Rainier 3G

A new multiviewing experience

Revision 1.0.9, (January, 2021)

AVITECH

ABOUT THIS MANUAL
This manual contains information on how to use Avitech Rainier 3G.

The following conventions are used to distinguish elements of text throughout the manual.

 *provides additional hints or information that require special attention.*

 *identifies warnings which must be strictly followed.*

Any name of a menu, command, icon or button displayed on the screen is shown in a bold typeset. For example: On the **Start** menu select **Settings**.

To assist us in making improvements to this user manual, we welcome any comments and constructive criticism. Email us at: sales@avitechvideo.com.

WARNING
Do not attempt to disassemble Rainier 3G. Doing so may void the warranty. There are no serviceable parts inside. Please refer all servicing to qualified personnel.

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TECHNICAL SUPPORT
For any questions regarding the information provided in this guide, call our technical support help line at 425-885-3863, or our toll free help line at 1-877-AVI-TECH, or email us also at support@avitechvideo.com

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Warranty

Avitech International Corporation (herein after referred to as “Avitech”) warrants to the original purchaser of the products manufactured in its facility (the “Product”), that these products will be free from defects in material and workmanship for a period of 1 year or 15 months from the date of shipment of the Product to the purchaser. There is a 3 month grace period between shipping and installation.

If the Product proves to be defective during the 1 year warranty period, the purchaser’s exclusive remedy and Avitech’s sole obligation under this warranty is expressly limited, at Avitech’s sole option, to:
(a) repairing the defective Product without charge for parts and labor; or (b) providing a replacement in exchange for the defective Product; or (c) if after a reasonable time is unable to correct the defect or provide a replacement Product in good working order, then the purchaser shall be entitled to recover damages subject to the limitation of liability set forth below.

Limitation of Liability

Avitech’s liability under this warranty shall not exceed the purchase price paid for the defective product. In no event shall Avitech be liable for any incidental, special, or consequential damages, including without limitation, loss of profits for any breach of this warranty.

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Any Product which fails under conditions other than those specifically covered by the Hardware Warranty, will be repaired at the price of parts and labor in effect at the time of repair. Such repairs are warranted for a period of 90 days from date of reshipment to customer.

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Regulatory Information

Marking labels located on the exterior of the device indicate the regulations that the model complies with. Please check the marking labels on the device and refer to the corresponding statements in this chapter. Some notices apply to specific models only.

Federal Communications Commission (FCC) Statement

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. Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Avitech is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment. Operation is subject to the following 2 conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

European Union CE Marking and Compliance Notices Statements of Compliance

English

This product follows the provisions of the European Directive 1999/5/EC.

Dansk (Danish)

Dette produkt er i overensstemmelse med det europæiske direktiv 1999/5/EC.

Nederlands (Dutch)

Dit product is in navolging van de bepalingen van Europees Directief 1999/5/EC.

Suomi (Finnish)

Tämä tuote noudattaa EU-direktiivin 1999/5/EC määräyksiä.

Français (French)

Ce produit est conforme aux exigences de la Directive Européenne 1999/5/EC.

Deutsch (German)

Dieses Produkt entspricht den Bestimmungen der Europäischen Richtlinie 1999/5/EC.

Ελληνικά (Greek)

Το προϊόν αυτό πληροί τις προβλέψεις της Ευρωπαϊκής Οδηγίας 1999/5/EC.

Íslenska (Icelandic)

Þessi vara stenst reglugerð Evrópska Efnahags Bandalagsins númer 1999/5/EC.

Italiano (Italian)

Questo prodotto è conforme alla Direttiva Europea 1999/5/EC.

Norsk (Norwegian)

Dette produktet er i henhold til bestemmelsene i det europeiske direktivet 1999/5/EC.

Português (Portuguese)

Este produto cumpre com as normas da Diretiva Européia 1999/5/EC.

Español (Spanish)

Este producto cumple con las normas del Directivo Europeo 1999/5/EC.

Svenska (Swedish)

Denna produkt har tillverkats i enlighet med EG-direktiv 1999/5/EC.

Australia and New Zealand C-Tick Marking and Compliance Notice
Statement of Compliance

This product complies with Australia and New Zealand's standards for radio interference.

1. Getting Started

The Rainier 3G allows users to monitor up to eight SDI (3G/HD/SD)/CVBS sources through a single unit. It features a built-in 8×8 crosspoint switcher to efficiently manage multiple inputs and two outputs, and users can cascade up to eight modules to monitor 64 video sources on one or two screens. A Rainier 3G outputs a full 1080p signal. Exhibiting flawless clarity and dynamic control, the Rainier 3G delivers a new multiviewing experience.

This chapter introduces the features and specifications as well as external components of Rainier 3G.

1.1 Package Contents

After unpacking the shipping carton, the following items can be found:

Avitech Rainier 3G

Utility Disc (software and user manual)

12 V DC Power Adapter (optional) *

Standard Power Cord (USA customer only)

RS-485 Cascading Cable (optional – when purchasing 2 or more Rainier 3G)

DVI Cascading Cable (optional – when purchasing 2 or more Rainier 3G)

RJ-50 GPI Terminal Block

DVI-I Male to Female Cable (optional) **

DVI to HDMI® Adapter (optional)

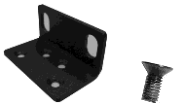
DVI to VGA Adapter (optional)

Avitech DB26 to 16 BNC Breakout Cable (optional)

Avitech DB9 to 4 BNC Breakout Cable (optional)

Avitech TACP (optional) ***

Avitech RJ-45 to RS-232 (DB9-FM) **Cable** (optional – refer to the "NOTE" below)

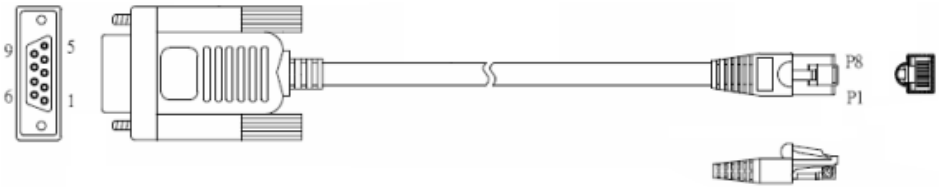


Ear with screw (already installed on Rainier 3G upon order for assembly on to rack mount)

Table 1-1 Package Contents

** This is an optional external power supply, along with the associated dual power supply PCBA inside the Rainier 3G, achieves power redundancy. If this optional external power supply is connected, the main power supply (AC or DC) can be unplugged on the Rainier 3G without affecting power supply to the unit.*
*** When using the DVI-I female connector on the Rainier 3G, the connector may easily be damaged if the DVI-I plug (male) has bent or damaged pins. With this optional DVI-I male to female cable permanently connected to the Rainier 3G, the female connector of the Rainier 3G will not be damaged.*
**** The Avitech TACP can be used with the Rainier 3G. Contact the authorized dealer or refer to the TACP User Manual for more details.*

Due to space limitation the serial connector is replaced with a RJ-45 connector. The Avitech RJ-45 to RS-232 (DB9-FM) cable is needed for serial function. The pin definition is shown next.



DB9-FM	
Pin	Assignment
1	
2	Tx
3	Rx
4	
5	Gnd
6	
7	
8	5 V
9	

RJ-45	
Pin	Assignment
1	Tx
2	Gnd
3	
4	Rx
5	Gnd
6	
7	
8	5 V

Figure 1-1 Avitech RJ-45 to RS-232 (DB9-FM) Cable

1.2 Product Features

Featuring automatic sensing of input signals, the Rainier 3G supports up to two 3G/HD outputs and two DVI-I outputs (HDMI through DVI to HDMI adapter).

Model	HD-SDI/ SD-SDI/ NTSC/PAL Input	DVI/VGA/ HDMI Input	Looping Output on SDI	8×8 SDI Crosspoint Switch
Rainier 3G-4E Rainier 3G-4A Rainier 3G-4D	4	1	N/A*	N/A
Rainier 3G-4E/4E Rainier 3G-4A/4A Rainier 3G-4D/4D Rainier 3G-4A/4E Rainier 3G-4A/4D Rainier 3G-4E/4D	8	2	N/A	N/A
Rainier 3GL-4E/4E Rainier 3GL-4A/4A Rainier 3GL-4D/4D Rainier 3GL-4A/4E Rainier 3GL-4A/4D Rainier 3GL-4E/4D	8	2	8	N/A
Rainier 3GC-4E/4E Rainier 3GC-4A/4A Rainier 3GC-4D/4D Rainier 3GC-4A/4E Rainier 3GC-4A/4D Rainier 3GC-4E/4D	8	2	N/A	Built-in
Rainier 3GLC-4E/4E Rainier 3GLC-4D/4D Rainier 3GLC-4A/4A Rainier 3GLC-4A/4E Rainier 3GLC-4A/4D Rainier 3GLC-4E/4D	8	2	8	Built-in

Table 1-2 Rainier 3G Series Video Comparison

Featuring dual AES audio inputs and one AES audio output for monitoring, the Rainier 3G supports audio delay.

Model	Embedded Audio	Analog Stereo Audio	Digital Audio
Rainier 3G-4E	4	N/A	N/A
Rainier 3G-4A	N/A	4	N/A
Rainier 3G-4D	N/A	N/A	4
Rainier 3G-4E/4E Rainier 3GL-4E/4E Rainier 3GC-4E/4E Rainier 3GLC-4E/4E	8	N/A	N/A
Rainier 3G-4A/4A Rainier 3GL-4A/4A Rainier 3GC-4A/4A Rainier 3GLC-4A/4A	N/A	8	N/A
Rainier 3G-4D/4D Rainier 3GL-4D/4D Rainier 3GC-4D/4D Rainier 3GLC-4D/4D	N/A	N/A	8
Rainier 3G-4A/4E Rainier 3GL-4A/4E Rainier 3GC-4A/4E Rainier 3GLC-4A/4E	4	4	N/A
Rainier 3G-4A/4D Rainier 3GL-4A/4D Rainier 3GC-4A/4D Rainier 3GLC-4A/4D	N/A	4	4
Rainier 3G-4E/4D Rainier 3GL-4E/4D Rainier 3GC-4E/4D Rainier 3GLC-4E/4D	4	N/A	4

Table 1-3 Rainier 3G Series Audio Comparison

1. *Embedded digital audio signals stream into high definition digital video signals. Inputs can contain embedded digital video and digital audio signals.*
2. *AES (Audio Engineering Society) – Officially known as AES3, it is a digital audio standard used for carrying digital audio signals between various devices. AES was designed primarily to support PCM (pulse-code-modulated) encoded audio in either DAT (digital audio tape) format at 48kHz or compact disc format at 44.1kHz.*
3. *Analog audio is superior to digital audio due to the absence of fundamental error mechanisms which are present in digital audio systems; including aliasing, quantization noise, and supposed limitations in dynamic range.*

The OSD (on screen display) provides the following visual guides:

– labels
– 3D borders
– alarms (video loss, video freeze, black video, audio loss/audio high/audio low detection)
– VU/PPM ballistic scale meter (user-adjustable)
– interpreted WSS, LTC and AFD metadata for aspect ratio adjustment, time code display and formatting

Reliable engineering offers no Single Point of Failure that ensures system integrity if a module fails, with an optional redundant power supply that offers increased security. What's more, the Rainier 3G provides a dual power supply with DC input as well as a replaceable front fan module for easy maintenance and minimum upkeep.

1.3 Specifications

Input	
SDI/CVBS (75 Ω, BNC connector)	Automatic sensing ❖ *3G-SDI: SMPTE 424M-2006 level A* *1080p60, 1080p59.94, 1080p50 (4:2:2)* ❖ *HD-SDI: SMPTE 292M* *1080p30, 1080p29.97, 1080p25, 1080PsF24 (segmented frame), 1080PsF23.98, 1080i59.94, 1080i60, 1080i50, 1035i60, 1035i59.94, 720p59.94, 720p60, 720p50* ❖ *SD-SDI: SMPTE 259M* *480i60, 480i59.94, 576i50* ❖ *CVBS:* *NTSC/PAL* ❖ *Input cable length:* ✓ *3G-SDI: 100m (328 ft.) Belden 1694A at 3Gbps* ✓ *HD-SDI: 150m (492 ft.) Belden 1694A at 1.5Gbps* ✓ *SD-SDI: 300m (984 ft.) Belden 1694A at 270Mbps* ❖ *Return loss: 15 dB up to 1.5 GHz*
HDMI and DVI (through HDMI to DVI adapter)	Automatic sensing, input can be used as background or to cascade with another Rainier 3G; the following input signals are supported: ❖ *1024×768, 50Hz/60Hz/75Hz* ❖ *1280×960, 50Hz/60Hz* ❖ *1280×1024, 50Hz/60Hz/75Hz* ❖ *1360×765, 50Hz/60Hz* ❖ *1400×1080, 50Hz/60Hz* ❖ *1600×1200, 50Hz/60Hz* ❖ *1680×1050, 50Hz/60Hz* ❖ *1920×1080, 50Hz/60Hz* ❖ *1920×1200, 50Hz/60Hz*
VGA (through adapter)	Automatic sensing through an adapter in CASCADE IN-1/2 port; input can be used as background or to cascade with another Rainier 3G; input signals supported: ❖ *1024×768, 50Hz/60Hz* ❖ *1280×960, 50Hz/60Hz* ❖ *1280×1024, 50Hz/60Hz* ❖ *1360×765, 50Hz/60Hz* ❖ *1400×1080, 50Hz/60Hz* ❖ *1600×1200, 50Hz/60Hz* ❖ *1680×1050, 50Hz/60Hz* ❖ *1920×1080, 50Hz/60Hz* ❖ *1920×1200, 50Hz/60Hz*
Audio (through Avitech DB26 to 16 BNC breakout cable)	AUDIO IN-1/-2 port, stereo; input signals supported: ❖ *Analog; 2 channel per video* ❖ *AES; 4-channel per video (balanced and unbalanced)* ❖ *Embedded; 8 channel per video*
GPI (through GPIO box)	8; configuration through GPIO utility (refer to Pacific GPIO reference guide for details)
LTC (through Avitech DB9 to 4 BNC breakout cable)	Linear (or Longitudinal) Time Code input (encoding of SMPTE Time Code data in an audio signal) Electrical: Single End Impedance: >30k ohms Sensitivity: 500 mV pk-pk (5V maximum)

Output	
DVI and HDMI (through HDMI to DVI adapter)	User configurable: ❖ *1024×768, 50Hz/60Hz/75Hz* ❖ *1280×960, 50Hz/60Hz/75Hz* ❖ *1280×1024, 50Hz/60Hz/75Hz* ❖ *1360×765, 50Hz/60Hz/75Hz* ❖ *1400×1080, 50Hz/60Hz/75Hz* ❖ *1600×1200, 50Hz/60Hz/75Hz* ❖ *1680×1050, 50Hz/60Hz/75Hz* ❖ *1920×1080, 50Hz/60Hz* ❖ *1920×1200, 50Hz/60Hz*
SDI (75 Ω, BNC connector)	Looping output of the SDI input (non-configurable) ❖ *3G-SDI: 1080p60, 1080p59.94, 1080p50 (4:2:2)* ❖ *HD-SDI: 1080p30, 1080p29.97, 1080p25, 1080PsF24 (segmented frame), 1080PsF23.98, 1080i59.94, 1080i60, 1080i50, 1035i60, 1035i59.94, 720p59.94, 720p60, 720p50* ❖ *SD-SDI: 480i60, 480i59.94, 576i50* ❖ *Return loss: 15 dB up to 1.5 GHz*
SDI (75 Ω, BNC connector)	Output (non-configurable) ❖ *3G-SDI: 1080p60, 1080p50 (4:2:2)* ❖ *HD-SDI: 720p60, 720p50* ❖ *Return loss: 15 dB up to 1.5 GHz* *Note: No 3G-SDI video output is possible when the item **Output Timing** in Phoenix-Q program is set at **VESA***
Audio (through Avitech DB9 to 4 BNC breakout cable)	AES audio for monitoring
GPO (through GPIO box)	8; configuration through GPIO utility (refer to Pacific GPIO reference guide for details)
LTC (through Avitech DB9 to 4 BNC breakout cable)	Looping output of the Linear (or Longitudinal) Time Code input (encoding of SMPTE Time Code data in an audio signal) Electrical: Single End Impedance: >30k ohms Sensitivity: 500 mV pk-pk (5V maximum) *Note: Output follow input format.*

Others	
Power	Power consumption is 70W Power Supply: ❖ *100 ~ 240 V AC / 12 V DC adapter*
Dimensions/Weight	Dimensions: 439×367×44 mm (17.3×14.4×1.73 inch) Weight: 3.8 kg (8.4 lb)
Environment/Safety	Temperature: ❖ *Operating: 0 ℃ (32 ℉) to 40 ℃ (104 ℉)* ❖ *Storage: –10 ℃ (14 ℉) to 50 ℃ (122 ℉)* Humidity: 0% to 80% relative, non-condensing Safety: FCC/CE/C-Tick/Class A

Table 1-2 Specifications

1.4 Connections to the Rainier 3G

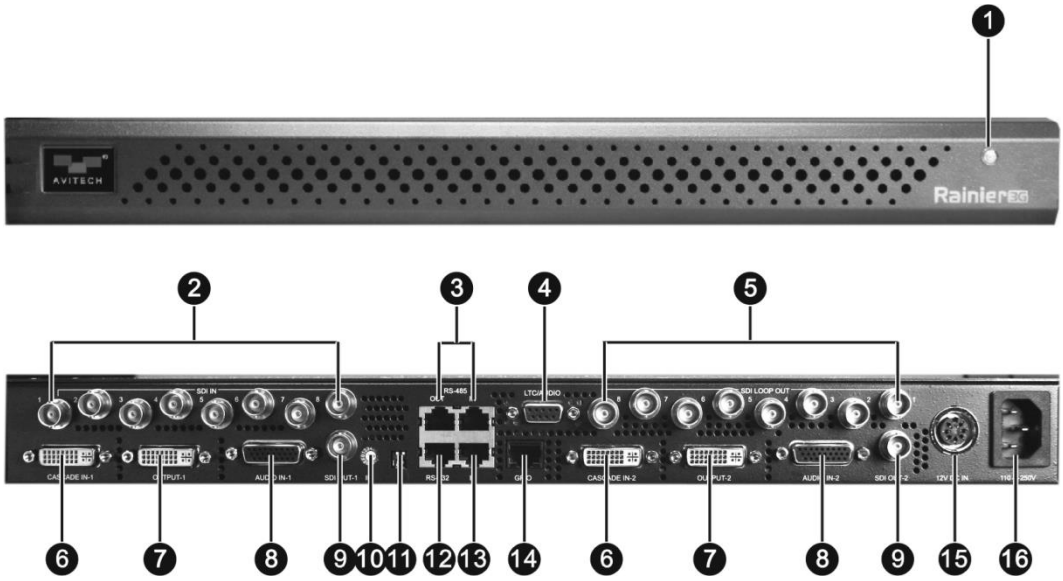


Figure 1-1 Rainier 3G Components

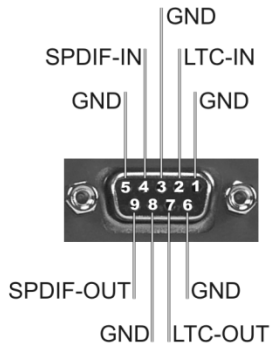
Front Panel	
❶ **Indicator**	Lights green when the Rainier 3G is powered on

Table 1-3 Rainier 3G Front Component Description

Rear Panel	
❷ **SDI IN**	BNC connector for SDI (3G/HD/SD) CVBS (NTSC/PAL) video sources
❸ **RS-485 In/Out**	For serial cascading input/output
❹ **LTC Audio In**	AES audio input/output for monitoring through proprietary DB9 to 4 BNC breakout cable (SPDIF IN/OUT) as well as for pulling LTC Time Code out of serial digital video and displaying it (LTC IN/OUT) *Note: Refer to the next figure for the pin-out assignments*
❺ **SDI LOOP OUT**	SDI connector for SDI video out loop (output signal coming from SDI IN port only) *Note: Often used for preview or as input for another device*
❻ **Cascade In**	DVI connector for multimedia input (cascade from other Rainier 3G or video source as background image)
❼ **DVI OUT**	Connect to the monitor's DVI signal cable
❽ **Audio Input**	Each connector can include up to 4 analog stereo pairs/AES audio inputs through proprietary DB26 to 16 BNC breakout cable *Note: Refer to the next figure for the pin-out assignments*
❾ **SDI OUT**	BNC connector supports SDI (3G/HD/SD) signal for long distance output *Note: No video output from this port is possible when the item **Output Timing** in Phoenix-Q software is set at **VESA***
❿ **ID**	Rotary dial to assign unique addresses in systems with 2 or more chassis
⓫ **Dip Switches**	Updates the firmware and resets the Rainier 3G to the factory-default setting.
⓬ **Serial**	RJ-45 connector for signal from the computer through the proprietary RJ-45 to RS-232 (DB9-FM) cable
⓭ **Ethernet (IP)**	For setup through the Avitech Phoenix-Q utility through network connection
⓮ **GP Input**	RJ-50 connector for general purpose input
⓯ **Power (DC 12V)**	Connects to the 12 V DC power adapter
⓰ **Power (AC)**	Connects to the 100 to 240 V AC power cord

Table 1-4 Rainier 3G Rear Component Description

1.4.1 Proprietary DB9 to 4 BNC Breakout Cable



DB9-FM	
Pin	Assignment
1	Ground
2	LTC-in
3	Ground
4	SPDIF-in
5	Ground
6	Ground
7	LTC-out
8	Ground
9	SPDIF-out

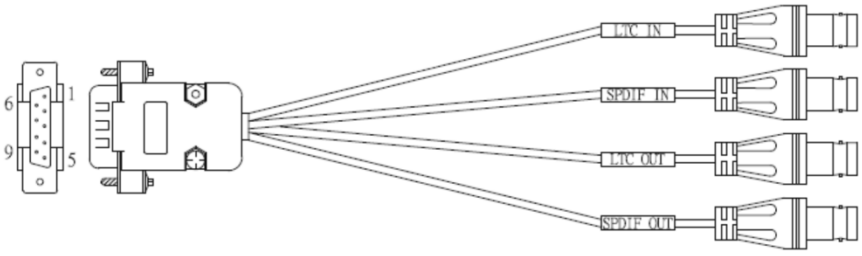
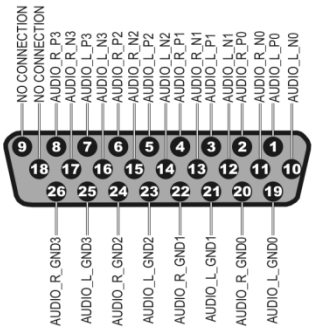


Figure 1-2 Proprietary DB9 to 4 BNC Breakout Cable

1.4.2 Proprietary DB26 to 16 BNC Breakout Cable



DB26-FM					
Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Audio_L_P0	10	Audio_L_N0	19	Audio_L_Gnd0
2	Audio_R_P0	11	Audio_R_N0	20	Audio_R_Gnd0
3	Audio_L_P1	12	Audio_L_N1	21	Audio_L_Gnd1
4	Audio_R_P1	13	Audio_R_N1	22	Audio_R_Gnd1
5	Audio_L_P2	14	Audio_L_N2	23	Audio_L_Gnd2
6	Audio_R_P2	15	Audio_R_N2	24	Audio_R_Gnd2
7	Audio_L_P3	16	Audio_L_N3	25	Audio_L_Gnd3
8	Audio_R_P3	17	Audio_R_N3	26	Audio_R_Gnd3
9	NC	18	NC		

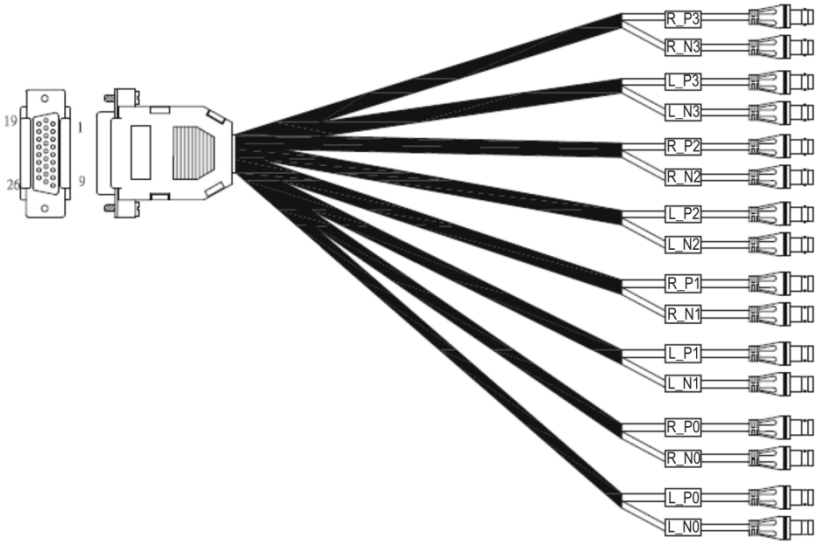


Figure 1-3 Proprietary DB26 to 16 BNC Breakout Cable

Each window can support 4 pairs of audio sources (comprised of left and right channel on each pair, hence the 8-channel).

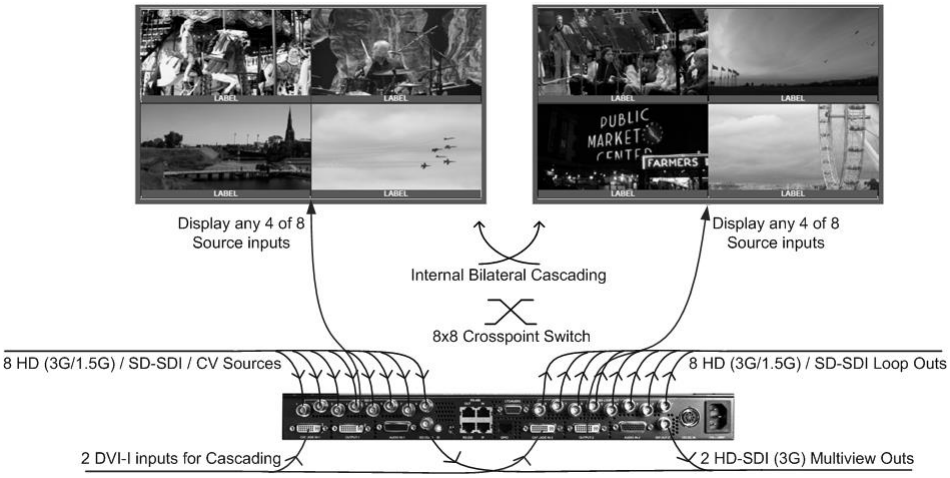
The left and right channel of each pair must have the same source. If the left channel is set as embedded audio, the right channel must be set as embedded audio; it cannot be set as analog audio.

However, different pairs can have different sources (i.e. pair 1 can have embedded audio as its source; pair 2 can have analog audio as its source, and so forth).

1.5 Application Scenarios

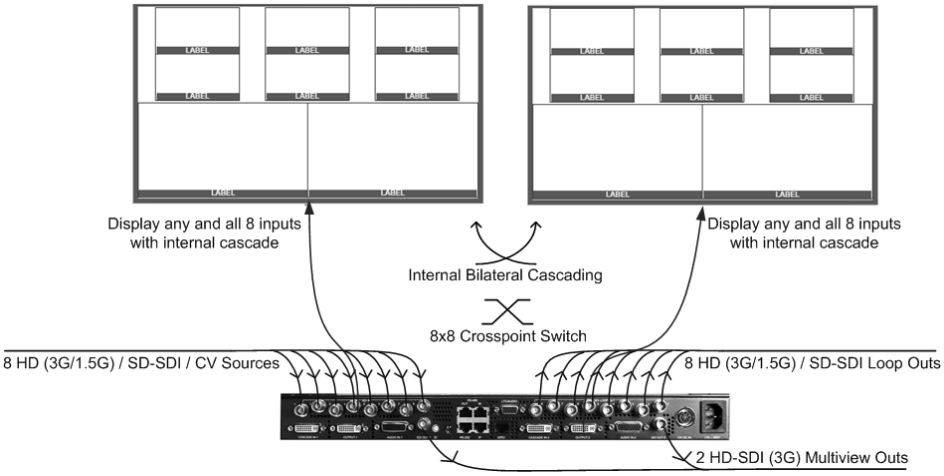
The following figures are for illustration purposes only. Select the appropriate configuration based on the requirements.

1.5.1 One Rainier 3G Connected to Two Monitors

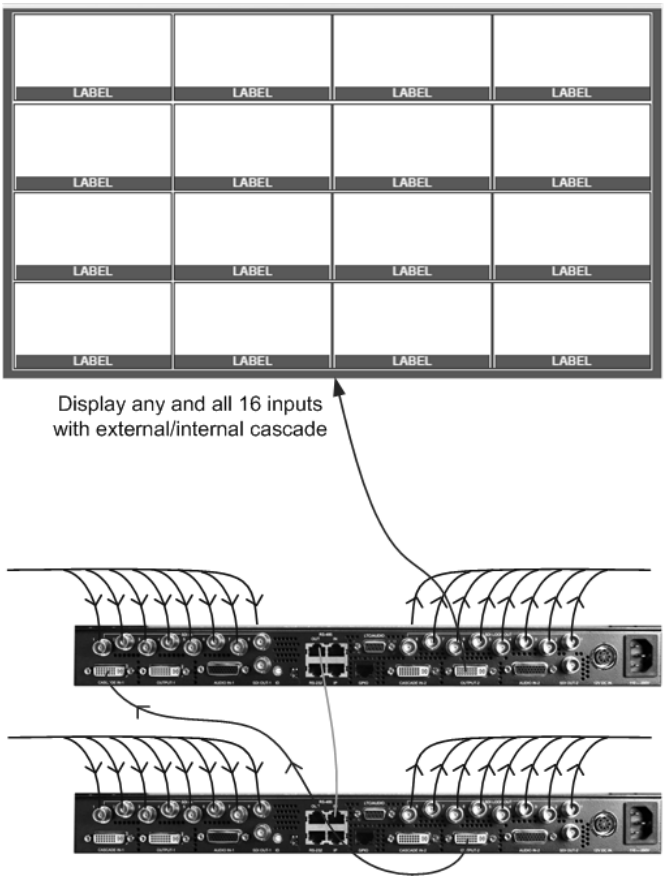


CV stands for NTSC/PAL signal.

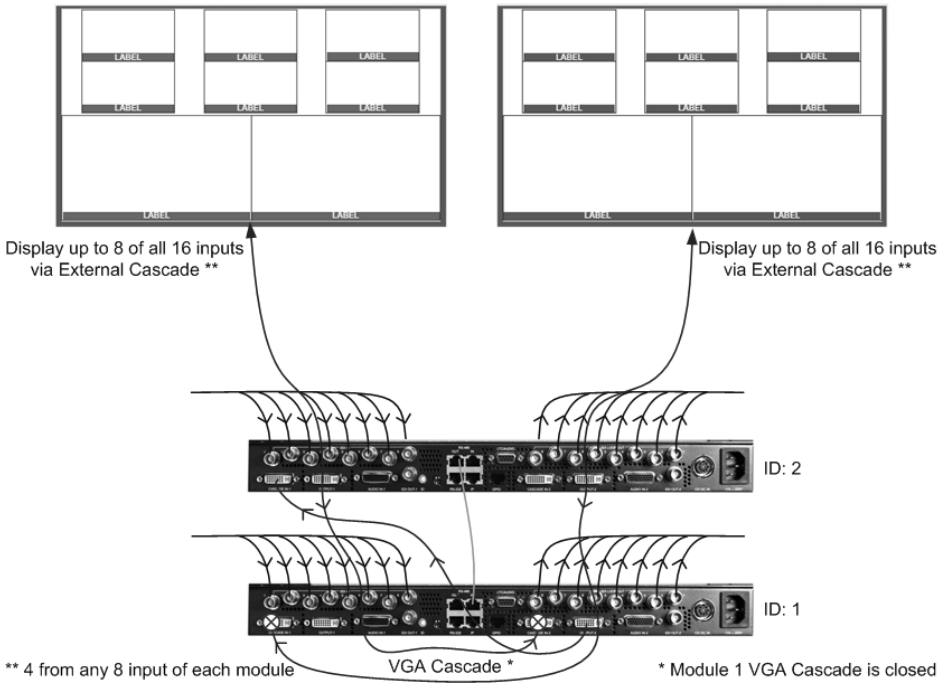
1.5.2 One Rainier 3G with a Redundant Display (Monitor Failure Back-up Scheme)



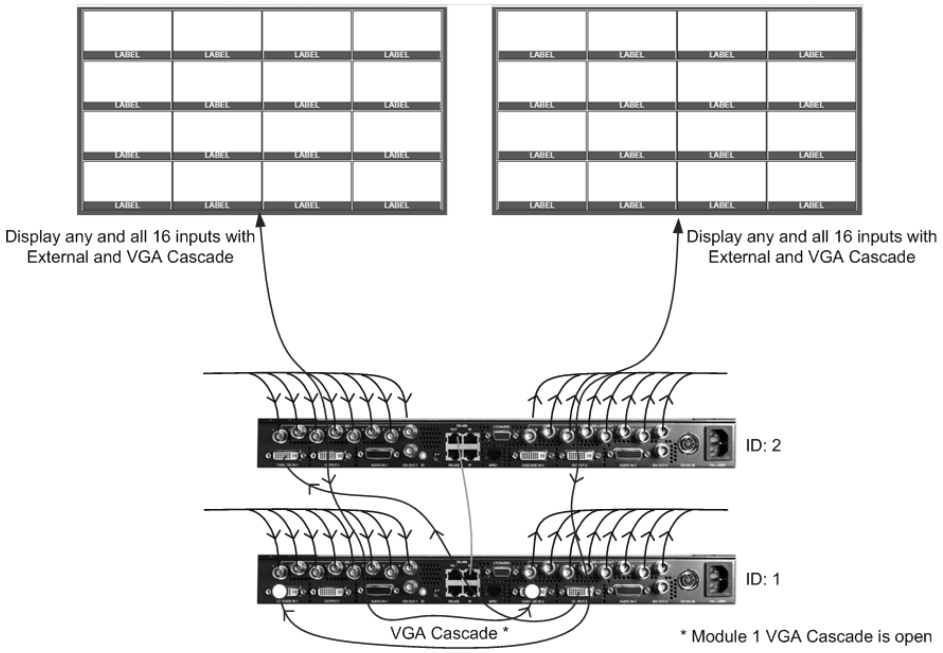
1.5.3 Two Rainier 3G Units Connected to a Dedicated Monitor



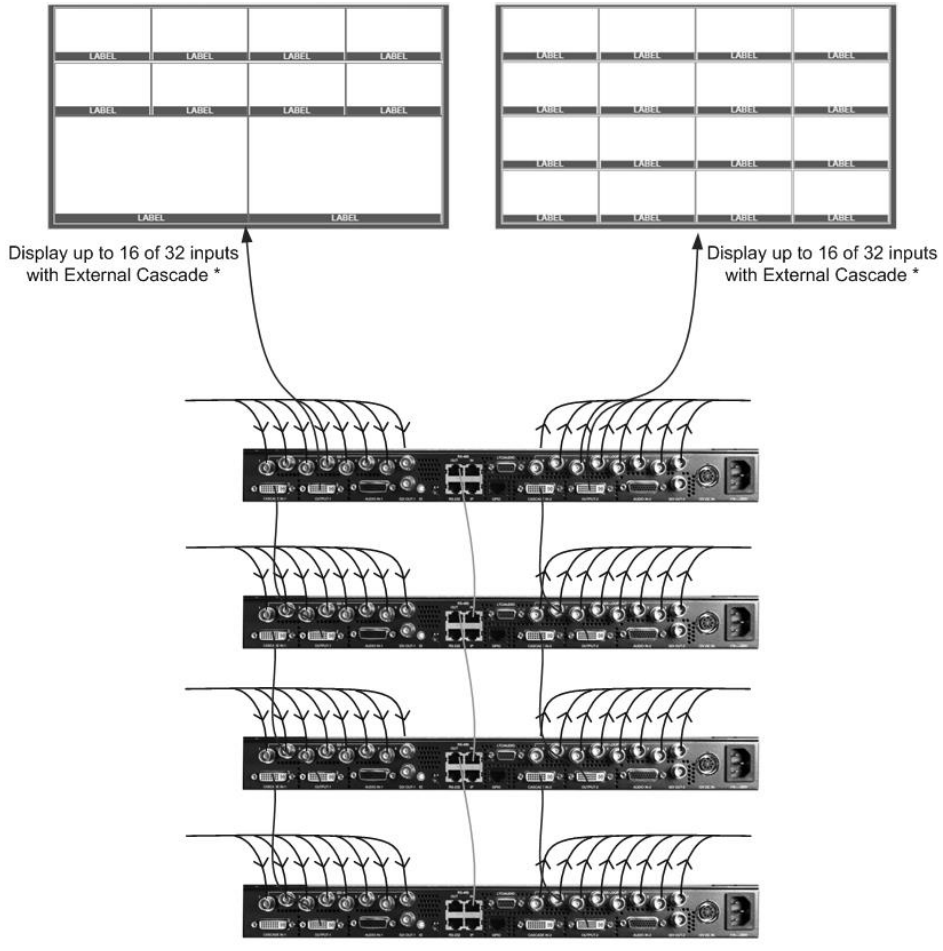
1.5.4 Two Rainier 3G Units Connected to Two Monitors



