Rainier 3G Plus

Multiviewing experience taken to the next level

AVITECH

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

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 Plus. Doing so may void the warranty. There are no user serviceable parts inside. Please refer all servicing to qualified personnel.

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head

1. Getting Started

The **Rainier 3G Plus Series** is a modular card based multiviewer. Each card can receive up to 4 input signals and up to 4 cards can be installed in the 1RU chassis. Users can monitor 4 SDI (3G/HD/SD)/ CVBS sources through HD 1080p output.

The Rainier 3G Plus-Q (**Q**uad series) features a quad view or full screen view while the Rainier 3G Plus-1 allows for fully free-scaling windows. A high degree of flexibility can be achieved through internal cascading. This flexibility allows all 4 cards (up to 16 signals) to easily be displayed on one monitor, and/ or be duplicated to other monitors. The Rainier 3G Plus is also extremely scalable; users can easily expand the system by cascading up to 10 chassis which allows for the monitoring of up to 160 signal sources on multiple screens.

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

1.1 Package Contents

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

Avitech Rainier 3G Plus series

Utility Disc (software and user manual)

24 V DC Power Adapter

Standard Power Cord (USA customer only)

RS-485 Cascading Cable (optional – when purchasing 2 or more Rainier 3G Plus-1)
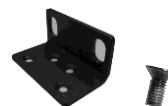
Ear with screw (already installed on Rainier 3G Plus upon order for assembly on to rack mount)

DVI to HDMI® Adapter (optional)

Table 1-1 Package Contents

The following items are included if an optional rack mount kit is ordered, refer to the "Rack Mount Assembly Reference Guide" for details.

Rack Tray Ear (left and right pc)

Ear-A (2 pcs)
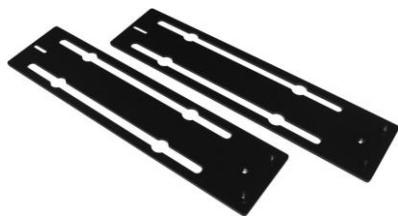
Ear-B (2 pcs) Used on 700/750/800mm rack depth (27.56/29.53/31.49 inch)	Tray

Screw 3*4mm (4 pcs)	Screw 3*7mm (6 pcs)

Screw 3*5mm (12 pcs)	Screw 3*6mm (2 pcs)

Cable Tie 370*4.8mm (2 pcs)

Table 1-2 Optional Rack Mount Package Contents

1.2   Product Features

✓ *Automatic sensing of up to 16 SDI (3G/HD/SD)/CVBS input signals*

✓ *Independent operation, settings can be configured from the front LCD panel*

✓ *1920×1200 maximum output resolution*

✓ *Up to 14 presets/configurations can be saved and recalled per card*

✓ *Supports HDMI®, features 4 HDMI outputs*

✓ *Supports DVI, features 4 DVI outputs (through a HDMI to DVI adapter)*

✓ *Supports SDI, features 4 SDI outputs*

✓ *Supports cascading, features an SDI input for cascading (not available for Rainier 3G Plus-Q)*
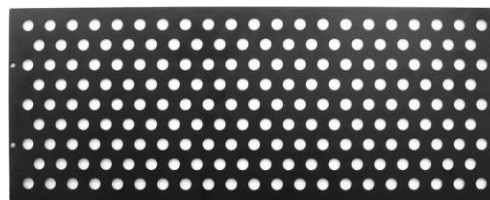
✓ *Supports Avitech's Phoenix-Q configuration interface through an Ethernet connection*

✓ *Supports TSL through Ethernet (IP) or serial interface (RS-232)*

✓ *Supports General Purpose Input/Output through an Ethernet connection*

✓ *Supports Avitech ASCII Protocol (AAP)*

Robust Design:

    ✓ *Passed Extensive Vibration Test: (MIL-STD-810G vibration test) method 514.6 for US truck under random vibration while in operation*

    ✓ *Dual power supply with DC input (one main and one redundant, interchangeable)*

    ✓ *Field serviceable front fan module*

✓ *Video Control:*

    1. *Rainier 3G Plus-1: Free-scaling windows, quad view, full screen view, adjustable safe area, and aspect ratio control.*

    2. *Rainier 3G Plus-Q: Quad view or full screen, adjustable safe area, and aspect ratio control.*

    3. *Picture-in-Picture (PiP) overlay display (not available for the **Q**uad series)*

    4. *Video loss / video black / video freeze detection*

    5. *Image/Gain: automatic or manual adjustment*

    6. *Image crop and pan*

✓ *On Screen Display (OSD):*

    1. *Border*

        ✓ *Features fully customizable image borders (color and width)*

        ✓ *Video borders*

    2. *Labels*

        ✓ *BMP label*

        ✓ *UMD – (under monitor display)*

    3. *Alarms*

        ✓ *Video loss*

        ✓ *Video freeze*

        ✓ *Video black*

        ✓ *Audio high*

- ✓ *Audio low*

- ✓ *Audio lost*

- ✓ *Out of Phase*

- ✓ *Metadata display (AFD) Active Format Description*

- ✓ *Closed caption detection*

  4. Tally

  5. Audio meter

  *6. Digital clock / user logo (not available for Rainier 3G Plus- **Q**uad Series)*

  7. External Linear Time Code (LTC) / SDI Embedded Time Code display

  8. Safe area, aspect ratio detection

  9. Screen background color is configurable

- ✓ *Audio Output Control:*

  1. Supports 8 channel embedded audio

  2. HDMI: 8 channels selectable between the 4 groups

  3. Analog: 1/8 inch stereo headphone jack for audio monitoring

  4. Audio loss / audio high / audio low / phase detection

1.3   Specifications

Rainier 3G Plus – (Q card) / Rainier 3G Plus – (1 card)

Input	
SDI/CVBS (BNC connector)	Automatic sensing, the following input signals are supported: ❖ *3G-SDI: 1080p60, 1080p59.94, 1080p50 (YUV 4:2:2 10-bit)* ❖ *HD-SDI: 1080p30, 1080p29.97, 1080PsF29.97 (segmented frame), 1080p25, 1080PsF24, 1080PsF23.98, 1080i60, 1080i59.94, 1080i50, 1035i60, 1035i59.94, 720p60, 720p59.94, 720p50, 720p30, 720p29.97, 720p25* ❖ *SD-SDI: 480i60, 576i50* ❖ *CVBS: NTSC/PAL*

Output	
HDMI and DVI (through HDMI to DVI adapter)	Normal/VESA output timing; 8-bit/10-bit HDMI color depth; user configurable: ❖ *1920×1200 (WUXGA) 50Hz/60Hz* ❖ *1920×1080 (HD 1080) 50Hz/60Hz* ❖ *1680×1050 (WSXGA+) 50Hz/60Hz/75Hz* ❖ *1600×1200 (UXGA) 50Hz/60Hz/75Hz* ❖ *1600×900 (HD+) 60Hz* ❖ *1440×900 (WSXGA, WXGA) 50Hz/60Hz/75Hz* ❖ *1400×1050 (SXGA+) 50Hz/60Hz/75Hz* ❖ *1360×768 (WXGA) 50Hz/60Hz/75Hz* ❖ *1280×1024 (SXGA) 50Hz/60Hz/75Hz* ❖ *1280×768 (WSGA) 50Hz/60Hz/75Hz* ❖ *1280×720 (HD 720) 50Hz/59.94Hz/60Hz/75Hz* ❖ *1024×768 (XGA) 50Hz/60Hz/75Hz* ❖ *800×600 (SVGA) 50Hz/60Hz/75Hz*

Rainier 3G Plus – (Q card) / Rainier 3G Plus – (1 card)	
	❖ *640×480 (VGA) 60Hz* *Note: If the Rainier 3G Plus-1 is in cascade mode, the output resolution can only support 720p/1080p at 50Hz/60Hz.*
SDI **(BNC connector)**	User configurable: ❖ *1920×1080 50Hz/60Hz Progressive (4:2:2 YUV / 10-bit)* ❖ *1280×720 50Hz/60Hz Progressive (4:2:2 YUV / 10-bit)* *Note:* 1. If the Rainier 3G Plus-1 is in cascade mode, the output resolution can only support 720p/1080p at 50Hz/60Hz. 2. Complying with the HDCP license, HDCP video cannot be converted to SDI.

Table 1-3 Rainier 3G Plus – (Q Card) / Rainier 3G Plus – (1 Card) Specifications

Rainier 3G Plus – (PI card)	
Output	
SDI **(BNC connector)**	This card's sole purpose is to convert a 1080p source signal to a 1080i 50/59.94/60 Hz output signal. Cascade input from control board can also be routed to the PI card for conversion.

Table 1-4 Rainier 3G Plus – (PI Card) Specifications

Rainier 3G Plus – (Control card)	
Control interface **(serial connector)**	For connecting to TSL port of the TSL controller for TSL interface
Cascade **(BNC connector)**	For multimedia input coming from SDI Out port (cascadable to any other Rainier 3G Plus – (1 card); but not cascadable to Rainier 3G Plus – (Q card))
LTC **(BNC connector)**	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)
Audio **(Headphone jack)**	Analog Audio (audio out port) Stereo
Power	Power consumption is 110 Watt (maximum) Power Supply: ❖ *24 V DC 120 Watt adapter*
Dimensions/Weight	Dimensions: 439×310×44.4 mm (17.3×12.2×1.8 inch) Weight: 4.2 kg (9.3 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 Pass MIL-STD-810G test method 514.6 for US truck under random vibration while in operation

Table 1-5 Rainier 3G Plus – (Control Card) Specifications
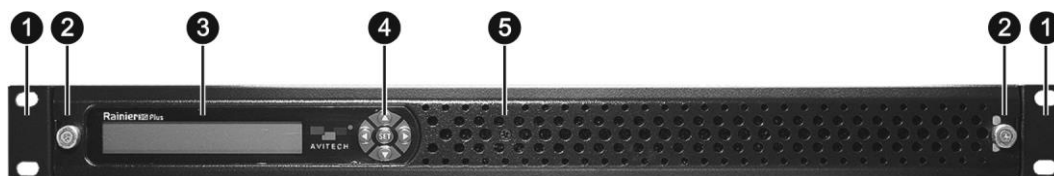
1.4 Connections to the Rainier 3G Plus

Figure 1-1 Rainier 3G Plus Front Components

| Front Panel	
❶ **Rack Mount Ear**	For fixing the chassis onto a server rack (ears are installed upon leaving the factory)
❷ **Release Knob**	Turn the knob counter-clockwise to loosen and clockwise to secure the front panel to the chassis
❸ **LCD Panel**	For displaying the configuration and control parameters
❹ **Control Buttons**	▲ Go to previous selection ▼ Go to next selection ◀ A quick press moves the cursor one character to the left, while a long press deletes the character to the left of the current cursor position (e.g., set password). ▶ Moves the cursor one character to the right. Upon reaching the last character, a space will be added (e.g., set password). SET Enter next menu level or select item *Note: Refer to Appendix A for functions that can be changed by the control buttons.*
❺ **Release Screw**	Turn the screw counter-clockwise to loosen and clockwise to secure the front panel to the chassis

Table 1-6 Rainier 3G Plus Front Component Description
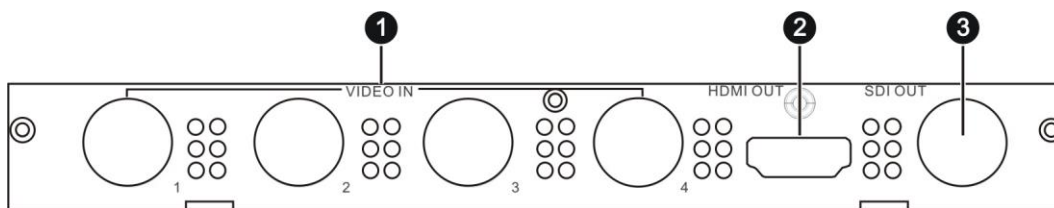
Figure 1-2 Rainier 3G Plus – (Q Card) / Plus – (1 Card) Components

Rear Panel (–1 card)	
❶ **SDI/CVBS IN**	BNC connector for SDI (3G/HD/SD) CVBS (NTSC/PAL) video sources
❷ **HDMI OUT**	Connect to the monitor's HDMI signal cable*
❸ **SDI OUT**	BNC connector supports SDI (1080p/720p) signal output

Table 1-7 Rainier 3G Plus – (Q Card) / Plus – (1 Card) Component Description

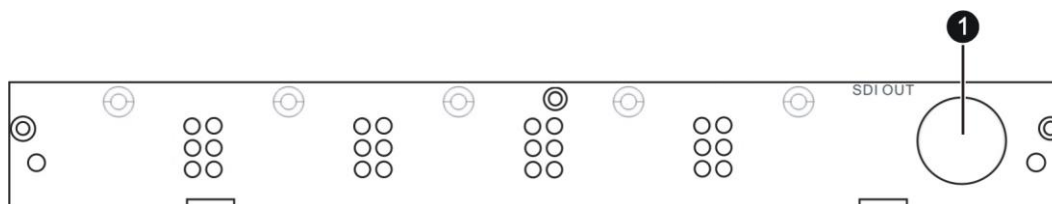** Complying with the HDCP license, HDCP video cannot be converted to SDI.*

Figure 1-3 Rainier 3G Plus – (PI Card) Components

Rear Panel (PI card)	
❶ **SDI OUT**	BNC connector supports 1080i 50/59.94/60 Hz signal output

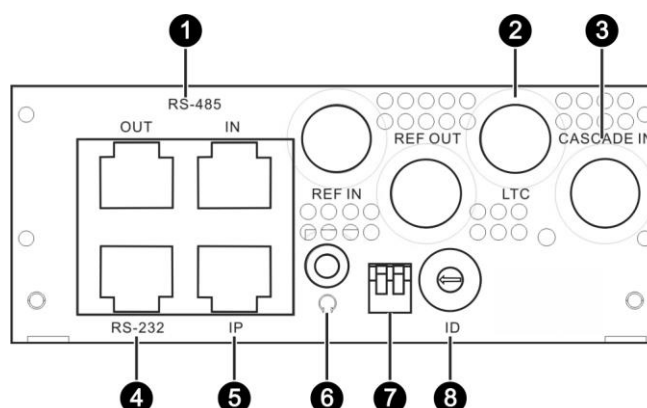**Table 1-8** Rainier 3G Plus – (PI Card) Component Description

Figure 1-5 Rainier 3G Plus – (Control Card) Components

Rear Panel (control card)	
❶ **RS-485 IN/OUT**	For serial cascading input/output control signals
❷ **LTC Audio In**	For linear (or longitudinal) Time Code input (encoding of SMPTE Time Code data in an audio signal)
❸ **Cascade In (BNC)**	BNC connector for multimedia input (cascade from other Rainier 3G Plus (BNC) or from other video sources) *Note: Select the type of Cascade In signal through Phoenix-Q software as only one is allowed at a time.*
❹ **Serial**	❖ Connects to TSL port of the TSL controller for TSL interface through the proprietary RJ-45 to RS-232 (DB9-FM) cable *Note: This port is __not__ available for connecting to a computer for configuration and control (Phoenix-Q utility). Likewise, it __cannot__ be used for entering the Avitech ASCII Protocol (AAP) X command interface.*
❺ **Ethernet (IP)**	❖ For setup through Avitech Phoenix-Q utility through network connection ❖ For entering the Avitech ASCII Protocol (AAP) X command interface ❖ For connecting to TSL port of the TSL controller for TSL interface
❻ **Headset**	1/8 inch audio port for connecting headphones (stereo)
❼ **Dip Switches**	Updates the firmware and resets the Rainier 3G Plus to the factory-default setting. *Note: Dip Switch 2 is for factory reset, see Appendix E.*
❽ **ID**	Rotary dial to assign unique addresses in systems with 2 or more chassis.

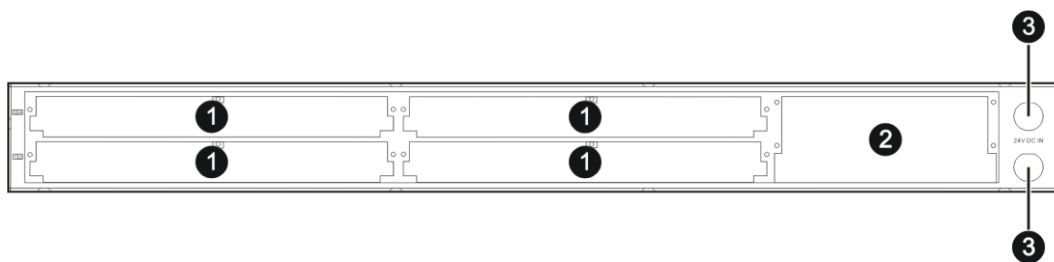**Table 1-9** Rainier 3G Plus – (Control Card) Component Description

Figure 1-6 Rainier 3G Plus Chassis Component

Rear Panel (chassis)	
❶ **Card Cover Plate**	Remove the cover plate to install any of the following: ✓ Rainier 3G Plus – (Q card) ✓ Rainier 3G Plus – (1 card) ✓ Rainier 3G Plus – (PI card)
❷ **Control Card Cover Plate**	Remove the cover plate to install the Rainier 3G Plus – (control card)
❸ **Power (DC 24V)**	Connects to the 24 V DC power adapter *Note: When connecting 2 power adapters for redundant power supply, make sure the power adaptors are at least 10 cm away from each other.*

Table 1-10 Rainier 3G Plus Chassis Component Description

2. Hardware Configuration

This chapter discusses the process of installing a card into Rainier 3G Plus chassis.

⚠ *To prevent any damage to hardware components as well as to avoid any injuries, make sure to turn off power coming from the power strip to Rainier 3G Plus before making any changes to the hardware configuration.*

2.1 Installing New Card on Blank Slot

The Rainier 3G Plus chassis accept any of the following cards:

✓ *Rainier 3G Plus – (Q card)*
✓ *Rainier 3G Plus – (1 card)*
✓ *Rainier 3G Plus – (PI card)*
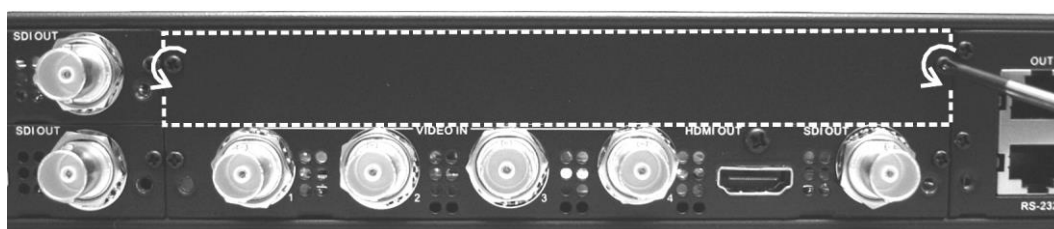
Step 1. Remove the two screws securing the back plate.

Figure 2-1 Remove the 2 Back Plate Screws

Step 2. Remove the back plate.

Figure 2-2 Remove the Back Plate

Step 3. Align both sides of the card to the rails, and slide all the way into the chassis.
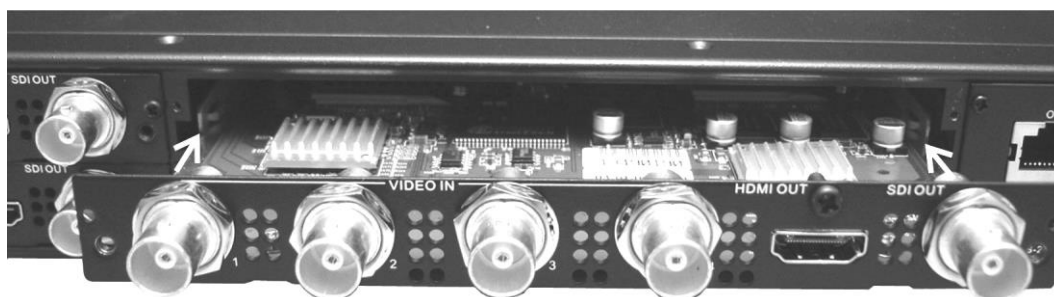

Figure 2-3 Align the New Card to the Rail on Both Sides

Step 4. Secure the screws on both sides to fix the new card to the chassis.
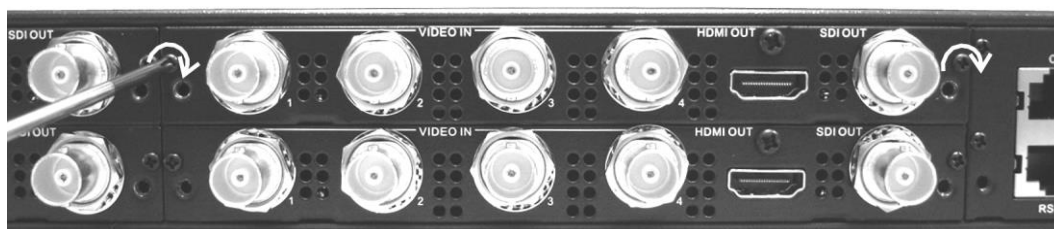

Figure 2-4 Secure the Screws on Both Sides

2.2 Removing a Previously Installed Card

Step 1. Use a flat screwdriver to unscrew the left and right puller screws on the control board module.

Figure 2-5 Remove the Left and Right Puller Screws on Control Board

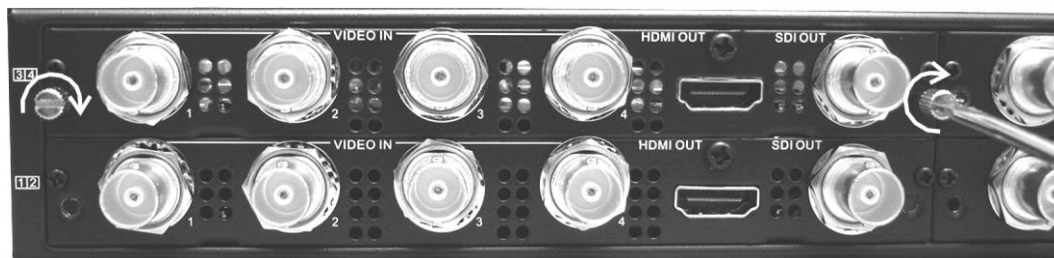*Step 2. Use the just removed puller screws and screw them to both sides of the card to be removed.*

Figure 2-6 Screw the Left and Right Puller Screws to Old Card

Step 3. Remove the left and right screws securing the card from the chassis.

Figure 2-7 Remove the Left and Right Screws

Step 4. Grasp both left and right puller screws and pull the card away from the chassis.
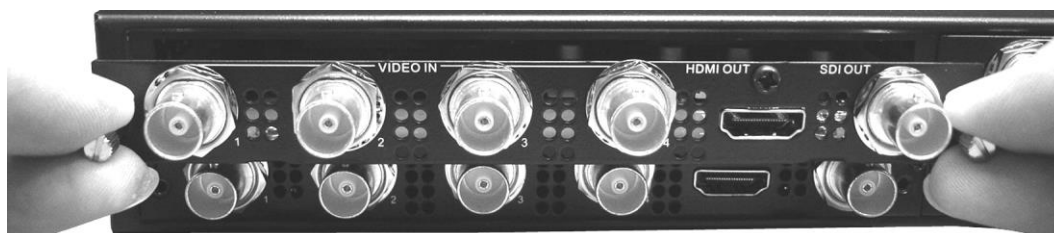

Figure 2-8 Pull the Left and Right Puller Screws

Step 5. Remove the puller screws on the just removed card and return them to the control board module.

3. Cascading

Cascading is the technique of "daisy-chaining" multiple Rainier 3G Plus through an HDMI/SDI display and a digital control backbone. This connection allows the combined Rainier 3G Plus chassis to operate as a single integrated system. Up to 10 different Rainier 3G Plus can be combined in this fashion to create large and complex systems with the ability to simultaneously monitor multiple audio, video, and computer signals on the same display.

Cascading in Rainier 3G Plus can be classified into 2 types:

✓ *Internal cascading* – *achieved by grouping 2 or 3 or 4 cards within a single Rainier 3G Plus through the Phoenix-Q configuration software (4 displays of any 4 multiple windows combination).*

✓ *External cascading* – *achieved by physically "daisy-chaining" 2 or more (up to 10) Rainier 3G Plus chassis to increase windows on one screen (up to 160 – achieved by cascading 10 Rainier 3G Plus with 4 windows from each of the 4 cards). Multiple cards allow multiple SDI signals on one display.*

> 📄 *The following examples require a working knowledge of Phoenix-Q software.*
> *For an in-depth understanding of Phoenix-Q, skip to chapters 4 and 5 for more information.*

3.1 Internal Cascading

3.1.1 Example 1: Cascade 2 cards and duplicate display

Step 1. *Make sure that the 4 card IDs belong to the same group. Verify this as shown on the **Group View** tree found on the left panel of the Phoenix-Q software. To change the group setup, go to **System→Configuration**.*
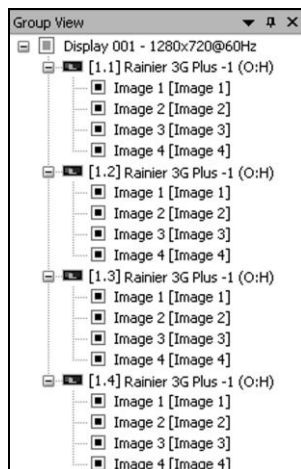

Figure 3-1 Phoenix-Q Software: Group View Panel

Step 2. *Right-click the group heading in the **Group View** panel (e.g., **Display 001 1280×720@60Hz**) and then click **Set Subgroup** item in the menu.*
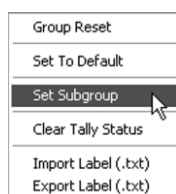

Figure 3-2 Phoenix-Q Software: Group View Panel – Set Subgroup

Step 3. *Click to remove the checkboxes on the left. Then drag the **Card ID**s to the desired configuration (both illustrations depicted below will work) and then click **OK**.*
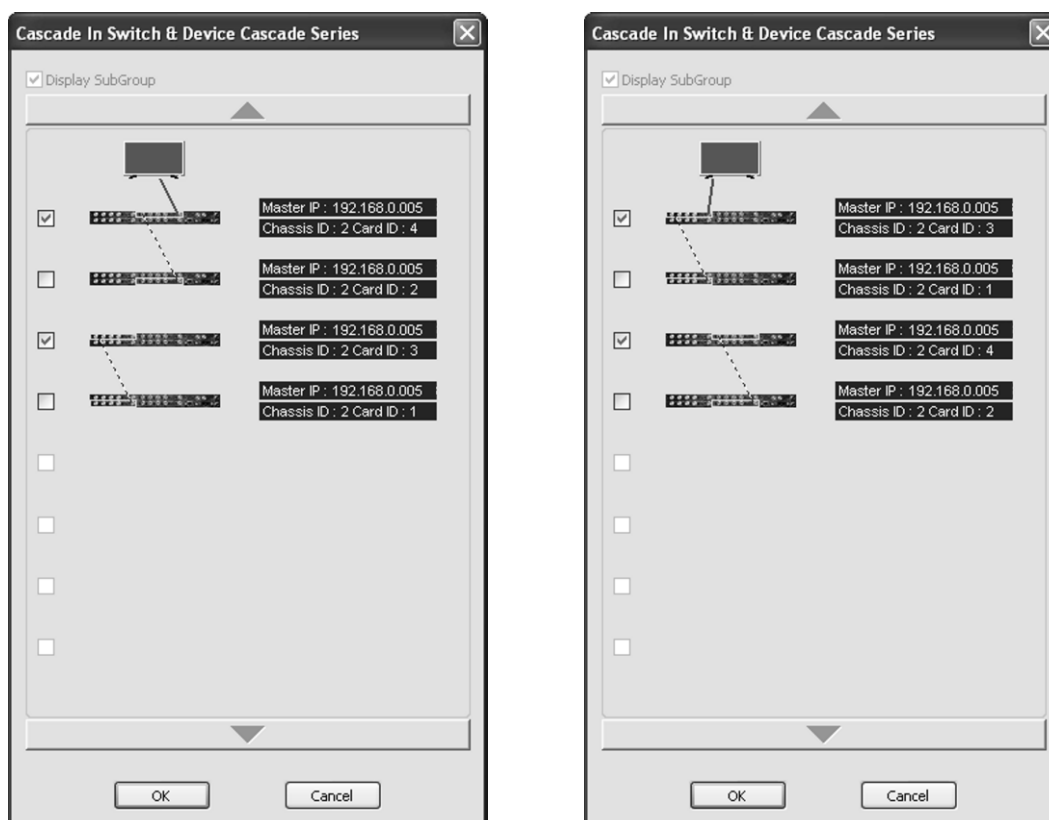

Figure 3-3 Phoenix-Q Software: Set Subgroup Configuration

*There is no need to make any adjustments to the **HDMI OUT** item in **Properties** panel as the software will automatically make the necessary adjustments.*

Figure 3-4 Phoenix-Q Software: Properties – HDMI OUT (Display Source)

The following figure illustrates the above setup.
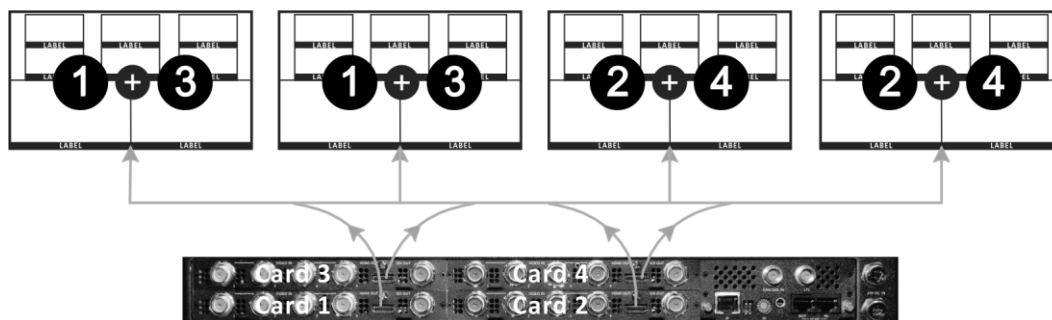
Figure 3-5 Cascade 2 Cards and Duplicate Display Illustration

3.1.2 Example 2: Cascade 2 cards and independent quads

*Step 1. Make sure that the 2 card IDs belong to the same group, while the other 2 card IDs are each assigned a group by themselves. Verify this as shown on the **Group View** tree found on the left panel of the Phoenix-Q software. To change the group setup, go to **System→Configuration**.*

Figure 3-6 Phoenix-Q Software: Group View Panel

*There is no need to make any adjustments to the **HDMI OUT** item in **Properties** panel as the software will automatically make the necessary adjustments.*
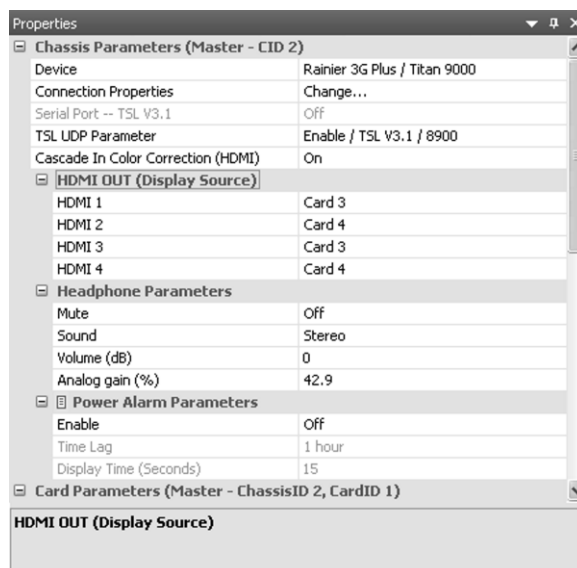

Figure 3-7 Phoenix-Q Software: Properties – HDMI OUT (Display Source)

The following figure illustrates the above setup.
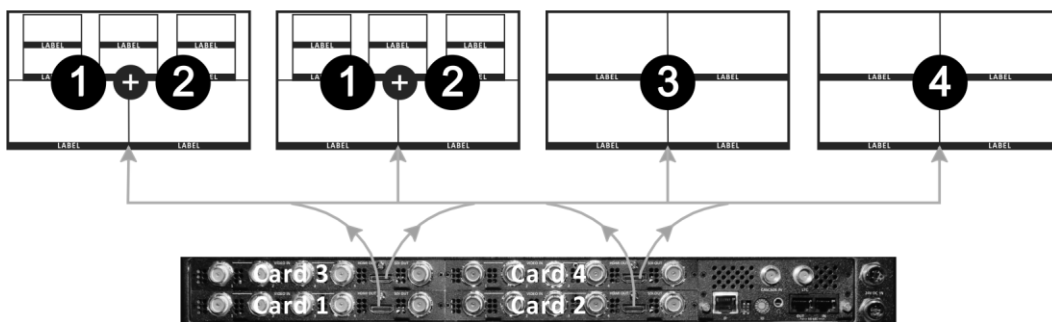
Figure 3-8 Cascade 2 Cards and 2 Independent Quad Illustration

3.1.3 Example 3: Cascade 3 cards and independent quad

*Step 1. Make sure that card IDs 1, 2, and 4 belong to the same group, while card ID 3 is assigned to a group by itself. Verify this as shown on the **Group View** tree found on the left panel of the Phoenix-Q software. To change the group setup, go to **System→Configuration**.*
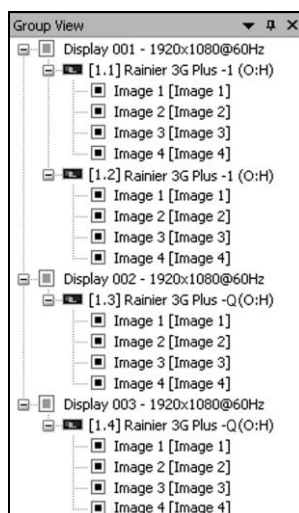
Figure 3-9 Phoenix-Q Software: Group View Panel

*There is no need to make any adjustments to the **HDMI OUT** item in **Properties** panel as the software will automatically make the necessary adjustments.*
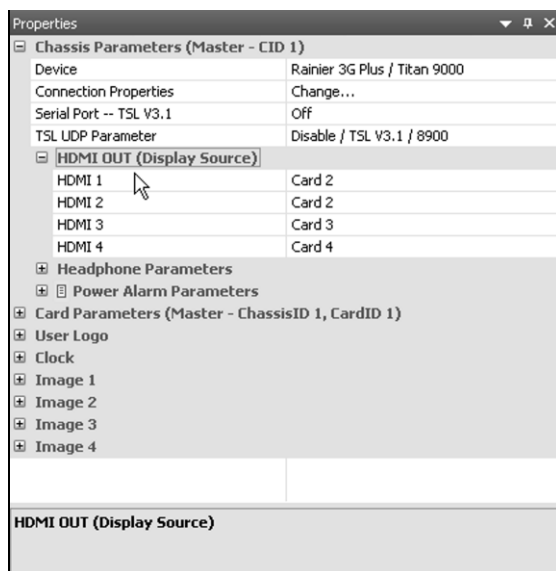
Figure 3-10 Phoenix-Q Software: Properties – HDMI OUT (Display Source)

The following figure illustrates the above setup.
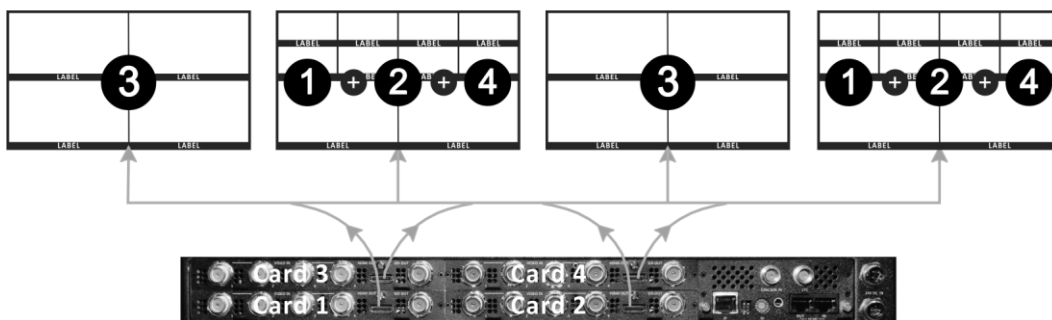
Figure 3-11 Cascade 3 Cards and 1 Independent Quad Illustration

3.1.4 Example 4: Cascade all 4 cards

*Step 1. Make sure that all 4 card IDs belong to the same group. Verify this as shown on the **Group View** tree found on the left panel of the Phoenix-Q software. To change the group setup, go to **System→Configuration**.*
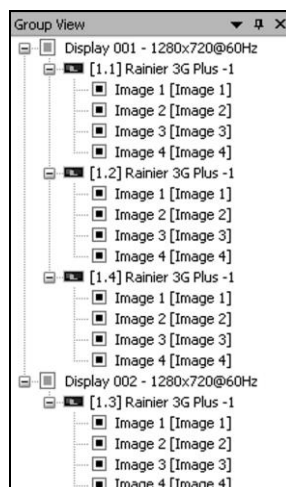

Figure 3-12 Phoenix-Q Software: Group View Panel

*There is no need to make any adjustments in the **HDMI OUT** item in **Properties** panel as the software will automatically make the necessary adjustments.*
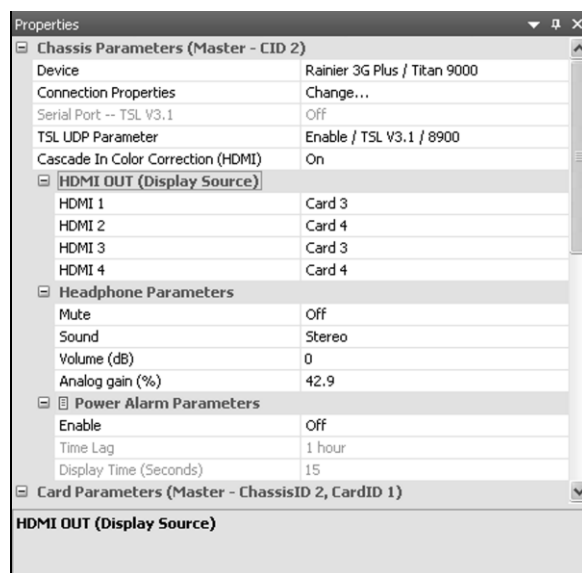

Figure 3-13 Phoenix-Q Software: Properties – HDMI OUT (Display Source)

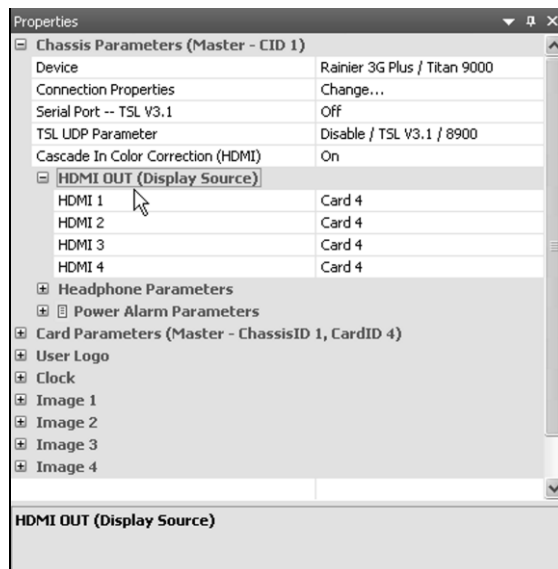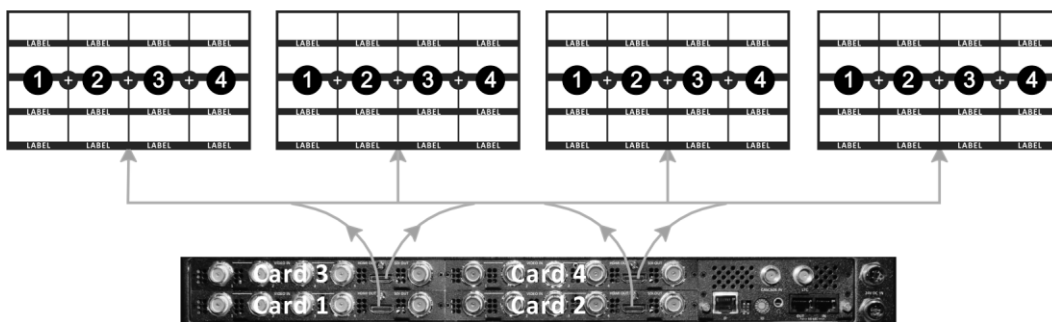*The following figure illustrates the above setup.*

Figure 3-14 Cascade 4 Cards Illustration

3.2 External Cascading

Step 1. *Set the rotary **ID** on the first Rainier 3G Plus to **0**, set the rotary **ID** on the second Rainier 3G Plus to **1**, set the rotary **ID** on the third Rainier 3G Plus to **2**, and so forth (can be other values except **F** as long as they are different from each other's setting).*

⚠️ | *To prevent input conflicts, when cascading 2 or more Rainier 3G Plus (up to 10 maximum), make sure each Rainier 3G Plus gets assigned a unique rotary ID.*

Step 2. *To display video overlay from each Rainier 3G Plus, all units must be connected to each other through BNC cables. Connect one end to the **HDMI/SDI OUT** port on the first Rainier 3G Plus' last card (there can be up to 4 cards in a single Rainier 3G Plus), and the other end to the **CASCADE IN** (BNC) port of the next Rainier 3G Plus' in the chain.*

Step 3. *Cascading through the RJ-45 (RS-485) port is used to loop communication from one Rainier 3G Plus to the next. The data stream carries control and configuration information. Connect one end of RS-485 cascading cable to the **RS-485 OUT** of the first Rainier 3G Plus and the other end to **RS-485 IN** of the next Rainier 3G Plus in the chain.*

Step 4. *Connect one end of a HDMI/BNC cable to the **HDMI/SDI OUT** port on the last cascaded Rainier 3G Plus and the other end to the group output monitor.*

Step 5. *Connect the computer that is running the Phoenix-Q software to the Master Rainier 3G Plus by using a straight-through or a cross-over RJ-45 cable from the computer to the **IP** port on the Rainier 3G Plus. Make sure to be able to ping the Master Rainier 3G Plus' IP address.*

The following illustration shows a typical setup of cascaded Rainier 3G Plus.

