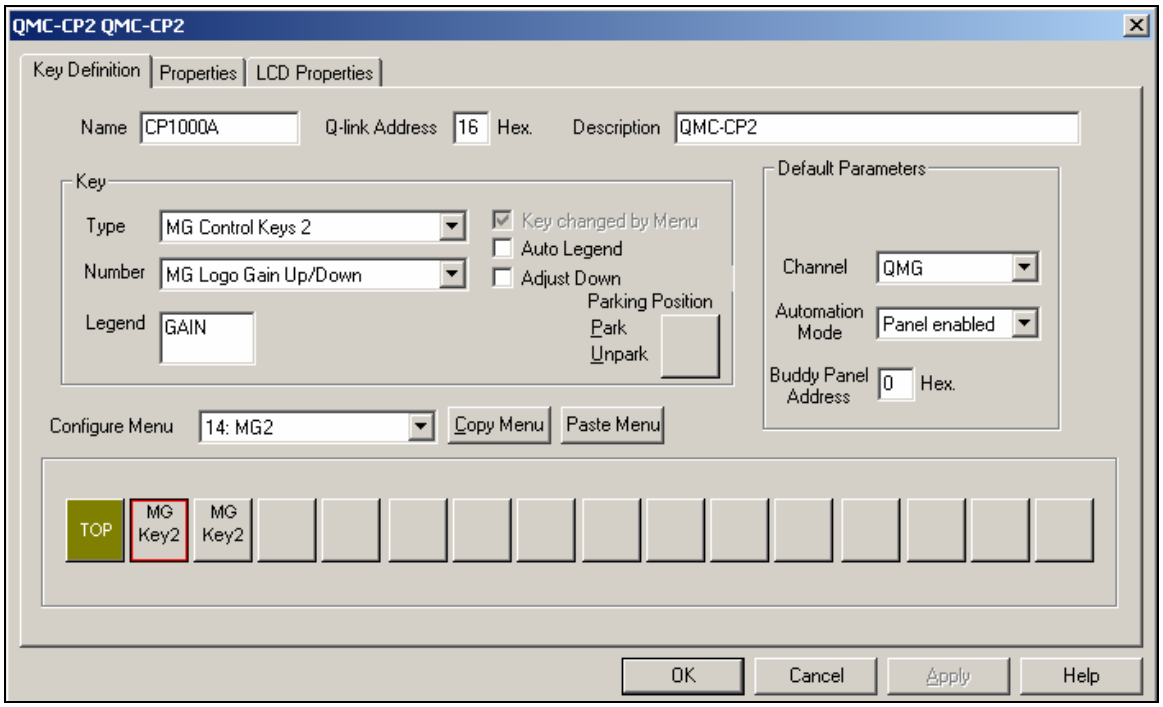


Figure 6-10: 'MG Control Keys 2' Option

6.5.1. Logo Action Definitions

MG Logo Gain Up/Dow: This key sets the gain on the selected logo. Gain is the opacity (inverse of transparency) of the logo.

Logo Layer: This key sets the layer level of the selected logo.

6.5.1.1. Configuring X, Y Placement for Logos

Logo Position Left: This key will display the x co-ordinate in pixels (0-720) of the currently selected logo and decreases this when pressed. The x co-ordinate is incremented in 2 pixel increments.

Logo Position Right: This key will display the x co-ordinate in pixels (0-720) of the currently selected logo and increases this when pressed. The x co-ordinate is decremented in 2 pixel decrements.

Logo Position Up: This key will display the y co-ordinate in TV Lines (0-576 for PAL) of the currently selected logo and decreases this when pressed.

NOTE: The logo position can only change when the logo is off-air as this function causes disturbance on the output.

Logo Position Down: This key will display the y co-ordinate in TV Lines (0-576 for PAL) of the currently selected logo and increases this when pressed.

6.6. CONFIGURING THE DVE SELECTION

One of the Selected Keys can be allocated for DVE control. When "Menu" is selected under *Key Type*, the key can be defined as 'DVE'. The user will have access to the DVE Key's sub-menus.

Figure 6-11 shows the sub-menu of the 'DVE' Key. *Key Type* is defined as 'DVE Selection'. Each 'DVE' key is specified by a *Number*. The first DVE key uses 'DVE 1' for *Number*; the second DVE key uses 'DVE 2' respectively. Each DVE move is specified by a number in the *DVE Move Manager* and this move can be activated by specifying the associating DVE number.

