3G-NE RX MODULE

vidblox Quick-Start Guide

PESA

Step 1 UNPACK 3G-NE 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

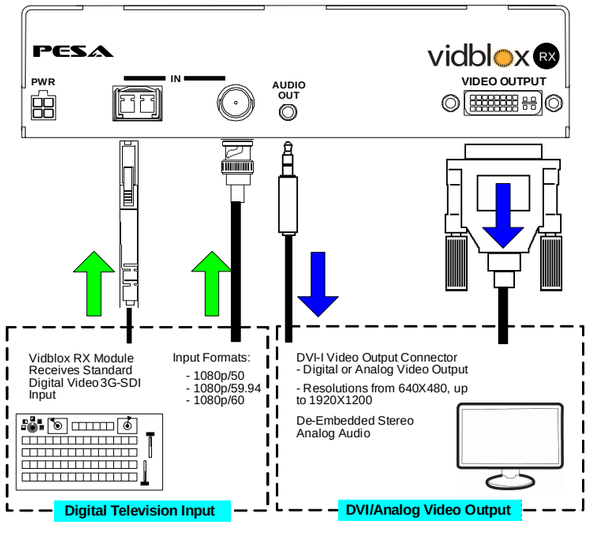
PACKAGE CONTENTS:

Quick Start Guide | USB Cable | AC POWER ADAPTER – IF PURCHASED AS STAND-ALONE MODULE | CATTRAX CUB INSTALL CD | TECH MANUAL CD

2 VERIFY ITEMS SHOWN ABOVE ARE INCLUDED WITH MODULE*

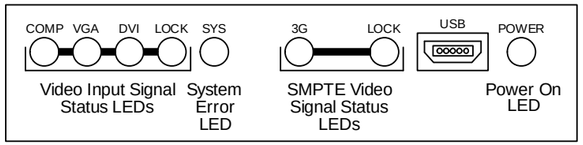
Step 2 GET ACQUAINTED

- 3G-NE RX Receiver module accepts input of SMPTE compliant 3G-SDI broadcast quality video at resolution of 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-NE 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 2 separate SDI input ports - BNC connector or fiber channel
- Any single 3G-NE RX module can be connected to the host PC via a USB connection using Cattrax Cub controller application

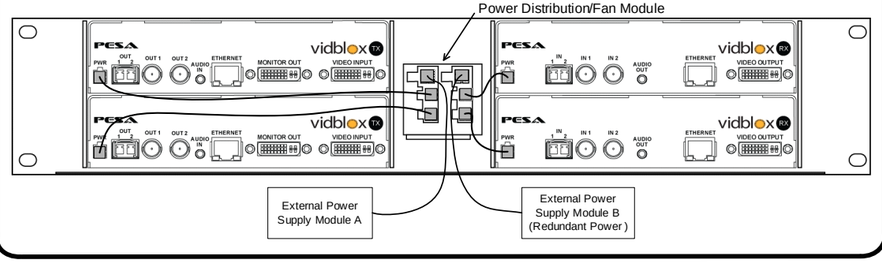


- **Video Output Signal Status LEDs** - Indicate format of DVI-D or analog video signal leaving DVI-I connector to video destination as follows:
  - Composite (COMP) – Composite analog video
  - VGA – VGA (RGBHV) analog video
  - DVI – DVI digital video
  - LOCK – Currently not used with Vidblox RX module
- **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 3G-SDI digital video signal entering module through selected BNC or fiber connector as follows:
  - 3G – Digital video signal is SMPTE compliant 3G-SDI (1080p)
  - LOCK – RX module has detected and locked to format of input signal
- **USB -** "Mini" USB port to connect 3G-NE 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-NE RX User Manual

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

- 3G-NE 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



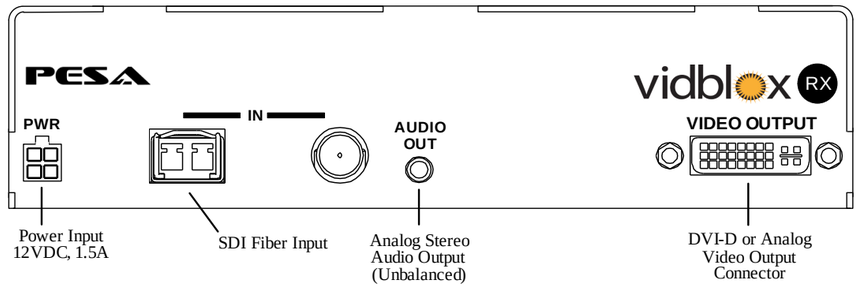
Step 3 PLACE STAND-ALONE VIDBLOX MODULE OR INSTALL IN OPTIONAL EXTENDER FRAME (CONT.)