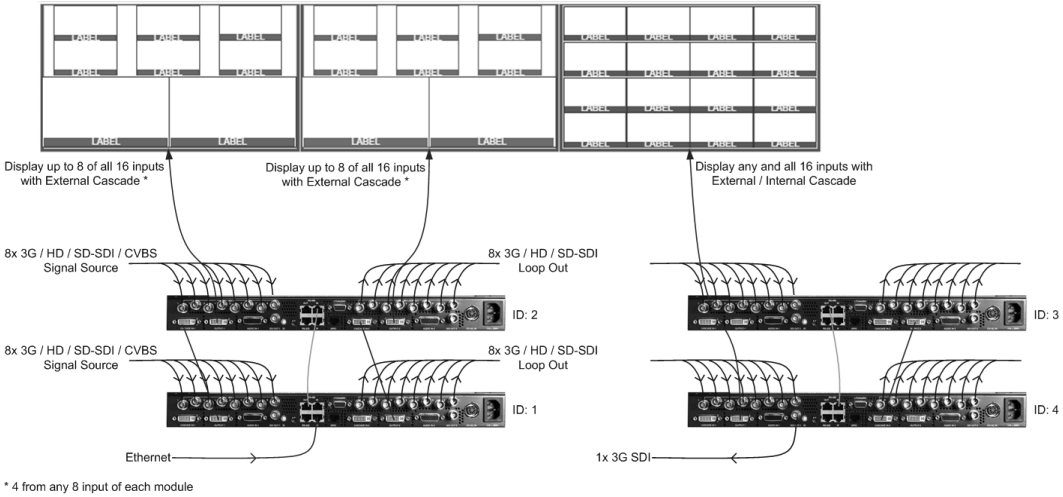
1.5.5 Two Rainier 3G Units with a Redundant Display (VGA Cascade, Monitor Failure Back-up Scheme)



1.5.6 Four Rainier 3G Units Connected to Two Monitors

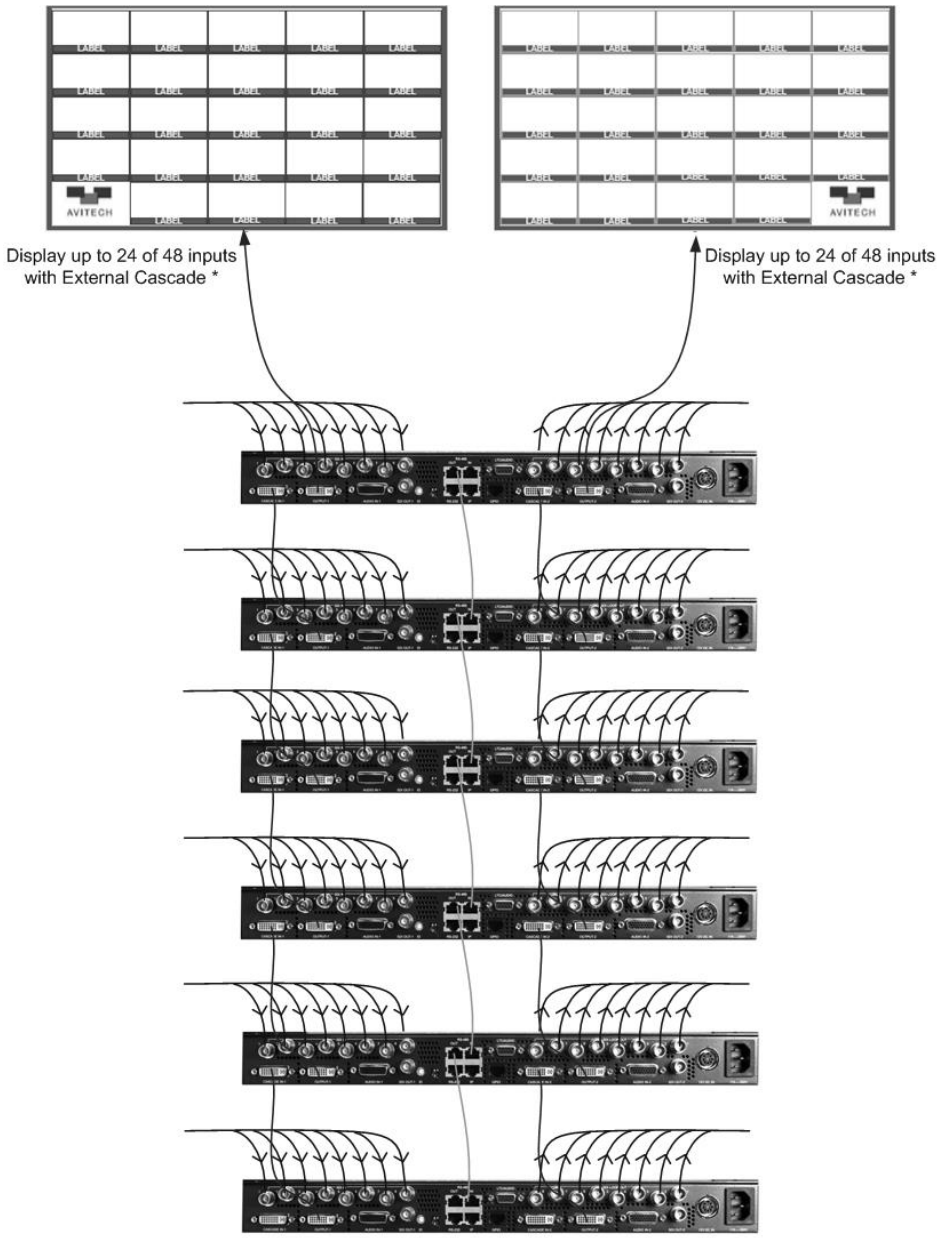


1.5.7 Four Rainier 3G Units Connected to Three Monitors



* 4 from any 8 input of each module

1.5.8 Six Rainier 3G Units Connected to Two Monitors



* 4 from any 8 input of each module

2. Hardware Configuration

Perform the following steps to get the Rainier 3G series up and running:

The steps outlined next would depend on the type of configuration to set up.

*Step 1. Connect up to eight BNC cables to the eight video **SDI IN 1/2/3/4/5/6/7/8** ports for SDI (3G/HD/SD) or composite (NTSC/PAL) video inputs.*

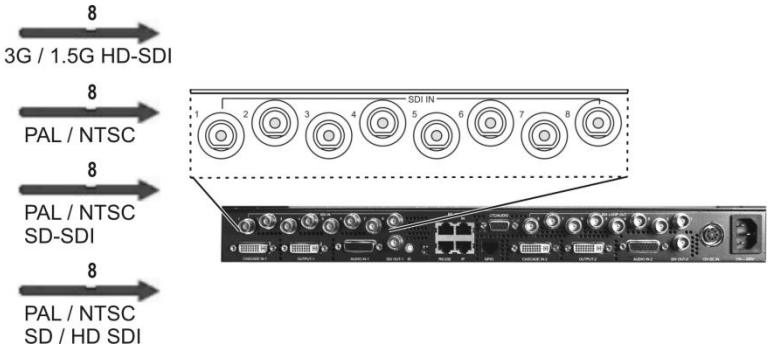


Figure 2-1 Connect Up to Eight Video Sources

*Step 2. Use a proprietary RJ-45 to RS-232 (DB9-FM) cable to connect the **RS-232** port and a computer.*

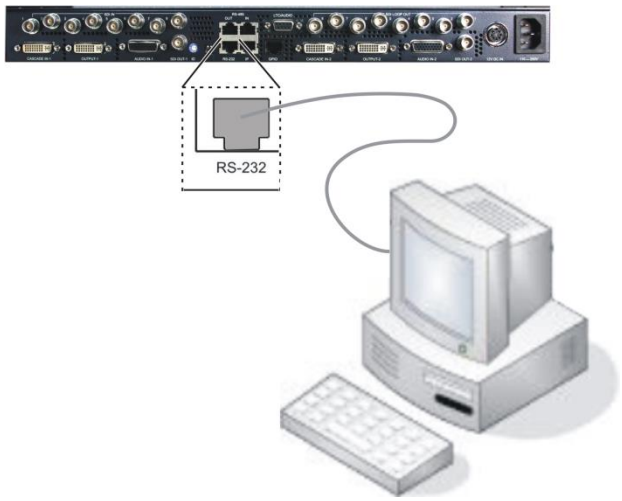


Figure 2-2 Connect the RS-232 Signal from Computer

*And/or, connect the Ethernet cable to the **IP** port and the computer to use Avitech's Phoenix-Q software to setup the Rainier 3G.*

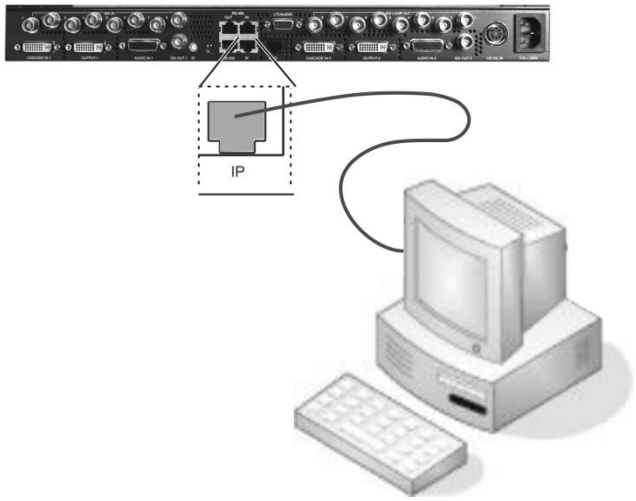


Figure 2-3 Connect the Ethernet Cable from Computer

*Step 3. Connect a DVI/VGA cable to the computer's DVI port and the **CASCADE IN-1** port of the Rainier 3G for video input of computer signal (as background image). A DVI-to-VGA adapter may be needed.*

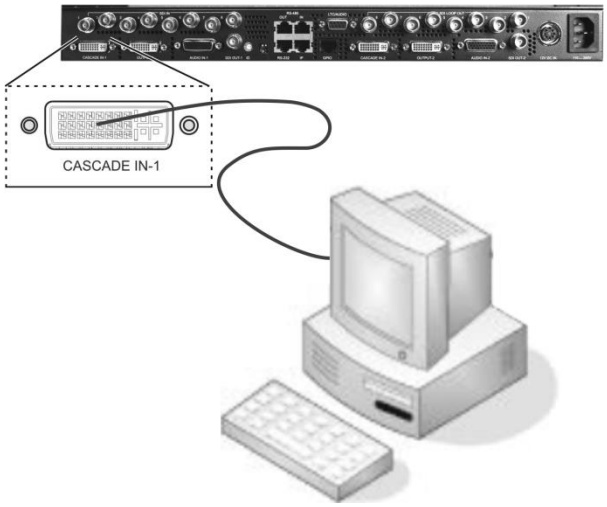


Figure 2-4 Connect the DVI/VGA Cable to Computer's DVI **CASCADE IN-1** Port

1. *Make sure that the resolution of the input source (as a background image) is the same as the resolution of the **OUTPUT-1** port's video output to the monitor.*
2. *When connecting to the computer with a NVIDIA™ display card use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.*
3. *HDCP-compliant content is not supported for **CASCADE IN** ports on the Rainier 3G.*

*Step 4. Connect the DVI-I cable from the **OUTPUT-1** port to the monitor for video output (may need to use a DVI-to-VGA adapter for a monitor with VGA input).*

Figure 2-5 Connect the DVI-I Cable to **OUTPUT-1** Port

*Step 5. Make sure to assign a unique address to the Rainier 3G **ID** rotary dial when connecting to systems with two or more units.*

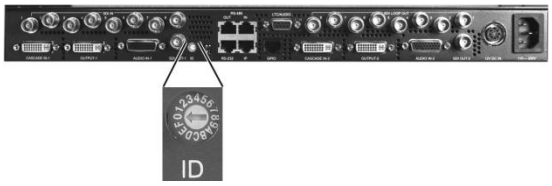


Figure 2-6 Assign Unique Address to Rainier 3G **ID** Rotary Dial

*Step 6. Connect the AC power cord to the **110~250V** power jack.*

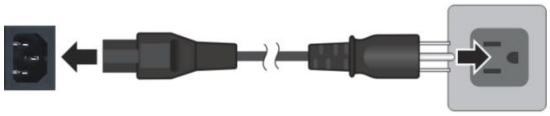


Figure 2-7 Connect the AC Power Cord

2.1 Cascading

In essence, except for the Rainier 3G-4E/-4A/-4D, the Rainier 3G/-3GL/-3GC/ -3GLC (-4E/4E / -4A/4A / -4D/4D / -4A/4E / -4A/4D / -4E/4D) is an internally cascaded dual module.

Cascading is the technique of “daisy-chaining” two or more Rainier 3G modules through a DVI display and a digital control backbone. This connection allows the combined modules to operate as a single integrated system. Up to eight different modules can be combined in this fashion to create extremely large and complex systems with the ability to simultaneously monitor dozens of audio, video, and computer signals on the same display. If any single module should fail, the control and video information is still passed through to allow the continued operation of the entire system.

2.1.1 Cascading One Rainier 3G Unit (Internal and External)

When cascading internally: If the monitor is connected to the **OUTPUT-1** port, follow the instructions in **Scenario 1**. If the monitor is connected to the **OUTPUT-2** port, follow the instructions with **Scenario 2**.

✓ ***Scenario 1*** *– when the* ***OUTPUT-1*** *port is connected to the monitor.*
Make sure the ***Cascade In*** *setting for* ***M****odule* ***ID 1*** *(****MID 1****) in the Phoenix-Q program is set to* ***Internal***

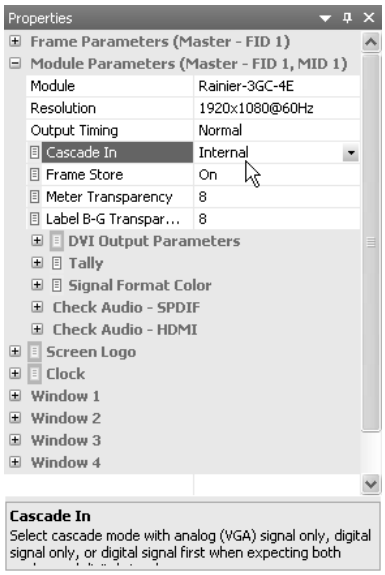


Figure 2-8 Properties: Cascade In – Internal (**MID 1**)

✓ ***Scenario 2*** *–when the* ***OUTPUT-2*** *port is connected to the monitor.*
Make sure the ***Cascade In*** *setting for* ***M****odule* ***ID 2*** *(****MID 2****) in the Phoenix-Q program is set to* ***Internal****.*

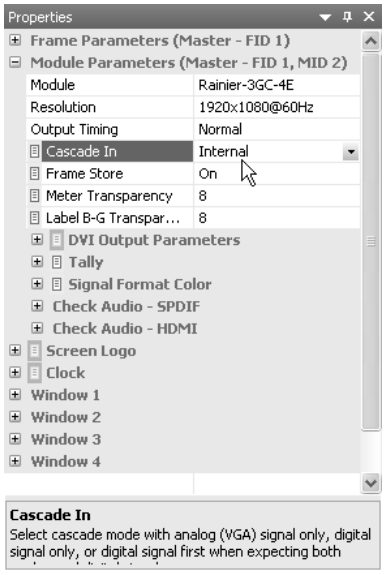


Figure 2-9 Properties: Cascade In – Internal (**MID 2**)

When externally cascading the two modules in a single Rainier 3G unit, connect the two modules using a DVI-I male-to-male cable. If the monitor is connected to the **OUTPUT-1** port, follow the instructions in **Scenario 1**. If the monitor is connected to the **OUTPUT-2** port, follow the instructions with **Scenario 2**.

✓ ***Scenario 1*** *– Use a DVI-I male-to-male cable to connect the* ***OUTPUT-2*** *port to the* ***CASCADE IN-1*** *port.* ***OUTPUT-1*** *port connects to the monitor.*

Figure 2-10 Connect **OUTPUT-2** to **CASCADE IN-1** Port

Then make sure that the ***Cascade In*** *setting for* ***Module ID 1*** *(****MID 1****) in the Phoenix-Q program is set to* ***Internal****; and the* ***Cascade In*** *setting* ***Module ID 2*** *(****MID 2****) in the Phoenix-Q program is set to* ***DVI-I Auto (Digital First)****.*

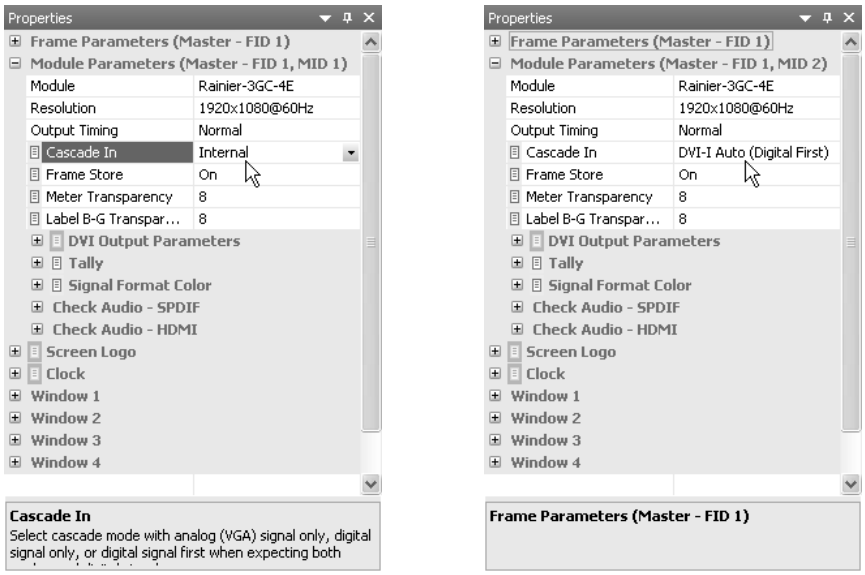


Figure 2-11 Properties: Cascade In – **Internal** (**MID 1**); Cascade In – **DVI-I Auto (Digital First)** (**MID 2**)

✓ ***Scenario 2*** *– Use a DVI-I male-to-male cable to connect the* ***OUTPUT-1*** *port to the* ***CASCADE IN-2*** *port.* ***OUTPUT-2*** *port connects to the monitor.*

Figure 2-12 Connect **OUTPUT-1** to **CASCADE IN-2** Port

*Then make sure that the **Cascade In** setting for **M**odule **ID 1** (**MID 1**) in the Phoenix-Q program is set to **DVI-I Auto (Digital First)**; and the **Cascade In** setting **M**odule **ID 2** (**MID 2**) in the Phoenix-Q program is set to **Internal**.*

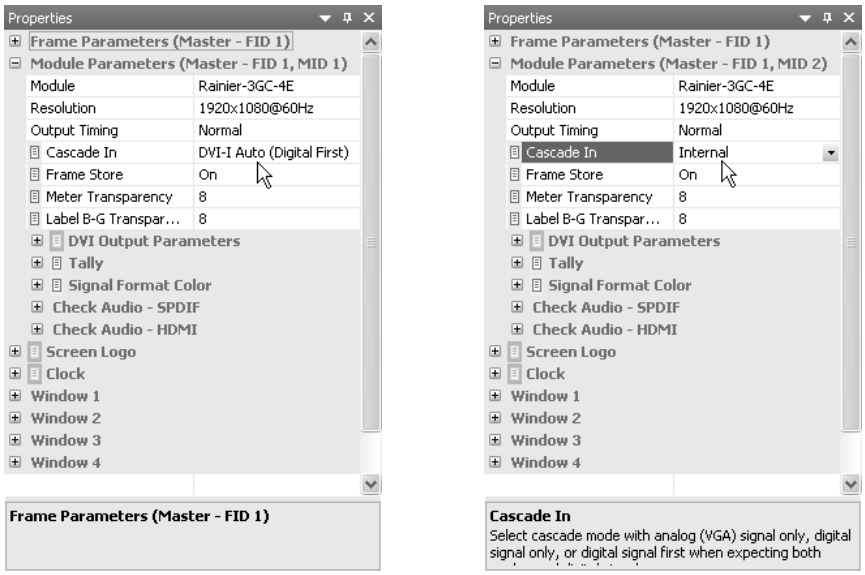


Figure 2-13 Properties: Cascade In – **DVI-I Auto (Digital First)** (**MID 1**); Cascade In – **Internal** (**MID 2**)

2.1.2 Cascading Two or More Rainier 3G Units (External)

To cascade two or more Avitech Rainier 3G units, perform the following steps:

*Step 1. Set the rotary **ID** on the first Avitech Rainier 3G to **0** and the second Rainier 3G to **1**, and so forth. (the IDs can be set to other values as long as no two Rainier 3G units have the same ID)*

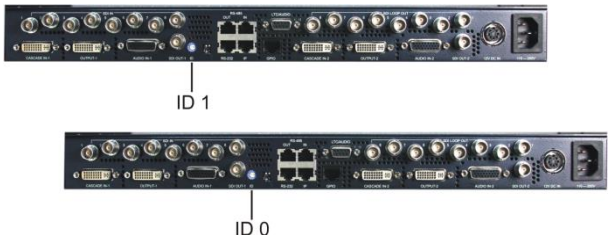


Figure 2-14 Set Rotary ID

⚠ *When cascading two or more modules (up to eight maximum) make sure each module gets assigned a unique rotary ID or it will cause input conflicts.*

*Step 2. To display video overlay from each module all units must be connected to each other through male-to-male short DVI cascading cables. Take a DVI cascading cable and connect the **OUTPUT-1/-2** port on the Master (first) module (N) to the **CASCADE IN-1/-2** port of the next module in the chain (N+1).*

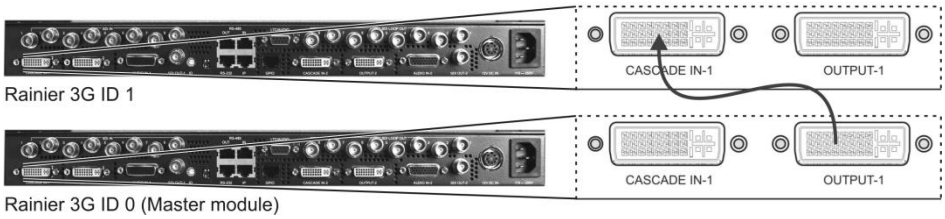
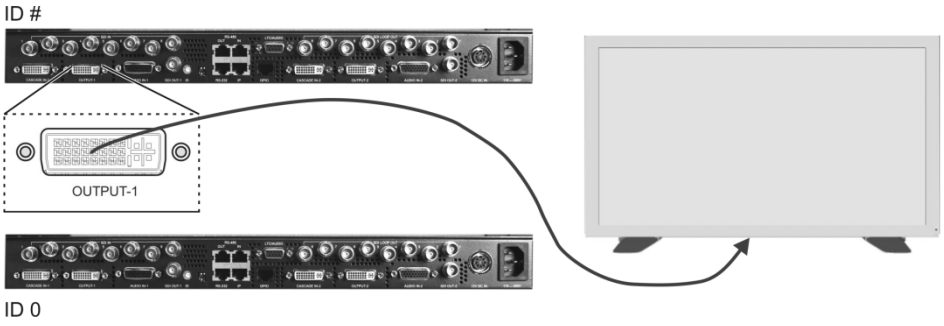


Figure 2-15 Connect **OUTPUT-1/-2** on the Master (the First) Module (N) to **CASCADE IN-1/-2** Port

*Step 3. The Rainier 3G is cascaded through RJ-45 (RS-485) which is used to loop communication from one Rainier 3G to the next. The data stream carries control and configuration information. Take the RS-485 cascading cable and connect the **RS-485 OUT** of the Master (the first) Rainier 3G (N) to **RS-485 IN** of the next Rainier 3G up (N+1). Refer to the sample combination as follows.*

Figure 2-16 Connect **RS-485 OUT** of Master (First) Rainier 3G (N) to **RS-485 IN** Port

*Step 4. Connect the DVI cable to the **OUTPUT-1/2** port of the last Rainier 3G cascaded and a monitor (may need to use a DVI to VGA adapter for a monitor with a VGA input).*



Or

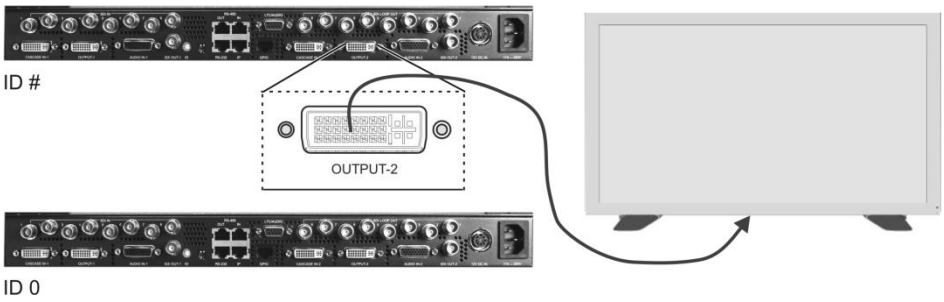
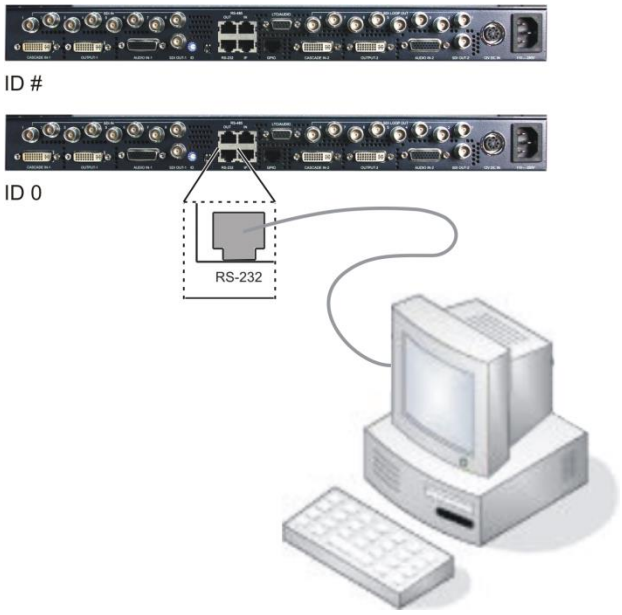


Figure 2-17 Connect **OUTPUT-1/2** Port of Last Rainier 3G Cascaded and Monitor

*The analog part of the **CASCADE IN-1/2** port is bypassed (relays) in case a Rainier 3G has no power or is defective. A powered down or a defective unit in the chain will not compromise the whole system, and other Rainier 3G units in the chain will display properly.*

*Step 5. Connect the proprietary RJ-45 to RS-232 (DB9-FM) cable to the computer's RS-232 port and the **RS-232** port of the master (the first) Rainier 3G.*



*Or, connect the Ethernet cable to the master (the first) Rainier 3G's **IP** port to the computer's RJ-45 ports.*

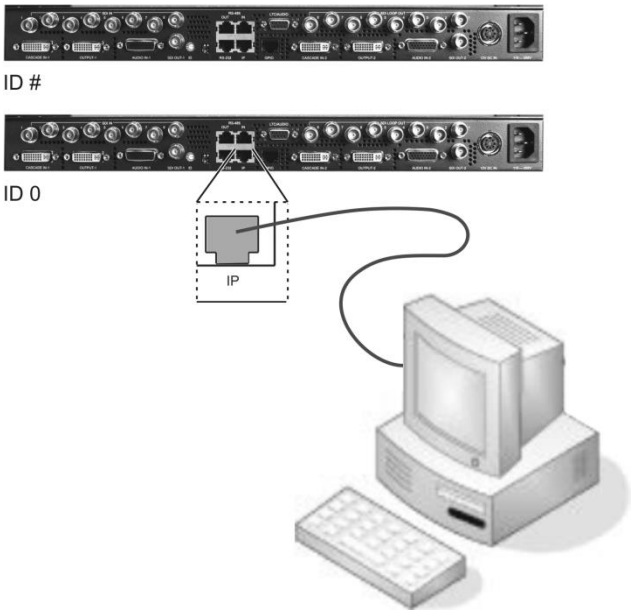


Figure 2-18 Connect the Computer's RS-232 / RJ-45 and **RS-232** / **IP** Port of the Master Rainier 3G

*Step 6. Connect a DVI/VGA cable to the computer's DVI port and the **CASCADE IN-1** port of the Rainier 3G for the computer signal's video input (as a background image). A DVI-to-VGA adapter may be needed.*

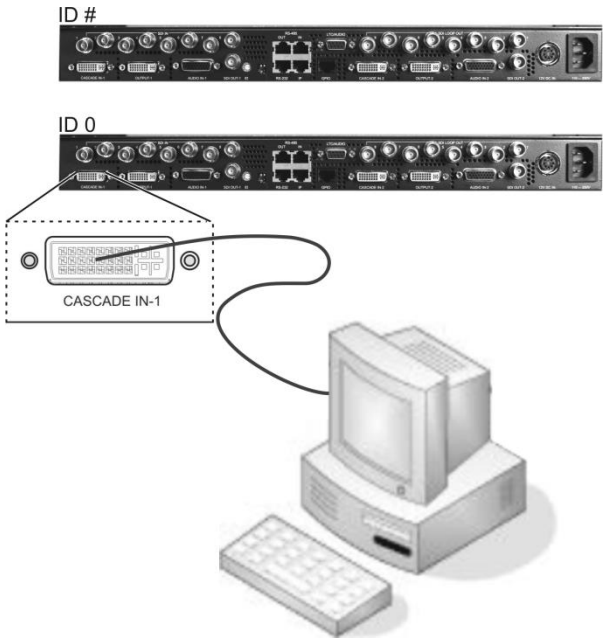


Figure 2-19 Connect the Computer's DVI Port and the **CASCADE IN-1** Port of the Rainier 3G

1. *Make sure that the resolution of the input source (as a background image) is the same as the resolution of the **OUTPUT-1/2** port for video output to the monitor.*
2. *When connecting to the computer with NVIDIA™ display card use the DVI-to-VGA adapter that came with the NVIDIA™ display card instead of the included Avitech DVI-to-VGA adapter.*
3. *HDCP-compliant content is not supported for **CASCADE IN-1** / **2** ports on the Rainier 3G.*

Step 7. Connect the power cables to the Avitech Rainier 3G multiviewer and make sure that power is available.

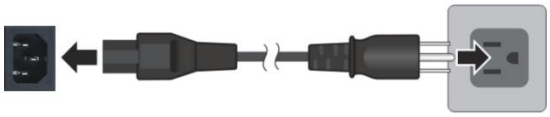


Figure 2-20 Connect Power Cables

3. Phoenix-Q Configuration

The Avitech Phoenix-Q program requires no installation and should not be run from a “read-only” device, such as an optical disc. This chapter introduces the Phoenix-Q software and explains how to set up the Rainier 3G.

Make sure the Rainier 3G is powered on and connected properly to the computer through an Ethernet/COM port before launching the Phoenix-Q software.

3.1 Connection Method

Connect the Rainier 3G to the controlling computer through an Ethernet (IP address) or a serial (COM) cable.

Before connecting the computer to the Rainier 3G, the computer’s DHCP LAN connection must be changed to a static IP, of a similar range as the Rainier 3G (i.e. ”192.168.0.5” – factory-default setting). Or, change the IP address of the Rainier 3G Master chassis to a similar range as the controlling computer. See Appendix A for details.

If using the serial cable to connect with the computer, configure the computer’s COM port to **1** – **15**. Then perform the steps to specify COM port communication. See Appendix B for details.

3.2 Pinging the Rainier 3G

Make sure to be able to ping the Rainier 3G at “192.168.0.5” (factory-default IP address).

*Step 1. Enter the factory-default IP address **192.168.0.5**. Then click **Ping**.*

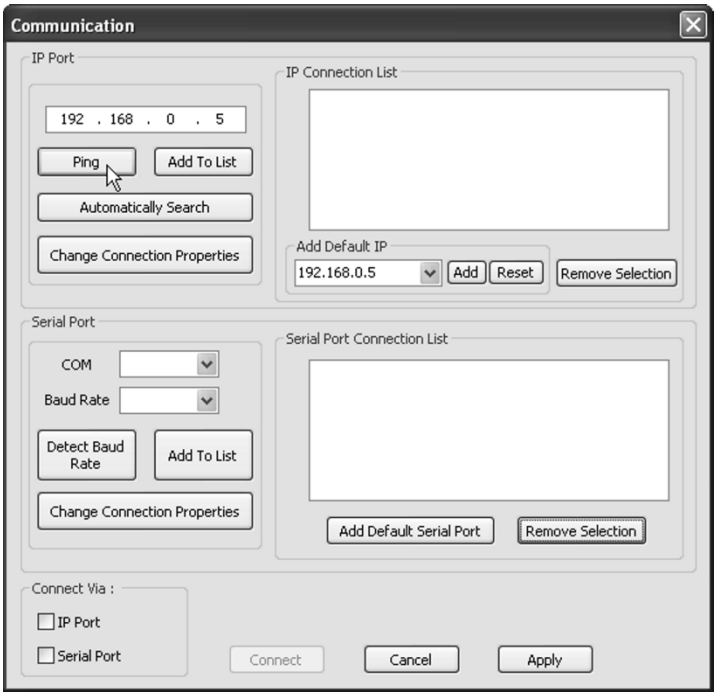


Figure 3-1 Enter the IP Address to Ping

*Step 2. The following window will appear to signify a successful communication. Click **OK** to exit.*

Figure 3-2 IP Address Pinged Successfully

3.3 Starting Up the Phoenix-Q Software

*Step 1. Run the Phoenix-Q software by double-clicking **Phoenix-Q.exe**.*

Step 2. For Ethernet communication set the IP address using any of the below two methods:
Method 1 – using the default IP address (i.e. 192.168.0.5).

*Click **Add** to allow **IP Address: 192.168.0.5** to appear in the **IP Connection List** window in case it has been removed.*

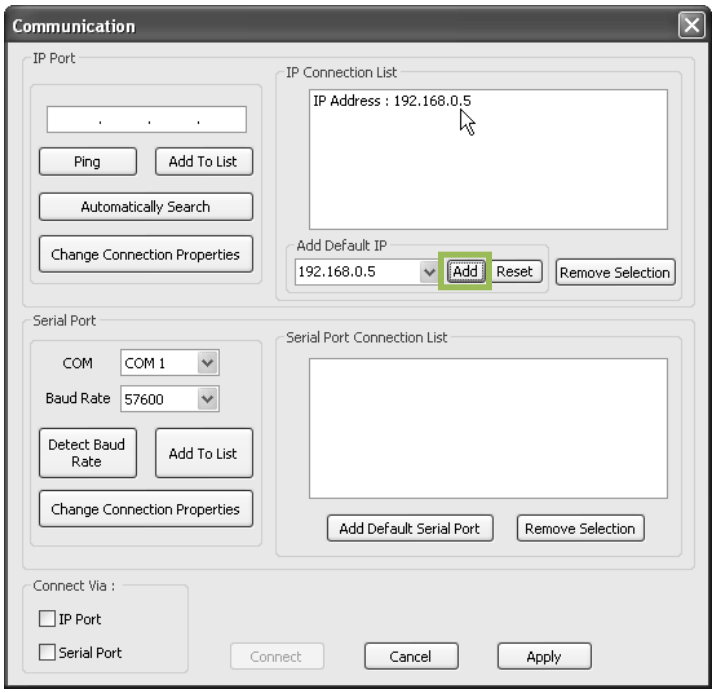


Figure 3-3 Communication: Click “Add”

*Method 2 – enter the correct IP address (i.e. 210.100.100.228) to match the value of the controlling computer. Next, click the **Add To List** button to allow the newly configured IP address to appear on the **IP Connection List** window.*

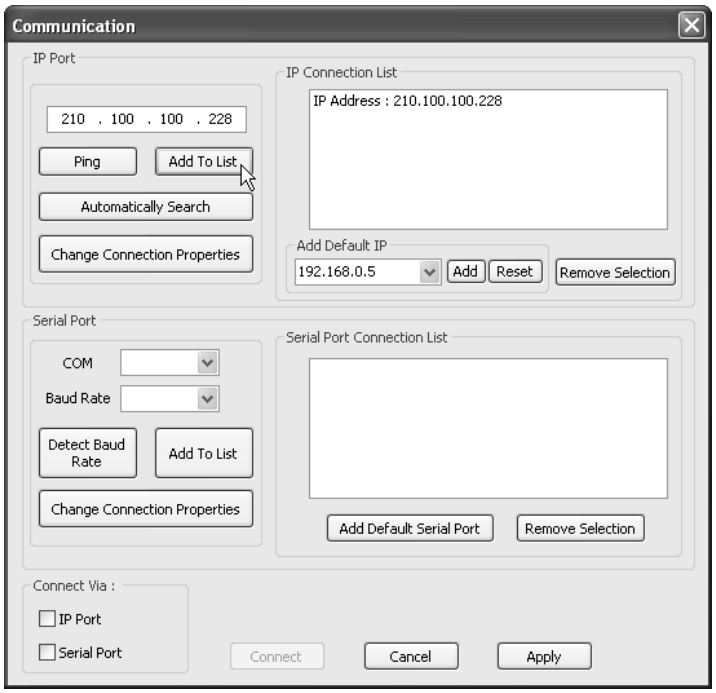


Figure 3-4 Communication: Click “Add To List”

*When using serial communication, make sure to specify the correct **COM** and **Baud Rate** setting (see Appendix B) then click the **Add To List** button to allow the newly configured serial port to appear on the **Serial Port Connection List** window.*

*Step 3. Click **Apply**.*

*Step 4. Select type of connection by clicking the **IP Port** or **Serial Port** checkbox. Then click **Connect**.*

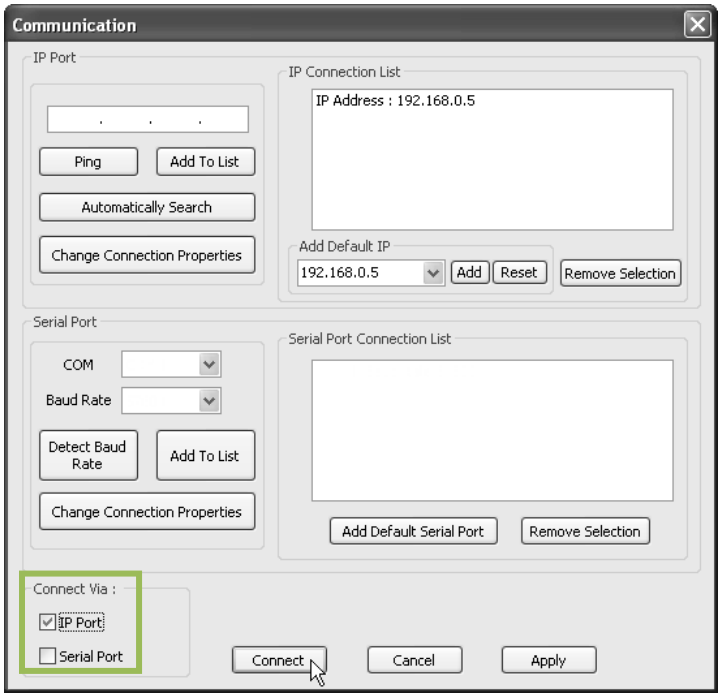


Figure 3-5 Communication: Select the Connection Method and click “Connect”

The computer will start to search for the Rainier 3G.

