Imagine COMMUNICATIONS™

Installation And Operation Manual

Selenio 6800+™ Multiviewer

HView™ QS QVM6800+

Applies to:
QVM6800+T
QVM6800+C-T

Edition B

175-100047-00

Publication Information

This publication is designed to assist in the use of the product as it exists on the date of publication of this manual, and may not reflect the product at the current time or an unknown time in the future. This publication does not in any way warrant description accuracy or guarantee the use for the product to which it refers.

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Chapter 5: Specifications

Preface

Manual Information

Purpose

This manual details the features, installation, operation, maintenance, and specifications for the QVM6800**+** series of Quad Video Modules

Audience

This manual is written for engineers, technicians, and operators responsible for installation, setup, maintenance, and/or operation of the QVM6800**+** Quad Video Modules.

Revision History

Table 1-1. Revision History of Manual

Edition	Date	Comments
Full	15 June 2009	Initial release
Provisional	2 December 2009 3:42 pm	Second Release

Writing Conventions

To enhance your understanding, the authors of this manual have adhered to the following text conventions:

Table 1-2. Writing Conventions

Term or Convention	Description
Bold	Indicates dialog boxes, property sheets, fields, buttons, check boxes, list boxes, combo boxes, menus, submenus, windows, lists, and selection names
Italics	Indicates E-mail addresses, the names of books or publications, and the first instances of new terms and specialized words that need emphasis
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, or DELETE
Code	Indicates variables or command-line entries, such as a DOS entry or something you type into a field
>	Indicates the direction of navigation through a hierarchy of menus and windows
hyperlink	Indicates a jump to another location within the electronic document or elsewhere

Table 1-2. Writing Conventions

Term or Convention	Description
Internet address	Indicates a jump to a website or URL
	Indicates important information that helps to avoid and troubleshoot problems
	Indicates advice or recommended practice.

Obtaining Documents

Product support documents can be viewed or downloaded from our website. Alternatively, contact your Customer Service representative to request a document.

Unpacking/Shipping Information

Unpacking a Product

This product was carefully inspected, tested, and calibrated before shipment to ensure years of stable and trouble-free service.

1. Check equipment for any visible damage that may have occurred during transit.
2. Confirm that you have received all items listed on the packing list.
3. Contact your dealer if any item on the packing list is missing.
4. Contact the carrier if any item is damaged.
5. Remove all packaging material from the product and its associated components before you install the unit.

Keep at least one set of original packaging, in the event that you need to return a product for servicing.

Product Servicing

Except for firmware upgrades, QVM6800**+** modules are not designed for field servicing. All hardware upgrades, modifications, or repairs require you to return the modules to the Customer Service center.

Returning a Product

In the unlikely event that your product fails to operate properly, please contact Customer Service to obtain a Return Authorization (RA) number, and then send the unit back for servicing.

If the original package is not available, you can supply your own packaging as long as it meets the following criteria:

- The packaging must be able to withstand the product’s weight.
- The product must be held rigid within the packaging.
- There must be at least 2 in. (5 cm) of space between the product and the container.
- The corners of the product must be protected.

Ship products back to us for servicing prepaid and, if possible, in the original packaging material. If the product is still within the warranty period, we will return the product prepaid after servicing.

Restriction on Hazardous Substances (RoHS) Compliance

The European Union (EU) Directive 2002/95/EC—commonly known as the Restriction on Hazardous Substances (RoHS)—sets limits on the use of certain substances found in electrical and electronic equipment. The intent of this legislation is to reduce the amount of hazardous chemicals that may leach out of landfill sites or otherwise contaminate the environment during end-of-life recycling. The Directive, which took effect on July 1, 2006, refers to the following hazardous substances:

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr-V1)
- Polybrominated Biphenyls (PBB)
- Polybrominated Diphenyl Ethers (PBDE)

According to this EU Directive, all products sold in the European Union will be fully RoHS-compliant and “lead-free.” (See our website for more information.) Spare parts supplied for the repair and upgrade of equipment sold before July 1, 2006 are exempt from the legislation. Equipment that complies with the EU directive will be marked with a RoHS-compliant emblem, as shown in Figure P-1.

Figure P-1. RoHS Compliance Emblem

Waste from Electrical and Electronic Equipment (WEEE) Compliance

The European Union (EU) Directive 2002/96/EC—commonly known as the Waste from Electrical and Electronic Equipment (WEEE)—deals with the collection, treatment, recovery, and recycling of electrical and electronic waste products. The objective of the WEEE Directive is to assign the responsibility for the disposal of associated hazardous waste to either the producers or users of these products. As of August 13, 2005, producers or users will be required to recycle electrical and electronic equipment at end of its useful life, and may not dispose of the equipment in landfills or by using other unapproved methods. (Some EU member states may have different deadlines.)

In accordance with this EU Directive, companies selling electric or electronic devices in the EU will affix labels indicating that such products must be properly recycled. (See our website for more information.) Contact your local Sales representative for information on returning these products for recycling. Equipment that complies with the EU directive will be marked with a WEEE-compliant emblem, as shown in Figure P-2.

Figure P-2. WEEE Compliance Emblem

Safety

Carefully review all safety precautions to avoid injury and prevent damage to this product or any products connected to it. If this product is rack-mountable, it should be mounted in an appropriate rack using the rack-mounting positions and rear support guides provided. To protect a frame from circuit overloading, connect each frame to a separate electrical circuit. If this product relies on forced air cooling, all obstructions to the air flow should be removed prior to mounting the frame in the rack.

If this product has a provision for external earth grounding, ground the frame to the earth using the protective earth ground on the rear panel.

IMPORTANT! Only qualified personnel should perform service procedures.

Safety Terms and Symbols in this Manual

WARNING

Statements identifying conditions or practices that may result in personal injury or loss of life. High voltage is present.

CAUTION

Statements identifying conditions or practices that can result in damage to the equipment or other property.

Chapter 1

Introduction

Overview

QVM6800**+** Quad Video Module supports four autosensing inputs (HD-SDI, SD-SDI, and Composite) with simultaneous DVI and HD-SDI outputs. The cascade versions can be combined to build larger virtual systems and are used with a back I/O plate with a LOOP IN connector.

This chapter introduces the QVM6800**+** series, and includes the following topics:

The QVM6800**+** can be configured as a quad-split, or as any other arrangement and cascaded with other units (cascade version only) to build larger systems. The DVI-D output supports output resolutions up to 1920 × 1200. The HD-SDI output supports resolutions up to 1920 × 1080i.

The HD-SDI and DVI outputs always have the same resolution or pixel count whether progressive or interlaced.

Due to high levels of heat dissipation, QVM6800**+** modules should not be installed in frames without fans.The modules cannot be installed in FR6802**+**DM and 6800/7000 series frames.

Main Features

- Four autosensing inputs: Composite (PAL, NTSC), SD-SDI (525, 625), HD-SDI (1080i/59.94, 1080i/50, 1080i/60, 720p) as standard
- Licensed option available for 3G-SDI (1080p/59.94, 1080p/50, 1080p/60)
- QVM6800**+** cascade version has Loop In input to combine other cascade modules to build larger systems (requires license)
- All modules are 3 slots wide

- Monitoring for 16 channels of embedded audio per input
- Ability to listen to a single discrete stereo pair on analog output
- On-screen alarms, SNMP notification and GPI Output to indicate common fault conditions such as Audio Over/Under, Loss of Sync, Frozen Video and Black Picture
- UMD (Under Monitor Display) and tally control interface with support for Harris-Zandar, Thomson Simple, TSL and Image Video native protocols
- On-screen clocks and timers with support for NTP (Network Time Protocol) and LTC time code
- Minimum frame delay through system (0.5 to 1 frame)
- Four GPI inputs for full screen, layout, or tally recall
- One GPI output
- Control using ZConfigurator software (supplied) and SNMP and CCS (Nav, Nucleus, 3rd party)
- Tally protocols, ballistics and layout data transferred using a local Ethernet (10/100) connection
- Full-screen support for any single input
- Ability to add elements such as tallies, UMDs, borders, clocks and status alarm messages on the DVI/SDI output

Applications

The QVM6800**+** series can be used for:

- Broadcast monitoring in studios, production control rooms, and master control rooms
- Satellite center and cable head-end monitoring.

ZConfigurator for QVM6800+

ZConfigurator is the primary configuration and control application for the QVM6800**+** modules. ZConfigurator is installed on the PC that is connected to one or more controllable modules using the Ethernet connector on the 6800**+** or back module.

The 6800**+** frame ethernet port cannot be used to control the QVM 6800**+** card at this time. However, cascade configuration is supported via the 6800+ frame Ethernet port

In addition, ZConfigurator provides signal monitoring, alarm feedback, and layout creation and design capabilities.

For more information, press F1 while you are using ZConfigurator to open the online help, or see “Using ZConfigurator” on page 11.

Module Description

Front Module

Figure 1-1 shows the position of the LEDs on the card edge of the QVM6800+ front module.

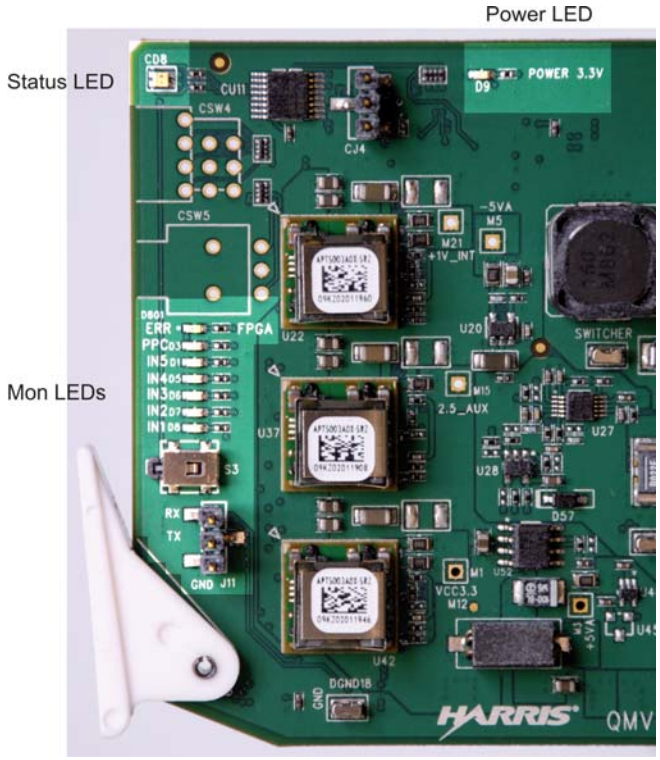


Figure 1-1. QVM6800+ Front Module

Table 1-1 on page 3 briefly describes the QVM6800+ LEDs and switches.

Table 1-1. QVM6800+ Module Features

Feature	Description
Status LED	Colors indicate module state. See “Card Edge Controls and LEDs” on page 47.
Power LED	3.3V regulator LED. See “Card Edge Controls and LEDs” on page 47
Monitoring LEDs	Function and I/P status. See “Monitoring LEDs” on page 48.
J11	Serial port for firmware update. See Appendix 7: “Connectors and Cables” on page 57
SW 3	Not used.

Back Modules

Figure 1-2 shows the triple-slot back module used by the QVM6800+ C modules. Modules cannot be installed in frames without fans, or in FR6802+DM and 6800/7000 series frames.

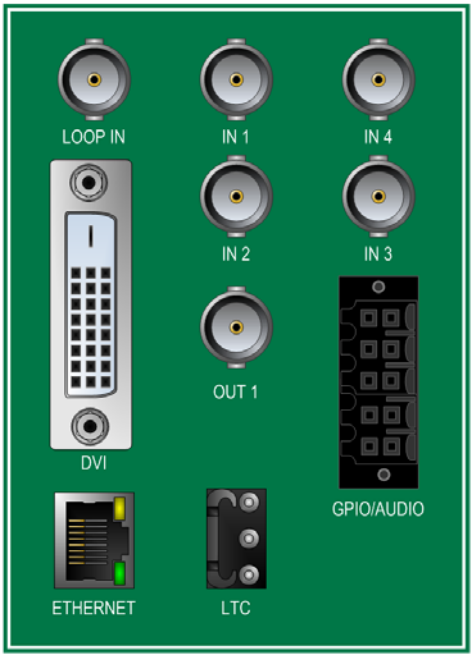


Figure 1-2. QVM6800+ C Back Connector

For connector pinout and cable wiring instructions refer to Appendix 7: “Connectors and Cables” on page 57.

Signal Flow Diagram

The functional block diagram for the cascade QVM6800+.

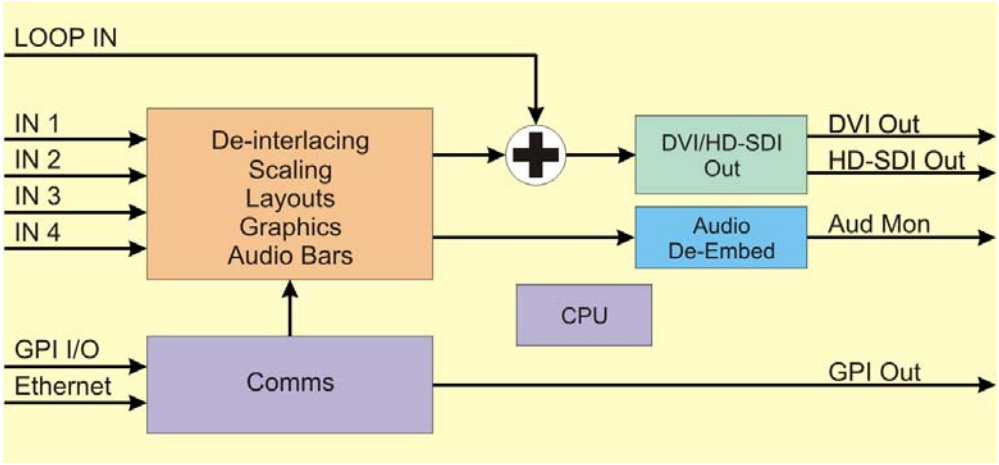


Figure 1-3. Signal Flow for QVM6800+ cascade version

Note

The the basic QVM6800+ lacks the LOOP IN connector.

Building Cascaded Systems

A cascade system allows inputs from multiple QVM6800**+** cascade modules to drive one display.