- 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-NE RX modules need not be continuously connected to host PC for operation

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

Step 4 CONNECT I/O SIGNALS TO VIDBLOX

- Receiver module accepts input of 3G-SDI (1080p) video from any SMPTE compliant source
- 3G-NE RX Receiver module allows selection of one of two SDI inputs through BNC connector or fiber channel
- Active input is automatically detected or may be manually selected through Cattrax 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-NE 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 –** Single-channel SFP fiber receiver device
- **BNC Connectors** - BNC connector provides coaxial cable transport input 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	

SIGNAL CONNECTION STEPS CONTINUED ON NEXT PAGE

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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-NE RX module.

3G-NE RX – Output Resolutions				
480p/60	576p/50	720p/50	720p/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-NE RX User Manual

Step 5 SYSTEM SET-UP AND CONFIGURATION

- Set-up, configuration and monitoring functions of Vidblox 3G-NE RX module are performed 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 Cub automatically searches for PESA equipment on the USB port 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 a single Vidblox module through USB:

- Locate 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 Cub
- 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

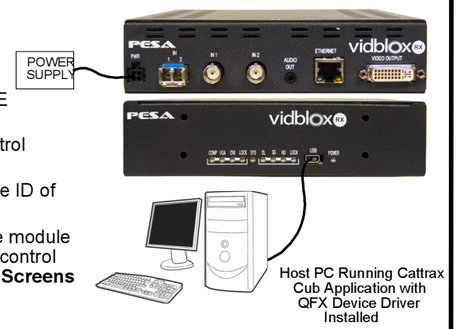
CONNECT VIDBLOX MODULE TO HOST PC VIA USB PORT:

- 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 by illustration (next column)
- Allow "Plug and Play" capability of the Windows® operating system to interface Vidblox hardware to host PC

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

CONNECT VIDBLOX MODULE TO HOST PC VIA USB PORT (CONT.):

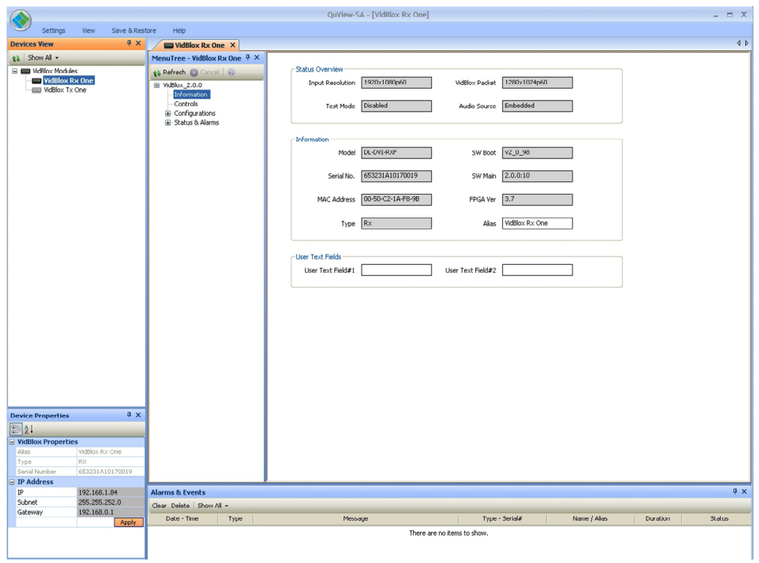
- Follow on-screen prompts to complete hardware installation
- Vidblox module should now be communicating with host PC
- If you encounter any difficulty establishing communication with host PC, consult the Vidblox 3G-NE RX User Manual
- Start the Cattrax Cub software control application
- Cattrax will 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-NE RX User Manual

3G-NE RX CONFIGURATION SCREENS:

- If it is not already started from the previous step, start Cattrax Cub by clicking desktop icon, or navigating through Start Menu of the Windows® operating system to 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 below is displayed on PC monitor



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

3G-NE RX CONFIGURATION SCREENS: (CONTINUED)

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

INFORMATION DISPLAY

- **Model and Serial Number** – Model identifier and serial number of module
- **MAC Address** – MAC address of module
- **Type** – Indentifies 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:
    - Fiber IN
    - BNC IN
  - BNC – Selects SDI input from BNC connector
  - Fiber – Selects SDI input from fiber channel
  - Input failover modes - each identifies an input port as *primary*, followed by a sequence containing the remaining input 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
  - 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
- **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)

3G-NE RX CONFIGURATION SCREENS CONTINUED ON NEXT PAGE

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

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

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

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.)

CUSTOM RESOLUTIONS MENU (CONTINUED)

- **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 Module Status Display**
  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

INPUT VIDEO STATUS MENU

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

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

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

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