

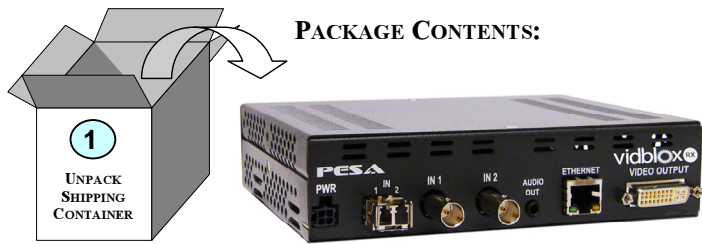
3G-SL RX MODULE

vidbloX Quick-Start Guide

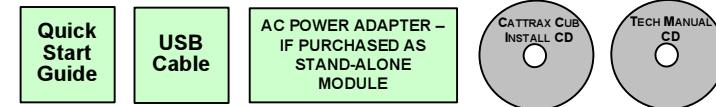


Step 1 UNPACK 3G-SL RX MODULE

- Carefully unpack VidBlox module from shipping container and verify package contents against contents listed below
- Visually inspect for any signs of damage in shipment or transit
- If any components are missing or damaged, contact PESA Customer Service



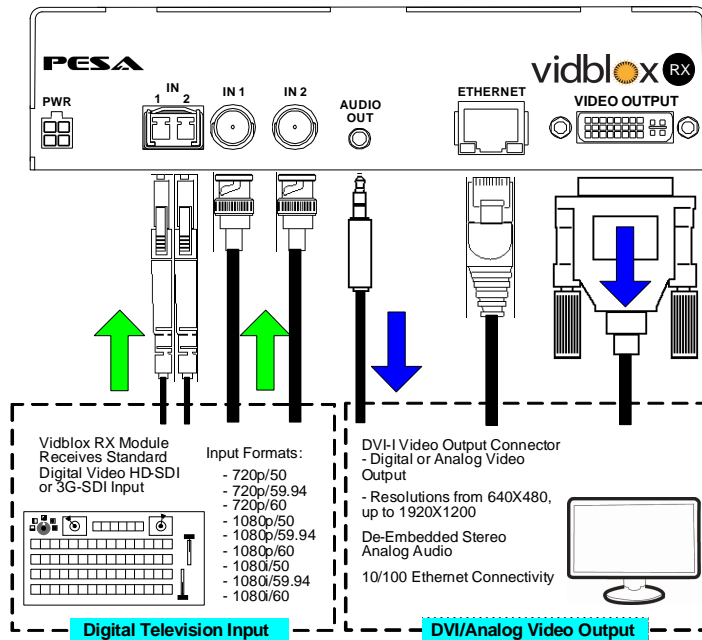
PACKAGE CONTENTS:



2 VERIFY ITEMS SHOWN ABOVE ARE INCLUDED WITH MODULE*

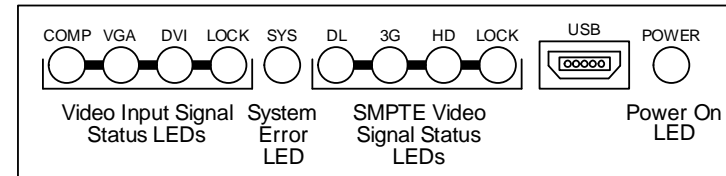
Step 2 GET ACQUAINTED

- 3G-SL RX Receiver module accepts input of SMPTE compliant HD or 3G-SDI broadcast quality video at resolutions of 720p, 1080i, or 1080p
- Produces output of DVI or analog video in a user-selectable SDI broadcast or computer graphics format from a set of standard resolutions up to 1920X1200, or one of three custom configurable non-standard output resolutions
- I/O connections to 3G-SL RX are shown pictorially below



Step 2 GET ACQUAINTED (CONT.)