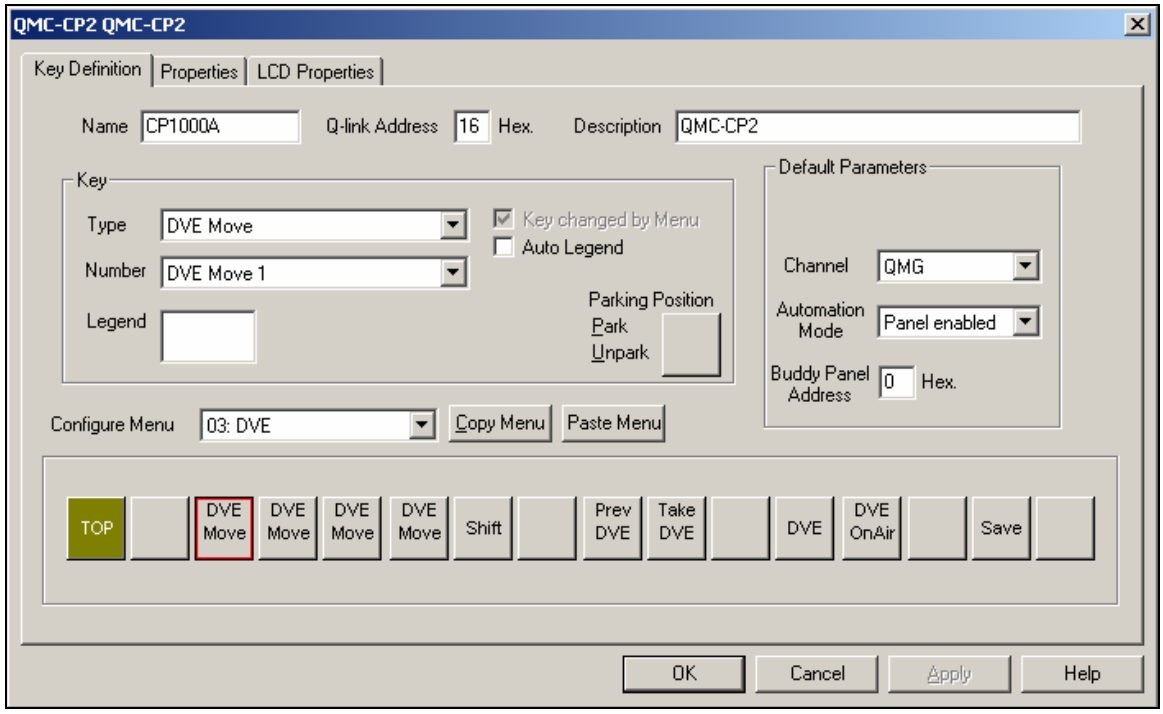


Figure 6-11: 'DVE' Key Sub-Menu

The last two keys are 'Shift' and 'Shift Up'. The 'Shift' buttons allow the user to navigate through the entire DVE list of the QMG. In this example, 'Shift' and 'Shift Up' keys use a Decimal 'Number' of 208 given that 13 logo keys are present. This will provide access to 208 (13x16) logos.

6.6.1. DVE Keys

Preview DVE: This key is used for PST DVE moves. A PST DVE can be visible only if there is an active PGM DVE, although a PST DVE can be triggered at any time. If a PGM DVE is active, then the newly triggered PST DVE move will be on top. When both PGM and PST DVEs are active, the last triggered DVE will be on top. PST DVE move can be triggered at any time, and can only be visible when PGM DVE is active.

Take DVE: This key is used for Program DVE (PGM DVE) moves. When the QMG operates in Dual-DVE mode, the PGM DVE layer will be on top of the PST DVE layer.

DVE Level: This key is used to remove the Preview DVE (PST DVE) move.

DVE On-Air: This key type is used to remove the Program DVE (PGM DVE) move. If a PST DVE move is also active, this will also be removed.

DVE Left: Move the DVE video window position to the left.

DVE Right: Move the DVE video window position to the right.

DVE Up: Move the DVE video window position upwards.

DVE Down: Move the DVE video window position downwards.

DVE Size Up: Increase the size of the DVE video window.

DVE Size Down: Decrease the size of the DVE video window.

DVE Crop Up: This key type will increase the DVE Crop top and bottom. Please note that this controls the top and bottom edges of the DVE simultaneously.

DVE Crop Down: This key type will decrease the DVE Crop top and bottom. Please note that this controls the top and bottom edges of the DVE simultaneously.

DVE Crop In: This key type will increase the DVE Crop left and right. Please note that this controls the left and right edges of the DVE simultaneously.

DVE Crop Out: This key type will decrease the DVE Crop left and right. Please note that this controls the left and right edges of the DVE simultaneously.

DVE Border Width Up: Increases the width of the DVE video window border from top to bottom edges simultaneously.