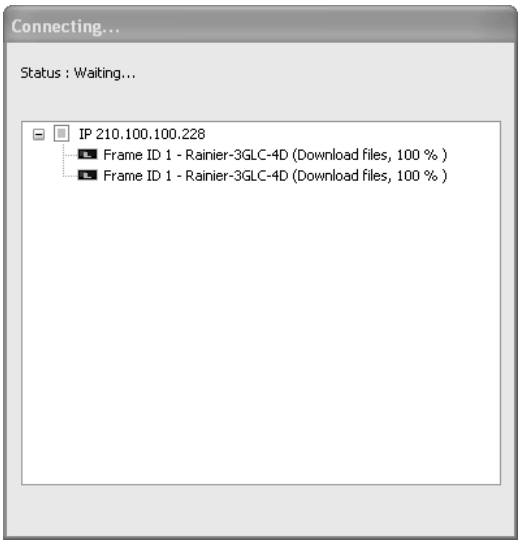


Figure 3-6 Phoenix-Q Software: Connection Progress

*Make sure the cascaded Rainier 3G have different rotary ID settings (i.e. **1 – 2 – 3**) on their rear chassis.*

***Group View** window will list the module(s) found and will initially be listed under **Idle Group**.*

1. *For two or more chassis cascaded they should also be detected.*
2. *Make sure that the slave chassis' baud rate and resolution is the same as the master chassis.*

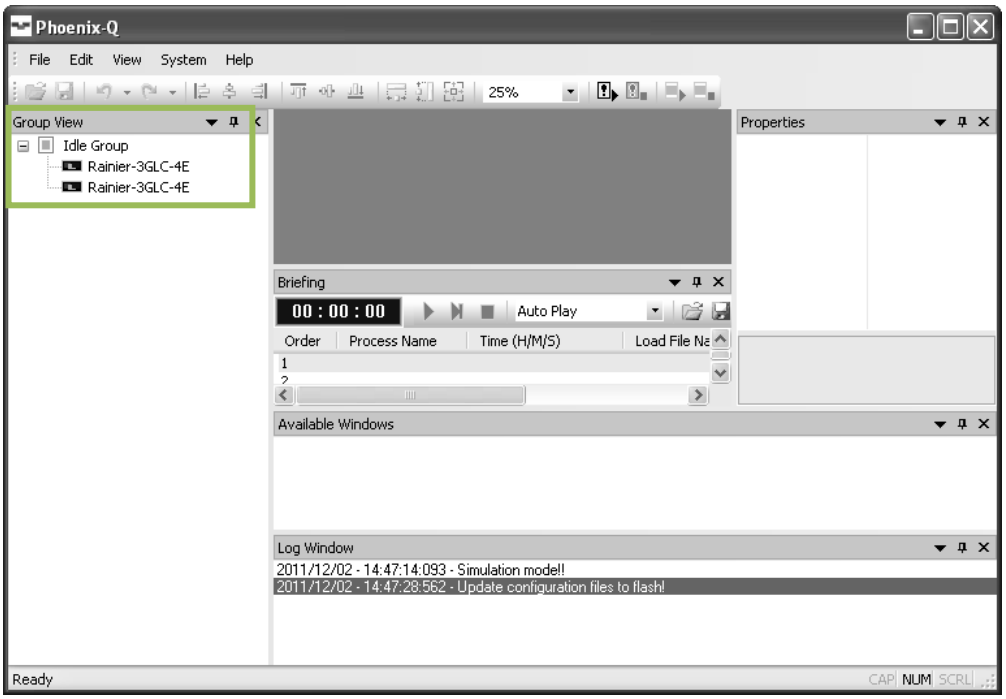


Figure 3-7 Phoenix-Q Software: Initial Screen

*Step 5. Click **System→Configuration**.*

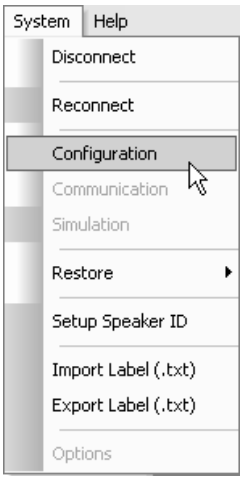


Figure 3-8 Phoenix-Q Software: Click "System"→"Configuration"

*The **Group Setup** window will appear.*

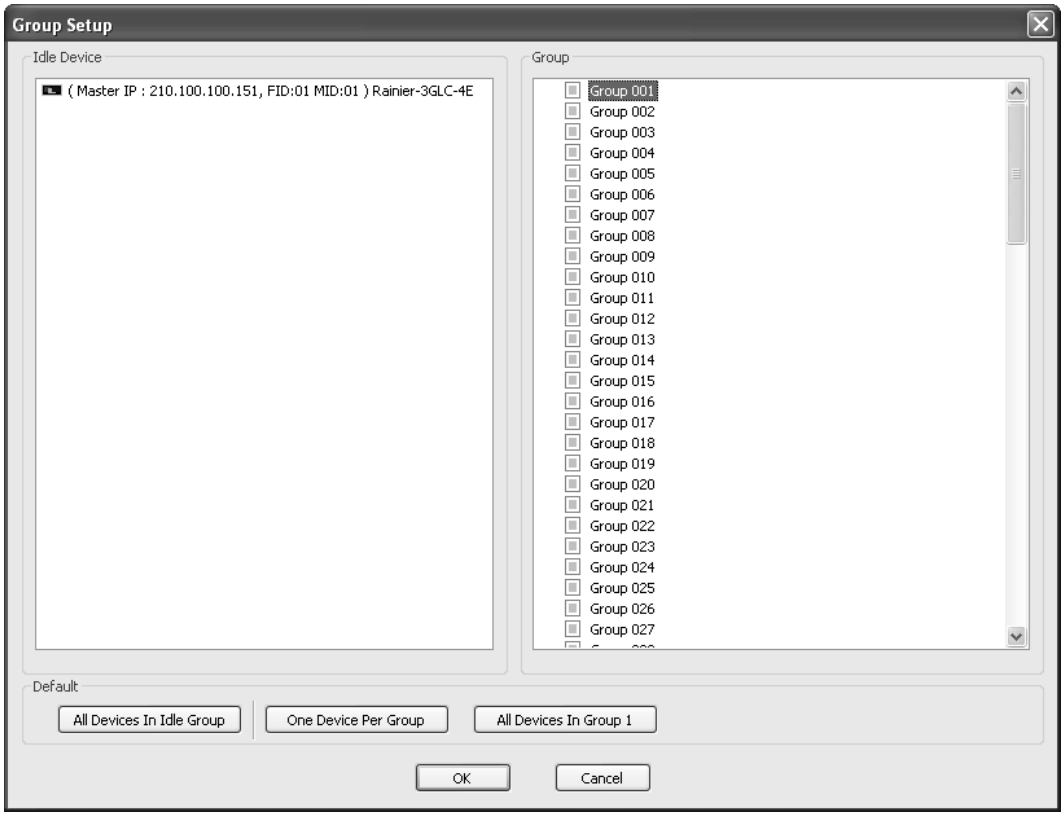


Figure 3-9 Phoenix-Q Software: Group Setup

*Step 6. To assign the grouping drag the **Idle Device** on the left panel to the desired **Group #** on the right panel (i.e. **Group 001**).*

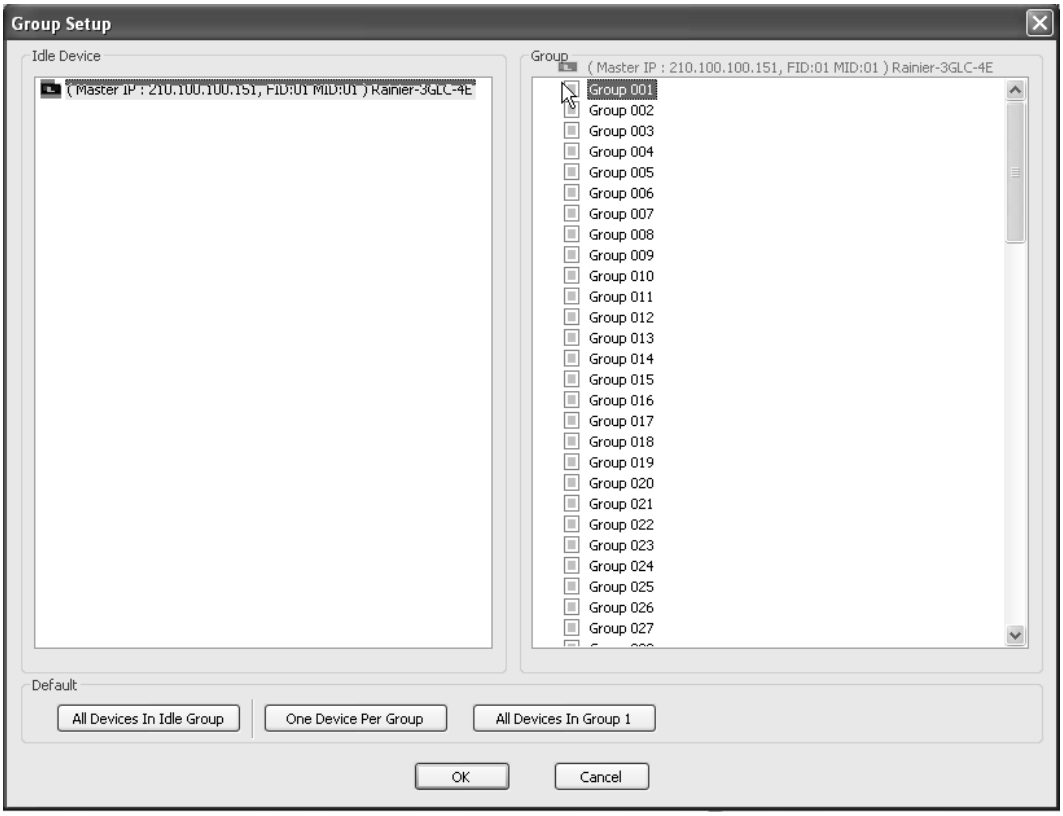


Figure 3-10 Phoenix-Q Software: Assign Group # to Idle Device

*Click the **One Device Per Group** button to assign a card to each group, or click the **All Devices in Group 1** button to assign all cards to **Group 1**.*

After dragging/assigning the card, it will be displayed within the assigned grouping.

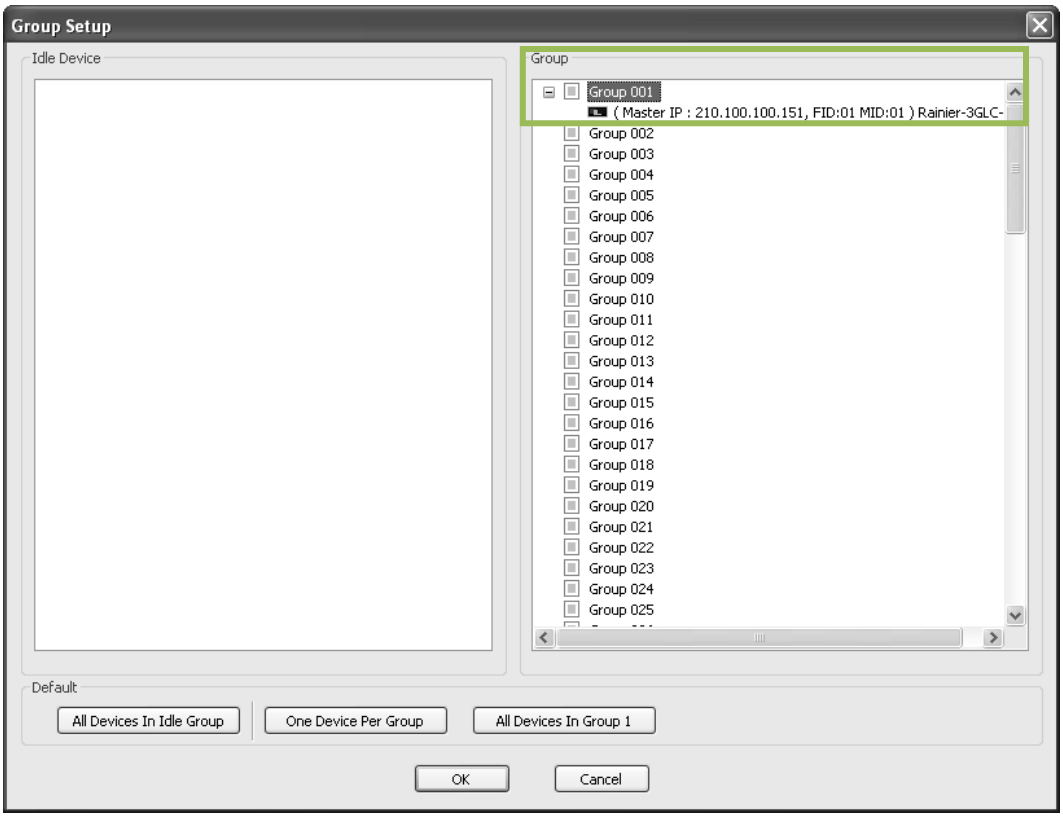


Figure 3-11 Phoenix-Q Software: Idle Device Assigned to Group 001

*Perform the same for any other **Idle Device**s.*

*Step 7. Click **OK** to exit the **Group Setup** window. Phoenix-Q will save the configuration file "System.agi" to the device's flash memory.*

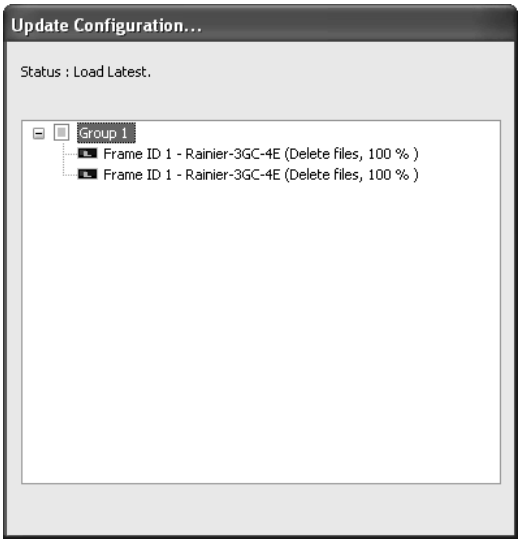


Figure 3-12 Phoenix-Q Software: Update Configuration Progress

After group setup has been completed, every time the IP address of master chassis has been changed (see Appendix A), perform the simple step of entering the Group Setup window and then clicking "OK" to exit (there is no need to re-assign grouping). This will help maintain system integrity when running ASCII X command.

The next figure shows sample idle devices assigned to groups. The "[1.1]" appearing before the module name signifies the chassis ID and module ID number. Hence "[1.2]" would signify chassis ID 1 and module ID 2.

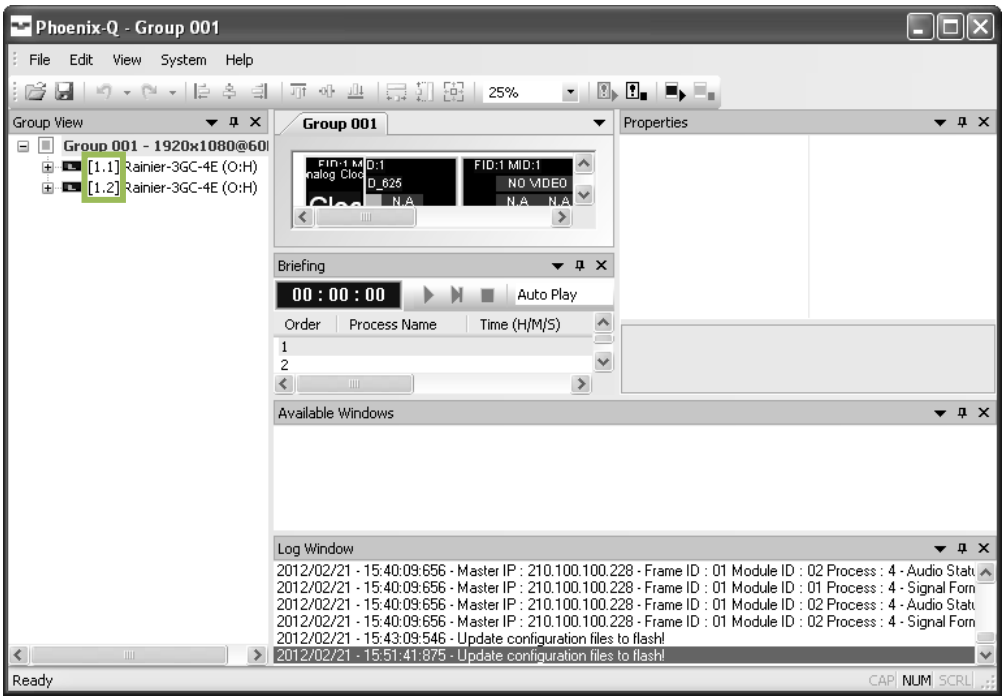


Figure 3-13 Phoenix-Q Software: Chassis and Module ID

3.4 Obtaining the UMD (Under Monitor Display) Data from Router

*Step 1. Click **System→Disconnect**.*

Figure 3-14 Phoenix-Q Software: Click "System"→"Disconnect"

*Then click **OK** to confirm system disconnection through Phoenix-Q software.*

Figure 3-15 Phoenix-Q Software: Confirm Disconnection

The progress of disconnection will appear on screen.

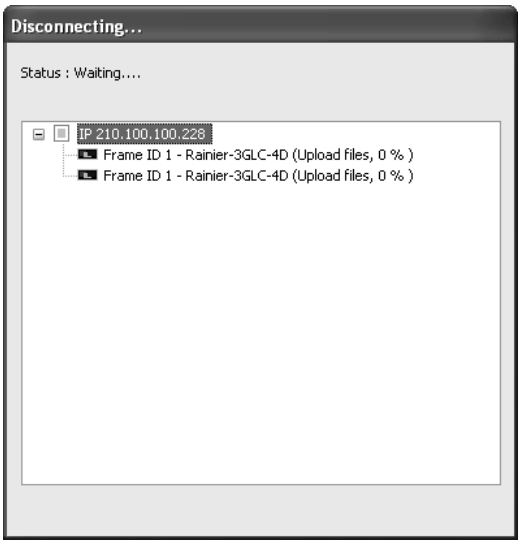


Figure 3-16 Phoenix-Q Software: Disconnection Progress

*Step 2. Click **System→Options**.*

Figure 3-17 Phoenix-Q Software: Click “System”→”Options”

*Step 3. On the **Options** screen click **External Device** and make sure that **Device Enable** is set **On**.*

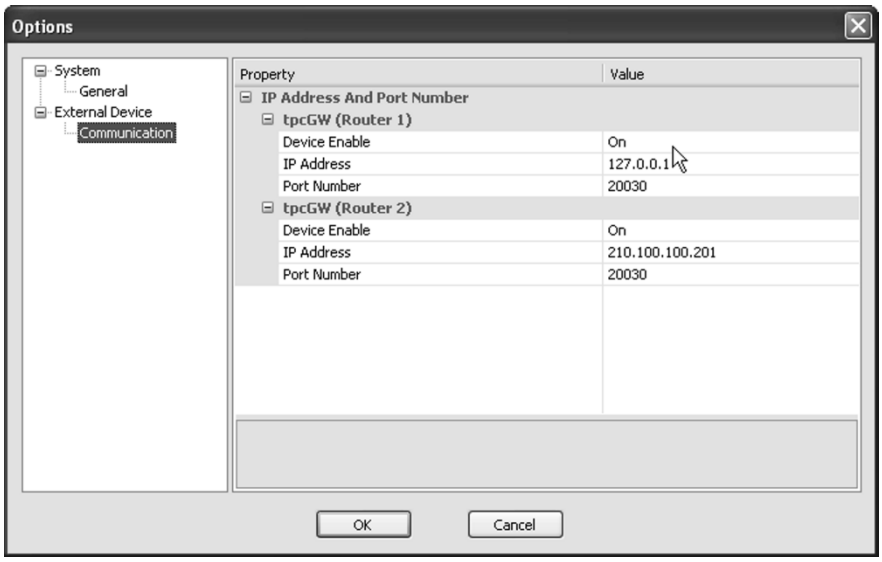


Figure 3-18 Phoenix-Q Software: Enable External Device

*Step 4. Make sure that the **IP Address** corresponds to the IP address of the computer running the tpcGW utility. If not, click the IP Address button "…" and when the **IP Address** screen appears, enter the correct value. Then click **OK** to exit.*

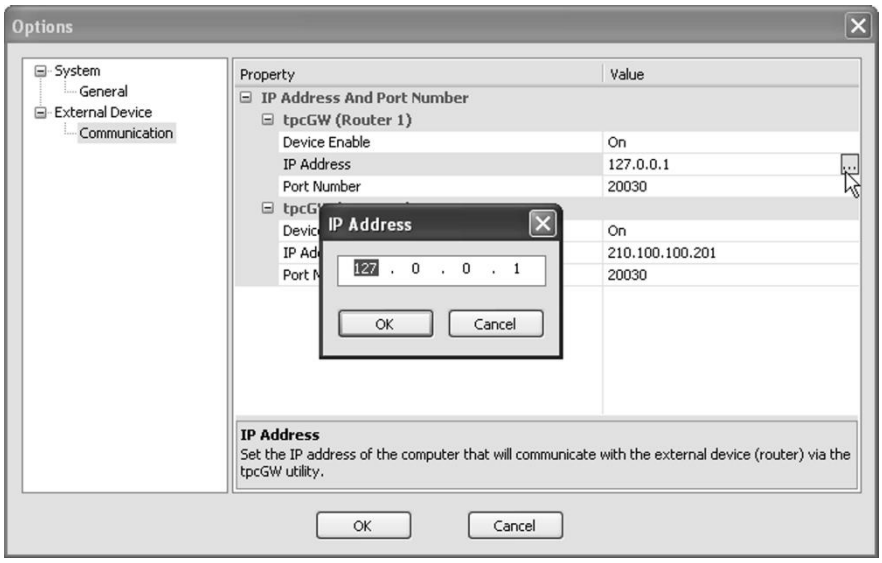


Figure 3-19 Phoenix-Q Software: Enter Correct IP Address

*Step 5. Lastly, make sure that the **Port Number** shown is correct. If not, enter the value directly or click the up/down arrow button to increase or decrease the **Port Number**. Then click **OK** to exit the **Option** screen setup.*

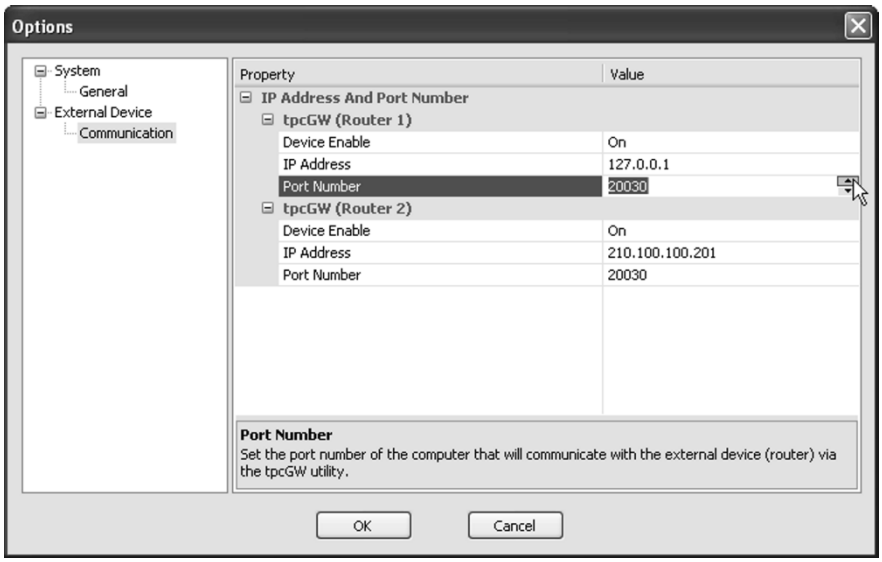


Figure 3-20 Phoenix-Q Software: Enter Correct Port Number

*To successfully connect to the router, make sure the values of both the **IP Address** and the **Port Number** are similar to the values entered in the tpcGW utility.*

Step 6. To allow the Phoenix-Q software to connect to the router, use the tpcGW utility (refer to the tpcGW Utility Quick Reference Guide for details).

3.5 Window Layout

3.5.1 Arranging Windows (by Group)

For a quick layout setup of the video windows, right-click the **Group #** tab (**Display ###**) to access the **Group Layout** menu. Select from **2×2** up to **10×10** as possible grid positions on the monitor.

The layout size available for the particular model will depend on the monitor's resolution as well as the smallest window size limitation.

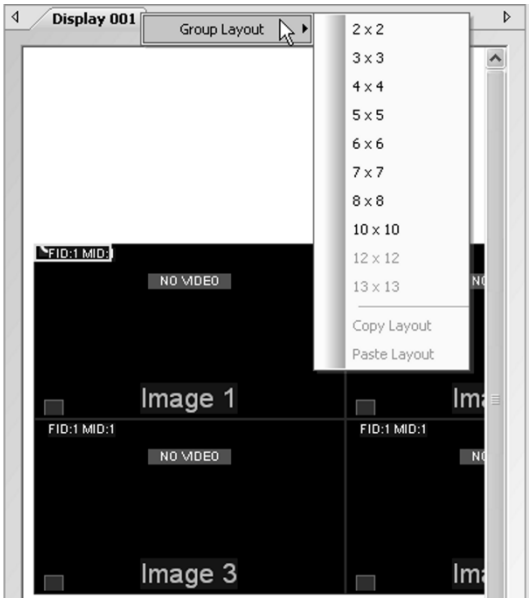


Figure 3-21 Phoenix-Q Software: Group Layout

3.5.2 Resizing Window

Perform the following steps to resize a window:

*Method 1. Right-click a window, and then select **Size**. Select the desired preset size.*

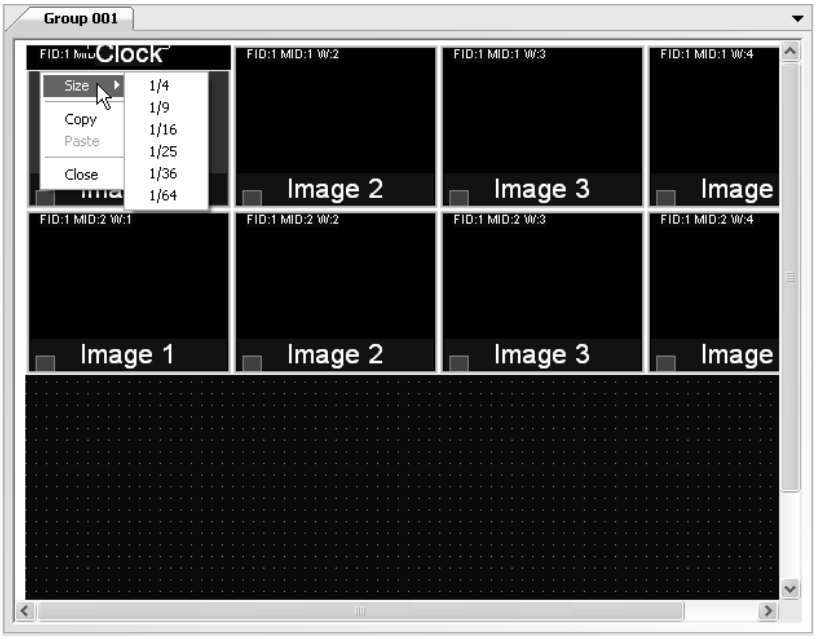


Figure 3-22 Phoenix-Q Software: Select a Preset Size

Method 2. Resize a window by clicking and dragging the border of a window to the desired size. Keep in mind that there is a scaling limitation for each window that limits the minimum scalable size to 816×465 pixels for NTSC video and 816×560 for PAL video.

To reposition a window, click and drag the center of a window and drop to a new position. It will be updated on the monitor. Or, upon selecting a window, use the left/right/up/down arrow buttons on the keyboard.

3.5.3 Full Screen Mode; Swap Window Contents

Two quick keys are available to quickly bring a window to/from full screen mode, as well as to swap the contents of two windows. These two quick keys are detailed below:

Full Screen Mode

Double-click the mouse on a window. Double-click again to return from full screen mode.

Swap Window

*Move cursor to the bottom left hand corner of a window until a letter **S** appears.*

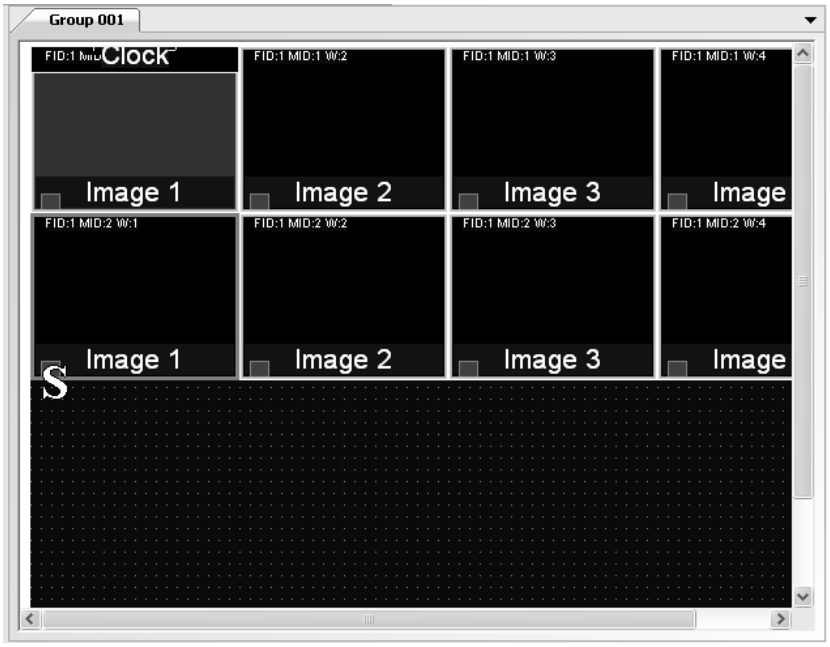


Figure 3-23 Phoenix-Q Software: Swap Window

*Click the letter **S** to select a source window and then click again at a destination window on where to swap the contents from the source. This will swap all the contents and properties of the source window to the destination window.*

3.5.4 Visual Studio

For a quick global view of monitors installed in the studio, use the Visual Studio tab to easily glance the present set ups.

Step 1. To configure how the monitors will appear in the Visual Studio tab, right-click anywhere inside the Visual Studio tab and click "Visual Studio Setting."

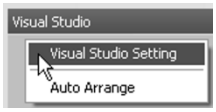


Figure 3-24 Visual Studio: Click "Visual Studio Setting"

*Step 2. 1). Click to select the particular **Display** ### (Card ID) on the left column.*
*2). Click the desired **Visual Studio** ### (group) on the right column.*
3). Click the right arrow button [>>].
*Select other **Display** ### (Card ID) to assign to a **Visual Studio** ### group.*
*Multiple **Display** ### (Card ID) can be assigned to the same **Visual Studio** ### group.*
Finally, click "OK" to exit the "Visual Studio Setup" window.

*To remove a particular **Display** ### from the previously assigned **Visual Studio** ### on the right column, click to select it. Then click the left arrow button [<<] to remove it from the Visual Studio.*

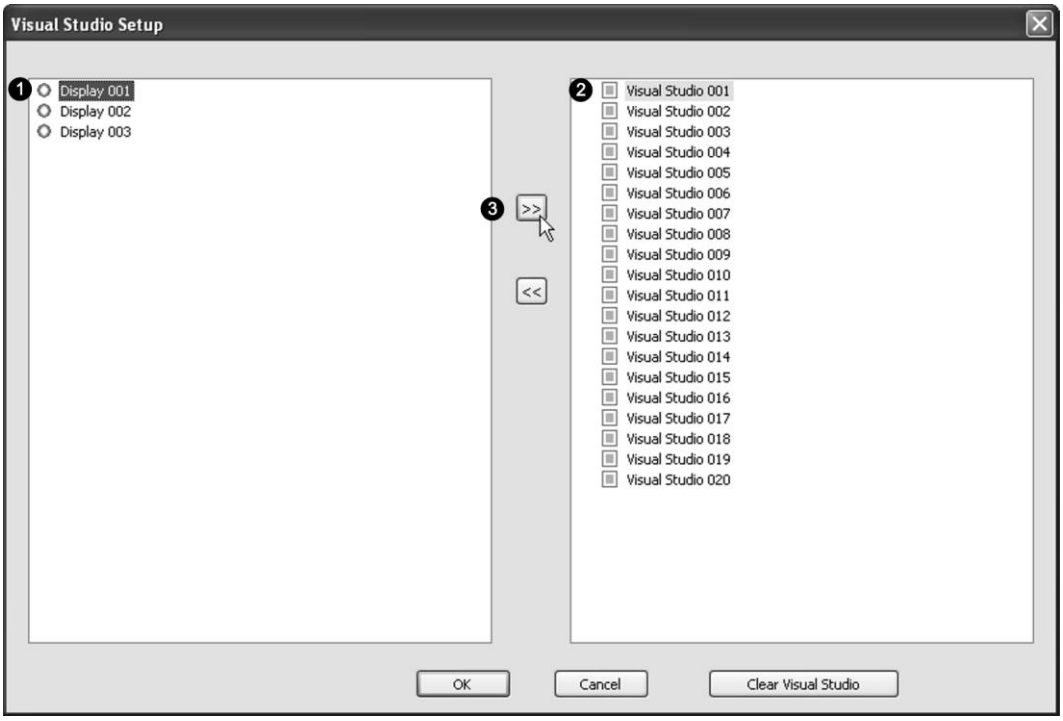


Figure 3-25 Visual Studio Setup: Assigning Visual Groups

*Step 3. On the Visual Studio tab select the desired layout by right-clicking anywhere and clicking "Layout." Select a grid position (from **2×2** up to **10×10**), or specify a fixed 1 row by "N" columns or "N" rows by 1 column, with "N" being the number of images.*

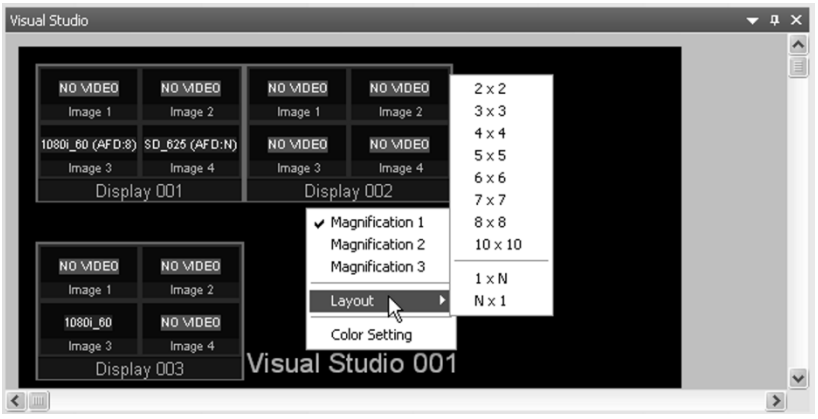


Figure 3-26 Visual Studio: Select the "Layout"

If more than one Card ID has been assigned to a Visual Studio group, they may initially be stacked on top of each other. Change the "Layout" to display the other Card IDs.

Quick Information

Positioning the cursor on top of a window will provide some information about that window. "Double-click → (window label)" allows a quick display of that particular group's layout view in the main window of the Phoenix-Q software.