- Analog stereo audio output de-embedded from channels 1 & 2 of digital audio group 1 on SDI input signal
- Active input signal selectable from one of 4 separate SDI input ports - two BNC connectors, and two fiber channels
- Modules are Ethernet-ready allowing monitoring and configuration functions over a network with PESA's Catrtrax control application, or any single module can be connected to the host PC via a USB connection using Catrtrax Cub controller application

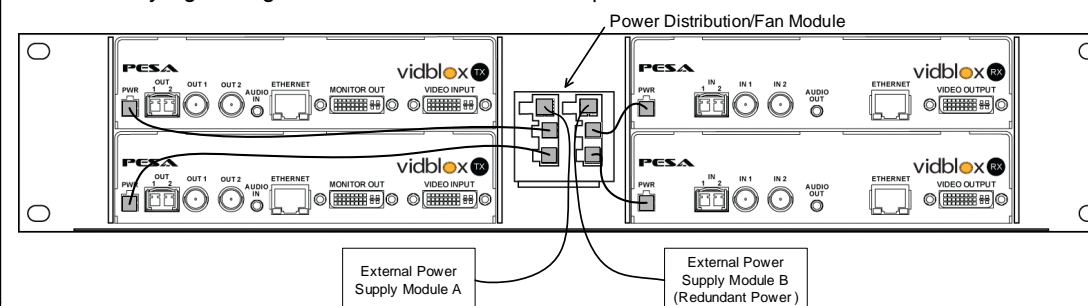


- Video Output Signal Status LEDs** - Indicate format of DVI-D or analog video signal leaving DVI-I connector to video destination as follows:
 - COMP - Composite analog video
 - VGA - VGA (RGBHV) analog video
 - DVI - DVI digital video
 - LOCK - Currently not used with VidbloX RX module
- System Error LED** - Lights when fault or alarm condition is detected within VidbloX module.
- SMPTE Video Signal Status LEDs** - Indicate format and lock status of HD or 3G-SDI digital video signal entering module through selected BNC or fiber connectors as follows:
 - DL - Currently not used with VidbloX RX module
 - 3G - Digital video signal is SMPTE compliant 3G-SDI (1080p)
 - HD - Digital video signal is SMPTE compliant HD-SDI (720p or 1080i)
 - LOCK - RX module has detected and locked to format of input signal
- USB** - "Mini" USB port to connect 3G-SL RX module to host PC over standard USB bus
- Power On LED** - Lights whenever power is applied to VidbloX module

For further information, refer to Chapter 3 in the VidbloX 3G-SL RX User Manual

Step 3 PLACE STAND-ALONE VIDBLOX MODULE OR INSTALL IN OPTIONAL EXTENDER FRAME

- 3G-SL RX modules are shipped from factory in "auto-detect" mode for default operating parameters
- In most installations, no further configuration should be required
- Locate each module or extender frame for convenient access to video source signals
- Ensure primary power is available and that each module or extender frame has clearance for cooling air
- If mounting modules in extender frame, slide module into position from rear, as shown below, and secure by tightening thumb screw on front of rack panel



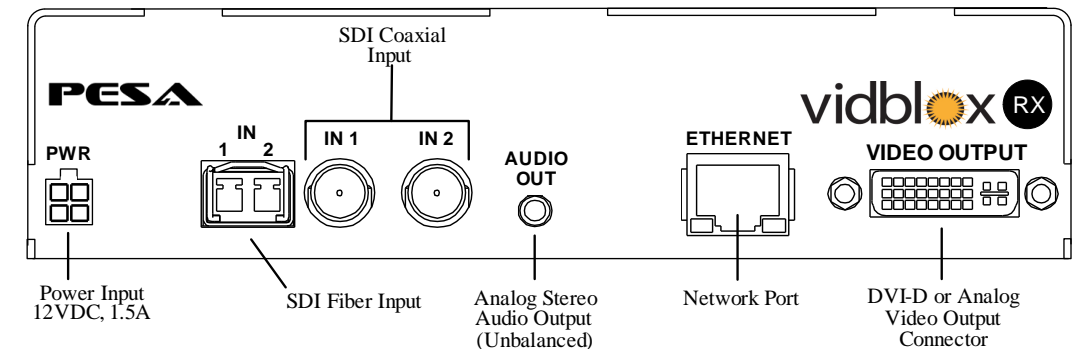
Step 3 PLACE STAND-ALONE VIDBLOX MODULE OR INSTALL IN OPTIONAL EXTENDER FRAME (CONT.)