DVE Border Width Down: Decreases the width of the DVE video window border from top to bottom edges simultaneously.

DVE Border Width In: Increases the width of the DVE video window border from left and right edges simultaneously.

DVE Border Width Out: Decreases the width of the DVE video window border from left to right edges simultaneously.

DVE Border Softness Up: Increases the softness of the DVE video window border.

DVE Border Softness Down: Decreases the softness of the DVE video window border.

This page left intentionally blank

CHAPTER 7
TABLE OF CONTENTS

This page left intentionally blank

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

The QMG with the EAS option fitted is the perfect solution for on-air insertion of channel branding bugs and Emergency Alert System messages. The QMG is designed to interface to serial port based EAS decoders from Sage and TFT, and to the Ethernet based EAS decoder from Trilithic. The emergency alerts from these decoders are inserted over the program video and/or audio.

This chapter describes how to connect the Sage or TFT serial port based EAS decoders to the Keyer, how to configure those decoders and the Keyer, and to perform tests to verify the system is functioning properly. The Setup of the Trilithic over serial is similar to the Sage serial setup (however, we do not have a Trilithic Decoder Configuration section at this time).

For instructions on configuring the Trilithic EAS decoder for operation over TCP refer to the Technical Note titled, "Trilithic EASyPlus Setup". For using the DASDEC device over TCP, refer to DASDEC for documentation.

7.1. CONNECTING THE QMG MODULE 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 QMG module's built in character generator. Please ensure that your QMG module is out of the broadcast path when testing functionality. Figure 7-1 gives a simplified connection overview.

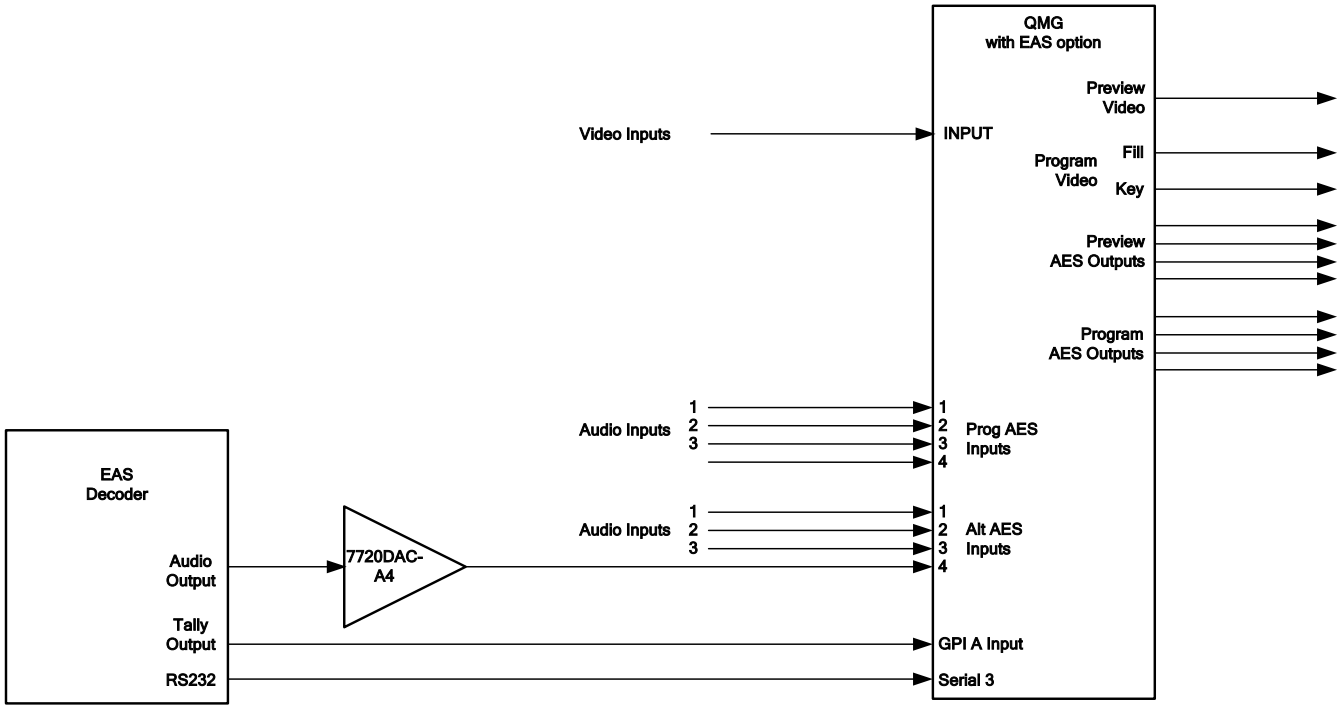


Figure 7-1: EAS Decoder Connection

7.1.1. Connecting the Serial Port

Using a standard DB9 to RJ-45 adapter, connect a straight-through RS-232 cable to Serial port 3 on the QMG. 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 QMG module. 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 7-1. This cable should not exceed 50 feet. Note that the serial port on the QMG module must be set for RS-232 operation as described in section 2.1.4.