Cascaded windows to output monitor

Connect up to 10 Rainier 3G Plus

Computer running Phoenix-Q for setup and control
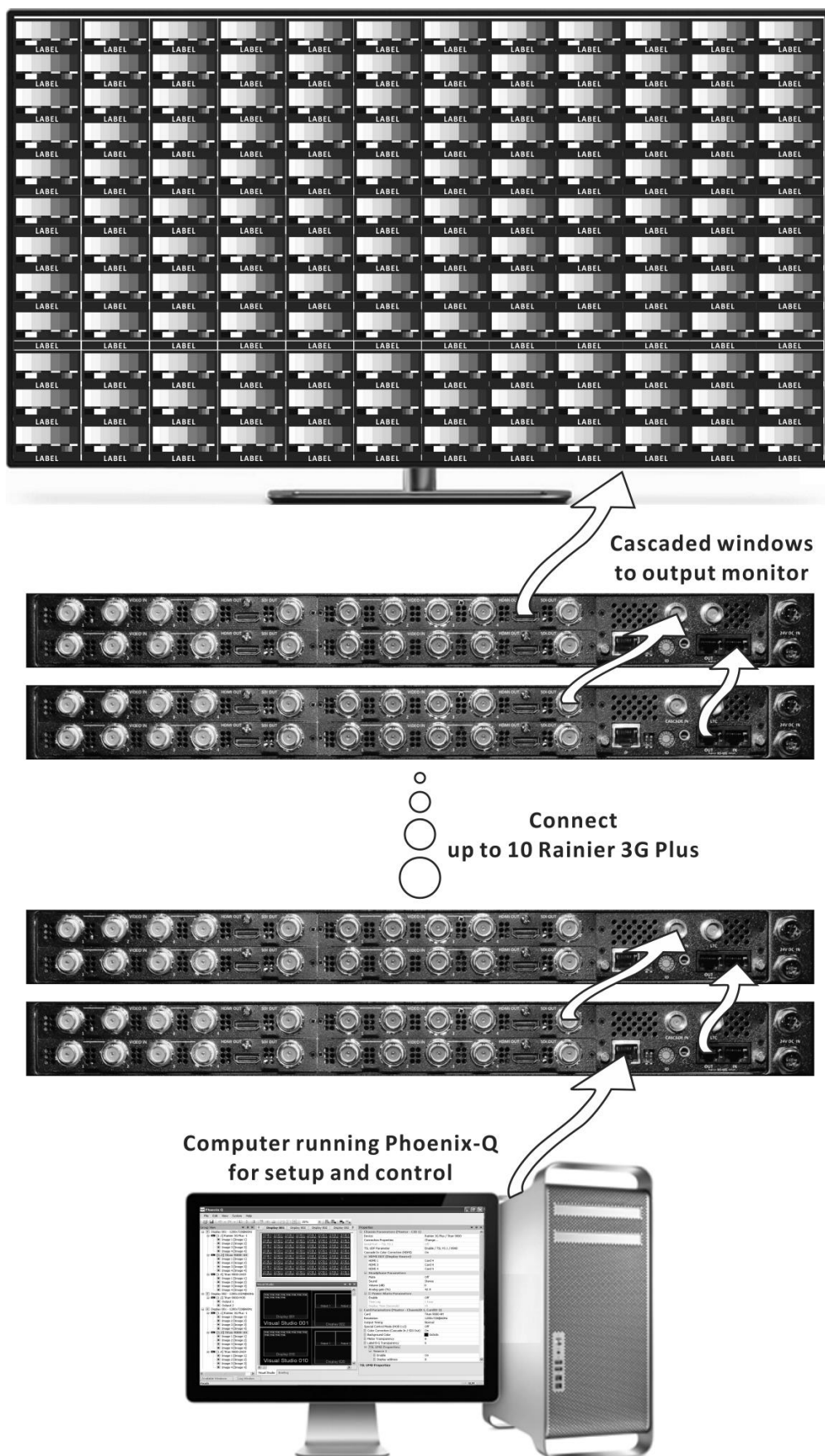
Figure 3-15 Cascaded Rainier 3G Plus Illustration

3.2.1 Example 1: Transfer SDI output of any card to the next chassis' cascade input

> *To be able to display all 32 input source windows (16 from each chassis) on one monitor, make sure to assign all 8 cards (4 from each chassis) to the same group.*
> *Likewise, assigning card(s) to another group will display the second group's window on a second monitor.*

Below, we provide examples for cascading input signals from 1, 2, 3, or 4 cards:

① *Card ID 1 output to the next chassis' cascade input.*
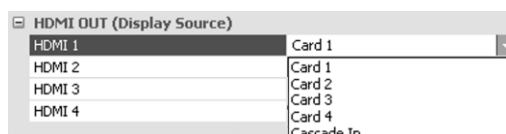
Figure 3-16 Phoenix-Q Properties: HDMI OUT (Display Source) Setting

✓ *If we select "Card 1" for "HDMI 1" (as shown in Figure 3-16), then only the 4 windows of card ID 1 plus the 16 windows of chassis ID 2 will be displayed.*

Figure 3-17 SDI Output of Card ID 1 to the Next Chassis' Cascade Input Illustration 1

✓ *If we select "Card 2" for "HDMI 1," then only the 8 windows of card ID 1 and 2 plus the 16 windows of chassis ID 2 will be displayed.*

Figure 3-18 SDI Output of Card ID 1 to the Next Chassis' Cascade Input Illustration 2

✓ *If we select "Card 3" for "HDMI 1," then only the 12 windows of card ID 1, 2, and 3 plus the 16 windows of chassis ID 2 will be displayed.*

Figure 3-19 SDI Output of Card ID 1 to the Next Chassis' Cascade Input Illustration 3

✓   *If we select "Card 4" for "HDMI 1," then all 16 windows of card ID 1, 2, 3, and 4 (chassis ID 1) plus the 16 windows of chassis ID 2 will be displayed.*

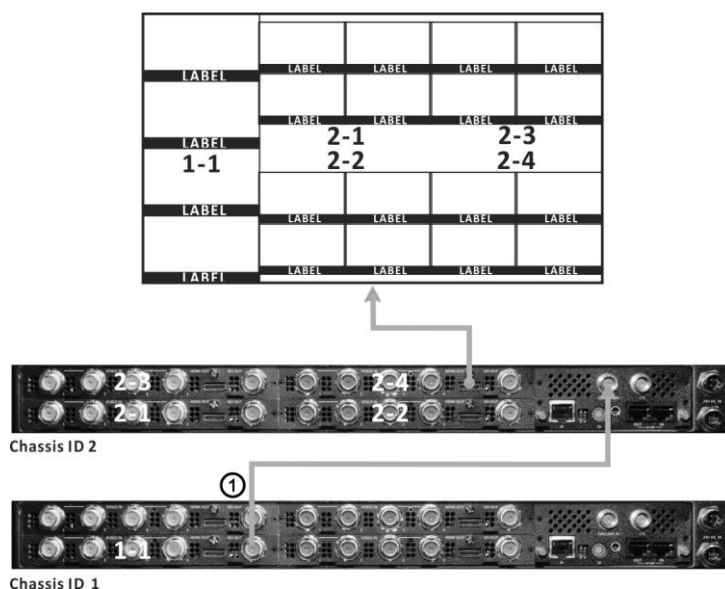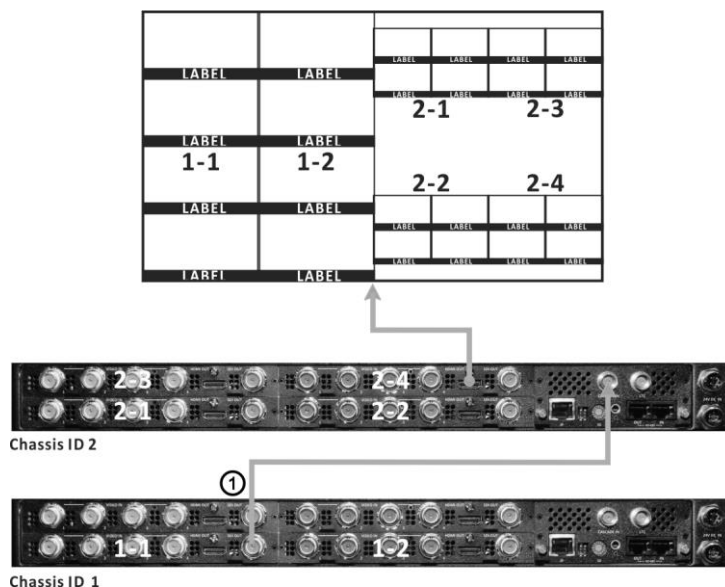**Figure 3-20** SDI Output of Card ID 1 to the Next Chassis' Cascade Input Illustration 4

②   *Card ID 2 output to the next chassis' cascade input.*

✓   *If we select "Card 1" for "HDMI 2" then only the 4 windows of card ID 1 plus the 16 windows of chassis ID 2 will be displayed.*
✓   *If we select "Card 2" for "HDMI 2" then only the 8 windows of card ID 1 and 2 plus the 16 windows of chassis ID 2 will be displayed.*
✓   *If we select "Card 3" for "HDMI 2" then only the 12 windows of card ID 1, 2, and 3 plus the 16 windows of chassis ID 2 will be displayed.*
✓   *If we select "Card 4" for "HDMI 2" then all 16 windows of card ID 1, 2, 3, and 4 (chassis ID 1) plus the 16 windows of chassis ID 2 will be displayed.*

Figure 3-21 SDI Output of Card ID 2 to the Next Chassis' Cascade Input Illustration 5

③   *Card ID 3 output to the next chassis' cascade input.*

- ✓   *If we select "Card 1" for "HDMI 3" then only the 4 windows of card ID 1 plus the 16 windows of chassis ID 2, will be displayed.*
- ✓   *If we select "Card 2" for "HDMI 3" then only the 8 windows of card ID 1 and 2 plus the 16 windows of chassis ID 2 will be displayed.*
- ✓   *If we select "Card 3" for "HDMI 3" then only the 12 windows of card ID 1, 2, and 3 plus the 16 windows of chassis ID 2 will be displayed.*
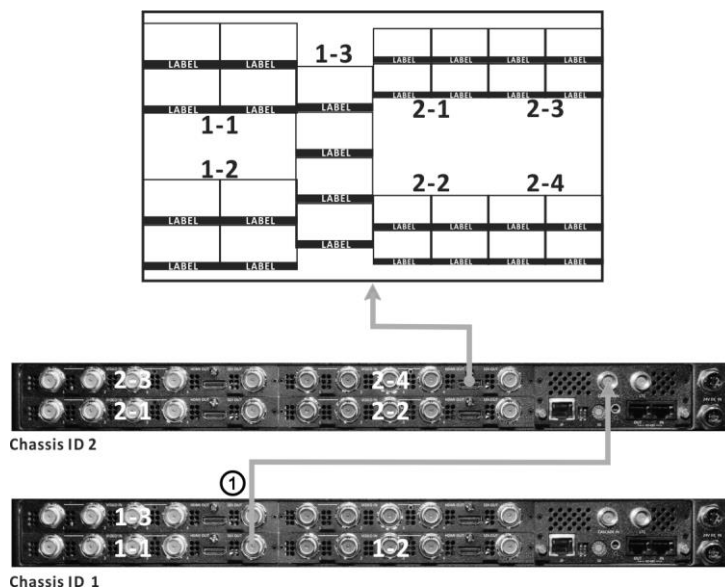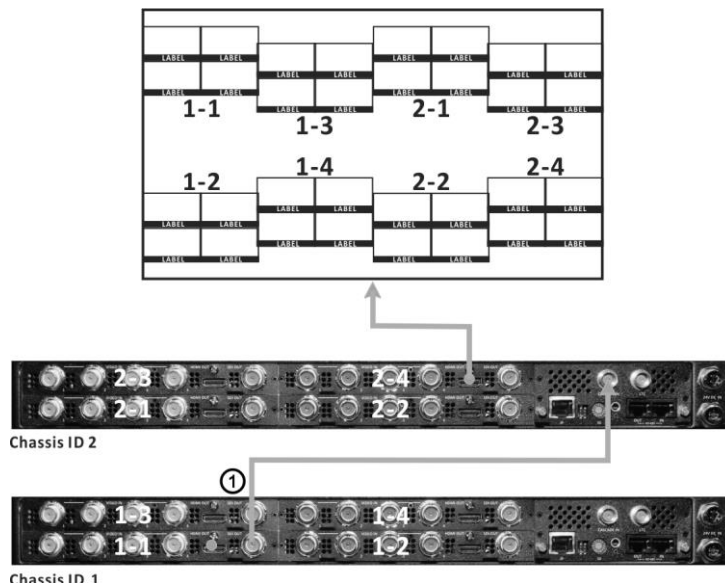- ✓   *If we select "Card 4" for "HDMI 3" then all 16 windows of card ID 1, 2, 3, and 4 plus the 16 windows of chassis ID 2 will be displayed.*

Figure 3-22 SDI Output of Card ID 3 to the Next Chassis' Cascade Input Illustration 6

④ *Card ID 4 output to the next chassis' cascade input.*

   ✓ *If we select "Card 1" for "HDMI 4" then only the 4 windows of card ID 1 plus the 16 windows of chassis ID 2 will be displayed.*
   ✓ *If we select "Card 2" for "HDMI 4" then only the 8 windows of card ID 1 and 2 plus the 16 windows of chassis ID 2 will be displayed.*
   ✓ *If we select "Card 3" for "HDMI 4" then only the 12 windows of card ID 1, 2, and 3 plus the 16 windows of chassis ID 2 will be displayed.*
   ✓ *If we select "Card 4" for "HDMI 4" then all 16 windows of card ID 1, 2, 3, and 4 (chassis ID 1) plus the 16 windows of chassis ID 2 will be displayed.*
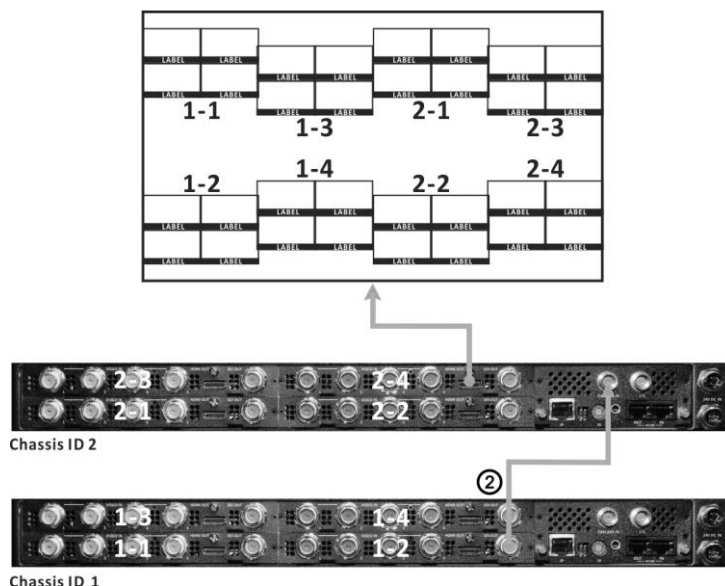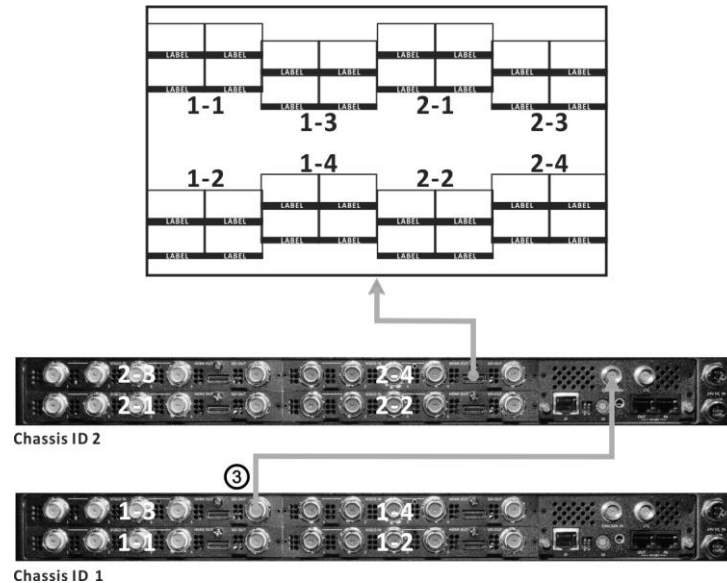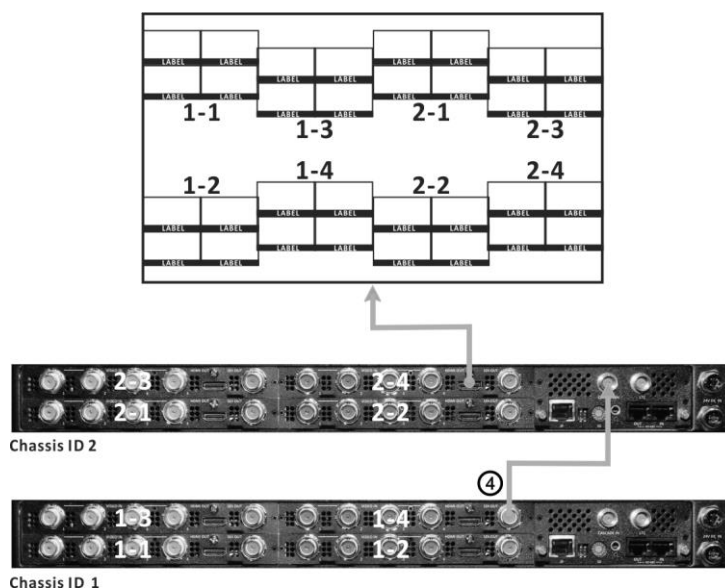
Figure 3-23 SDI Output of Card ID 4 to the Next Chassis' Cascade Input Illustration 7

3.2.2 Example 2: Assign multiple internally cascaded cards to the cascade output

> *To be able to display all 48 input source windows (16 from each of the 3 chassis) in one monitor, make sure to assign all 12 cards (4 from each of the 3 chassis) to the same group.*
> *Likewise, assigning card(s) to another group will display the second group's window on a second monitor.*

For the purpose of this example, we will focus on the Phoenix-Q setting for chassis ID 2.

✓ *To display the input source signals of card ID 1 from chassis ID 2 –*
select "Card 1" for "HDMI 4"
Only the 4 windows of (chassis ID 2 : card ID 1) + 16 windows of chassis ID 1 + 16 windows of chassis ID 3 will be displayed.

Figure 3-24 Assign Any or Multi-cards to the Cascade Output Illustration 1

✓   To display the input source signals of card ID 1 and 2 from chassis ID 2 –
     select "Card 2" for "HDMI 4"
     Only the 8 windows of (chassis ID 2 : card ID 1 and 2) + 16 windows of chassis ID 1 + 16
     windows of chassis ID 3 will be displayed.
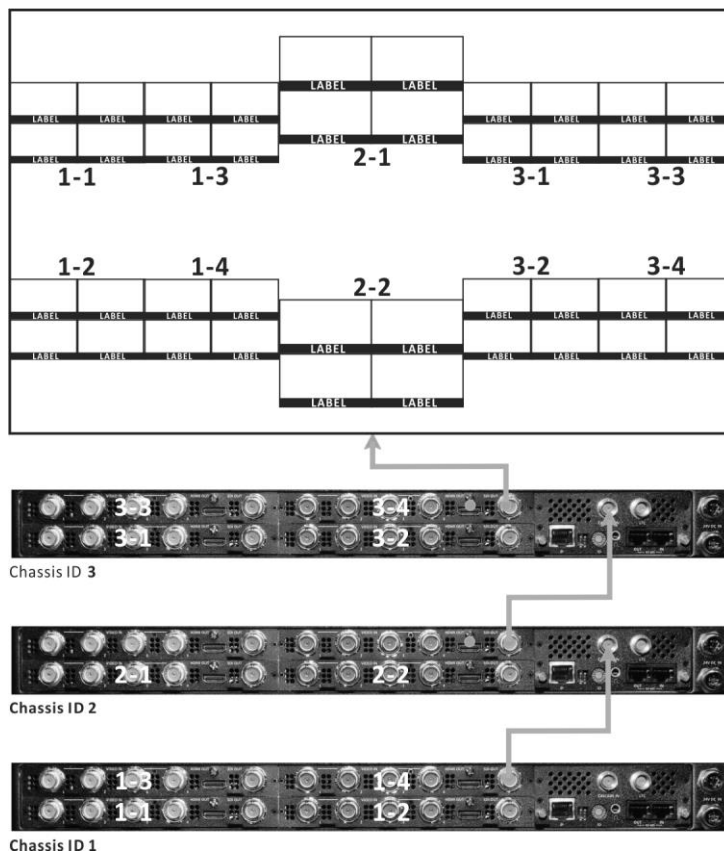
Figure 3-25 Assign Any or Multi-cards to the Cascade Output Illustration 2

✓   *To display input source signals of card ID 1 and 2 and 3 from chassis ID 2 –*
select "Card 3" for "HDMI 4"
Only the 12 windows of (chassis ID 2 : card ID 1 and 2 and 3) + 16 windows of chassis ID 1 + 16
windows of chassis ID 3 will be displayed.

Figure 3-26 Assign Any or Multi-cards to the Cascade Output Illustration 3

✓ To display the input source signals of all 4 cards from chassis ID 2 –
select "Card 4" for "HDMI 4"
All 16 windows of (chassis ID 2 : card ID 1 and 2 and 3 and 4) + 16 windows of chassis ID 1 + 16
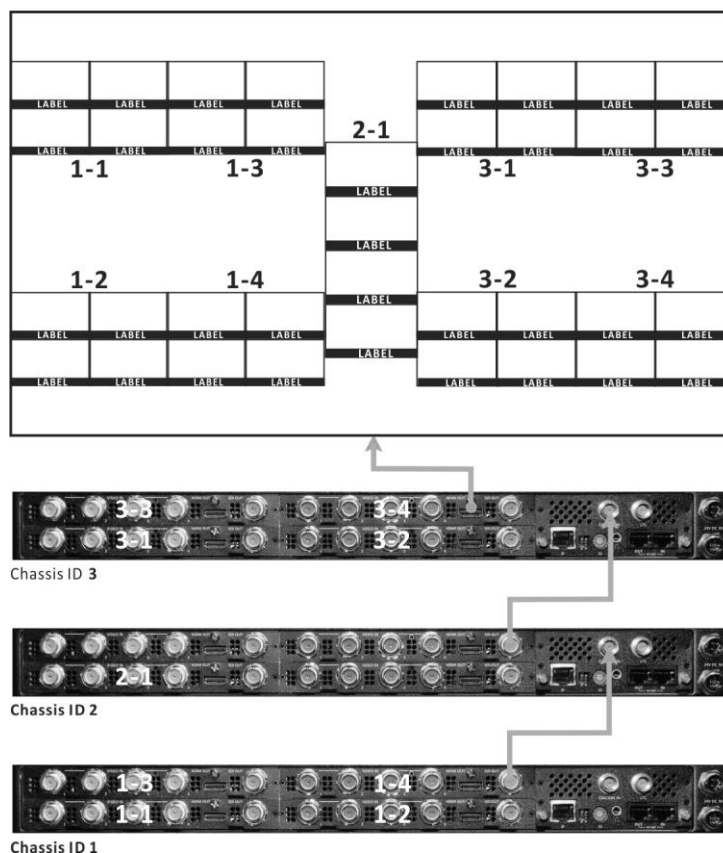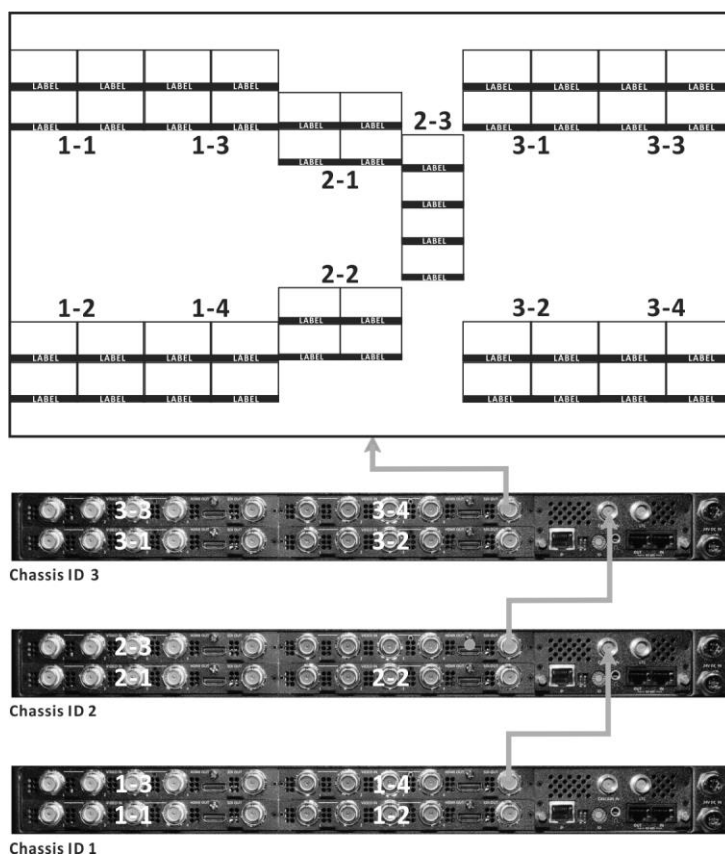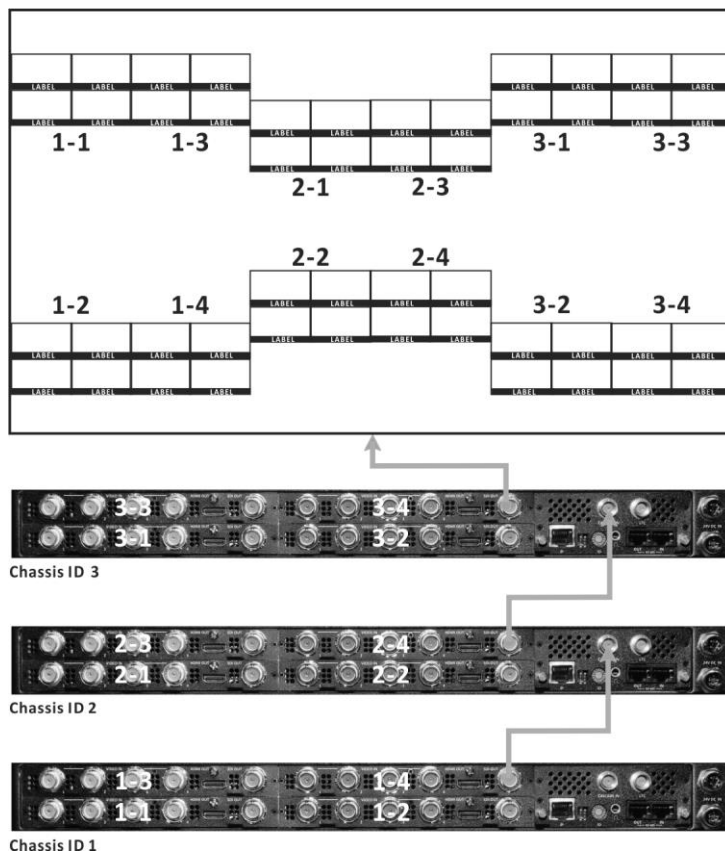windows of chassis ID 3 will be displayed.

Figure 3-27 Assign Any or Multi-cards to the Cascade Output Illustration 4

✓ *To bypass all input source signals of all 4 cards from chassis ID 2 –*
select "Cascade In" for "HDMI 4"
Only the 16 windows of chassis ID 1 + 16 windows of chassis ID 3 will be displayed.
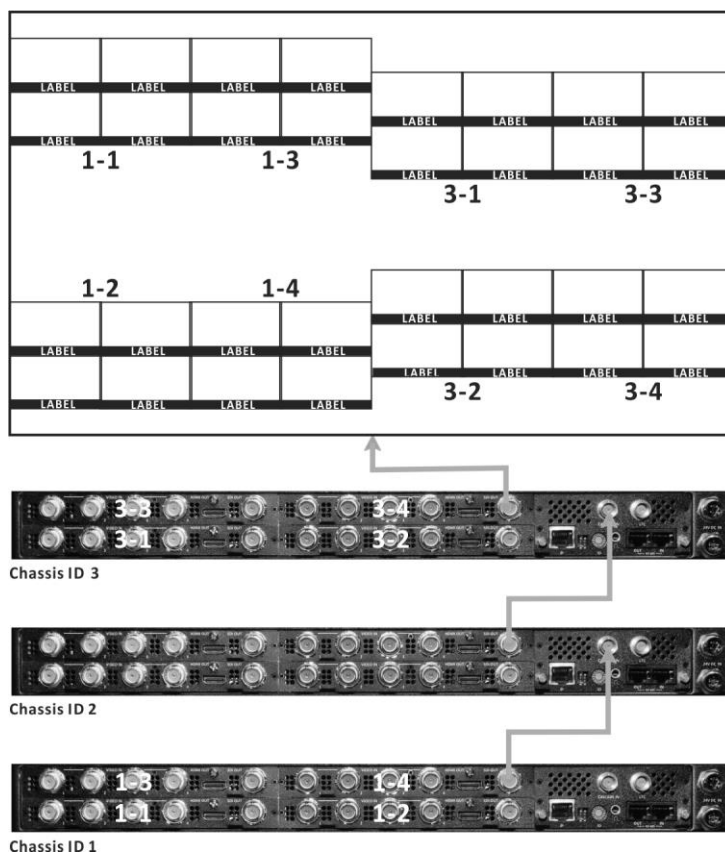
Figure 3-28 Assign Any or Multi-cards to the Cascade Output Illustration 5

4. Phoenix-Q Configuration

The Avitech Phoenix-Q program requires no installation. Just copy the system files to the computer's hard drive. This chapter introduces the Phoenix-Q software for setting up the Rainier 3G Plus.

⚠️
1. *Make sure the Rainier 3G Plus is powered on and properly connected to the computer through an Ethernet cable before launching the Phoenix-Q software.*
2. ***DO NOT*** *use the serial cable to connect the Rainier 3G Plus to the computer. The serial port is for connecting to a TSL controller/interface.*

4.1 Connection Method

Connect the Rainier 3G Plus to the controlling computer through an Ethernet cable (IP address).

Before connecting the computer to the Rainier 3G Plus, the computer will need to be changed to a static IP, and its subnet mask must be set to a similar range as the Rainier 3G Plus (e.g., "192.168.0.5" – factory-default setting). Or, the IP address of the Rainier 3G Plus Master chassis must be changed to a similar range as the controlling computer. See Appendix D for details on setting up an IP connection.

4.2 Pinging the Rainier 3G Plus

Make sure to be able to ping the chassis at "192.168.0.5" (factory-default IP address).

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

*Step 2. Enter the factory-default IP address **192.168.0.5**. Then click **Ping**.*
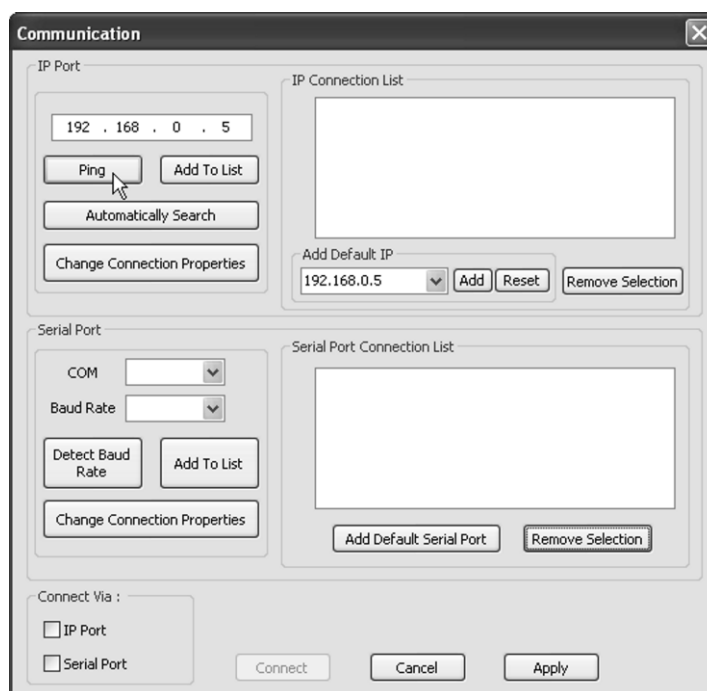
Figure 4-1 Enter the IP Address to Ping

*Step 3.   The following window will appear to signify a successful communication. Click **OK** to exit.*

Figure 4-2 IP Address Pinged Successfully

4.3 Starting Up the Phoenix-Q Software

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

Step 2.   Make sure to set the correct IP address (see Appendix D for details).

*Step 3.   Select the **IP Port** checkbox (Serial Port is for connecting to a TSL controller/interface only). Then click **Connect**.*
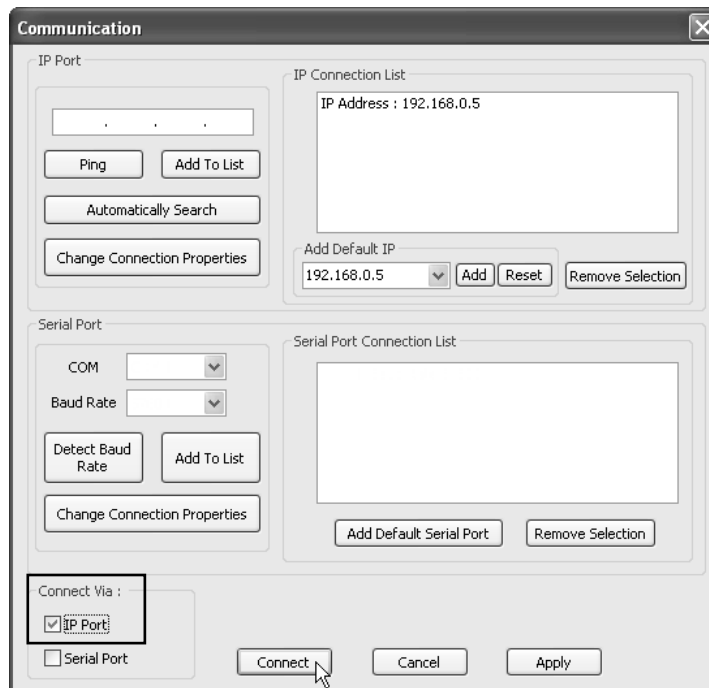
Figure 4-3 Phoenix-Q Software: Select the Ethernet Connection Method

The computer will start to search for the Rainier 3G Plus.
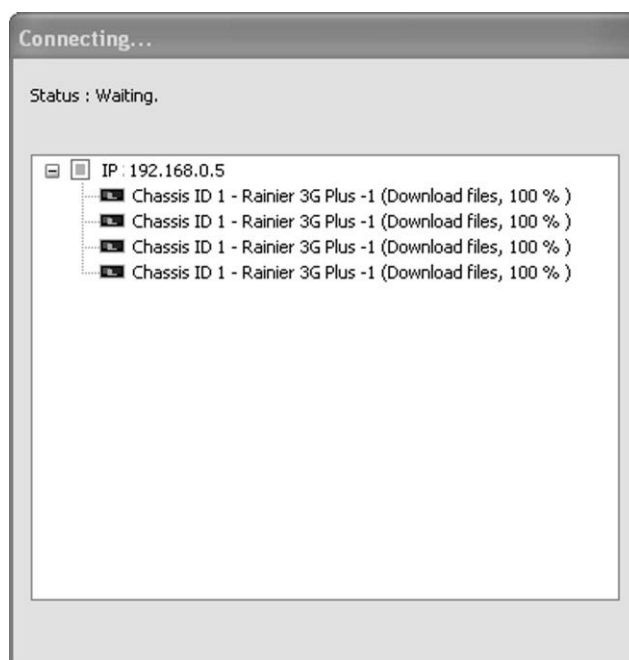
Figure 4-4 Phoenix-Q Software: Connection Progress

When cascading the Rainier 3G Plus make sure each chassis has a different rotary ID setting selected (e.g., 1 – 2 – 3) on their rear control board.