A 6800+ frame, fully populated with six QVM6800**+** cascade modules, could provide:

1) Six independent quad cards

2) A 24 input cascade system

3) Any combination of the above

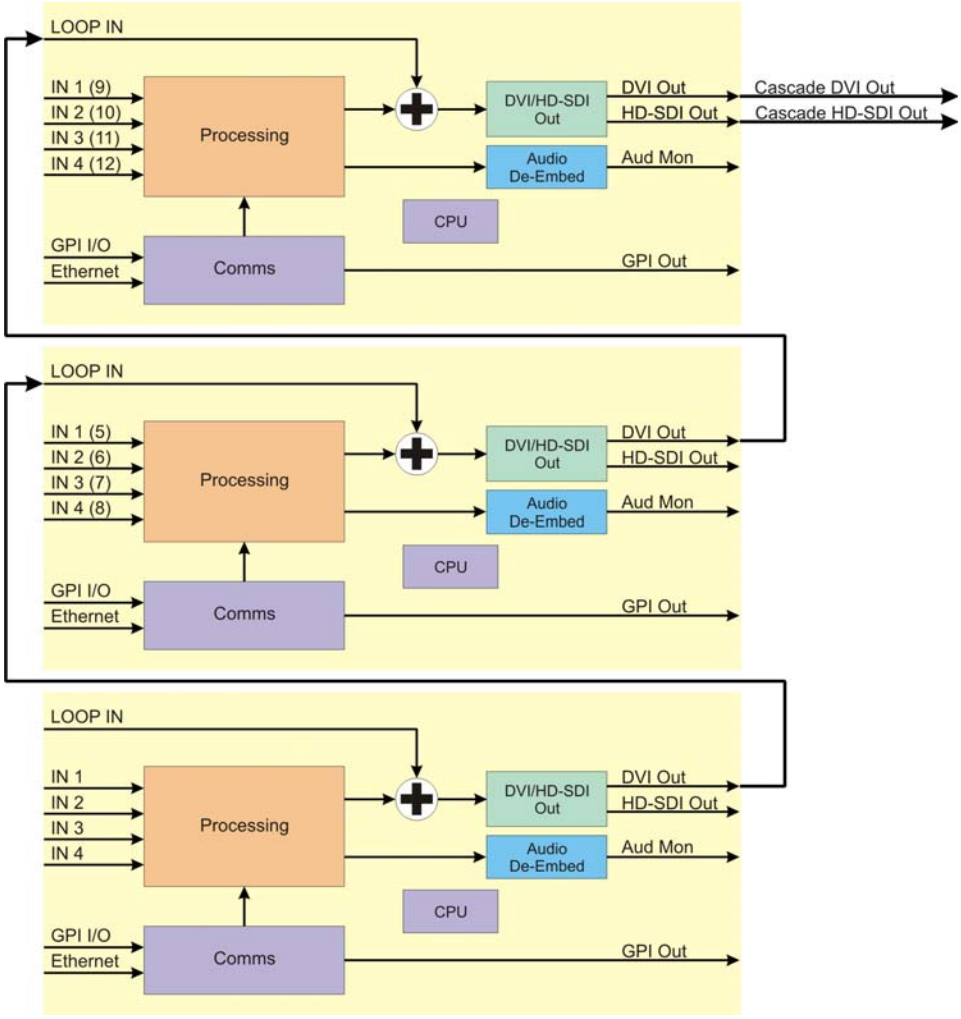


Figure 1-4. QVM6800**+** Cascade System

The 12 input example shown would require 9 slots. Input mapping is configured from within ZConfigurator.

The ordering codes for QVM6800**+** options are as follows:

Table 1-2. QVM6800**+** part numbers

QVM6800+ Model	Comment
QVM6800+T	Basic quad card with no cascade
QVM6800+C-T	Cascading version
QVM68OPT-C	License to add cascade to non cascade version
QVM68OPT-3G	License for 3G inputs/outputs on all models

Chapter 2

Installation

Overview

This chapter describes the QVM6800**+** and QVM6800**+** C installation process, including the following topics:

Caution

Before installing this product, read the *6800+ Series Safety Instructions and Standards Manual* shipped with every frame installation and operation manual. This information is also available on our website. The safety manual contains important information about the safe installation and operation of 6800**+** series products.

See your frame installation and operation manual for information about installing and operating an FR6802**+** frame and its components.

Maximum 6800+ Frame Power Ratings

The power consumption for the QVM6800**+** and QVM6800**+** C modules is less than 13 W each. Table 2-1 shows the maximum allowable power ratings for 6800**+** frames. Note the given maximums before installing any 6800**+** and/or QVM6800**+** C modules in your frame.

Due to high levels of heat dissipation, the QVM6800**+** series modules must not be installed in frames without fans. The modules cannot be installed in FR6802+DM and 6800/7000 series frames.

To maintain proper temperatures, ensure that the front panel is closed at all times, and that the fan module is fully operational.

Table 2-1. Maximum Power Ratings for 6800+ Frames

6800+ Frame Type	Max. Frame Power Dissipation	Max. Number of QVM6800+ Series Modules	Max Power Dissipation for Three Slots (each module requires three slots)
FR6802+QXF (frame with AC or DC power supply)	120 W	6	13 W
FR6802+XF (frame with AC power supply)	120 W	6	13 W
FR6802+XF-48 (frame with DC power supply)	105 W	5	13 W

Unpacking the Module

Preparing the Product for Installation

Before you install QVM6800+ and/or QVM6800+ C modules, do the following:

- Check the equipment for any visible damage that may have occurred during transit.
- Confirm receipt of all items on the packing list. See "Checking the Packing List" below for more information.

Contact your Customer Service representative if parts are missing or damaged.

- Remove the anti-static shipping pouch, if present, and all other packaging material.
- Retain the original packaging materials for possible re-use.

See "Unpacking/Shipping Information" on page vi for information about returning a product for servicing.

Checking the Packing List

Table 2-2. Available Product Packages

Ordered Product	Content Description
QVM6800+	• One or more QVM6800+ and/or QVM6800+ C front modules • One or more QVM6800+ and/or QVM6800+ C back modules • One *QVM6800+ Installation and Operation Manual*

Installing QVM6800+ Series Modules

QVM6800**+** series modules have triple-width back connectors. Due to high levels of heat dissipation, QVM6800**+** series modules must not be installed in frames without fans. The modules cannot be installed in FR6802**+**DM and 6800/7000 series frames.

Note

Do not install QVM6800**+** series modules in slots 6 or 14 because the heat sink and or audio option board will interfere with the frame.

These modules require no specialized installation or removal procedures.

Note

Ensure that the back connector is installed before inserting the front module. Likewise, ensure that the front module is unplugged from the frame before removing the back connector.

See the *FR6802+ Frames Installation and Operation Manual* for information about installing and operating an FR6802**+** frame and its components.

A FR6802**+**RM (Rear Support Extension Rails for 6800**+** series frames) option is recommended for the QVM6800**+** series modules. See your *FR6802+ Frame Installation and Operation Manual* for installation instructions.

Building a Cascade System

A cascade system is built by connecting the HD-SDI output of one QVM6800**+** C module to the LOOP IN connector of another QVM6800**+** C module until all modules in the system are connected.

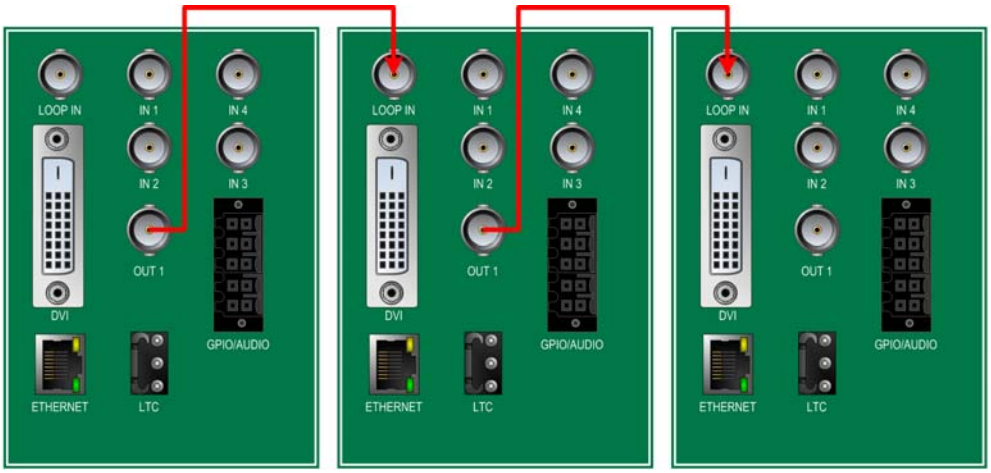


Figure 2-1. Cabling a Cascade System (3 x QVM6800**+** C back I/O view)

In the example above, the HD-SDI output is always connected to the adjacent QVM6800**+** C module working from left to right, as it results in minimum cable lengths and neat wiring. In practice cascade systems may be built with any equivalent cabling scheme.

Note

The mapping of inputs to a single virtual layout is accomplished using ZConfigurator; see “Working with Cascade Systems” on page 14.

Cable Requirements

DVI Cables

When you connect a QVM6800**+** and/or a QVM6800**+** C module to the output display module using the DVI cable, observe the following:

- Do not use a cable that is greater than 10 m long.
- If you must add length to your cable, use an extender that has its own power source. Do not draw power from the DVI power pin.

Video Input Cables

Use high-quality video cables for the video inputs. Do not exceed the recommended cable lengths (see Chapter 5: “Specifications” on page 49).

Audio Monitoring, GPI I/O and LTC

The stereo audio analog monitoring output and contact closure GPI I/O are all brought out to the 10 way connector on the rear panel. A source of longitudinal timecode may be connected to the connector marked LTC on the rear panel to synchronize on-screen clocks.

High quality screened dual-core cable is recommended for both LTC and audio.

For information on cables and connector pinout refer to Appendix 7: “Connectors and Cables” on page 57. For information on connector types and part numbers see Chapter 5: “Specifications” on page 49

Installing ZConfigurator

ZConfigurator software is required to configure and operate QVM6800+ and/or QVM6800**+** C modules and must be installed before use.

Installing software

To install the software, insert the ZConfigurator CD into an available CD drive. If the program does not autorun navigate to the ZConfigurator folder on the CD and run Setup.exe. Obey the prompts when the program installs. Accept default locations for the installation directory or enter preferred locations.

The controlling PC will need to be configured when connecting to a multiviewer for the first time.

Refer to “Connecting to a Module for the First Time” on page 12 for more information.

Chapter 3

Using ZConfigurator

Overview

This chapter describes how to operate the QVM6800**+** series modules using ZConfigurator.

The following topics are discussed in this chapter:

Operating Notes

When you set the control parameters on QVM6800**+** modules observe the following:

- If changes are made to certain parameters, other related parameters may also be affected.
- When a parameter is changed, the effect is immediate. However, the module requires a few seconds to save changes. Once saved, new settings will be restored if the module loses power and is restarted.
- Terminate any unused coaxial output connectors with a 75Ω connector.

Adding a License Key

To use new features such as 3G outputs and cascades, appropriate licences should be purchased. License keys for options that may apply to the QVM6800**+** series may be added using ZConfigurator.

See "Licensing" on page 41.

Part numbers to order licenses are shown in the table Table 1-2, "QVM6800+ part numbers" on page 6.

For assistance with a license key, or to purchase a license key, contact your Sales representative.

Connecting to a Module for the First Time

QVM6800+ series modules are configured using the ZConfigurator software that accompanies the modules. To access the setup options, ZConfigurator must be installed on the PC that is connected to the modules through the Ethernet connector.

When it first starts, ZConfigurator searches for attached multiviewers. However, the PC that is running ZConfigurator and the multiviewer must have IP addresses that are in the same subnet range. If they do not, you must change the IP address of the PC so that it is in the same subnet as the multiviewer when you connect to it the first time.

Note

The IP address of a QVM6800+ series module can be changed to a desired IP address using ZConfigurator once connection has been established.

To discover the current IP address of a QVM6800+ series module, proceed as follows:

- Connect the QVM6800+ or QVM6800+ C LAN port via TCP/IP using a direct Ethernet connection (single multiviewer) or via a LAN (multiple multiviewers)
- Power the QVM6800+ or QVM6800+ C
- The attached monitor LCD screen will show the current QVM6800+ or QVM6800+ C IP address (and MAC address) for about 7 or 8 seconds
- Make a note of the IP address

To continue the first time connection procedure:

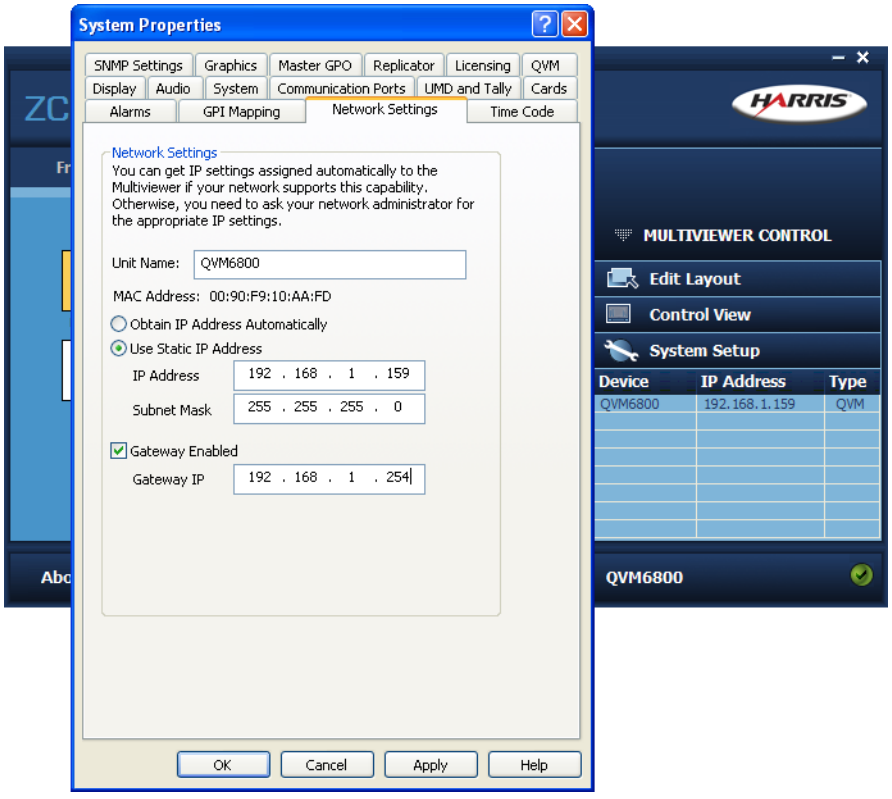
- Change the PC's IP address to one in the same subnet range as the QVM6800+ or QVM6800+ C. See “How do I change my PC’s IP Address?” on page 55 for help if required.
- Launch ZConfigurator (**Start** > **Programs** > **ZConfigurator**.)
- In single multiviewer mode, double-click on the multiviewer connection icon (or right click in the **Device List** and select **Connect**)

The currently loaded presets on the multiviewer are loaded.

Note

If the multiviewer cannot be connected, check that there is no firewall blocking access and that the PC's IP address is set to the same subnet as the multiviewer.

- With the multiviewer connected, select **System Setup** from the ZConfigurator **Main Panel** and click on the **Network Settings** tab.



- Enter a **Static IP Address** and appropriate **Subnet Mask** that matches the network.
- If required, enable and enter a **Gateway** address
- Click **Apply** to apply and confirm the change or **OK** to apply and dismiss the tab.
- Return the PC to its normal network address

- Right click in the blue connection area under **Device/IP Address/Type** and initiate a new search by clicking on **Scan Network** (or restart ZConfigurator)
- The QVM6800**+** connection icon appears

Note

If you need more information while you use ZConfigurator, press **F1** or click **Help**.

Trouble Shooting Failed Connections

Connected multiviewers with IPs in the same range as the PC are normally discovered automatically. However, there may be times when a network scan has to be forced or a manual connection has to be made or is preferred.

To force a **network scan**, proceed as follows:

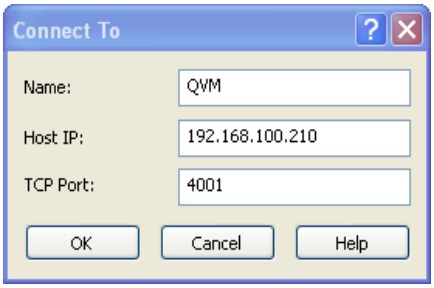
Right click in the **Device List** and select **Scan Network** or relaunch ZConfigurator.