- When modules are mounted in extender frame, power is derived from external power supply(s) and connected to individual modules using connector cables from power distribution module
- 3G-SL RX modules need not be continuously connected to host PC through a network or USB connection for operation

For further information, refer to Chapter 3 in the VidbloX 3G-SL RX User Manual

Step 4 CONNECT I/O SIGNALS TO VIDBLOX

- Receiver module accepts input of HD-SDI (720p or 1080i) or 3G-SDI (1080p) video from any SMPTE compliant source
- 3G-SL RX Receiver module allows selection of one of four SDI inputs through BNC connectors and fiber channels
- Active input is automatically detected or may be manually selected through Catrtrax or Catrtrax Cub
- Computer graphics video output in user-selectable DVI-D or analog format, and at user-selectable resolution up to 1920X1200, or one of three custom-configurable non-standard resolutions available at chassis mounted DVI-I connector
- Unbalanced output of dual channel analog audio de-embedded from audio channels 1 and 2 of audio group 1 available through 3.5mm stereo connector
- I/O connections for 3G-SL RX module are shown in following illustration and briefly introduced in following paragraphs
- Using illustration for reference, complete I/O connections to module prior to applying power



- Power (PWR)** - Operating power (12 VDC, 1.5A) is attached to this connector. When module is used standalone, power is derived from a furnished external power supply "brick." If module is mounted in rack frame, power is derived from frame power distribution panel
- Fiber** - Dual-channel SFP fiber receiver device
- BNC Connectors** - BNC connectors IN 1 and IN 2 provide coaxial cable transport inputs for SDI video signal
- Audio Out** - Output jack for de-embedded, unbalanced analog audio signals:

3.5mm Connector Pin	Audio Output	De-Embed Channel
Tip	Audio Channel 1 - Left Stereo	Channel 1 of Group 1
Ring	Audio Channel 2 - Right Stereo	Channel 2 of Group 1
Sleeve	Common Gnd	
- Ethernet** - Standard RJ-45 connector for connecting VidbloX to a 10/100 Ethernet network

SIGNAL CONNECTION STEPS CONTINUED ON NEXT PAGE

Step 4 CONNECT I/O SIGNALS TO VIDBLOX (CONT.)

- **Video Output** - Connect output signal from DVI-I connector to destination point using cable-end adapters, if required. Interfacing a VGA video device to output connector requires use of a DVI-VGA converter cable. The chart below lists valid, user-selectable output resolutions available with the 3G-SL RX module.

3G-SL RX – Output Resolutions				
480i/60	480p/60	576i/50	576p/50	720p/50
720p/60	1080i/50	1080i/60	1080p/50	1080p/60
640x480/60	800x600/60	1024x768/60	1280x800/60	1280x1024/60
1360x768/60	1440x900/60	1600x900/60	1680x1050/60	1600x1200/60
1920x1200/60				

For further information, refer to Chapter 3 in the Vidblox 3G-SL RX User Manual

Step 5 SYSTEM SET-UP AND CONFIGURATION

- Set-up, configuration and monitoring functions of Vidblox 3G-SL RX module are performed over a facility network through GUI menu screens of PESA's Cattrax network controller application installed on a host PC running Microsoft Windows® 2000, XP, Vista or Windows 7 operating system; or on a single module through a USB connection using Cattrax Cub controller application
- USB driver file must be installed on host PC in order for Cattrax Cub to communicate with PESA equipment over USB port
- Cattrax and Cattrax Cub automatically search for PESA equipment through a process called "discovery"
- Using Cattrax Cub, only one module may be connected to USB port at a time
- Vidblox is shipped from factory with an auto-run CD that loads Cattrax Cub controller application and USB driver onto a host PC