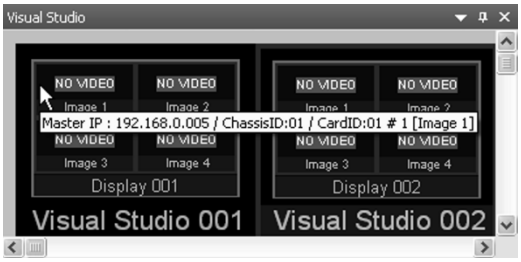


Figure 3-27 Visual Studio: Window Quick Information

Magnification

Right-click anywhere on a window to select from the three available magnifications.

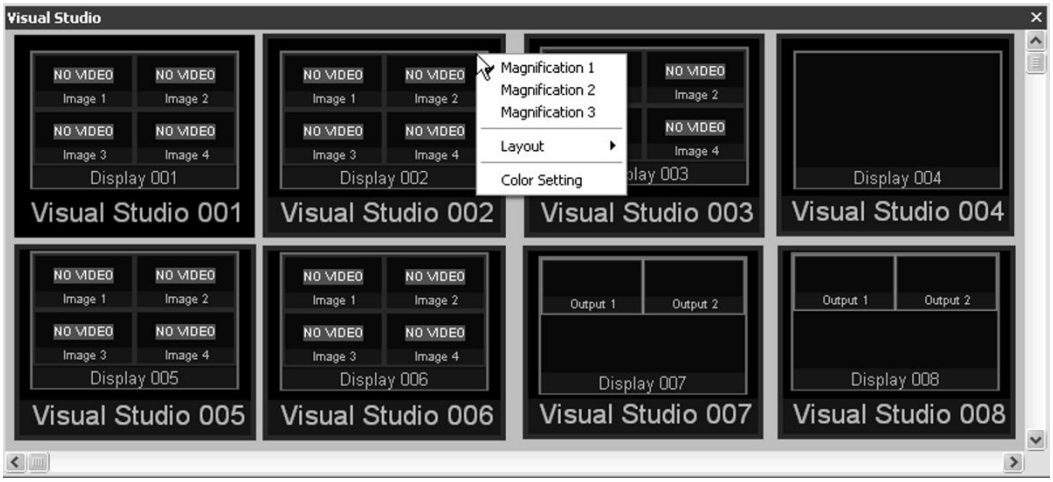


Figure 3-28 Visual Studio: Select the Magnification

Color Setup

*To set the border color and label color (font and background), right-click anywhere on a window and click **Color Setting**.*

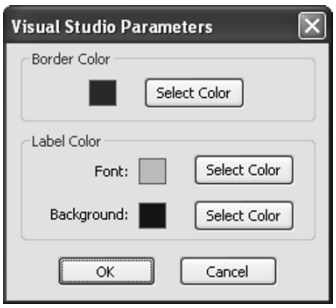


Figure 3-29 Visual Studio: Set the Border and Label Color

Auto Arrange

Allow the system to automatically arrange the layout of the windows appearing in the Visual Studio tab.

Figure 3-30 Visual Studio: “Auto Arrange”

4. Basic Setup Using the Phoenix-Q Software

This chapter instructs on how to use the Phoenix-Q software to set the features of the Rainier 3G, and familiarizes the menus appearing on the Phoenix-Q software.

Some items appearing on the menus of the Phoenix-Q software may not be available (grayed-out).

4.1 File Menu

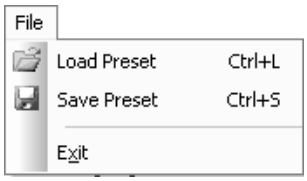


Figure 4-1 Phoenix-Q Software: File Menu

All the presets created are stored in the Rainier 3G and not in the computer that is running the Phoenix-Q software. After creating a preset, save it to flash in order to write all the presets into the internal flash memory of the Rainier 3G. To save a preset, perform the following steps:

Step 1. Configure the window layout according to how it is to be displayed.

*Step 2. Click **Save Preset**.*

*Step 3. Enter a unique filename for the preset, and select **OK** to save. Repeat steps 1 through 3 for each additional preset. There may only be ten saved presets.*

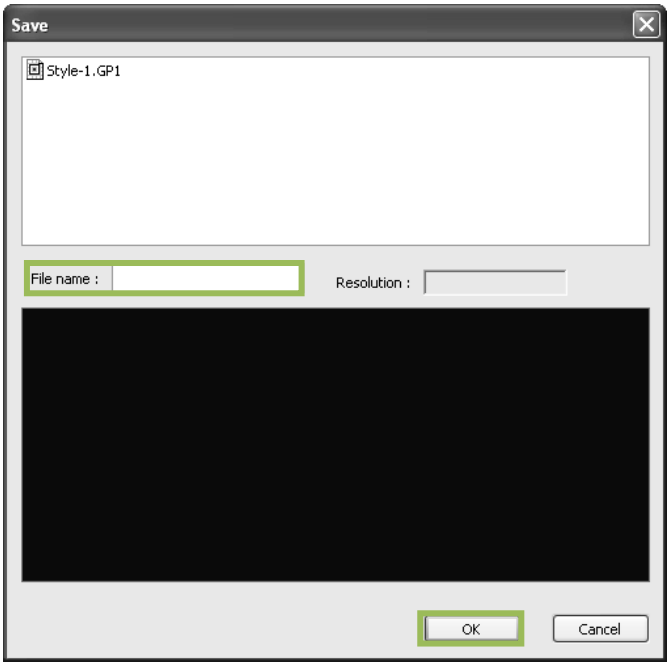


Figure 4-2 Phoenix-Q Software: Enter Unique Filename for Preset

*The file extension **GP#** will be automatically added to the filename.*
*1. When using a keypad, use the numbers **0–9** for the preset names.*
*2. When using the GPI, use the numbers **1–8** for the preset names.*

*Delete a file appearing on the **Save** window by right-clicking the filename and clicking **Delete**.*

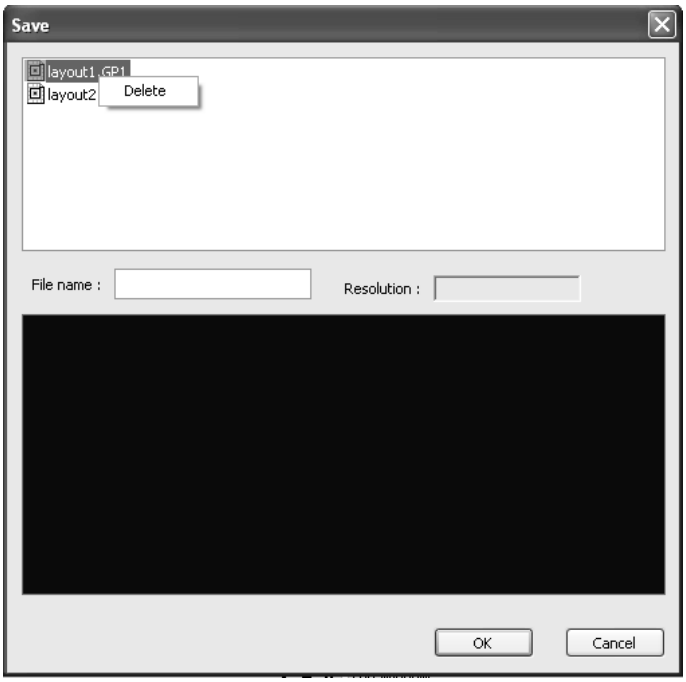


Figure 4-3 Phoenix-Q Software: Delete File in Save Window

*To delete all the files, right-click anywhere inside the window (except on a filename) and click **Delete All**. When the confirmation window appears, click **OK** to proceed.*

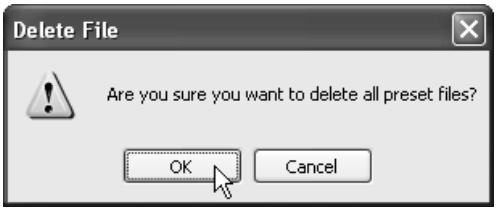


Figure 4-4 Phoenix-Q Software: Delete All Preset Files Confirmation

*Step 4. After creating presets, select the preset to automatically be loaded when the Rainier 3G is powered on by clicking **Load Preset**.*

*Step 5. Select a saved file and then click **OK** to load the preset.*

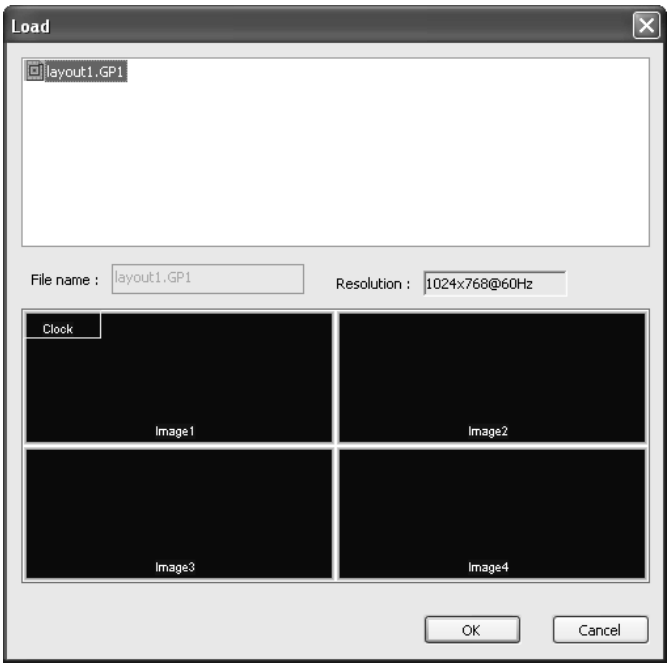


Figure 4-5 Phoenix-Q Software: Load Preset File

*Just like the **Save** window, delete a file on the **Load** window by right-clicking the filename and clicking **Delete**. To delete all the files appearing in the window right-click anywhere inside the window (except the filename itself) and click **Delete All**. When the confirmation window appears, click **OK** to proceed.*

*Step 6. Click **Exit** to close the Phoenix-Q software and all the changes will be automatically saved to the configuration file "System.agi" in the device's flash memory.*

4.2 Edit Menu

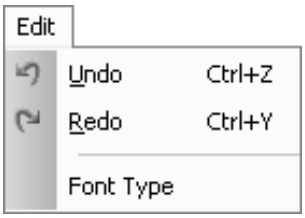


Figure 4-6 Phoenix-Q Software: Edit Menu

*Click **Undo** to cancel the previous step.*

*Click **Redo** to repeat the previous step that was cancelled.*

*Click **Font Type** to set the **Font**, **Font style**, and **Size**. After setting click **OK**.*

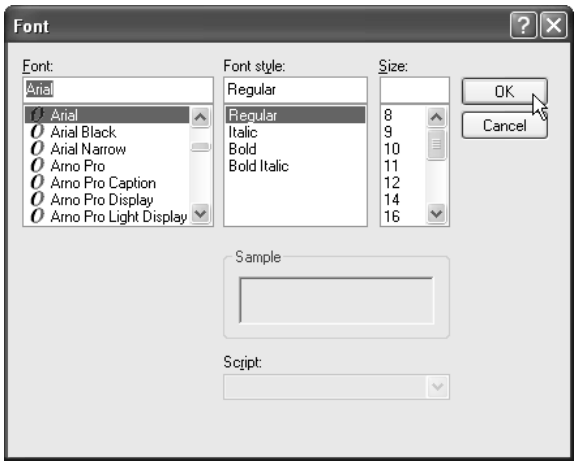


Figure 4-7 Phoenix-Q Software: Set Font Properties

***For Windows 7:** When using the Phoenix-Q in a language that is not English the **Font** "Arial" might not appear as the default font-type. This may cause the label in the window to appear askew. Perform the following steps to return the default font type to **Arial**.*

*Step 1. Click **Control Panel** and when the next screen appears click **Appearance and Personalization**.*

*Step 2. On the next screen click **Change Font Settings** under **Fonts**.*

*Step 3. On the next screen click **Font settings**.*

*Step 4. On the next screen click the **Hide fonts based on language settings** checkbox to unselect. Then click **OK** to exit.*

*Step 5. On the Phoenix-Q software click **Arial** to select it as the default **Font** and then click **OK**.*

4.3 View Menu

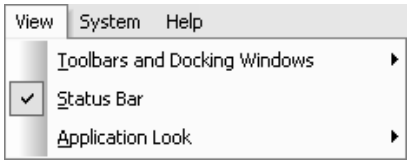


Figure 4-8 Phoenix-Q Software: View Menu

*Enable (with checkmark) or disable the display of the **Standard** toolbar, **Available Windows** panel, **Log Window** panel, **Group View** panel, **Properties** panel, **Briefing** panel, as well as **Customize** the display.*

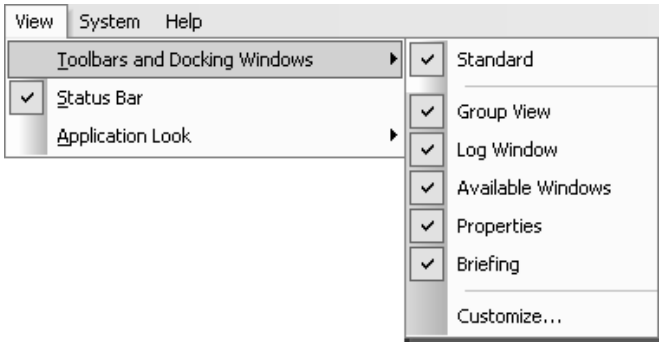


Figure 4-9 Phoenix-Q Software: "Toolbars and Docking Windows" Menu

*Click **Customize** to design the look of the menus and commands appearing on the Phoenix-Q software. Click the particular tab (**Commands**, **Toolbars**, **Menu**, and **Options**) and then make the necessary changes. Click **Close** when finished to exit.*

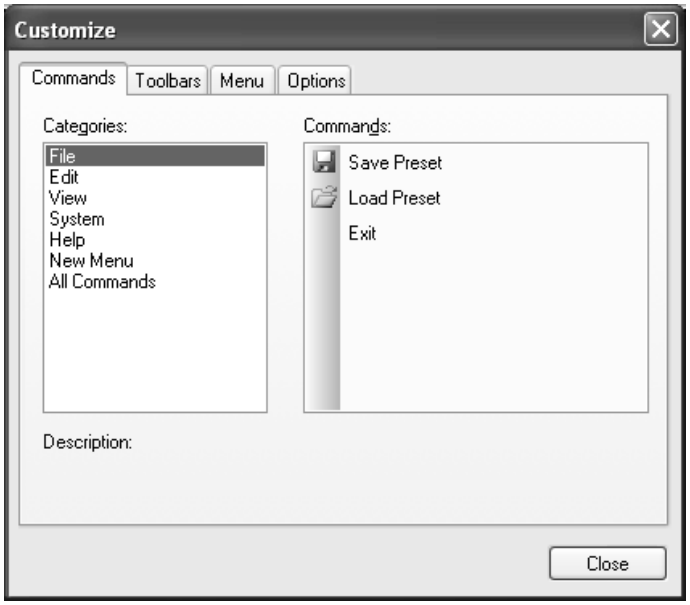


Figure 4-10 Phoenix-Q Software: "Customize the Toolbars" Window

*Click **Status Bar** to show (with a checkmark) or hide the status bar appearing on the bottom of the Phoenix-Q software.*

*Click **Application Look** to select the overall design and theme of the Phoenix-Q software. It is possible to click and select the various options available, and to view the changes afterwards (in the figure below, the "dot" in front of the option **Visual Studio.NET 2005** signifies that it is currently selected).*

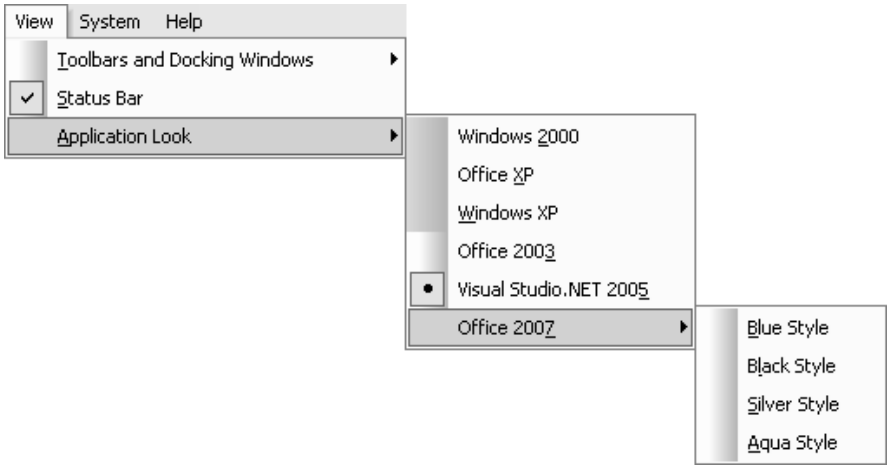


Figure 4-11 Phoenix-Q Software: "Application Look" Menu

4.4 System Menu

Figure 4-12 Phoenix-Q Software: System Menu

***Connect** the computer and the Rainier 3G through an Ethernet or serial port connection; Click **Disconnect** to break the connection between the computer and the Rainier 3G. Before reconnecting make sure that correct configurations are entered in **Communication**.*

*Upon unplugging the Ethernet cable and re-connecting it, click **Reconnect** to continue the configuration process.*

*Click **Configuration** to assign the groupings. Create the configuration of a particular group (for example move the module to another group as so desired by dragging the module listed under **Group 001** to **Group 003**) and then click **OK**. Phoenix-Q will save the configuration file "System.agi" to the device's flash memory.*

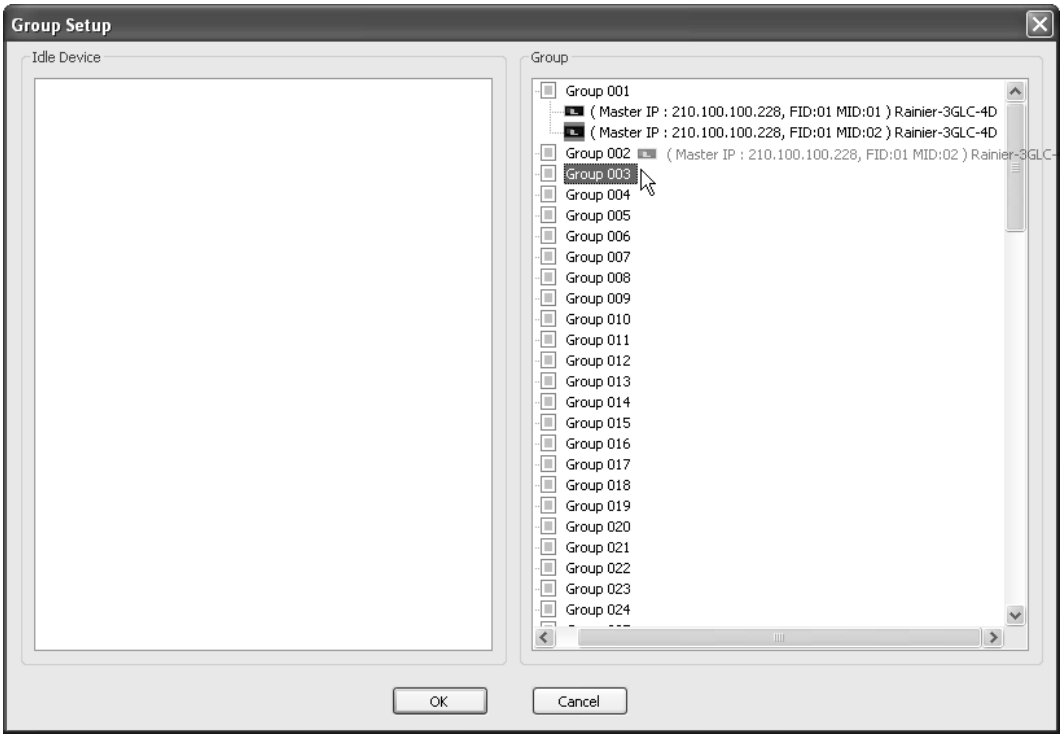


Figure 4-13 Group Setup: Drag Module

This item is available only when the computer is connected to the Rainier 3G.

*Click **Communication** to select the mode of connection (through **IP Port** "Ethernet" or **Serial Port** "COM") between the computer and Rainier 3G.*

This item "Communication" and the next item "Simulation" are not available when the computer is connected to the Rainier 3G.

*After setting the mode of connection between the computer and the Rainier 3G, click **Simulation** to preview.*

*To manually **Restore** a preset perform the following steps. This item is only available when the computer is connected to the Rainier 3G.*

Step 1. Set the Rainier 3G to the factory-default value (see Appendix C for details).

*Step 2. When using a backup file from a Rainier 3G chassis to restore a different Rainier 3G chassis, make sure that the hardware is exactly the same, that the rotary **ID** setting of the chassis being restored matches the old chassis' setting, and that the method of communication is the same (IP or RS-232).*

*Step 3. Click **System→Restore→Configuration and Files**.*

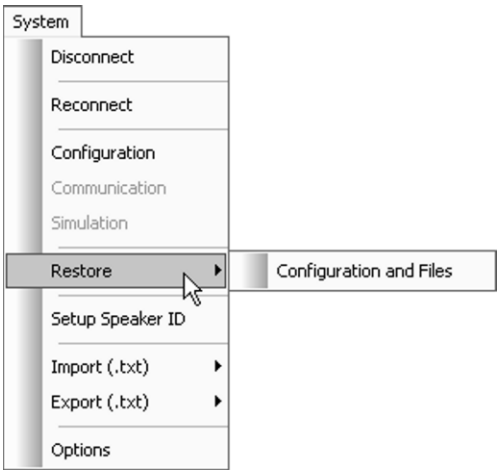


Figure 4-14 Phoenix-Q Software: Click “System”→”Restore”→”Configuration and Files”

*Step 4. The **Date** window shows various folders with the date (automatically generated) when the preset(s) were previously saved. The **Preview Configuration** window shows the setup of the just selected folder. The **Present Configuration** window shows the present setup of the Rainier 3G.*

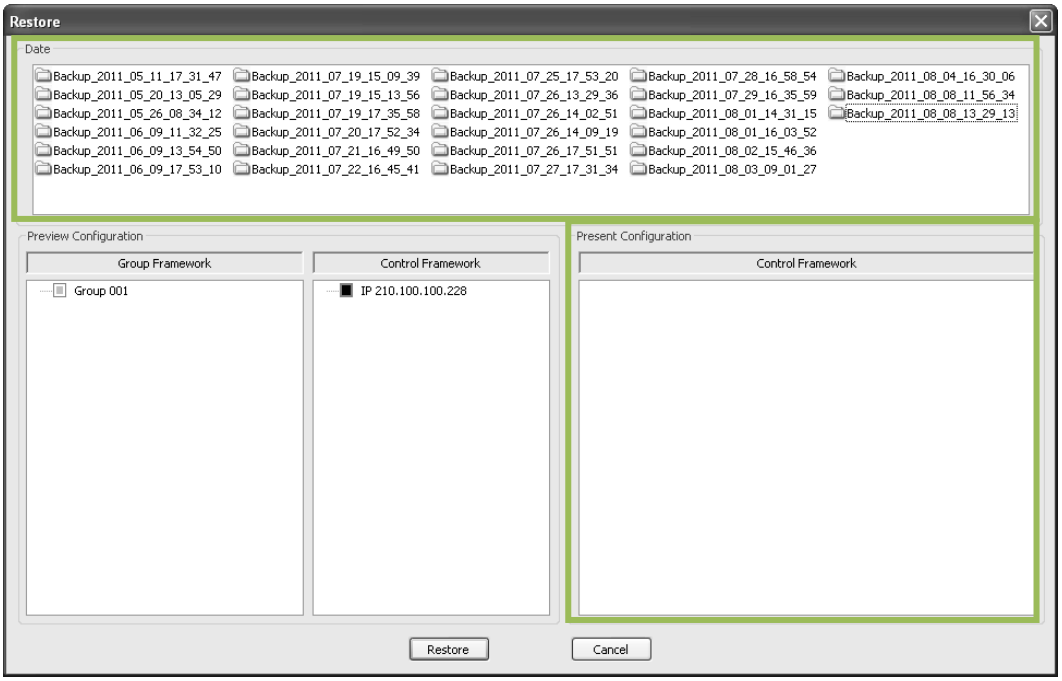


Figure 4-15 Phoenix-Q Software: ”Restore” Window

*Step 5. Click to select a restore point (i.e. **Backup_2011_08_08_13_29_13**). System will automatically compare the setup listed in **Present Configuration** window with the setup listed in **Preview Configuration** window (i.e. **Identical**, **Different**, **New Device**).*

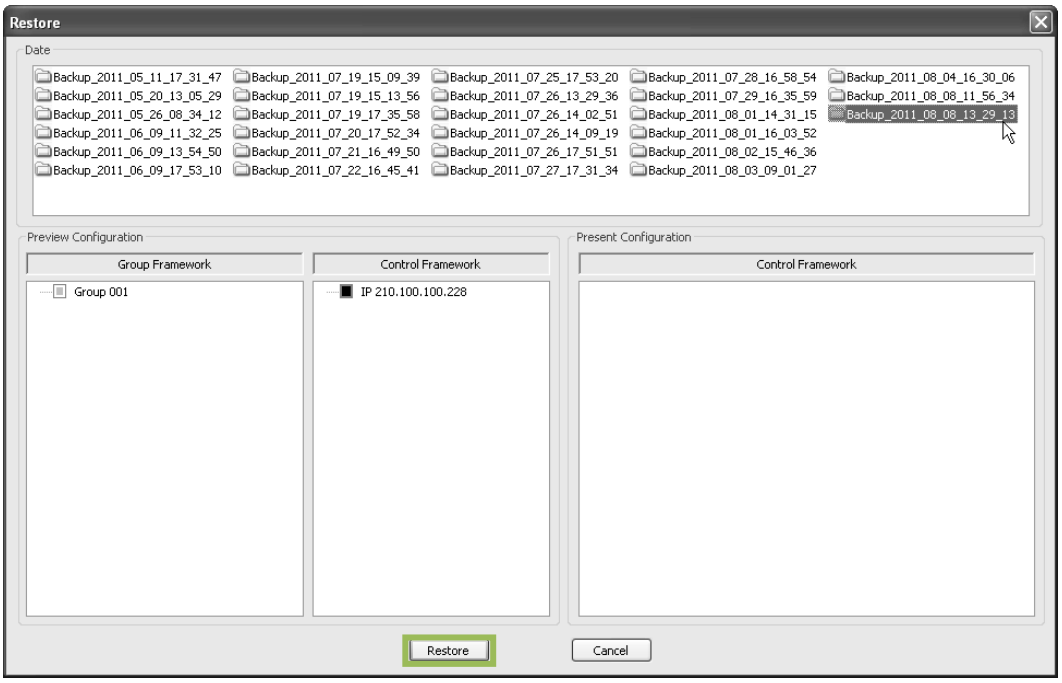


Figure 4-16 Phoenix-Q Software: ”Restore” Window

*If the Rainier 3G has not been set to factory-default value, or the setup of the **Present Configuration** window is different from the setup in the **Preview Configuration** window, then restore is not allowed by the system and the **Restore** button remains grayed-out.*

*Step 6. Click **Restore**. The progress of restoration will be shown.*

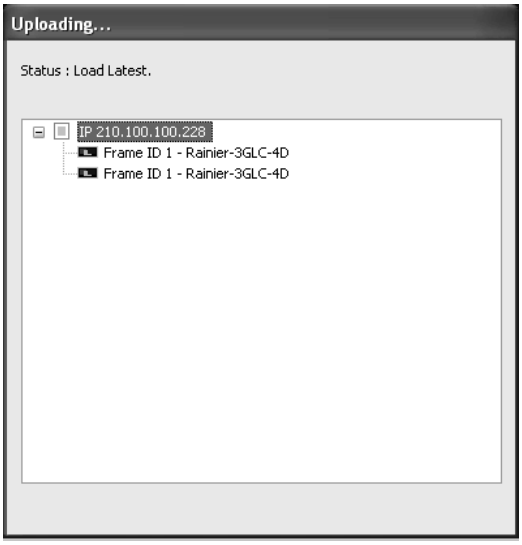


Figure 4-17 Phoenix-Q Software: ”Restore” Progress

Step 7. Reboot the Rainier 3G to complete the "restore" process.

Figure 4-18 Phoenix-Q Software: Reboot Device

Figure 4-19 Phoenix-Q Software: Click "System"→"Setup Speaker ID"

*Use the **Setup Speaker ID** function to set up the speaker to monitor the audio source by assigning a **Speaker ID** number (**1** to **32**) for each card ID. Can also have the option to assign **One group per speaker** or to assign **All groups in one speaker**. Once finished, click **OK** to exit.*

*For two or more cascaded chassis ID, use **Setup Speaker ID** to assign each card ID to output to different chassis ID headset connectors. Make sure to first assign two or more chassis ID cards to the same group.*

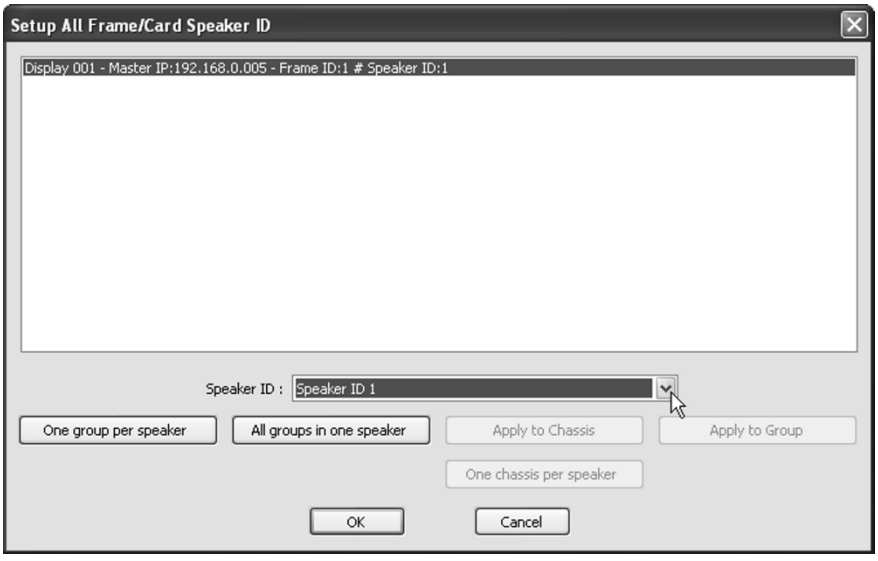


Figure 4-20 Phoenix-Q Software: Frame Speaker ID

This item is only available when the computer is connected to the Rainier 3G.

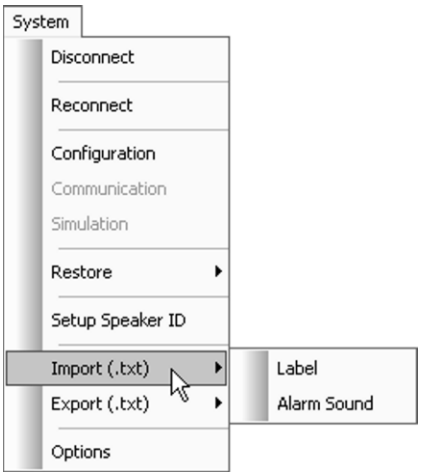


Figure 4-21 Phoenix-Q Software: Click "System"→"Import/Export Label (.txt)"

1. *Settings here will affect all the labels of the Groups in the System.*
2. *These items are only available when the computer is connected to the Rainier 3G.*
3. *Refer to Appendix C for complete details on using the "Import"/"Export"→"Alarm Sound" function.*

To change the label, the label must be exported and edited externally. Follow the steps below to change the Rainier 3G's labels. The most convenient way is to export the file (label) as:

- ✓ ***ANSI*** *– up to 30 characters; can contain the English characters A–Z, a–z, 0–9, or*
- ✓ ***BMP Label*** *(Unicode – up to 15 characters; useful for displaying text other than the English language)* ***txt*** *file*

Step 1. Click ***System→Export (.txt)→Label*** *and assign a filename. Then click* ***Save****.*

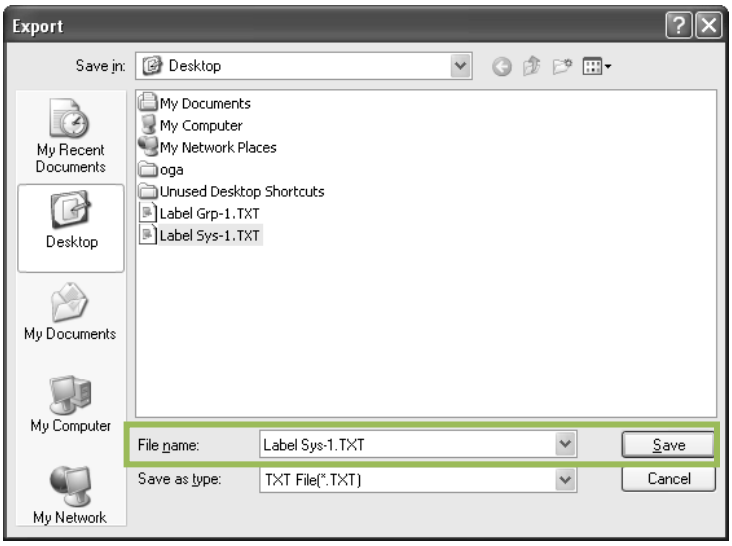


Figure 4-22 Phoenix-Q Software: Export Label

*Step 2. Open the exported text file. The first row of text provides a guide to the two types of labels (**A** for **ANSI** / **B** for **BMP Label**). Change the label type as desired by typing **A** or **B** after the dash "–" (highlighted below)*

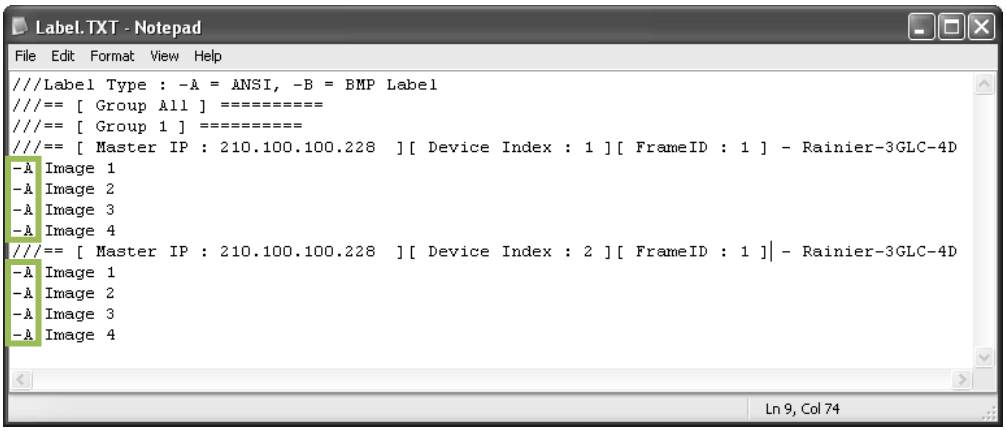


Figure 4-23 Phoenix-Q Software: Change Label Type

*Step 3. Then edit the text in the file (highlighted as shown below). After editing the label save the **txt** file and import it. The on screen labels will be updated.*

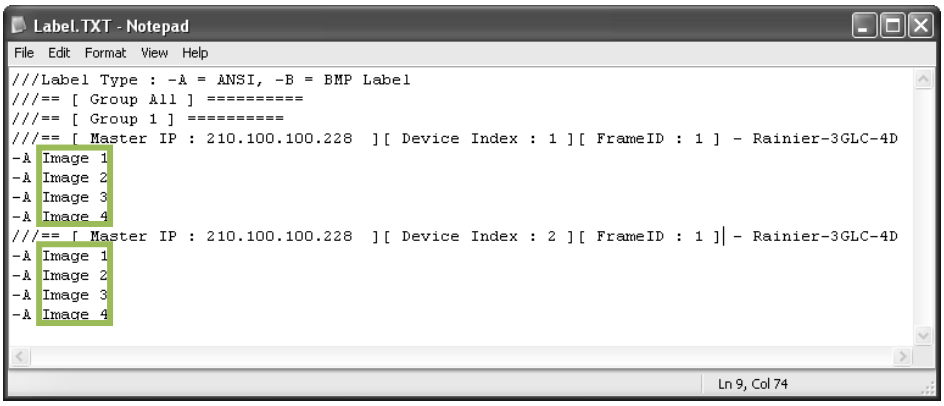


Figure 4-24 Phoenix-Q Software: Change Label Text

Figure 4-25 Phoenix-Q Software: Click "System"→"Options"

✓ ***General→General→Backup Path***

The default backup path "C:\Avitech\Backup\" contains the system configuration, preset files, system log data, and firmware version information. To change the backup path, type the desired path in the ***Value*** *column (available only when Phoenix-Q is not connected to chassis).*

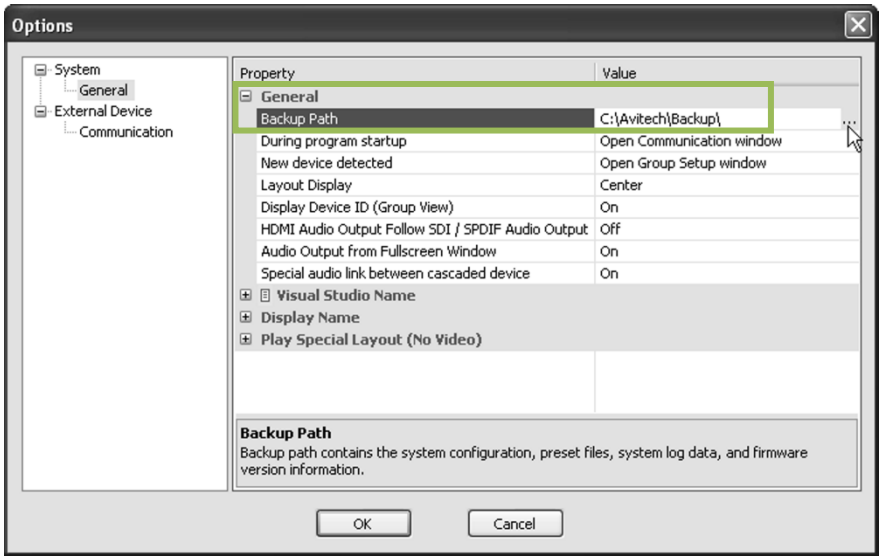


Figure 4-26 Options: "System"→"General"→"Backup Path"

Or click the select folder button "…" (if available) and when the ***Select Folder*** *screen appears select from the existing folders or click the* ***Make New Folder*** *button to create a new folder. Then click* ***OK*** *to exit.*

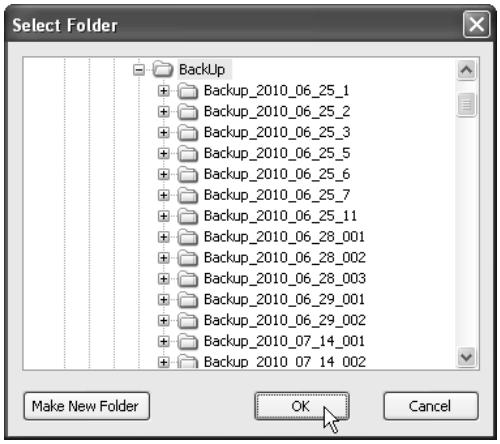


Figure 4-27 Phoenix-Q Software: Select Folder Window

✓ ***General→General→During Program Startup***
Click the drop-down button (click the cell's rightmost portion) to select ***Open Communication window*** *that allows the Phoenix-Q program to automatically open the* ***Communication*** *window upon startup.*

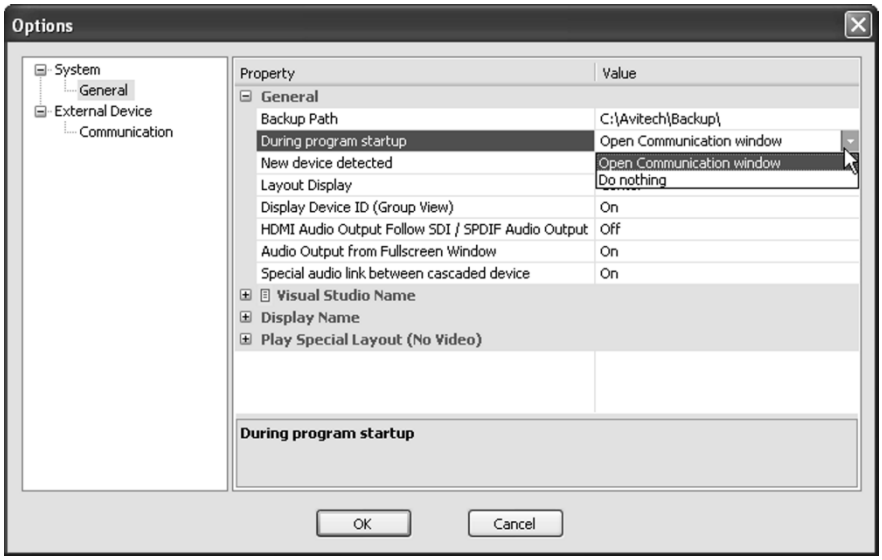


Figure 4-28 Options: "System"→"General"→"During Program Startup"

✓ ***General→General→New Device Detected***
Click the drop-down button (click the cell's rightmost portion) to select ***Open Group Setup window*** *that allows the Phoenix-Q program to automatically open the* ***Group Setup*** *window when a new device has been detected.*

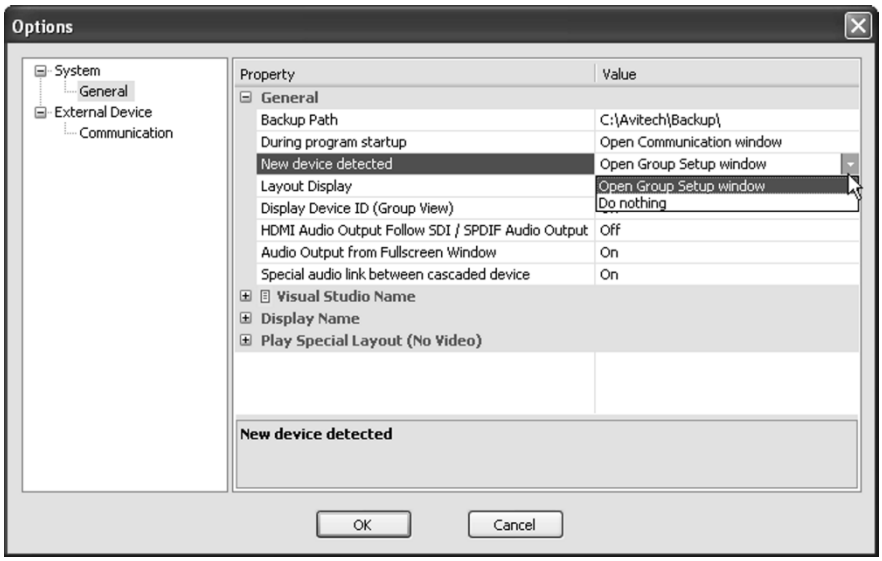


Figure 4-29 Options: "System"→"General"→"New Device Detected"

To prevent errors when detecting new devices, it is highly recommended to return the new device to its default setting before connecting it to the present setup.