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

1. If there are 2 or more chassis cascaded they should also be detected.
2. Make sure that the cascaded chassis' baud rate and resolution is the same as the master chassis.
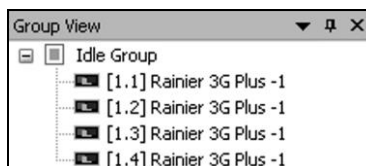
Figure 4-5 Phoenix-Q Software: Idle Group

*Step 4. Click **System**→**Configuration**.*
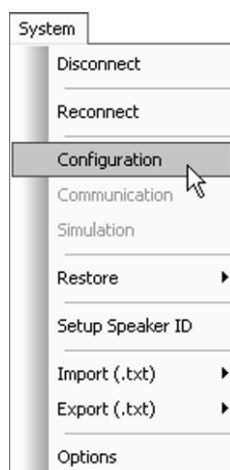
Figure 4-6 Phoenix-Q Software: Click "System"→"Configuration"

*The **Group Setup** window will appear.*
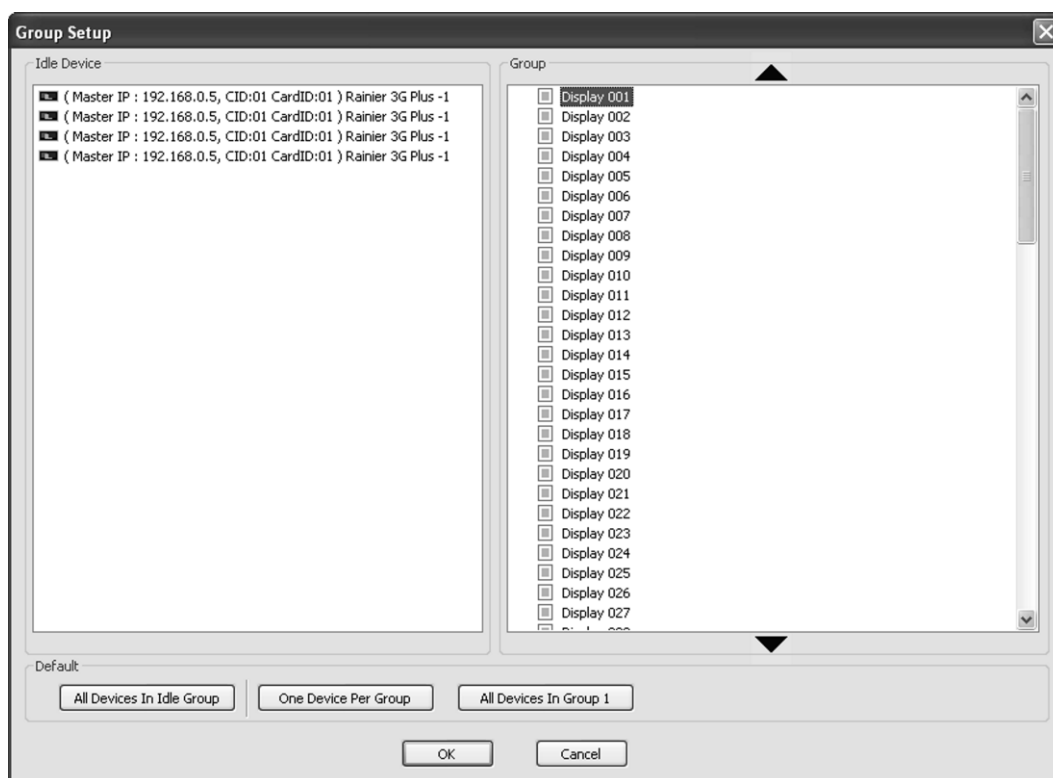
Figure 4-7 Phoenix-Q Software: Group Setup

Step 5. To assign the grouping drag the **Idle Device** on the left panel to the desired **Group #** on the right panel (e.g., **Group 001**).
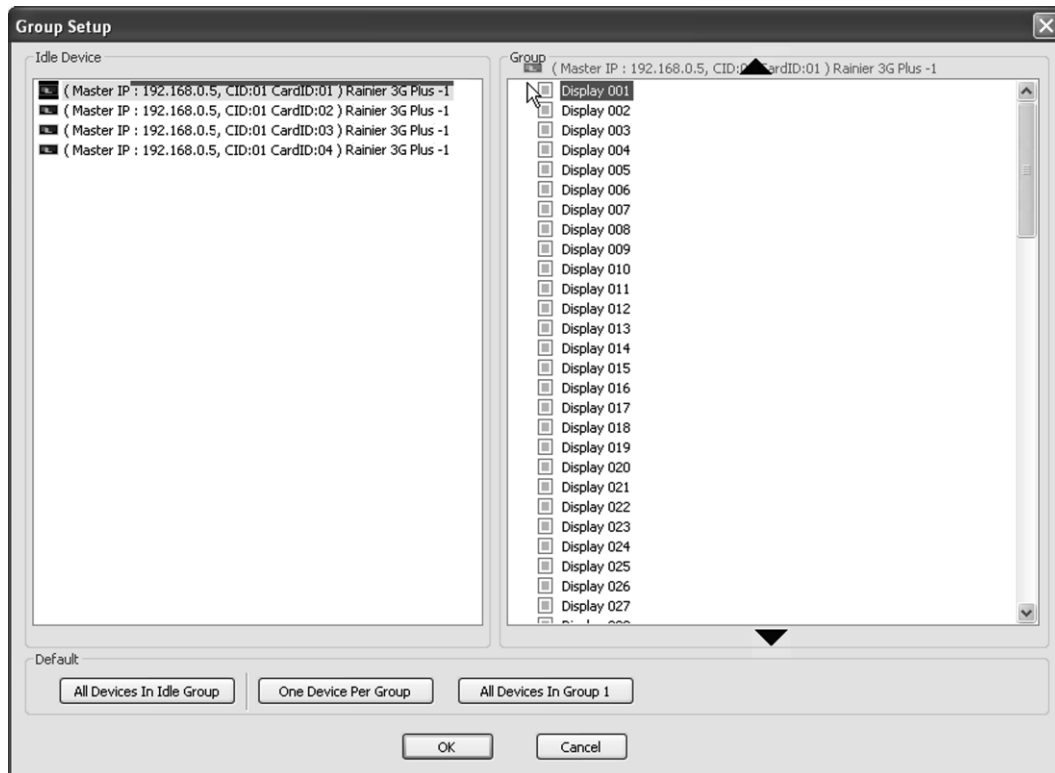
Figure 4-8 Phoenix-Q Software: Assign Group # to Idle Device

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

The Rainier 3G Plus – (PI card) must be assigned a group by itself.

After dragging/assigning the card, it will be displayed as belonging to the assigned group.
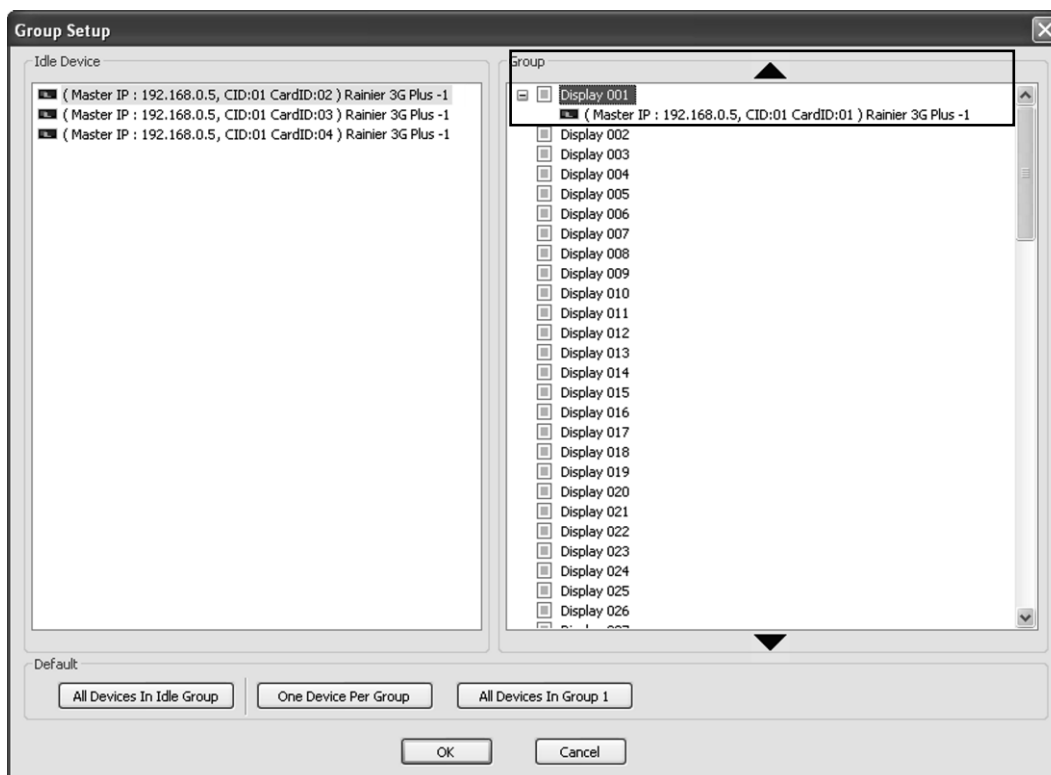
Figure 4-9 Phoenix-Q Software: Idle Device Assigned to Group 001

Step 6. *Repeat the previous step for any additional **Idle Device**(s). Next, click **OK** to exit the **Group Setup** window. Phoenix-Q will save the configuration file "System.agi" to the device's flash memory.*
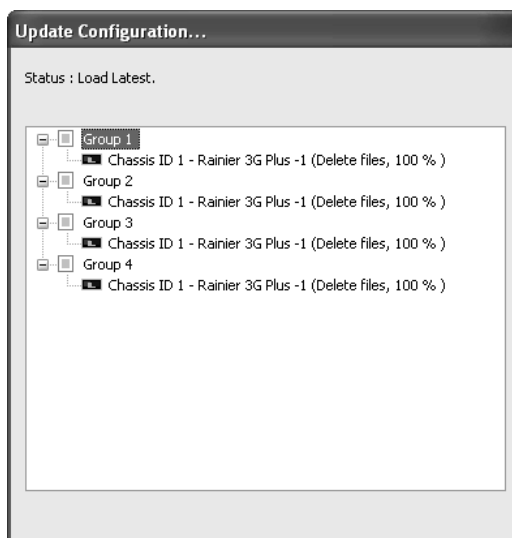
Figure 4-10 Phoenix-Q Software: Update Configuration Progress

After group setup has been completed, every time the IP address of the master chassis has been changed (see Appendix D), perform the simple step of entering 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 card name signifies the chassis ID and card ID number. Hence "[1.2]" would signify chassis ID 1 and card ID 2.
The "(O:H)" appearing after the card name signifies that audio "O"utput is to the "H"DMI OUT port. "(O:S)" would signify that audio "O"utput is to the "S"DI OUT port.
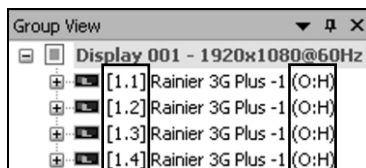
Figure 4-11 Phoenix-Q Software: Chassis and Card ID; Audio Output

*Place the mouse pointer over a specific card ID to show various information such as "**Master IP**" / "**Chassis ID** #" / "**Card ID** #" / "**Audio Output**" reference guide.*
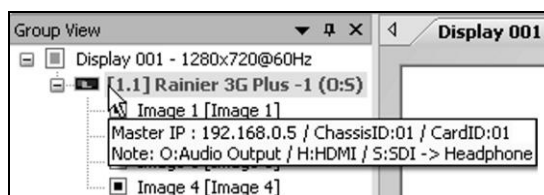
Figure 4-12 Phoenix-Q Software: Device Information and Reference

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

*Step 1. Click **System→Disconnect**.*
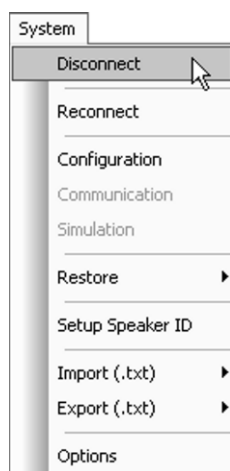
Figure 4-13 Phoenix-Q Software: Click "System"→"Disconnect"

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

Figure 4-14 Phoenix-Q Software: Confirm Disconnection

The progress of disconnection will appear on screen.
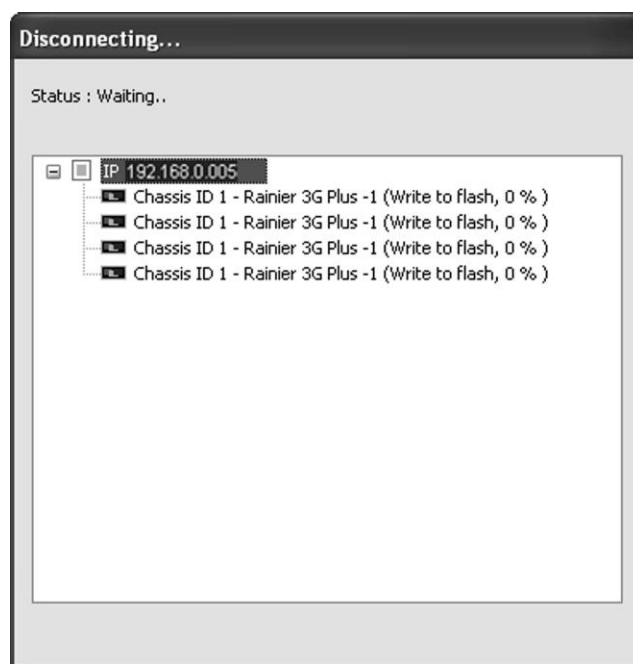
Figure 4-15 Phoenix-Q Software: Disconnection Progress

*Step 2.   Click **System**→**Options**.*
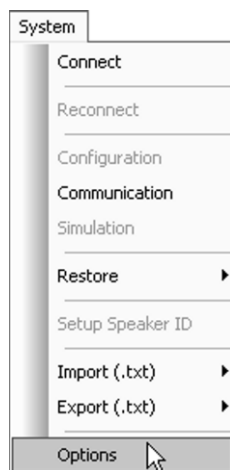
Figure 4-16 Phoenix-Q Software: Click "System"→"Options"

Step 3. On the **Options** screen click **External Device** and make sure that **Device Enable** is set **On**.
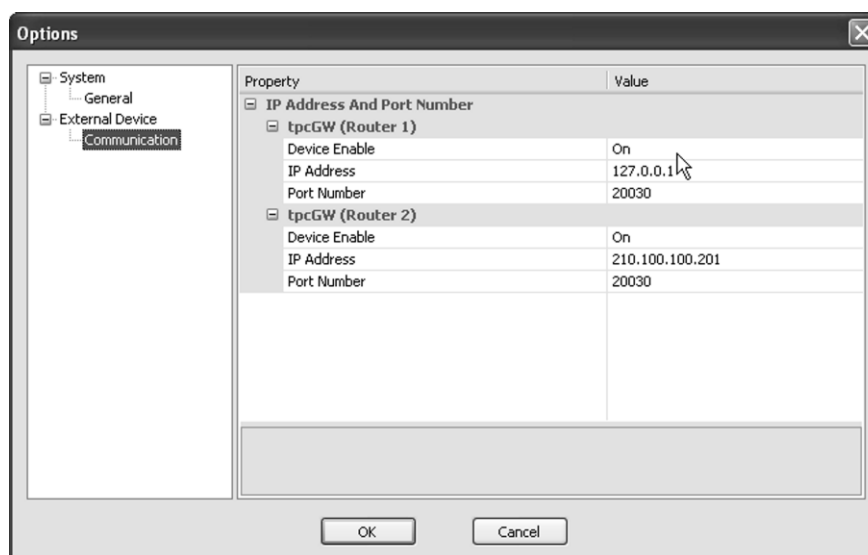
Figure 4-17 Phoenix-Q Software: Enable External Device

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.
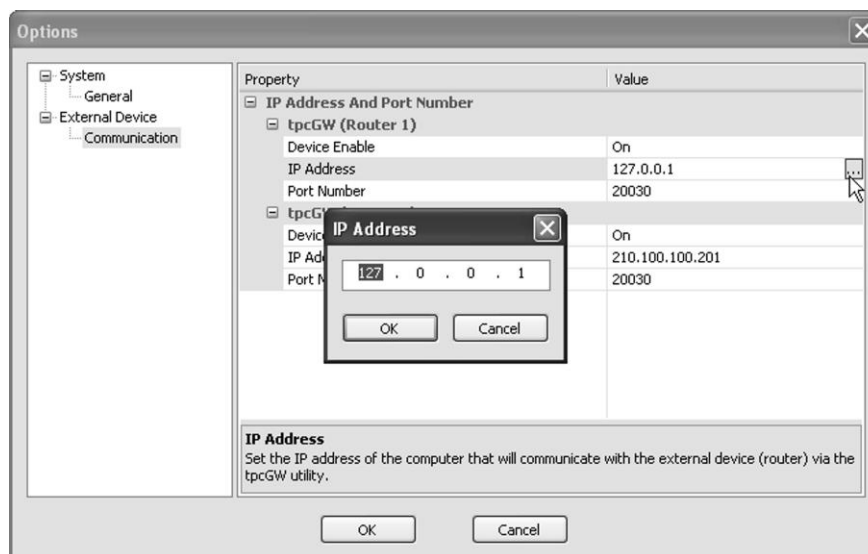
Figure 4-18 Phoenix-Q Software: Enter Correct IP Address

*Step 5. Make sure that the **Port Number** shown is correct. If not, enter the value directly or click the up/down arrow buttons to change the value. Then click **OK** to exit the **Option** screen setup.*
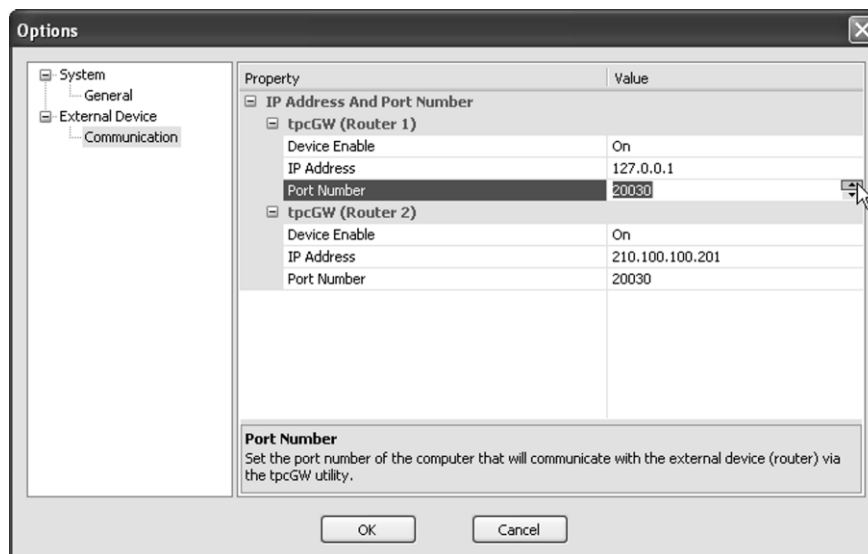
Figure 4-19 Phoenix-Q Software: Enter Correct Port Number

⚠️ *Make sure the values appearing for both **IP Address** and **Port Number** are similar to the values entered in the tpcGW utility, otherwise you will not be able to successfully connect to the router.*

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).

4.5 Window Layout

4.5.1 Arranging Windows (by Group)

For a quick layout setup of the video windows, right-click the **Group ###** (e.g., **Group 001**) tab to access the **Group Layout** menu. Select from **2×2** up to **13×13** 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.
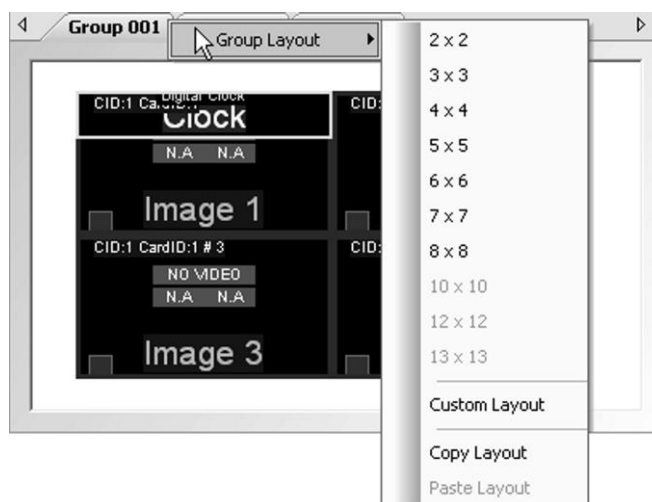
Figure 4-20 Phoenix-Q Software: Group Layout

Upon selecting **Custom Layout**, specify the **Window Ratio** (**Normal** / **4:3** / **16:9**). If **Normal** is selected, then set the **Horizontal** and **Vertical** number of windows (**2** to **8**) as possible grid positions on the monitor. If **4:3** or **16:9** is selected, then only set the **Horizontal** number of windows (**2** to **8**).
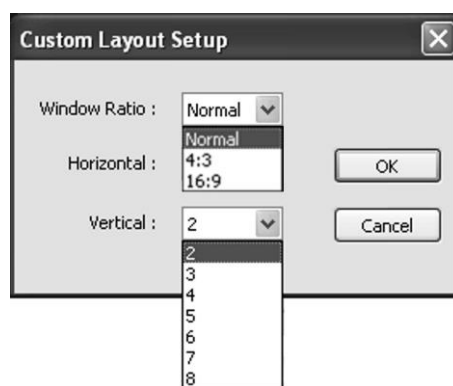
Figure 4-21 Phoenix-Q Software: Set Custom Layout

4.5.2   Resizing Window

Perform the following steps to resize a window:

*Method 1.   Right-click a window, and then select **Size**. Click the desired preset size.*
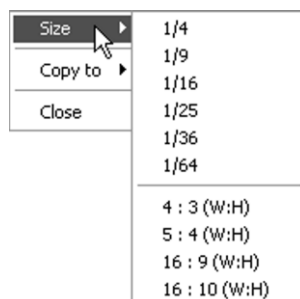
Figure 4-22 Phoenix-Q Software: Select a Preset Size

Method 2.   Resize a window by 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 128×80 pixels for NTSC/PAL video.

To reposition a window, 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.

4.5.3   Full Screen Mode; Swap Window Contents

Full Screen Mode

Double-click a window to enter full screen mode. 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.*
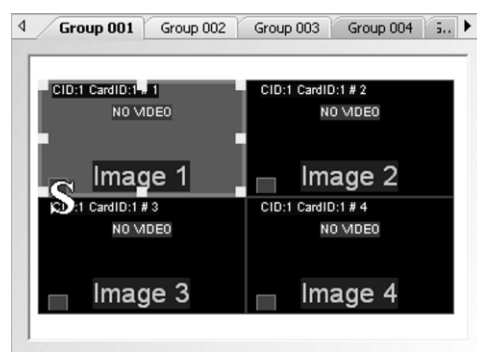
Figure 4-23 Phoenix-Q Software: Swap Window

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

4.5.4 Visual Studio

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

Step 1. To configure the appearance of the monitors in the Visual Studio tab, right-click anywhere inside the Visual Studio tab and click "Visual Studio Setting."
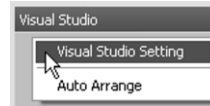
Figure 4-24 Visual Studio: Click "Visual Studio Setting"

*Step 2. ❶ Click to select the particular **Group ###** (card ID) on the left column.*
*❷ Click the destination **Visual Studio ###** (group) on the right column.*
❸ Click the right arrow button ⟩⟩.
*Select other **Group ###** (card ID) to belong to a **Visual Studio ###** group.*
*Multiple **Group ###** (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 **Group ###** from the previously assigned **Visual Studio ###** on the right column; click to select it. Then, click the left arrow button ⟨⟨ .*
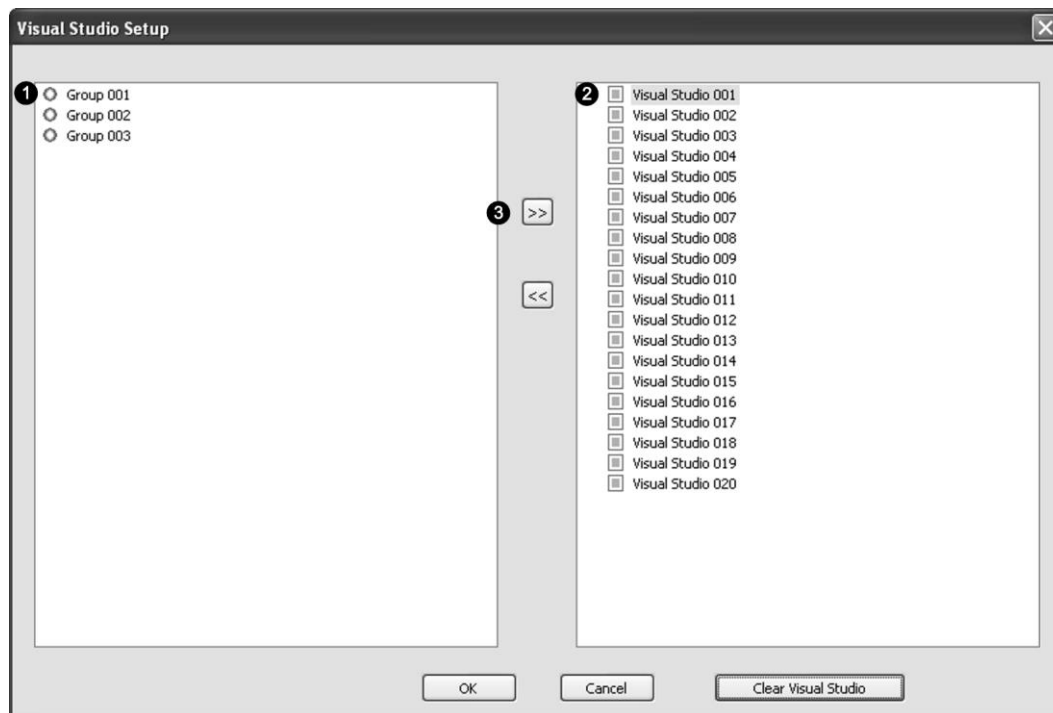
Figure 4-25 Visual Studio: Assigning Visual Groups

*Step 3. On the Visual Studio tab select the desired layout by right-clicking anywhere and clicking "Layout." Select from **2×2** up to **10×10** as possible grid positions, or specify a fixed 1 row by "N" columns or "N" rows by 1 column (with "N" being the number of displays).*
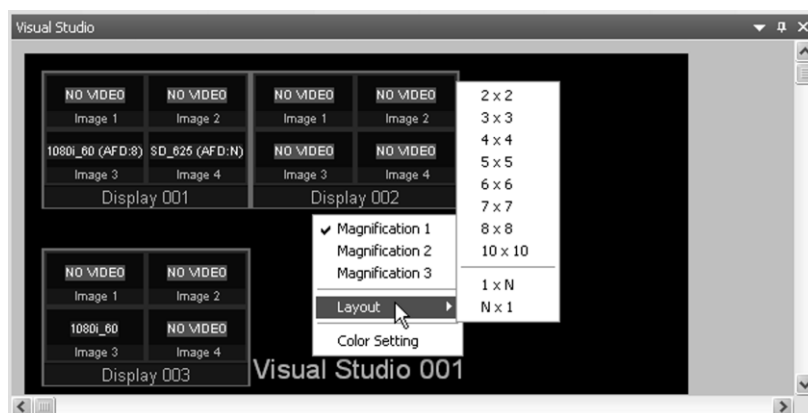
Figure 4-26 Visual Studio: Select the "Layout"

If more than one card ID was assigned to a Visual Studio group, initially the card IDs appearing on the Visual Studio tab may be stacked on top of each other. Select a "Layout" to display the other card IDs.

Quick Information

Positioning the cursor on top of a window will provide quick information for the window. A prompt "Double-click → (window label)" will allow you to quickly bring up the particular group's layout view in the main window of Phoenix-Q.

Figure 4-27 Visual Studio: Window Quick Information

Magnification

Right-click anywhere on a window to select from the 3 available magnifications.

Figure 4-28 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**.*
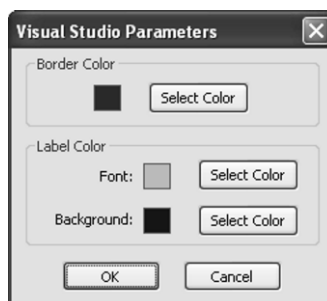
Figure 4-29 Visual Studio: Set the Border and Label Color

Auto Arrange

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

Figure 4-30 Visual Studio: "Auto Arrange"

4.5.5 Available Windows

Image windows that are disabled (turned off) reside in a tab called "Available Windows."
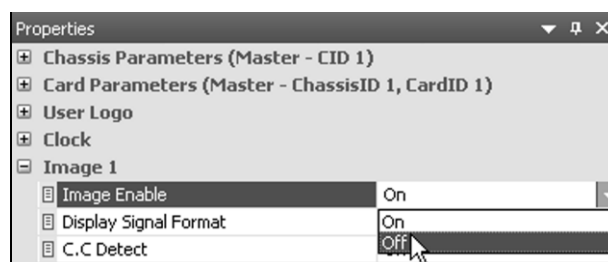
Figure 4-31 Properties Tab: Turn Off Image Window

To turn image window back on (re-enable), use any of the below 2 methods:

Method 1. Select the desired image window to be turned on and in the "Properties" tab click "Image Enable"→ "On".
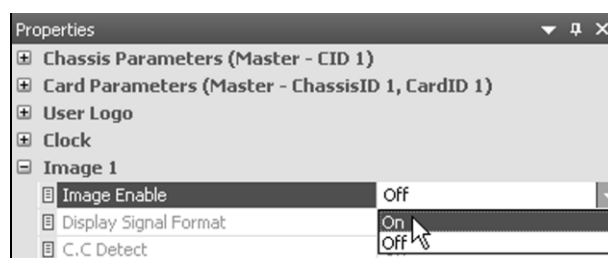
Figure 4-32 Properties Tab: Turn On Image Window

Method 2. Drag the window to be enabled to the "Group xxx" tab.
Action ❶ (drag window to an empty location) will allow the selected window to appear in the previously empty space.
Action ❷ (drag window on top of another window) will cause the former occupant window to be disabled (turned off) and moved to "Available Windows" tab ❸.
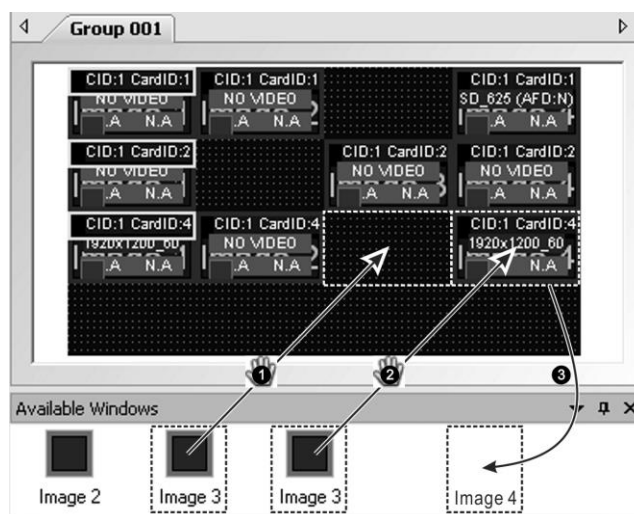
Figure 4-33 Properties Tab: Turn On Image Window

Placing the mouse pointer on top of a window residing in the "Available Windows" tab displays information about the image window.
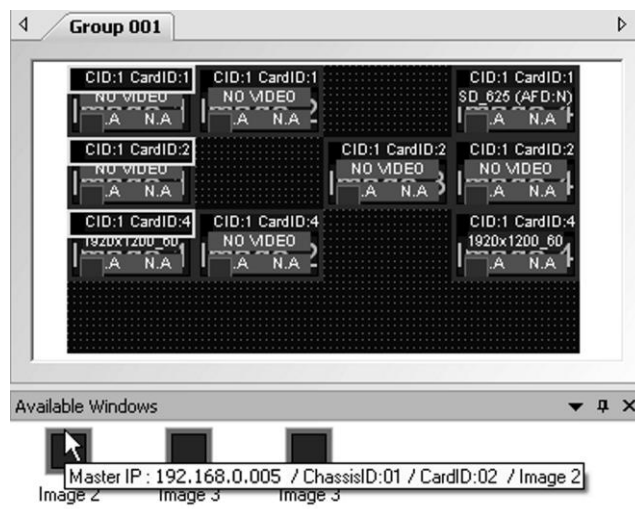
Figure 4-34 Available Windows Tab: Image Window Information

4.5.6 Copy Window Properties

*Right-click an item (with ▤ icon) on the **Properties** window (except with ▤ icon) and click the following to quickly apply the settings to –*
1. *all the windows (**Card→All**)*
2. *to a particular window (**Card→Image 1/2/3/4**)*
3. *all the cards belonging to the same (**Group**)*
4. *to the entire (**System**)*
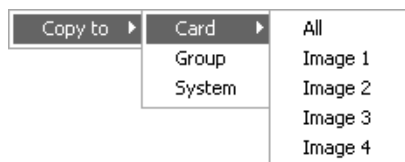
Figure 4-35 Phoenix-Q Software: Right-click Item to Quickly Apply Settings to Card/Group/System

The properties of a window can be copied to another window on the same card, as well as between cascaded chassis.

*Right-click a window, select **Copy to**, and click the following to quickly apply the settings to –*
   1. *all the windows (**Card→All**)*
   2. *to a particular window (**Card→Image 1/2/3/4**)*
   3. *all the cards belonging to the same (**Group**)*
   4. *to the entire (**System**).*
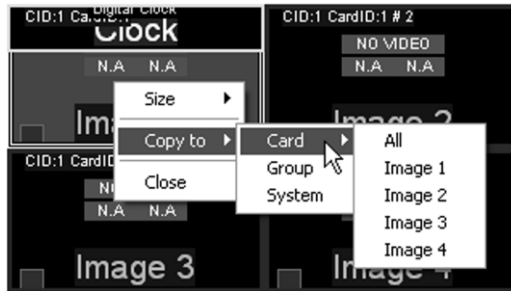
Figure 4-36 Phoenix-Q Software: Right-click Window and Click "Copy"

The properties that can be copied include the following:

- ✓ *Window size:*
   1. *width, and*
   2. *height*

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

- ✓ *Aspect ratio:*
   1. *on/off switch*
   2. *sync type, and*
   3. *fit image size*

- ✓ *Safe area:*
   1. *on/off switch*
   2. *horizontal and vertical markers*

- ✓ *Meter:*
   1. *on/off switch*
   2. *layout and alarm trigger*
   3. *group*
   4. *width*
   5. *vertical coordinates, and*
   6. *VU/PPM switch*

- ✓ *Image border:*
   1. *on/off switch*
   2. *width, and*
   3. *color*

- ✓ *Video border:*
   1. *on/off switch*
   2. *width, and*
   3. *color*

📄 *Close a particular window by clicking **Close**. The Window would appear as an icon on the **Available Windows** pane. To activate the window just drag the window into the main area.*
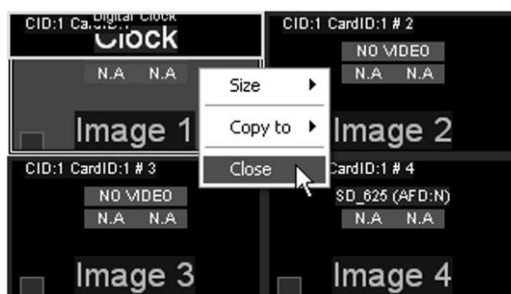
Figure 4-37 Phoenix-Q Software: Right-click Window and Click "Close"

4.5.7 Undo/Redo Changes

Click the [🗘 ▾ 🗘 ▾] to undo the previous step; while click the [🗘 ▾ 🗘 ▾] to redo the previous step that was undone.
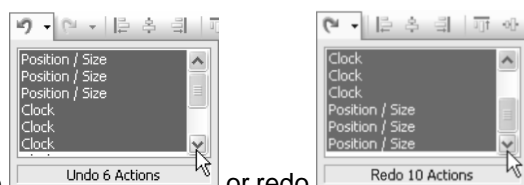
To undo [Undo 6 Actions] or redo [Redo 10 Actions] multiple actions click the drop-down arrow symbol beside the undo/redo button, then click to highlight the actions to be undone or redone. Use the scrollbar to highlight more than 6 actions.

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*

4.5.8 Align Windows

Align a set of windows horizontally or vertically. Choose how the windows will be lined up in relation to each other. For example, clicking the **Align Right** button ([⊟ Align Right]) 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 the succeeding windows using the keyboard's **Ctrl** key + left mouse button.*

📄 *Other computer applications that are currently running which use the same **Ctrl** key + left mouse button hot-key may disable multiple window selection in your Phoenix-Q software. Close the other programs before using the **Ctrl** key + left mouse button in Phoenix-Q.*
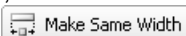
Step 2. To indicate how the windows will be lined up with each other click one of the following buttons. The alignment follows the position of the last window selected.

- ✓ *top*   [⊤↑ Align Top]

- ✓ *middle* [◦↕ Align Middle]

✓ *bottom*   Align Bottom

✓ *left*   Align Left

✓ *center*   Align Center

✓ *right*   Align 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.*

4.5.9 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 the succeeding windows using the keyboard's **Ctrl** key + left mouse button.*

📄 | *Other computer applications that are currently running which use the same **Ctrl** key + left mouse button hot-key may disable multiple window selection in the Phoenix-Q software. Close the other program first before using the **Ctrl** key + left mouse button in Phoenix-Q.*

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

✓ *copy width*   Make Same Width

✓ *copy height*   Make Same 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 (e.g., if resolution is set at 1080i 50Hz then the image's height must not be less than 540 pixels).*

✓ *copy size*   Make Same 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.*
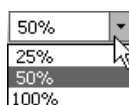
Figure 4-38 Phoenix-Q Software: Set Custom Level Magnification for Viewing Windows

4.5.10 Remove Horizontal/Vertical Spacing

Eliminate the space between a set of windows horizontally or vertically. Choose how the windows will line up in relation to each other. For example, clicking the **Remove Vertical Spacing** button (⬚ Remove Vertical Spacing) eliminates the vertical space between a set of windows.

To position a set of windows side-by-side by removing the horizontal/vertical space:

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

📄 *Other computer applications that are currently running which use the same **Ctrl** key + left mouse button hot-key may disable multiple window selection in the Phoenix-Q software. Close the other programs before using the **Ctrl** key + left mouse button in Phoenix-Q.*

Step 2.   To eliminate the vertical/horizontal spacing between the windows click one of the following buttons. The position of the last window selected do not change but the other window(s) changes position to remove any vertical/horizontal spacing in-between.

✓   *horizontal*   ⬚ Remove Horizontal Spacing

✓   *vertical*   ⬚ Remove Vertical Spacing

📄 *1. "Remove Horizontal Spacing" button is disabled (grayed-out) if any of 2 consecutive windows selected are overlapped horizontally (x-axis perspective).*
2. "Remove Vertical Spacing" button is disabled (grayed-out) if any of 2 consecutive windows selected are overlapped vertically (y-axis perspective).

4.6 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**.*
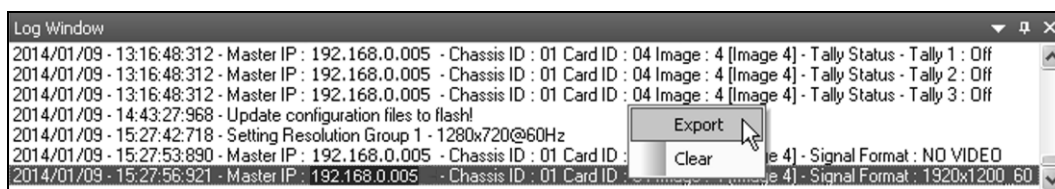
Figure 4-39 Log Window: Right-click "Export"

*Step 2. Assign a filename and click **Save** to store the data.*
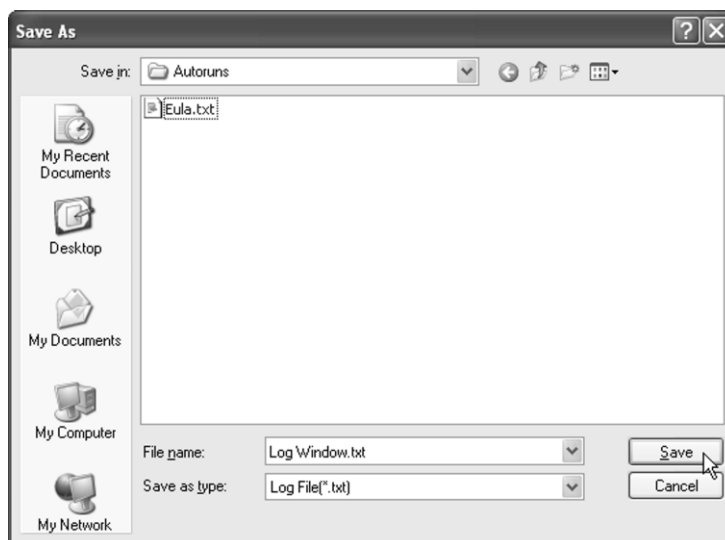
Figure 4-40 Phoenix-Q Software: Save Log Window Information

Refer to the computer's hard drive (C:/Avitech/Backup/Backup_date_time/Log/ folder) for various system log messages text file.
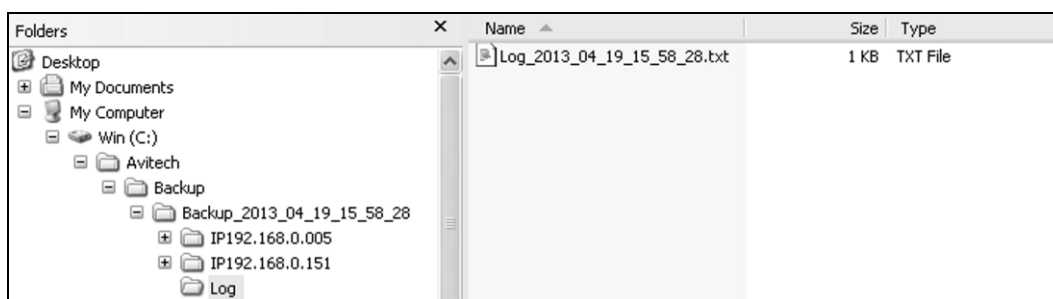
Figure 4-41 Phoenix-Q Software: Location of Auto-save Log File

5. Basic Setup Using the Phoenix-Q Software

This chapter introduces the Phoenix-Q software for setting the features of the Rainier 3G Plus; as well as familiarizing 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).