Communicating with Vidblox over a network:

- Locate Cattrax (NOT Cattrax Cub) software CD included with module and place in drive of host PC
- If installation program does not automatically start, navigate to directory of install CD and double-click Setup.exe
- Follow screen prompts to install Cattrax
- Ensure that host PC is actively communicating over the facility network
- Ensure that an Ethernet cable is attached to the Vidblox network connector
- Apply power to Vidblox module by connecting external power supply to module and to a source of primary power, or connect power cable jumper to Extender Frame power distribution module
- Vidblox supports the DHCP protocol and should automatically receive a valid IP address from the facility DHCP server, if one is present on the network – if no DHCP server available, manually enter and select network addressing parameters – see Chapter 4 of User Manual
- Start the Cattrax software control application
- If PESA equipment you wish to control resides on multiple subnets, ensure all required subnets are active – see Chapter 4 of User Manual
- Cattrax will discover and display in bold letters the ID of all active Vidblox modules on the network
- Double click the entry for the module you wish to control and proceed to the **3G-SL RX Configuration Screens** portion of this guide

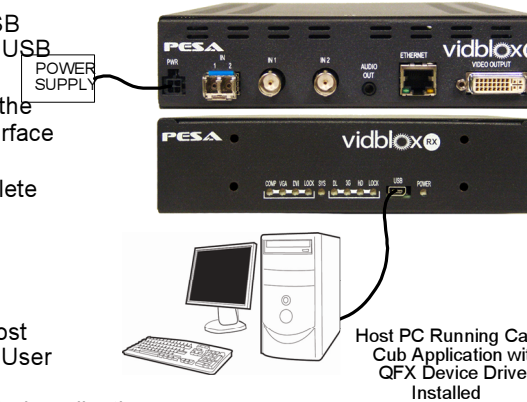
Step 5 SYSTEM SET-UP AND CONFIGURATION (CONT.)

Communicating with a single Vidblox module through USB:

- Locate Cattrax Cub (NOT Cattrax) software CD included with module and place in drive of host PC
- If installation program does not automatically start, navigate to directory of install CD and double-click Setup.exe
- Follow screen prompts to install Cattrax
- When Cattrax Cub has installed, prompt to install USB driver is displayed
- Click "OK" to install the driver
- If USB driver is not present on host PC, Cattrax Cub will not communicate via USB with module
- Follow screen prompts to install USB driver
- Prompt is displayed when driver installation is complete

CONNECT VIDBLOX MODULE TO HOST PC VIA USB PORT:

- Ensure that USB driver is installed on host PC
- Apply power to Vidblox module by connecting external power supply to module and to a source of primary power
- Connect USB cable first to mini-USB connector on module then to open USB port on host PC, as shown at right
- Allow "Plug and Play" capability of the Windows® operating system to interface Vidblox hardware to host PC
- Follow on-screen prompts to complete hardware installation
- Vidblox module should now be communicating with host PC
- If you encounter any difficulty establishing communication with host PC, consult the Vidblox 3G-SL RX User Manual
- Start the Cattrax Cub software control application
- Cattrax will discover and display the ID of the active Vidblox module
- Double click the entry for the active module (shown in bold letters) you wish to control and proceed to the **Configuration Screens** portion of this guide



For further information, refer to Chapter 4 in the Vidblox 3G-SL RX User Manual

3G-SL RX CONFIGURATION SCREENS:

- If it is not already started from the previous step, start Cattrax (for network control) or Cattrax Cub (for USB control) by clicking desktop icon, or navigating through Start Menu of the Windows® operating system to Cattrax or Cattrax Cub program folder and clicking on **Cattrax.exe** file
- Double click the ID of the active (bold letters) Vidblox module you wish to control
- Vidblox Information Menu screen similar to that shown at top of next column is displayed on PC monitor