✓ ***General→General→Layout Display***

Click the drop-down button (click the cell's rightmost portion) to select ***Center*** *or* ***Upper left corner*** *that allows the preview window to be displayed in the center or upper left corner of the monitor.*

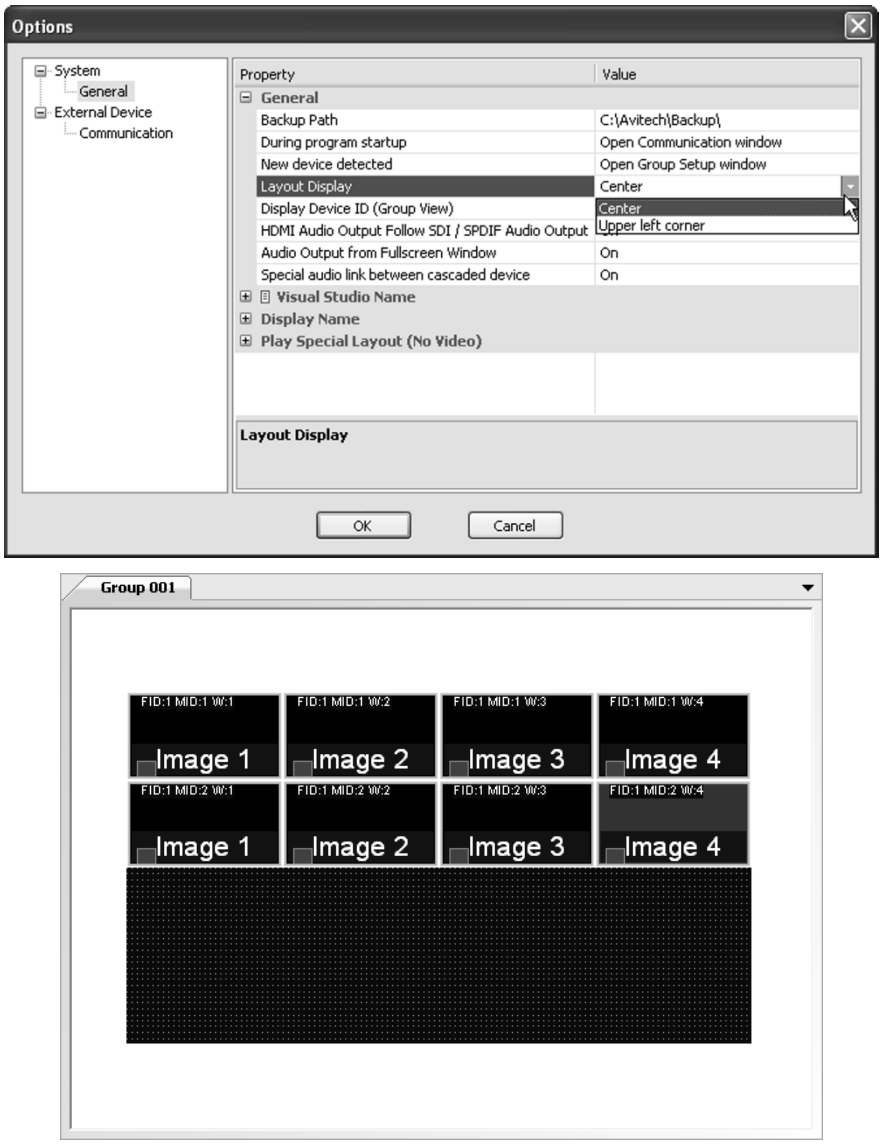


Figure 4-30 Options: "System"→"General"→"Layout Display"

✓ ***General→General→Display Device ID (Group View)***
*To display the device ID information in the **Group View** panel, make sure **Display Device ID (Group View)** is enabled (set **On**). Click the drop-down button [click the **Display Device ID (Group View)** cell's rightmost portion] to select **On**.*

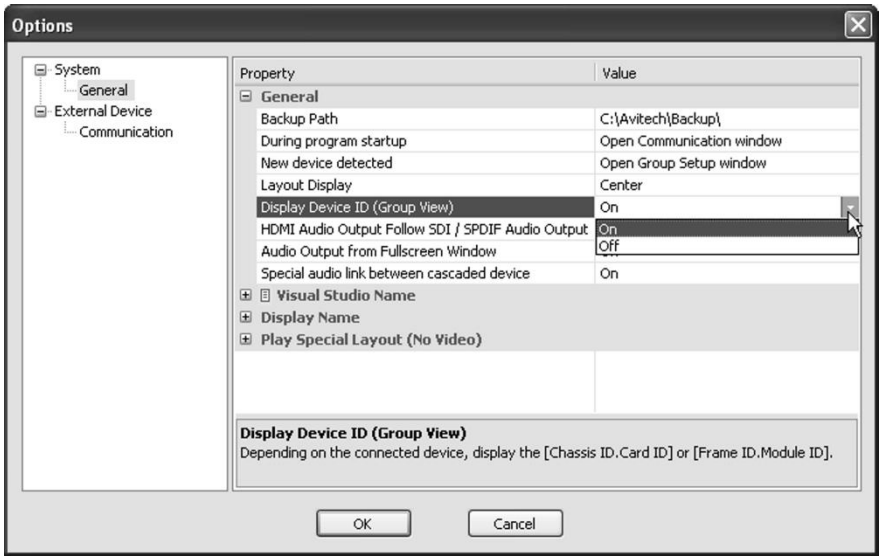


Figure 4-31 Options: "System"→"General"→"Display Device ID (Group View)"

✓ ***General→General→HDMI Audio Output Follow SDI / SPDIF Audio Output***
*To make the HDMI audio output the same as the SDI audio output (**Properties** portion – **Card Parameters→Headphone (Local)→Source**), make sure **HDMI Audio Output Follow SDI / SPDIF Audio Output** is enabled (set **On**). Click the drop-down button [click the **HDMI Audio Output Follow SDI / SPDIF Audio Output** cell's rightmost portion] to select **On**.*

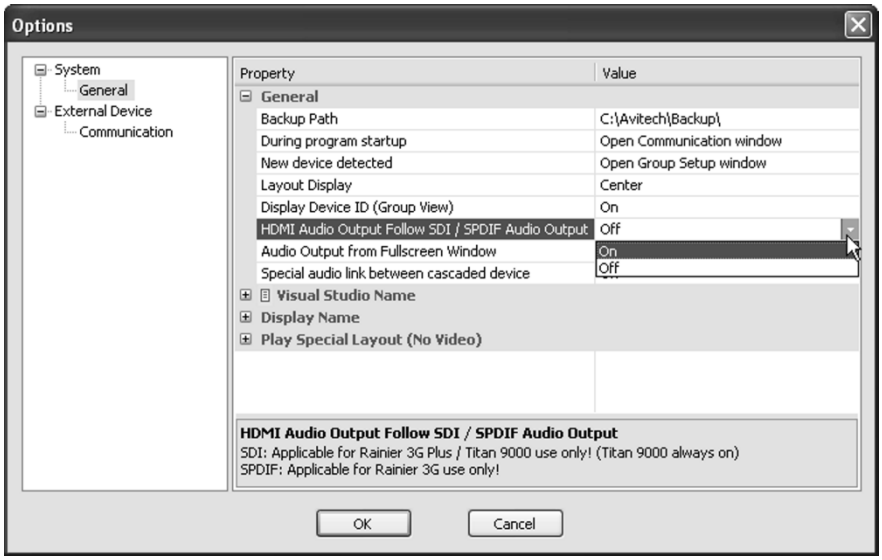


Figure 4-32 Options: "System"→"General"→"HDMI Audio Output Follow SDI / SPDIF Audio Output"

✓ ***General→Audio Output from Full Screen Window*** *(not applicable for Rainier 3G).*

✓ ***General→General→Special Audio Link Between Cascaded Device***

*To allow the audio signal to pass through a cascaded Rainier 3G and a Titan 9000 (both device must belong to the same group), make sure **Special Audio Link Between Cascaded Device** is enabled (set **On**). Click the drop-down button [click the **Special Audio Link Between Cascaded Device** cell's rightmost portion] to select **On**.*

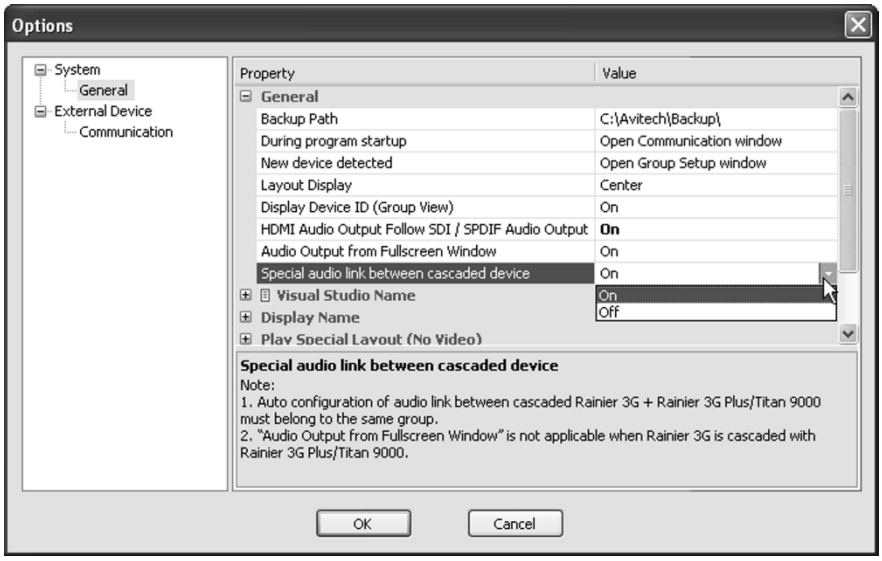


Figure 4-33 Options: "System"→"General"→"Special Audio Link between Cascaded Device"

✓ ***General→Visual Studio Name***

To change the Visual Studio group's name, click the Visual Studio group name to change, and then type the Visual Studio group's new name (up to 30 characters).

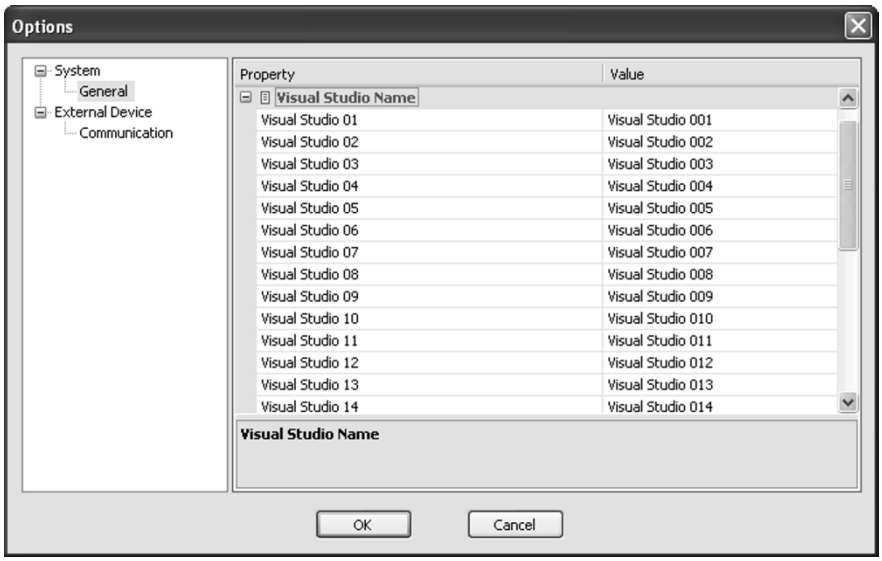


Figure 4-34 Options: "System"→"General"→"Visual Studio Name"

✓ ***General→Display Name→Type***
*To allow a user to change the group's displayed name, click the drop-down button [click the **Type** cell's rightmost portion] and select **Custom**.*

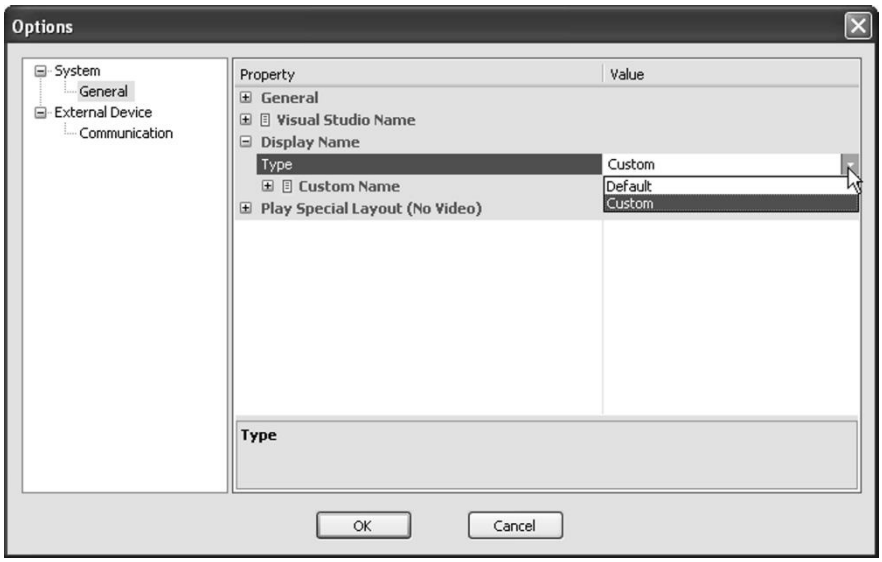


Figure 4-35 Options: "System"→"General"→"Type"

✓ ***General→Display Name→Custom Name***
To change the group's name, click the Group name to change, and then type the group's new name (up to 30 characters).

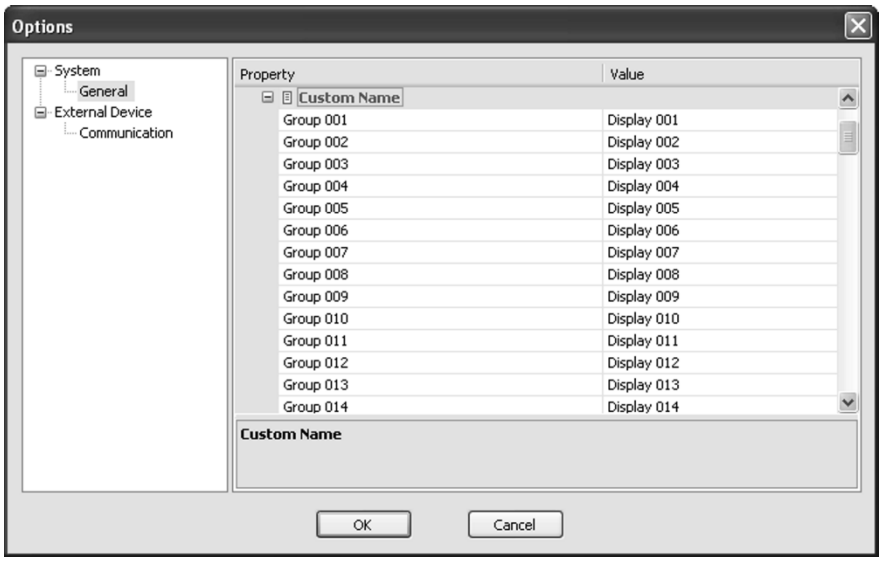


Figure 4-36 Options: "System"→"General"→"Custom Name"

✓ ***General→Play Special Layout (No Video)→Enable***
*To set the Phoenix-Q to alert the user when a video signal is interrupted or lost, **Enable** (set **On**) **Play Special Layout (No Video)** by clicking the drop-down button (clicking the **Enable** cell's rightmost portion) and selecting **On**.*

✓ ***General→Play Special Layout (No Video)→Display Type***
*To select what to display when a video signal is lost, click the drop-down button (use the mouse to click the **Display Type** cell's rightmost portion) to select **Quad** or **Full screen**. The following sample scenarios may occur.*

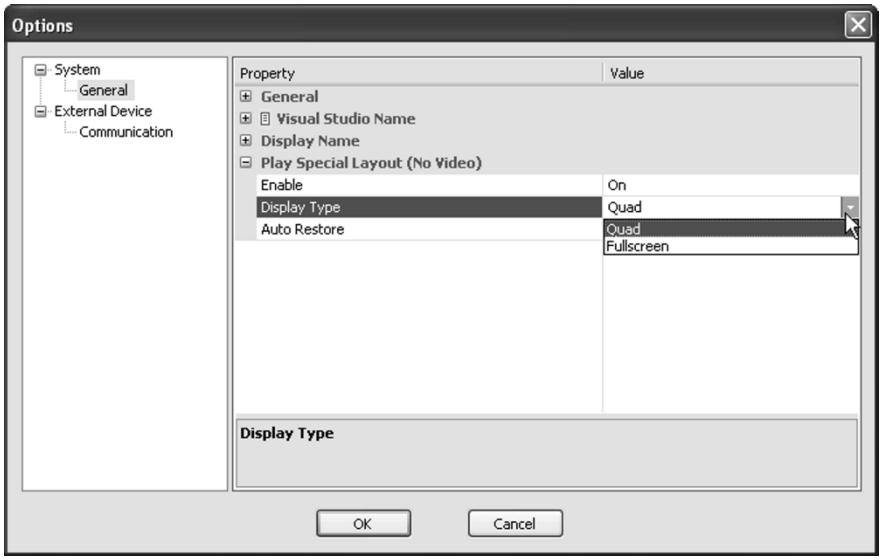


Figure 4-37 Options: "System"→"Play Special Layout (No Video)"→"Display Type"

*The following scenarios will only occur if **Play Special Layout (No Video)** is **Enable**d (set **On**).*

Display Type**: **Quad/Full screen

Sample scenario 1 – a single window loses video signal
Regardless of the present monitor's window layout, the quad/full screen layout would be displayed and the single window without video signal would occupy the top-left position/full screen to alert the user to the problem.

Sample scenario 2 – 3 windows lose video signal
Regardless of the present monitor's window layout, the quad layout would be displayed and the three windows without video signal will occupy the top-left, top-right, and bottom-left positions to alert the user to the problem.
*If **Display Type** is set to **Full screen**, the last of the three windows to have lost its video signal will occupy the full screen to warn the user.*

✓ ***General→Play Special Layout (No Video)→Auto Restore***
Allows the window layout to revert back to where it was before signal loss occurred. Click the drop-down button (use the mouse to click the ***Auto Restore*** *cell's rightmost portion) to select* ***On****. If* ***Auto Restore*** *is disabled (set* ***Off****) and a window loses its video signal, simply right-click the window and select* ***Close*** *to allow the window to revert back to where it was before signal loss occurred.*

Auto Restore

Sample scenario 1 – a single window loses video signal
If ***Auto Restore*** *is* ***On****, all windows will revert to the original layout.*

Sample scenario 2 – window #2 has regained video signal out of the three windows that lost video signal
If ***Auto Restore*** *is* ***On****, window #2 (which has regained video signal) will be removed from the screen and will revert back to where it was before signal loss occurred. When* ***Display Type*** *is set to* ***Quad****, then window #3 would occupy the place vacated by window #2. If* ***Display Type*** *is set to* ***Full screen****, then the last window to have lost its video signal would occupy the whole screen.*

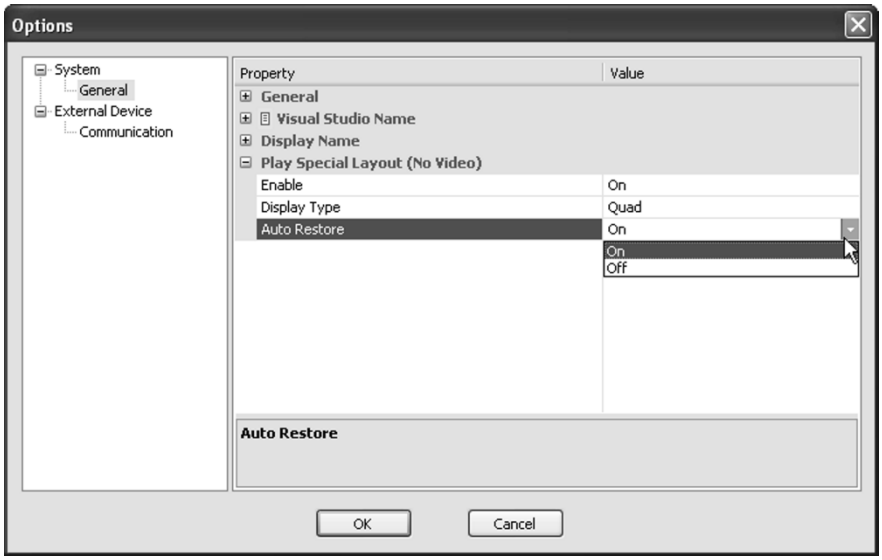


Figure 4-38 Options: "System"→"Play Special Layout (No Video)"→"Auto Restore"

✓ ***External Device→Device Enable***

*To allow the Phoenix-Q software to get the UMD (under monitor display) data from the router (when necessary) click **External Device**, then click **Communication**, and make sure that **Device Enable** is set **On**.*

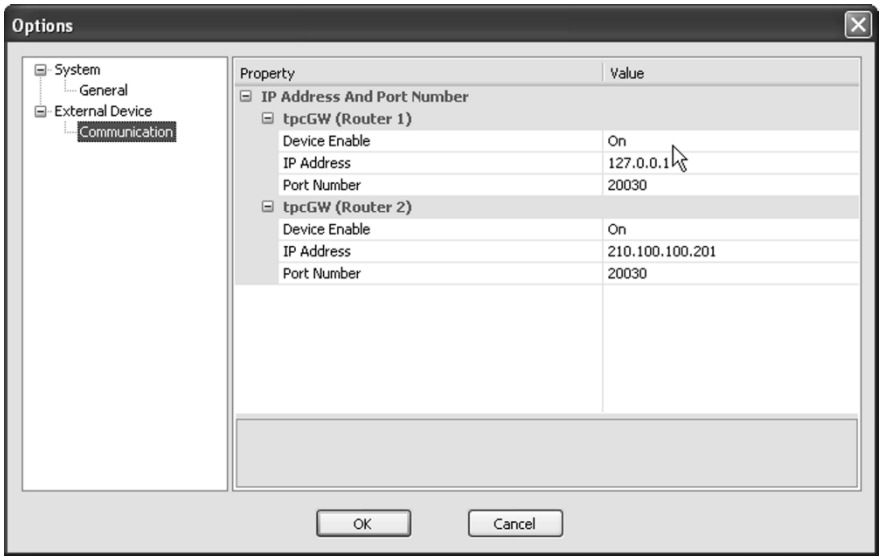


Figure 4-39 Options: "External Device"→"Communication"→"Device Enable"

✓ ***External Device→IP Address***

*Make sure that the **IP Address** corresponds to the IP address of the computer running the tpcGW utility. If not, click the IP Address button "…" and when the **IP Address** screen appears, enter the correct value. Then click **OK** to exit.*

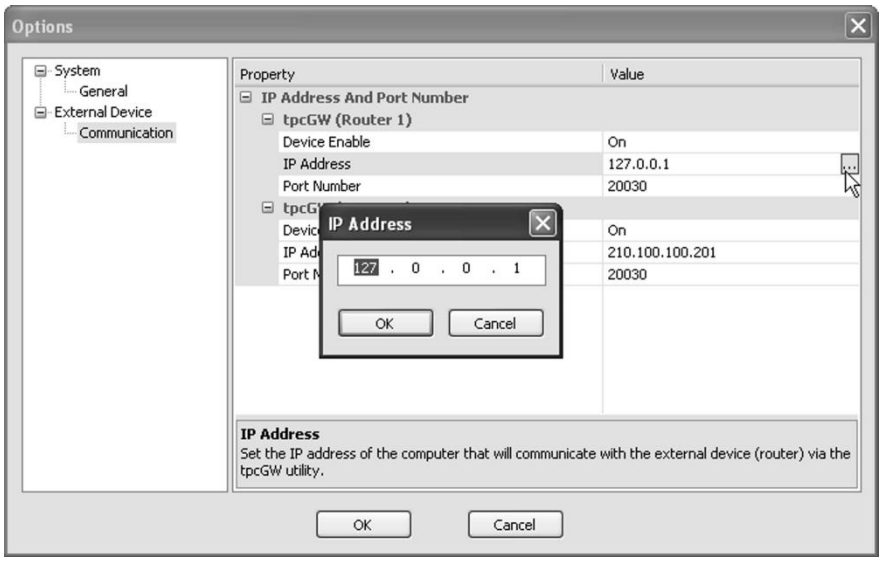


Figure 4-40 Options: "External Device"→"Communication"→"IP Address"

✓ ***External Device→Port Number***
*Make sure that the **Port Number** shown is correct. If not, enter the value directly or change the value by clicking the up/down arrow button. Then click **OK** to exit the **Options** screen setup.*

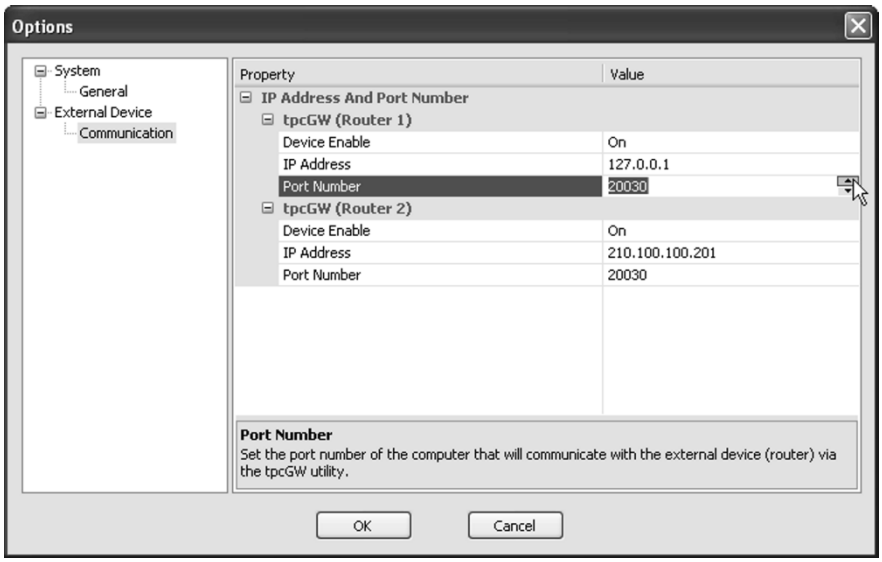


Figure 4-41 Options: "External Device"→"Communication"→"Port Number"

*To be able to successfully connect to the router, make sure the values for both the **IP Address** and the **Port Number** are similar to the value entered in the tpcGW utility.*

4.5 Help Menu

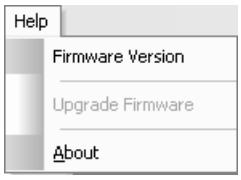


Figure 4-42 Phoenix-Q Software: Help Menu

*To obtain the **Firmware Version** file, perform the following steps:*

*Step 1 Click **Firmware Version**.*

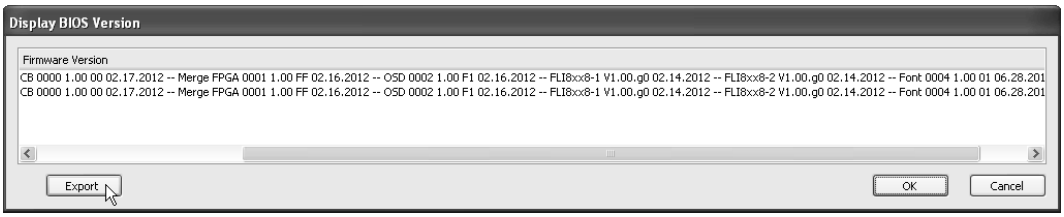


Figure 4-43 Phoenix-Q Software: Firmware Version

*Step 2. Click **Export**.*

*Step 3. Assign a filename and click **Save** to store the data.*

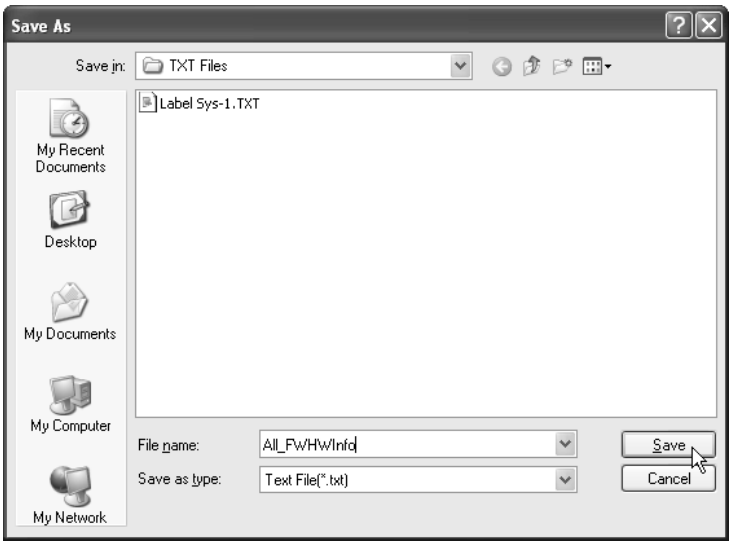


Figure 4-44 Phoenix-Q Software: Save Firmware Version Information

*Click **Upgrade Firmware** to bring the device's firmware up-to-date (see "Firmware Upgrade Reference Guide for Rainier 3G" for details).*

Click "System"→"Disconnect" first before firmware upgrade.

*Click **About** to see a pop-up box showing the Phoenix-Q software information.*

Figure 4-45 Phoenix-Q Software: Version Information

5. Setting the Group/Module Properties

To set the properties of the Rainier 3G, click to select the Module on the **Group View** window (left panel) and the **Properties** window (right panel) will list the parameters available for setup.

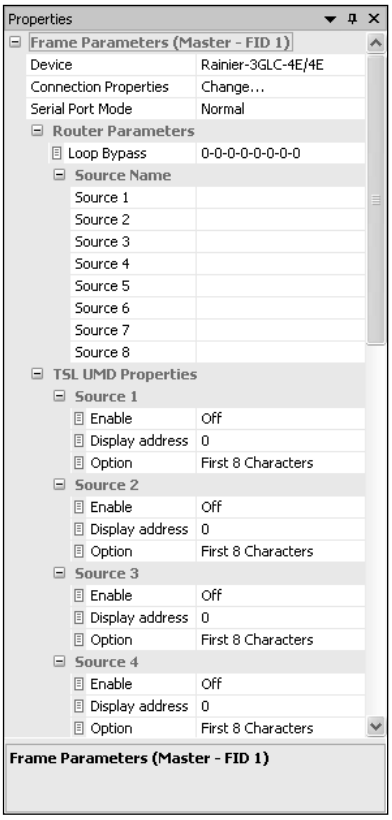


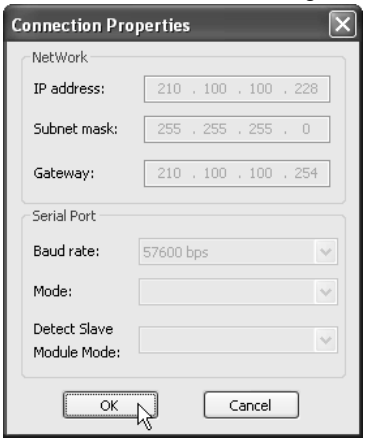
Figure 5-1 Phoenix-Q Software: Properties Window

*Some of the items appearing on the **Properties** window may not be available for the Rainier 3G.*

Connection Properties

Click **Change** to set the **IP address**, **Subnet mask**, and **Gateway**, or to set the **Baud rate** when using the **Serial Port** to connect.

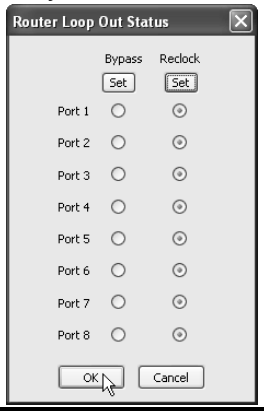
Change . . .