Note

ZConfigurator will only search for connected multiviewers at start-up if 'Scan TCP/IP network at application start' is checked (default) under *User Preferences >> User Interface*.

To connect to a multiviewer **manually**, proceed as follows:

Press **Connect to...** (or right click in an *empty* **Device List** and select **Insert New**) and type in the IP address and port number (default 4001).



Note

See also answers to "ZConfigurator cannot access any QVM6800+ modules on the network." on page 55.

Working with Cascade Systems

Cascade systems are virtual multiviewers consisting of multiple QVM6800+ cards that have been licensed for cascade.

Licenses are added as explained in "Licensing" on page 41.

Note

At present only quad cards in one frame can be used to build a cascade.

Note

Cascade Configuration of the QVM6800+ is not supported with the ICE6800+ resource module. The 6800+ETH card is required and if not present please contact customer service.

Getting started

To start building a cascade system from multiple QVM6800**+** modules, select **Frame View** in the main application and double click on **Scan for Frames**.

Click on the plus sign by a frame to see the QVM modules installed.

If no frames can seen, check that the frame Ethernet port is also connected to the same network that the QVM6800**+** modules are connected to.

Note

A cascade system requires that each FR6802+ frame has its Ethernet port connected to the same network that ZConfigurator is connected to. However, only ZConfigurator can be used to configure a cascade. Navigator and CCS-P control and monitoring software should not be used to control or create cascades created by ZConfigurator.

Tip

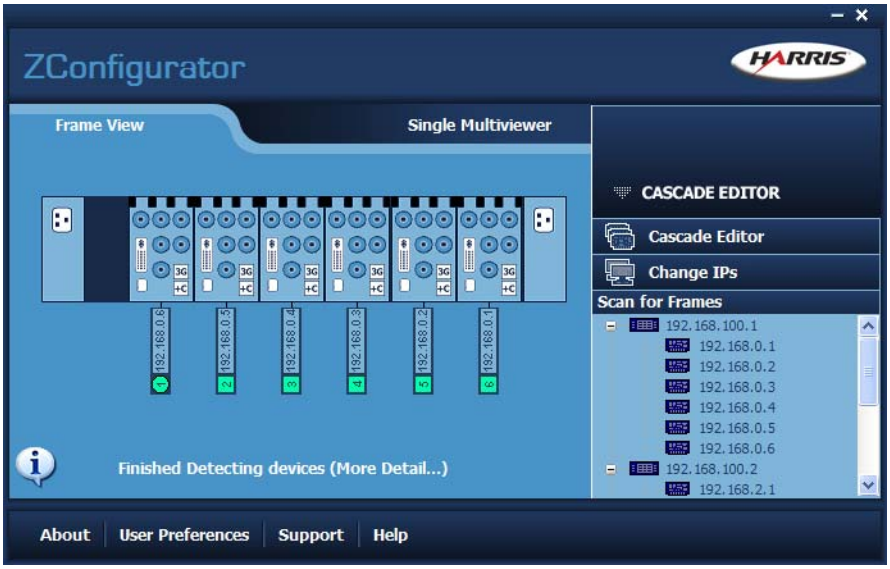
The IP address of each card must lie in the same subnet range as each QVM6800**+** ETH module installed. Frame IP addresses can be changed using telnet commands; refer to the FR6802+ QXF manual for further help.

Note

If difficulty in detecting frames in frame view persists, it is recommended to contact customer service as a frame upgrade may be required.

Using Frame View

Double click on a frame to see the detected QVM cards.



The QVM cards detected are shown with their IP numbers below the frame.

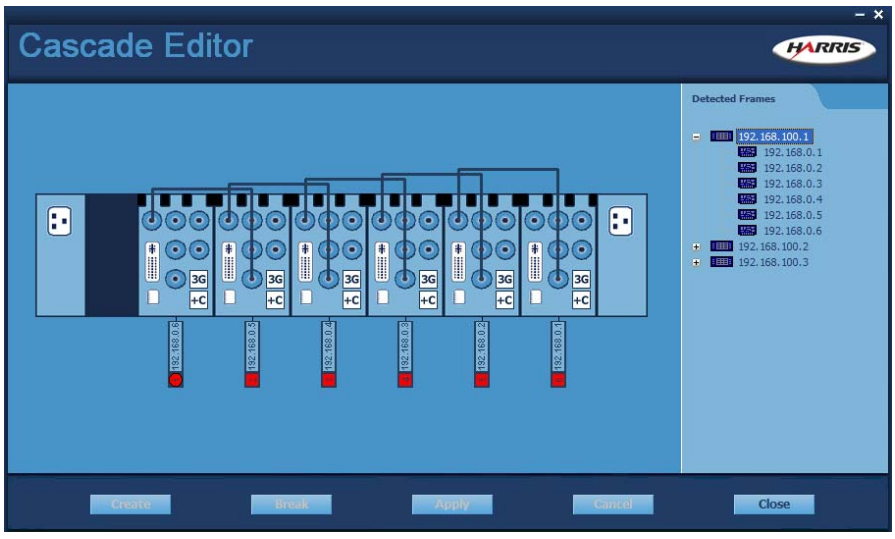
The numbers in circle and squares below IP numbers indicate that these cards are already in a cascade with the positions indicated. The master card is always numbered 1 in a circle and is the first card in the cascade. The remaining slave cards have their LOOP IN connector fed from previous cards and are shown with position numbers in squares.

IP numbers for certain QVM6800+ modules may be edited in frame view. See “Editing QVM 6800+ IP Numbers” on page 21.

Using the Cascade Editor

The cascade editor allows a virtual multiviewer to be constructed using individual QVM6800**+** modules. ZConfigurator can manage layouts using cascaded QVM modules as if they were a single multiviewer.

To use the editor click on **Cascade Editor**.



In the above example, a virtual multiviewer with 24 inputs has been created out of six QVM6800+C-T cards from one frame.

Input numbering is based on the sequence in which the cards appear in the cascade and should therefore be cabled as follows:

Table 3-1.

Quad card IP number	Input numbers in virtual layout
192.168.0.1	Inputs 1 to 4
192.168.0.2	Inputs 5 to 8
192.168.0.3	Inputs 9 to 12
192.168.0.4	Inputs 13 to 16
192.168.0.5	Inputs 17 to 20
192.168.0.6	Inputs 21 to 24

The next section shows how to create a cascade from scratch.

Creating a Cascade from Standalone Cards

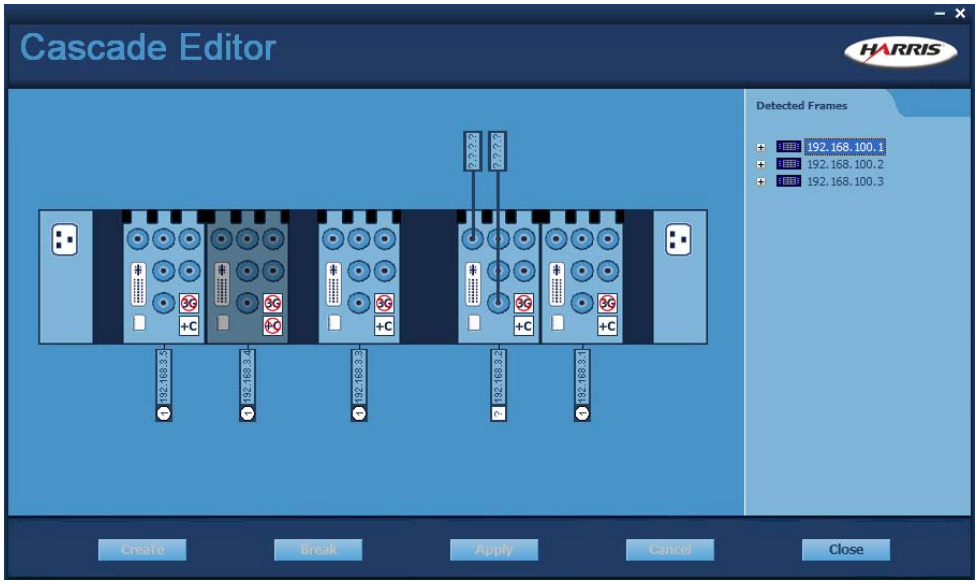
In this example, a cascade will be built from available Quad cards in the frame shown below.

There are four standalone quad cards, (shown with white circles with a ‘1’ in them) in the frame with IP 192.168.100.3. One quad card is shown with a question mark ‘?’ in a white square. This indicates that it is a slave card that has become orphaned and is no longer associated with a master card. This card can be made available for the new cascade from within the editor using the **Break** command as we will see later.

However, not all of them can be cascaded; only those with a ‘+C’ in a white square that is not crossed out in red have been licensed for cascade. This means that the number of cascadable cards is only four.

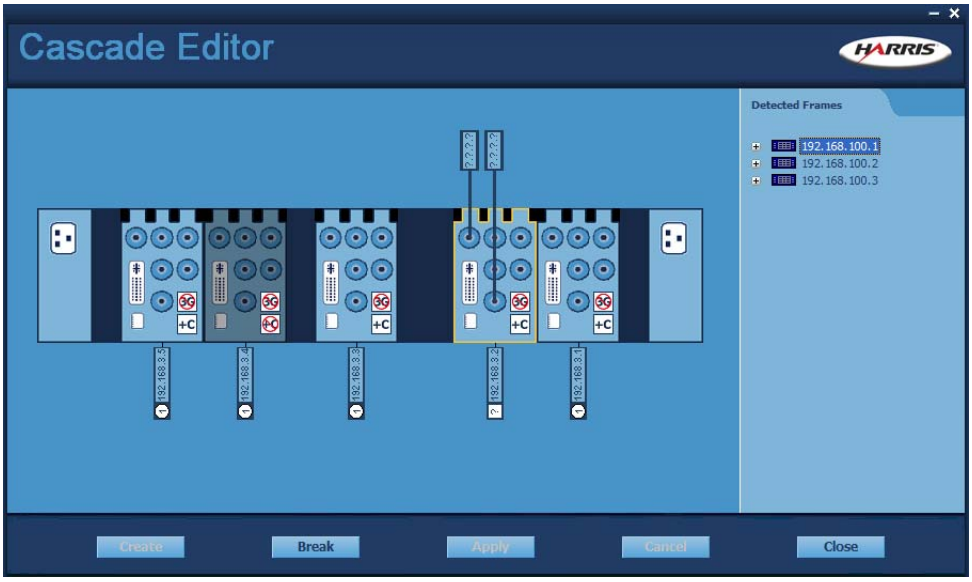
The next section shows the steps required to create the cascade.

Click on one of the frame that contains the master card for the new cascade and click on **Cascade Editor**.



Cards that are not available are shown dimmed. In the example above, card 192.168.3.4 is not available because it has not been licensed for cascade. Card 192.168.3.2 is not dimmed, but the question marks at its connections and in the white square below its IP number show that it has become orphaned and is no longer associated with a master card.

To use the orphaned card in a new cascade, click once on it, and then click on **Break**.

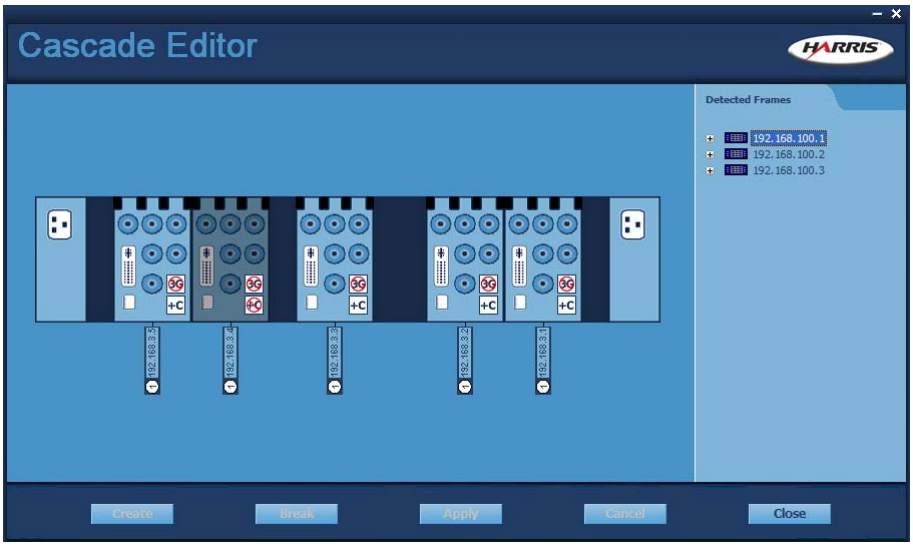


A message will appear saying “Cannot find cascade details for card 192.168.3.2. Do you wish to switch just this card to standalone mode?”

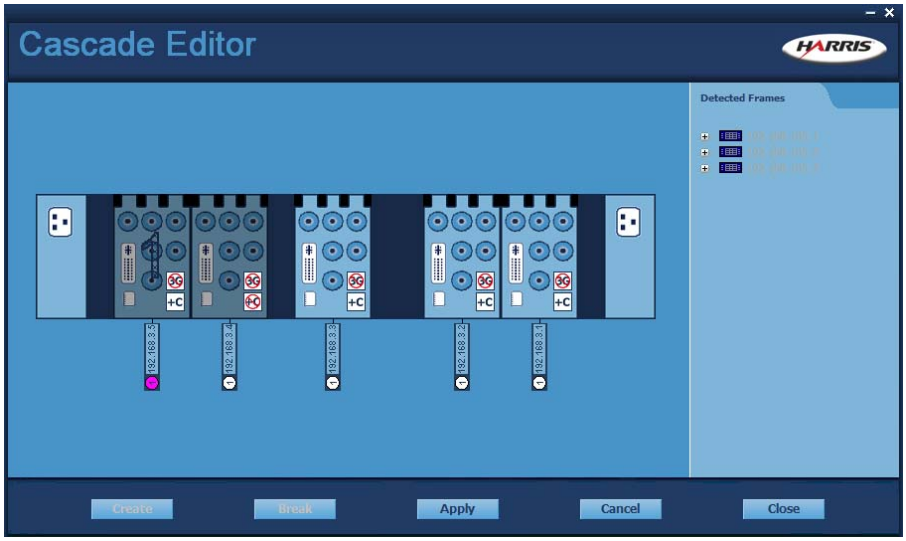
Click **OK**. The cascade editor will display an animation while the command is performed.

When completed, the orphaned card will be available.

To continue building the cascade open the **Cascade Editor** again.

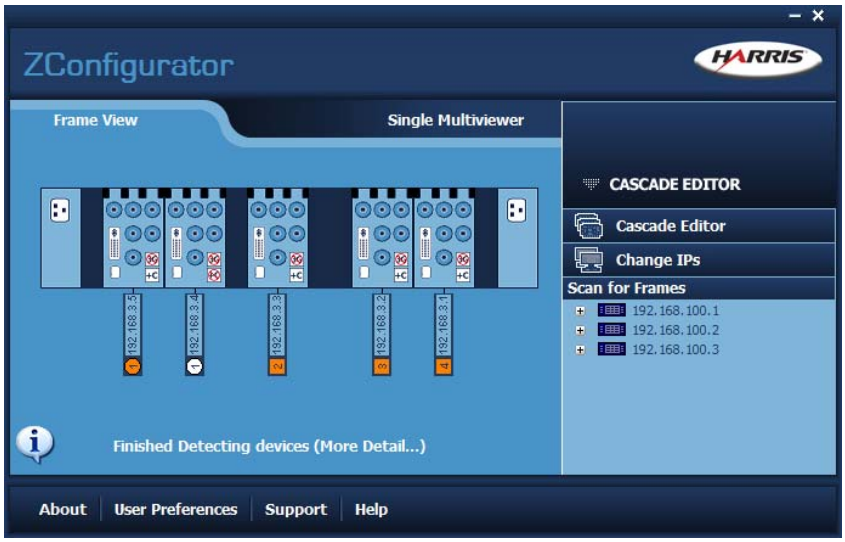


Click on one quad card to be a master card and click **Create.** The selected card will be shown dimmed with a large number ‘1’.