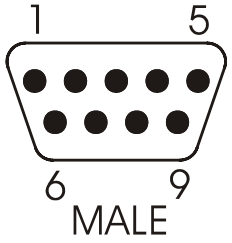
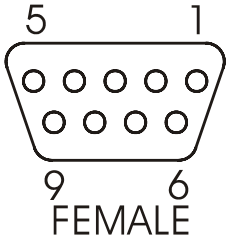
QMG End				EAS Decoder End		
	9 pin D Male	**Pin**	**Belden 9729**	**9 pin D Female**	**Pin**	
		1			1	
	TxD	2	-------1a------	RxD	2	
	RxD	3	-------2b------	TxD	3	
		4		Rx Gnd	4	
	Sig Gnd	5	---drain 1----	Sig Gnd		
		6		Tx Gnd	6	
	RTS	7	-------1b-----	CTS	7	
	CTS	8	-------2a------	RTS	8	
		9			9	
	Frame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

Table 7-1: EAS Decoder Extender Cable

If you are using a Sage model EAS decoder please see section 7.1.2 for port configuration information. If you are using a TFT model EAS decoder please see section 7.1.3 for port configuration information.

7.1.2. 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 QMG module 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 QMG module. Proceed to section 7.1.4 to connect the audio and GPI controls, to configure the QMG module and verify that the connections are functioning as expected.

7.1.3. 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 QMG module and it is configured to communicate using the *Alternate TFT I/F for Trilithic EAS Sytems 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 QMG module 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 QMG module. Proceed to section 7.1.4 to connect the audio and GPI controls, to configure the QMG module and verify that the connections are functioning as expected.

7.1.4. 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 QMG module. 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 QMG module, which has been specified as the voiceover input via the *HTML Audio Setup* page. (See section 5.13.1).

7.1.5. 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 QMG module 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 QMG module.

(See *Note 1: TTL Tally voltage levels; Inputs are Logic 0 = <0.8V, Logic 1 = >3.5V; Outputs are Logic 0 = <1.0V at 10mA, Logic 1 = >3.5V (thru 4K7).
for a pinout of the GPIO connector on the keyer unit.)

7.2. CONFIGURING THE QMG MODULE FOR EAS

7.2.1. Configuring the Serial Port

In order for the EAS decoder to communicate to the QMG module you must configure the SERIAL PORT 2 for the correct protocol and baud rate. Set this menu item to *EAS CG* in order for the EAS decoder to communicate to the QMG module. See section 5.6.9 for information on setting the serial port protocol.

7.2.2. 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 7-2. See section 5.8.1 for information on configuring the GPI inputs.

Menu Item	Setting
CAction	Duck In
OAction	Duck Out
Logo	None

Table 7-2: GPI settings for EAS Tally Control

7.2.3. Configuring the EAS Controls

The EAS menu items are used to configure the EAS crawl position, size, and colors. See section 5.10 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.

7.3. TESTING THE SYSTEM

Please ensure all output video from the QMG module is out of your on-air broadcast path for this test.

7.3.1. 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 and ensure that you have the correct video standard selected in the QMG module. 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 QMG module. 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

7.3.2. 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 and ensure that you have the correct video standard selected in the QMG module. 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 QMG module. 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.

This page left intentionally blank

CHAPTER 8
TABLE OF CONTENTS

Figures

This page left intentionally blank

8. TECHNICAL DESCRIPTION

8.1. SPECIFICATIONS

8.1.1. Video Specifications

8.1.1.1. Video Connections

Outputs:
2 standard (dual): Program (Key), Preview (Fill)

8.1.1.2. Video Inputs (apart from bypass inputs)

Number of Inputs: 1 Program
Input Standard: SMPTE 259M or 292M
Signal Level: 800mV p-p nominal
Impedance: 75Ω terminating
Return Loss:
5 - 270MHz: 15dB typical
5 - 1.485GHz: 15dB typical

Cable Equalization: Belden 8281 up to 250m (270Mb/s)
Belden 1694AA: Up to 90m (1.5 Gb/s)
Connectors: BNC 75Ω terminating