5.1 File Menu
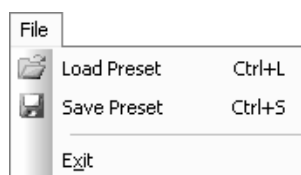
Figure 5-1 Phoenix-Q Software: File Menu

All the presets created are stored in the Rainier 3G Plus flash memory, not on the computer. After creating a preset "save to flash" in order to write all the presets into the internal flash memory of the Rainier 3G Plus. To save a preset, perform the following steps:

Step 1. Configure the window layout 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 these steps for each additional preset.*

Figure 5-2 Phoenix-Q Software: Enter Unique Filename for Preset

*1. The file extension **GP#** will be automatically added to the filename of a group's preset.*
*2. Click to select **Save Global Preset** (with checkmark) to save a group preset that can be applied to all the groups. The file extension **GLB** will be automatically added to the filename.*

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

Figure 5-3 Phoenix-Q Software: Delete File in Save Window

📄 *To delete all the files appearing on the window right-click anywhere inside the window (except on a filename) and click **Delete All**. When the confirmation window appears, click **OK** to proceed.*
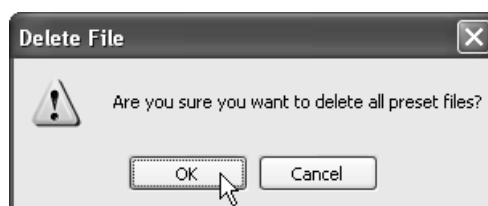
Figure 5-4 Phoenix-Q Software: Delete All Preset Files Confirmation

*Step 4.   After creating presets, click **Load Preset** to load the file to be the master layout which is automatically loaded when the Rainier 3G Plus is powered on.*

*Step 5. Select a saved file and then click **OK** to load the preset.*
Opening a preset file with "GP#" as the filename extension loads a single group preset; while opening a preset file with "GLB" as the filename extension loads a preset that applies to all groups (global preset).
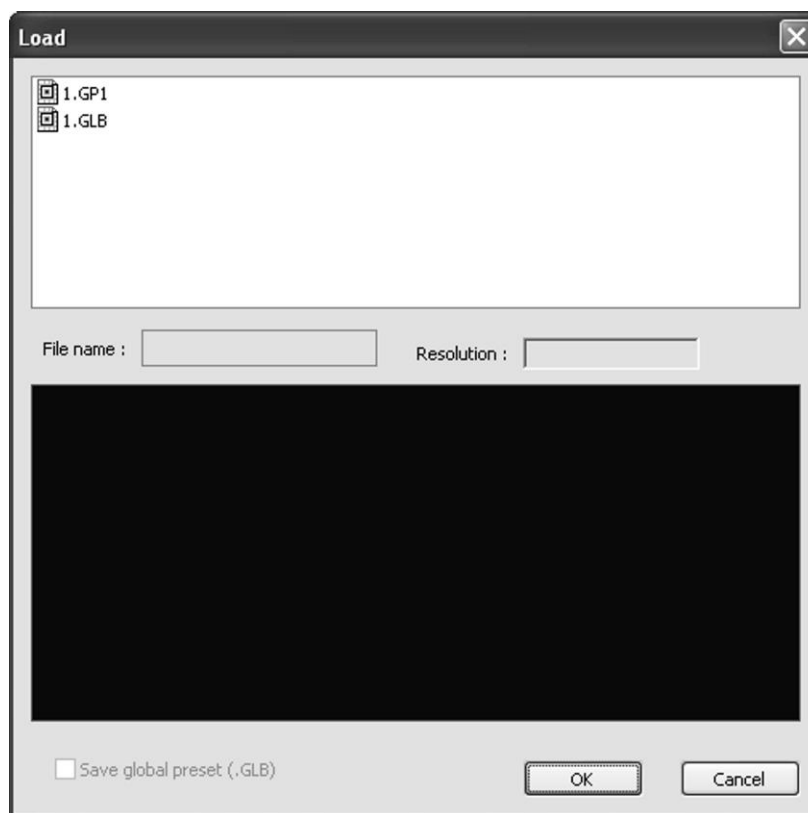
Figure 5-5 Phoenix-Q Software: Load Preset File

*Just like the **Save** window delete a file appearing on the **Load** window by right-clicking the filename and clicking **Delete**. To delete all the files appearing on the window right-click anywhere inside the window (except 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 would be automatically saved to the configuration file "System.agi" in the device's flash memory.*

5.2 Edit Menu
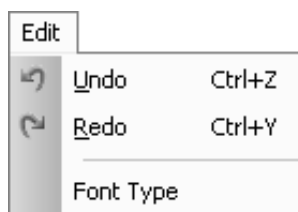
Figure 5-6 Phoenix-Q Software: Edit Menu

Edit Menu	
Undo	Click **Undo** to cancel the previous step.
Redo	Click **Redo** to repeat the previous step that was cancelled.
Font Type	Click **Font Type** to set the **Font**, **Font style**, and **Size**.

Table 5-1 Phoenix-Q Software: Edit Menu Description

Font Type: *Click **Font Type** to select the **Font**, **Font style**, and **Size**. Then, click **OK**.*
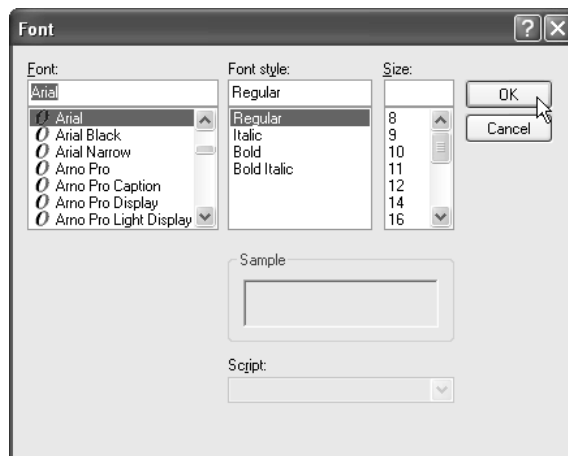
Figure 5-7 Phoenix-Q Software: Set Font Properties

📄 *For Windows 7: When using the Phoenix-Q in a different language other than English the **Font** "Arial" might not appear as the default font-type. This may cause the label appearing 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 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 to unselect the **Hide fonts based on language settings** checkbox. Then click **OK** to exit.*

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

5.3 View Menu
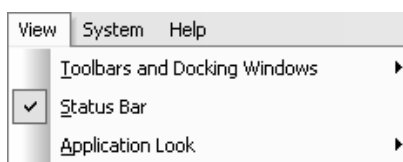
Figure 5-8 Phoenix-Q Software: View Menu

View Menu	
Toolbars and Docking Windows	Enable (with checkmark) or disable the display of any of the toolbars or windows as well as **Customize** the display. *See figure 5-9
Status Bar	When enabled (with checkmark) the status bar is displayed on the bottom of the Phoenix-Q software. Click to enable or disable.
Application Look	Click **Application Look** to select the overall design and theme of the Phoenix-Q software. *See figure 5-11

Table 5-2 Phoenix-Q Software: View Menu Description

Toolbars and Docking Windows:

Enable (with checkmark) or disable display of **Standard** toolbar, **Available Windows** panel, **Log Window** panel, **Group View** panel, **Properties** panel, **Briefing** panel, as well as **Customize** display.
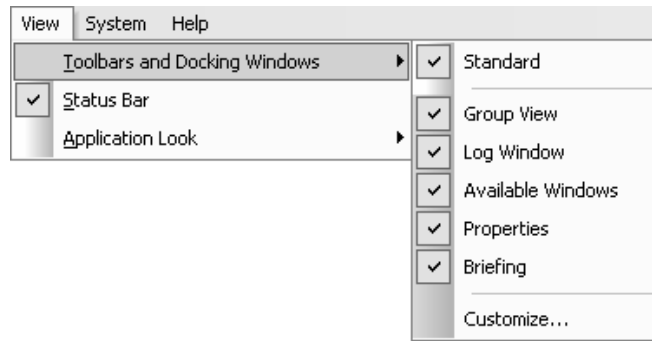
Figure 5-9 Phoenix-Q Software: "Toolbars and Docking Windows" Menu

Customize:

Click **Customize** to design the look of the menus and commands appearing on the Phoenix-Q software. Click the particular folder (**Commands**, **Toolbars**, **Menu**, and **Options**) and then make the necessary changes. Click **Close** when finished to exit.
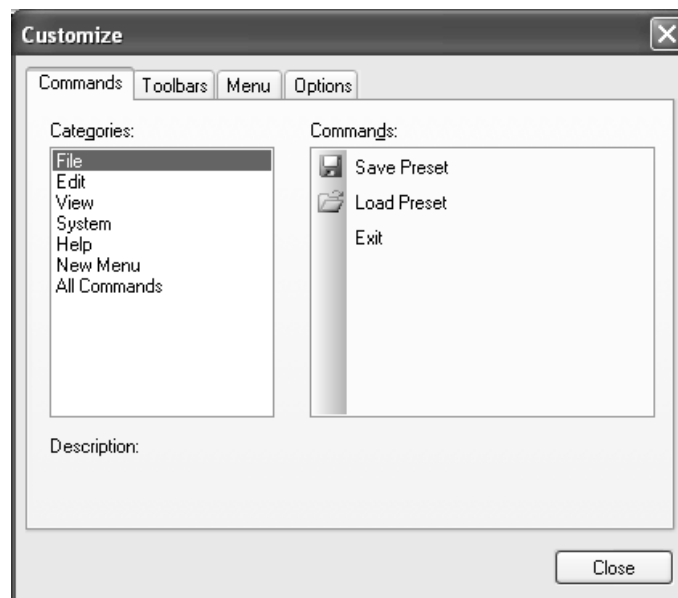
Figure 5-10 Phoenix-Q Software: "Customize the Toolbars" Window

Application Look:

Click **Application Look** to select the overall design and theme of the Phoenix-Q software. Click on the themes title to view the theme.
<u>Note</u>: *The "dot" to the left of **Visual Studio.NET 2005** signifies that it is the currently selected theme.*
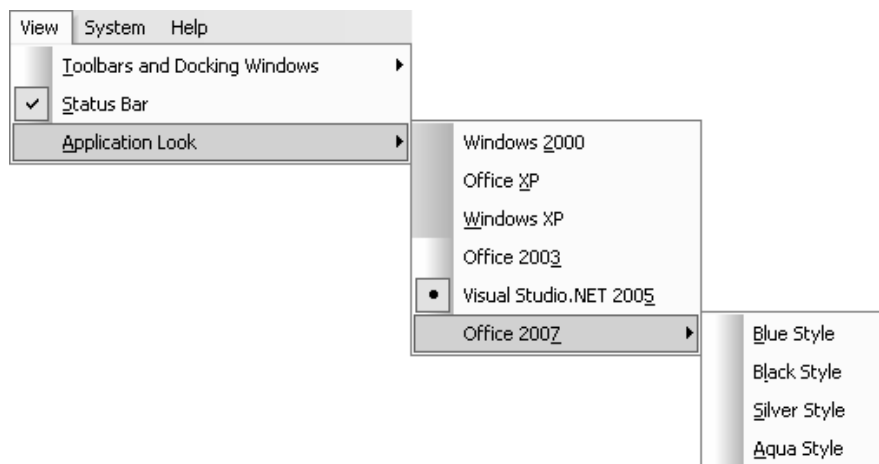
Figure 5-11 Phoenix-Q Software: "Application Look" Menu

5.4 System Menu
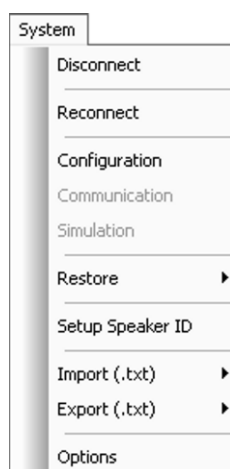
Figure 5-12 Phoenix-Q Software: System Menu

System Menu	
Connect or **Disconnect**	**Connect** the computer and Rainier 3G Plus through an Ethernet connection; click **Disconnect** to break the connection between the computer and the Rainier 3G Plus. Before connecting make sure that the correct configurations are entered under the item **Communication**.
Reconnect	Upon unplugging the Ethernet cable and re-connecting it, click **Reconnect** to continue the configuration process.
Configuration	Click **Configuration** to assign the groupings. Create the configuration of a particular group (for example move the card to another group by dragging the card 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.
Communication	Click **Communication** to select the **IP Port** "Ethernet" mode of connection between the computer and Rainier 3G Plus. *Note: This item is not available when the computer is connected to the Rainier 3G Plus.*
Simulation	*Note: For factory testing only, this item is not available.*
Restore	To restore a preset follow the steps outlined in figures (5-13 to 5-16).
Setup Speaker ID	Use Setup Speaker ID to set up which speakers monitor audio sources.
Import	Import image labels or alarm sound file from a .txt file. See figures (5-19 to 5-22) for details.
Export	Export image labels or alarm sound parameters to be edited externally. See figures (5-19 to 5-22) for details.
Options	Clicking Options opens up a popup window to customize a number of default settings for Phoenix-Q. These settings are organized into the following categories; System, General, External Device, and Communication. See figures (5-23 to 5-39) for details.

Table 5-3 Phoenix-Q Software: System Menu Description

Restore: *To manually **Restore** a preset perform the following steps.*

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

*Step 2. When using a backup file from a Rainier 3G Plus chassis to restore a different Rainier 3G Plus chassis, make sure that the hardware is exactly the same, and that the rotary **ID** setting of the chassis being restored matches the old chassis' setting.*

*Step 3. Click **System→Restore→Configuration and Files**.*
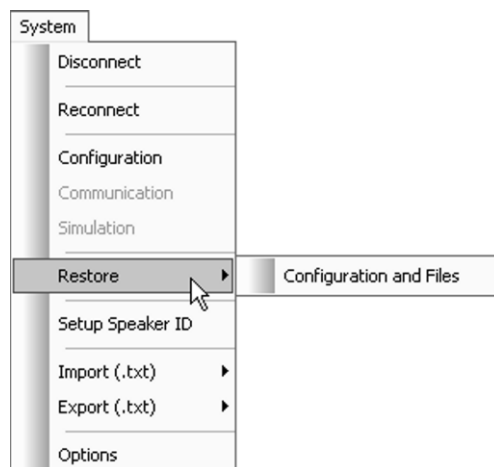
Figure 5-13 Phoenix-Q Software: Click "System"→"Restore"→"Configuration and Files"

*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 Plus.*
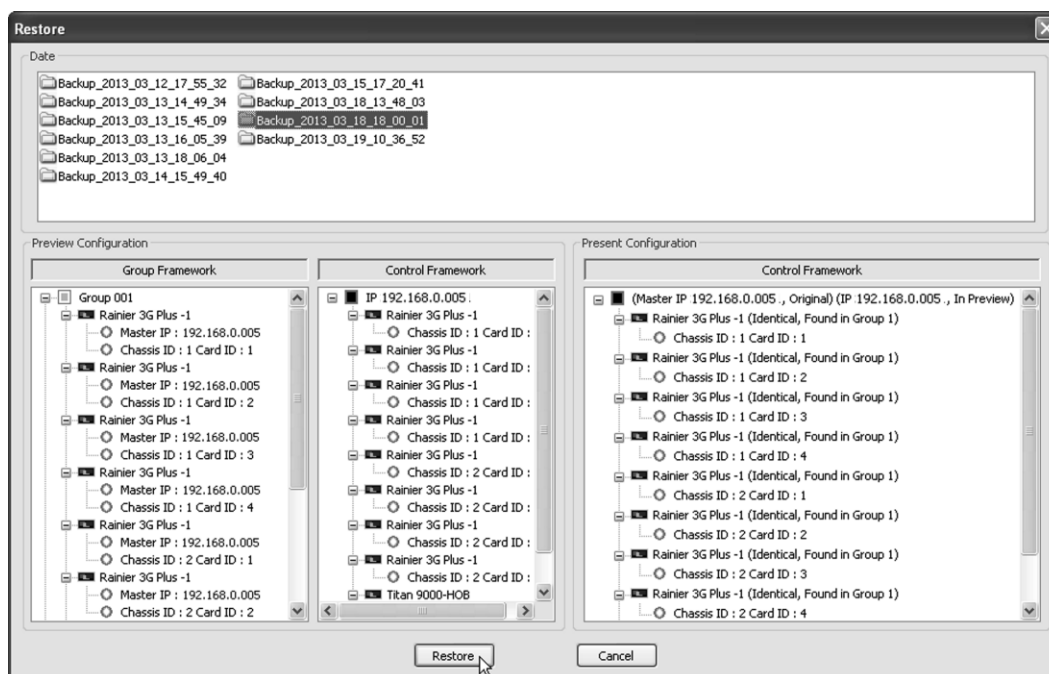
Figure 5-14 Phoenix-Q Software: "Restore" Window

*Step 5. Click to select a restore point (e.g., **Backup_2013_03_18_18_00_01**). System will automatically compare the setup listed in **Present Configuration** window with the setup listed in **Preview Configuration** window (e.g., **Identical**, **Different**, **New Device**).*

📄 | *When the setup of the **Present Configuration** window is different from the setup in the **Preview Configuration** window (e.g., upon selecting **Backup_2013_03_15_17_20_41** folder in the **Date** 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.*
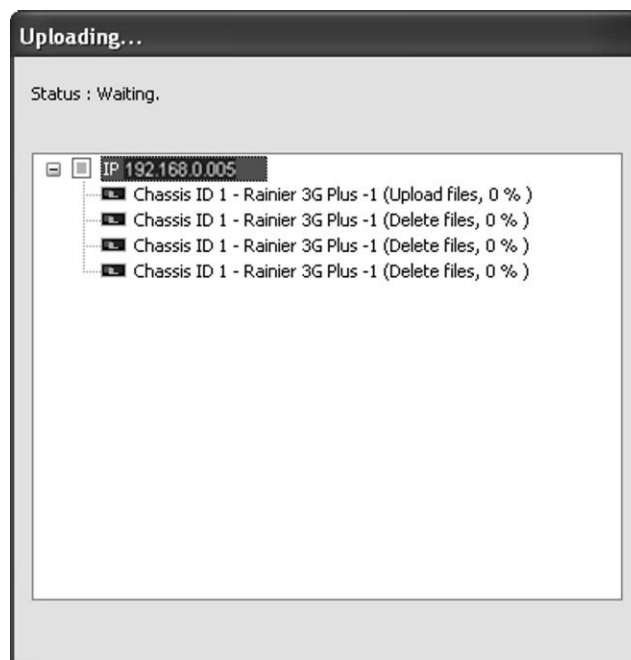
Figure 5-15 Phoenix-Q Software: "Restore" Progress

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

Figure 5-16 Phoenix-Q Software: Reboot Device

Setup Speaker ID: *When there are 2 or more cascaded chassis ID, use **Setup Speaker ID** to assign each card ID to output to a chassis ID headset output. Make sure to first assign 2 or more chassis ID cards to the same group.*
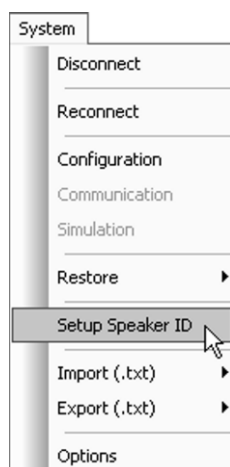
Figure 5-17 Phoenix-Q Software: Click "System"➔"Setup Speaker ID"
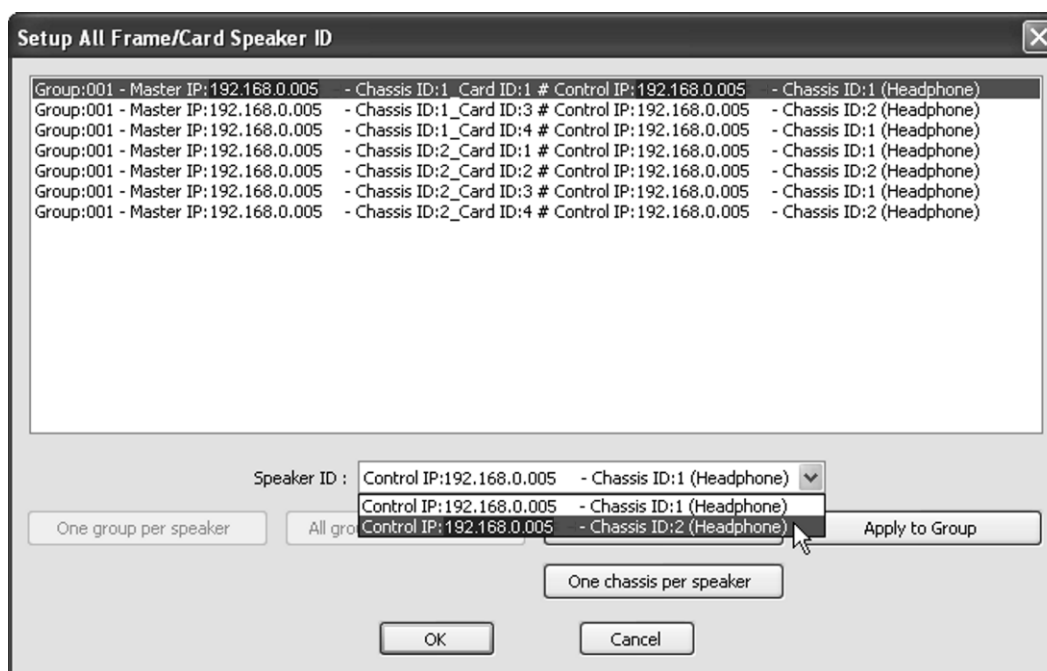
Figure 5-18 Phoenix-Q Software: Card Speaker ID

📄 | *This item is only available when the computer is connected to the Rainier 3G Plus.*

Import and Export Labels / Alarm Sound
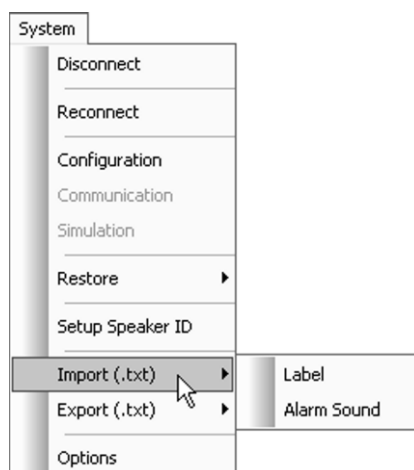
Figure 5-19 Phoenix-Q Software: Click "System"→"Import/Export Label (.txt)"

1. *"Label" 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 Plus.*
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 to be edited externally. Follow the steps below to change the Rainier 3G Plus' 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**.*
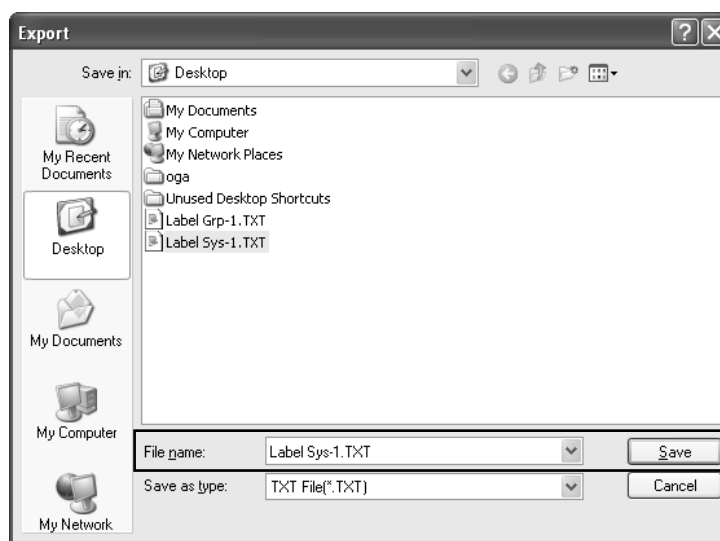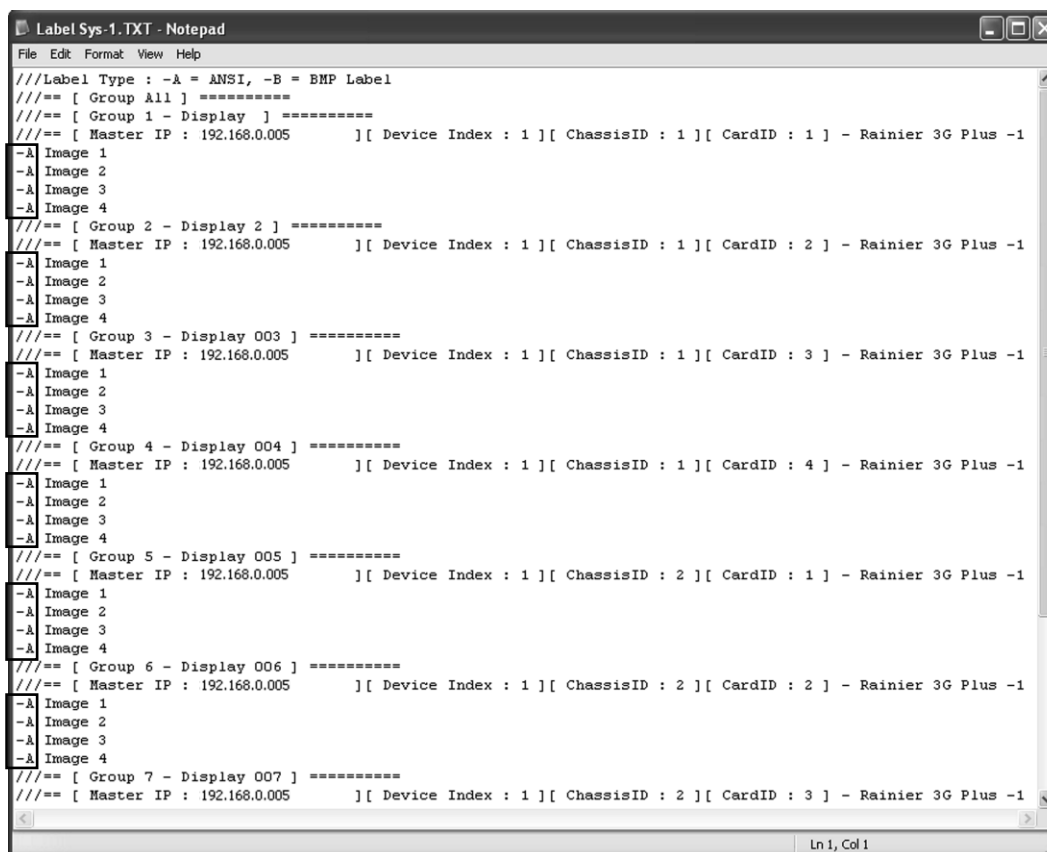
Figure 5-20 Phoenix-Q Software: Export Label

Step 2. *Open the exported text file. The first row of text provides a guide to the 2 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 5-21 Phoenix-Q Software: Change Label Type

Step 3. *Then edit the text in the file (highlighted as shown below). When done editing the label save the* ***txt*** *file and import it. The on screen labels will be updated.*
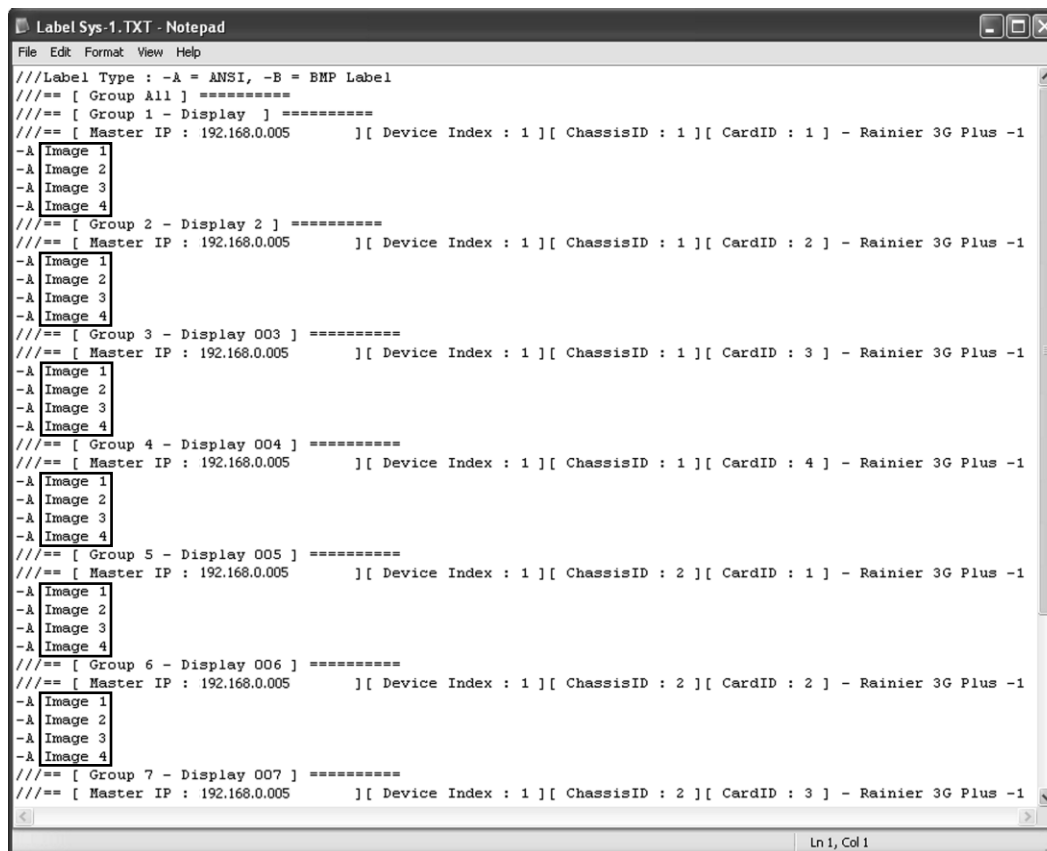
Figure 5-22 Phoenix-Q Software: Change Label Text

Options: *Opens a popup window with system configuration settings.*
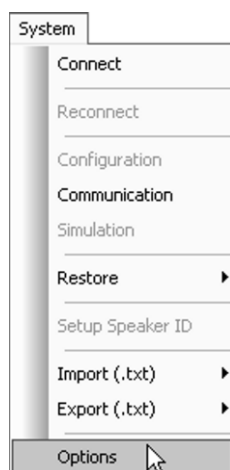
Figure 5-23 Phoenix-Q Software: Click "System"➔"Options"

✓ **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 (only available when Phoenix-Q is not connected to chassis).
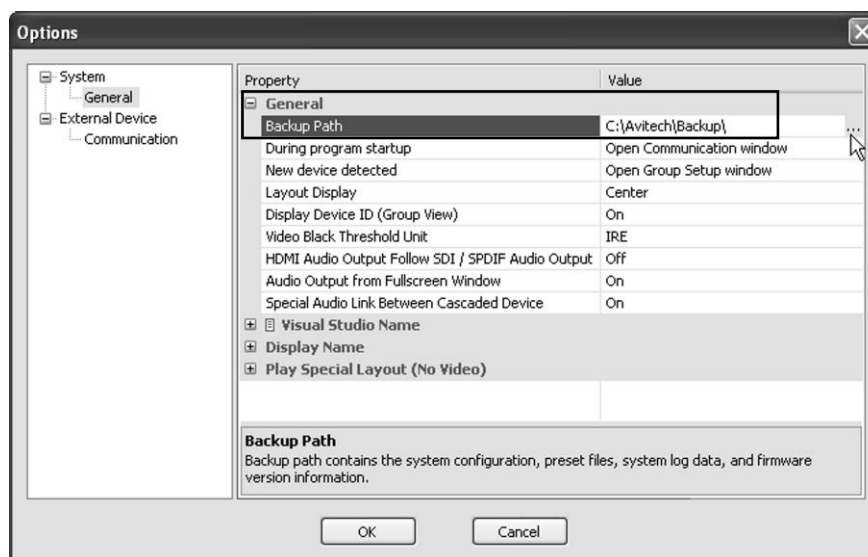
Figure 5-24 Options: "System"➔"General"➔"Backup Path"

Or click the select folder button "…" and when the **Select Folder** screen appears choose from the existing folders or click the **Make New Folder** button to create a new folder. Then click **OK** to exit.
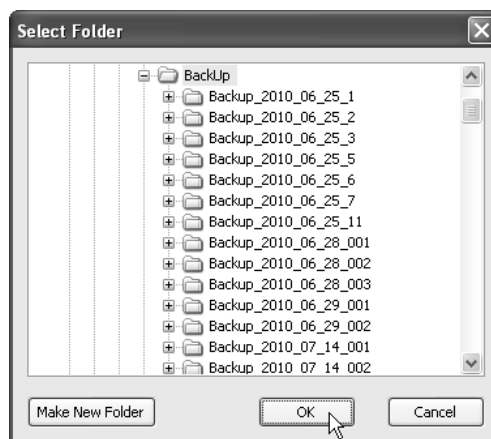
Figure 5-25 Phoenix-Q Software: Select Folder Window

✓ *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.
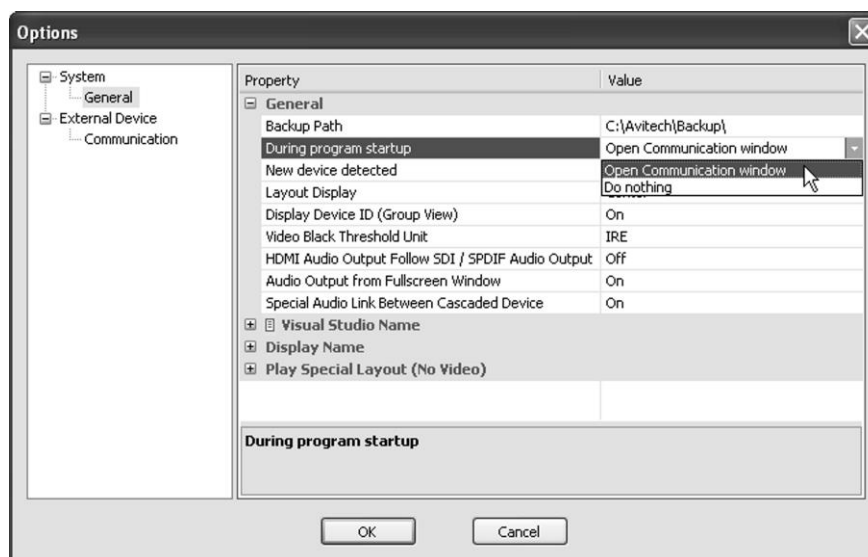
Figure 5-26 Options: "System"➔"General"➔"During Program Startup"

✓ *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.
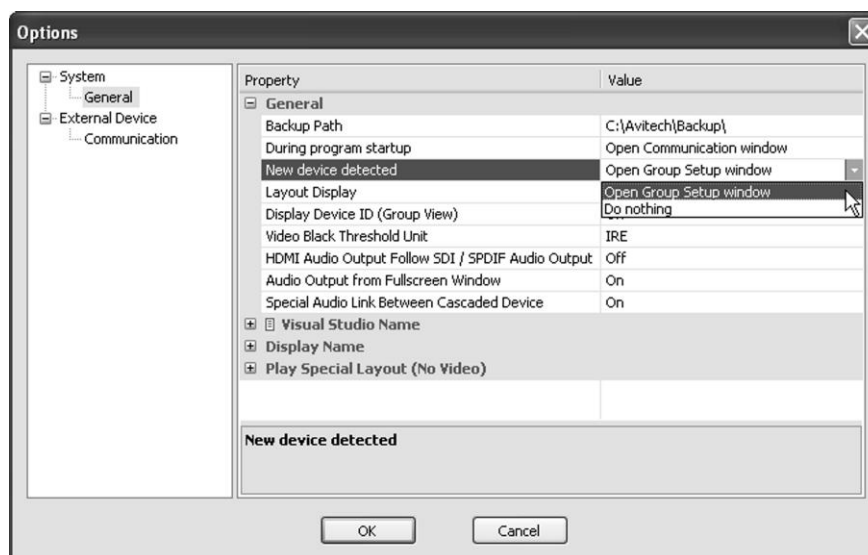
Figure 5-27 Options: "System"➔"General"➔"New Device Detected"

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.*
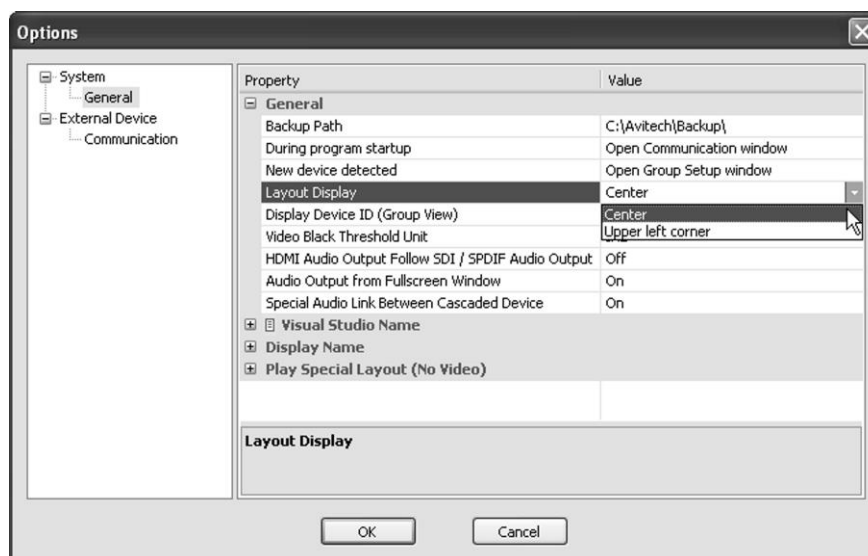
Figure 5-28 Options: "System"→"General"→"Layout Display"

✓ *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**.*
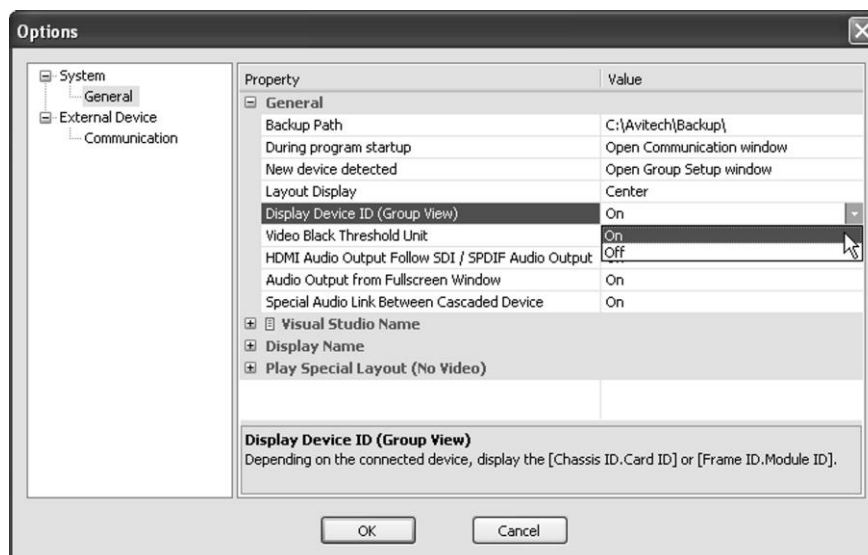
Figure 5-29 Options: "System"→"General"→"Display Device ID (Group View)"