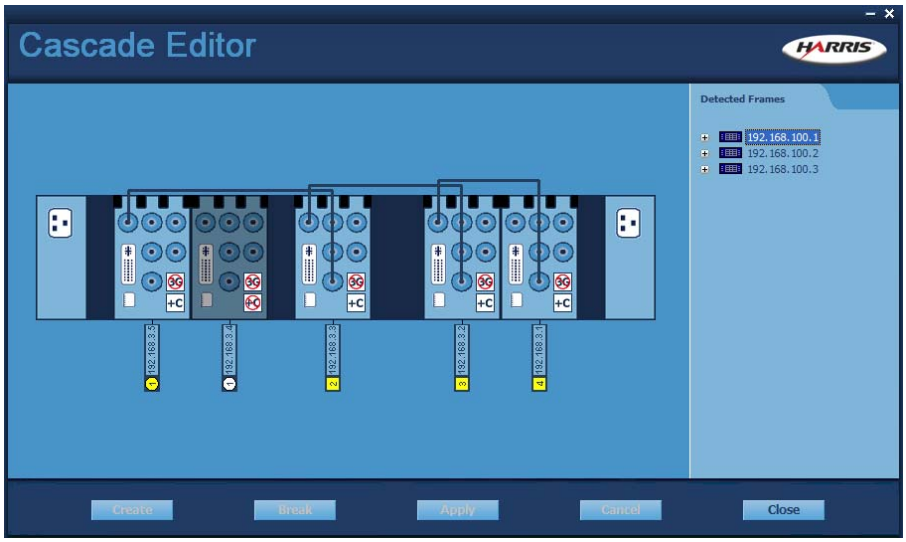
Select the slave cards by double-clicking them in sequence until the cascade is complete.

When you are happy with the order in which the quad cards must be cabled, click on **Apply**.



Tip

To view a completed cascade to see the cabling connections, select the frame in **Frame View** and then enter the **Cascade Editor**.



Note

Colors used to highlight connections other than white are arbitrary and only used to help distinguish cascades.

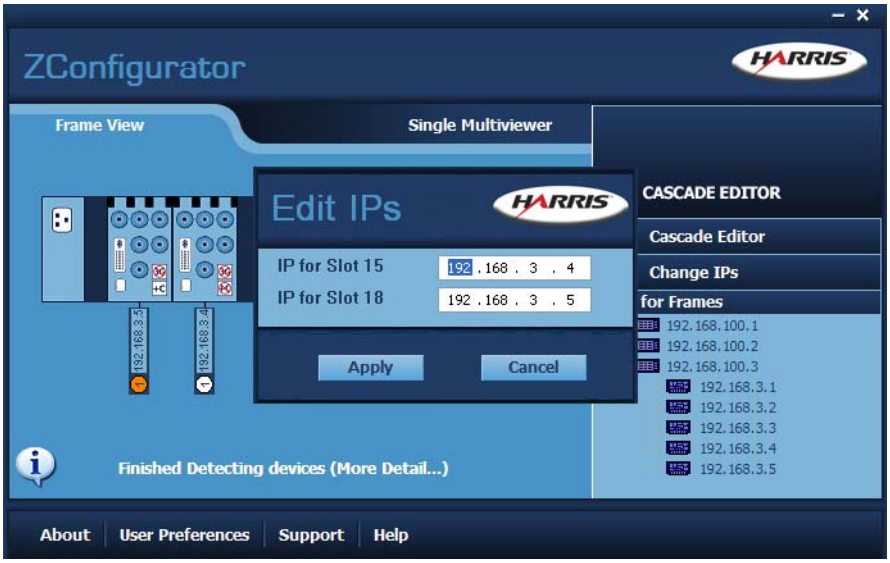
Editing QVM 6800+ IP Numbers

To edit IP the numbers of master cards and standalone cards in selected frames, proceed as follows:

Double click the frame containing the cards you wish to configure in frame view.

Click on **Change IPs**.

The **Edit IPs** form appears.



Edit the IP numbers to change and click on **Apply**.

Note

QVM cards in the same network should all have unique IP numbers.

Cascade Rules

Here are some cascade rules which may help:

- A +C icon that's not crossed out in red indicates a QVM6800+C-T which is licensed for cascade
- A spanner icon against a red background indicates a QVM card that requires calibration; contact customer support for assistance
- Basic cards with part no QVM6800+T cannot be cascaded and are shown with +C crossed out in red
- A '?' below a quad card IP number (and '????' in connections) shows an orphaned slave card - which means its master card or next/previous card cannot be found
- Any quad card with number 1 below its IP number is a master card (also indicated by a circle; a slave card has a square)
- Any card with a white card number is either standalone or an orphaned slave
- Colors other than white are arbitrary and only help to distinguish cascades
- Only a standalone card can be added to a cascade
- Only a master card or standalone card can have it's IP address changed
- You can only break a quad card in a cascade or an orphaned slave
- Both the frame Ethernet port and QVM6800+C-T Ethernet ports must be connected to the same ZConfigurator network to create a cascade
- Cascades should be cabled in the same way as they are shown in the Cascade Editor

Getting Started with ZConfigurator

Once a connection to one or more multiviewers has been achieved, the next step is to carry out basic configuration steps to ensure that the best performance and full-feature set of each multiviewer is realized.

Setting Output Type and Standard

To prevent image degradation due to scaling artefacts the display output of the multiviewer must match the *native resolution* of the attached display.

Refer to in the “Configuring DVI Output and Resolution” on page 27 section for details.

Licensing options

To add licences for cascade or 3G refer to “Licensing” on page 41.

UMD and Tally Setup

QVM6800**+** can emulate Under Monitor Display (UMD) functionality allowing labels to be dynamically updated by external third party equipment such as cross-point routers used to select video sources for a multiviewer to monitor.

Configuration steps include selecting a LAN or serial port to accept the source name data and setting a protocol to decode it.

Refer to “UMD and Tally Settings” on page 28 for details.

Audio Scales and Transitions

The default settings for audio meter scale type and transitions are set to AES with the yellow/red transition at -11dB and the green/yellow transition at -33dB. These levels are sufficient for most purposes, but you can change them. They are configured on the System Setup Audio tab. See “Audio Settings” on page 32 for details.

Global Alarm Settings

Global settings that affect such things as alarm trigger sensitivity and threshold delay are set in the **System Setup Alarms** tab. These settings may also be left at their default settings when learning the interface for the first time.

See “Global Alarm Settings” on page 33 for details.Tallies and labels such as UMDs or captions are added as a component to a PIP in the Edit Layout window. The Layout Editor is discussed in detail in the help file available from within ZConfigurator.

Using Control View

Control View, accessible from the main application, provides a quick way to assign audio monitoring channels and send selected PiPs full-screen. Press **Help** from within ZConfigurator for further details.

Using the Layout Editor

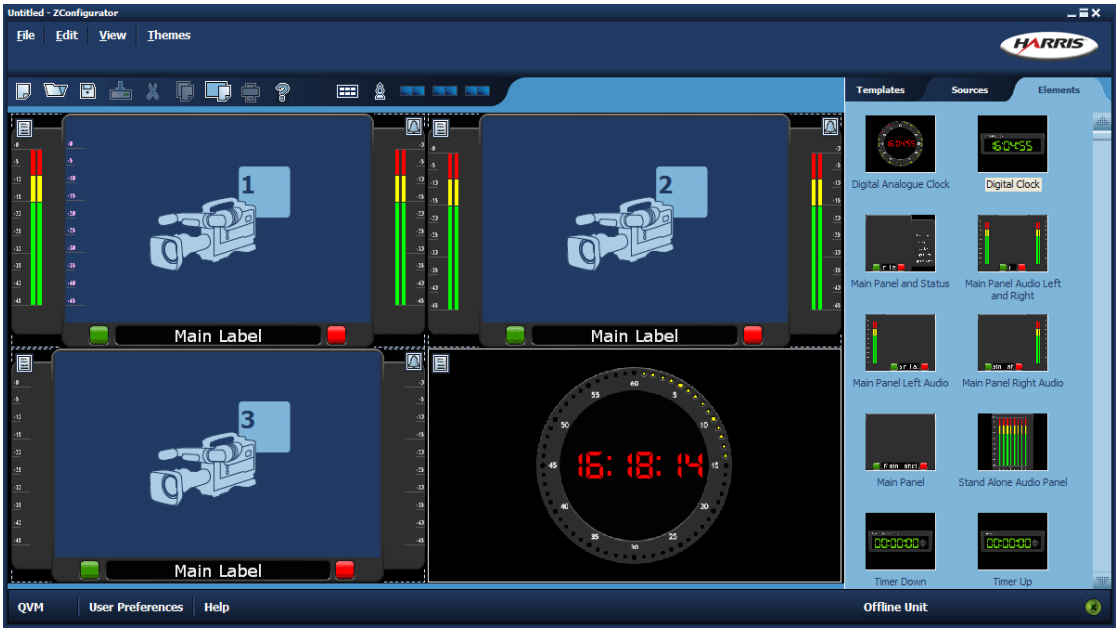
Further configuration settings for elements inserted into each PiP such as audio panels, audio bargraphs, labels, UMDs, tallies, clocks, timers, aspect ratio control, borders and alarms are made using the Layout Editor. See “Introduction to the Layout Editor” on page 23.

Introduction to the Layout Editor

The **Layout Editor** is the main workspace where basic templates from the Template Library are furnished with PiP elements such as sources, borders, labels, UMDs, clocks, timers, alarms and bitmap backgrounds.

There are also ready made PiP designs containing many of these items which can be drag-n-dropped from the Elements Library to any PiP.

Click on **Edit Layout**  from the main start-up application to display the **Layout Editor** with the current preset loaded.



Templates, Sources and Elements

Layouts can also be created from scratch using **Templates**, **Sources** and **Elements**.

Templates provide a range of PiP arrangements that can be used as the underlying pattern that layouts are based on. A single template can be used to make numerous layouts.

Video **Sources** are the video inputs available on the system. These can be assigned to any PiP in the layout by drag-n dropping camera icons from the **Sources** tab.

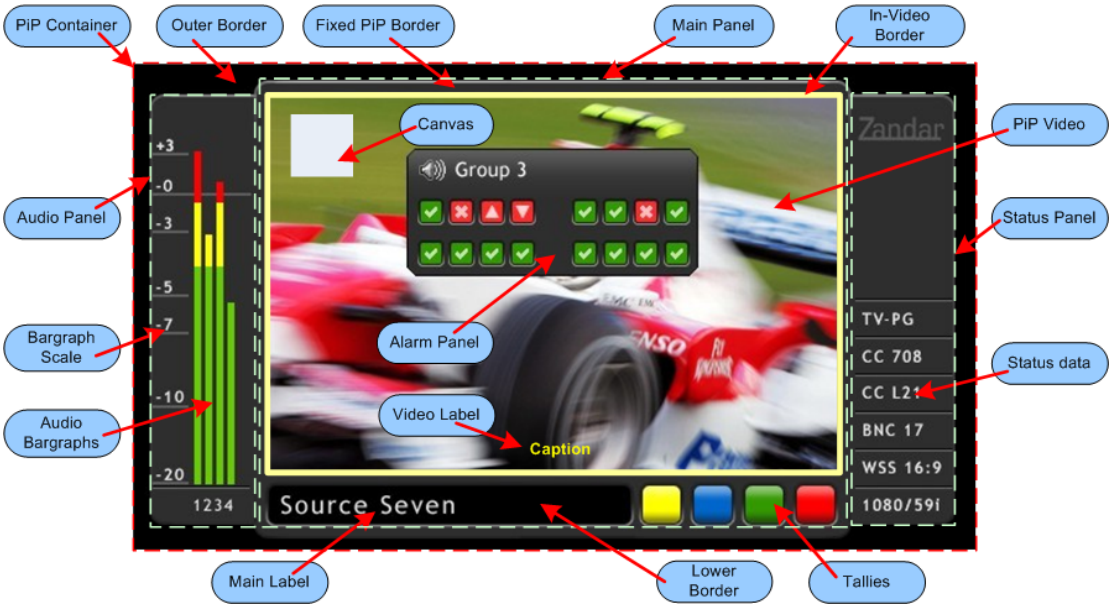
The **Elements** tab in offers a variety of pre-selected PiP elements with borders, labels, alarms, bargraphs, clocks and timers. The exact graphic style used for these elements varies according to the **System Theme** active on a multiviewer. The **System Theme** is the overall style used by the multiviewer when it renders each individual PIP element.

To understand how to insert and configure tallies, labels, UMDs, audio panels, bargraphs and other special graphic elements such as Canvas objects, its necessary to understand how the panels that contain these objects dock together in the **PiP Container**.

The PiP Container, Panels and Elements

The PiP Container encompasses all the elements that a PiP contains including the main panel and any audio panels or status panel in it, quick menu access icons, the lower text and tally area and the video area with its optional audio panels or canvas object.

The following illustration shows some of the panels, panel objects, video objects and PiP elements that are used in a PiP.



The most basic component of a PiP Container is the **Main Panel**. It is the panel to which all other panels dock.

Note

The only way to insert a **Main Panel** into a completely blank PiP, is to start by inserting a PiP design from the **Elements** tab that already has one.

Once a **Main Panel** has been inserted and a video source has been assigned, the objects that can be associated with a PiP can be inserted and configured from right-click menus accessible within the PiP.

Note

A solitary clock or timer does not require a Main Panel.

Note

Video sources are assigned by dragging a selected camera icon to a PiP from the **Sources** tab at the right of the editor interface.

Adding Audio Panels

Adding audio bargraph panels in video or border for each PiP is accomplished within the **Layout Editor** of **ZConfigurator**.

Use the Edit Layout icon  in the ZConfigurator **Main Application** to launch the editor.

Audio bargraph panels can be added to PiPs using **Main Panel** and **Video Source** right-click menus. However, the easiest method is to start with an **Element** that has a main panel and one or more audio panels already present and then re-position panels if required.

To add audio panels to a PiP's border in a newly created layout insert a pre-defined element with a main panel and one or more audio panels. To add audio panels to a PiP's video, right click on it's video icon and select **Add Audio Left** or **Add Audio Right**.

To zoom into or enlarge a PiP shown in a layout, double-click on the PiP.

Re-positioning Audio Panels

Audio panels can be moved between video and border areas or to other PiPs. For example, to move an audio panel from a PiP's left hand border to the left hand side of a PiPs video, drag-n-drop it on that PiP's video source icon. To move an audio panel from the right hand side of a PiP's video to another PiPs right hand border, drag-n-drop it on that PiP's main panel. Audio panels cannot be moved between left and right hand sides by drag-n-drop.

If the cursor does not change from a no-entry sign to a rectangle during drag-n-drop, the target PiP does not have either a source or main panel assigned.

Audio panels can be deleted by highlighting them and pressing the delete key.

Assigning Audio Source Monitoring to Audio Panels

Once one or more left and/or right **Audio Panels** have been inserted, right click one, select **Audio Setup** and map available sources as required.