8.1.1.3. Video Outputs

Number of Outputs: 1 Program (Key), 1 Preview (Fill)
Output Standard: SMPTE 259M or 292M
Signal Level: 800mV p-p ± 10%
Impedance: 75Ω terminating
Return Loss:
5 - 270MHz: 15dB typical
5 - 1.485GHz: 15dB typical

D.C. offset: 0 ± 0.5V
Rise/fall times: <0.4ns
Output Jitter: 0.2UI p-p
Connectors: BNC, 75

8.1.2. Reference Input

Standard: Analog Black
Signal Level: 1V p-p ± 3dB
Connector: BNC, 75Ω with looping connector

8.1.2.1. Audio Connections

Audio Inputs:

Input Standard:	SMPTE 276M, AES-3
Quantity:	4 Voice Over, 8 Program
Signal Frequency:	32 - 96kHz
Audio Resolution:	24bit
Signal Level:	200mV - 10V p-p
Impedance:	110∧ terminating (balanced QMC-2 frame)
	75∧ terminating (unbalanced QMC-2 frame)
Return Loss:	0.1 - 6MHz: >20dB
Connectors:	D50 female (balanced QMC-2 frame)
	BNC, 75∧ (unbalanced QMC-2 frame)

8.1.3. Control Specs

Serial:	1x D9 female, 3 x 8 pin RJ45
	RS232/RS422 link selectable
Ethernet 1000BT:	8 pin RJ45
Tally:	1x D25 female

8.1.4. Physical Specs

Operating Temperature: 0 - 40°C

8.2. UPGRADING THE FIRMWARE – RS232 SERIAL PORT

8.2.1. Overview

The firmware in the unit 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 QMG module 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.

8.2.2. Terminal Program Setup

1. Connect the serial cable to the **Serial 1** DB9 connector on the rear panel of the QMG. 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**

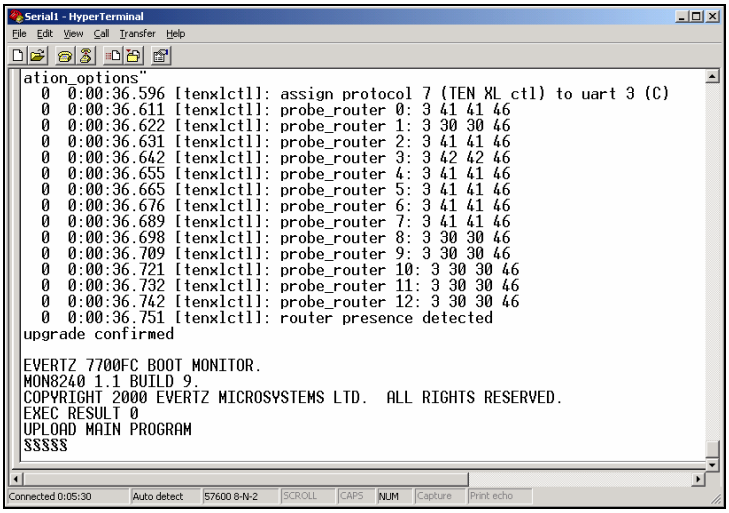
5. Power up the unit.

8.2.3. Initiating Firmware Upgrade Mode via the Rackmount Remote Control Panel

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 8.2.4.

6. You can invoke the Firmware upgrade mode using the front panel Setup Menu. (See section 5 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



You will have approximately 10 seconds to start transferring the file before the unit automatically reboots. Proceed to section 8.2.4 for instructions on uploading the firmware using the terminal program.

8.2.4. 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 Figure 8-1). The symbol used depends on the font selected for use with HyperTerminal.

   For example:

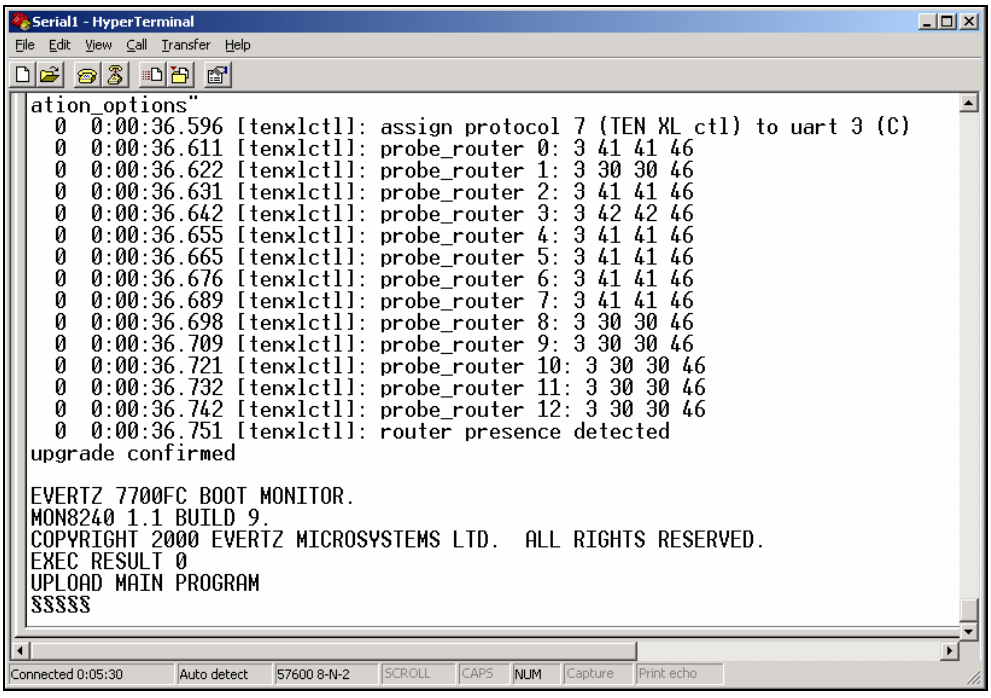


Figure 8-1: HyperTerminal Serial 1

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.