✓ **General→General→Video Black Threshold Unit**
*Set the level (in **IRE** or **mV**) below which the signal will be considered to be black. Click the drop-down button [click the **Video Black Threshold Unit** cell's rightmost portion] to select **IRE** or **mV**.*

📄 *IRE is a unit used in the measurement of composite video signals. Its name is an abbreviation of Institute of Radio Engineers. **mV** stands for millivolt.*
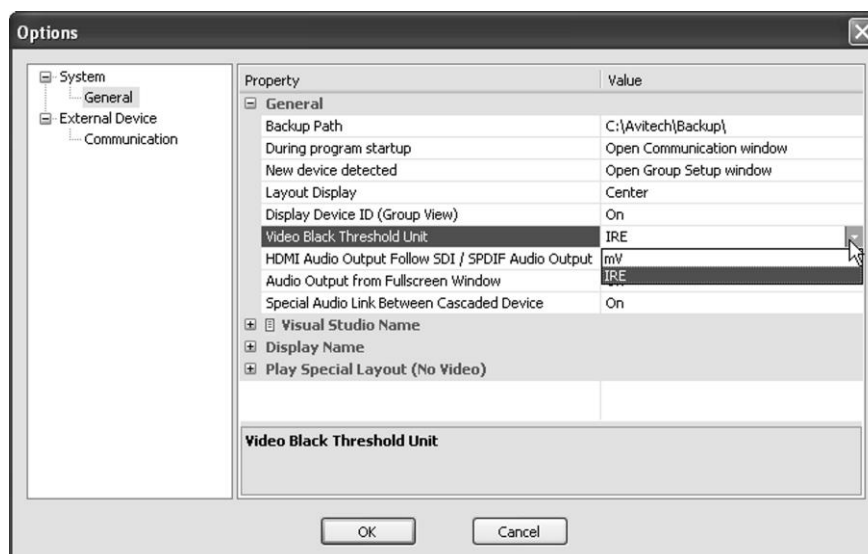
Figure 5-30 Options: "System"→"General"→"Video Black Threshold Unit"

✓ **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**.*
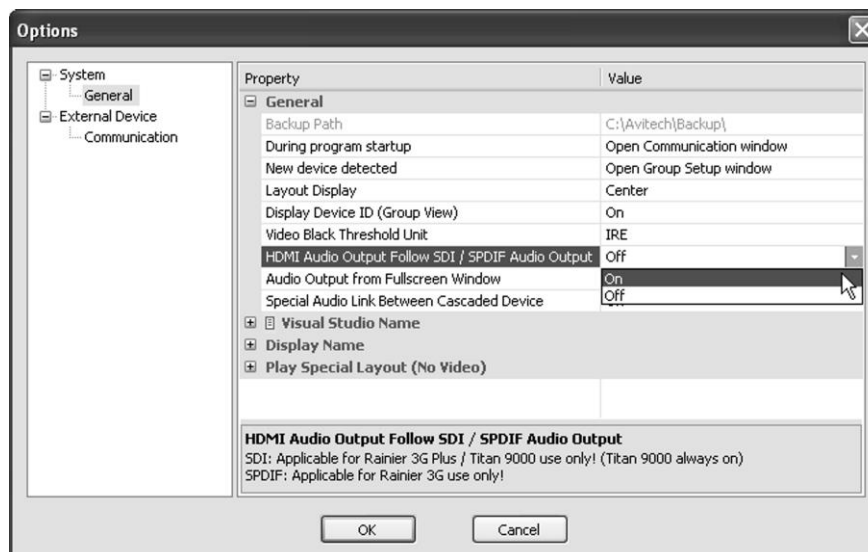
Figure 5-31 Options: "System"→"General"→"HDMI Audio Output Follow SDI / SPDIF Audio Output"

*Upon selecting **On** the following reminder will appear. Click **OK** to close the window.*
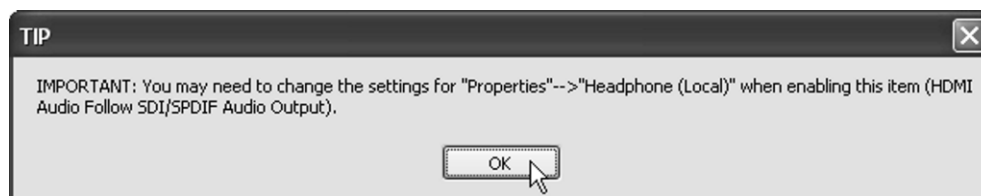
Figure 5-32 Reminder Upon Enabling "HDMI Audio Output Follow SDI / SPDIF Audio Output"

✓ ***General→General→Audio Output from Full Screen Window***
*To allow all audio outputs to switch to the window that just entered full screen mode, make sure **Audio Output From Full Screen Window** is enabled (set **On**). Click the drop-down button [click the **Audio Output from Full Screen Window** cell's rightmost portion] to select **On**.*

Audio output will return to the previous window source upon exiting from full screen mode.
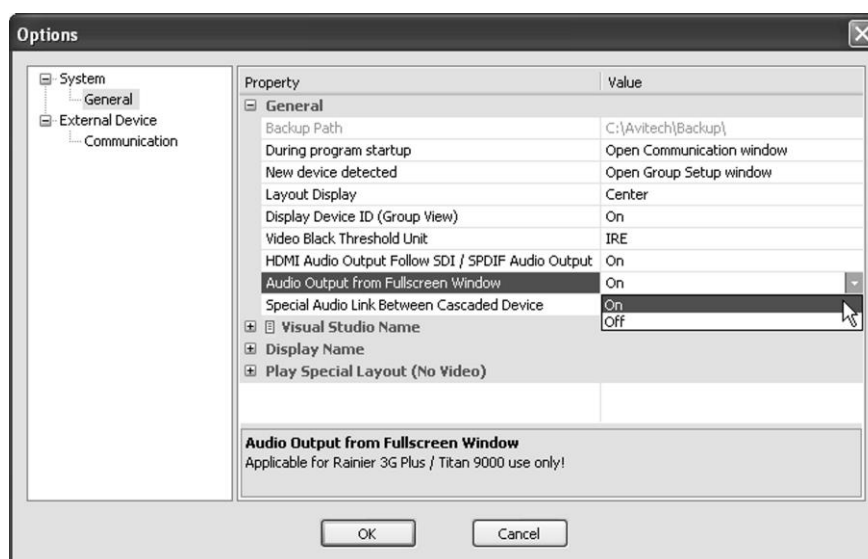
Figure 5-33 Options: "System"→"General"→"Audio Output From Full Screen Window"

Not applicable when Rainier 3G Plus is cascaded with Rainier 3G.

✓ *General*→*General*→*Special Audio Link Between Cascaded Device*
  To allow the audio signal to pass through a cascaded Rainier 3G Plus and a Rainier 3G (both devices 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**.
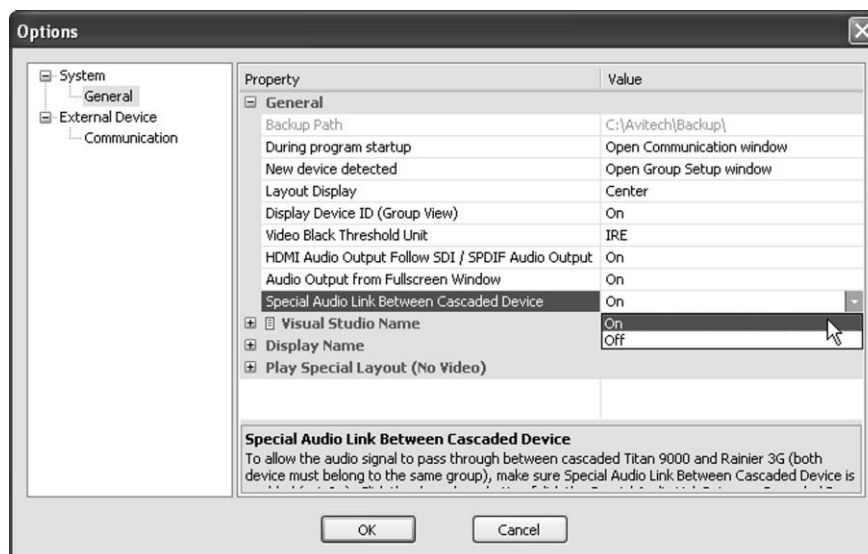
Figure 5-34 Options: "System"→"General"→"Special Audio Link between Cascaded Device"

✓ *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).
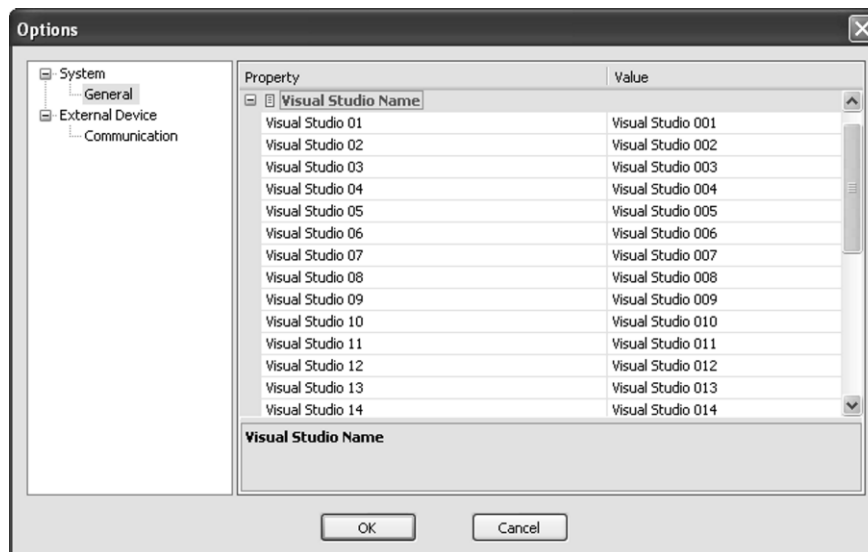
Figure 5-35 Options: "System"→"General"→"Visual Studio Name"

✓ **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**.*
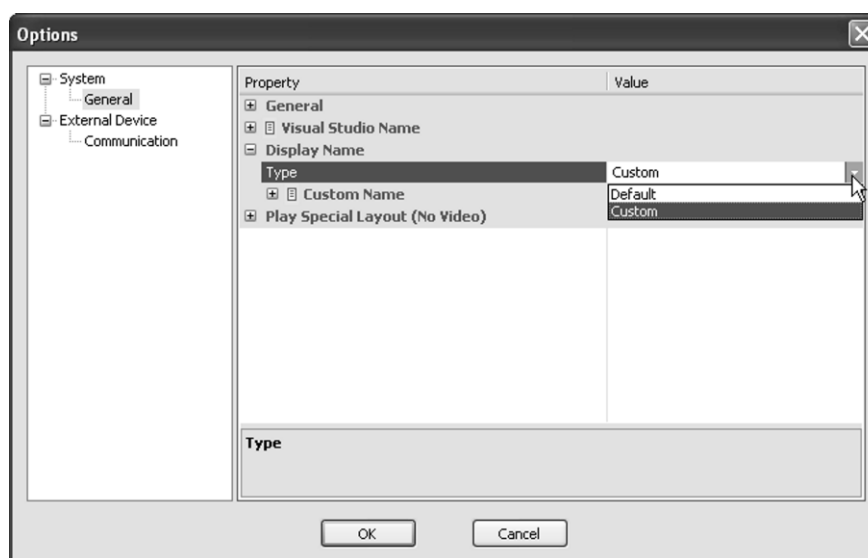
Figure 5-36 Options: "System"➔"General"➔"Type"

✓ **General➔Display Name➔Custom Name**
To change the group's name, click the Group name to change, then type the group's new name (up to 30 characters).
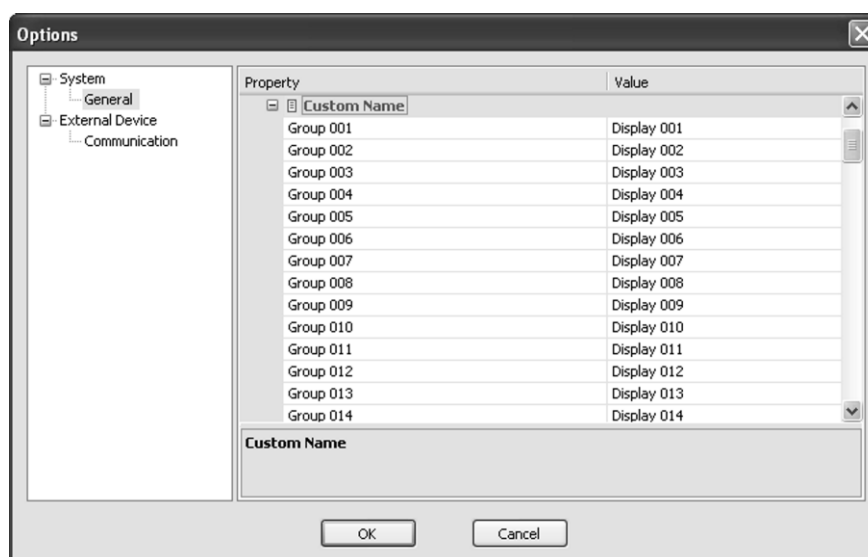
Figure 5-37 Options: "System"➔"General"➔"Custom Name"

✓ **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 the type of display when a video signal is lost, click the drop-down button (click the **Display Type** cell's rightmost portion) to select **Quad** or **Full screen**.
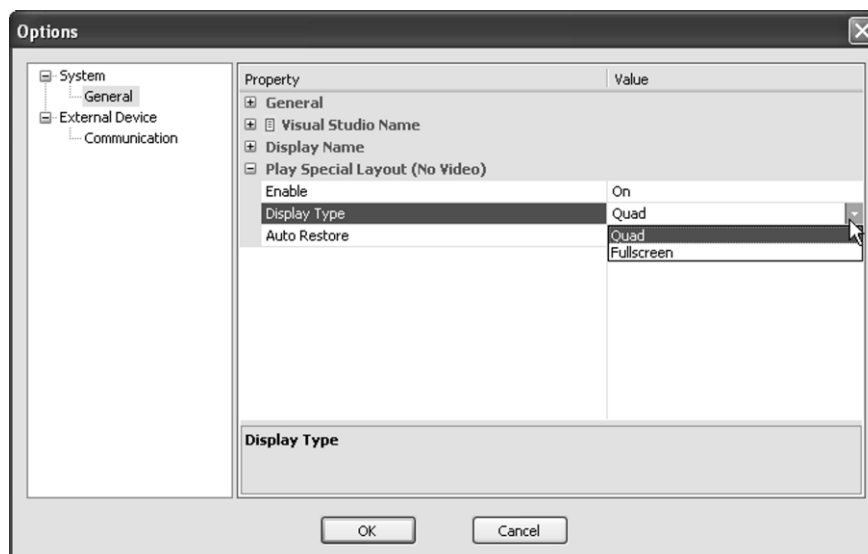
Figure 5-38 Options: "System"→"Play Special Layout (No Video)"→"Display Type"

Display Type: **Quad/Full screen**
The following sample scenarios may occur.
<u>Note</u>: the following scenarios will only occur if **Play Special Layout (No Video)** is **Enable**d (set **On**).

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 warn the user that the particular window has no video signal.

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

✓ **General→Play Special Layout (No Video)→Auto Restore**

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.*

The following sample scenarios may occur:
*Note: The following scenarios will only occur if **Play Special Layout (No Video)** and **Auto Restore** are **Enable**d (set **On**).*

Sample scenario 1 – all windows regain video signal
*If **Auto Restore** is set **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 set **On**, window #2 (which has regained video signal) will be removed from the screen. When **Display Type** is set to **Quad** then window #3 would occupy the place vacated by window #2. If **Full screen** is selected for **Display Type**, then the last window that lost its video signal would occupy the whole screen.*
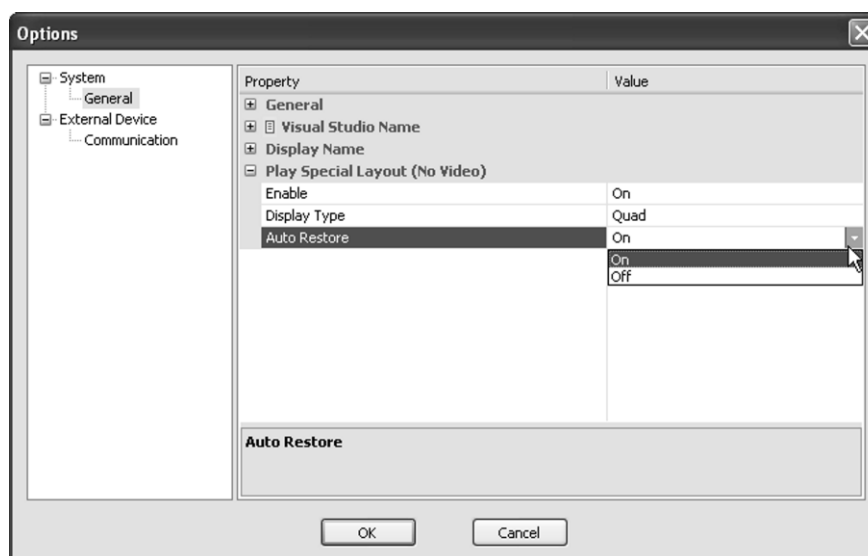
Figure 5-39 Options: "System"→"Play Special Layout (No Video)"→"Auto Restore"

✓ **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**.
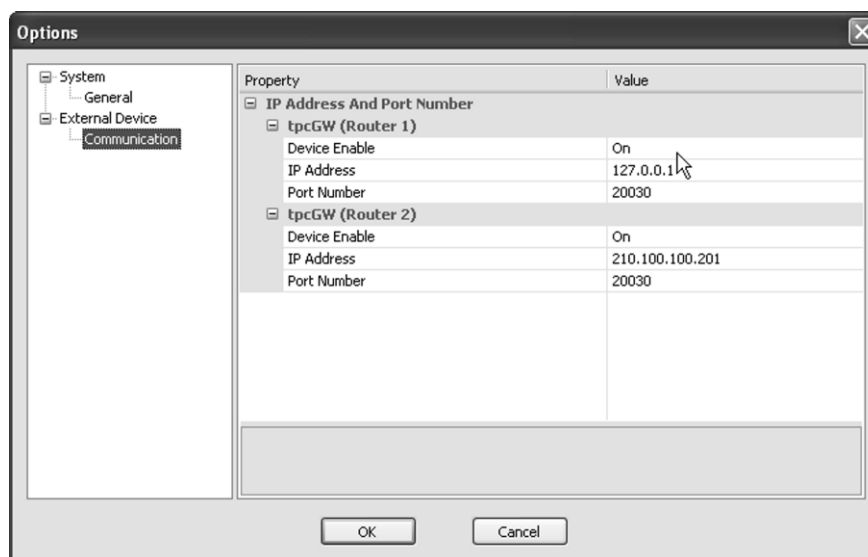
Figure 5-40 Options: "External Device"➔"Communication"➔"Device Enable"

✓ **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.
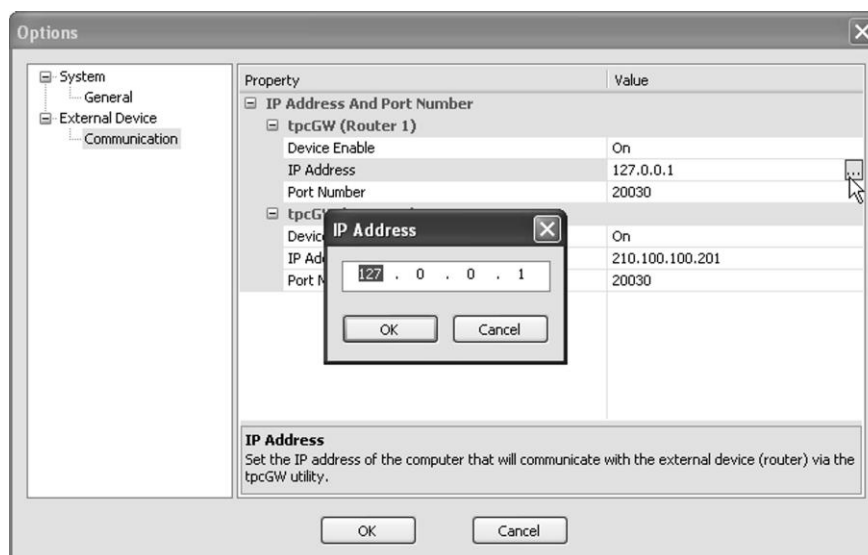
Figure 5-41 Options: "External Device"➔"Communication"➔"IP Address"

✓ ***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.*
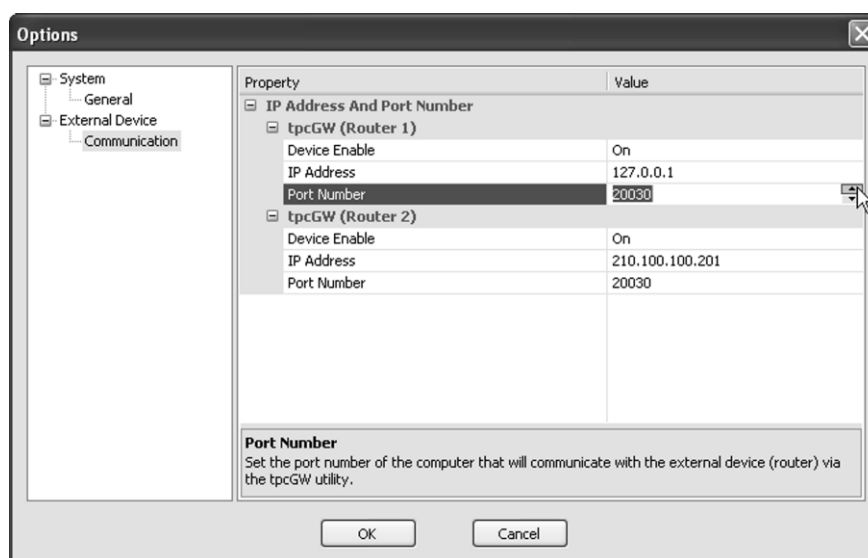
Figure 5-42 Options: "External Device"→"Communication"→"Port Number"

⚠️ *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.*

⚠️ *Upon clicking **OK** to exit the **Options** setup, the following message appears. Click **OK** to close the message.*

Figure 5-43 Options: "Audio Output Auto-Off" Message When Exiting Options Setup

5.5 Help Menu
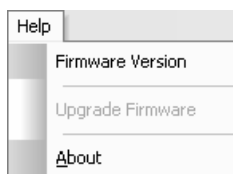
Figure 5-44 Phoenix-Q Software: Help Menu

Help Menu	
Firmware Version	Click to export as a .txt file.
Upgrade Firmware	Click **Upgrade Firmware** to bring the device's firmware up-to-date (see "Firmware Upgrade Reference Guide" for details).
About	Click **About** to see a pop-up window which displays information about the Phoenix-Q software. i.e., version number.

Table 5-4 Phoenix-Q Software: Help Menu Description

Export Current Firmware Version

Follow the steps below to export the current version of the Rainier 3G Plus' firmware.

Step 1. Click **Firmware Version**.
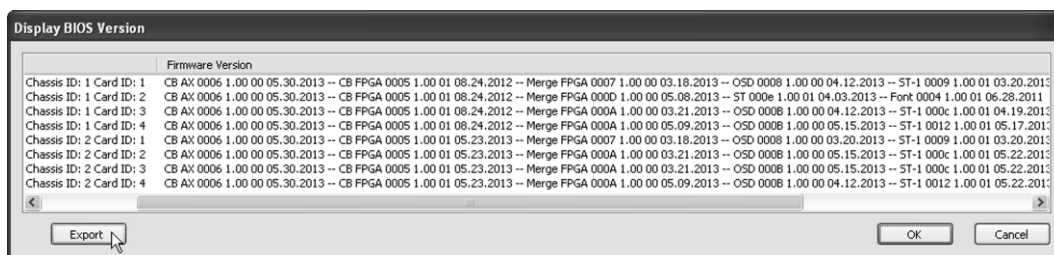
Figure 5-45 Phoenix-Q Software: Firmware Version

Step 2. Click **Export**.

*Step 3. Assign a filename and click **Save** to store the data.*
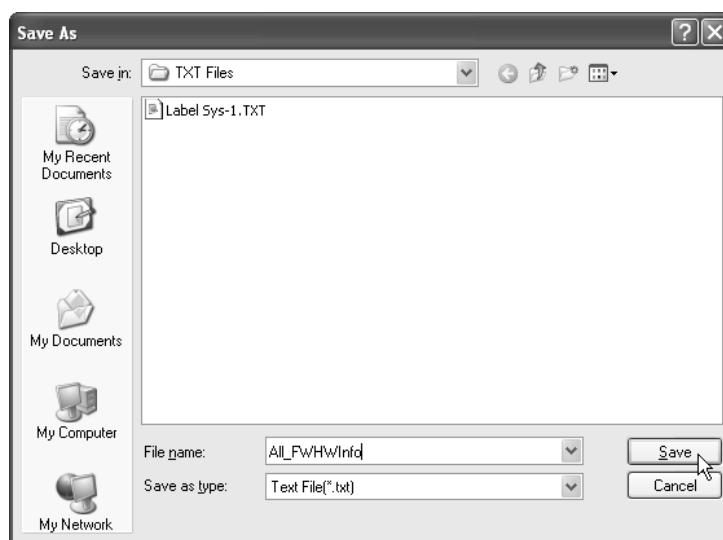
Figure 5-46 Phoenix-Q Software: Save Firmware Version Information

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

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

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

Figure 5-47 Phoenix-Q Software: Version Information

5.6 Briefing

This function cycles between presets for a slideshow effect.

*Step 1. Right-click the title bar and when the menu appears, click **Add**.*
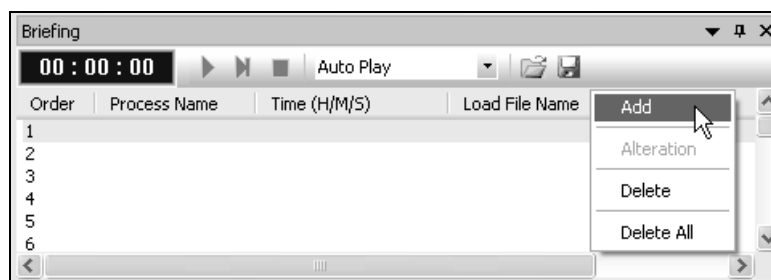
Figure 5-48 Briefing: Click "Add"

*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.*
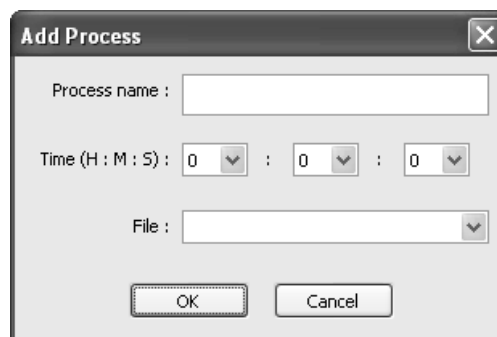
Figure 5-49 Phoenix-Q Software: "Add Process" Window

*Step 3. On the drop-down menu select **Auto Play**, **Auto Play (Repeat)**, **Manual**, or **Manual (Repeat)**. Click play ▶ to start the sequence.*
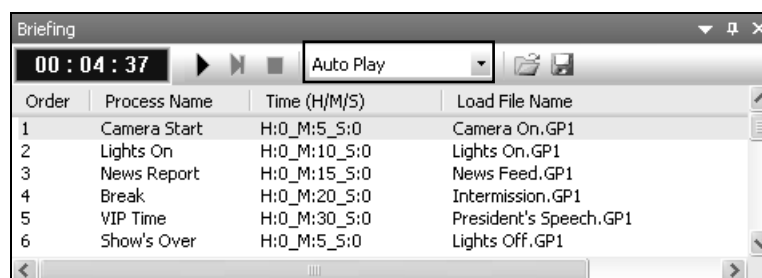
Figure 5-50 Briefing: Select Type of Playback

6. Setting the Group/Card Properties

To set the properties of the Rainier 3G Plus, click to select the Card on the **Group View** window (left panel) and the **Properties** window (right panel) will list the parameters available for setup.
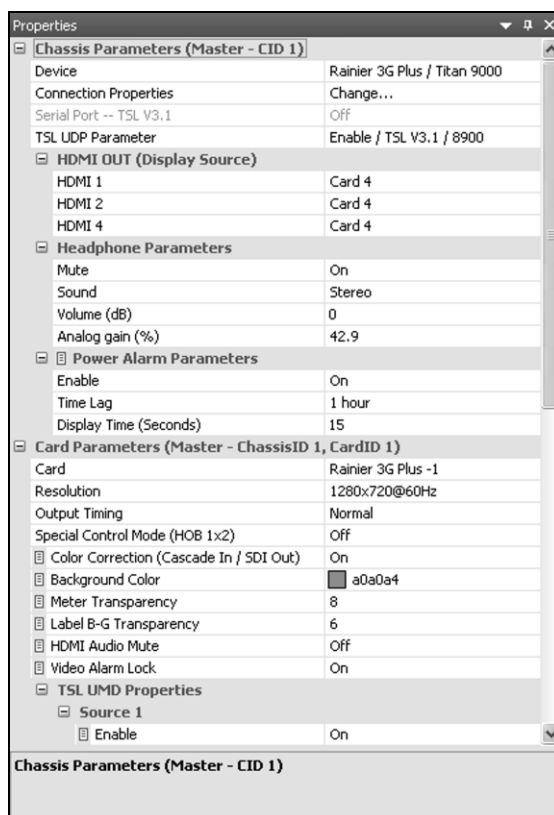
Figure 6-1 Phoenix-Q Software: Properties Window

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

6.1 Rainier 3G Plus – 1 / – Q Properties Setup

Connection Properties	
Change . . .	Click **Change** to set the network **Connection Properties** by entering the **IP address**, **Subnet mask**, and **Gateway**. Or, set the **Baud rate** when using the **Serial Port** to connect. **Connection Properties** NetWork IP address: `0 . 0 . 0 . 0` Subnet mask: `0 . 0 . 0 . 0` Gateway: `0 . 0 . 0 . 0` Serial Port Baud rate: `57600 bps` Mode: Detect Slave Module Mode: OK Cancel *Note: This item is available for slave (cascaded) chassis only.*

Serial Port – TSL V3.1	
On **Off**	Enable/Disable **TSL V3.1** for the configuration of the **RS-232** port with a TSL connection. *Note: The **RS-232** port is **not** for connecting to a computer for configuration (Phoenix-Q utility). Likewise, it **cannot** be used for entering any Avitech ASCII commands.* When configuring, connect the (*Master* Rainier 3G Plus) to the controlling computer through an **Ethernet** connection and then connect the (*Master* Rainier 3G Plus) **RS-232** port to the **TSL router**. *Note: To implement TSL, aside from selecting "On" for "Serial Port-TSL V3.1,"* ✓ *"TSL UMD Properties" must be "On" and "Display Address / Option" must be configured.* ✓ *"Label→Display Type" for the particular Window must be set as "UMD" or "D-Name/UMD"*

TSL UDP Parameter

Enable/Disable **TSL V3.1** for configuration of **IP** port with TSL connection.

Make sure to enter the correct **UDP Port** (User Datagram Protocol) value that matches the connected router.

Note: To implement TSL, aside from selecting "Enable"

✓ *"TSL UMD Properties" must be "On" and "Display Address / Option" must be configured. (Refer to Appendix F for details on using "TSL UMD Properties" to set Compatibility With Tally Interface Device.)*
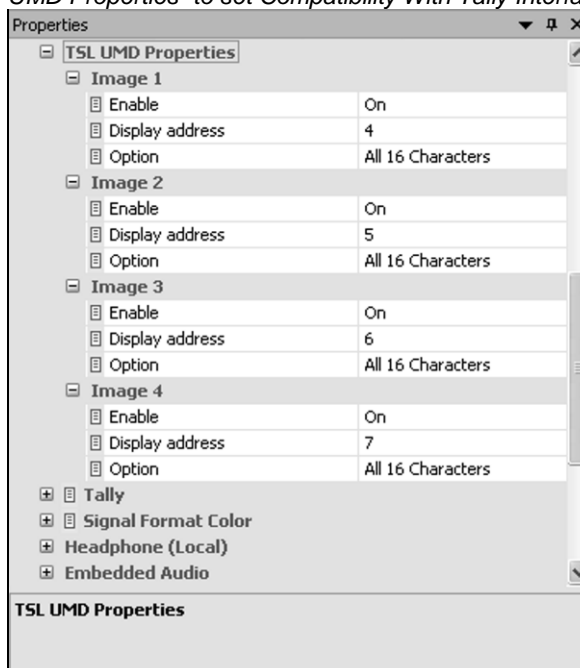
✓ *"Label→Display Type" for the particular Window must be configured "UMD" or "D-Name/UMD"*
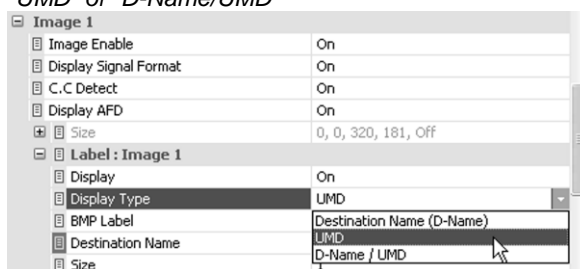
When **TSL UDP Parameter** is enabled, **Serial Port – TSL V3.1** will automatically be disabled.

HDMI OUT (Display Source)	
HDMI 1/2/3/4 (Card 1/2/3/4, cascade in)	Select the display source for the output to each card's **HDMI OUT** port. Select another card's **VIDEO IN** source as the output to another card's **HDMI OUT** port. Or, use the source signal coming into the chassis' **CASCADE IN** port as output to a card. *Note:* *1. Only 720p and 1080p 50Hz/60Hz input source signal from another Rainier 3G Plus is allowed when cascading (Cascade In).* *2. When the Rainier 3G Plus contains a (PI card) it will automatically be removed from the list since its function is different from a -1 / -Q card. A Rainier 3G Plus-PI card must be assigned a group by itself.*

Headphone Parameters	
Mute (On / Off)	Turn on/off the audio signal to the audio output port.
Sound Stereo Mono Left Mono Right	Select whether audio output is coming from one side or both sides of the headphone.
Volume (dB) (–64 up to 12)	Set the volume level of audio output.
Analog gain (%) (0.0, 14.6, 28.6, 42.9, 57.1, 71.4, 85.7, 100.0)	Adjust the proper volume level (previous item) and proper audio analog amplifier's gain (this item) to achieve the best SNR (signal-to-noise ratio). Signal-to-noise ratio is a measure used in comparing the level of a desired signal to the level of background noise.

Power Alarm Parameters	
Enable (On / Off)	Turn on/off the power alarm feature that is triggered when either one of the power sources is cut-off.
Time Lag (Always on, 1 5, 10, 30 minutes, 1, 2, 6, 12, 24 hours)	Set the time interval between when the power source is cut-off and when power alarm is shown on screen.
Display Time (Seconds) (1 to 120)	Set the length of time that the power alarm remains on screen.
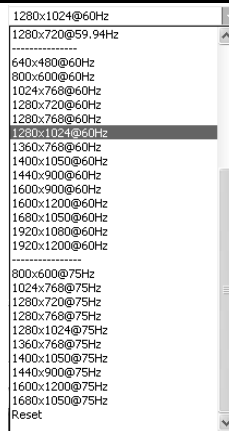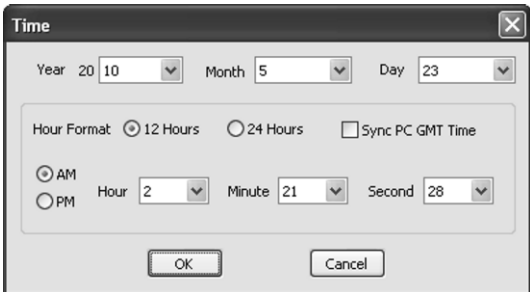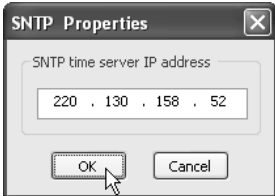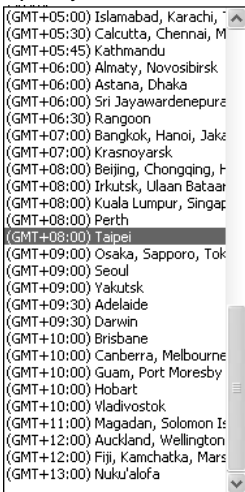
Card Parameters	
Resolution Set the display resolution	1280x1024@60Hz 1280x720@59.94Hz ---------------- 640x480@60Hz 800x600@60Hz 1024x768@60Hz 1280x720@60Hz 1280x768@60Hz 1280x1024@60Hz 1360x768@60Hz 1400x1050@60Hz 1440x900@60Hz 1600x900@60Hz 1600x1200@60Hz 1680x1050@60Hz 1920x1080@60Hz 1920x1200@60Hz ---------------- 800x600@75Hz 1024x768@75Hz 1280x720@75Hz 1280x768@75Hz 1280x1024@75Hz 1360x768@75Hz 1400x1050@75Hz 1440x900@75Hz 1600x1200@75Hz 1680x1050@75Hz Reset *Note:* *1. Make sure that the resolution of the input source (as background image) is the same as the resolution of the HDMI OUT / SDI OUT ports for video output to the monitor.* *2. Only 720p and 1080p 50Hz/60Hz output resolution is available when cascading.* *3. Only 1080i 50Hz/59.94Hz/60Hz output resolution is available for a Rainier 3G Plus PI card.*
Input Source (Card 1/2/3, cascade in)	Select the source of the video signal for conversion to a 1080i signal. You can select another card's 1080p source signal or, use the 1080p source signal coming into the chassis' **CASCADE IN** port. *Note: This item is only available for Rainier 3G Plus – (PI card).*
Output Timing Normal VESA	**Normal** output timing is designed for some brands of monitor that do not support the **VESA** standard. *Note: Only 1080p 50/60 Hz and 720p 50/60 Hz is supported on SDI OUT port upon setting Normal. No video output from this port is possible when set at VESA. The HDMI OUT port supports both Normal and VESA.*
Special Control Mode (HOB 1×2)	Allows the proportional display of Titan 9000-HOB 1×2 wall display windows in the Visual Studio tab. *Note: This item is only available for Titan 9000-HOB card.*
Color Correction (Cascade In / SDI Out) (On / Off)	Turn on the encoder (signal in/out stage) to completely fix any color anomaly that may appear on color edge. Select off to disable this function. *Note:* *1. Make sure to turn this function off when cascading with non-Rainier 3G Plus and non-Titan 9000 cards.* *2. (For Rainier 3G Plus-Q card)* *Make sure to turn this function off when another card is selected as output in "HDMI Out (Display Source)" and not the Rainier 3G Plus-Q card itself.*
Background Color	Set the card's background color. *Note: Not applicable for Rainier 3G Plus-Q card.*
Meter Transparency (1 up to 8)	Use the slider to set the transparency (default is 8, no transparency) of the meter appearing on screen.
Label B-G Transparency (1 up to 8)	Use the slider to set the background transparency level (default is 8, no transparency) of the label appearing on screen.
HDMI Audio Mute (On / Off)	Turn on or off HDMI signal's embedded audio output.

Card Parameters	
Video Alarm Lock (On / Off)	Turning on video alarm lock allows the alarm during occurrence of "NO VIDEO / VIDEO BLACK / VIDEO FREEZE" to remain on screen even after video image signal has resumed streaming from the input source. This feature is most useful when the operator is away and wants to keep track of any occurrences of "no video / video black / video freeze." *Note: To remove "NO VIDEO" text on screen click "Erase Alarm" button.* Erase Alarm (System)
Audio Alarm Lock (On / Off)	Turning on audio alarm lock allows the alarm during occurrence of "NO AUDIO / OUT OF PHASE" to remain on screen even after audio signal has resumed streaming from the input source. This feature is most useful when the operator is away and wants to keep track of any occurrences of "no audio / out of phase." *Note: To remove "NO AUDIO" text on screen click "Erase Alarm" button.* Erase Alarm (System)

TSL UMD Properties	(Image 1/2/3/4)
Enable (On / Off)	Allow the UMD (under monitor display) to be shown.
Display Address (0 up to 126)	Set the display address for each image. 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 images, right-click any **Display Address**, click **Quick Setting**, and set the starting and ending number (0-**126**) to be displayed for each image (e.g., Set **100** as the **Start Number** for **Image 1** and set **126** as the **End Number**. Then **100** would be shown as the **Display Address** for **Image 1**, **101** for **Image 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).