Note

Available embedded sources will be represented with corresponding tabbed source lists at the top of this menu.

The procedure for adding and removing bars is as follows.

- Add audio to left and right panels by double clicking the required channel in the source list.
- Left click on audio panels in the pip graphic to select them or click the corresponding radio button
- Left click on audio bars in the pip graphic to remove them

Tip

If you need more information while you use ZConfigurator, press **F1** or click **Help**.

Configuring QVM6800+ Settings

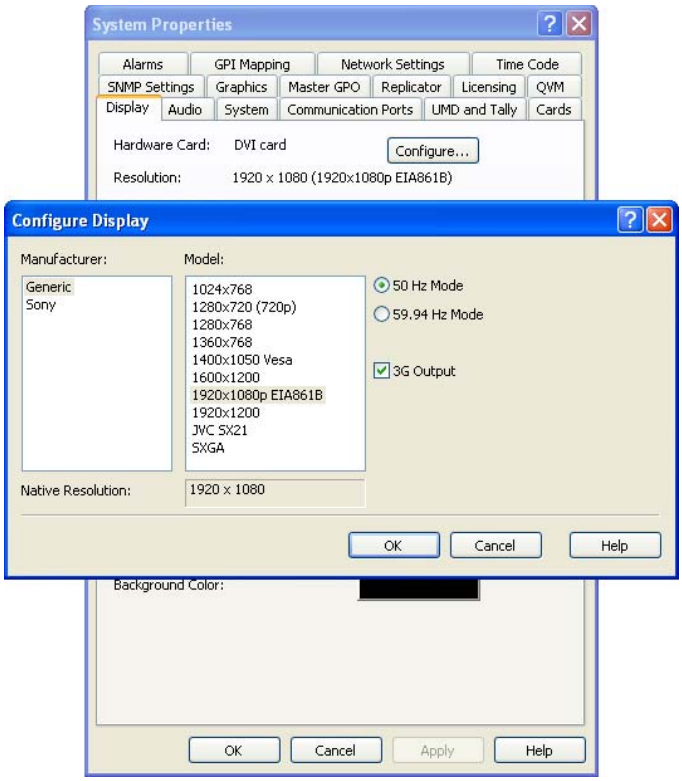
The following settings are made in single frame view using **System Properties** (System Setup) dialog box in ZConfigurator.

Tip

Before you begin, make sure that ZConfigurator is connected to the QVM6800**+** module to configure (see “Connecting to a Module for the First Time” on page 12).

Configuring DVI Output and Resolution

1. On the ZConfigurator **Main Panel**, click **System Setup**.
2. Select the **Display** tab and click **Configure**.



3. In the **Manufacturer** list, select the appropriate manufacturer name or select **Generic** for a list of industry standard resolutions.

   A list of available models or resolutions appears.

4. Select the desired **Model** or **Resolution**.

Note

With a cascade QVM6800+ system, only 1920x1080P is currently available.

5. Select a refresh rate of **50 Hz** for a PAL region or **59.9 Hz** for an NTSC region.
6. Click **OK,** then click **OK** on the **System Setup** dialog box to save changes.

Note

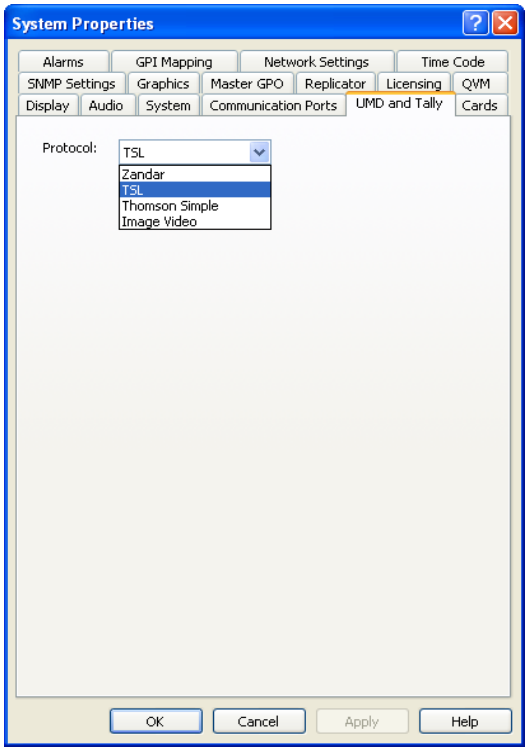
The SDI output resolution always follows the resolution set for the DVI output.

UMD and Tally Settings

QVM6800+ can emulate UMD (Under Monitor Display) functionality so that main and video labels on the PiPs can be updated dynamically by external third party equipment.

Selecting the UMD Protocol

1. Open the **System Properties** dialog box and select the **UMD and Tally** tab.



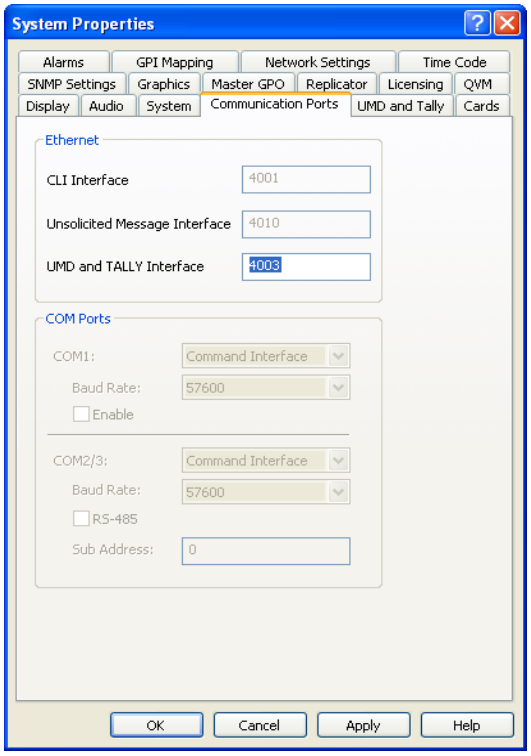
2. Select the desired protocol from the **Protocol** drop down box.

Note

Tallies are added as a component to a PIP in the edit layout window.

Changing the UMD and Tally port

The default port used to communicate with an external 3rd party UMD and Tally controller is 4003. If required, select the **Communication Ports** tab and set the desired IP port to connect with the external 3rd party UMD and Tally controller.



3. In the **UMD and TALLY Interface** field, enter the port number that is used to connect to the external third party UMD and Tally controller.
4. Click **OK**.

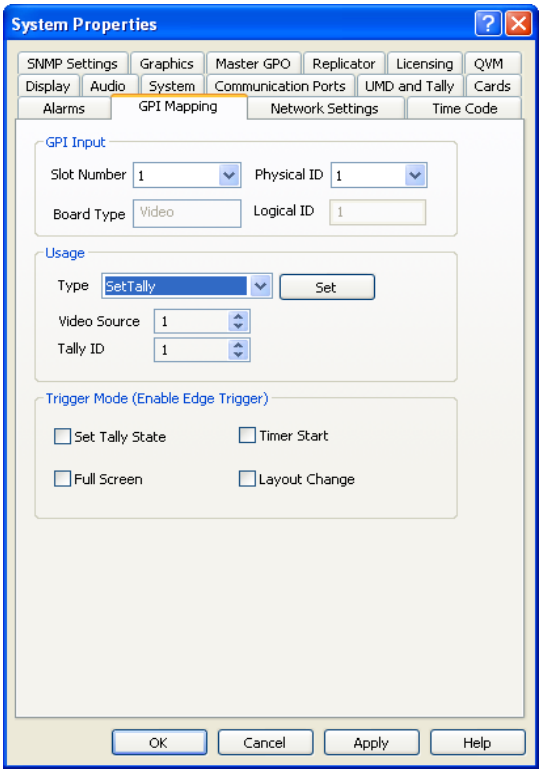
Note

Serial communication port selections are not applicable to the QVM6800**+**.

GPI Mapping

There are four GPI inputs. Contact closure on GPI inputs can toggle the state of tallies in each PiP, **Full Screen Recall** for each PiP, **Control Layout Recall** for the first four presets, or **Start/Pause/Reset** timers.

To change the current settings select the **System >>GPI Mapping** tab.



Select the physical ID (1 to 4) of a GPI channel at the rear of the frame. Usage options depend on the function type selected from the drop down list.

GPI's are level triggered by default. Place a tick against one or more trigger modes to enable edge trigger for that mode. This setting affects all four GPI inputs.

Table 3-2 describes the different functions that can be assigned to each contact closure associated with a GPI input.

Table 3-2. GPI Inputs

Function	Description
Set Tally	A tally is active (on) when the contact is closed, and inactive (off) when the contact is open. For example, if a GPI with Physical ID 1 on slot 1 is assigned to Tally 1 on Source 1, it controls tally 1 for video source 1.
Full Screen	Closing the GPI contact causes the associated PiP to be displayed full screen. Opening the GPI contact switches the display back to multiviewer.
Layout	Closing the contact on the first four GPIs in the system recalls a stored layout from the first four presets. For example, a contact closure on GPI 2 recalls Layout 2 and contact closure on GPI 1 recalls Layout 1.
Timer Start	If there is a timer on your layout, closing the GPI contact starts count up or count down on the timer.
Timer Reset	If there is a timer on your layout, closing the GPI contact resets the timer back to its starting value.

1. In the **Slot Number** field, enter the video card slot number.
2. In the **Physical ID** field, enter the input number of the GPI channel.
3. In the **Type** field, select the function for the GPI (see Table 3-2 on page 31).
4. Do one of the following:
   - For **Set Tally**, set the video source number and the tally ID number.
   - For **Full Screen**, set the video source number.
   - For **Layout**, set the number of the affected preset.
   - For **Timer Start** and **Timer Reset**, set the number of the timer.

If you want to review the settings you made, select each Physical ID number and the settings are displayed.

5. Click **Set**.
6. Repeat steps 1 to 5 for each GPI that you want to add.
7. Click **OK**.

Audio Settings

The audio settings control metering options for all PiPs in all layouts.

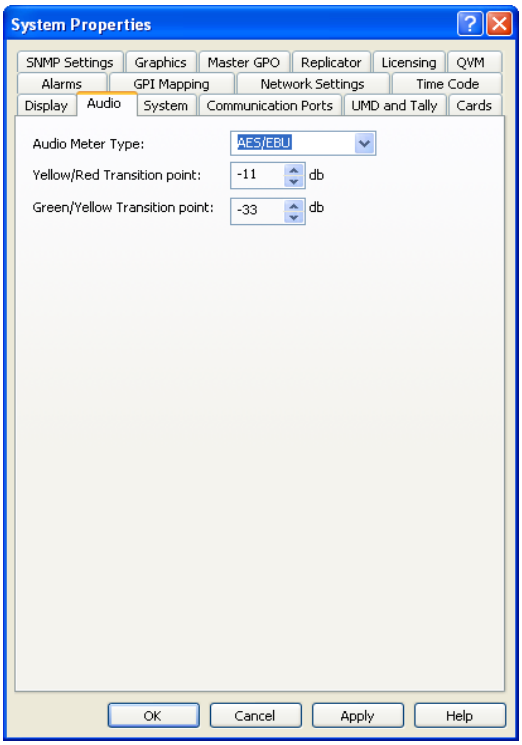
The default settings for audio meter scale type and transitions are set to AES with the yellow/red transition at -11dB and the green/yellow transition at -33dB. These levels are sufficient for most purposes, but you can change them.

The scale type must be set to AES for embedded and digital audio. De-embedded HD SDI/SDI and discrete audio channels can only be assigned to an AES bar/scale.

Table 3-3. AES Bar Scale

Scale	Dynamic Range	Attack Time	Decay Time
AES/EBU	45 dB, 0 to -45 dB	One sample	1.5 s per 20 dB decay

1. Open the **System Properties** dialog box. and select the **Audio** tab.

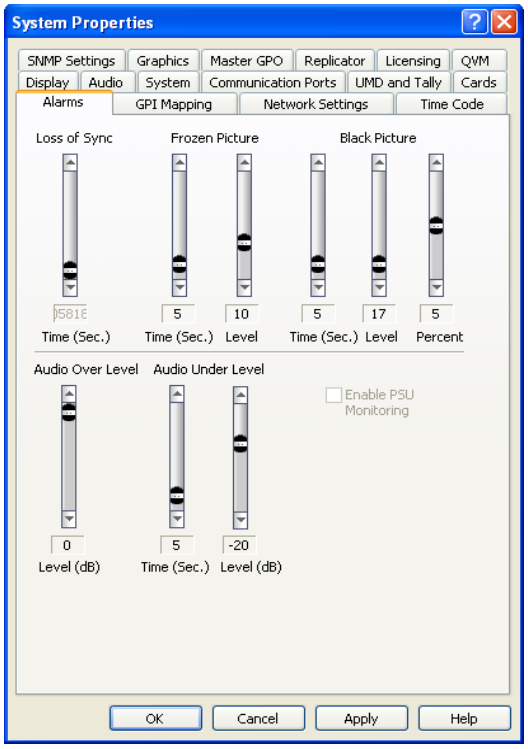


2. In the **Audio Meter Type**, select the appropriate option.
3. Set the **Yellow/Red Transition point** (upper transition point).
4. Set the **Green/Yellow Transition point** (lower transition point).
5. Click **OK**.

For help with adding audio panels to accept audio monitoring meters see “Adding Audio Panels” on page 25.

Global Alarm Settings

The **Alarms** tab allows the global settings for all alarms supported by the multiviewer to be configured.



The alarms supported depend on the options licensed or fitted to the connected multiviewer and the threshold ranges depend on the type of audio meter standard selected on the Audio System tab.

The following settings affect all PiPs that use the corresponding alarm.

Frozen Picture Delay

Time in seconds (1-60) - the amount of a time of video source would need to remain static before being declared frozen.

Level (1-30) - the percentage of motion allowed in picture before it is deemed to no longer be static. (Normally used with noisy analog inputs)

Black Picture

Time in seconds (1-60) - the amount of time a video source would need to remain below the black level threshold before being declared black.

Level (0-255) - the video level or threshold below which pixels are deemed to be black. Black is set to 16 (default) and white is set to 235.

Percent (0-10) - the percentage of picture allowed above the black level threshold in a black picture. The threshold back-off percentage control is provided so that a brief period of blackness won't trigger the alarm.

Audio Alarms

AES/EBU meters are supported and the threshold for audio under and over alarms ranges from -60 to 0 dB.

Audio Over

Level in dB (-60 to 0) - the level in dB's above which the audio is deemed to be too loud and an audio over event is triggered.

Audio Under Level

Level in dB (-60 to 0) - the level in dB's below which the audio is deemed to be too low and an under level event is triggered.

Time in seconds (1-60) - the amount of time an audio source must be silent or under level before an alarm is raised.

PSU Monitoring

Power supply level monitoring is not supported with the QVM6800**+**.

Enabling Alarms

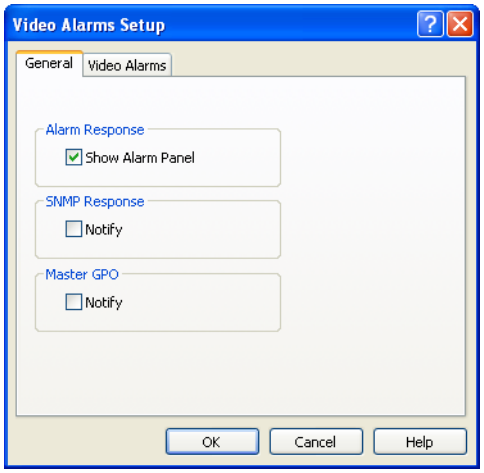
Fault detection and reporting can be enabled for audio and/or video sources assigned to a PiP. Alarms can be sent to the output display, notified by SNMP or indicated via the GPI Output.