Note: This item is available for subordinate chassis only.

Serial Port Mode	
Normal **TSL V3.1**	Select **Normal** for using the **RS-232** port with computer for control. Or, select **TSL V3.1** for configuring the **RS-232** port with TSL connection. *Note: Use the Master (Rainier 3G with Ethernet connection to the controlling computer) chassis' **RS-232** port to connect to the router for TSL function.*

Router Parameters

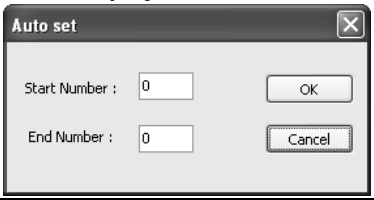
Loop Bypass	
	Selecting the default setting **Re-clock** will enhance the **SDI IN 1** – **8** signal before outputting to the **SDI LOOP OUT 1** – **8** ports by synchronizing the video output according to the Rainier 3G´s internal clock. This way, the frames will match the vertical sync parameter. The audio output will also be synchronized to the same speed. 

Source Name	
Source 1/2/3/4/5/6/ 7/8	Input the text string appearing on the source window's label string.

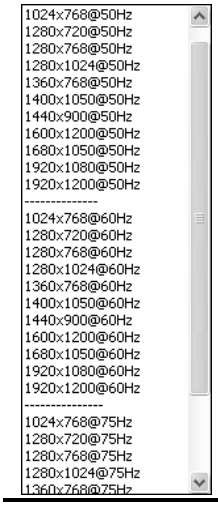
TSL UMD Properties

Source 1/2/3/4/5/6/ 7/8

Enable	
On/Off	Allow the UMD (under monitor display) to be shown. *Note: Make sure to use a TSL connection with TSL UMD Properties.*

Display Address	
0 up to **126**	Set the display address for each source. The address should match the TSL controller's configured address connected to the router output feeding the corresponding Avitech input. To set **Display Address**es for all sources, right-click any **Display Address**, click **Quick Setting**, and set the starting and ending number (**0**-**126**) to be displayed for each source (i.e. Set **100** as the **Start Number** for **Source 1** and set **126** as the **End Number**. Then **100** would be shown as the **Display Address** for **Source 1**, **101** for **Source 2**, and so forth.) 

Option	
First 8 Characters **All 16 Characters**	Select to display 8 or 16 dynamic characters of the UMD label (if the TSL implementation allows it).

Resolution	
	Set the display resolution. *Note: Make sure that the resolution of the input source (as a background image) is the same as the resolution of the **OUTPUT-1/2** port's video output to the monitor.*

Output Timing	
Normal **VESA**	**Normal** output timing is designed for some brands of monitor that do not support the **VESA** standard. *Note 1: When using the DVI-to-VGA adapter on **OUTPUT-1/2** ports for video output to a monitor, make sure to set it to **VESA**.* *Note 2: Only 1080p 50/60 Hz and 720p 50/60 Hz is supported on **SDI OUT-1/2** ports upon setting **Normal**. No video output from these ports is possible when set at **VESA**.*

Cascade In	
Internal **DVI-I Auto (Digital First)**	Select cascade mode with internal or digital signal first when expecting both analog and digital signals.

Frame Store	
On **Off**	Turn on/off Frame Store (synchronization) to lessen occurrence of frame delay when multiple modules are cascaded, most especially on the last cascaded module.

3G SDI	
Level A **Level B**	Select the desired "mapping format" based on the output signal passing through "SDI OUT-1" and "SDI OUT-2" ports on rear panel. Level A – direct image format mapping. Level B – 2 × SMPTE 292 HD SDI mapping (including SMPTE 372M dual link mapping). *Note:* *1. Based on the image format, pixel depth and sampling structure a 3G signal can carry one or both "Levels."* *2. Applicable only for YCbCr 422 1080p output signal.*

Meter Transparency	
0 up to **8**	Use the slider to set the transparency (default is 8, no transparency) of the audio meter appearing on screen.

Label B-G Transparency	
0 up to **8**	Use the slider to set the background transparency level (default is 8, no transparency) of the label appearing on screen.

DVI Output Parameters

Cable Driving

Pre-emphasis	
On **Off**	Enabling (set **On**) **Pre-emphasis** prevents display abnormalities when connecting a long DVI cable from the **OUTPUT-1/2** port of the last cascaded module to the monitor.

Hot Plug Re-sync

Re-sync	
On **Off**	Allows the re-synching of the connected monitor during hot-plugging when set **On**.

Delay (Second)	
0 to **31**	Use the slider to set the time delay when re-synching of the monitor occurs after hot-plugging. *Note: This item is only available when the previous item (**Re-sync**) is set **On**.*

Tally

Enable	
On **Off**	Enable tally for one window or all the windows in a group.

Flash	
On **Off**	Enable flashing tally for one window or all the windows in a group.

Tally1/2/3 Color (LED1/2/3)	
	Select the preferred tally color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values. *Note: **Tally 1** and **2** are triggered by GPIO (general purpose input/output) while **Tally 3** is triggered through serial communication.*

Event

GPI Event

GPI1 Event

LED 1/2/3	
On **Off**	Turn on/off the LED alerts caused by a GPI (general purpose input) event.

Label	
On **Off**	Turn on/off the label alerts caused by a GPI (general purpose input) event.

Border	
On **Off**	Turn on/off the border alerts caused by a GPI (general purpose input) event.

Serial Event

Tally1/2/3 Event

LED 1/2/3	
On **Off**	Turn on/off the LED alerts caused by a serial event.

Label	
On **Off**	Turn on/off the label alerts caused by a serial event. *Note: Tally 1/2/3 can trigger either **Label** or **Border**, but there can only be one border or label. If tally 1/2/3 are triggered simultaneously, the display priority will be tally 1, tally 2, and then tally 3.*

Border	
On **Off**	Turn on/off the border alerts caused by a serial event.

Signal Format Color

Font Color	
	Select the preferred font color of the signal. Click **Others** for more color choices (**Standard** tab) or to customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** and **Red**/**Green**/**Blue** values.

B-G Color	
	Select the preferred background color of the signal. Click **Others** for more color choices (**Standard** tab) or to customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** and **Red**/**Green**/**Blue** values.

Check Audio – (SPDIF)

Enable	
On **Off**	Enable/disable the SPDIF audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Source	
Mute **HDMI input embedded audio** **External input AES/AD** **Window 1/2/3/4 SDI embedded audio**	Select the source of SPDIF audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Channel	
Channel 1/2/3/4	Enable the channel's SPDIF audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Sound	
Stereo **Mono Left** **Mono Right**	Select **Stereo** or **Mono Left**/**Right** SPDIF audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Audio Delay (Millisecond)	
0 to **170**	Set the duration (millisecond) of audio delay for SPDIF audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Volume Control	
On **Off**	Enable/disable SPDIF audio signal's volume control check function (through proprietary DB9 to 4 BNC breakout cable).

Volume	
0 to **3.875**	Set the volume level of SPDIF audio signal's check function (through proprietary DB9 to 4 BNC breakout cable).

Check Audio – (HDMI)

Bypass Enable	
On **Off**	Enable/disable the HDMI audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

Source	
Mute **HDMI input embedded audio** **External input AES/AD** **Window 1/2/3/4 SDI embedded audio**	Select the source of HDMI audio signal check function (through proprietary DB9 to 4 BNC breakout cable).

User Logo

Enable	
On **Off**	Allow the display of a screen logo.

Display	
Foreground **Background**	Set the screen logo to be a part of the image in the window (display in foreground) or to appear as a background on the image window.

Hide (Fullscreen mode)	
On **Off**	Allow the display of a screen logo during full screen mode. *Note: This item is only available if **Foreground** was selected in the previous item **Display**.*

Picture	
Upload	Click the "open" button [...] (cell's rightmost portion) to select a bitmap file to upload as the screen logo (i.e. 1920×1200 image will take approximately 180 seconds or more depending on the system's resource allocation).

Position	
X **Y**	Specify the location of the logo on the screen by setting the **X** and **Y** coordinates.

Clock

Enable	
On **Off**	Allow the display of the clock on the screen.

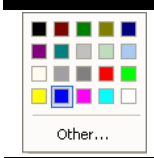
Display	
Digital Clock **Analog Clock**	Select the type of clock to be displayed on the screen for each group. *Note:* *1. This selection will not be available when the **User Logo** is **Enable**d (set **ON**).* *2. User logo is not displayed when analog clock is selected.*

Analog Clock Size	
192×192 / **224×224** / **256×256** / **320×320** / **384×384**	Select the size of the analog clock to be displayed onscreen.

Border Enable	
On **Off**	Allow the display of a border on the digital clock. *Note: This option is only available for digital clock display.*

Hide (Fullscreen mode)	
On **Off**	Hide or display clock during full screen mode.

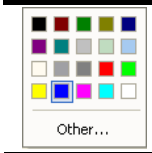
Clock Font Color	
	Set the color of the font appearing on the clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Clock Background Color	
	Set the background color appearing on the clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Clock Background Transparency	
0 to **8**	Set background transparency level of clock. **0** signifies total transparency.

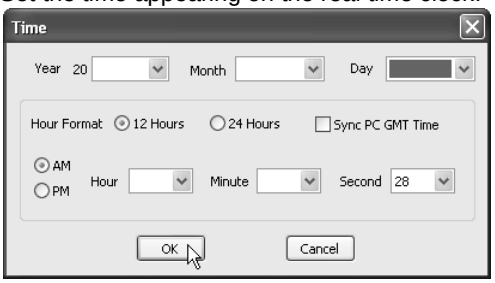
Size	
X **Y**	Specify the location of the clock appearing on screen by setting the X and Y coordinates.
Width **Height**	Specify the size of the clock appearing on screen by setting the **Width** and **Height** values.

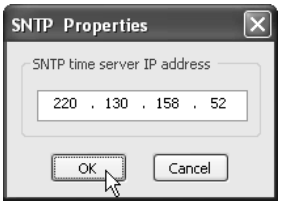
Analog Clock Parts

Hour/Minute/ Second Hand	
	Set the color of the **Hour**/**Minute**/**Second Hand** appearing on the analog clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Time

Source	
RTC **SNTP** **LTC** **Counter** **Sync to Master**	Activate the time code feature by selecting **RTC**, **Counter**, or **LTC**. Select **Sync to Master** to synchronize the module's clock with the Master module's clock. The **SNTP** time code feature allows the module to synchronize the clock with an external SNTP time server. The **IP** port on rear of module can send and receive time code information simultaneously. *Note: **Sync to Master** is only available for the modules belonging to the same group.*

RTC Properties	
Change . . .	Set the time appearing on the real time clock.  *Note: This item is only available when **RTC** was selected.*

SNTP Properties	
Change . . .	Set the **SNTP time server IP address** for synchronizing the clock with an external SNTP time server.  *Note: This item is only available when **SNTP** was selected in **Source**.*

Pause	
On **Off**	Allows the pausing/resumption of the time count. *Note: This item is only available when **Counter** was selected in **Source**.*

Count	
Up **Down**	Select the counting method: **Up** (forward) or **Down** (reverse). *Note: This item is only available when **Counter** was selected in **Source**.*

Reset Counter	
Reset	Allows the resetting of the counter. *Note: This item is only available when **Counter** was selected in **Source**.*

Format	
12-hour **24-hour**	Select the clock display format. *Note: This item is not available when **Counter** was selected in **Source**.*

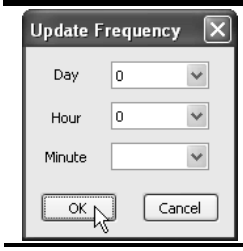
Display Frame	
On **Off**	Enable the video's frame per second (fps) value to be shown on screen. *Note: This item is only available when **LTC** was selected in **Source**.*

Daylight Saving Time	
On **Off**	Enable the Daylight Saving Time function. *Note: This item is not available when **Counter** was selected in **Source**.*

Time Zone	
	Specify the desired time zone shown on a particular monitor.  *Note: This item is not available when **Counter** was selected in **Source**.*

Broadcast Sync Time	
On **Off**	Allows the frame to synchronize the clock with an external SNTP time server. *Note: Only available when **RTC** and **SNTP** were selected in **Source**.*

Sync Time (Day:Hour:Minute)



Set the amount of time between each clock synchronization.
*Note: This item is only available when **RTC** and **SNTP** were selected in **Source**.*

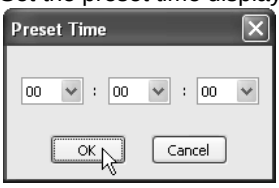
Preset Time

Select Index (For Counter)

Index 1/2/3/4/5/6/7/8 — Select which index preset time to use.
*Note: This item is only available when **Counter** was selected in **Source**.*

Index 1/2/3/4/5/6/7/8

Change . . . — Set the preset time displayed for each input source.



*Note: This item is only available when **Counter** was selected in **Source**.*

Label:Clock

Display

On
Off — Allow the display of the clock's label (default label is "Clock").

BMP Label

On
Off — Allow the display of universal fonts for the on screen clock.

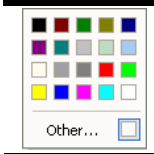
Text

To change the content of label string, directly type in the desired content.

Size

1/2/3/4 — Specify the clock label's size.

Label Font Color



Specify the clock label's font color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Label Background Color

Specify the clock label's background color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

*The following table shows the **Properties** setting for each window in the Rainier 3G.*

Window Enable	
On **Off**	Show or hide the selected window on the monitor. Upon selecting **Off**, the hidden window will appear on the **Available Windows** panel (see below). To show the window again just click and drag the icon into the main screen (can also select and drag multiple windows). 

Display Signal Format	
On **Off**	Allow the display of window's input signal format.

Display AFD	
On **Off**	AFD (Active Format Description) codes are intended to guide DTV receivers and/or intermediate professional video equipment regarding the display of video of one aspect ratio on a display of another aspect ratio. The Rainier 3G can use this information, together with knowledge of the display shape and user preferences, to choose a presentation mode. Upon selecting **On**, the AFD codes will be displayed in the window. *Note: Only available when **On** was selected in **Display Signal Format**.*

Input Source	
1/2/3/4/5/6/7/8	Select input signal source for each window (i.e. if value **1** was selected for 4 windows, then 4 windows would be displaying the same input signal 1).

Size	
X **Y**	Specify the location of the window appearing on screen by setting the **X** and **Y** coordinates.

Size	
Width **Height**	Specify the size of the window appearing on screen by setting the **Width** and **Height** values. Either directly input the values, use the left/right buttons (**Width**) and up/down buttons (**Height**), or use the keyboard's **Ctrl** + left/right arrow (**Width**) and **Ctrl** + up/down arrow (**Height**) keys. *Note: To prevent distortion on the window's image (for "interlaced" input signals), make sure the height of the image (excluding the label and border) **IS NOT** smaller than one-half of the vertical active region of the input source (i.e. if resolution is set at 1080i 50Hz then the image's height must not be less than 540 pixels)*

Lock Position	
On **Off**	Lock or unlock the position of the window appearing on screen.

Label	

Display	
On **Off**	Show the label appearing on the window. Keep in mind that each window supports one line of text.

Display Type	
D-Name	Display the destination name.
S-Name	Display the source name.
UMD	Display the under monitor display.
D-Name/S-Name	Display both the destination name and source name.
D-Name/UMD	Display both the destination name and under monitor display.
S-Name/UMD	Display both the source name and under monitor display.
D-Name/S-Name/ UMD	Display the destination name, source name and under monitor display.

BMP Label	
On/Off	Allow the use of universal fonts for the window's on screen label.

Destination Name	
	Input the text string appearing in the window's label (up to 32 characters).

Size	
1/2/3/4	Specify the window's label size.

Font Color	
	Specify the window label's font color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/ **Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Background Color	
	Specify the window label's background color. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting the **Hue**/**Saturation**/**Luminance** as well as the **Red**/**Green**/**Blue** values.

Fill Background	
On **Off**	Allow the label background to fill the entire width of the window.

Position	
Top **Bottom**	Specify the position of the label.

Outside	
On **Off**	Place the label outside/inside the window.

Aspect Auto Detect	

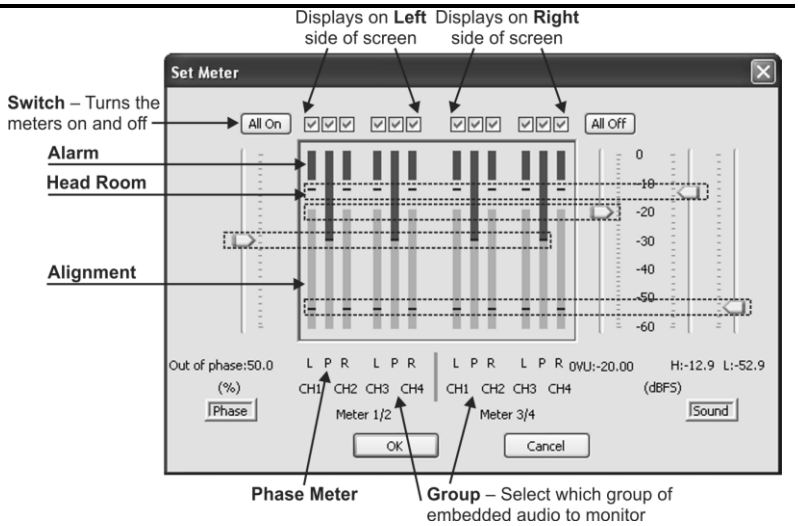
Enable	
On **Off**	Allow automatic detection of the input signal's aspect ratio. For HD-SDI input signal, the aspect ratio will be 16:9. For SD-SDI/composite, the aspect ratio setting can be 4:3/16:9.

Sync Type	
Default **AFD**	Upon selecting **Default**, aspect ratio will be fixed at **16:9** for **HD-SDI** and **4:3**/**16:9** for **SD-SDI**/**Composite**. Upon selecting **AFD**, the "protected area" shown on screen takes priority.

Fit Window Size	
On **Off**	Upon selecting **On**, and if the previous item **Sync Type→Default** was selected; the image will fit the window size (fixed at **16:9** for **HD-SDI** or **4:3/16:9** for **SD-SDI/Composite**). If the previous item **Sync Type→AFD** was chosen; image will fit window size based on affixed AFD code (if included).

Meter	

Meter Enable	
On **Off**	Allow the audio meter for the particular window to appear on screen.

Layout and Alarm Trigger	
Change . . .	 ❖ ***Switch****: turn on/off any of the following meters* ■ METER1_L ■ METER3_L ■ PHASE1 ■ PHASE3 ■ METER1_R ■ METER3_R ■ METER2_L ■ METER4_L ■ PHASE2 ■ PHASE4 ■ METER2_R ■ METER4_R ❖ ***Group****: **Meter**'s **1** & **2** and **Meter**'s **3** & **4** can be assigned to any of 4 groups. However, (**1** & **2**) and (**3** & **4**) cannot share same **Group**.* ❖ ***Phase Meter****: 50% (default); When monitoring a stereo signal, the coherence between the 2 channels (i.e., how similar they are) greatly affects its mono compatibility. The phase meter indicate the relative phase of the 2 channels and thereby provide some measure of mono compatibility. Phase meter reading in the upper half of the scale indicate acceptable mono compatibility, whereas lower half readings warn of a potential compatibility problem.* ❖ ***Alignment*** *(VU – volume unit): –20 to –60 dBFS (default); user adjustable; also known as the safe range.* ❖ ***Alarm****: 0 to –9.9 dBFS (default); depending on "alignment" setting the "alarm" range is equivalent to the upper half of 0 dBFS minus previous "alignment" item setting.* ❖ ***Head Room****: –10 to –19.9 dBFS (default); depending on "alignment" setting the "head room" range is equivalent to the lower half of 0 dBFS minus "alignment" setting; also known as the head room before alarm range is reached.* ***dBFS*** *(Decibels Relative to Full Scale)* The Rainier 3G is capable of displaying embedded audio as VU (volume unit) meters inside the video window. Embedded audio is divided into 4 groups (**CH1** to **CH4**), with a master (**Meter 1/2**) and secondary channel

Layout and Alarm Trigger	
	(**Meter 3/4**) for each group. Allows the display of the left and right VU meter of either the master or secondary channel on the left and right side of the window just as the menu depicts. Adjust the **Phase** (**Out of phase** slider), **VU** (one slider), **Sound** (**H/L** sliders). *Note: If there is no audio detected, NO VU meters will be shown.* Audio Meters & Groups: Along with the video signal(s), each input signal may contain up to 16 channels (8 pairs) of embedded audio. Typically, 48kHz, 20-bit audio; (extendable to 48kHz, 24-bit audio). Use the **Group** setting to select which group of embedded audio to monitor. In accordance with SMPTE standards incoming audio may be embedded in up to 4 groups with each group containing 4 channels. For example; a simple stereo signal would typically use: **Ch**annels **1** & **2** which can also be thought of as **Meter 1**-**L**eft and **Meter 1**-**R**ight. The Rainier 3G is capable of displaying 8 Channels (2 Groups) at a time. **Meter**s **1/2** are always displayed on the left side of the screen and **Meter**s **3/4** are always displayed on the right side of the screen. However, associate any Group to any **set** of meters which, for instance; would allow **Group 2** to be displayed on the left side of the screen. Recap: Any of the 4 **Group**s can be assigned to **Meter**s **1** & **2** and any of the 4 **Group**s can be assigned to **Meter**s **3** & **4**. However, **Meter**s **1** & **2** and **Meter**s **3** & **4** can never share a group. For example; Group 1 can never be set to Meters 1, 2, 3 & 4 all at the same time. Upon changing the audio source entering the **SDI IN** port; make sure to refresh the audio meters by either re-selecting the "On" option in "Meter Enable" menu or physically disconnecting and then reconnecting signal cable entering **SDI IN** port. Refreshing audio meters is necessary for **Meter**s **3** & **4** to display correct dynamic meter bars.

Outside	
On **Off**	Allow the location of the audio meter to be outside the video area

Meter12 Group Meter34 Group	
1/2/3/4	Select the audio meter's group (embedded audio). *Note for SDI (3G/HD) signal: Selecting the primary channel without embedded audio will cause the secondary channel to lose its audio output*

Width	
2/4/6/8/10/12/14	Select the audio meter's width.

Ballistics	
PPM **VU**	Select the meter's ballistics. Meters which monitor audio levels are typically 1 of 2 varieties: **VU** (Volume Unit) or **PPM** (Peak Program Meters). Though both perform the same function, they accomplish the function in very different manners. A **VU** meter displays the average volume level of the audio signal. A **PPM** displays the peak volume level of the audio signal. For a steady state sine wave tone, the difference between the average level (VU) and the peak level (PPM) is about 3 dB. But for a complex audio signal (speech or music), the difference between the average level (VU) and the peak level (PPM) can be 10 to 12 dB. This difference between the reading of a VU meter and a PPM is known as the crest factor.

A.A Gain	
0.25 to **6.6875**	Set the audio meter's analog audio gain's value.

Safe Area

Enable

On **Off**	Display the safe area markers.

Left/Right Top/Bottom

0 to **100**	Freely adjust the horizontal (**Left**/**Right**) and vertical (**Top**/**Bottom**) markers. *Note: This item is only available when the previous item is set **On**.*

Image Border

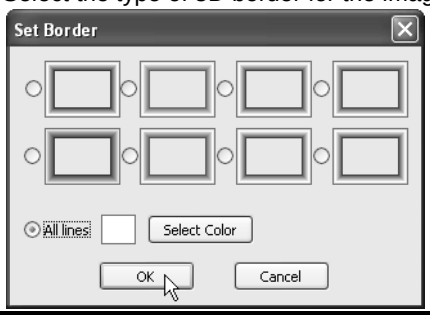
Enable

On **Off**	Display the image border.

Width

2/**4**/**6**	Set width of the image border.

Default Type

Set Other Type	Select the type of 3D border for the image. 

Color

Line 1/2/3/4/5/6

	Change the image border color as each pixel/line can have a different color.

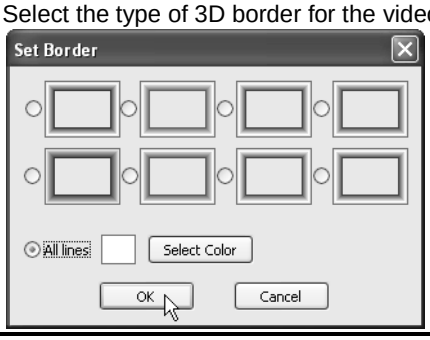
Video Border

Enable

On **Off**	Display the border of the video.

Width

1 to **6**	Set the width of the video border.

Default Type	
Set Other Type	Select the type of 3D border for the video. 

Color	

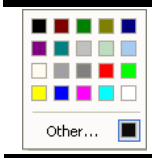
Line 1/2/3/4/5/6	
	Change the video border color as each pixel/line can have a different color.

Image Adjustment	

Brightness	
0 to **255**	Adjust the brightness or darkness of the input signal. This control can correct exposure problems caused by overexposure (too much light) or underexposure (too little light).

Saturation	
0 to **127**	Adjust the color saturation of the input signal. For example, by moving the slider to the right, increase the vibrancy of a blue sky in an image. By moving the slider to the left, reduce the vividness of color. Create a black-and-white image effect by moving the slider all the way to the left, so that all color in the image is removed.

Contrast	
0 to **127**	Adjust the difference in tone between the dark and light areas of the input signal. Moving the slider to the right increases the contrast, making the light areas lighter and the dark areas darker. For example, if the image has a dull, gray tone, sharpen the detail by increasing the contrast.

Hue	
–128 to **127**	Adjust the intensity of color of the input signal.

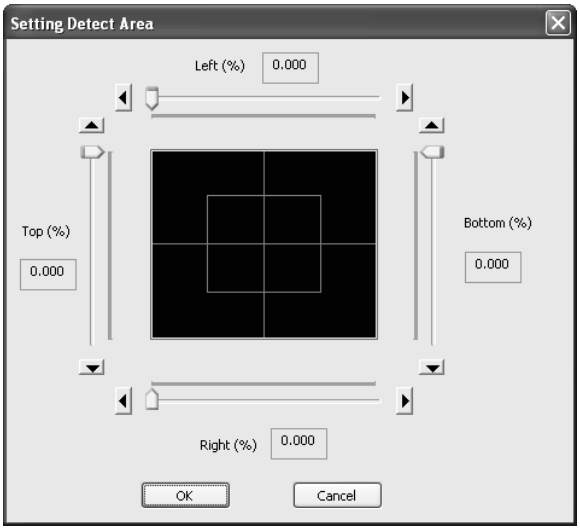
Sharpness	
0 to **255**	Adjust the sharpness to increase contrast, enhance image edges, or reduce shading of the input signal.

Alarm	

Enable	
On **Off**	Activate the various alarm features.

Video Alarm

Enable	
On **Off**	Activate the video signal alarm feature.

Video Detect Area (L/T/R/B, %)	
Change . . .	Freely adjust horizontal (**Left** and **Right**) and vertical (**Top** and **Bottom**) markers to set the scope of area to be monitored when “no video” occurs.  *<u>Note</u>: This item is only available when the previous item is set **On**. If the **Safe Area** item has been previously set, **Video Alarm** will temporarily use the mask area border to help set **Video Alarm**.*

Video Black

Enable	
On **Off**	Enable the “video black” alarm feature.

Threshold (mV)	
0 to **140**	Set the brightness level of the image when the “video black” alarm will be triggered. The lower the “threshold” set, the smaller the decrease of average brightness in the “detect area” needed to trigger the alarm.

Set Duration (Second)	
1 to **255**	Set the “video black” alarm response time (seconds). If the “video black” alarm feature is triggered, the alarm will be activated after the amount of time set here.

Video Freeze

Enable	
On **Off**	Enable the “video freeze” alarm feature.

Sensitivity Level	
1 to **255**	Set the motion sensitivity of the image when the “video freeze” alarm will be triggered. If the “sensitivity” level is set very high, a slight difference in frame by frame content comparison in the “detect area” will trigger the alarm.

Set Duration (Second)	
1 to **255**	Set the “video freeze” alarm duration (seconds). If the “video black” alarm feature is triggered, the alarm will be activated after the amount of time set here.

Video Black *(no video) and* ***Video Freeze*** *cannot happen simultaneously. When both features are enabled, the* ***Video Black*** *feature will take precedence.*

Border

Red Color	
On **Off**	Enable the image border to change to the color **Red** when a video alarm is activated.

Flash	
On **Off**	Enable the image border to **Flash** when a video alarm is activated.

Audio Alarm

Enable	
On **Off**	Activate audio loss detection to be monitored for a single channel or group.

No Audio Alarm (Single Meter)	
On **Off**	Enable/disable the **No Audio Alarm**, which is triggered when an audio signal out of the multiple signals selected is lost.

Border

Red Color	
On **Off**	Enable the image border to change to the color **Red** when an audio alarm is activated.

Flash	
On **Off**	Enable the image border to **Flash** when an audio alarm is activated.

Response Time

Signal In	
0.25 to **49.75**	Set the **Signal In** alarm response time (seconds). If the audio alarm is activated, but the signal is restored, then the alarm will be cancelled after the amount of time set here.
Signal Out	
0.25 to **49.75**	Set the **Signal Out** alarm response time (seconds). If the audio alarm is triggered, the alarm will be activated after the amount of time set here.

Alarm Sound	
Video	
Enable	
On **Off**	Activate alarm sound when no video / video black / video freeze is detected in a particular window. *Note: To enable alarm sound playback, click "Start Alarm Sound (System)" icon (will become grayed-out).* 
Set Duration (Second)	
5 to **3600** seconds **Always on**	Set "video alarm" sound duration (seconds) for specific window. *Note: To shut off alarm sound playback before the time set has elapsed, click the "Stop Alarm Sound (System)" icon.* 
File	
Change . . .	Click the cell's rightmost portion "change" button [...] to select an audio file as the video alarm sound for the particular window. *Note: Only the "WAV" audio file format is supported.*
Audio	
Enable	
On **Off**	Activate alarm sound when no audio is detected in a window. *Note: To enable the alarm, click the "Start Alarm Sound (System)" icon (will become grayed-out).* 
Set Duration (Second)	
5 to **3600** seconds **Always on**	Set "audio alarm" sound playback duration (seconds) for a specific window. *Note: To shut off alarm sound playback before the set duration has elapsed, click the "Stop Alarm Sound (System)" icon (which will become grayed-out).* 
File	
Change . . .	Click the cell's rightmost portion "change" button [...] to select an audio file as the video alarm sound for the particular window. *Note: Only the "WAV" audio file format is supported.*

Table 5-1 Phoenix-Q Software: Setting Group/Module Properties

5.1 Copy Window Properties

*Right-click an item (with icon) on the **Properties** window (except with icon) and follow the instructions in Figure 5-2 to quickly apply the settings to –*

1. *all the windows (click **Module→All**)*
2. *to a particular window (click **Module→Image 1/2/3/4**)*
3. *all the modules belonging to the same group (click **Group**)*
4. *to the entire system (click **System**)*

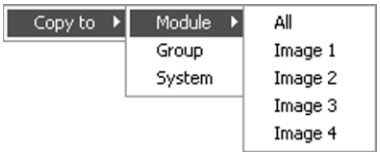


Figure 5-2 Phoenix-Q Software: Right-click Item to Quickly Apply Settings to Module/Group/System

The properties of a window can be copied to another window on the same frame, as well as between cascaded chassis, by following the steps below.

*Step 1. Right-click a window and select **Copy**.*

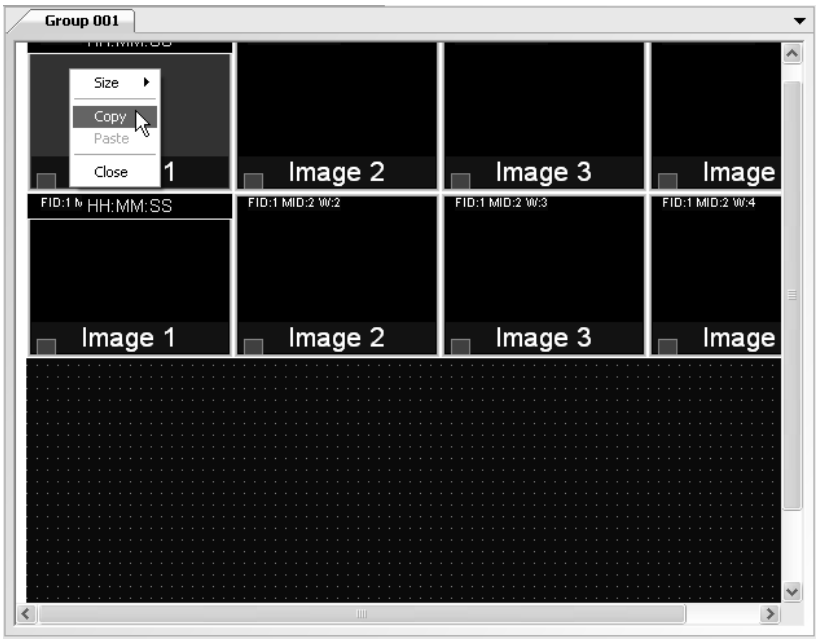


Figure 5-3 Phoenix-Q Software: Right-click Window and Click "Copy"

The properties that can be copied include the following:

- ✓ *Window size:*
  1. *width*
  2. *height*
- ✓ *Label:*
  1. *on/off switch*
  2. *type (ANSI or BMP label)*
  3. *font color*
  4. *background color*

✓ *Border:*
1. on/off switch
2. width
3. color

Step 2. Select a window to copy the properties to and right-click the window and then select ***Paste****.*

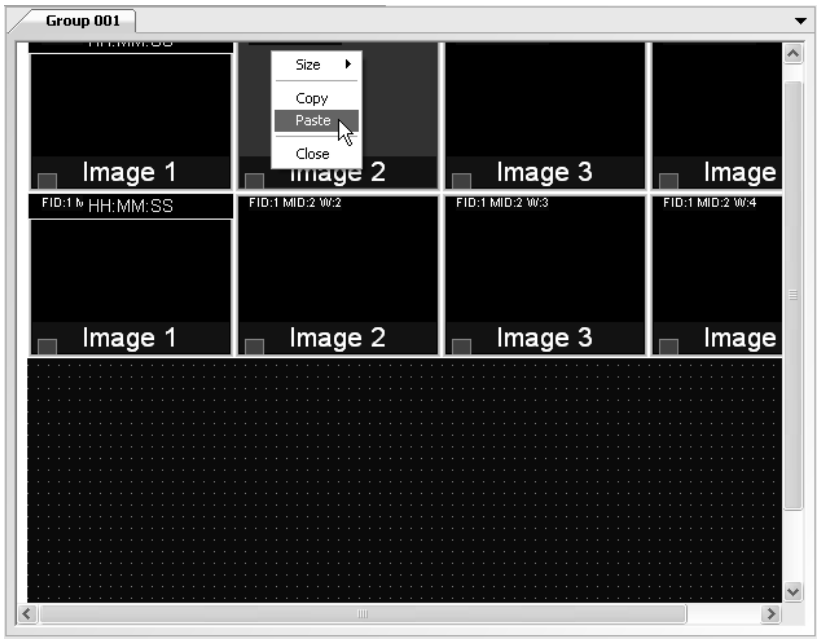


Figure 5-4 Phoenix-Q Software: Right-click Window and Click “Paste”

Close a particular window by clicking ***Close****. The Window would appear as an icon on the* ***Available Windows*** *pane. To activate the window again just use the mouse to drag the window into the main area.*

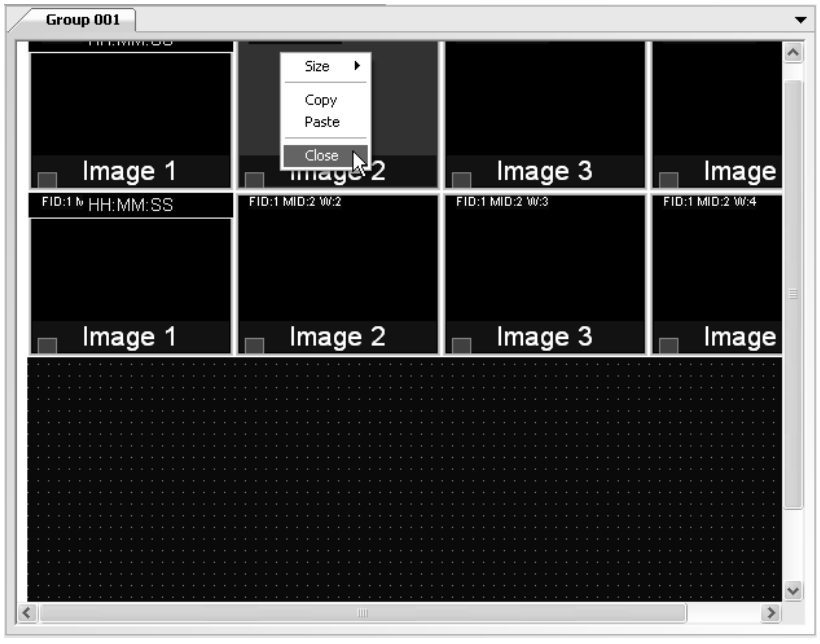
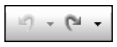
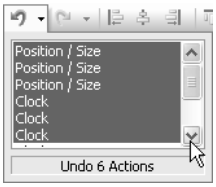


Figure 5-5 Phoenix-Q Software: Right-click Window and Click “Close”

5.2 Undo/Redo Changes

Click the  to undo the previous step; while click the  to redo the previous step that was undone.