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

Signal Format Color	
Font Color	Select the font color on 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 background color on 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.

Headphone (Local)	
Enable (On / Off)	Enable audio output from this card to the headphones that are connected to the audio output connector.
Source	Select the source of the audio signal for the headphones. Select window 1/2/3/4 embedded audio, or pass through embedded audio.
Channel	Select the source of audio signal to be played on headphone. This item depends on your selection in the item above (Source). (**Group 1/2/3/4 CH1/CH2** / **CH3/CH4**)
Audio Delay (0 to 2700) millisecond	Allows adjustment of headphone audio output to optimize the relative timing of the audio and video signals on the monitor wall display. Use the slider to adjust the audio monitoring delay until the headphone audio output and video are well synchronized on the monitor wall display. _Note: By default, the audio signal is approximately 5.56 ms._

Embedded Audio	
SDI Out Type	(**Pass through** embedded audio, or **Local**) Select the source of embedded audio signal that will be outputted through **SDI**/**HDMI OUT** ports; choose whether the signal will be **Local** (from the card's **VIDEO IN** ports) or **Pass through embedded audio** (from cascaded signal source). _Note: Refer to Appendix B for details on when item is available for setup._
HDMI Out Type	(**Pass through** embedded audio, or **Local**) _Note: Refer to Appendix B for details on when item is available for setup._
Source	Select the source of embedded audio signal; Select from the windows' **VIDEO IN** ports. (Window 1/2/3/4 embedded audio)
Primary Group	Assign the primary embedded audio group to one of the groups (**Group 1/2/3/4**).
Secondary Group	Assign secondary embedded audio group to one of the groups (**Group 1/2/3/4**).

User Logo	_Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-PI card._
Enable (On / Off)	Allow the display of a user logo.
Display Foreground Background	Set the user logo as a part of the image in the window (foreground) or as a background on the image window (background).
Hide – **Full screen mode** (On / Off)	Allow the display of user logo during full screen mode. _Note: Only available when **Foreground** was selected for the previous item "Display"._

User Logo	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-PI card.*
Picture Upload	Click the cell's rightmost portion "open" button […] to select bitmap file to upload as the user logo (e.g., 1920×1200 image would take approximately 180 seconds or more depending on the system's resource allocation). *Note:* *1. A higher quality image file will take longer to load (e.g., 1920×1200 image would take approximately 180 seconds or more depending on the system's resource allocation).* *2. To fill the entire screen of the monitor, the size (pixel count) of user logo picture must be same as monitor resolution. In case the file size is larger than the card's output resolution (see Card Parameters→Resolution) the system will automatically detect it and prevent it from displaying as the user logo picture.*
Position	
X **Y**	Specify the location of the user logo appearing on screen by setting the X and Y coordinates.

Clock	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-PI card*
Enable (On / Off)	Allow the display of a clock on the screen.
Border Enable (On / Off)	Allow the display of a border on the digital clock.
Hide – **Full screen mode** (On / Off)	Hide or display the clock during full screen mode.
Clock Font Color	Set the color of any font on the clock. Click **Others** for more color choices (**Standard** tab) or customize the color (**Custom** tab) by setting **Hue**/**Saturation**/**Luminance** as well as **Red**/**Green**/**Blue** values.
Clock Background Color	Set the background color of the clock. Click **Others** for more color choices (**Standard** tab) or customize color (**Custom** tab) by setting **Hue**/**Saturation**/**Luminance** as well as **Red**/**Green**/**Blue** values.
Clock Background Transparency (0 to 8)	Set the background transparency level of the clock. **0** signifies total transparency, **8** signifies no transparency.
Size	
X **Y**	Specify the location of the clock on the screen by setting the **X** and **Y** coordinates.
Width **Height**	Specify the size of the clock on the screen by setting the **Width** and **Height** values.
Time	
Source RTC SNTP LTC Counter Sync to Master	Activate the Time Code feature by selecting **RTC**, **LTC** or **Counter**. Synchronize with the clock of the Master card by selecting **Sync to Master**. The **SNTP** Time Code feature allows the card to synchronize the clock with an external SNTP time server. The **IP** port on the rear of the chassis can simultaneously control and receive Time Code information. *Note: Sync to Master is only available for modules belonging to the same group.*

Clock	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-PI card*
RTC Properties Change . . .	Set the time appearing on the real time clock. *Note: This item is only available when selecting **RTC** in **Source**.*
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 selecting **SNTP** in **Source**.*
Pause (On / Off)	Allows the pausing/resumption of the time count. *Note: This item is only available when selecting **Counter** in **Source**.*
Count (Up / Down)	Select the counting method: **Up** (forward) or **Down** (reverse). *Note: This item is only available when selecting **Counter** in **Source**.*
Reset Counter	Allows resetting of the counter. *Note: This item is only available when selecting **Counter** in **Source**.*
Format 12-hour 24-hour	Select the clock display format. *Note: This item is not available when selecting **Counter** 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 selecting **LTC** in **Source**.*
Daylight Saving Time (On / Off)	Enable the Daylight Saving Time function. *Note: This item is not available when selecting **Counter** in **Source**.*
Time Zone	Specify the desired time zone shown on a particular monitor. *Note: This item is not available when selecting **Counter** in **Source**.*
Broadcast Sync Time (On / Off)	Allows the card to synchronize the clock with an external SNTP time server. *Note: This item is only available when selecting **SNTP** in **Source**.*

Clock	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-PI card*
Sync Time (Day:Hour:Minute)	Set the amount of time between each clock synchronization. *Note: This item is only available when selecting **SNTP** in **Source**.*
Preset Time	
Select Index **(For Counter)**	Select which index preset time to use. (**1**/**2**/**3**/**4**/**5**/**6**/**7**/**8**) *Note: This item is only available when selecting **Counter** 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 selecting **Counter** 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 Plus-1 / -Q cards.*

Image	
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).

Image	
Display Signal Format (On / Off)	Allow the display of window's input signal format.
C.C Detect (On / Off)	Allow detection of closed captioning. "NO C.C" would be displayed if detection is enabled but input signal is without closed captioning.
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 Plus can then use this information, together with knowledge of the display shape and user preferences, to choose a presentation mode. *Note: Only available when **On** is selected in **Display Signal Format**.*
Size	*Not applicable for Rainier 3G Plus-Q card*
X **Y**	Specify the location of the window appearing on screen by setting the **X** and **Y** coordinates.
Width **Height**	Specify the size of the window appearing on screen by setting the **Width** and **Height** values. To 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 (e.g., 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 Destination Name (D-Name)	Display the destination name.
UMD	Display the under monitor display.
D-Name / UMD	Display both the destination name and under monitor display.
BMP Label (On / Off)	Allow the use of universal fonts for the window's on screen label.
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.

Image	
Position (Top / Bottom)	Place the label on top/bottom of the window.
Outside (On / Off)	Place the label inside/outside the window. *Note: This is not allowed when the image height is less than 80 lines.*
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 Image 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.

Displays on **Left** side of screen

Displays on **Right** side of screen

Switch – Turns the meters on and off

Set Meter

All On   All Off

[SMPTE] [DIGITAL]

0
-10
-20
-30
-40
-50
-60

lvul
20
10
0
-10
-20
-30
-40

Alarm

Headroom

Alignment

| Out of phase 90.0 deg | H:-12.9 L:-52.9 (dBFS) | 0VU -20.00dBFS | L P R CH1 CH2 | L P R CH3 CH4 | L P R CH1 CH2 | L P R CH3 CH4 | 0VU 4.00dBu |

Phase   Sound   Meter 1/2   Meter 3/4   Alignment

OK   Cancel

Phase Meter

Group – Select which group of embedded audio to monitor

Audio meter scale:

Layout and Alarm Trigger

Change . . .

dBu	VU +4dBu	BBC PPM	EBU PPM	DIN PPM	NORDIC PPM	SMPTE DIGITAL	dBu

VU +4dBu — IEC 60268-17 (1991)
BBC PPM — IEC 60268-10 Type IIa (1991)
EBU PPM — IEC 60268-10 Type IIb (1991)
DIN PPM — IEC 60268-10 Type I (1991)
NORDIC PPM — Derived from DIN Meter Spec.
SMPTE RP155 Recommended Digital Alignment — IEC 60268-18 (1995)
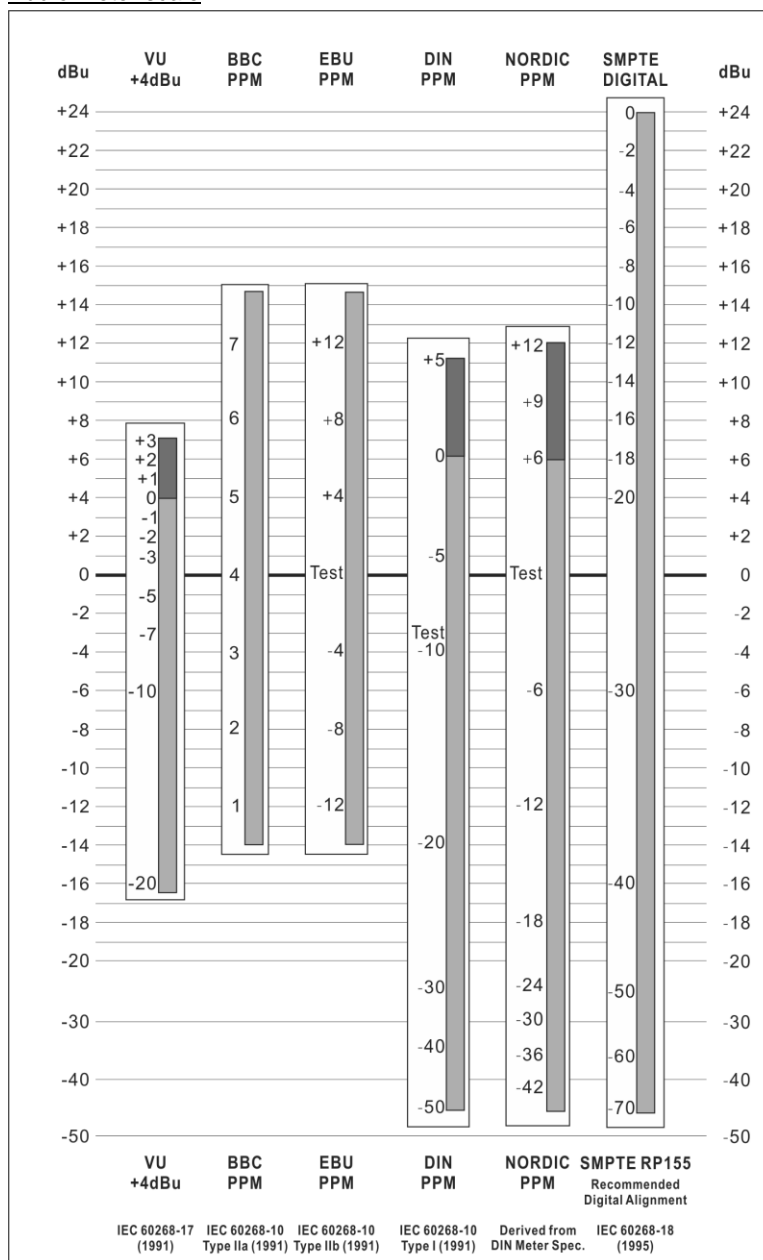
❖ **Switch**: turn on/off any of the following meters

◼ 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**: 90 deg (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**:
–20 dBFS in SMPTE digital unit or 4 dBu in VU unit (default); user adjustable; also known as the safe range.

❖ **Alarm**: 0 to –9.9 dBFS (default);
0 to –20 dBFS depending on "alignment" setting;
the "alarm" range is equivalent to the upper half of 0 dBFS minus previous item "alignment" setting.

❖ **Headroom**: –10 to –19.9 dBFS (default);
–20.7 to –41.58 dBFS depending on "alignment" setting the "headroom" range is equivalent to the lower half of 0 dBFS minus "alignment" setting; also known as the headroom before alarm range is reached.

dBFS (decibels relative to full scale)
VU (volume unit)

The Rainier 3G Plus is capable of displaying embedded audio as VU 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), **Sound** (**H**igh/**L**ow sliders). If there is no audio detected, <u>NO</u> VU meters will be shown.

<u>Audio Meters & Groups:</u>

Along with the video signal(s), each input signal may contain up to sixteen 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 Plus 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 <u>set</u> of meters which, for instance; would allow **Group 2** to be displayed on the left side of the screen.

<u>Recap:</u>

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**.

*Note: Upon changing audio source entering **VIDEO IN** port; make sure to refresh audio meters by either re-selecting "**On**" option in "**Meter Enable**" menu. Or, by physically disconnecting and then reconnecting signal cable entering **VIDEO IN** port. Refreshing audio meters is necessary for **Meters 3** & **4** to display correct dynamic meter bars.*

Outside	Allow the location of the audio meter to be outside the video area.
(On / Off)	*Note: This is not allowed when the image width is less than 128 pixels.*

Image	
Meter 1/2 Group	Select the audio meter's group (embedded audio).
Meter 3/4 Group	
Width	Select the audio meter's width. (**2** / **4** / **6** / **8** / **10** / **12** / **14**)
Vertical Offset (0 to 144)	Specify the location of the meter appearing on screen by setting the vertical coordinate.
Ballistics PPM VU	Select the meter's ballistics. Meters which monitor audio levels are typically one of two 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 an audio signal. A PPM displays the peak volume level of an 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. Upon selecting PPM, clicking **Layout and Alarm Trigger→Change . . .** allows the selection of the type of PPM scale (**Nordic**/**BBC**/**EBU**/**DIN**). Whereas the VU meter has fairly equal attack and release times, the PPM is characterized by having a very slow fall-back time, taking over 1.5 seconds to fall back 20dB (the specifications vary slightly for Type I and II meters). The reasoning for the slow fall-back was to reduce eye-fatigue and make the peak indication easier to assimilate. The specifications of all types of PPM are detailed in IEC 60268-10 (1991), and the scale used by the BBC comprises the numbers 1-7 in white on a black background. There are 4dB between each mark, and PPM 4 is the reference level (0dBu). EBU, DIN and Nordic variants of the PPM exist with different scales. The EBU version replaces the BBC numbers with the equivalent dBu values, while both the Nordic and DIN versions accommodate a much wider dynamic range.
Safe Area	
Enable (On / Off)	Display the safe area markers. *Note: Default settings are 0% and 100% thus the need to first create and save parameters using Phoenix-Q before safe area will display a result.*
Left/Right **Top/Bottom** (0 to 100)	Freely adjust the horizontal (**Left** and **Right**) and vertical (**Top** and **Bottom**) markers. *Note: This item is only available when the previous item is set **On**.*
Image Border	
Enable (On / Off)	Display the border of the image.

Image	
Width (2/4/6)	Set the width of the image border.
Default Type	**Set Other Type:** Select the type of 3D border for the image.
Color	Change image border color as each pixel/line can have a different color. (**Line 1/2/3/4/5/6**)
Video Border	
Enable (On / Off)	Display the border of video.
Width (1 to 6)	Set width of the video border.
Color	Change the video border color.
Image Adjustment	
Brightness (–128 to 127)	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 1023)	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 1023)	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 (–1024 to 1023)	Adjust the intensity of color of the input signal.
Sharpness (–128 to 127)	Adjust the sharpness to increase contrast, enhance image edges, or reduce shading of the input signal.
Alarm	
Enable (On / Off)	Activate the various video and audio alarm features.
Video Alarm	
Enable (On / Off)	Activate the various video signal alarm features.
Video Black	
Enable (On / Off)	Enable the "video black" alarm feature which blacks out the screen when the image's brightness level decreases. *Note: Analog input signal is not supported.*

Image

Video Detect Area (L/T/R/B, %) Change . . .	 Freely adjust the horizontal (**L**eft and **R**ight) and vertical (**T**op and **B**ottom) markers to set the scope of area to be monitored for an occurrence of "no video". *Note: 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 the **Video Alarm**.*
Threshold (mV/IRE) (0 to 140 for mV) (0 to 20 for IRE)	Set the brightness level (IRE/mV) of the "detect area" below which the signal will be considered to be black. *Note: IRE/mV unit will depend on the choice in "System"→ "Option"→ "General"→ "Video black threshold unit".*
Set Duration (1 to 255 seconds)	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)	Activate the "video freeze" alarm feature. Freeze detection is done by comparing successive frames based on the parameters set on the next 2 items (Sensitivity Level and Set Duration). *Note: Analog input signal is not supported.*
Sensitivity Level (1 to 128)	Set the motion sensitivity of the image when "video freeze" alarm will be triggered. Adjust the sensitivity according to the signal being monitored, on a range of **1** (for filtering out the noise in a noisy signal) to **128** (for a clean signal). If the "sensitivity" level is set very low, a lack of any change in frame by frame content comparison in the "detect area" (e.g., a talk show video where the background is constant and the only motion detectable is the announcer's lip movement) may trigger the alarm. In this case consider increasing the "sensitivity level" or "set duration" (next item) values.
Set Duration (5 to 255 seconds)	Set the time interval to wait before activating the "video freeze" alarm once the criteria (sensitivity level) for the alarm has been detected. *Note: It may take up to one second more than the value of the "Set Duration" parameter to trigger a video freeze alarm.*

📄 *The **Video Black** alarm (no video) and the **Video Freeze** alarm cannot happen simultaneously. If both alarms are enabled, and both alarms are triggered, the **Video Black** alarm will be activated, as it has the higher priority.*
Likewise, both functions are not available for analog input signal.

Image

Border

Red Color (On / Off)	Enable the image border to change to the color **Red** when a video alarm is activated
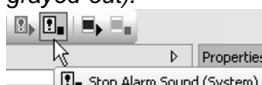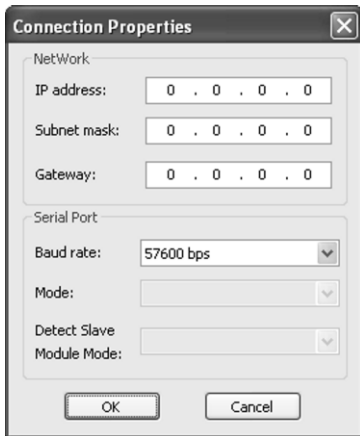
Image	
Flash (On / Off)	Enable the image border to **Flash** when a video alarm is activated.
Audio Alarm	
Enable (On / Off)	Activate audio loss detection to be monitored on a single channel or group.
No Audio Alarm (Single Meter) (On / Off)	Enable/disable the **No Audio Alarm**, which is triggered when an audio signal 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.
Response Time Signal Out (0.25 to 49.75)	Set the **Signal Out** 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).* 🔊 Start Alarm Sound (System)
Set Playback Duration (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 (which will become grayed-out).* 🔊 Stop Alarm Sound (System)
File Change	Click the cell's rightmost portion "change" button [...] to select the 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 alarm sound playback, click "Start Alarm Sound (System)" icon (will become grayed-out).* 🔊 Start Alarm Sound (System)
Set Playback Duration (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).* 🔊 Stop Alarm Sound (System)
File Change	Click the cell's rightmost portion "change" button [...] to select the audio file as the audio alarm sound for the particular window. *Note: Only the "WAV" audio file format is supported.*

Image	
Time Code	
Display (On / Off)	Display the Time Code (a form of media metadata).
Background (On / Off)	Display the Time Code's background.
Transparency (0 to 8)	Set the background transparency level of the Time Code. **0** signifies complete transparency and **8** signifies no transparency.
Position X (%) (0 to 75)	Specify the location of the **Time Code** appearing on screen by setting the **X** coordinate (percentage in relative position to the screen).
Position Y (%) (0 to 98.5)	Specify the location of the **Time Code** appearing on screen by setting the **Y** coordinate (percentage in relative position to the screen). _Note: For SDI (HD/SD) signal type, it is recommended to set the value of Position Y between **92%** and **96%**._
Size Width (%) (11.5 to 90)	Specify the size of the Time Code appearing on screen by setting the **Width** (percentage).

Table 6-1 Phoenix-Q Software: Setting Group/Card Properties for Rainier 3G Plus-1 / -Q

6.2 Rainier 3G Plus – PI Properties Setup

Connection Properties	
	Set network **Connection Properties** by entering **IP address**, **Subnet mask**, and **Gateway**. Or set **Baud rate** when using **Serial Port** to connect
Change . . .	

Serial Port – TSL V3.1	
	Enable/Disable **TSL V3.1** for configuring **RS-232** port (TSL connection). _Note: The **RS-232** port is **not** for connecting to a computer for configuration (Phoenix-Q utility). Likewise, it **cannot** be used for entering any Avitech ASCII commands._
On **Off**	When configuring, connect the (_Master_ Rainier 3G Plus) to the controlling computer through an **Ethernet** connection and then connect the (_Master_ Rainier 3G Plus) **RS-232** port to the **TSL router**. _Note: To implement TSL, aside from selecting "On" for "Serial Port-TSL V3.1,"_ ✓ _"TSL UMD Properties" must be "On" and "Display Address / Option" must be configured._ ✓ _"Label→Display Type" for the particular Window must be set as "UMD" or "D-Name/UMD"_

TSL UDP Parameter

Enable/Disable **TSL V3.1** for configuration of **IP** port with TSL connection.

Make sure to enter the correct **UDP Port** (User Datagram Protocol) value that matches the connected router.

Note: To implement TSL, aside from selecting "Enable"

✓ *"TSL UMD Properties" must be "On" and "Display Address / Option" must be configured.*

✓ *"Label→Display Type" for the particular Window must be configured "UMD" or "D-Name/UMD"*

*When **TSL UDP Parameter** is enabled, **Serial Port – TSL V3.1** will automatically be disabled.*

Cascade In Color Correction (HDMI)	(This item pending verification)
On **Off**	Turn on encoder (signal in/out stage) to fix any color anomaly that may appear on the color edge of any signal entering the **CASCADE IN** (HDMI port). Select off to disable this function.

HDMI OUT (Display Source)	
HDMI 1/2/3/4 (Card 1/2/3/4, cascade in)	Select the display source for the output to the other card's **HDMI OUT** port belonging to the same chassis. Select another card's **VIDEO IN** source as the output to another card's **HDMI OUT** port. Or, use the source signal coming into the chassis' **CASCADE IN** port as output to a card. *Note: When the Rainier 3G Plus contains a (PI card) it will automatically be removed from the **HDMI OUT (Display Source)** list since its function is different from a -1 / -Q card.* *A Rainier 3G Plus-PI card must be assigned a group by itself.*
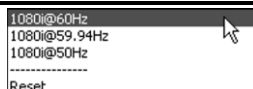
Card Parameters	
Resolution Set the display resolution	1080i@60Hz 1080i@59.94Hz 1080i@50Hz ---------------- Reset
Input Source (Card 1/2/3, cascade in)	Select the source of the video signal for conversion to a 1080i signal. Select another card's 1080p source signal or, use the 1080p source signal coming into the chassis' **CASCADE IN** port.

Table 6-2 Phoenix-Q Software: Setting Group/Card Properties for Rainier 3G Plus-PI

6.3 Setting Group Parameters

Any changes to the group settings will only affect the cards included in the selected group. Upon right-clicking a particular Group # heading portion the following menu will appear.
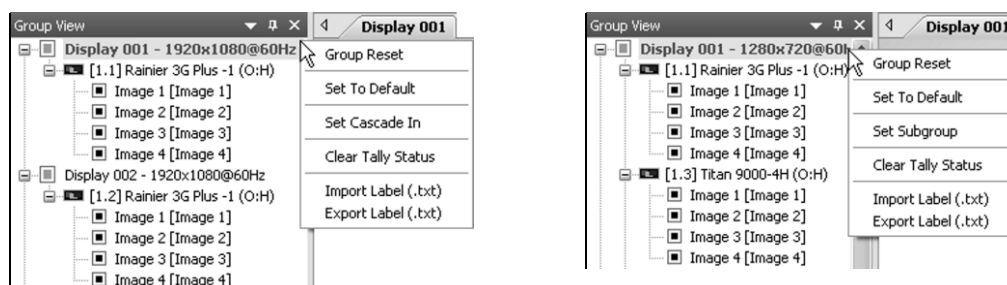
Figure 6-2 Phoenix-Q Software: Set Group Parameter

📄 *Set Cascade In appears when there is an individual card in a group setup as well as for Rainier 3G Plus – (Q card).*
Set Subgroup appears when there are multiple cards in a group.

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

✓ Click **Set to Default** *to return all cards belonging in that group to the default settings:*
    ✓ *1080p output resolution, 60 Hz vertical frequency*
    ✓ *Normal output timing*
    ✓ *Default preset layout (8 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 and line 2 color "grey" with RGB value of 58)*
    ✓ *Clock is set "Off"*
    ✓ *Meter is set "Off"*
    ✓ *Alarm is set "Off"*
    ✓ *Signal Type is set "Off"*

✓ Click **Set Cascade In / Set Subgroup**. *Depending on the card installed in the Rainier 3G Plus, the default cascaded configuration **within a particular group** will be displayed:*
  – *the broken lines signify internal cascading between the cards within a Rainier 3G Plus (left figure below)*
  – *the solid line linking the third and fourth unit (in the figure to the right) signifies external cascading between 2 Rainier 3G Plus. Likewise, a solid line links the last internal cascaded card or last external cascaded card to the monitor.*
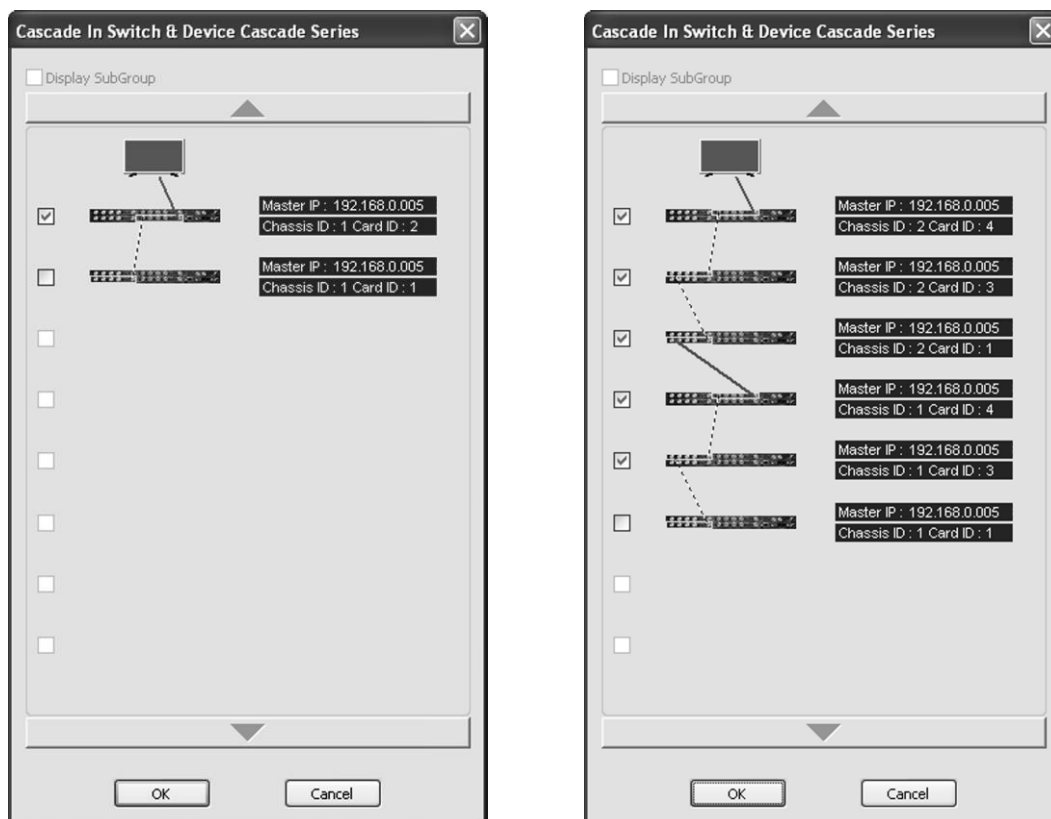
Figure 6-3 Phoenix-Q Software: "Cascade In Switch & Device Cascade Series" Window
(standalone Rainier 3G Plus – left; 2 cascaded Rainier 3G Plus – right)

Click the checkbox to enable (default setting) or disable "cascade in" for each card ID number. Disabling (or removing the checkmark) will cause the previous link on the particular ID number to be broken. This will cause the monitor to only display the linked cards after the broken link.

Change the ID number designation only (by clicking a card and dragging up or down using the symbol); this will not affect the actual physical connection of the Rainier 3G Plus.
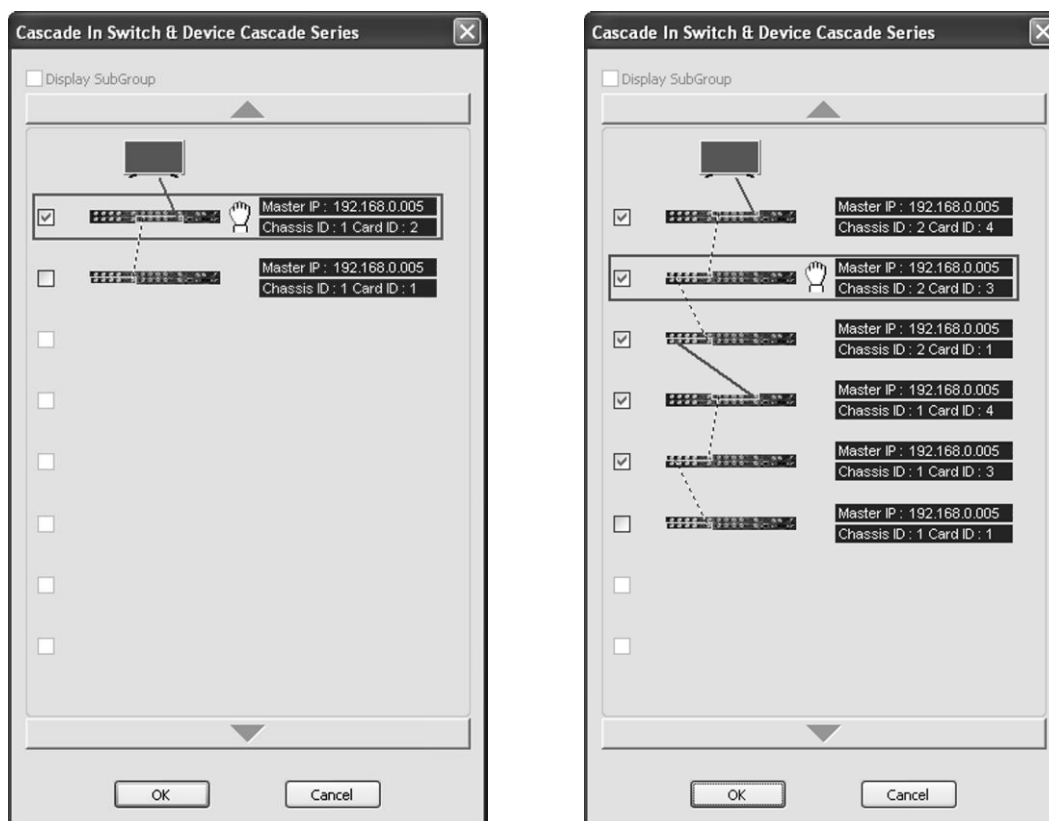
Figure 6-4 Phoenix-Q Software: Drag to Change the ID Number Designation Only

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

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

✓ Click **Import (.txt)→Label** to apply the labels you 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 the labels of the windows within the selected Group. However, the process of editing and importing the labels is the same as described on page 55.
   Note: To change all the labels in the System see page 55.
2. These items are only available when the computer is connected to the Rainier 3G Plus.

Appendix A   Using the LCD Panel

This appendix discusses the process of using the LCD panel to set up the Rainier 3G Plus.

The LCD panel allows for the control of some functions of the Rainier 3G Plus including; output resolution and signal adjustment, user logo, audio (headphone and HDMI), cascade, HDMI output source, preset file, color correction, clock, window display parameters, alarm, aspect ratio adjustment, safe area and operational status reports.

The LCD panel consists of 5 buttons:

▲   Go to next selection (up arrow button)
▼   Go to previous selection (down arrow button)
◀   Move to left of present cursor position (left arrow button)
▶   Move to right of present cursor position (right arrow button)
SET Enter the next level of a menu, or select the currently highlighted item.

		C	A	R	D		1		R	E	S	O	L	U	T	I	O	N			
P	L	E	A	S	E		W	A	I	T	.	.	.	.	.	.	.	.	.	.	.

Figure A-1 LCD Panel: Busy State

⚠️ 1. When the busy state "**PLEASE WAIT . . . .**" message is displayed on the LCD panel (see sample screen above), **DO NOT** disconnect or connect any signal cables.
2. Also, **DO NOT** change any of the incoming signal's display resolutions while the Rainier 3G Plus is in the busy state.

A.1 Welcome Screen

Upon starting up the LCD panel, the welcome screen is shown for a few seconds.

							A	V	I	T	E	C	H								
R	A	I	N	I	E	R		3	G	+		/		T	I	T	A	N		9	0	0	0

Figure A-2 LCD Panel: Welcome Screen

Then the following default screen is displayed.

C	A	R	D		1	:	1	9	2	0	_	1	0	8	0	@	6	0			
C	A	S	C	A	D	E	:	C	A	S	C	A	D	E		I	N				

Figure A-3 LCD Panel: Default Initial Screen

📄 This screen displays the card's default settings.
1. First line (video): Display the first card's current video output settings.
2. Second line (cascade method):
   The default cascade method for Rainier 3G Plus – (1 Card) is **Cascade In**.
   The default cascade method for Rainier 3G Plus – (Q card) is **Off**.

⚠️ Settings made through the LCD panel will be saved automatically upon turning off power to the Rainier 3G Plus.

Figure A-4 LCD Panel: Menu Tree

A.2 Navigating the Main Menu

1. Press the SET button from the default initial screen to enter the main menu.
2. Use the buttons on the front panel to navigate: (▲ / ▼ / ◀ / ▶ / SET)
3. There are a number of tables below, each detailing an item on the main menu (Input Port, Output Port… etc.). Within each table is listed the choices that can be made within each item.

Resolution	
Output	Select the desired display resolution and frequency. ❖ *1920×1200 @ 50, 60* (Hz) ❖ *1920×1080 @ 50, 60* (Hz) ❖ *1680×1050 @ 50, 60, 75* (Hz) ❖ *1600×1200 @ 50, 60, 75* (Hz) ❖ *1440×900 @ 50, 60, 75* (Hz) ❖ *1400×1050 @ 50, 60, 75* (Hz) ❖ *1360×768 @ 50, 60, 75* (Hz) ❖ *1280×1024 @ 50, 60, 75* (Hz) ❖ *1280×768 @ 50, 60, 75* (Hz) ❖ *1280×720 @ 50, 59.94, 60, 75* (Hz) ❖ *1024×768 @ 50, 60, 75* (Hz) ❖ *800×600 @ 50, 60, 75* (Hz) ❖ *640×480 @ 60* (Hz)
Output	Select the desired display resolution and frequency. ❖ *1080i @ 50, 59.94, 60* (Hz) *Note: For Rainier 3G Plus – (PI card) only.*
Exit	Exit the output resolution and frequency setup menu.

Table A-1 Output Resolution and Frequency

Output Timing	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Standard	**Normal**: select this for SDI output. **VESA**: select this for HDMI/DVI/VGA output.
Exit	Exit the output timing setup menu.

Table A-2 Output Timing

User Logo	*Only applicable for Rainier 3G Plus-1 card*
Display	**On**: enable the user logo display feature. Foreground can only be selected upon turning on user logo (the default setting is **Background**). ❖ *Background* ❖ *Foreground* **Off**: disable the display of the user logo. *Note: To fill the entire screen of monitor, the size (pixel) of the user logo picture must be the same as the monitor resolution. If the size of the file is larger than the card's output resolution (see **Output Resolution**) the system will automatically detect it and prevent it from displaying as your user logo picture.*
Exit	Exit the user logo setup menu.

Table A-3 User Logo

Audio	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*

Headphone	**On**: listen to the audio output through headphones.
	 ❖ *Mute: disable the audio output through headphone feature.*
	  ✓ *On/Off*
	 ❖ *Sound: select the left/right/both channels.*
	  ✓ *Stereo*
	  ✓ *Mono L (left)*
	  ✓ *Mono R (right)*
	 ❖ *Volume: adjust the volume.*
	  ✓ *−64 up to 12 (level)*
	 ❖ *Source: select from available 4 source windows or pass through.*
	  ✓ *Image 1/2/3/4*
	 ❖ *Channel: select the group and master/slave channels.*
	  ✓ *Group 1/2/3/4 Master/Slave*
	 Off: disable the audio output through headphones.

Embedded Audio	Audio signal from SDI input
	 ❖ *SDI Out:*
	  ✓ *Local*
	  ✓ *Pass Through*
	 ❖ *HDMI Out:*
	  ✓ *Local*
	  ✓ *Pass Through*
	 ❖ *Source: select from the available 4 source windows.*
	  ✓ *Image 1/2/3/4*
	 ❖ *Primary Group: select the primary group for HDMI audio.*
	  ✓ *Group 1/2/3/4*
	 ❖ *Secondary Group: select the secondary group for HDMI audio.*
	  ✓ *Group 1/2/3/4*

Exit	Exit the headphone audio setup menu.

Table A-4 Audio

Cascade	

Status	**On**: enable the card's cascade feature.
	 ❖ *SOURCE: select the card's (1/2/3/4) cascade source.*
	  ✓ *Card 1/2/3/4*
	  ✓ *Cascade In (default for Rainier 3G Plus – (1 Card))*
	 Off: disable cascade feature *(default for Rainier 3G Plus – (Q Card)).*
	 <u>*Note*</u>*: Except for Rainier 3G Plus – (PI card), make sure that the cascaded card belongs to the same group and has the same resolution.*

Exit	Exit the cascade setup menu.

Table A-5 Cascade

HDMI Output	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*

HDMI	Signal to HDMI output (1080p or 720p 50/60 Hz)
	 ❖ *Source: select the card's (1/2/3/4) HDMI output source.*
	  ✓ *Card 1/2/3/4*
	  ✓ *Cascade In*
	 <u>*Note*</u>*: Rainier 3G Plus – (PI card) is not included in the selection.*

Exit	Exit the HDMI output setup menu.

Table A-6 HDMI Output

Preset File	*Only "Save Current Setting" is available for Rainier 3G Plus – (PI card)*
Action	User created preset file. ❖ ***Load Preset****: recall a previously saved preset file.* ❖ ***Save Preset****: save the current parameters as a preset file (preset.GPx). The filename (preset) can be up to 18 characters in length, while the "x" in "GPx" would be assigned automatically based on the current group number (1 up to 99).* *Use the ▲ / ▼ buttons to scroll through the available ASCII characters for setting the filename.* *A quick press of the ◀ button moves the cursor one character to the left, while a long press deletes the character to the left of the current cursor position.* *Pressing the ▶ button moves the cursor one character to the right. Upon reaching the last character, a space will be added.* <u>*Note*</u>*: 14 user-created preset files are assignable per card/group.* ❖ ***Save Current Setting****: saves the current parameters as the "latest" system file to be loaded the next time Rainier 3G Plus is turned on.* <u>*Note*</u>*: This action is similar to the automatic system parameter save when quitting the Phoenix-Q program.*
Exit	Exit the preset file setup menu.

Table A-7 Preset File

Color Correction	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On:** enable the color correction feature. **Off:** disable the color correction feature.
Exit	Exit the color correction setup menu.

Table A-8 Color Correction

For Rainier 3G Plus-Q card –
Make sure to turn this function off when another card is selected as output in "HDMI Output" and not the Rainier 3G Plus-Q card itself.