Enabling video and/or audio alarms for each PiP is accomplished within the **Layout Editor** of **ZConfigurator**.

Alarms are only relevant for PiPs with a video source and/or at least one audio panel with assigned audio sources.

Video Alarm Setup

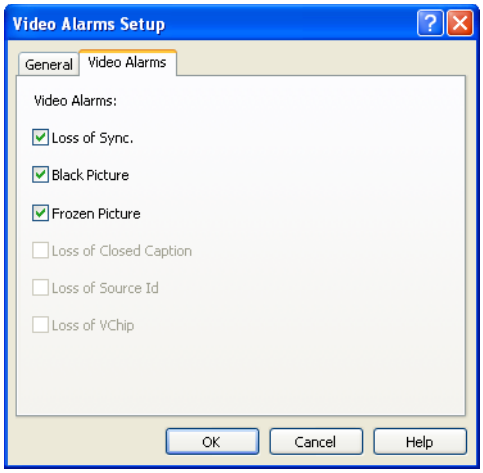
To access the **Video Alarm** setup menu click on the bell icon  and select **Video Alarm**.



If only a video source is assigned, just click once on the bell icon to display the **Video Alarms Setup** menu.

Select notification options on the **General** tab by placing a tick against the required response.

To define which video parameters cause alarms click on the **Video Alarms** tab.



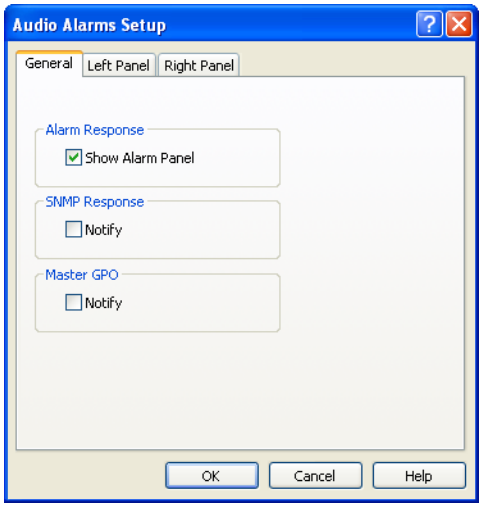
Enable the required alarm event triggers.

Note

Options that don't currently apply are grayed out.

Audio Alarm Setup

To access the **Audio Alarm** setup menu click on the bell icon  and select **Audio Alarm.**

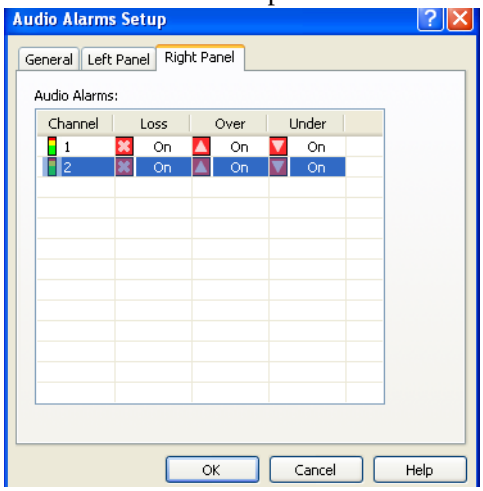


Note

If only one or more audio sources are assigned, just click once on the bell icon to display the **Audio Alarms Setup** menu.

Select notification options on the **General** tab by placing a tick against the required response.

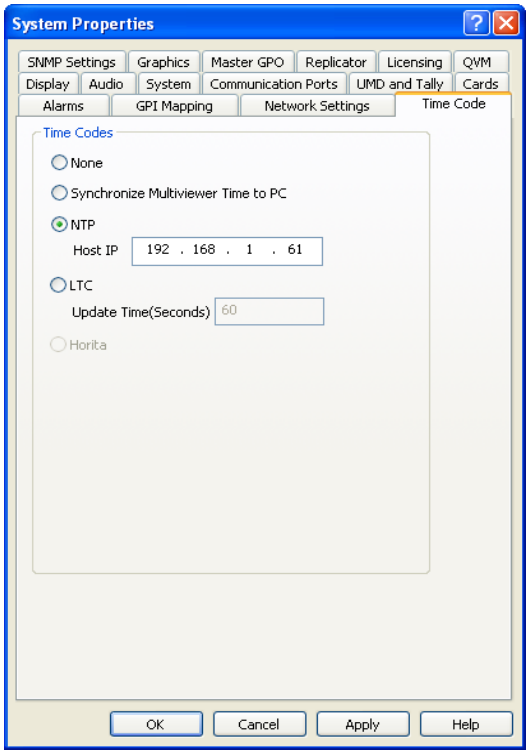
To define which audio parameters cause alarms click on a **Panel** tab.



Enable the required alarm event triggers.

Timecode

The Time Code tab is used to synchronize multiviewer time to various sources.



None - no external time reference is used.

PC clock - to sync clocks to an internal clock check **Synchronize Multiviewer Time to PC**.

Using an NTP server - to sync clocks to an NTP server, check **NTP** and enter its IP address.

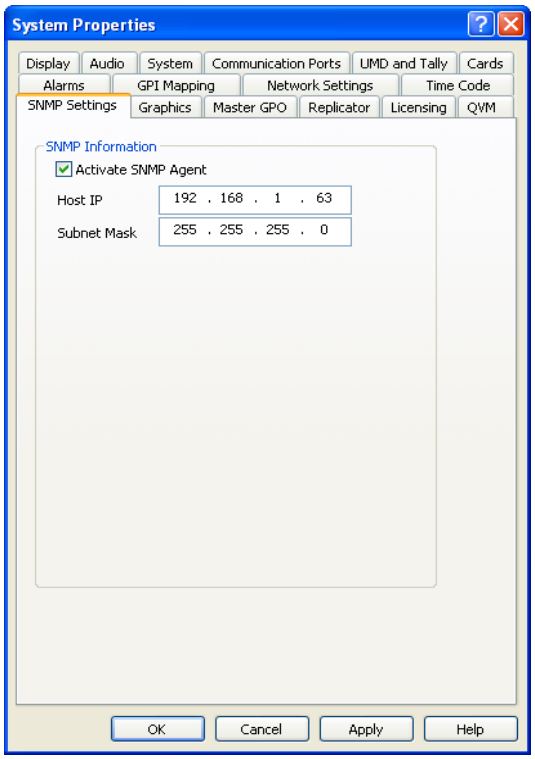
The Network Time Protocol (NTP) is designed to resist the effects of variable latency and jitter when synchronizing computer system clocks over the internet with a time server.

Use a reliable NTP server, rather than a PC clock, even if the PC also uses an internet time server, since the time link only exists while ZConfigurator controls the multiviewer.

Using an LTC source - select **LTC** to lock to external Longitudinal Time Code. The Horita option is not available for this multiviewer.

Using SNMP Agents

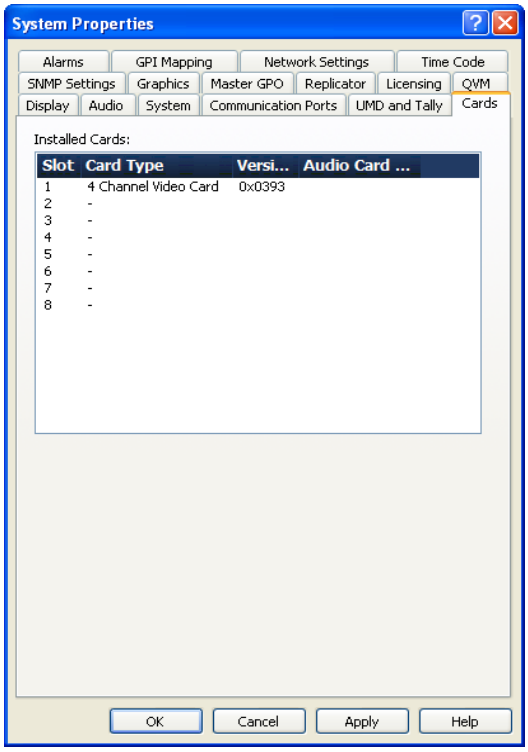
The Simple Network Management Protocol (SNMP) is used to allow network attached multiviewers to be monitored remotely for alarms and other conditions that might require administrative attention.



An SNMP agent receives requests from and sends responses to ZConfigurator when an event, such as a video or audio alarm occurs. To use an SNMP agent check the **Activate SNMP Agent** box and enter an appropriate IP address and subnet mask.

Checking Installed Cards

The Cards tab shows the installed cards and their version numbers.

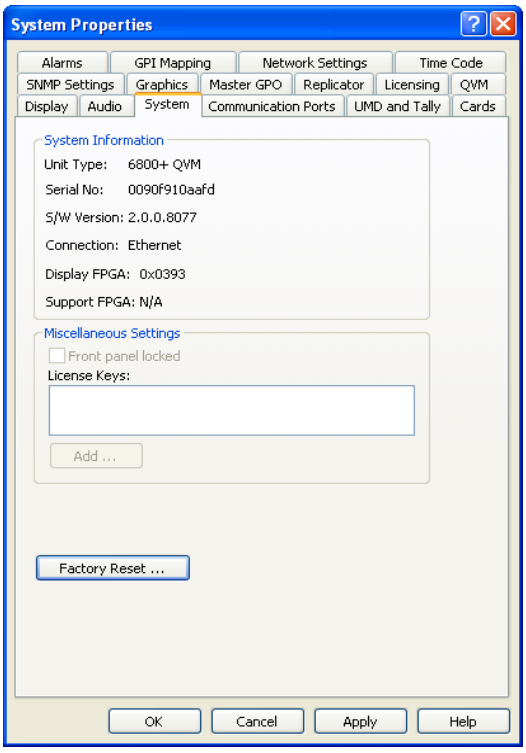


Note

No changes can be made in this menu. Press **OK** or **Cancel** to leave this menu.

System Properties

The system tab shows information about the connected multiviewer such as Unit Type, Serial Number, Software Version and Connection Type.



System Information

This section of the System tab shows the unit type, serial number, firmware (flash software) and display version.

The connection name may be changed using ZConfigurator but the serial number and unit type name cannot.

Using License Keys

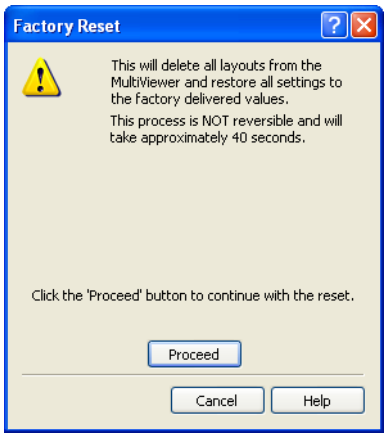
Licences are managed using the **License** tab. See “Licensing” on page 41.

Locking the Front Panel

This feature is not applicable to this multiviewer.

Restoring Factory Settings

To recall the multiviewer factory settings, click the **Factory Reset** button. A message will be shown warning that all layouts currently stored on the multiviewer will be overwritten.



Click **Proceed** to reset the multiviewer or **Cancel** to leave the menu without making any changes.

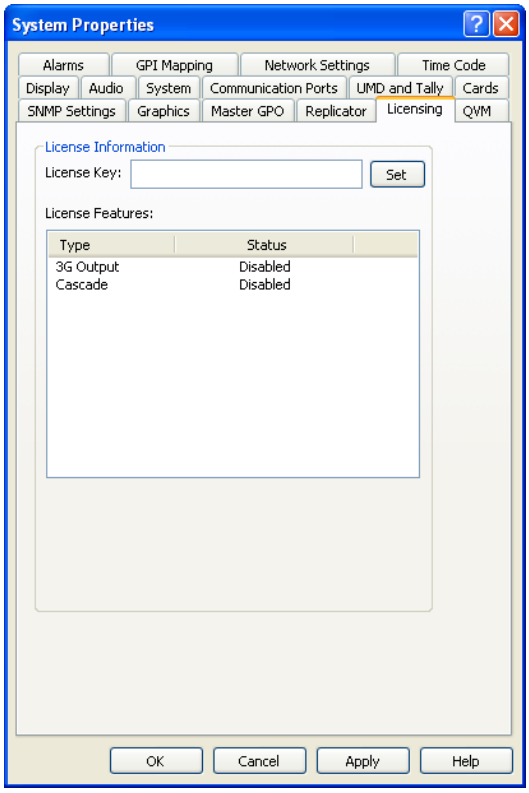
When the reset is finished the multiviewer will be rebooted. ZConfigurator will then attempt to reconnect with the multiviewer, provided another connection has not been made.

Note

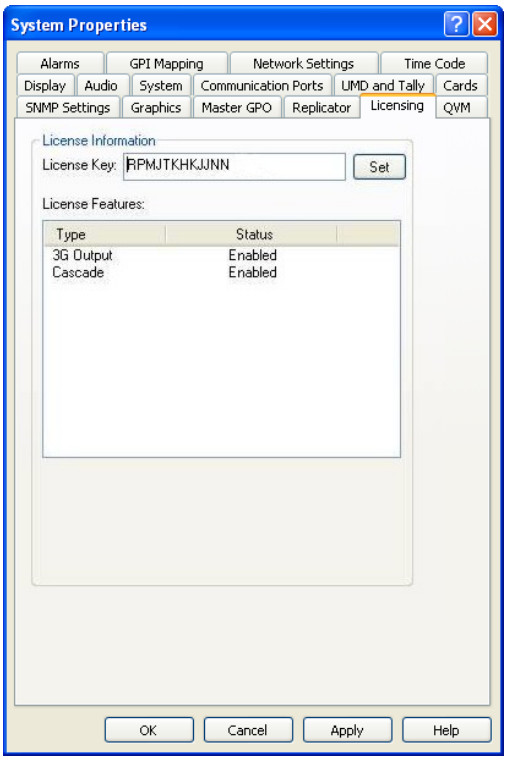
If necessary, re-connect by double clicking on the unit's connection icon.

Licensing

Multiviewer options that require a license key to be applied are managed via the **License** tab.



To add a licensed option type the code you have been given into the **License Key** box and click on **Set**.

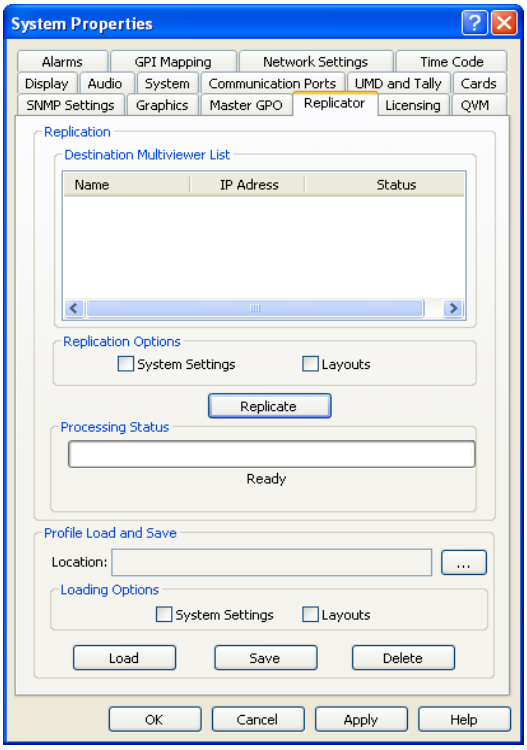


The features purchased will be enabled.