To undo 

or redo 

multiple actions click the drop-down arrow symbol beside the undo/redo button, then click each actions to be undone or redone. Use the scrollbar to scroll up and down to highlight more than 6 actions.

The following actions will clear the list of undo/redo actions:

- ✓ *load/save preset file*
- ✓ *set display resolution*
- ✓ *group reset*
- ✓ *change group setup*
- ✓ *set to default state*

5.3 Align Windows

Align a set of windows horizontally or vertically. Can also choose how the windows will be lined up in relation to each other. For example, clicking the **Align Right** button () aligns the right edges of the windows with each other.

To align a set of windows horizontally/vertically:

*Step 1. Select the windows by clicking the first window with the left mouse button and then clicking the succeeding windows using the left mouse button while simultaneously pressing the keyboard's **Ctrl** key.*

*Other computer applications which use a **Ctrl** key + left mouse button hot-key may disable the Phoenix-Q software's multiple window selection if they are running at the same time. Close the other programs before using the **Ctrl** key + left mouse button in Phoenix-Q.*

Step 2. To indicate how the windows are to line up with each other click one of the following buttons. The alignment follows the position of the last window selected.

- ✓ *top* 

- ✓ *middle* 

- ✓ *bottom* 

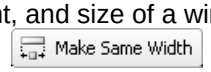
- ✓ *left* 

- ✓ *center* 

- ✓ *right* 

*To undo alignment of windows just click the **Undo** button repeatedly according to the number of windows that were aligned with the last selected window.*

5.4 Copy Window Size

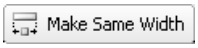
This function allows a set of windows to copy the width, height, and size of a window appearing on screen. For example, clicking the **Make Same Width** button () would cause the selected windows to have the same width.

To modify the window size:

*Step 1. Select the windows by clicking the first window with the left mouse button and then clicking the succeeding windows using left mouse button while simultaneously pressing the keyboard's **Ctrl** key.*

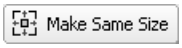
*Other computer applications which use a **Ctrl** key + left mouse button hot-key may disable the Phoenix-Q software's multiple window selection if they are running at the same time. Close the other programs before using the **Ctrl** key + left mouse button in Phoenix-Q.*

Step 2. To indicate how the windows are to appear on screen, click one of the following buttons. The windows will follow the width/height/size of the last window selected.

✓ *copy width* 

✓ *copy height* 

*To prevent distortion on the window's image (for "interlaced" input signal), make sure the height of the image (excluding label and border) **IS NOT** smaller than one-half of the vertical active region of input source (i.e. if resolution is set at 1080i 50Hz then the image's height must not be less than 540 pixels).*

✓ *copy size* 

*To undo window's size modification just click the **Undo** button repeatedly according to the number of windows that were modified except the last selected window.*

*By default the main display area of the Phoenix-Q program is shown at a **50 %** magnification; meaning the entire layout (single or multiple windows) is visible at one-half magnification within the main display area. However, set a custom level of magnification for viewing windows. Zoom in (**100 %**) to get a closer look at image detail; zoom out to (**25 %**) view a larger portion of the image or the entire image.*

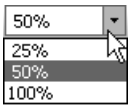


Figure 5-6 Phoenix-Q Software: Set Custom Level Magnification for Viewing Windows

5.5 Start/Stop Alarm Sound and Special Layout

Click the respective "start/stop alarm sound" buttons to allow/terminate alarm sound.

Before activating the special screen layout when no video occurs, make sure to enable the feature. To do so, click **System→Options** on the Phoenix-Q software's drop-down menu.

The highlighted item (in Figure 5-7) must be set at **On**.

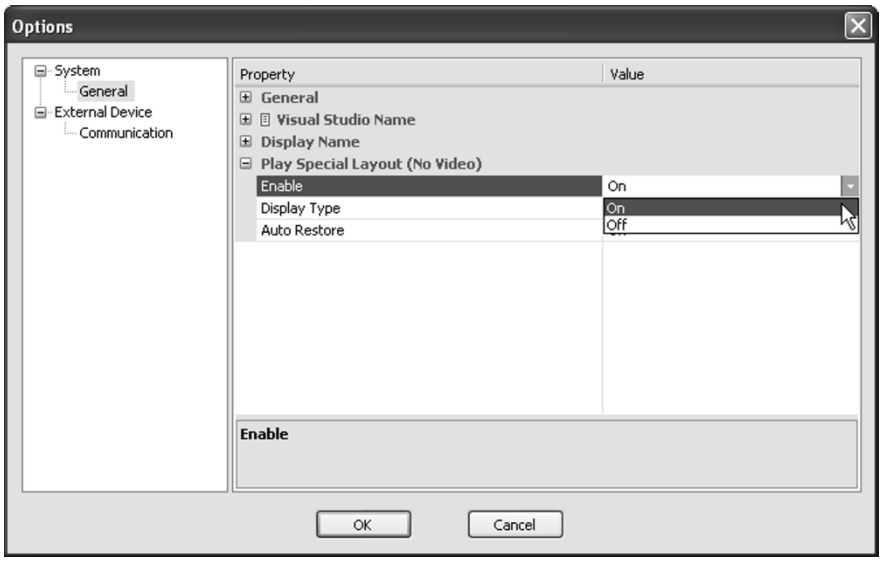


Figure 5-7 Options: Enable Special Layout

Otherwise, the icon would be disabled (grayed-out). Click the third icon (the boxed icon in Figure 5-8) to activate special screen layout alert when **No Video** occurs.

Figure 5-8 Phoenix-Q Software: Activate Special Layout Button

Click the last icon when the special screen layout alert occurs and to deactivate it. Notice that when the special screen layout alert occurs, many functions on the Phoenix-Q software are disabled (i.e. **Group View** window, **Properties** window, main layout area move or resize window, etc).

Figure 5-9 Phoenix-Q Software: Deactivate Special Screen Layout Alert Button

5.6 Setting Group Parameters

The settings here only affect the cards included in a particular group. Upon right-clicking a particular Group # (i.e. **Group 001**) heading portion the following menu will appear.

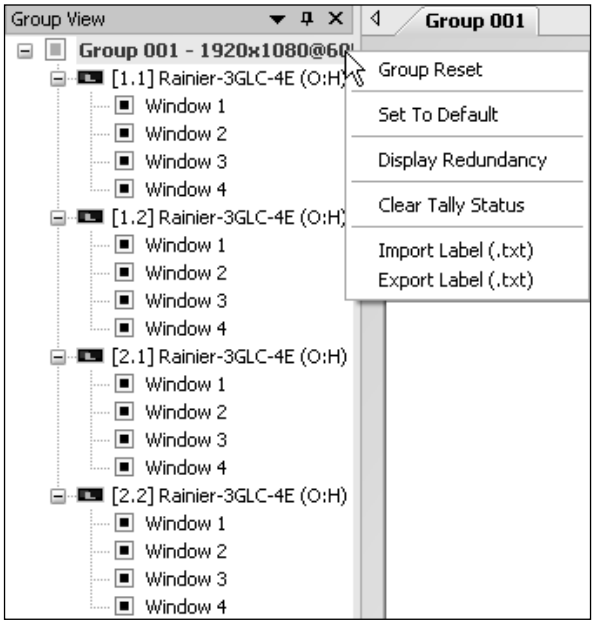


Figure 5-10 Phoenix-Q Software: Set Group Parameter

✓ *Click **Group Reset** to refresh all cards belonging to the same group.*

✓ *Click **Set to Default** to return all cards belonging in the same group to its default setting:*
- ✓ *1080p output resolution, 60 Hz vertical frequency*
- ✓ *Normal output timing*
- ✓ *Default preset layout (eight windows per row; total number of rows depending on number of cards on each chassis as well as the total number of cascaded chassis if any)*
- ✓ *Label is set "On" (background color "dark grey" with RGB value of 31; font color "grey" with RGB value of 200; fill background set "On," transparency set 6)*
- ✓ *Border is set "On" (2 pixel in width, line 1 color "grey" with RGB value of 58, line 2 color "black" with RGB value of 0)*
- ✓ *Clock is set "Off"*
- ✓ *Meter is set "Off"*
- ✓ *Alarm is set "Off"*
- ✓ *Signal Type is set "Off"*

✓ *Click **Display Redundancy**.*

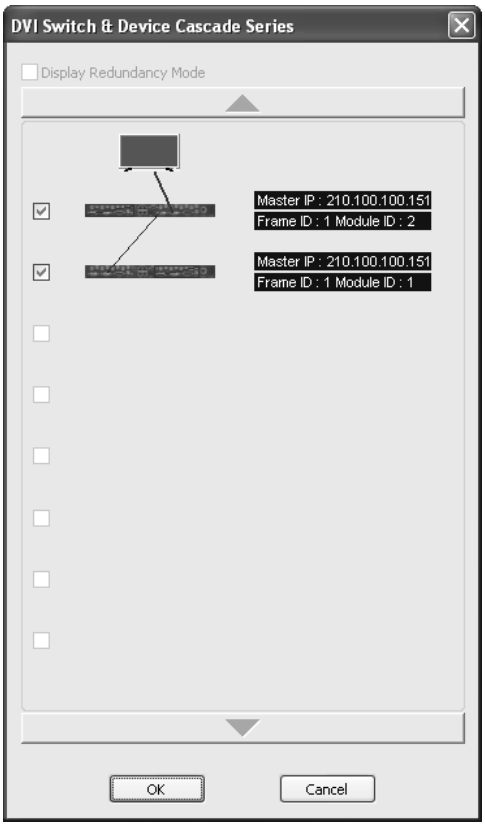


Figure 5-11 Phoenix-Q Software: “DVI Switch & Device Cascade Series” Window

Click the checkbox to enable or disable "cascade in" for each ID number. Use the mouse to change the ID number designation (by clicking the module and dragging up or down using the ✋ symbol); this will not affect the actual physical connection of the Rainier 3G.

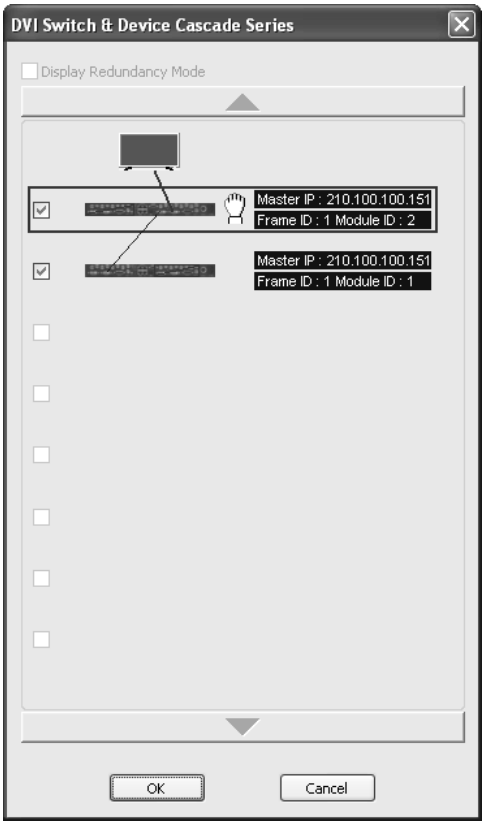


Figure 5-12 Phoenix-Q Software: Drag to Change the ID Number Designation Only

Make sure the ID number designation matches the actual physical connection of the cascaded Rainier 3G.

Example

The DVI output of last module of each group is feeding the monitor. The VGA output of the last module of each group is also connected to the background input of the first module of the other group. During normal operation the input of the first module of each group is disabled (switched to default black background).

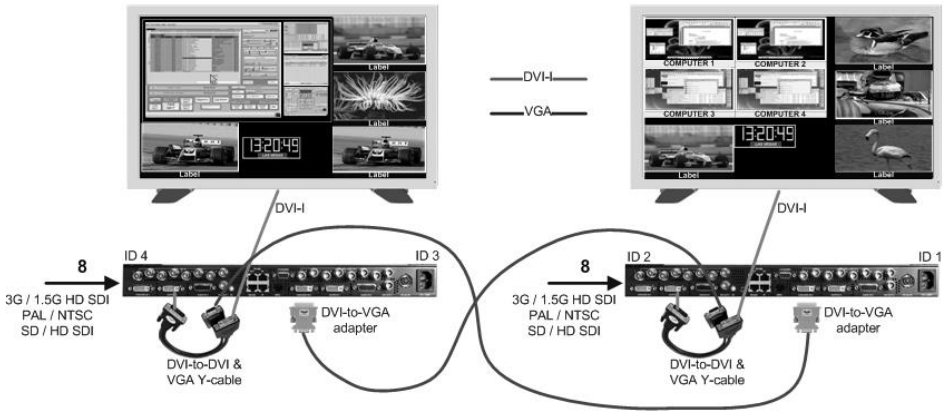


Figure 5-13 Sample Cascade Application Scenario

The following setting is shown to result in the above sample scenario. Take note that the **Display Redundancy Mode** item must be enabled to allow each module to output to multiple monitors.

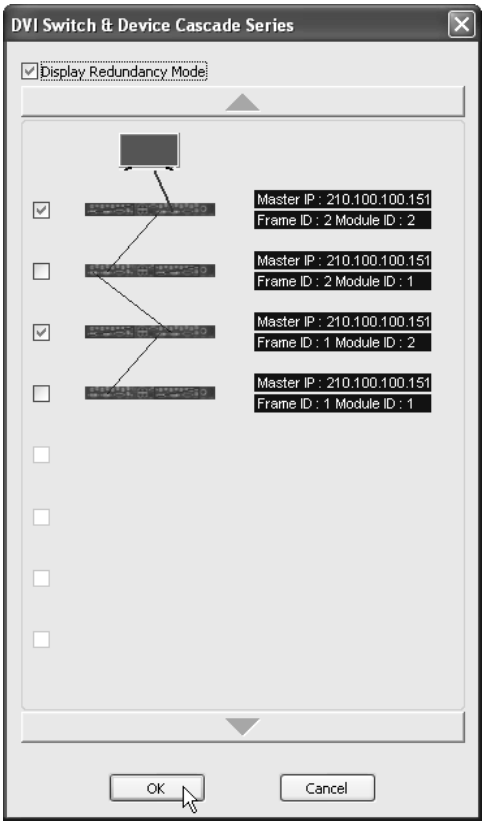


Figure 5-14 Phoenix-Q Software: Enable “Display Redundancy Mode” Option

In case one monitor fails, a preset combining all the inputs of both groups can be recalled through the looping cable. In case the other monitor fails, another preset addressing this situation can be recalled. The same concept can be extended to more than two groups.

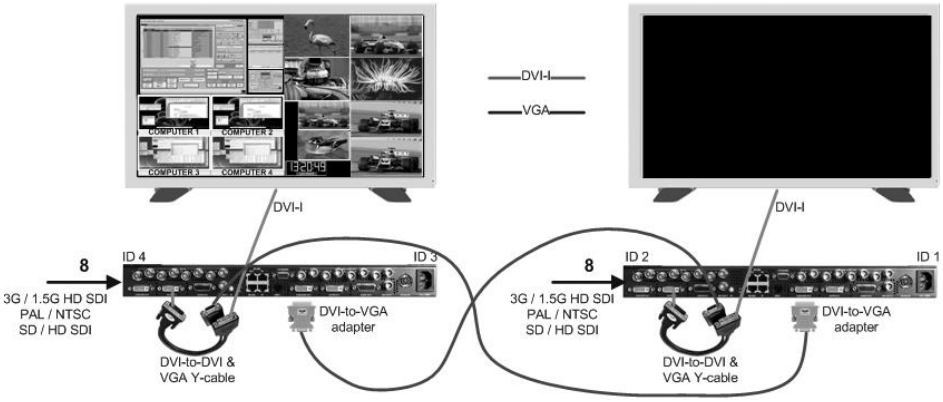


Figure 5-15 Inputs of Both Groups Recalled Through the Looping Cable

The following setting is shown to affect the above sample scenario. To combine multiple displays into one monitor (as in Figure 5-15), the user must follow the setting below.

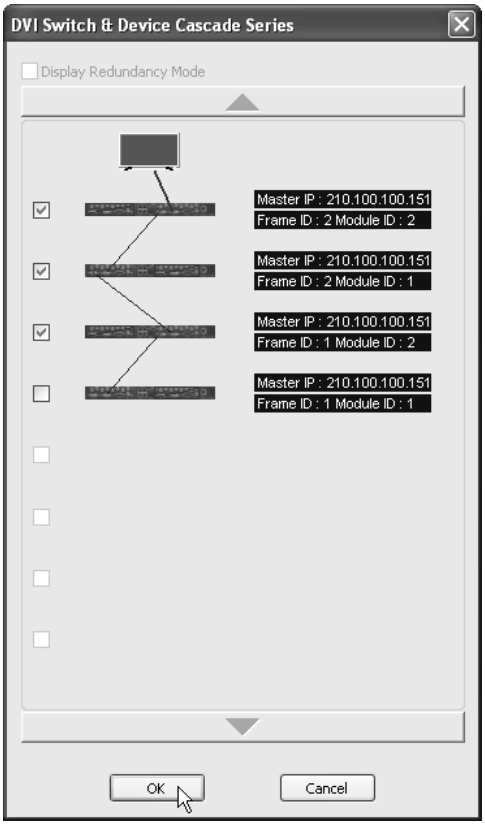


Figure 5-16 Phoenix-Q Software: Setting to Allow Recall of Preset Combining Inputs of Both Groups

✓ *Click **Clear Tally Status** to clear up any tally that has appeared on screen.*

✓ *Click **Import (.txt)→Label** to apply the labels created. Click **Export (.txt)→Label** to edit the labels externally. The most convenient way is to export the label file as:*
  ✓ ***ANSI** – up to 30 characters; can contain the English characters A–Z, a–z, 0–9, or*
  ✓ ***BMP Label** (Unicode – up to 15 characters; useful for displaying text other than the English language) **txt** file*

1. *Settings here will only affect all the labels of the windows in the Group compared to changing all the labels of the Groups in the System as explained in page 53. But the steps are the same.*
2. *These items are only available when the computer is connected to the Rainier 3G.*

5.7 Briefing

This function allows cycling between presets for a slideshow effect.

*Step 1. Right-click the title bar and when the menu appears, click **Add**.*

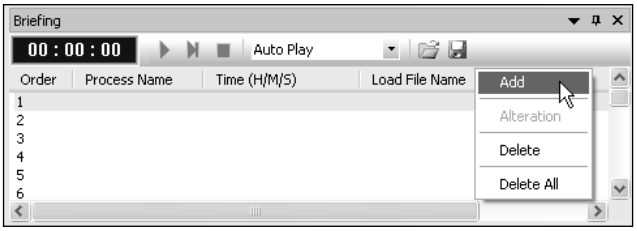


Figure 5-17 Briefing: Click “Add”

*Step 2. Enter the **Process name**, specify the **Time (H : M : S)**, then select the previously saved preset **File**. Click **OK** to continue. Continue adding new processes.*

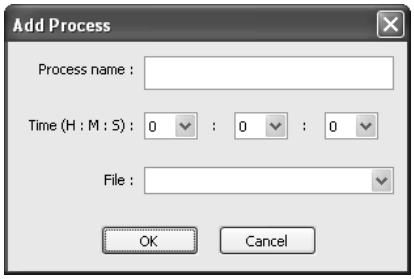


Figure 5-18 Briefing: Click “Add”

*Step 3. On the drop-down menu select **Auto Play**, **Auto Play (Repeat)**, **Manual**, or **Manual (Repeat)**. Click play to start the sequence.*

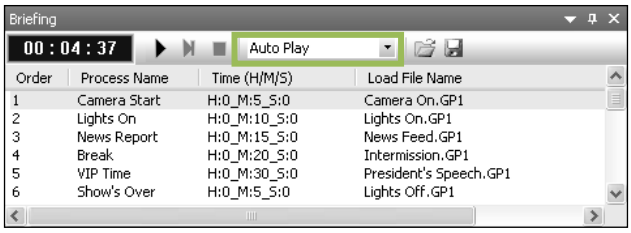


Figure 5-19 Briefing: Select Type of Playback

5.8 Log Window

Aside from viewing the various system messages in Phoenix-Q, export the log messages as a text file. This is most helpful when monitoring incidences of video loss/freeze/black, audio high/low/lost, metadata display (AFD) Active Format Description and closed caption detection.

*Step 1. Right-click anywhere inside **Log Window** and when the menu appears, click **Export**.*

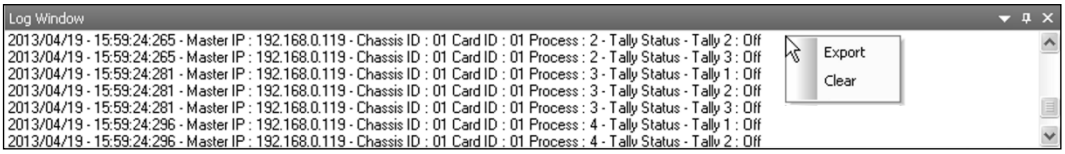


Figure 5-20 Log Window: Right-click “Export”

*Step 2. Assign a filename and click **Save** to store the data.*

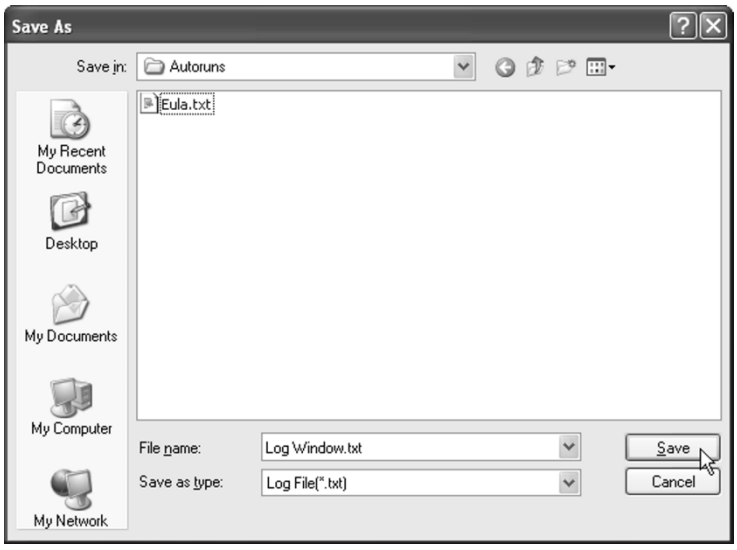


Figure 5-21 Phoenix-Q Software: Save Log Window Information

Refer also to the computer's hard drive (C:/Avitech/Backup/Backup_date_time/Log/ folder) for various system log messages text file.

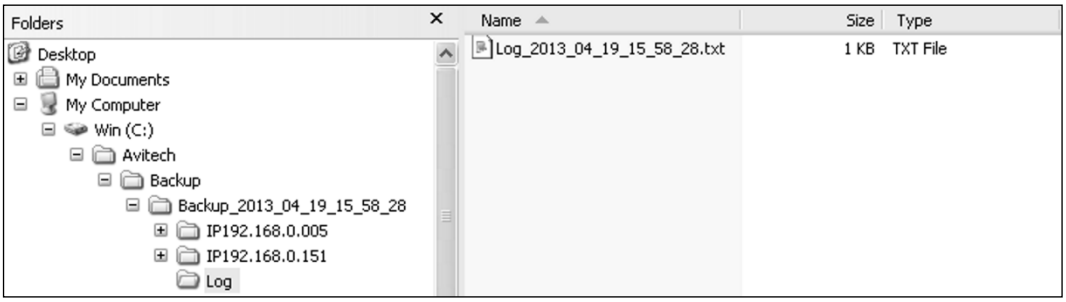
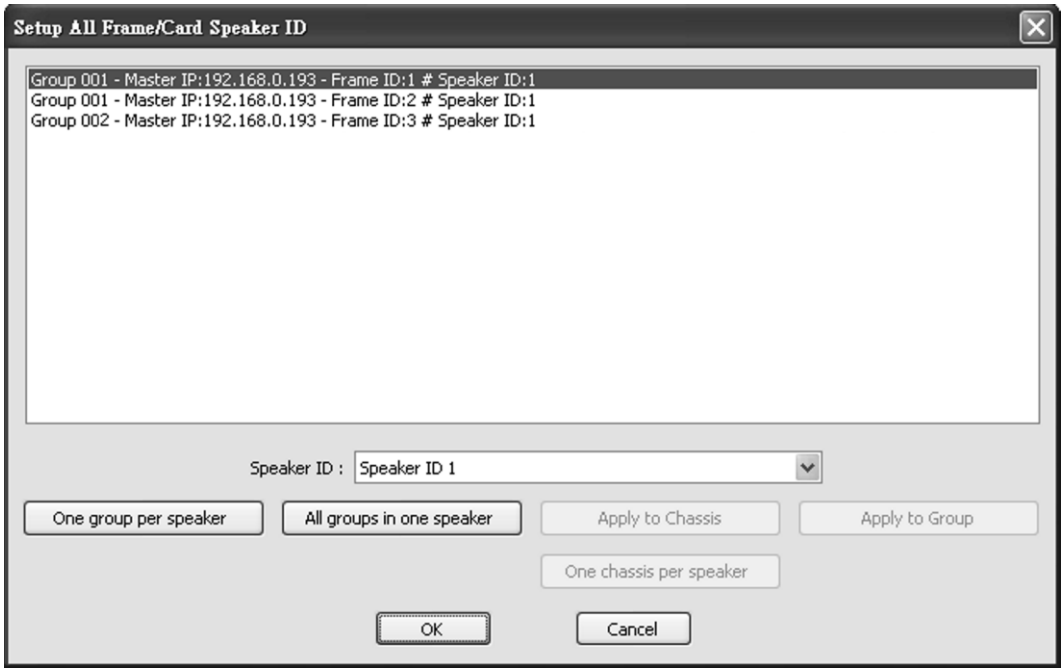


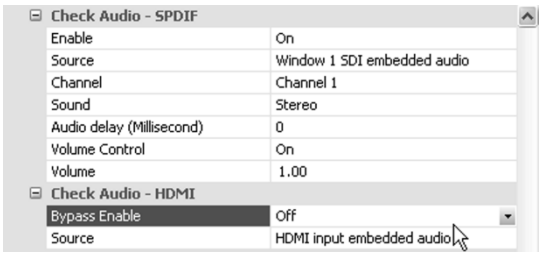
Figure 5-22 Phoenix-Q Software: Location of Auto-save Log File

Appendix A Setting Up Audio

Step 1. ***For two or more cascaded frame IDs***
System→Setup Speaker ID *allows the assigning of where each module will output to. Make sure that two or more cascaded frame's modules belong to the speaker ID.*



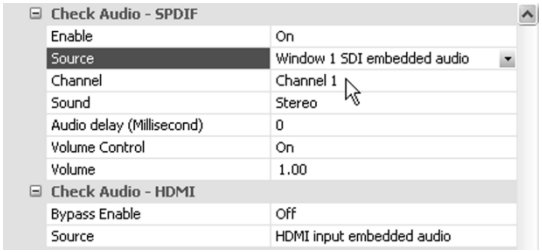
Step 2. *To allow audio monitoring through the monitor speakers connected to "OUTPUT-1" or "OUTPUT-2" port of the frame, make sure to select the correct settings (as displayed in the figure below) under "Check Audio – HDMI" which is located under the "Properties" section of Phoenix-Q.*
(Bypass Enable and Source).



"Source" will be disabled upon selecting "On" in "Bypass Enable."

Step 3. *To allow the cascading of the audio signal from first frame ID to the next frame ID (and so forth), each frame ID must have the proprietary DB9 to 4 BNC breakout cable connected to its "LTC/AUDIO" port (refer to page-9 of this manual for the pin assignment).*
Then connect the SPDIF OUT of the first frame ID's BNC breakout cable to the SPDIF IN of the next frame ID's BNC breakout cable (and so forth).

Step 4. Make sure to have the correct settings for the items under "Check Audio – SPDIF" (as displayed in the figure below) (Enable=On; Source; Channel; Sound; Audio delay (millisecond); Volume Control; and Volume)

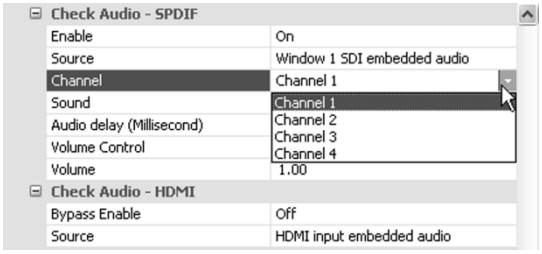


Step 5. Select the audio channel to monitor through proprietary DB9 to 4 BNC breakout cable (SPDIF).

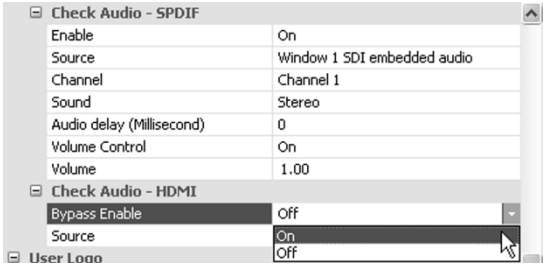
For an 8-channel (7.1) surround audio system, select from any of the four channels listed in the drop-down menu (Channel 1/2/3/4)

For a 6-channel (5.1) surround audio system, select from any of the first three channels listed in the drop-down menu (Channel 1/2/3)

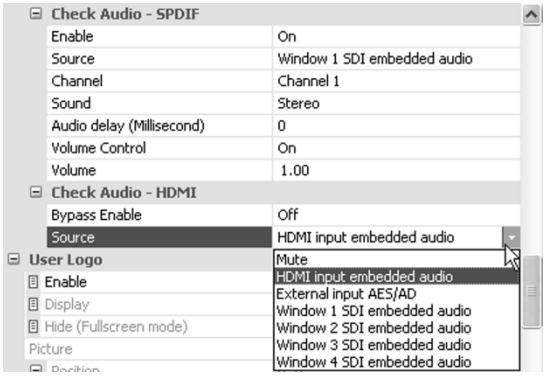
For a 2-channel (stereo) audio system, only the first channel is applicable (Channel 1)



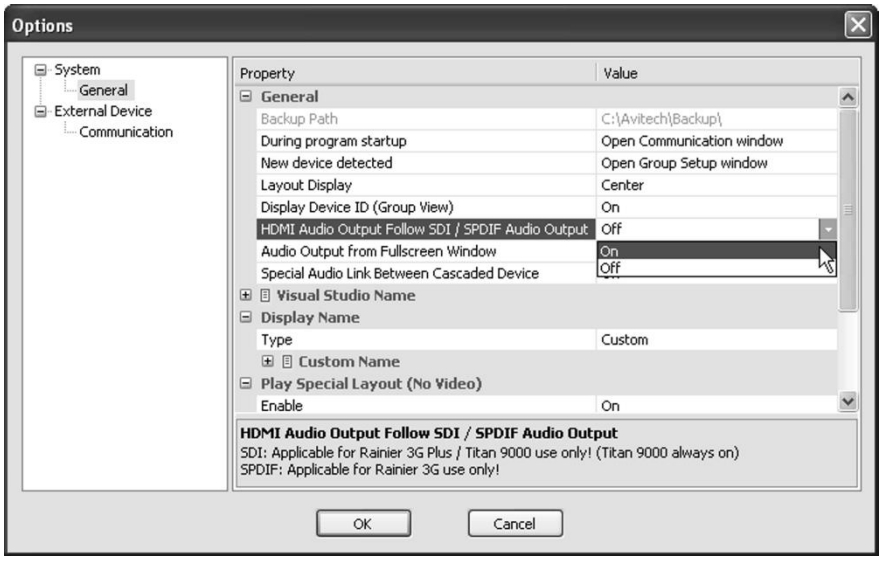
Step 6. <u>Note</u>: This step is not applicable if "System"→"Options"→"General"→"HDMI Audio Output Follow SDI / SPDIF Audio Output"→"On."
Select the output type of embedded audio signal for Bypass Enable (when available).
If "Off" was selected, Phoenix-Q allows output to come from the embedded audio signal of the selected "Source" image (next item).
If "On" was selected, the software allows audio output from another internally cascaded module or another externally cascaded frame's module.



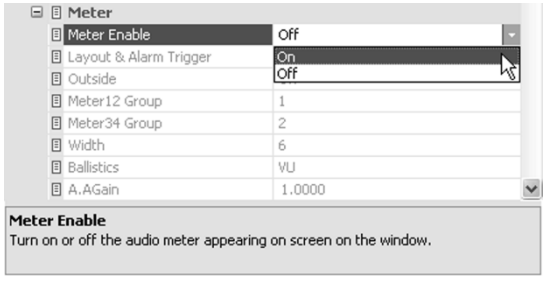
Step 7. *<u>Note</u>: This step is not applicable if "System"→"Options"→"General"→"HDMI Audio Output Follow SDI / SPDIF Audio Output"→"On."*
Select the source of embedded audio signal to output on "OUTPUT-1" or "OUTPUT-2" port of the particular module.
Only applicable when "Off" was selected on the previous item "Bypass Enable."



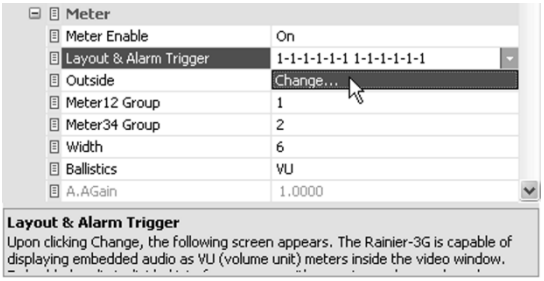
Step 8. *To allow the HDMI audio output to have the same audio output as SPDIF ("Properties" portion – "Check Audio – SPDIF"→"Source"), make sure "HDMI Audio Output Follow SDI / SPDIF Audio Output" (found by clicking the "Options" item under the "Systems" tab in the toolbar) is enabled (set "On"). Click the drop-down button (displayed in the figure below) to select "On."*

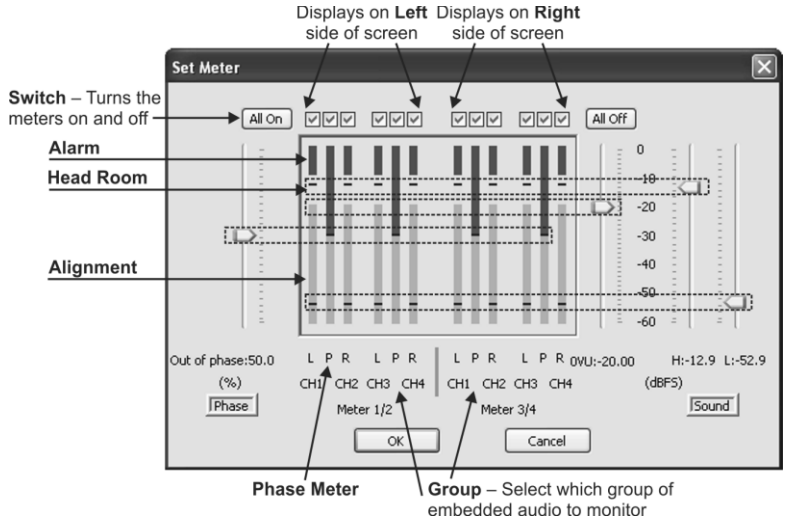


Step 9. *Turn on audio meter monitoring.*



Step 10. Click "Change" in "Layout & Alarm Trigger."





- ***Switch****: turn on/off any of the following meters*
  - METER1_L
  - PHASE1
  - METER1_R
  - METER2_L
  - PHASE2
  - METER2_R
  - METER3_L
  - PHASE3
  - METER3_R
  - METER4_L
  - PHASE4
  - METER4_R
- ***Group****: **Meter**s **1** and **2** and **Meter**s **3** and **4** can be assigned to any of the four groups, as long as **Meter**s **1** and **2** and **Meter**s **3** and **4** do not share the same **Group**.*
- ***Phase Meter****: 50% (default); When monitoring a stereo signal, the coherence between the two channels (i.e., how similar they are) greatly affects its mono compatibility. The phase meter indicate the relative phase of the two channels and thereby provides some measure of mono compatibility. Phase meter reading in the upper half of the scale indicate acceptable mono compatibility, whereas readings in the lower half warn of a potential compatibility problem.*
- ***Alignment*** *(VU – volume unit): –20 to –60 dBFS (default); user adjustable; also known as the safe range.*
- ***Alarm****: 0 to –9.9 dBFS (default); depending on "**alignment**" setting the "alarm" range is equivalent to the upper half of 0 dBFS minus previous "**alignment**" item setting.*
- ***Head Room****: –10 to –19.9 dBFS (default); depending on "**alignment**" setting the "head room" range is equivalent to the lower half of 0 dBFS minus "**alignment**" setting; also known as the head room before alarm range is reached.*
  dBFS *(Decibels Relative to Full Scale)*

*The Rainier 3G is capable of displaying embedded audio as VU (volume unit) meters inside the video window. Embedded audio is divided into four groups (**CH1** to **CH4**), with a master (**Meter 1/2**) and secondary channel (**Meter 3/4**) for each group. This allows the display of the left and right VU meter of either the master or secondary channel on the left and right side of the window just as the menu depicts. Adjust the **Phase** (**Out of phase** slider), **VU** (one slider), and **Sound** (**H/L** sliders) as needed.*

If there is no audio detected, NO VU meters will be shown.

Outside	
On **Off**	Allow the location of the audio meter to be outside the video area

Meter12 Group Meter34 Group	
1/2/3/4	Select the audio meter's group (embedded audio). *Note for SDI (3G/HD) signal: Selecting the primary channel without embedded audio will cause the secondary channel to lose its audio output*

Width	
2/4/6/8/10/12/14	Select the audio meter's width.