Clock	*Only applicable for Rainier 3G Plus-1 card*
Status	**On:** enable the clock to be displayed on screen. **Off:** disable the on screen clock display.
Exit	Exit the clock setup menu.

Table A-9 Clock

Window Close	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: close the selected window. **Off**: window appears on screen.
Exit	Exit the window close menu.

Table A-10 Window Close

Full Screen	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: allow the selected window to appear in full screen mode (default setting is **OFF**). **Off**: window appears in its present configuration.
Exit	Exit the window full screen menu.

Table A-11 Window Full Screen

Display AFD	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the AFD (**Active Format Description**). AFD 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 Plus can then use this information, together with knowledge of the display shape and user preferences, to choose a presentation mode. ❖ *Active area signaling allows the display device to process the incoming signal to make the highest resolution and most accurate picture possible. While aspect ratio signaling allows the display device to produce the best image possible.* **Off**: disable the AFD display feature. *Note: This item is only available when selecting* **On** *in* **Signal Format**.
Exit	Exit the display AFD setup menu.

Table A-12 Window Display AFD

📄   ✓ *When the* **Display AFD** *feature is set* **ON** *and AFD is present in the input signal, then the* **Aspect Auto Detect** *function (later item) will be automatically disabled.*
      ✓ *When the* **Display AFD** *feature is set* **ON** *but AFD is not present in the input signal, then this function is invalid and the* **Aspect Auto Detect** *function (later item) will not be affected.*

Note: AFD (Active Format Description) has been added to many digital interfaces for the purpose of identifying the video payload*. AFD solves a problem in the transition from conventional 4:3 display devices to widescreen 16:9 displays. Active area signaling allows the display device to process the incoming signal to make the highest resolution and most accurate picture possible.

*Video payload is defined as the picture carried by a digital interface and comprising a matrix of horizontal and vertical pixels. The matrix usually comprises a multiplex of luminance and color components.

Time Code	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the Time Code (form of media metadata). **Off**: disable the Time Code display feature.
Exit	Exit the Time Code setup menu.

Table A-13 Window Time Code

Signal Format	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the window's input signal format. **Off**: disable the display of the window's input signal format.
Exit	Exit the signal format setup menu.

Table A-14 Window Signal Format

Meter	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the audio meter for the particular window. **Off**: disable the display of the window's audio meter.
Exit	Exit the meter setup menu.

Table A-15 Window Meter

Window Border	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the border for the particular window. **Off**: disable the border of the window.
Exit	Exit the window border setup menu.

Table A-16 Window Border

Image Border	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the border for the particular image. **Off**: disable the border of the image.
Exit	Exit the image border setup menu.

Table A-17 Image Border

Aspect Auto Detect	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: allow automatic detection of the input signal's aspect ratio. **Off**: disable automatic detection of the input signal's aspect ratio feature.
Exit	Exit the aspect automatic detection setup menu.

Table A-18 Window Automatic Aspect Ratio Detection

Safe Area	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the safe area marker of window. *Note: the default settings are 0% and 100% thus the need to first create and save parameters using Phoenix-Q before safe area will display a result.* **Off**: disable the safe area marker of the window.
Exit	Exit the safe area setup menu.

Table A-19 Window Safe Area

Label	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: display the label for the particular window. ❖ *Destination Name: input the text string appearing on label of the window (up to 32 characters).* *Use the ▲ / ▼ buttons to scroll through the available ASCII characters for setting the label.* *A quick press of the ◀ button moves the cursor one character to the left, while a long press deletes the character to the left of the current cursor position.* *Pressing the ▶ button moves the cursor one character to the right. Upon reaching the last character, a space will be added.* ❖ *Position* ✓ *Bottom* ✓ *Top* **Off**: disable the display of the window's label.
Exit	Exit the label setup menu.

Table A-20 Window Label

Alarm	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*
Status	**On**: turn on the alarm feature for the particular window. ❖ *Video Alarm: activate alarm to be triggered when "no video" occur* *Note: analog input signal is not supported.* ✓ *On/Off* ❖ *Audio Alarm: activate alarm to be triggered when "no audio" occur* ✓ *On/Off* **Off**: disable the alarm feature of the window.
Exit	Exit the alarm setup menu.

Table A-21 Window Alarm

Image Adjustment	*Only applicable for Rainier 3G Plus-1 card and Rainier 3G Plus-Q card*

Parameters	Adjust the parameter of the image appearing in the particular window.
	❖ **Brightness**: adjust the brightness quality of the input signal.
	    ✓ **–128** to **127**
	❖ **Saturation**: adjust the saturation quality of the input signal.
	    ✓ **0** to **1023**
	❖ **Contrast**: adjust the contrast quality of the input signal.
	    ✓ **0** to **1023**
	❖ **Hue**: adjust the hue quality of the input signal.
	    ✓ **–1024** to **1023**
	❖ **Default**

Exit	Exit the image adjustment setup menu.

Table A-22 Window Image Adjustment

📄 *Depending on the type of video signal, **SATURATION** and **HUE** may not be available.*

A.3 Navigating the System Parameters Menu

Backlight	
Status	**On**: enable the LCD panel backlight. ❖ **Idle Time**: select the time before LCD panel backlight will turn off. ✓ **5** to **60 Minutes** (adjustment in increment of 5 minutes) **Off**: disable the LCD panel backlight (default is **On**).
Exit	Exit the image adjustment setup menu.

Table A-23 LCD Panel Backlight

LCD Panel Contrast	
	Adjust the LCD panel contrast. ❖ **0** to **26**

Table A-24 LCD Panel Contrast

Lock LCD Panel	
Status	**On**: enable the lock LCD panel feature when a set idle time has elapsed. ❖ **Password**: input the text string for unlocking the LCD panel (up to 7 characters). (Default is "Avitech") *Use the ▲ / ▼ buttons to scroll through the available ASCII characters for setting the password.* *A quick press of the ◄ button moves the cursor one character to the left, while a long press deletes the character to the left of the current cursor position.* *Pressing the ▶ button moves the cursor one character to the right. Upon reaching the last character, a space will be added.* ❖ **Idle Time**: select the time between the last button in LCD panel was pressed and before it will be locked. ✓ **1** to **60 Minutes** **Off**: disable the lock LCD panel feature
Exit	Exit the lock LCD panel setup menu.

Table A-25 Lock LCD Panel

In case the password for unlocking the LCD panel is forgotten, just press both ◀ and ▶ buttons simultaneously and enter "Avitech" (default password).

Firmware Version	
Reference	Show the various current firmware version for reference. ❖ **CB AX** *(controller board)* ❖ **CB FPGA** *(field-programmable gate array)* ❖ **Cx Merge FPGA** *(C stands for card; x the card number 1 to 4)* ❖ **Cx OSD** *(on screen display)* **FPGA** ❖ **Cx ST-1** *(chip 1)* ❖ **Cx ST-2** *(chip 2)* ❖ **Cx Font**
Exit	Exit the firmware version setup menu.

Table A-26 Firmware Version

IP Address	
Status	Allow user to modify the following based on their Ethernet environment. ❖ **IP address** ❖ **Subnet Mask** ❖ **Gateway**
Exit	Exit the IP address setup menu.

Table A-27 IP Address

Dual Power	
Status	**On**: turn on the power alarm feature that is triggered when either one of the power source in redundant power supply is cut-off. **Off**: disable the dual power alarm feature.
Exit	Exit the dual power alarm setup menu.

Table A-28 Dual Power Alarm

Appendix B   Setting Up Audio

Step 1. **For 2 or more cascaded chassis ID**
Use the **System→Setup Speaker ID** function to assign each card's audio signal to a particular chassis' headset connector.
Make sure that 2 or more cascaded chassis' cards belong to the same group.
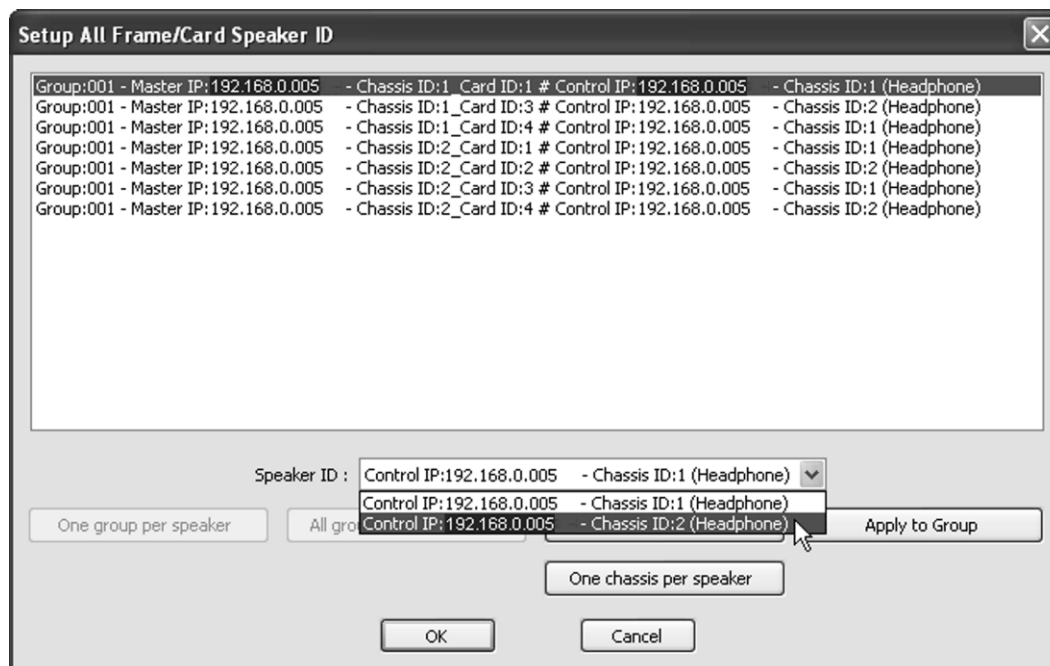
Step 2. To allow audio monitoring through the headphone connected to the headset port of the chassis, make sure to select the correct settings for the items under "Headphone Parameters" (Mute=Off; Sound; Volume (dB) and Analog gain (%)).
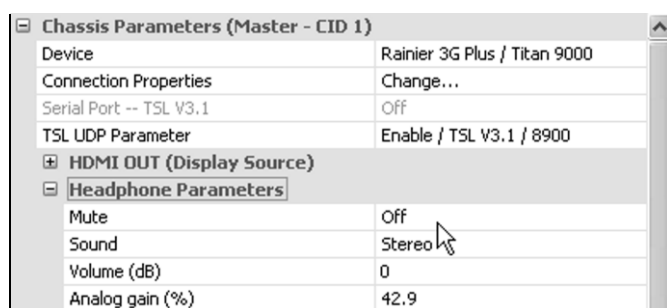
Step 3. To further allow audio monitoring through the headphone connected to the headset port of the chassis, make sure to select the correct settings for the items under "Headphone (Local)" (Enable=On and Source).
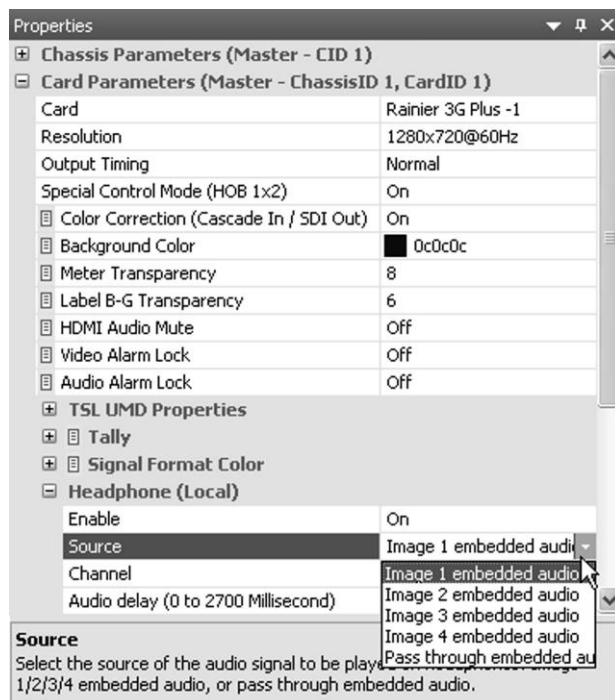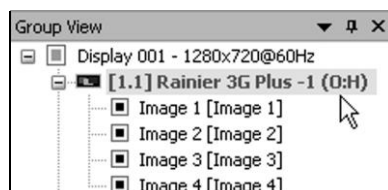

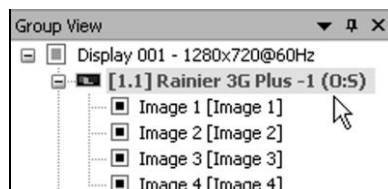Headphone will be disabled upon selecting "Pass through embedded audio."

"Group View" column provides quick information on 2 settings in "Properties→Card Parameters" section:
Scenario 1 (O:H/S): "HDMI Audio Mute"=Off; "Headphone (Local)"→Enable=On
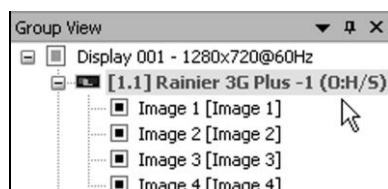
Scenario 2 (O:H): "HDMI Audio Mute"=Off; "Headphone (Local)"→Enable=Off

Scenario 3 (O:S): "HDMI Audio Mute"=On; "Headphone (Local)"→Enable=On

Step 4. *Select the audio channel to monitor through headphone.*

for an eight-channel (7.1) and six-channel (5.1) surround audio system, select from any of the first 2 groups listed in the drop-down menu
(Group 1 CH1/CH2 or CH3/CH4; Group 2 CH1/CH2 or CH3/CH4)

for a two-channel (stereo) audio system, only the first group is applicable
(Group 1 CH1/CH2)
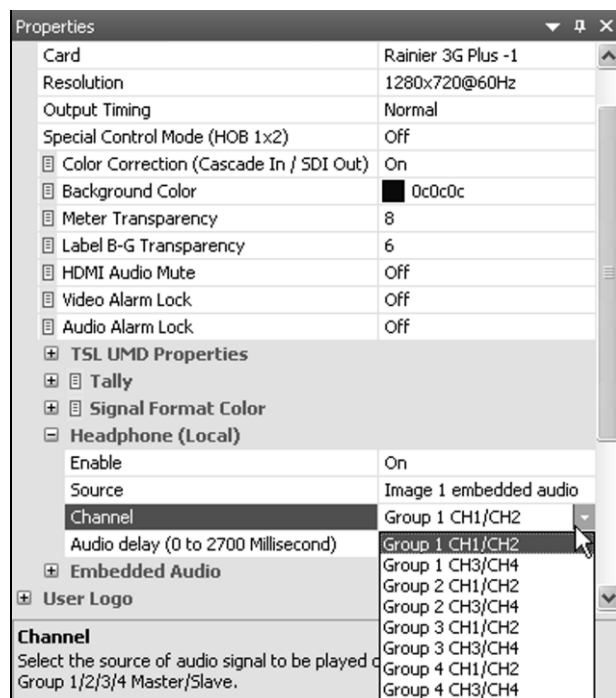
Step 5. *Select the output type of embedded audio signal (when available, see the "Note" below).*
Select "Local" to allow output to come from the embedded audio signal of the selected "Source" image (next item).
Select "Pass through embedded audio" to allow audio output from another internally cascaded card or another externally cascaded chassis' card.
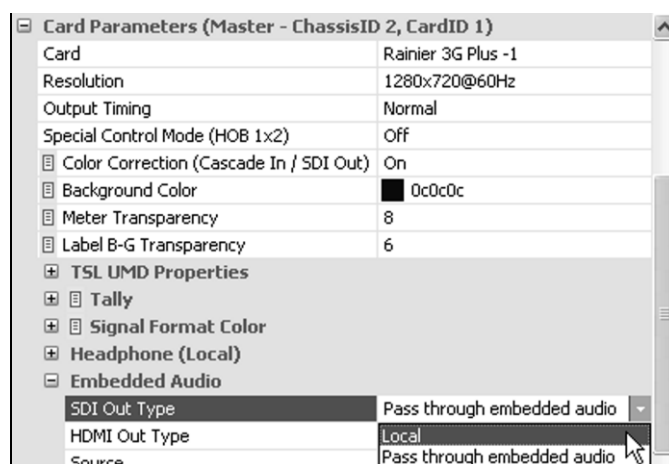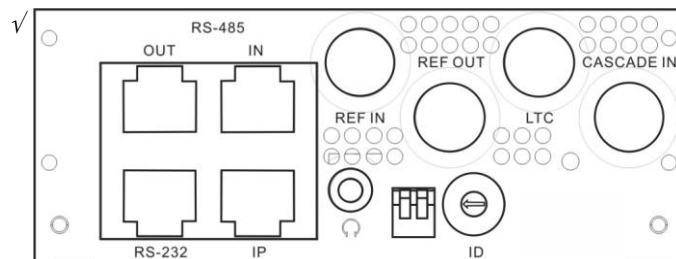
Important principles to consider when "SDI Out Type" (for Rainier 3G Plus card) and "HDMI Out Type" (for Rainier 3G Plus and Titan 9000 cards) are available (not grayed out):

√ *Upon setting one Rainier 3G Plus (–Q card) in a group by itself and "System→Options→HDMI audio output follow SDI audio output→Off".*

   Both "SDI Out Type" and "HDMI Out Type" are available for setting.

√

   Upon setting 2 to 4 cascaded cards in a group (internal cascade only).

   When there is one card in group and "System→Options→HDMI audio output follow SDI audio output→Off."

   "SDI Out Type" is unavailable (grayed out) but "HDMI Out Type" is available for setting.

√ *Upon setting 2 or more cascaded cards in a group (external cascade only.)*

   Both "SDI Out Type" and "HDMI Out Type" will be unavailable (grayed-out).

Step 6. Select the source of embedded audio signal to output to the HDMI OUT port of the particular card ID. Only applicable when selecting "Local" on the previous item "HDMI Out Type."
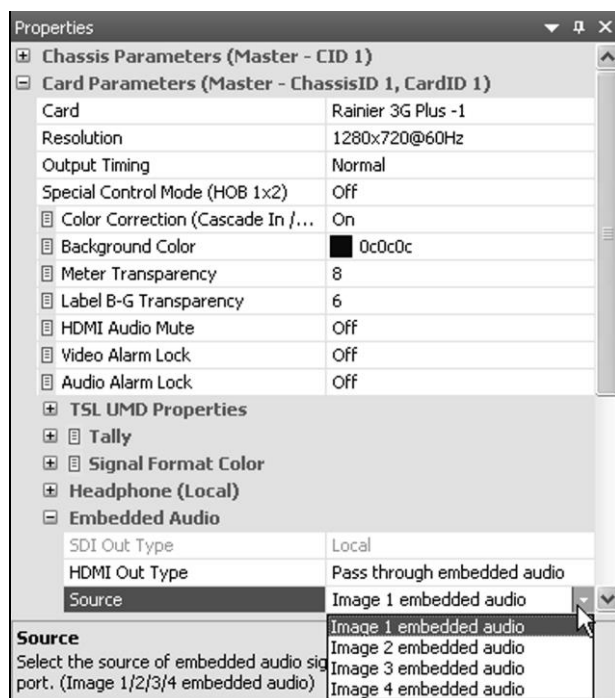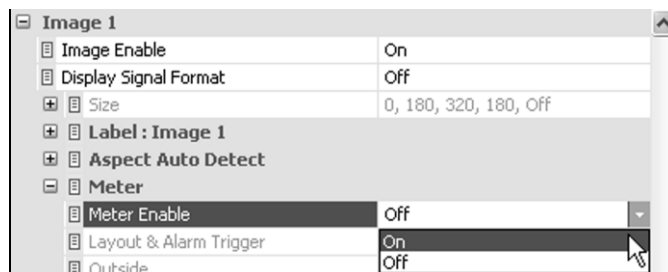
Step 7. *Select the combination of "Primary Group" and "Secondary Group" to be monitored.*

For an 8-channel (7.1) and six-channel (5.1) surround audio system, select "Group 1" or "Group 2"
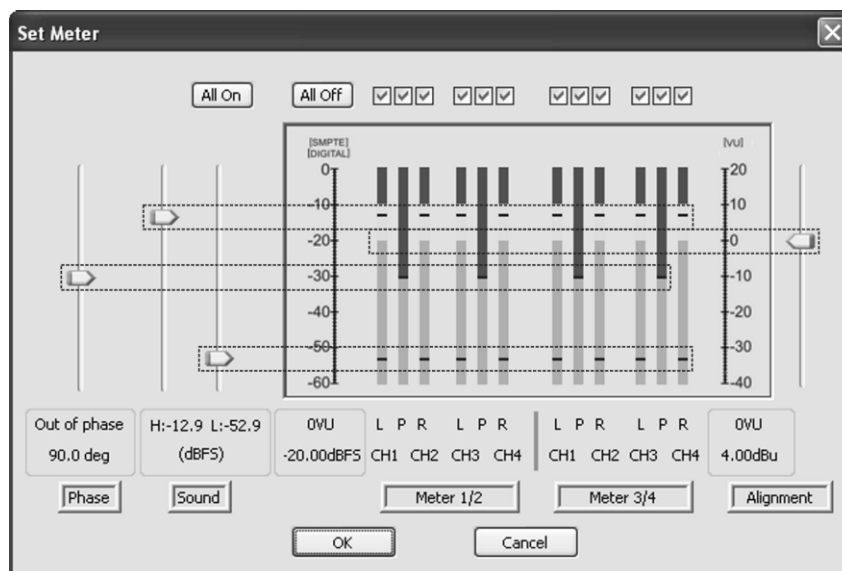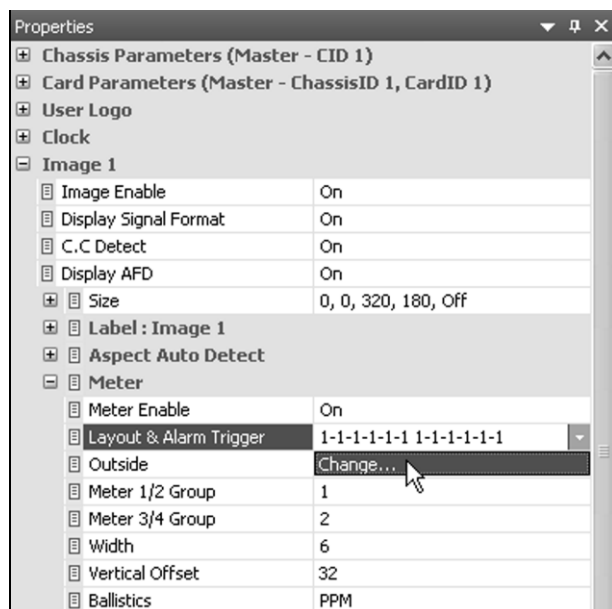
For a 2-channel (stereo) audio system, only Group 1 is applicable for both Primary Group and Secondary Group.
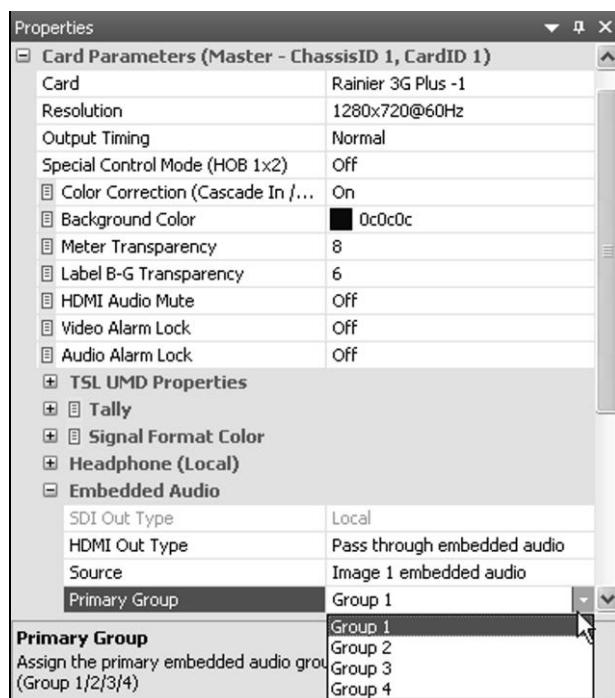
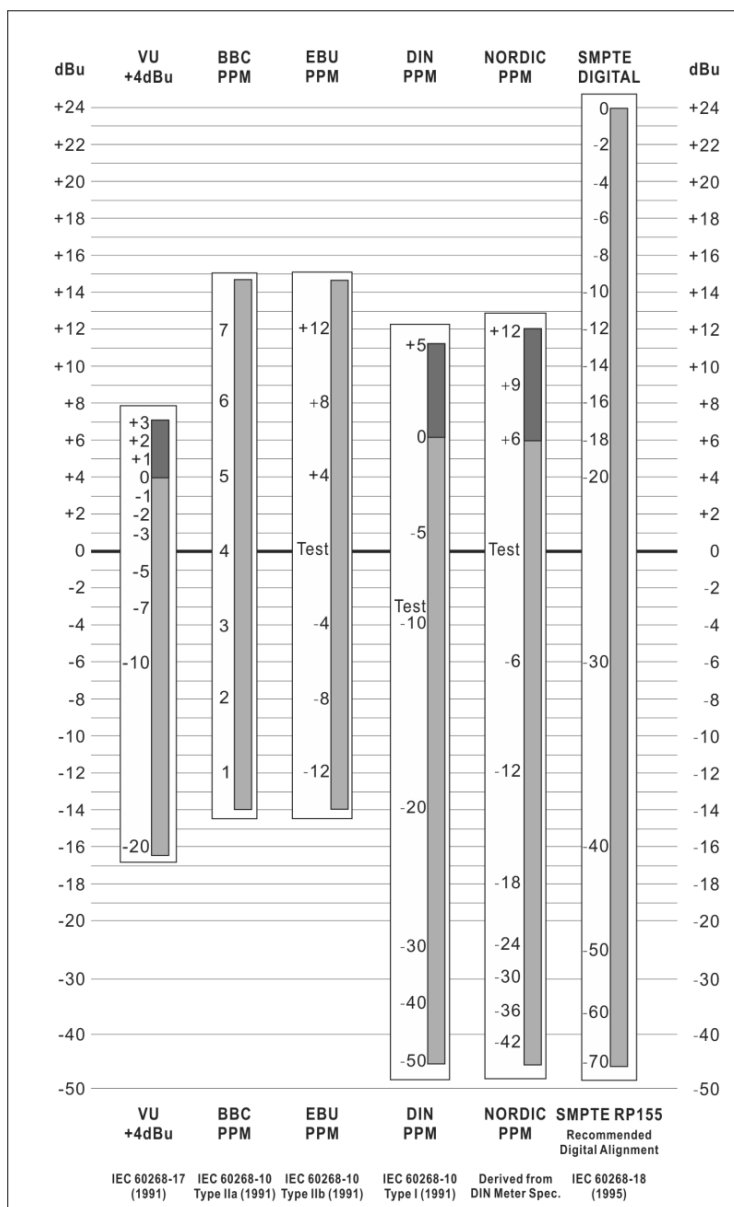*Step 8.* *Turn on audio meter monitoring.*

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

*Embedded audio as VU (volume unit) meters can be displayed 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 will display 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). If there is no audio detected, <u>NO</u> VU meters will be shown.*

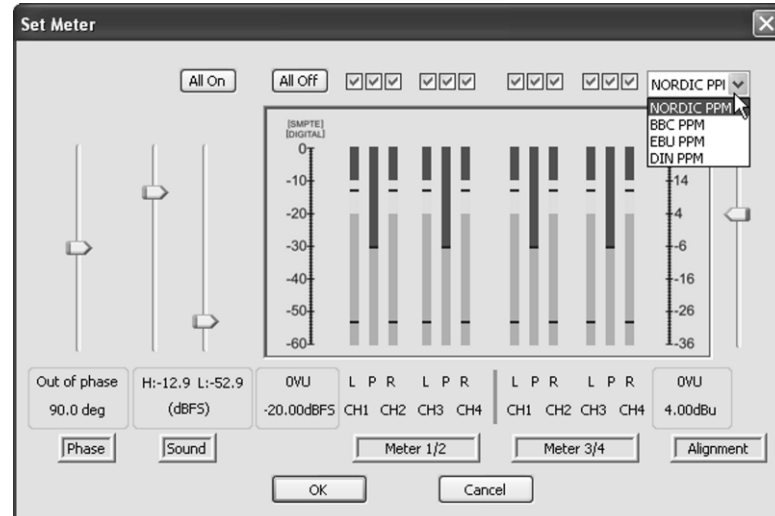*The following figure shows the audio meter scale as reference:*

dBu	VU +4dBu	BBC PPM	EBU PPM	DIN PPM	NORDIC PPM	SMPTE DIGITAL	dBu
+24						0	+24
+22						-2	+22
+20						-4	+20
+18						-6	+18
+16						-8	+16
+14			+12			-10	+14
+12		7		+5	+12	-12	+12
+10			+8		+9	-14	+10
+8	+3 +2 +1	6		0	+6	-16	+8
+6	0	5	+4			-18	+6
+4	-1 -2					-20	+4
+2	-3						+2
0	-5	4	Test	-5	Test		0
-2	-7						-2
-4		3	-4	Test -10			-4
-6	-10				-6	-30	-6
-8		2	-8				-8
-10							-10
-12		1	-12		-12		-12
-14				-20			-14
-16	-20					-40	-16
-18					-18		-18
-20							-20
				-30	-24	-50	
-30					-30		-30
				-40	-36	-60	
-40					-42		-40
				-50		-70	
-50							-50
	VU +4dBu	BBC PPM	EBU PPM	DIN PPM	NORDIC PPM	SMPTE RP155 Recommended Digital Alignment	
	IEC 60268-17 (1991)	IEC 60268-10 Type IIa (1991)	IEC 60268-10 Type IIb (1991)	IEC 60268-10 Type I (1991)	Derived from DIN Meter Spec.	IEC 60268-18 (1995)	

Outside (On / Off)	Allow the location of the audio meter to be outside the video area. *Note: This is not allowed when the image width is less than 128 pixels.*
Meter 1/2 Group Left (6) bars	Select the audio meter's group (embedded audio).
Meter 3/4 Group Right (6) bars	
Width	Select the audio meter's width. (**2** / **4** / **6** / **8** / **10** / **12** / **14**)
Vertical Offset (0 to 144)	Specify the location of the meter appearing on screen by setting the vertical coordinate.

Select the meter's ballistics. Meters which monitor audio levels are typically one of two 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 an audio signal. A PPM displays the peak volume level of an 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.

Upon selecting PPM, clicking **Layout and Alarm Trigger**→**Change . . .** selects the type of PPM scale (**Nordic**/**BBC**/**EBU**/**DIN**).

Ballistics
  PPM
  VU

Whereas the VU meter has fairly equal attack and release times, the PPM is characterized by having a very slow fall-back time, taking over 1.5 seconds to fall back 20dB (the specifications vary slightly for Type I and II meters). The reasoning for the slow fall-back was to reduce eye-fatigue and make the peak indication easier to assimilate. The specifications of all types of PPM are detailed in IEC 60268-10 (1991), and the scale used by the BBC comprises the numbers 1-7 in white on a black background. There are 4dB between each mark, and PPM 4 is the reference level (0dBu). EBU, DIN and Nordic variants of the PPM exist with different scales. The EBU version replaces the BBC numbers with the equivalent dBu values, while both the Nordic and DIN versions accommodate a much wider dynamic range.
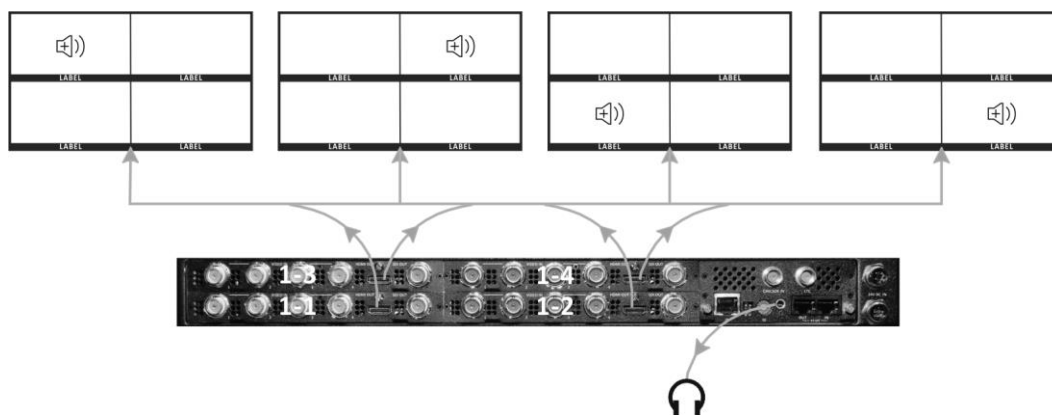
Sample illustration 1

Figure B-1 Audio Output From Each Card's HDMI OUT Port Plus Headset

- ✓ *To allow audio output from the chassis' headset port and from each card's HDMI OUT port –*
Headphone Parameters→Mute→Off (chassis level so this includes all 4 cards)
Headphone (Local)→Enable→On (card level so this must be set for each of the 4 cards individually; take note that only 1 card can be enabled at a time, turning on one card's local headphone will cause the other card's local headphone to be turned off automatically)
Headphone (Local)→Source (card level; select from among the 4 image's audio signal)
Headphone (Local)→Channel→Group 1 CH1/CH2 (this is the default setting; card level; depending on the signal source select another group to monitor if available)
Embedded Audio→Source (card level; select from among 4 image's audio signal for each card)

Sample illustration 2
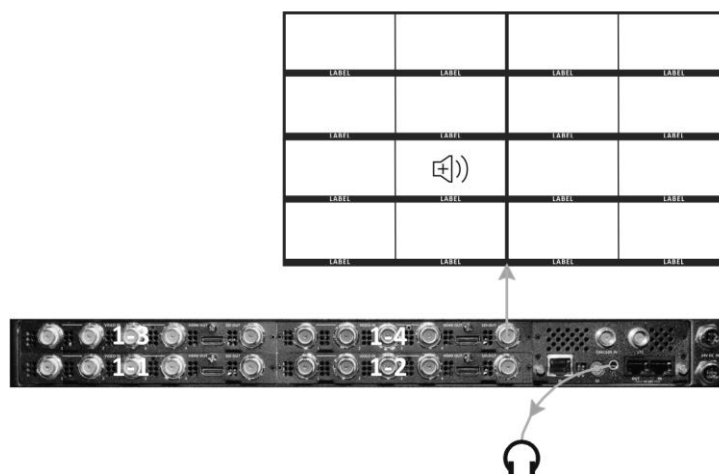
Figure B-2 Audio Output From Card ID 3 Image 2 Plus Headset

✓ *To allow audio output from the chassis' headset port and from card ID 3 image 2 embedded audio –*
   Headphone Parameters→Mute→Off *(chassis level so this includes all 4 cards)*
   Headphone (Local)→Enable→On *(card level so this must be set for card ID 3; take note that only 1 card can be enabled at a time, turning on card ID 3's local headphone will cause the other card's local headphone to be turned off automatically)*
   Headphone (Local)→Source *(card level; select from among the 4 image's audio signal)*
   Headphone (Local)→Channel→Group 1 CH1/CH2 *(this is the default setting; card level; depending on the signal source select another group to monitor if available)*
   Embedded Audio→Source *(card level; card ID 1 and card ID 2 and card ID 4 select "Pass through embedded audio"; card ID 3 select "Image 2 embedded audio")*
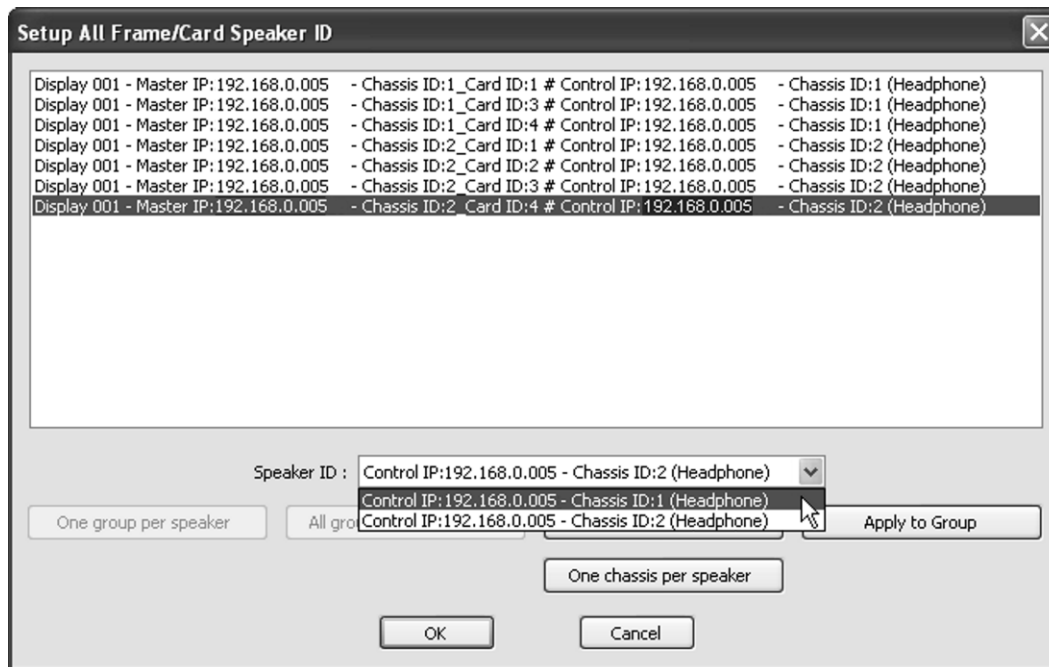
Sample illustration 3
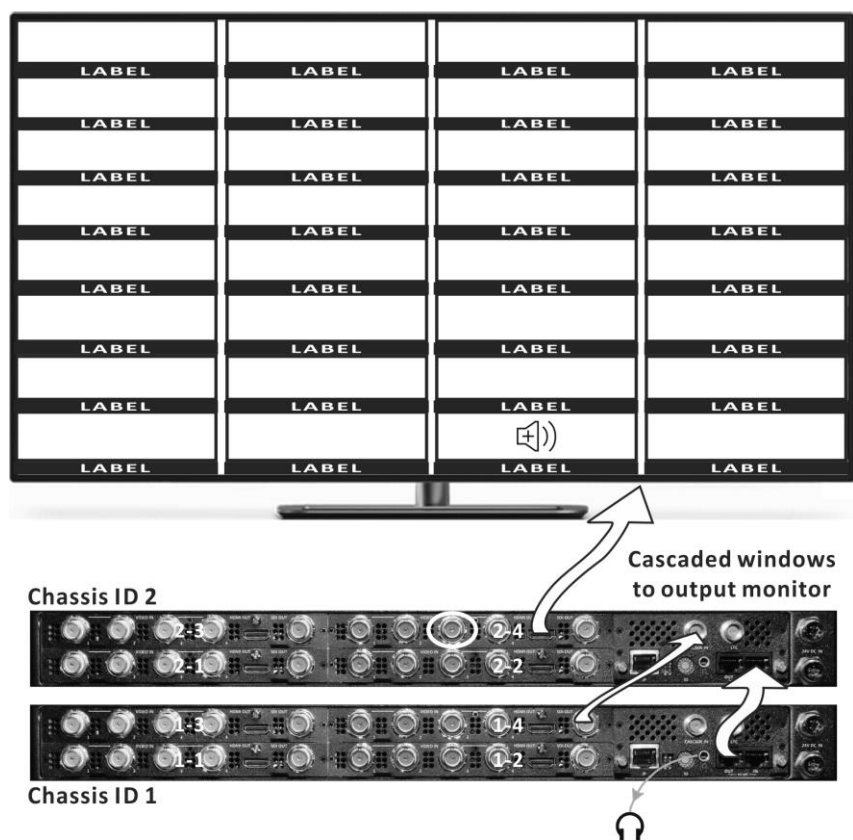
Figure B-3 Audio Output From Chassis ID 2 Card ID 4 Image 3 Plus Chassis ID 1 Headset

✓ *To allow audio output from chassis ID 1 headset port and from chassis ID 2 card ID 4 image 3 embedded audio–*
Assign all 8 cards to 1 group
System→Setup Speaker ID *(set chassis ID 2 card ID 4 output audio to chassis ID 1 headset port)*

Headphone Parameters→Mute→Off *(chassis ID 1; chassis level so this includes all 4 cards)*
Headphone (Local)→Enable→On *(card level so this must be set for chassis ID 2 card ID 4; take note that only 1 card can be enabled at a time, turning on card ID 4's local headphone will cause the other card's local headphone to be turned off automatically)*
Headphone (Local)→Source *(card level so this must be set for chassis ID 2 card ID 4; select "Image 3 embedded audio")*
Headphone (Local)→Channel→Group 1 CH1/CH2 *(this is the default setting; card level; depending on the signal source select another group to monitor if available)*
Embedded Audio→Source
(chassis ID 1 card ID 1 to card ID 4 select "Pass through embedded audio";
chassis ID 2 card ID 4 select "Image 3 embedded audio"; card ID 1 to card ID 3 select "Pass through embedded audio")

Appendix C   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 playback of alarm sound.