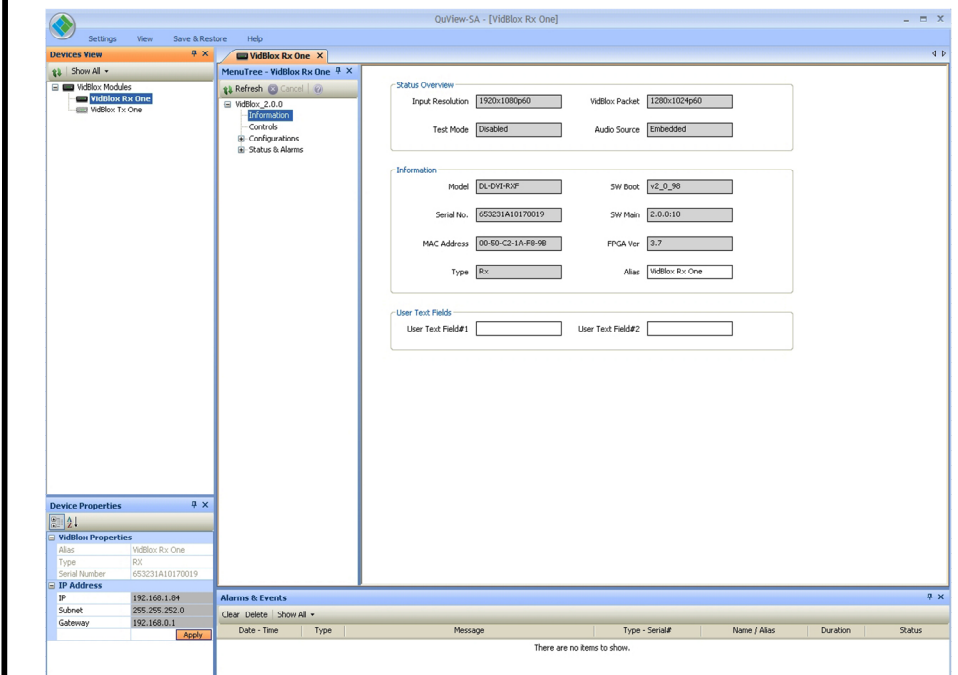
INFORMATION MENU

STATUS OVERVIEW DISPLAY

- Top portion of every menu screen always displays Status Overview data
- Module status data updated in real-time:
 - **Input Resolution** – Displays resolution of active SDI video input signal
 - **Vidblox Packet** – Identifies presence of VidBlox specific auxiliary data embedded into received SDI video signal
 - **Test Mode** – Identifies when black screen test signal is enabled or disabled
 - **Audio Source** – Displays source of de-embedded audio output as from SDI input signal, internally generated 1 kHz test tone or indicates audio is currently muted

Step 5 SYSTEM SET-UP AND CONFIGURATION (CONT.)

3G-SL RX CONFIGURATION SCREENS: (CONTINUED)



INFORMATION MENU (CONTINUED)

INFORMATION DISPLAY

- **Model and Serial Number** – Model identifier and serial number of module
- **MAC Address** – MAC address of module
- **Type** – Identifies type of module: TX or RX
- **SW Boot and SW Main** – Revision levels of boot code and main program firmware
- **FPGA Ver** – Indicates version number of code programmed into FPGA device
- **Alias** – Enter any alias name you wish to assign to module
- **User Text Fields** – Use Text Field #1 and #2 to enter information concerning module

CONTROLS MENU

Input Selection

Input Port:

- Auto – Auto is default selection - Vidblox searches all inputs for active signal in following sequence:
 - o Fiber IN channel 1
 - o BNC IN 1
 - o Fiber IN channel 2
 - o BNC IN 2
- BNC #1 or BNC #2 – Selects SDI input from indicated BNC connector
- Fiber #1 or Fiber #2 – Selects SDI input from indicated fiber channel
- Four input failover modes - each identifies an input port as *primary*, followed by a sequence containing the remaining three inputs designated as *secondary*

Display Output Select

Output Resolution:

- Pull-down menu of selectable standard output signal resolutions, plus three custom-configurable resolutions - Auto is default and selects output resolution same as resolution of input signal to TX module at origination point

Aspect Ratio:

- Minimal – Default selection - Vidblox attempts to process video signal without scaling and will only scale images that do not fit into selected output resolution
- Scale-to-Fit – Scales video to just fit within selected output image resolution while maintaining aspect ratio of original imagen

3G-SL RX CONFIGURATION SCREENS CONTINUED ON NEXT PAGE

Step 5 SYSTEM SET-UP AND CONFIGURATION (CONT.)