Ballistics	
PPM **VU**	Select the meter's ballistics. Meters which monitor audio levels are typically 1 of 2 varieties: **VU** (Volume Unit) or **PPM** (Peak Program Meters). Though both perform the same function, they accomplish the function in very different manners. A **VU** meter displays the average volume level of the audio signal. A **PPM** displays the peak volume level of the audio signal. For a steady state sine wave tone, the difference between the average level (VU) and the peak level (PPM) is about 3 dB. But for a complex audio signal (speech or music), the difference between the average level (VU) and the peak level (PPM) can be 10 to 12 dB. This difference between the reading of a VU meter and a PPM is known as the crest factor.

A.A Gain	
0.25 to **6.6875**	Set the audio meter's analog audio gain's value.

Sample illustration 1

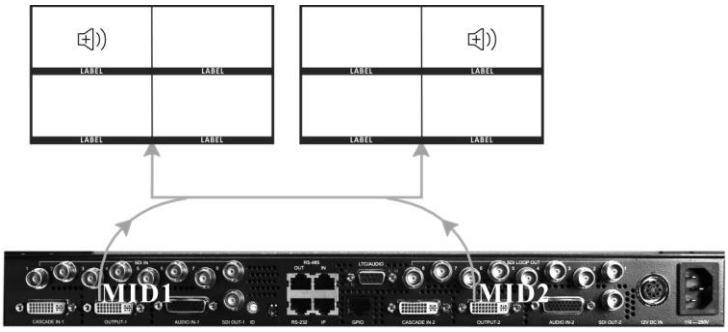


Figure A-1 Audio Output from Each Module's OUTPUT Port

✓ *To allow audio output from each module's OUTPUT ports –*
Make sure that ***System→Options→General→HDMI Audio Output Follow SDI / SPDIF Audio Output→Off****.*
Module Parameters→Check Audio-HDMI→Bypass Enable→Off *(module level so this must be set for each of the two modules)*
Module Parameters→Check Audio-HDMI→Source *(module level so this must be set for each of the two modules; select from among four image's audio signal).*

Sample illustration 2

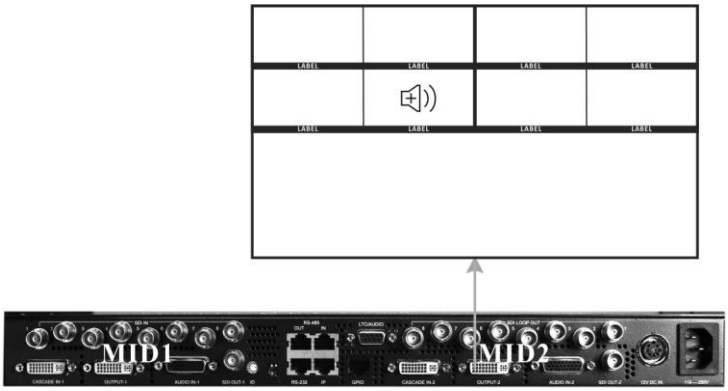


Figure A-2 Audio Output From Module ID 2 Image 2

✓ *To allow audio output from module ID 2's OUTPUT-2 port –*
Assign both modules to one group
Make sure that ***System →Options →General →HDMI Audio Output Follow SDI / SPDIF Audio Output →Off****.*
Module Parameters →Check Audio-HDMI →Bypass Enable →On *(module level, module ID 1 select "On")*
Module Parameters →Check Audio-HDMI →Bypass Enable →Off *(module level, module ID 2 select "Off")*
Module Parameters →Check Audio-HDMI →Source *(module level, module ID 2 select "Window 2 SDI embedded audio").*

Sample illustration 3

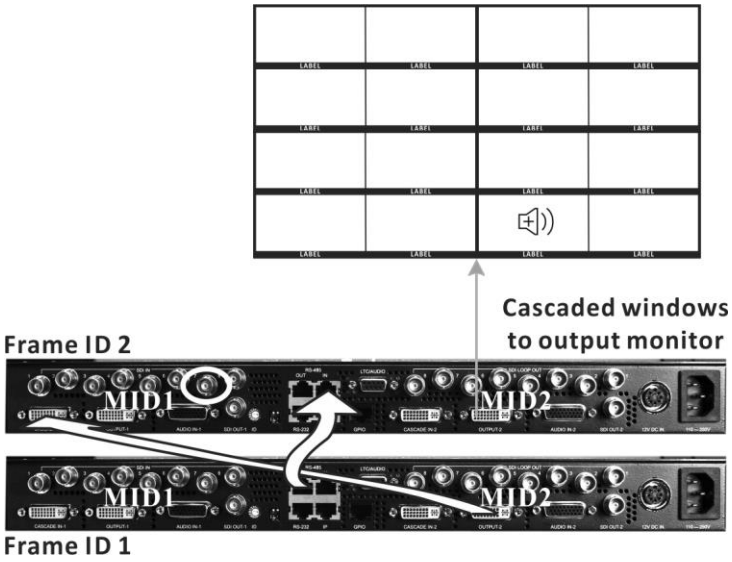
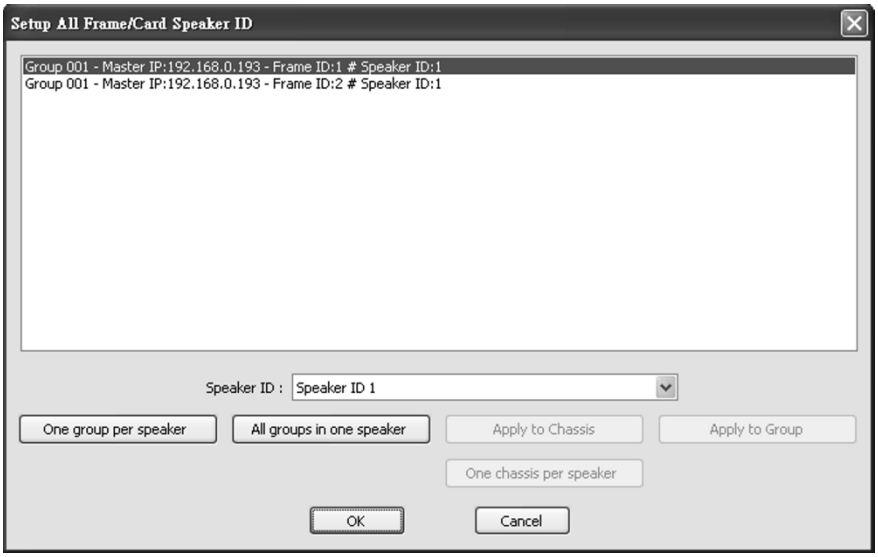


Figure A-3 Audio Output From Frame ID 2 Module ID 2 Image 3

✓ *To allow audio output from frame ID 2 module 2 image 3 embedded audio – Assign all four modules to one group*
System→Setup Speaker ID *(set frame ID 1 and 2 output audio to "Speaker ID 1")*



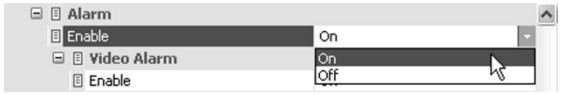
Make sure that ***System→Options→General→HDMI Audio Output Follow SDI / SPDIF Audio Output→Off****.*
Module Parameters→Check Audio-HDMI→Bypass Enable→On *(module level, frame ID 1 module ID 1 and module ID 2 select "On")*
Module Parameters→Check Audio-HDMI→Bypass Enable→On *(module level, frame ID 2 module ID 1 select "On")*
Module Parameters→Check Audio-HDMI→Bypass Enable→Off *(module level, frame ID 2 module ID 2 select "Off")*
Module Parameters→Check Audio-HDMI→Source *(module level, frame ID 2 module ID 2 select "Window 3 SDI embedded audio").*

Appendix B Setting Up the Alarm Sound

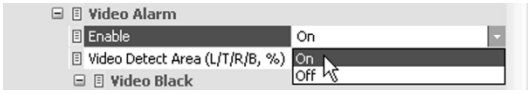
An audible alarm sound (“WAV” file format only) can be played during an alarm (no video / video black / video freeze) / (no audio) in each image source window to allow for easy monitoring. This appendix lists the steps to setup the alarm sound.

B.1 Alarm Sound Setup for No Video / Video Black / Video Freeze Occurrence

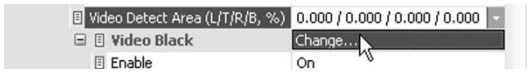
Step 1. Select “On” in “Alarm”→”Enable” (located in “Properties” portion of Phoenix-Q) to enable the various alarm features.

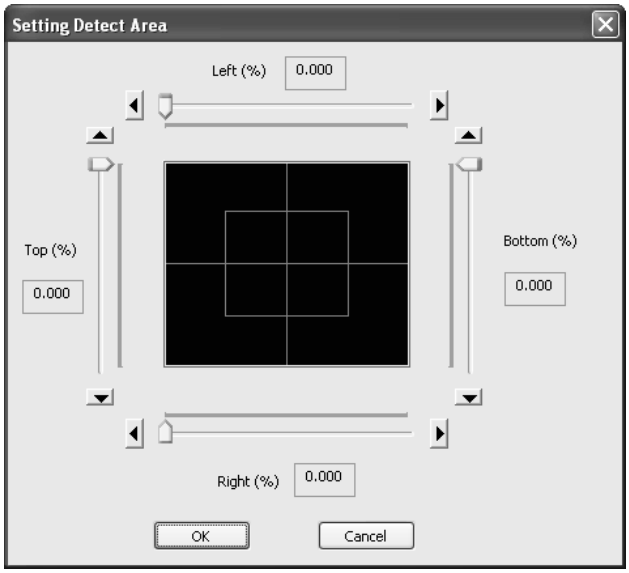


Step 2. Select “On” in “Video Alarm”→”Enable” to enable the various video signal alarm feature.



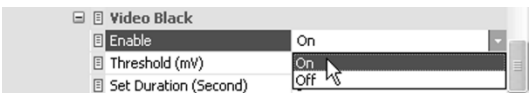
*Step 3. Click “Change” in “Video Detect Area” to freely adjust the horizontal (**Left** and **Right**) and vertical (**Top** and **Bottom**) markers to set the scope of area to monitor when “no video” occurs.*





*If the **Safe Area** item has been previously set, **Video Alarm** will temporarily use the mask area border to set **Video Alarm**.*

Step 4. Select “On” in “Video Black”→”Enable” to enable the “video black” alarm feature.

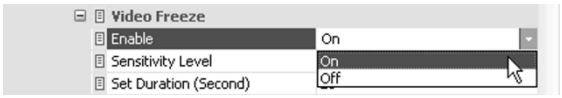


Analog input signal is not supported.

Step 5. Set the brightness level of the image which will trigger the "video black" alarm. The lower the "threshold" set, the smaller the decrease of average brightness in the "detect area" needed to trigger the alarm.

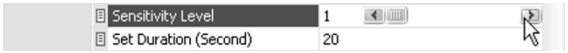
Step 6. Set the "video black" alarm response time (seconds).

Step 7. Select "On" in "Video Freeze"→"Enable" to activate the "video freeze" alarm feature.



Analog input signal is not supported.

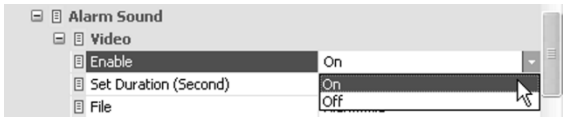
Step 8. Set the motion sensitivity of the image which will trigger the "video freeze" alarm. If the "sensitivity" level is set very high, a slight difference in frame by frame content comparison in the "detect area" will trigger the alarm.



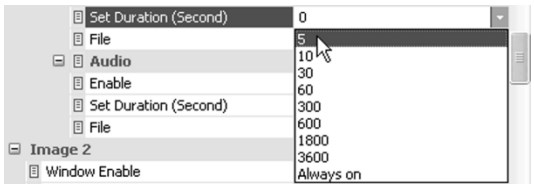
Step 9. Set the "video freeze" alarm response time (seconds).

***Video Black** and **Video Freeze** cannot happen simultaneously. When both conditions exist, **Video Black** has the higher priority.*
Likewise, both functions are not available for analog input signals.

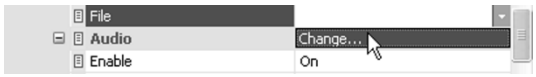
Step 10. Select "On" in "Alarm Sound"→"Video"→"Enable" to enable an alarm sound when no video / video black / video freeze is detected in a particular image source window.



Step 11. Set the "video alarm" sound playback duration (seconds) for particular image source window.



Step 12. Click "File"→"Change" to choose another alarm sound to play if a video alarm occurs for the particular source image window.



Click the "browse" button to select the location of the audio file. Click "Play" to hear a sampling of the selected alarm sound. Then click "OK" to exit.

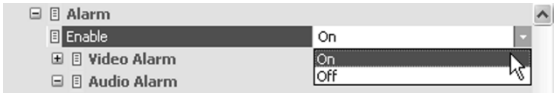
At present, only the "WAV" audio file format is supported.

Step 13. To enable alarm sound playback, click "Start Alarm Sound (System)" icon (this functions as the main switch – it will become grayed-out after being clicked).

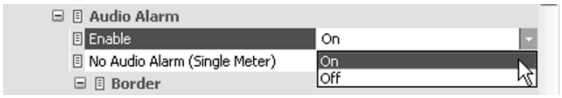
To shut off alarm sound playback before the time set has elapsed (duration), click "Stop Alarm Sound (System)" icon (it will become grayed-out after being clicked).

B.2 Alarm Sound Setup for No Audio Occurrence

Step 1. Select "On" in "Alarm"→"Enable" to enable the various alarm features.

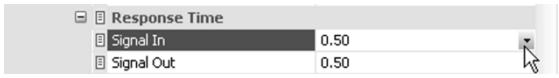


Step 2. Select "On" in "Audio Alarm"→"Enable" to enable audio loss detection for a single channel or group.

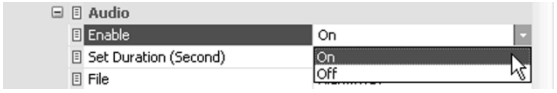


Step 3. Select "On" in "No Audio Alarm (Single Meter)" to enable the alarm, which is triggered when an audio signal is lost. This alarm is only enabled for the audio meters selected in the "Set Meter" dialog box (described in step 9).

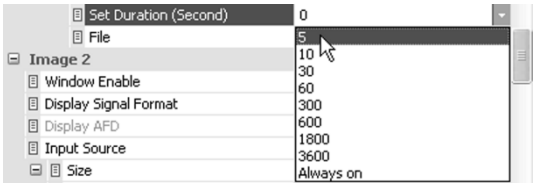
Step 4. Set the "Signal In/Out Response Time." If the audio alarm is activated, but the signal is restored, then the alarm will be cancelled after the amount of time set for "Signal In". If the audio alarm is triggered, the alarm will be activated after the amount of time set for "Signal Out."



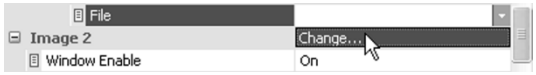
Step 5. Select "On" in "Alarm Sound"→"Audio"→"Enable" to enable an alarm sound when the audio alarm is activated.



Step 6. Set the "audio alarm" sound playback duration (seconds).



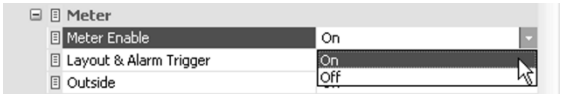
Step 7. Click "Change" in "File" to choose an alarm sound to play when audio alarm is activated.



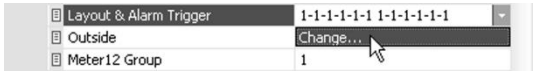
Click the "browse" button to select the desired audio file. Click "Play" to hear a sampling of the alarm sound selected. Then click "OK" to exit.

At present, only the "WAV" audio file format is supported.

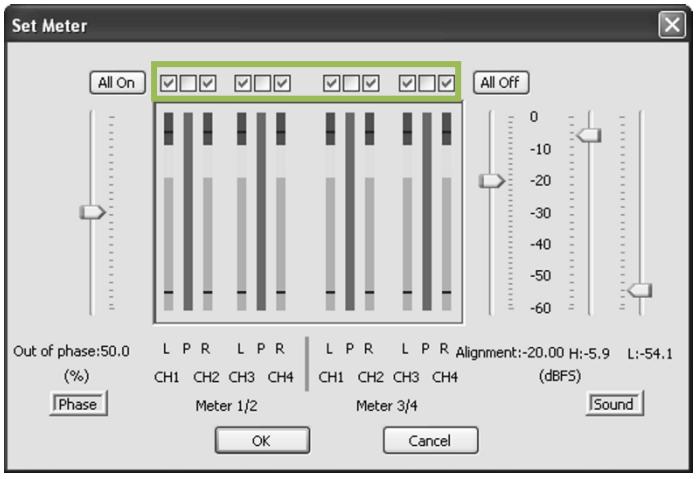
Step 8. Select "On" in "Meter"→"Meter Enable" to turn on audio meter monitoring.



Step 9. Click "Change" in "Layout & Alarm Trigger."



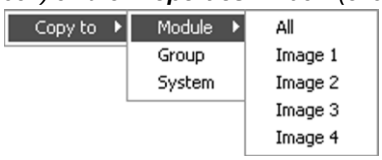
*Click to select (with a checkmark) the **L**eft and **R**ight **Meter 1/2** and **Meter 3/4** to monitor. Then click **OK** to exit.*



Step 10. To enable alarm sound playback, click "Start Alarm Sound (System)" icon (this functions as the main switch – will become grayed-out).

To shut off alarm sound playback before the set time duration has elapsed, click "Stop Alarm Sound (System)" icon (it will become grayed-out).

*Right-click an item (with icon) on the **Properties** window (except with icon) and click the following to quickly apply the settings to*



- ✓ *all the windows (**Module→All**)*
- ✓ *to a particular window (**Module→Image 1/2/3/4**)*
- ✓ *all the cards belonging to the same (**Group**)*
- ✓ *to the entire (**System**)*

B.3 Import and Export Alarm Sound

Export the "Alarm Sound" parameters to be edited externally using a text editor (i.e. Microsoft® Notepad), and then import the edited "Alarm Sound" parameters.

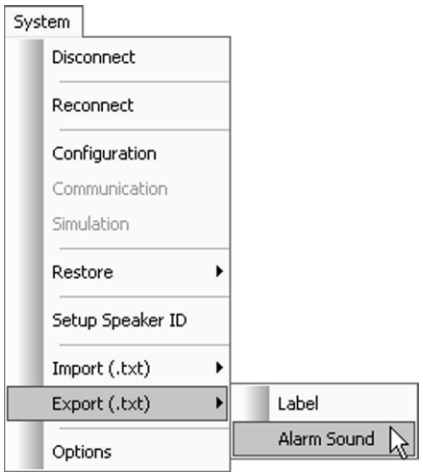


Figure B-1 Phoenix-Q Software: Click "System"→"Import/Export (.txt)"→"Alarm Sound"

These items are only available when the computer is connected to the Rainier 3G.

*Step 1. Click **System→Export (.txt)→Alarm Sound** and assign a filename. Then click **Save**.*

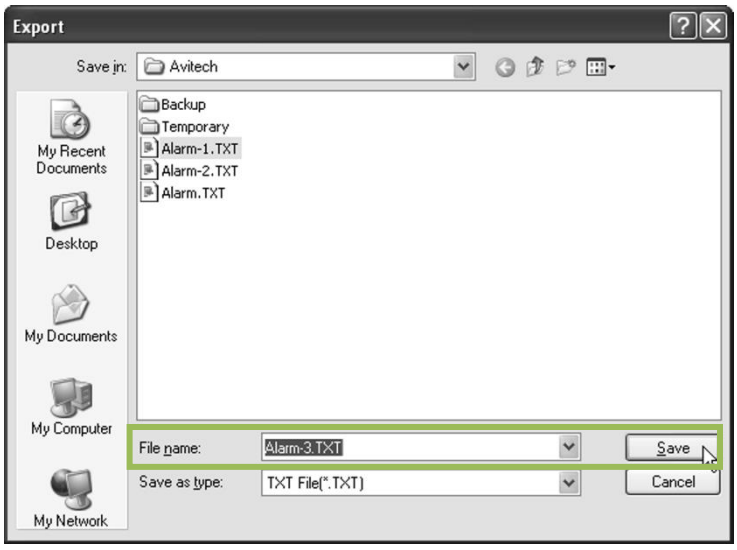


Figure B-2 Phoenix-Q Software: Export Alarm Sound

Step 2. Edit the text in the file (as highlighted below).
Make sure to follow correct syntax for editing the contents of the file: "Video Sound File – file path\filename.wav" where a space must be located before and after the dash (–).

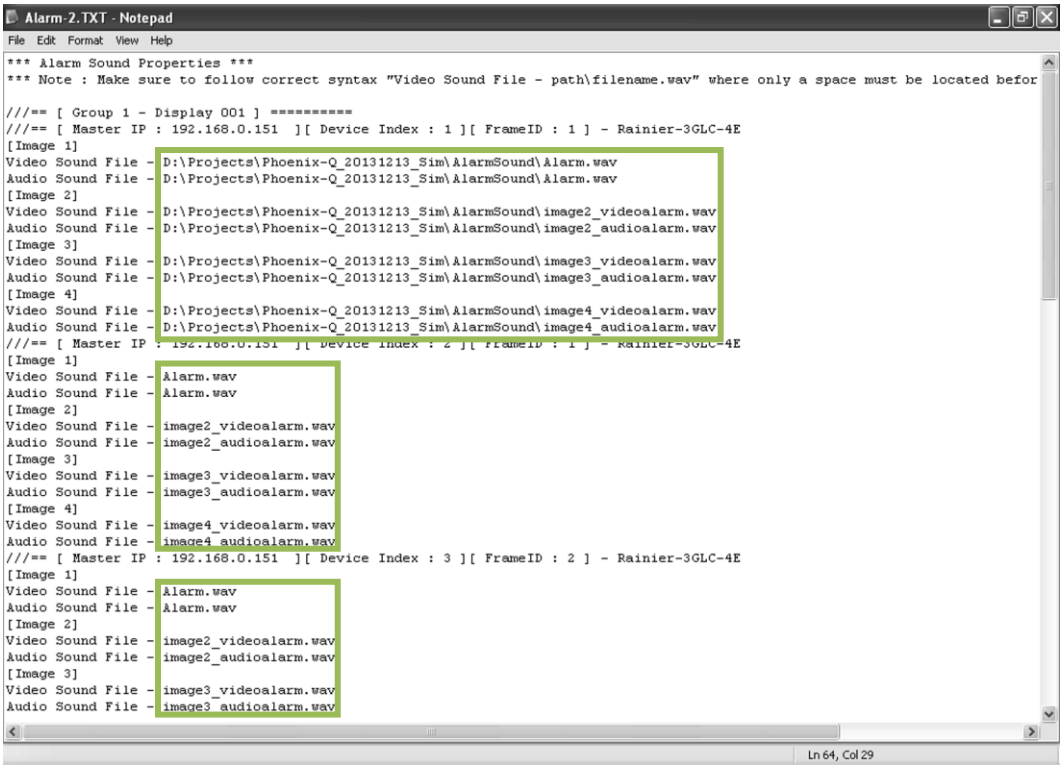


Figure B-3 Phoenix-Q Software: Change Alarm Sound File

*Step 3. After editing the alarm sound filename save the **txt** file and import it. The alarm sound WAV file(s) will be updated.*

Appendix C Connection Method

C.1 Setting Up Static IP

The following two methods allow Rainier 3G to be in same network mask as the connected computer.

C.1.1 Method 1: Change the IP Address of the Rainier 3G Chassis

*Step 1. Run the Phoenix-Q software by double-clicking **Phoenix-Q.exe**.*

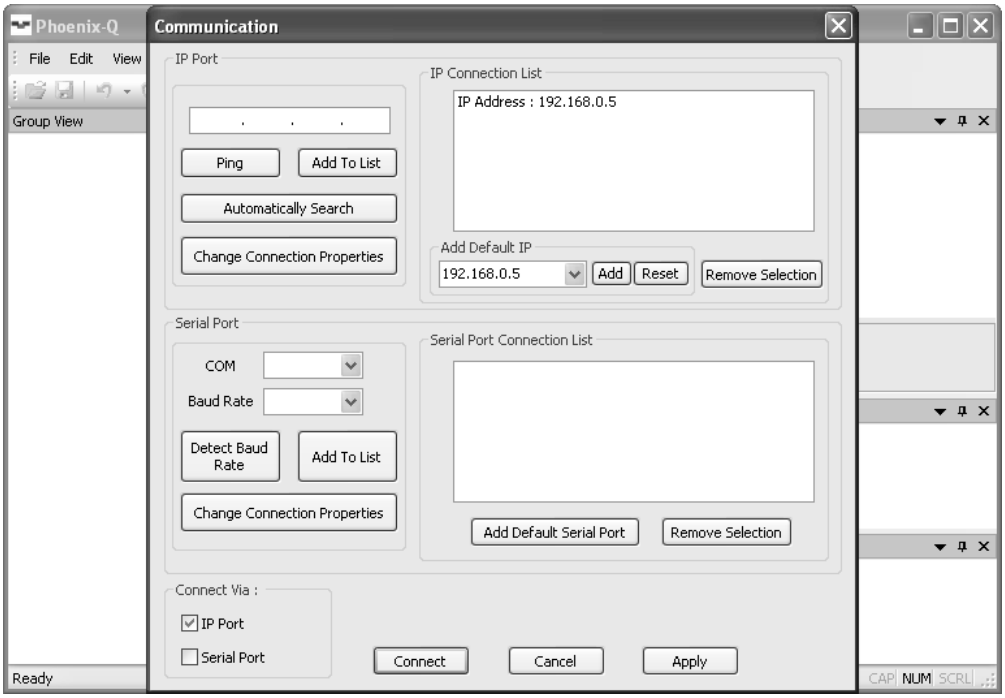


Figure C-1 Phoenix-Q Software: Initial Screen

*Step 2. Change the IP address by first clicking the default **IP Address: 192.168.0.5** entry in the **IP Connection List** window. Then, click the **Change Connection Properties** button.*

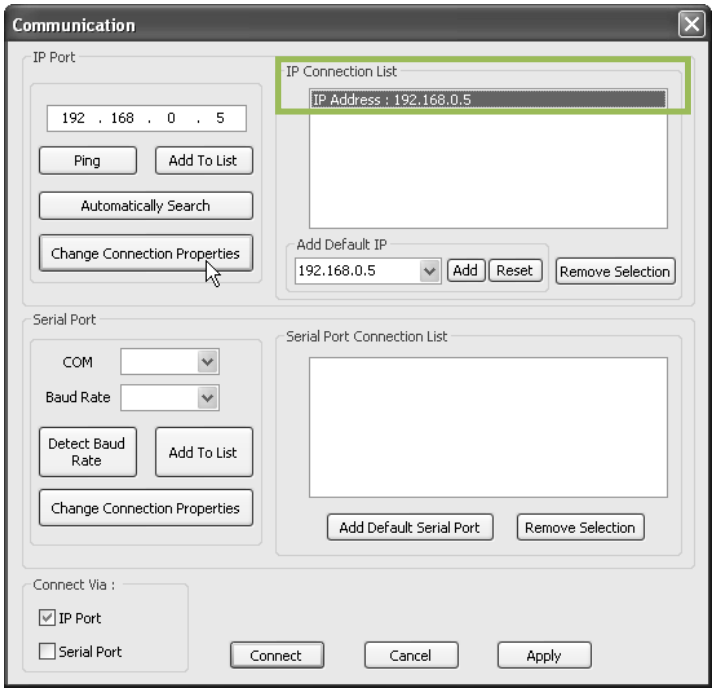


Figure C-2 Phoenix-Q Software: Click “Change Connection Properties”

*The following screen will appear showing the present IP address in the **IP address** field. The corresponding **Subnet Mask** and **Gateway** belonging to the present IP address are automatically displayed.*

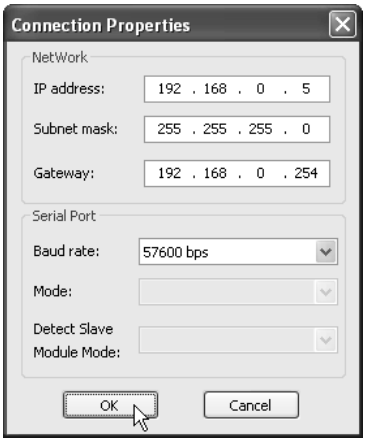


Figure C-3 Phoenix Q Software: “Connection Properties” Screen

*Step 3. Enter the new **IP address**. Edit the **Subnet Mask** and **Gateway**. Then, click **OK**. The IP address will be changed for the target device (saved to flash memory of the Rainier 3G).*

*Step 4. When the next window appears, click **OK** to exit.*

Figure C-4 IP Address Changed Successfully

C.1.2 Method 2: Change the IP Address of the Controlling Computer

For Windows XP

*Step 1. Click **Start**, and then right-click the mouse on **My Network Places**, and click **Properties**.*

*Step 2. When the next screen appears, right-click the **Local Area Connection** icon, and click **Properties**.*

*Step 3. When next screen appears, click to highlight **Internet Protocol (TCP/IP)**, and click **Properties**.*

*Step 4. When the next screen appears, click the radio button to select **Use the following IP address:**, and then enter the **IP address: 192 . 168 . 0 . x** (where **x** is any value from **1 – 4** or **6 – 253**), and **Subnet mask: 255 . 255 . 255 . 0**.*

*Step 5. Click **OK** to exit.*

For Windows 7

*Step 1. Click **Start** and type in **Network and Sharing Center**.*

*Step 2. Click **Change Adapter Settings** on the left.*

*Step 3. Right-click the **Local Area Connection** the Rainier 3G is connected to and select **Properties**.*

*Step 4. When the next screen appears, click to highlight **Internet Protocol Version 4 (TCP/IPv4)**, and click **Properties**.*

*Step 5. When the next screen appears, click the radio button to select **Use the following IP address:**, and then enter the **IP address: 192 . 168 . 0 . x** (where **x** is any value from **1 – 4** or **6 – 253**), and **Subnet mask: 255 . 255 . 255 . 0**.*

*Step 6. Click **OK** to exit.*

For Windows 10

*Step 1. On the taskbar, right click on the internet icon and click **Open Network and Sharing Center**.*

*Step 2. In the **Control Panel** > **Network and Internet** > **Network and Sharing Center**, click the **Connections** link on the left.*

*Step 3. A new window will open up showing the details about your internet connection, click **Properties**.*

*Step 4. Another window will open up showing the items used by your connection, click **Internet Protocol Version 4 (TCP/IPv4**) if you want to change the IPv4 address of your computer. Then click **Properties**.*

*Step 5. When the next page appears, click the radio button to select **Use the following IP address**, and then enter the **IP address: 192 . 168 . 1 . x** (where **x** is any value from **1 – 4** or **6 – 253**), and **Subnet mask: 255 . 255 . 255 . 0**.*

*Step 6. Click **OK** to exit.*

Appendix D Setting Up COM Port

Perform the following steps to set up COM port communications:

*Step 1. Click **System→Communication**.*

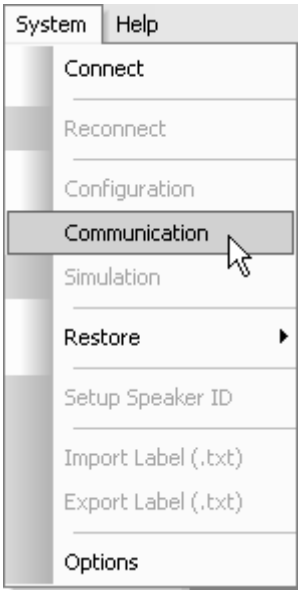


Figure D-1 Phoenix-Q Software: Click "System"→"Communication"

*Step 2. Specify the same **COM** port setting as the controlling computer.*

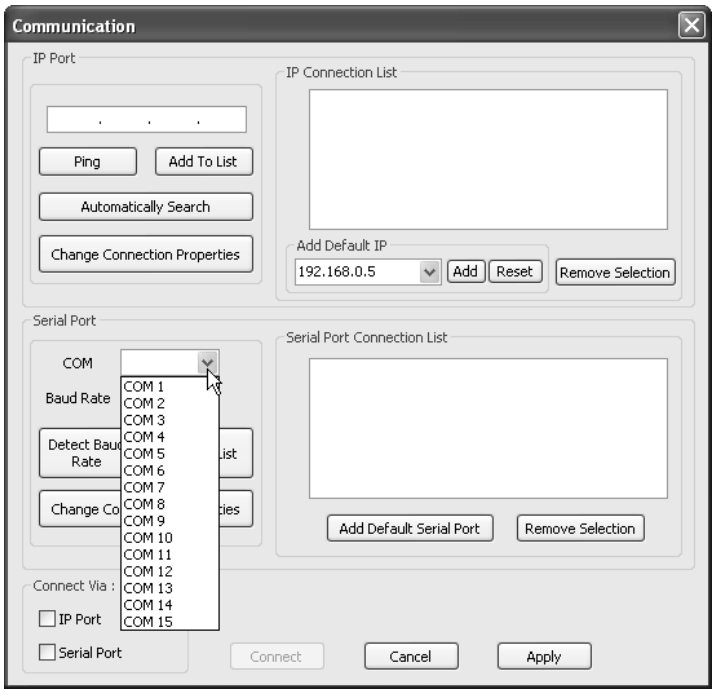


Figure D-2 Phoenix-Q Software: Select the "COM" Port

*Step 3. Select the desired **Baud Rate**.*

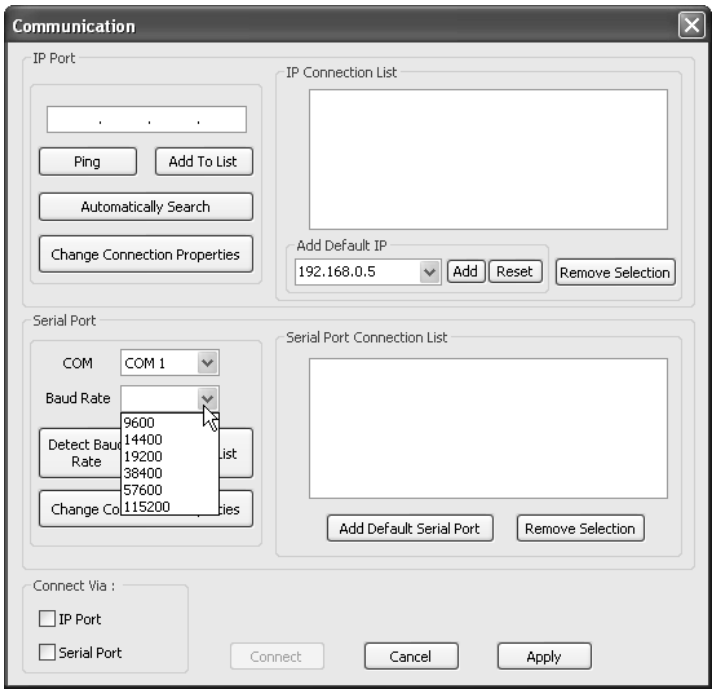


Figure D-3 Phoenix-Q Software: Select the "Baud Rate"

*Step 4. Click **Add to List** to allow the newly configured serial port to appear on the **Serial Port Connection List** window. Then, click **Apply**, and then **Cancel** to exit.*

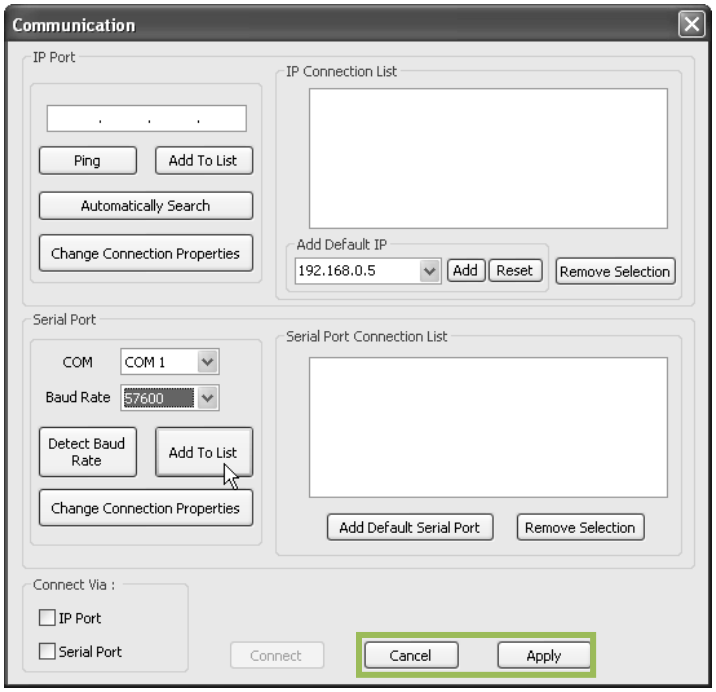


Figure D-4 Phoenix-Q Software: Click "Add to List"

Appendix E Resetting to the Factory-Default State

Step 1. Power-off the Rainier 3G by unplugging the power cord.

*Step 2. Push the number **2** dip switch located on the control card downward to the **ON** position.*

Figure E-1 Push Number 2 Dip Switch Downward

Step 3. Power-on the Rainier 3G by plugging in the power cord (make sure that power is available).

*Step 4. Push back the number **2** dip switch upward to the default position.*