Copying Settings to Other Units

System Settings and Layouts can be copied to other QVM6800+ units by using the **Replicator** function. In addition, multiviewer **Profiles** may be saved to local storage and loaded at any time to any multiviewer (of the same type).

To access the **Replicator** and **Profile** functions navigate to **System Settings >> Replicator**.



Replication

Replication requires that a target multiviewer is connected to the network and that its IP address is present in the **Destination Multiviewer List**.

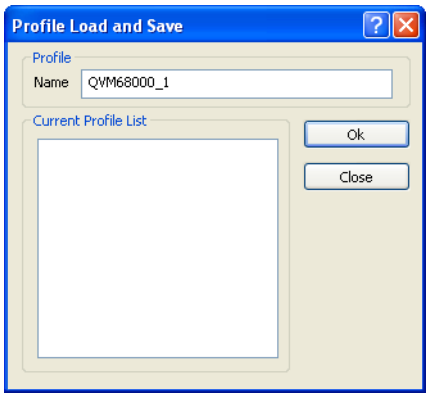
Highlight the desired multiviewer to receive the *current* multiviewer settings, then select **System Settings** and/or **Layouts** and click on **Replicate**. This will duplicate the chosen settings across the network to the target unit.

When Replicating or using Profile Load and Save the target multiviewers should be of the same type as the source. For example, if replicating a 12 input cascade system it should only be copied or replicated to other 12 input cascade systems."

Settings not applicable to the destination unit will be ignored.

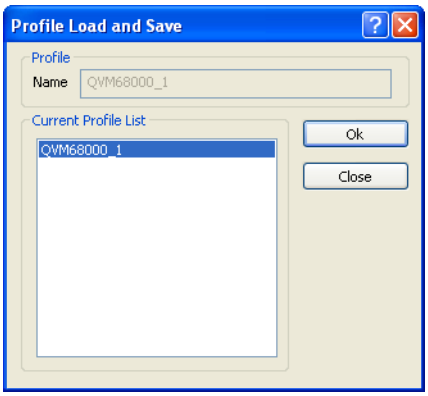
Profile Save and Load

To save both **Settings** and **Layouts** of the current unit to local storage as a named **Profile**, click on **Save.**



Type a memorable name for the profile and click **OK**.

To load a saved profile, choose **System Settings** and/or **Layouts** by placing a tick beside the desired option(s) and click on **Load**.



Then select the desired profile from the list and click **OK**.

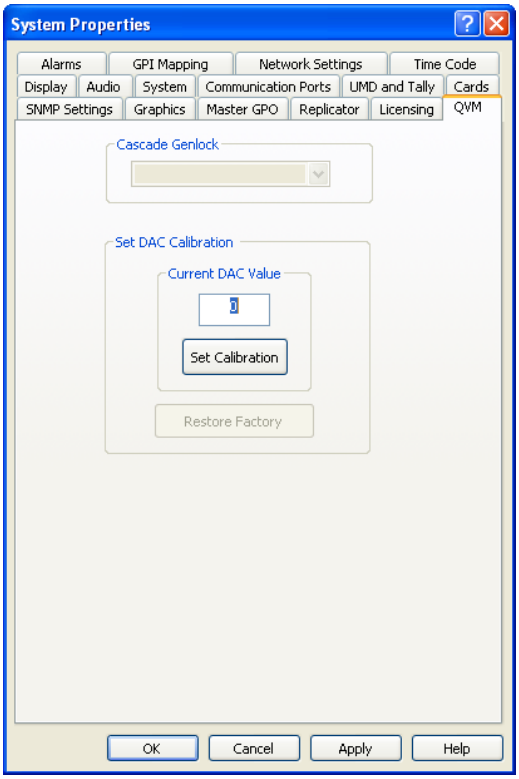
Note

Reconnect to the unit after the profile has been loaded to enable the preset list to be updated.

Setting Cascade Genlock Source

QVM6800**+** modules in cascade systems can be synchronised to one of two sources; the FR6800+ frame genlock input or a video input at the QVM6800**+** module itself.

To make the choice, go to **System Setup** >> **QVM**.



Note

The Cascade Genlock drop down box will be grayed out on QVM6800**+** units not licensed for cascade.

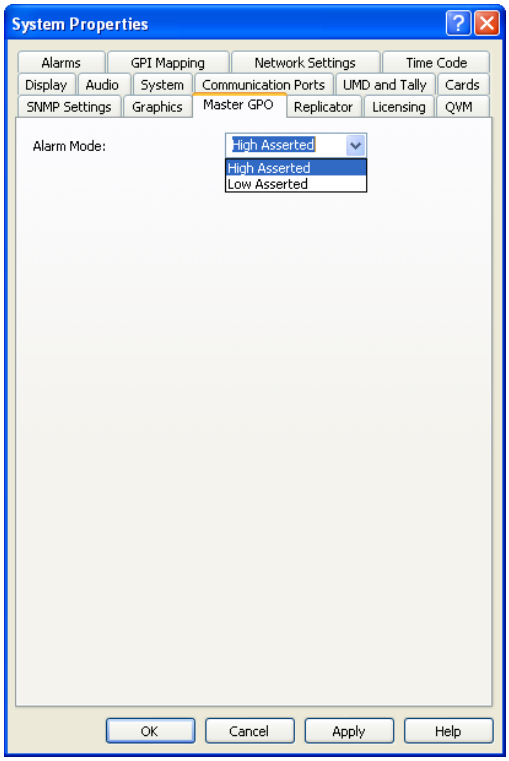
Note

Do not use the **Set Calibration** tool unless instructed to do so by Harris Customer Service. Incorrect use could result in loss of video lock or bad SDI output.

Setting Master GPI Output Options

Master GPI Output settings can be changed to affect the alarm state condition for the *Master GPO*.

Go to **System Setup >> Master GPO**.



The alarm trigger action of the *Master GPO* may be set to either **High Asserted** or **Low Asserted** to indicate the presence of an alarm.

When **Low Asserted** is selected the Master GPO output will produce a voltage of 0V when an alarm is present. If **High Asserted** is turned the voltage produced will be +5V when an alarm is present.

Make the selection from the **Alarm Mode** drop down list and click on **OK** to save changes.

Using Bitmap Images

Bitmap graphics may be stored on a multiviewer to provide a background to PiPs. They can be used to introduce a product image or station logo or for any other effect where a background image is applicable.

There is 10MB allocated within the multiviewer for bitmap storage and multiple bitmaps can be tiled to fill up the display. If too many tiled bitmaps are used the screen refresh time may be affected.

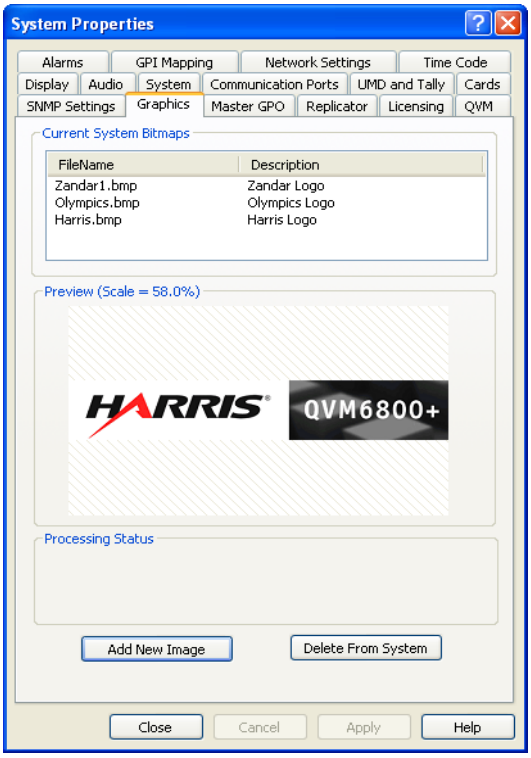
The largest single bitmap accepted is 0.5MB. The format is 8-bit bmp but 16 bit or 24 bit will be accepted and converted by ZConfigurator.

Note

For best results, images should be chosen or pre-sized so that they map directly into a proposed layout without the need for further scaling.

Each bitmap must be loaded into a multiviewer before it can be used.

To load a new bitmap into a multiviewer's memory or delete existing ones, access **System Setup** >> **Graphics**.



To add a new bitmap, click on **Add New Image** and browse for the desired image.

Note

At present, only the.bmp format is supported.

To delete a bitmap from the multiviewer's memory, highlight it in the **Current System List** and click on **Delete From System**.

Select **OK** when done to save changes and dismiss the Graphics tab.

Chapter 4

Hardware Monitoring

Card Edge Controls and LEDs

The QVM6800+ has seven monitoring LEDs that serve as a quick monitoring reference, one power LED and one module or card status LED.

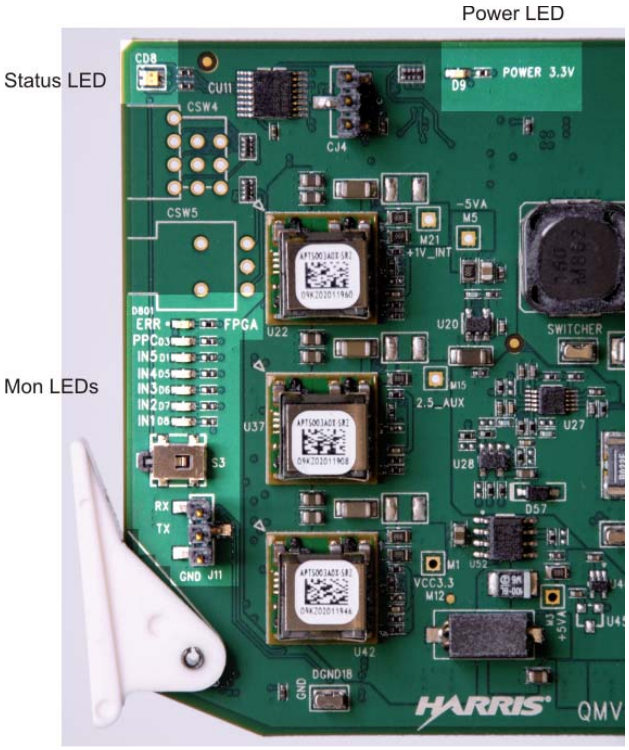


Figure 4-1. Location of QVM6800+ LEDs

Figure 4-1 shows the location of the LEDs on the QVM6800+ module.

Table 4-1 on page 48 describes the meaning of the card-edge LEDs.

Table 4-2 on page 48 describes the different states of the module status LED

Monitoring LEDs

Each monitoring LED is green when lit, unless specified otherwise.

Table 4-1. Monitoring LED Indicators

LED	On	Off
IN 1	Input 1 signal is present	Input 1 signal is not present
IN 2	Input 2 signal is present	Input 2 signal is not present
IN 3	Input 3 signal is present	Input 3 signal is not present
IN 4	Input 4 signal is present	Input 4 signal is not present
IN 5	LOOP IN present (QVM6800**+** C only)	LOOP IN not present (QVM6800**+** C only)
ERR	FPGA is in error (red, only during initialization)	
PPC	PPC is running	PPC is not running
3.3V	3.3V power rail present	3.3V power rail not present

Note

The PPC LED monitors the communication systems processor and the FPGA LED monitors the dedicated video/graphics processor.

Switches

The card edge switch labelled S3 is not used at this time.

Module Status LED

The general module status LED, CD8 at the corner of the module monitors a variety of key systems and lights up if an error is detected. See Figure 4-1 on page 47 for the location of the LED, and Table 4-2 for a description of the LED colors.

Table 4-2. Module Status LED Descriptions

LED Color Sequence	Meaning
Off	There is no power to the module; the module is not operational.
Green	There is power to the module; the module is operating properly.
Red	There is an alarm condition.
Flashing Red	The module has detected a hardware/firmware fault.
Yellow	The module is undergoing configuration.

Note

If the card or module status LED, CD8, is flashing red, contact your Customer Service representative.

Chapter 5

Specifications

Overview

The following specification tables appear in this chapter:

Inputs

Outputs

Miscellaneous

Specifications and designs are subject to change without notice.

Inputs

Auto-Sensing Video Inputs

Table 5-1. Video Input Specifications

Item	Auto-Sensing Video I/P Specification
Number of inputs	4 BNC per IEC 169-8
Type	Automatic line and color standard sensing
Standards	PAL-B (ITU-R BT.470-6), NTSC (SMPTE 170) SD-SDI (SMPTE 259M 270Mb/s) HD-SDI (SMPTE 292M, 1.485Gb/s): 1080i/59.94, 1080i/50, 720p/59.94, 720p/50 3G-SDI (SMPTE 424M 2.97Gb/s): 1080P/59.94, 1080P/50
Connectors	4 x BNC per IEC 169-8
Impedance	75Ω
Return loss	> 15 dB (typical) to 1.5 GHz >10dB (typical) from 1.5GHz to 3.0GHz
Analog Input A-to-D conversion	12 bit
Maximum cable length	SMPTE 259M: automatic up to 250m of Belden 1694A SMPTE 292M: automatic up to 100m of Belden 1694A SMPTE 424M: automatic up to 50m of Belden 1694A

GPI Inputs

Table 5-2. GPI Input Specifications

Item	Specification
Number of inputs	4
Type	Contact closure (cannot be driven)
Connector	Weidmuller # 1748190000 10 position, 2 row mating cable receptacle. Harris part no: 134-000765Q00. **Note:** This connector is shared with GPI and Audio Outputs

LTC Input

Table 5-3. LTC Input Specification

Item	Specification
Type	Balanced Differential
Input Impedance	Hi-Z
Supported Formats	SMPTE 12M, SMPTE 309M, Leitch
Connector	134-000536Q00

Frame Genlock Input

Table 5-4. Frame Genlock Input (when used as lock type for QVM6800+)

Item	Specification
Connector	4 BNC per IEC 169-8
Standards	PAL-B (ITU-R BT.470-6) NTSC (SMPTE 170)
Impedance	75Ω
Return Loss	>40dB (typical) 25Hz to 30MHz (SMPTE 318M-1999)
Input Level	NTSC/PAL-B (1 V pk-to-pk, -4.5 dB to 6.0 dB)
Locking Range	+/-10ppm (sync lock only, no burst lock)

Outputs

HD-SDI/3G Output

Table 5-5. HD-SDI Output Type Specifications

Item	HD-SDI	3G SDI
Connector	BNC per IEC 169-8	BNC per IEC 169-8
Impedance	75Ω	75Ω
Return loss	> 15 dB (typical) to 1.5 GHz	> 10 dB from1.5 GHz to 3Ghz
Jitter	<0.2 UI (740ps) for 1080i and 720p	<0.3 UI for 1080p
Amplitude	800mV +/- 10%	800mV +/- 10%
Rise/Fall Time	<270ps for 1080i and 720p	<135ps for 1080p

DVI-D

Table 5-6. DVI-D Output

Item	Specification
Connector	Microcross
Standards	DVI-D up to 165MHz
Resolution	User programmable to 1920 x 1200

The DVI-D output only supports a digital output and there is no analog RGB output.