3G-SL RX CONFIGURATION SCREENS (CONT.FROM PREVIOUS PAGE)

CONTROLS MENU (CONTINUED)

- **Display Output Select (Continued)**

Aspect Ratio:

- Full Screen – Scales input image both horizontally and vertically to completely fill output image space – this setting can alter aspect ratio of input signal

- **Display Output Type:**

Output Port:

- Auto – Active output automatically selected same as format (DVI or VGA) of input signal to TX module at origination point
- DVI – Active output signal is present only on DVI-D outputs of DVI-I connector
- Analog – Active output signal is present only on analog outputs of DVI-I connector

- **Analog Output Format:**

Analog O/P (Output) Type:

- Auto - Auto is default and selects format of analog output signal same as input signal to TX module at origination point
- VGA - Manually selects format of outgoing analog video as a VGA (RGBHV) source
- SOG - Manually selects format of outgoing analog video as a component analog "sync on green" signal
- RGBS - Manually selects format of outgoing analog video as a RGB component analog signal with a separate composite sync signal

Output Color:

- Auto – Auto is the default selection – color space is automatically selected same as input signal to TX module at origination point
- RGB – Identifies incoming video as a component analog signal using RGB color space
- YPbPr – Identifies incoming video as a component analog signal using YPbPr color space

- **Audio**

Audio Gain:

- Provides a slider control for gain adjustment of audio output from VidbloX audio connector over a range of -30dB to +10dB - default value is zero (0dB)

CONFIGURATIONS MENU

- **Video Test Pattern Select**

Test Mode:

- Enabled – Inserts a user-selectable video test pattern into video output signal
- Disabled – Removes test pattern and restores source video to DVI or analog output – disabled is default selection

Test Pattern:

Clicking arrow opens a listing of available test patterns

- **Audio Source**

Audio Source:

- Embedded – Audio is de-embedded from SDI input signal
- 1 kHz Tone – Inserts internally generated 1 kHz tone into audio output signal
- Mute – Inserts audio silence into audio output signal

- **IP Configuration**

DHCP On and Off:

- DHCP On is default selection - these buttons toggle dynamic host configuration protocol (DHCP) function of VidbloX RX module on and off
- When DHCP **On** is selected, VidbloX automatically receives network IP address from network DHCP server
- With DHCP **Off** selected, IP address, Subnet Mask and Gateway parameters entered in fields below radio buttons are used as network operating parameters for RX module
- To toggle DHCP mode on or off, click button for desired mode
- Clicking DHCP **Off** button activates manual data entry fields below button – in DHCP On mode, these fields are displayed as inactive
- Click **Apply** to initiate DHCP mode and IP address change, you will be prompted to verify this action before process begins

Step 5 SYSTEM SET-UP AND CONFIGURATION (CONT.)

CONFIGURATIONS MENU (CONTINUED)

- **IP Configuration (Continued)**

IP Address:

- Enter fixed IP address you wish to assign to module

Subnet Mask:

- Enter fixed subnet mask you wish to assign to module

Gateway:

- Enter fixed gateway parameter you wish to assign to module

- **Factory Defaults:**

Factory Reset:

- Clicking **Factory Reset** box restores factory default settings - you will be prompted to verify request before reset operation is performed

CUSTOM RESOLUTIONS MENU

- **Select Resolution Number**

Select Resolution:

- Click radio button of custom resolution number you wish to configure or verify
- When you select a button the user-defined name and saved parameters are displayed - if a custom resolution has previously been saved to that resolution number
- If no custom resolution has been saved, the **Name** field will be blank and all parameter fields filled with zeroes