C.1   Alarm Sound Setup for No Video / Video Black / Video Freeze Occurrence
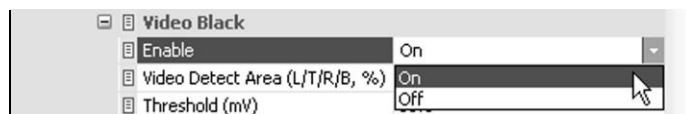
Step 1. Select "On" in "Alarm"→"Enable" (located in the "Properties" portion of the Phoenix-Q software) to enable the various alarm features.

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

Step 3. Select "On" in "Video Black"→"Enable" to enable the "video black" alarm feature.

Analog input signal is not supported.

*Step 4. Click "Change" in "Video Detect Area" to freely adjust the horizontal (**Left** and **Right**) and vertical (**Top** and **Bottom**) markers to set scope of area to monitor when "no video" occurs.*
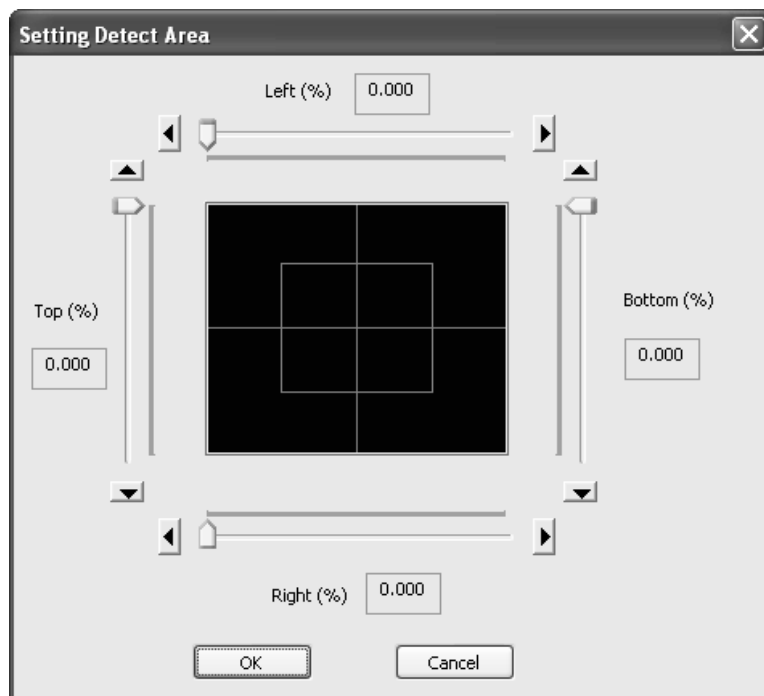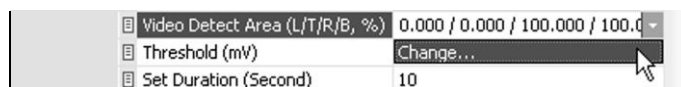
Video Detect Area (L/T/R/B, %)	0.000 / 0.000 / 100.000 / 100.0
Threshold (mV)	Change...
Set Duration (Second)	10

Setting Detect Area

Left (%) 0.000

Top (%) 0.000

Bottom (%) 0.000

Right (%) 0.000

OK Cancel

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

Step 5. Set the level (mV/IRE) of the "detect area" below which the signal will be considered to be black.

Threshold (IRE)	12.5
Set Duration (Second)	10

IRE/mV unit will depend on the choice in "System"→ "Option"→ "General"→ "Video black threshold unit".

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

Set Duration (Second)	10
Video Freeze	

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

|	
Video Freeze	
Enable	On
Sensitivity Level	On
Set Duration (Second)	Off

Analog input signal is not supported.

Step 8. Set the motion sensitivity of image which will trigger the "video freeze" alarm. Adjust the sensitivity according to the signal being monitored, on a range of 1 (for filtering out noise in a noisy signal) to 128 (for a clean signal). If the "sensitivity" level is set very low, a slight difference in frame by frame content comparison (e.g., a talk show video where the background is constant and the only motion detectable is the announcer's lip movement) may trigger the alarm. In this case consider increasing the "sensitivity level" or "set duration" (next item) values.

| Sensitivity Level | 1 |
| Set Duration (Second) | 20 |

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

| Set Duration (Second) | 20 |
| Border | |
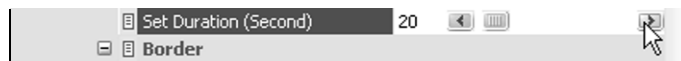
Video Black and Video Freeze cannot happen simultaneously. When both conditions exist, Video Black has the higher priority.
Likewise, both functions are not available for analog input signal.

Step 10. Select "On" in "Alarm Sound"→"Video"→"Enable" to enable playback of alarm sound when no video / video black / video freeze is detected in a particular image source window.
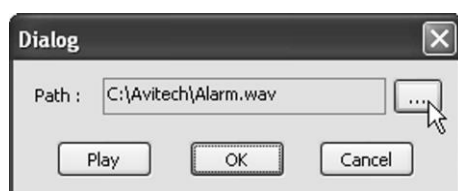
Alarm	
Alarm Sound	
Video	
Enable	On
Set Playback Duration (Second)	On
File	Off

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

Alarm	
Alarm Sound	
Video	
Enable	On
Set Playback Duration (Second)	5
File	5
Audio	10
Enable	30
Set Playback Duration (Second)	60
File	300
Timecode	600
	1800
	3600
Image 2	Always on

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

File	Alarm.wav
Audio	Change...
Enable	On

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

Dialog

Path : C:\Avitech\Alarm.wav   ...

[Play]   [OK]   [Cancel]

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 – will become grayed-out).

Start Alarm Sound (System)

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

Properties
Stop Alarm Sound (System)

C.2   Alarm Sound Setup for No Audio Occurrence

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

Alarm
Enable   On
Video Alarm   On
Audio Alarm   Off

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

Audio Alarm
Enable   On
No Audio Alarm (Single Meter)   On
Border   Off
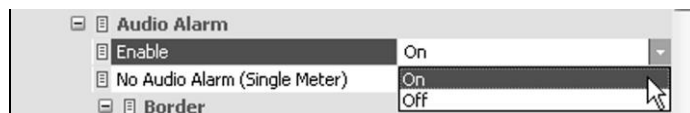
Step 3. Select "On" in "No Audio Alarm (Single Meter)" to enable the alarm that is triggered when no audio signal is detected on any of the meters enabled (with checkmark) in "Set Meter" dialog box (refer to step 9).

No Audio Alarm (Single Meter)   On
Border   On
Red Color   Off
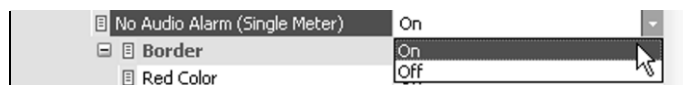
Step 4. Set the "Signal In/Out" alarm "Response Time," such as when inputting the signal or change of status from "abnormal" to "normal." If the Audio Alarm is activated, but the signal is restored, then the alarm will be cancelled after the amount of time set for "Signal In". If the Audio Alarm is triggered, the alarm will be activated after the amount of time set for "Signal Out."

Response Time
Signal In   0.50
Signal Out   0.50

Step 5. Select "On" in "Alarm Sound"➔"Audio"➔"Enable" to enable playback of alarm sound when no audio is detected in a particular image source window.
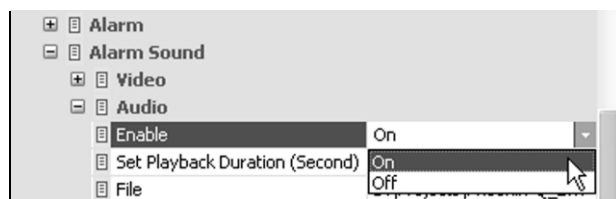
Step 6. Set the "audio alarm" sound playback duration (second) for particular image source window.
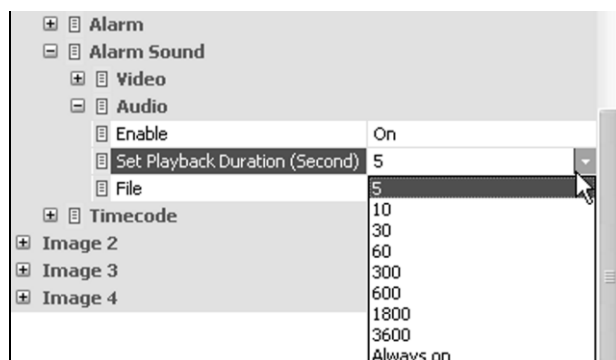
Step 7. Click "Change" in "File" to choose another alarm sound to play when audio alarm occurs for the particular source image window.

Click the "browse" button to select the location of the audio file. Click "Play" to hear a sampling of the 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.
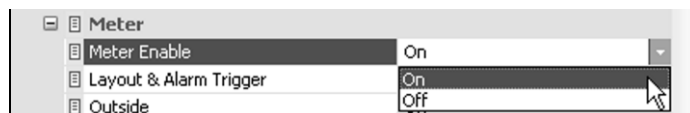
Step 9. Click "Change" in "Layout & Alarm Trigger."
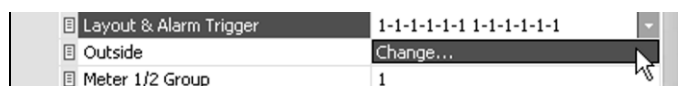
*Click to select (with checkmark) the **L**(eft) and **R**(ight) **Meter 1/2 / 3/4** to monitor. Then click **OK** to exit.*
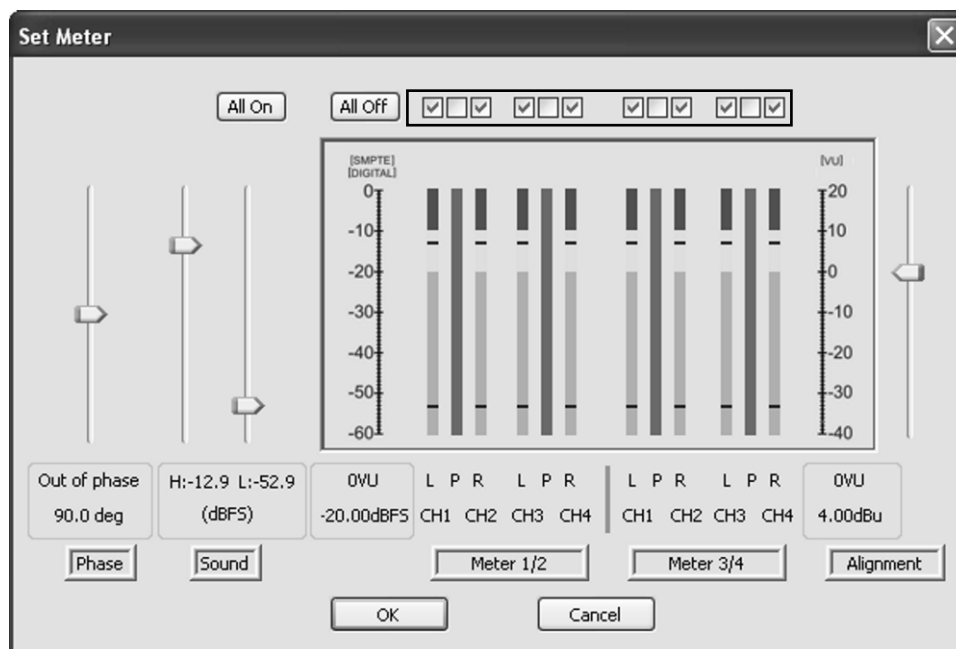

Step 10. To enable alarm sound playback, click "Start Alarm Sound (System)" icon (this functions as the main switch – will become grayed-out).

To shut off alarm sound playback before the time set has elapsed (duration), click "Stop Alarm Sound (System)" icon (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*
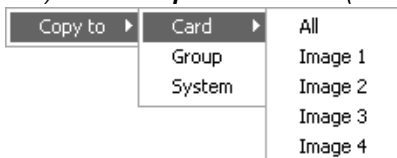
✓ *all the windows (**Card→All**)*
✓ *to a particular window (**Card→Image 1/2/3/4**)*
✓ *all the cards belonging to the same (**Group**)*
✓ *to the entire (**System**)*

C.3   Import and Export Alarm Sound

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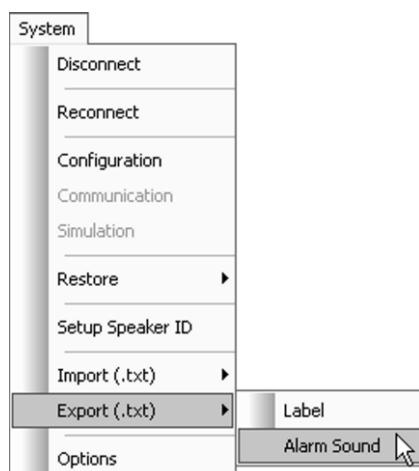Notepad), and then import the edited "Alarm Sound" parameters.

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

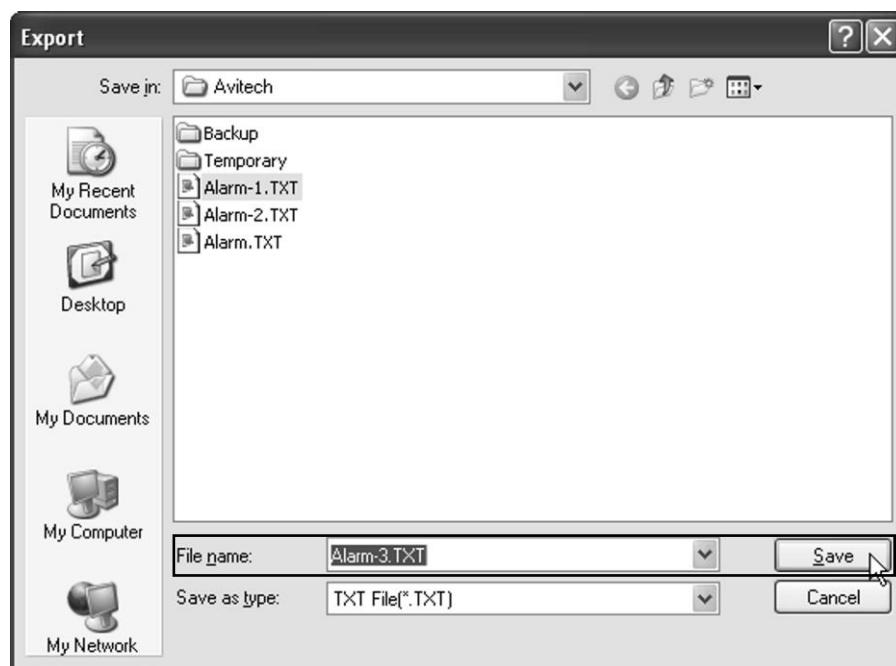*Step 1.   Click **System→Export (.txt)→Alarm Sound** and assign a filename. Then click **Save**.*

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

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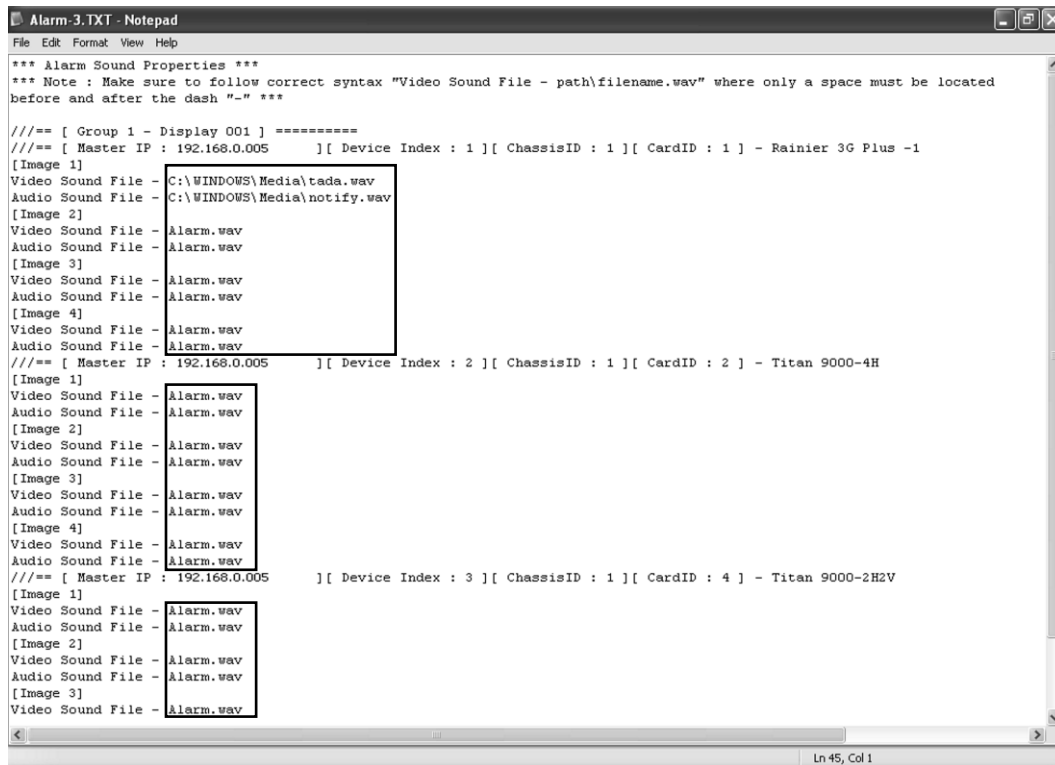

Figure C-3 Phoenix-Q Software: Change Alarm Sound File

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

C.4   Special Layout

Before starting or stopping display of special screen layout when no video occurs, make sure to enable the feature. To find out if it is enabled, click **System→Options** on the Phoenix-Q software's drop-down menu.

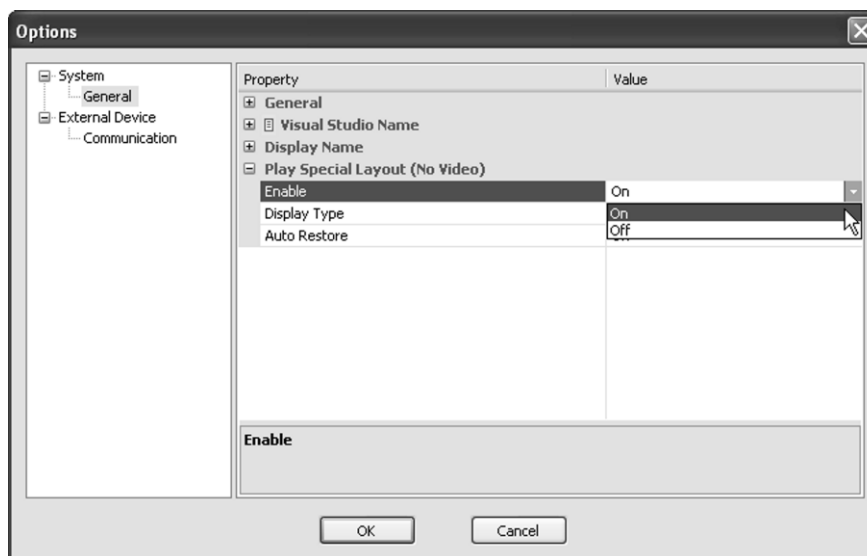The highlighted item must be set at **On**.

Figure C-4 Options: Enable Special Layout

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

Figure C-5 Phoenix-Q Software: Enable Special Layout Button

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

Figure C-6 Phoenix-Q Software: Shut Off Special Screen Layout Alert Button

Appendix D   Setting Up Static IP

The following 2 methods allow Rainier 3G Plus to be in the same network mask as the connected computer.

Method 1:   Change the IP Address of the Rainier 3G Plus Master Chassis

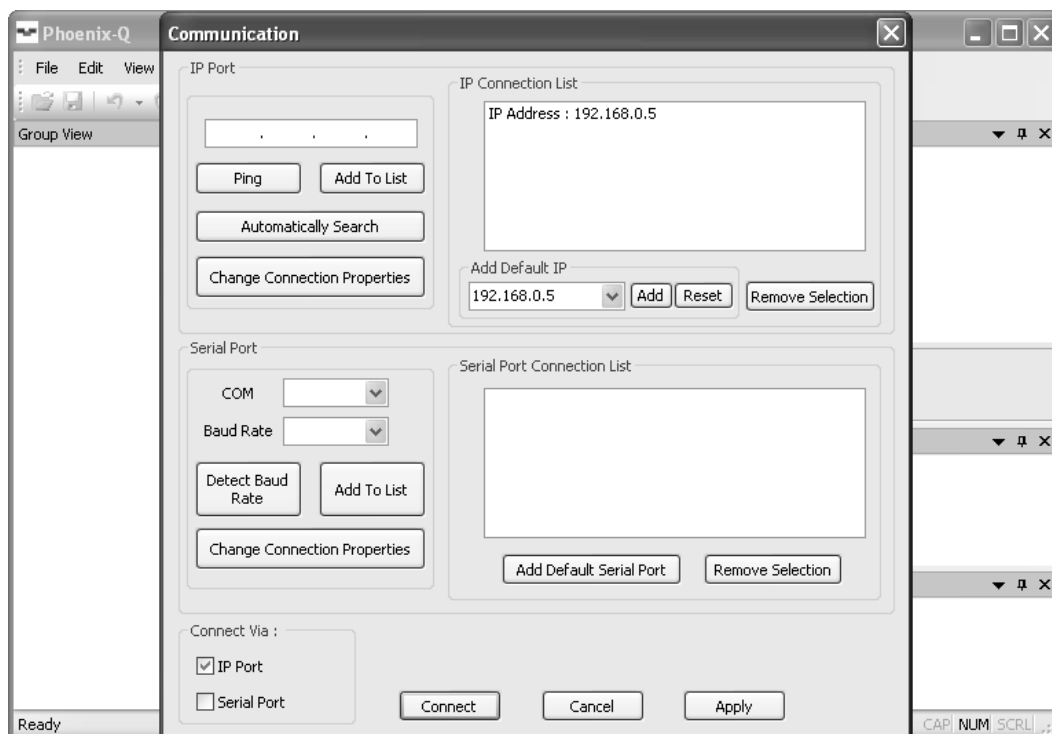*Step 1. Run the Phoenix-Q software by double-clicking **Phoenix-Q.exe**.*

Figure D-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 **Change Connection Properties**.*
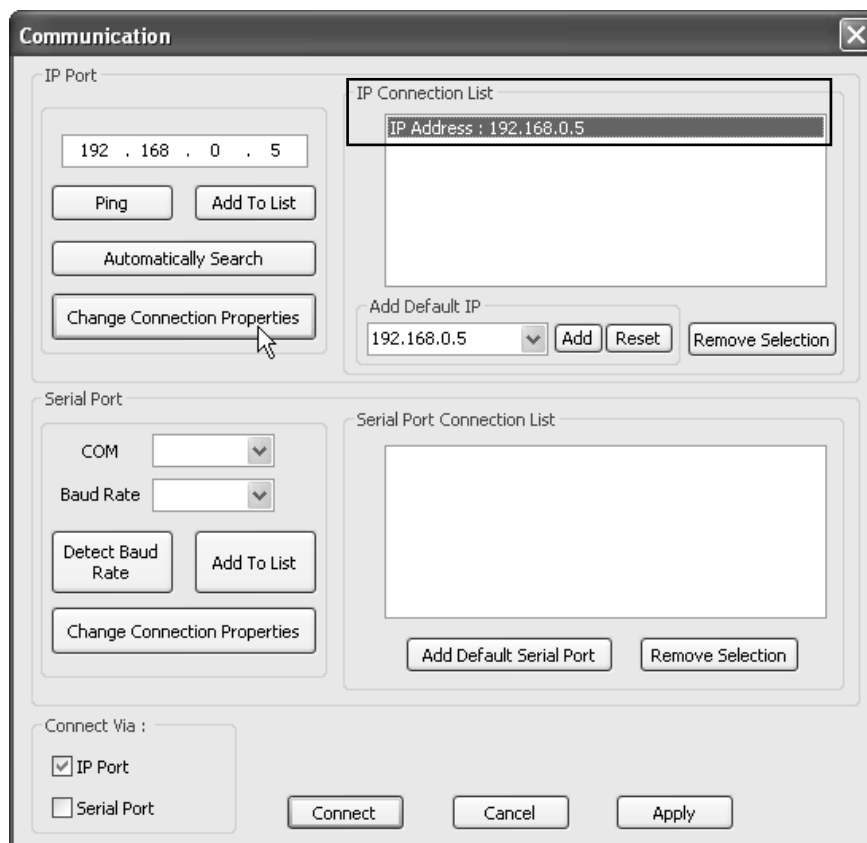

Figure D-2 Phoenix-Q Software: Click "Change Connection Properties"

*The present IP address is shown in the **IP address** field. The corresponding **Subnet Mask** and **Gateway** belonging to the present IP address is also displayed.*
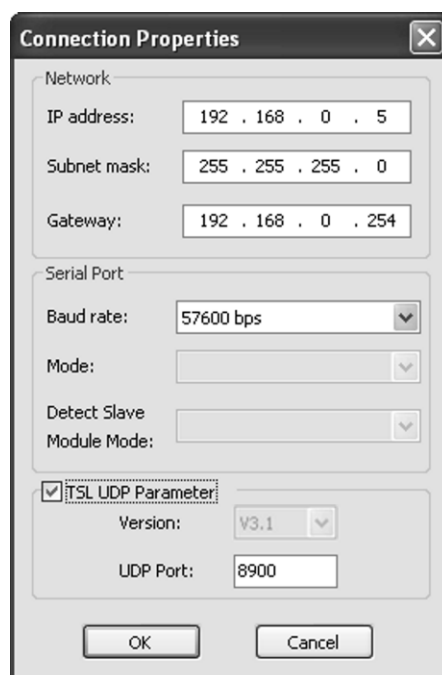

Figure D-3 Phoenix Q Software: "Connection Properties" Screen

Step 3. Enter 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 Rainier 3G Plus).
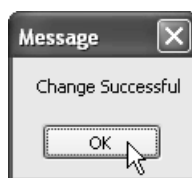
Step 4. Click **OK** to exit.

Figure D-4 IP Address Change Successful

Method 2: Change the IP Address of the Controlling Computer

For Windows XP

Step 1. Click **Start**, and then right-click **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 **Local Area Connection** the Rainier 3G Plus 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.

Appendix E   Resetting to the Factory-Default State

Step 1. Turn off power from the power strip to the Rainier 3G Plus.

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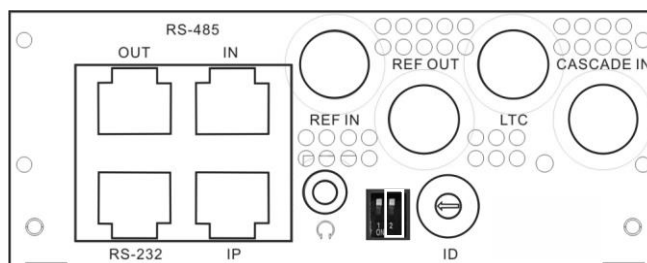

Figure E-1 Push Number 2 Dip Switch Downward

Step 3. Power-on the Rainier 3G Plus by restoring power from the power strip.

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

Appendix F   Compatibility With Tally Interface Device

The Rainier 3G Plus (together with Pacific GPIO + RS-232 to 422 converter + mini null modem adapter + re-worked serial cable) system supports production switchers and other tally interface devices; through a serial connection. The combined devices can dynamically update monitor wall elements to reflect text and status updates from the device. This appendix describes how Rainier 3G Plus can be configured to receive dynamic labels and status from tally interface devices.

> 📄 *At this time, the Rainier 3G Plus has been tested to support the Sony switcher. Other production switchers may be added in the future.*

F.1 Using the Pacific GPIO Box as GPI Interface

Pacific GPIO is a General Purpose Input/Output box for GPIO (General Purpose Input/Output Interface) task assignment. By using the RS-232 to 422 converter plus mini null modem adapter (DB9 male to DB9 male) plus re-worked serial cable, it serves as a bridge between Rainier 3G Plus and Sony switcher.

The Pacific GPIO box serves as the GPI interface to receive tally information from a switcher whose specific protocol the multiviewer does not support. This is based on the assumption that the switcher is capable of communicating through GPI.

No software configuration is needed on the Pacific GPIO box, only the hardware connection is necessary.

But for the Rainier 3G Plus to receive status information from a Sony switcher through the Pacific GPIO box, and to display the Pacific GPIO box's contribution on the monitor wall as visual tally information, configure the Rainier 3G Plus by performing the following setting in Phoenix-Q software:

Step 1. Run the Phoenix-Q software (see chapter 4 for details).

Step 2. Make sure to set the correct IP address (see Appendix D for details).

*Step 3. On the **Properties** window under **TSL UDP Parameter**, click the rightmost portion and click **Change**.*
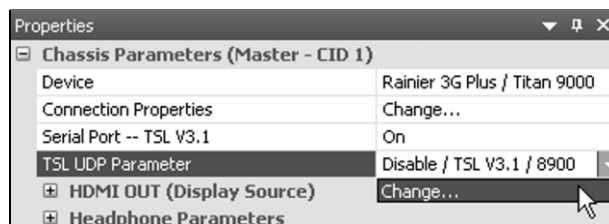

Figure F-1 Properties: Change TSL UDP Parameters

*Step 4. Click **Enable**. Enter the correct **UDP Port** (User Datagram Protocol) value that matches the connected switcher. Click **OK** to exit.*
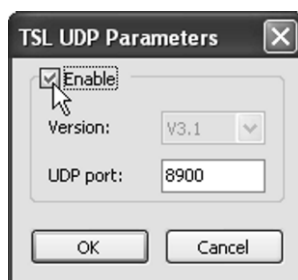
Figure F-2 Enable TSL UDP Parameters

*Step 5.   On the **Properties** window under **TSL UMD Properties**, make sure that **Enable** is set **On** for the **Image #** of a particular Card ID the Sony switcher wishes to communicate with.*
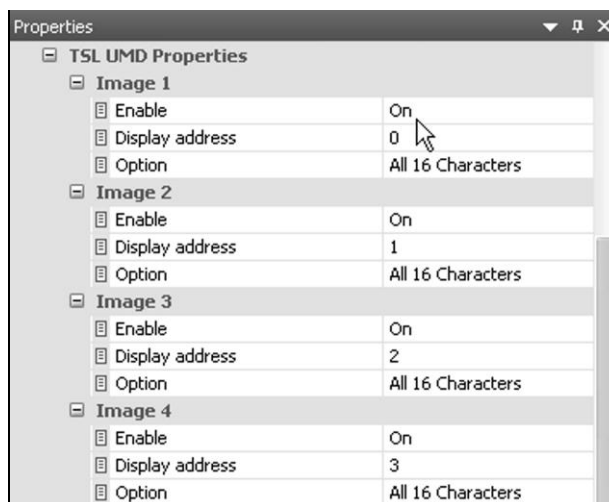

Figure F-3 Phoenix-Q Software: Enable Image #'s TSL UMD Properties

*Step 6.   Make sure that the **Display Address** corresponds to the assigned value of the Sony switcher. If not, select the correct value from the drop-down menu.*
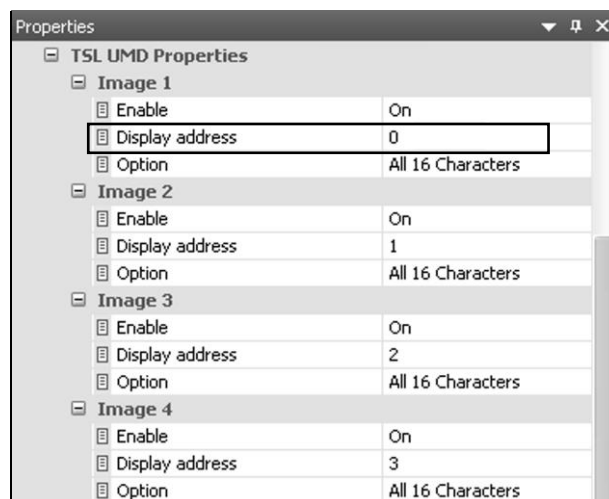

Figure F-4 Phoenix-Q Software: Select the Correct Display Address That Matches the Sony Switcher

Setting the next item "Option" is not necessary.

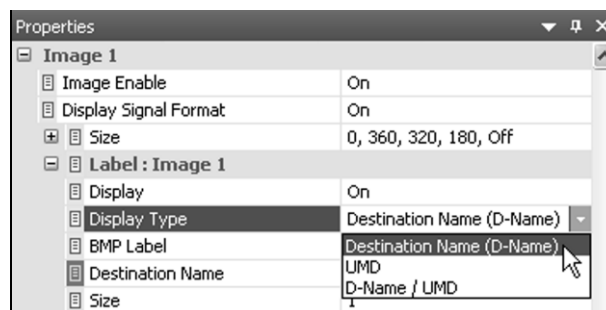*Step 7. Make sure that the **Display Type** is set at **Destination Name (D-Name)**.*

Figure F-5 Phoenix-Q Software: Select the Correct Display Type

F.2 Sony Production Switcher

Rainier 3G Plus can receive dynamic source names and tally information from a Sony switcher. The procedure below describes how to set up Rainier 3G Plus to interface with a Sony production switcher.

*Step 1. Connect an Ethernet cable between Rainier 3G Plus **IP** port and router.*

*Step 2. Connect an Ethernet cable between Pacific GPIO **IP** port and router.*

Step 3. Connect a special re-worked serial cable between Sony switcher's RS-422 serial tally port and RS-232 to 422 converter.
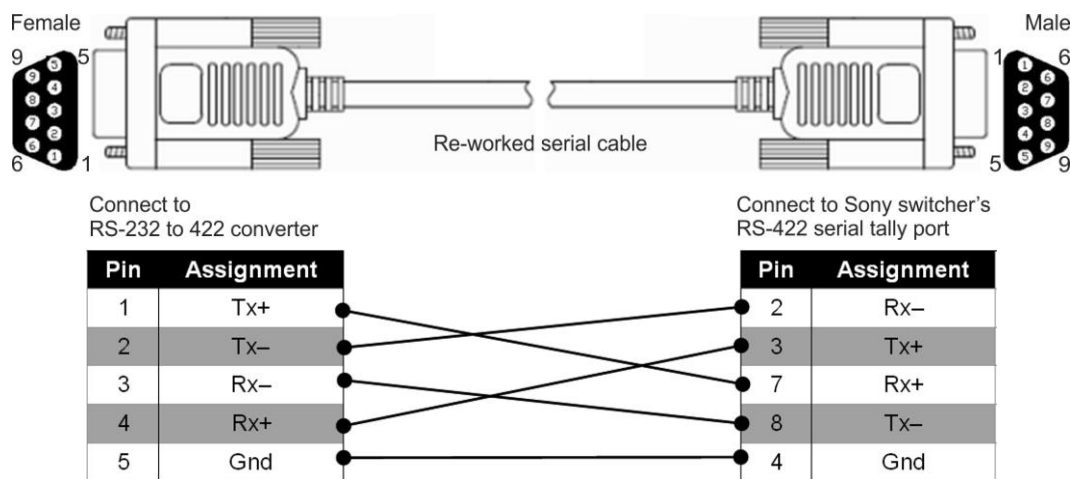

Figure F-6 Re-worked Serial Cable Pin Assignment

*Step 4. Connect one end of the mini null modem adapter (DB9 male to DB9 male) to the RS-232 to 422 converter; and the other end to the Pacific GPIO **RS-232 (1)** port.*
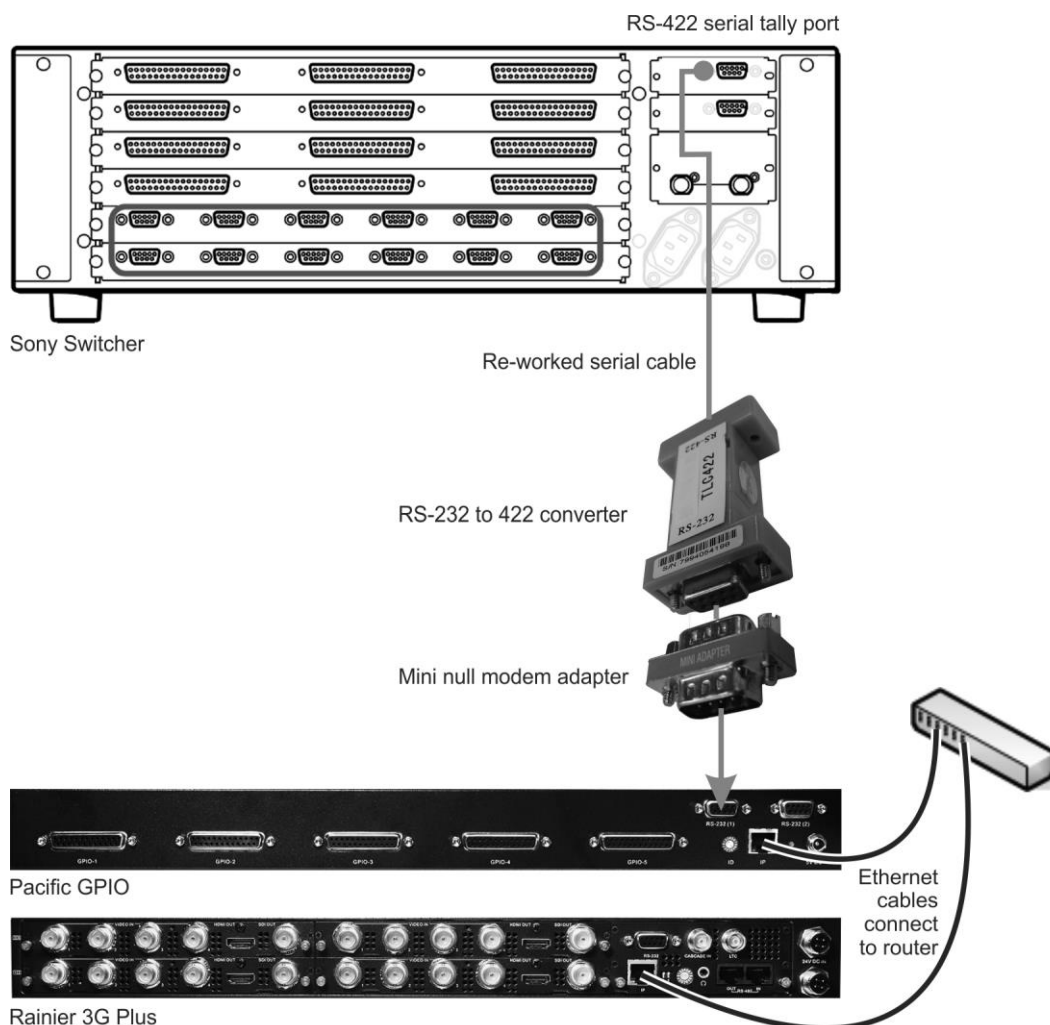

Figure F-7 Physical Connection (Sony Switcher)

*Only the **RS-232 (1)** port in Pacific GPIO can be used to connect to the mini null modem adapter.*

Step 5. Enable serial tally on one of the switcher's ports (refer to Sony Production Switcher System User's Guide for details).