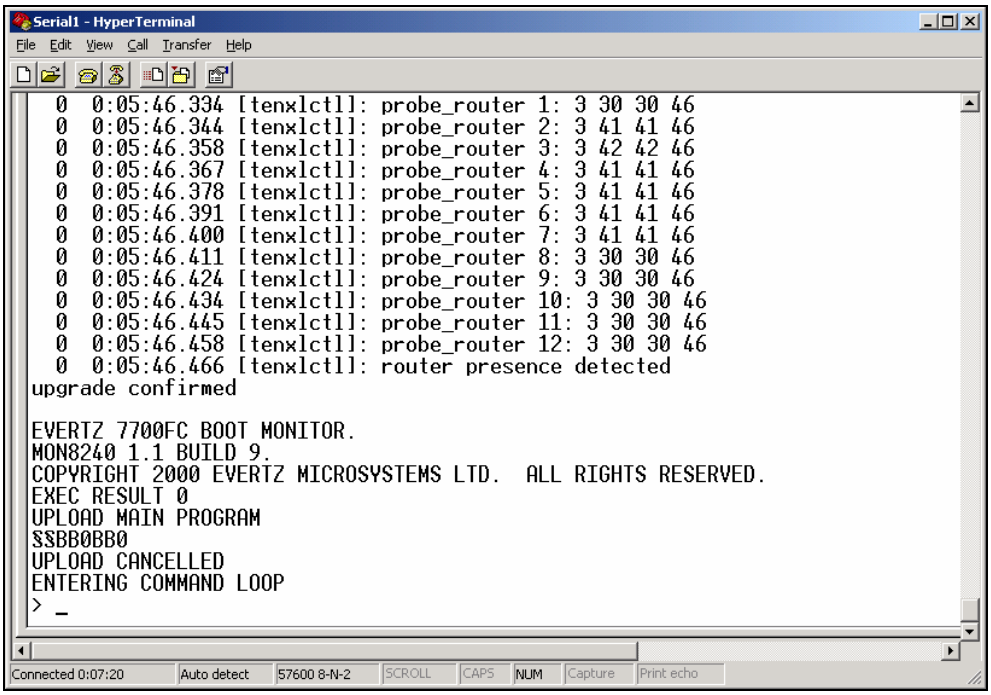


Figure 8-2: Serial 1 Entering Command Loop

10. Hit the <ENTER> key on your computer once.

11. Type the word "upload", without quotes, and hit the <ENTER> key once.

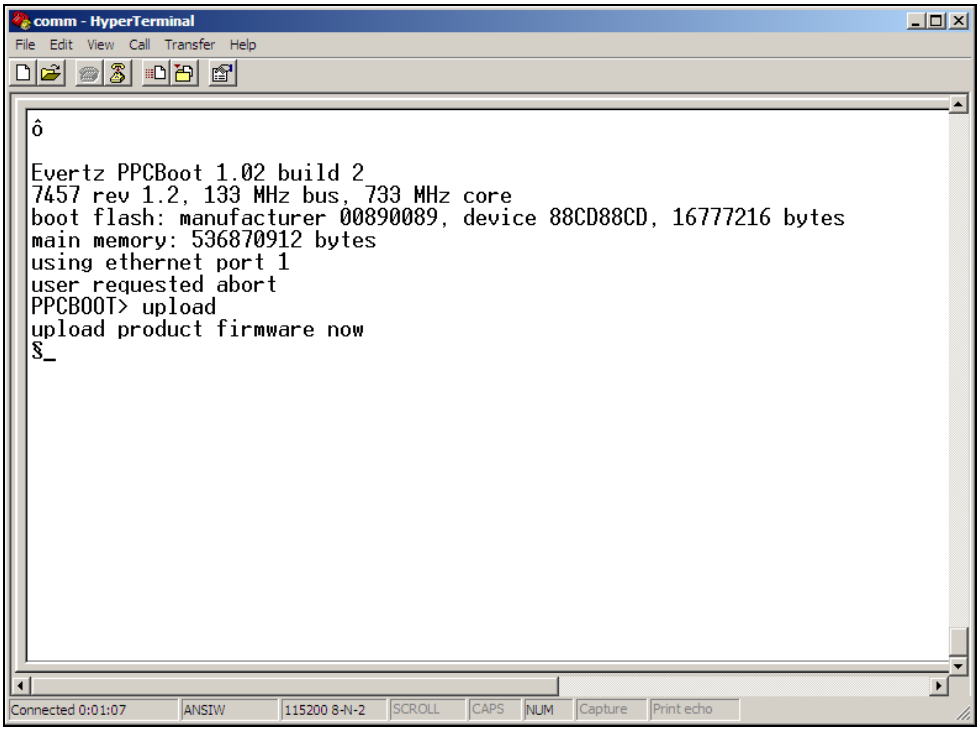


Figure 8-3: Comm - HyperTerminal

8.2.5. 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.

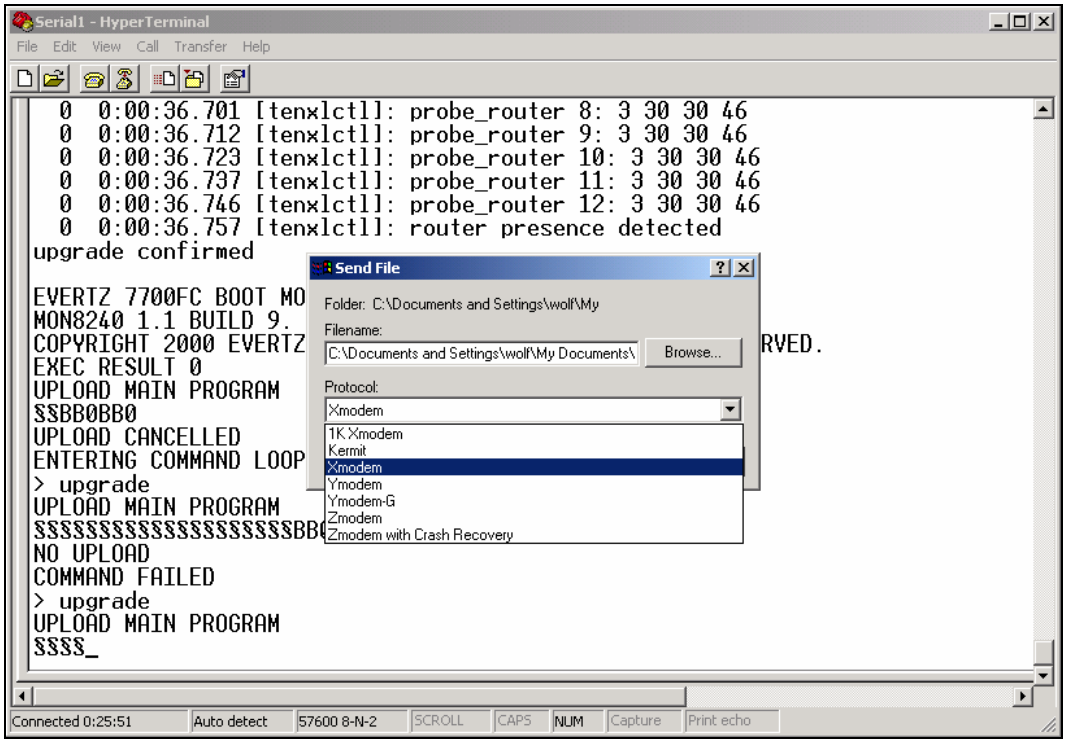


Figure 8-4: Send File

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 QMG module the name will be similar to: 2v11_3070_QMG.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.