Audio

Table 5-7. Audio Output Specifications

Item	Specification
Number of outputs	1 stereo output
Type	Balanced
Connector	Weidmuller # 1748190000 10 position, 2 row mating cable receptacle. Harris part no: 134-000765Q00. **Note:** This connector is shared with GPI I/O
Impedance	Lo-Z 50 Ω
Max Output Level	+19.2dBu = 0dBFS
Frequency Response	±0.1dB from 20Hz to 20kHz, relative to 1kHz
THD+N	>75dBFS

GPI Output

Table 5-8. GPI Output Specifications

Item	Specification
Number of outputs	1
Output type	• Open collector with pull-up resistor to +5 VDC • Maximum sink current of 200 mA • Will sink up to 200 mA at 0 V • Fused output with a thermally resetable fuse
Connector	Weidmuller # 1748190000 10 position, 2 row mating cable receptacle. Harris part no: 134-000765Q00. **Note:** This connector is shared with GPI Inputs and Audio Output

UMD Protocols

Zandar, TSL, Thomson Simple, Image Video

Graphics Overlay

Stylized video window skins

In-picture embedded audio bargraphs - red, green, yellow

16 text & border colors

4 tally lamps - red, green, yellow, blue

Dynamic UMD/tally

2 analog clocks

6 digital clocks

6 up/down timers

Propagation Delay

The total video delay is between 0.5 to 1 frame of video depending on the relative timing of the incoming sources.

Power Consumption

The power consumption for QVM6800**+** modules is <13 W.

Operating Temperature

The operating temperature for QVM6800**+** modules is 41° to 113°F (5° to 45°C).

Chapter 6

Troubleshooting

Frequently Asked Questions

Table 6-1. QVM6800+ Troubleshooting Tips

Problem	Solution
The output display module is not working correctly.	• Check that the cables are connected correctly. • Check that the output display module is calibrated for high picture quality. For example, the display brightness and contrast should be set so that neither black nor white crushing occurs. In addition, some displays require gamma adjustment to achieve full dynamic range.
Nothing appears on one or more connected output display devices.	• Check that the DVI output resolution is set to a resolution supported by the connected DVI and/or HD-SDI devices. • Make sure that there is power to the display device(s). • Make sure that the appropriate cable(s) are attached securely to both the QVM6800+ module and the corresponding output display device(s). • Make sure that the QVM6800+ module is inserted into the frame correctly. • Make sure that there is one or more valid input source present, and that the selected PiPs or tiles correspond to the appropriate sources.
The image quality on the output display module is poor.	• Check that the selected resolution matches the native resolution of the display and for 50Hz regions make sure your display natively supports 50Hz and does not scan convert to 60Hz. • Check that the supplied short DVI cable is connected securely between the QVM6800+ module and the corresponding output display module. If a longer DVI cable is required, consider using an ACTIVE cable that includes an in-line amplifier. • Make sure that the QVM6800+ module is inserted into the frame correctly.
The QVM6800+ module is not responding.	• Make sure that the 6800+ frame is powered on, and that the QVM6800+ module is fully inserted into the back module. • Power cycle the 6800+ frame (turn the frame off, and then turn it on again. • Make sure that the host name/IP address and port number are correct for TCP/IP connections.

Table 6-1. QVM6800+ Troubleshooting Tips *(Continued)*

Problem	Solution
ZConfigurator cannot access any QVM6800**+** modules on the network.	• Make sure that there is no firewall present that is blocking either ZConfigurator or the IP address range of the multiviewer network. See also "Connecting to a Module for the First Time" on page 12. **Note:** If ZConfigurator is run on a non-administrator account, personal firewalls may need to be re-configured to allow access to the multiviewer network. • Check that the PC and QVM6800**+** module IP addresses are in the same subnet range as the rest of the multiviewer network. • Check that 'Scan TCP/IP network at application start' is checked under *User Preferences >> User Interface*. • If two NICs are used on a PC connected to both a corporate and private network, it may be necessary to: 1) Disable the corporate network connection temporarily and force a new network scan by right clicking in an empty **Device List** and selecting **Scan Network** or by relaunching ZConfigurator (but check start-up preferences). 2) Add a new device manually by pressing **Connect to...** and typing in the IP address and port number (default 4001).
I do not know what the IP address for the QVM6800**+** module is.	The current IP address is displayed for a few seconds on the initial screen when the QVM6800**+** module is powered on.
How do I change my PC's IP Address?	• In Windows™ Control Panel, double-click Network Connections. • Right-click the network on which the PC and QVM6800+ module reside, and then choose Properties. • The Connections Properties dialog box appears. • Select Internet Protocol (TCP/IP), and then click Properties. • The Internet Protocol (TCP/IP) Properties dialog box appears. • Enter an IP address for the PC that is within the same subnet as the QVM6800+ module. • For example, if the IP address of the QVM6800+ module is 198.168.100.57, the IP address for the PC should be 198.168.100.xx, where xx is any number from 1 to 255, except 57. • Click OK.
I cannot use a DHCP server to assign IP addresses.	A DHCP server dynamically allocates IP addresses. Although this seems to make system administration easy, static addresses are preferred. Static addresses work well with UMD Tally controllers because they only recognize a QVM6800**+** module by its IP address and not its name. DHCP servers may change assigned addresses, which causes external controllers to lose their connection with the QVM6800**+** module.
Frame View doesn't find my frame; what's wrong?	• Frame View requires that the Ethernet port of the 6800 ETH card (behind the PSU at the back of the frame) is also connected to the ZConfigurator network. • Check also that the frame IP address is in the same subnet range as the ZConfigurator network. The

Table 6-1. QVM6800**+** Troubleshooting Tips *(Continued)*

Problem	Solution
The features of the System Setup Temperature tab don't work; what's wrong?	• Contact your Harris representative or visit http://support.broadcast.harris.com for a frame firmware upgrade.
Why doesn't my VGA display work?	• Analog outputs are not supported as the DVI-D specification only includes digital video signals.
What is the DVI-D format?	• The QVM6800**+** module comes with a DVI-D Display Output Microcross connector that outputs a digital video signal; it does NOT have analog signals. For pinout information, see "DVI Connector" on page 57. • Cable length for digital signals may be as low as two meters, but it can be increased using DVI extenders.

Chapter 7

Connectors and Cables

DVI Connector

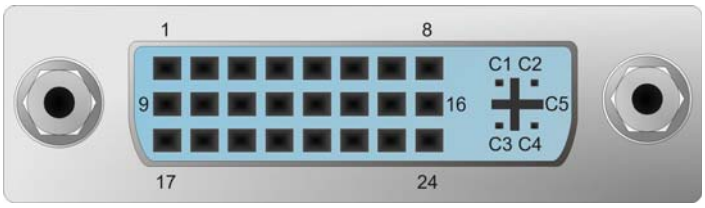


Figure 7-1. DVI Connector

Table 7-1. Pinouts for the DVI Connector

Pin No.	Description	Pin No.	Description
1	DATA 2+	16	Hot Plug Detect
2	DATA 2-	17	DATA 0-
3	DATA 2/4 SHEILD	18	DATA 0+
4	DATA 4-	19	DATA 0/5 SHIELD
5	DATA 4+	20	DATA 5-
6	DDC CLOCK	21	DATA 5+
7	DDC DATA	22	CLOCK SHIELD
8	N/C	23	CLOCK +
9	DATA 1-	24	CLOCK -
10	DATA 1+		
11	DATA 1/3 SHIELD	C1	N/C
12	DATA 3-	C2	N/C
13	DATA 3+	C3	N/C
14	+5V POWER	C4	N/C
15	DATA GND	C5	Analog Ground

Audio/GPI Connector

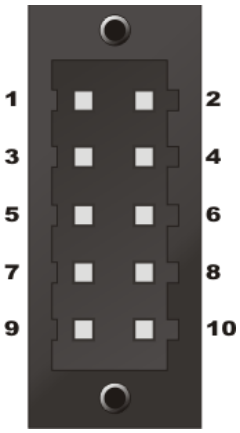


Figure 7-2. Audio/GPI Connector

Table 7-2. GPI/Audio Pinout

Pin No.	Description
1	GPI OUT
2	GPI IN 1
3	GPI IN 2
4	GPI IN 3
5	GPI IN 4
6	GND
7	AUD OUT R-
8	AUD OUT R+
9	AUD OUT L-
10	AUD OUT L+

Note

GPIs use contact closures. They must not be driven.

LTC Connector

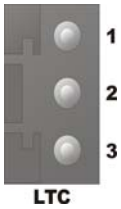


Figure 7-3. LTC Connector on Rear Module

Table 7-3. LTC Pinout

Pin No.	Description
1	LTC-
2	GND
3	LTC+

A three pin plug (supplied) suitable for the LTC connector is shown below:

Figure 7-4. LTC Plug

The plug has three screw-terminals to accept bared wire ends.

It is keyed so that it only fits one way round on the rear connector LTC port.

A dual core screened cable should be used wired at the LTC connector according to the pinout given in Table 7-3.

Note

Ensure that the screen is connected to pin 2.

The LTC connector pin assignment ID on the reverse side may help when wiring.

Figure 7-5. Leitch Plug with ID

RS232 Connector

The RS232 port on the front card edge may be used when programming on-board flash memory from a male 9 pin serial port on a PC.

Wire a cable to a 9 pin serial port as follows:

Table 7-4. RS232 Cable Details

DB-9M Pin	TYCO Pin	Description
3	1	Rx
2	2	Tx
5	3	GND

A suitable three pin plug is a TYCO 487378-2-ND or similar.

The DB-9M is a male 9 pin ‘D’ type connector.

Note

It is recommended to use screened cable. If ribbon cable is used it should be kept short (less than 1 meter).

Connect the three pin TYCO plug to J11 on the card edge.

Figure 7-6. Serial Port on Card Edge

Ensure that the orientation used places pin 1 (Rx) at the top of J11.

Connect the 9 pin male plug into the serial port of your PC.

Then power the PC and run the firmware update software you have been given, obeying any instructions that came it.

Chapter 8

Updating Firmware

As product developments occur, updates may be released to introduce new features or improve functionality. Firmware updates are applied to Harris Zandar multiviewers using the Z_Upgrade utility.

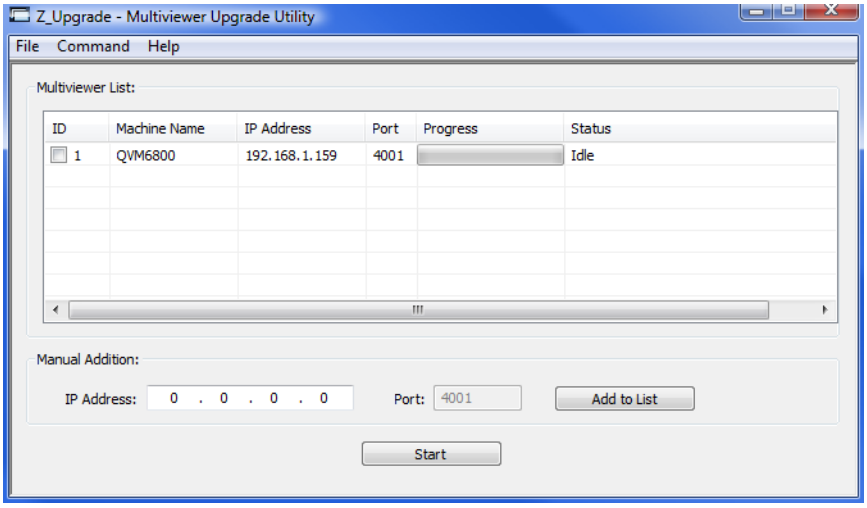
Caution

It is strongly recommended to backup any existing presets and/or language packs using ZConfigurator before starting the upgrade.

Using Z_Upgrade

Z_Upgrade searches for Harris Zandar multiviewers automatically over the network.

To run the flash utility click on Z_Upgrade.exe in the folder the utility was downloaded to.



Note

The required upgrade files or folders MUST be present within the same folder as the Z_Upgrade utility before the upgrade procedure is started.

Tip

If the desired multiviewer is not shown, ensure that neither ZConfigurator or any other instance of the update tool is running. Then select **Multiviewer Search** from the **Command** menu. If necessary, type the IP address in the **Manual Addition** box provided and select **Add to List**.

To select multiviewers to upgrade, place a tick against the desired entries in the **Multiviewer List** window.

Note

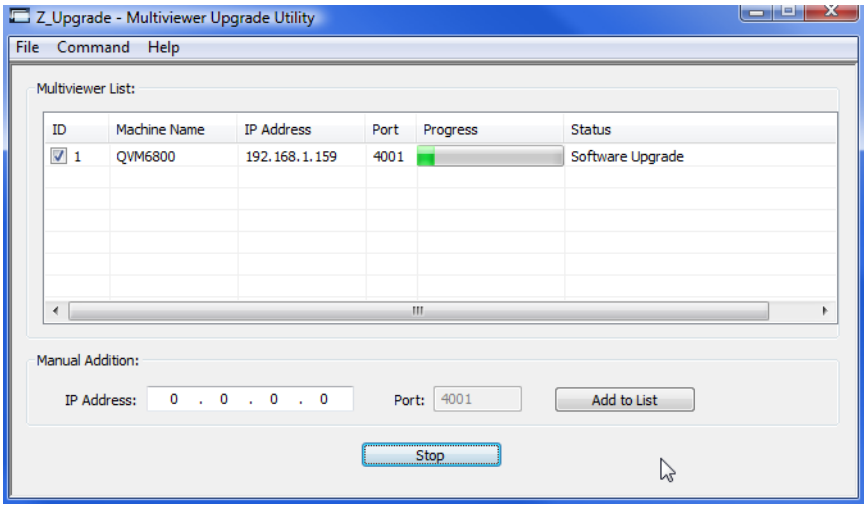
All Multiviewers upgraded at the same time should be of the same type.

Click on **Start** when ready to commence the upgrade.

Caution

A message will appear warning that installed language packs and custom presets will be overwritten during the upgrade. They should be backed up using ZConfigurator.

As the upgrade progresses, Z_Upgrade will display a green progress bar.

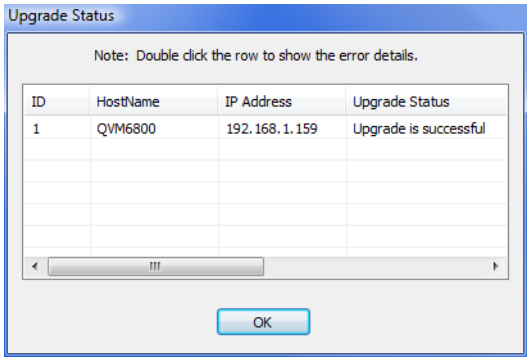


The update component in process will be shown in the Status column.

Caution

On no account should the power be interrupted during the upgrade.

When the upgrade process is finished, Z_Upgrade will display an **Upgrade Status** message showing any errors.



If necessary, double click on an entry row to see error details.

All successfully upgraded QVM6800**+** multiviewers will be power cycled automatically.

The version information of installed software and firmware can be seen on the **System Setup >> System** tab in ZConfigurator.

Z_Update FAQ

Q: How do I know if an upgrade is necessary?

If the system is operating normally and no new features are required or have been purchased, an upgrade is probably not neccesary. Most upgrades are done at the request of a support engineer.

Q: What happens if I don’t wait for the shutdown prompt?

File system corruption might occur. If this happens, contact customer service as you may need to re-flash your system.

Q: A search error appears such as Error 10048, what’s wrong?

It probably means that another Z_Upgrade or ZConfigurator is running. Close these applications.

Q: How do I refresh the list of multiviewers?

Under the **Command** menu, select **Multiviewer Search** to refresh the multiviewer list.

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