- **Set Base Resolution**

Base Resolutions:

- Clicking arrows opens listing of available base resolutions
- Selecting a base resolution provides a starting point for entering custom resolution data, based on existing valid resolutions
- Select any resolution listed and data stream parameters for that resolution are entered in the modifiable Horizontal and Vertical fields
- When entering custom data for a resolution that is a slight deviation from a listed resolution, Set Base saves you time by filling in modifiable fields with values for selected reference resolution
- You may modify any or all fields to define custom resolution
- Selecting or starting with a base resolution is not required to enter a custom resolution configuration

- **Change Resolution**

Name:

- This text field allows you enter a descriptive name to identify custom resolution being configured
- Click cursor in field box and type desired text
- Press "return" to enter typed data into field

Horizontal:

- Data fields in which you modify or assign data parameter values of horizontal lines and sync for custom resolution
- When you enter or modify a value in a field, press "return" to actively enter data
- **Pixel Frequency** field is not modifiable and is shown on screen with a shaded background - this value is automatically calculated and inserted based on values entered for horizontal and vertical pixel data

Vertical:

- Data fields in which you modify or assign data parameter values of vertical lines and sync for custom resolution
- When you enter or modify a value in a field, press "return" to actively enter data

Clear:

- Clicking **Clear** box clears all entries in all modifiable fields of Change Resolution grid
- You will be prompted to verify request before Clear operation is performed

Reload:

- Clicking **Reload** box causes all entries in all modifiable fields of Change Resolution grid to revert to values currently contained in saved custom resolution
- You will be prompted to verify request before Reload operation is performed

Step 5 SYSTEM SET-UP AND CONFIGURATION (CONT.)

- **Change Resolution (Continued)**

Save:

- Clicking **Save** box writes all entries in all modifiable fields of Change Resolution grid, plus the user-defined name you entered to internal memory and resolution look-up table
- You will be prompted to verify request before Save operation is performed

STATUS AND ALARMS MENUS

INPUT VIDEO STATUS MENU

- Displays parameters associated with input SDI signal and incoming VidbloX data packet – if input signal from VidbloX TX module

FIBER MODULE STATUS MENU

- **Fiber Module Information**

Vendor Name:

- Identifies manufacturer of SFP module

Part No.:

- Identifies manufacturer's part number of module

Date Code:

- Displays date of SFP module manufacture

- **Fiber Channel 1 and 2 Status Displays**

Type:

- Identifies type of SFP module: TX or RX

Signal Status:

- Indicates valid (OK) or unusable (Error) optical input channel signal

Temperature:

- Analog readout of fiber channel receiver operating temperature

Power:

- Analog power readout in dBm of optical input signal entering indicated channel of receiver module

HARDWARE STATUS MENU

- **Temperature – Fan – Power Status**

Board Temperature:

- Analog readout of circuit board surface temperature

Over Temp Threshold Slider:

- Determines temperature (Celsius) at which Over Temp alarm triggers an alert in Alarms and Events panel – default value is 70° C

FPGA Temperature:

- Analog readout of FPGA device operating temperature

Over Temp Threshold Slider:

- Determines temperature (Celsius) at which Over Temp alarm triggers an alert in Alarms and Events panel – default value is 70° C

On-Board Fan Status:

- Upper box provides digital readout of FPGA cooling fan speed in RPM, lower box indicates operating status of cooling fan speed

External Fan Status:

- Provides digital readout of extender frame cooling fan speed in RPM, if module is mounted in an optional rack chassis – in not rack mounted, reading is zero

Power Board Status:

- Upper box provides digital readout of measured operating voltage of 3.3V power rail, lower box indicates status of power supply voltage

For further information, refer to Chapter 4 in the VidbloX 3G-SL RX User Manual

*If any components are missing or damaged, contact PESA Customer Service by phone or e-mail.

Customer Service: (256) 726-9222
 Toll Free: (800) 323-7372
 Fax: (256) 726-9268
 Email: service@PESA.com