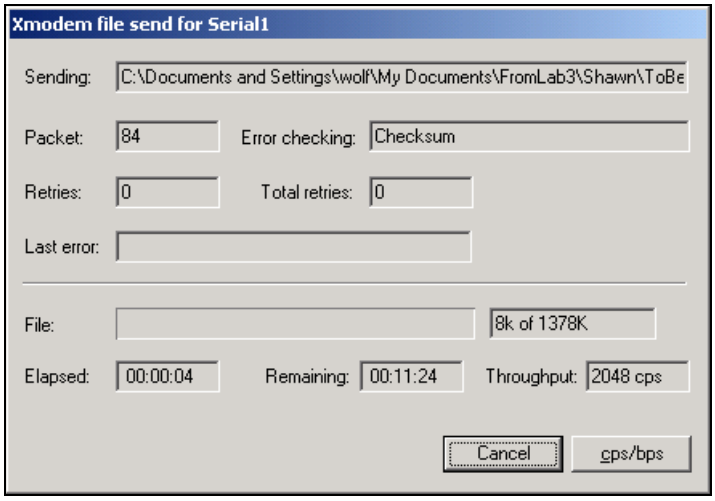


Figure 8-5: Xmodem file send for Serial1

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

For example:

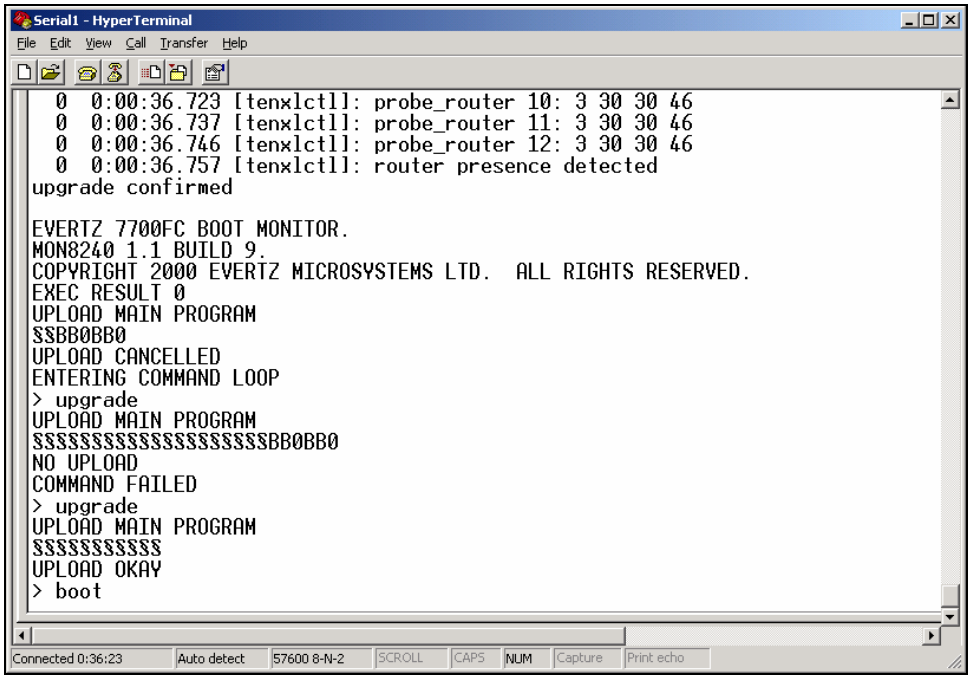


Figure 8-6: Boot Code

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.

8.2.6. Completing the Upgrade

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

8.3. UPGRADING THE FIRMWARE – FILE TRANSFER PROTOCOL OVER ETHERNET

The Overture™ software can be used to update the firmware in QMG module 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.

8.4. 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.

8.4.1. 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. Carefully reinsert the fuse holder into the power entry module.

This page left intentionally blank

CHAPTER 9

TABLE OF CONTENTS

This page is left intentionally blank

9. TROUBLESHOOTING THE QMG MODULE

If an error occurs while using the QMG module, consult the following table for more information. Table 9-1 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 *time & temperature* or *CG* logos have been requested. In the case of time, the QMG module 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 QMG supports up to 4 crawls running at a 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 `connect`() 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 `connect`() request was made on an already connected socket, or, a `sendto`() or `sendmsg`() 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 `signal`() or `kill`(), or reading or writing a file for which lseek() 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 SIGPIPE; 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 `getsockopt()` or `setsockopt()` 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 `open()`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 `write()` to an ordinary file, there is no free space left on the device; or no space in system table during `msgget(), semget(), or semop()` while SEM_UNDO 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 `msgget(), semget(), and shmget()` when key does not refer to any object and the IPC_CREAT flag is not set.
"Not a directory"	Not a directory. A nondirectory was specified where a directory is required, such as in a path prefix or as an argument to `chdir`().
"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., link ().

Table 9-1: Error Messages

10. INDEX

M

N

O

P

Q

R

S

T

U

V