NE-3G TX MODULE

vidblox Quick-Start Guide

PESA

Step 1 UNPACK VIDBLOX 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

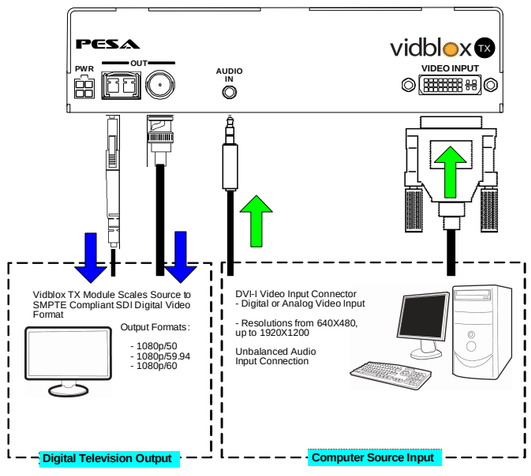
PACKAGE CONTENTS:

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

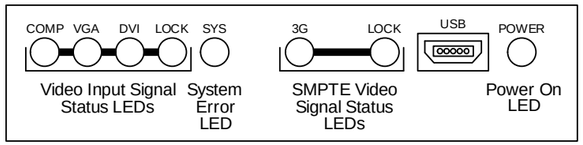
2 VERIFY ITEMS SHOWN ABOVE ARE INCLUDED WITH MODULE*

Step 2 GET ACQUAINTED

- NE-3G TX transmitter module accepts input of DVI or analog video in SDI broadcast or computer graphic formats at resolution up to 1920X1200
- Produces a 3G SDI broadcast quality, SMPTE compliant output at a resolution of 1080p
- Analog stereo audio input embedded into SDI output signal
- SDI output available at BNC connector or fiber output through a fiber transmitter device
- Any single NE-3G TX module can be connected to the host PC via a USB connection using Cattrax Cub controller application
- I/O connections to NE-3G TX are shown pictorially below



Step 2 GET ACQUAINTED (CONT.)

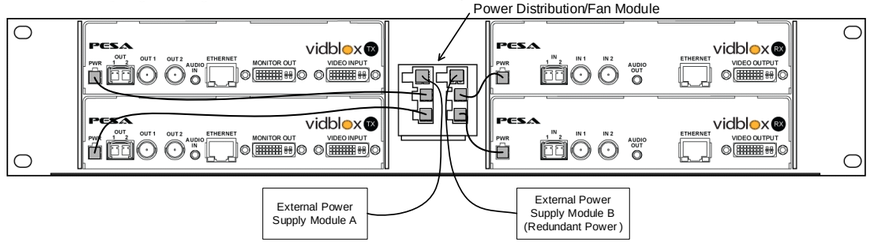


- **Video Input Signal Status LEDs** - Indicate format and lock status of input video entering module through DVI-I connector from the source as follows:
  - Composite (COMP) – composite analog video
  - VGA – VGA (RGBHV) analog video
  - DVI – DVI digital video
  - LOCK – TX module has detected and locked to format of input signal
- **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 leaving module through BNC or fiber connectors as follows:
  - 3G – Digital video signal is SMPTE compliant 3G-SDI (1080p)
  - LOCK – Output serializers are locked
- **USB -** "Mini" USB port to connect NE-3G TX 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 NE-3G TX User Manual

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

- NE-3G TX 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

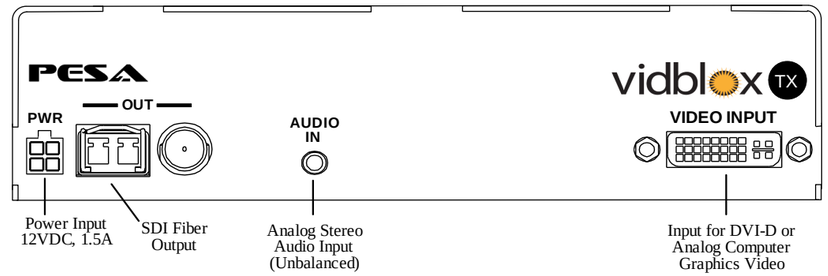


- When modules are mounted in extender frame, power is derived from external power supply(s) and connected to individual modules using connector cables from power distribution module
- NE-3G TX modules need not be continuously connected to host PC for operation

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

Step 4 CONNECT I/O SIGNALS TO VIDBLOX

- Transmit module accepts input of DVI-D or analog video through DVI-I connector
- Accepts input of unbalanced dual channel analog audio through 3.5mm connector
- SMPTE 424M compliant 3G-SDI broadcast quality video derived from BNC connector and SFP fiber transmit channel
- Both BNC connector and SFP fiber transmit channel provide identical SDI outputs – providing two separate outputs of SDI video
- I/O connections for NE-3G TX transmitter 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 module
- **Fiber –** Single-channel SFP fiber transmitter device provides fiber transport output of SDI video signal
- **BNC Connector** - BNC connector provides coaxial cable transport output of SDI video signal
- **Audio In –** Input jack for unbalanced stereo analog audio signals:

3.5mm Connector Pin	Input Audio to Vidblox	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	

- **Video Input -** Connect video input signal to DVI-I connector using cable-end adapters, if required. Interfacing a source of VGA video to Video Input connector requires use of a VGA-DVI converter cable. The chart below lists pre-defined input resolutions for use with NE-3G module; plus up to three custom resolution parameter sets may be defined

NE-3G TX – Input Resolutions

480p	576p	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 NE-3G TX User Manual

Part No. 81-9059-0689-0 Rev. A

NE-3G TX MODULE vidblox Quick-Start Guide

Step 5 SYSTEM SET-UP AND CONFIGURATION

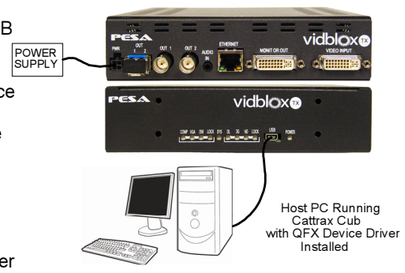
- Set-up, configuration and monitoring functions of Vidblox NE-3G TX module are performed on a single module through a USB connection using Cattrax Cub controller application
- USB driver file must be installed on host PC in order for Cattrax Cub to communicate with PESA equipment over USB port
- Cattrax Cub automatically searches for PESA equipment attached to 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
- 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 NE-3G TX User Manual



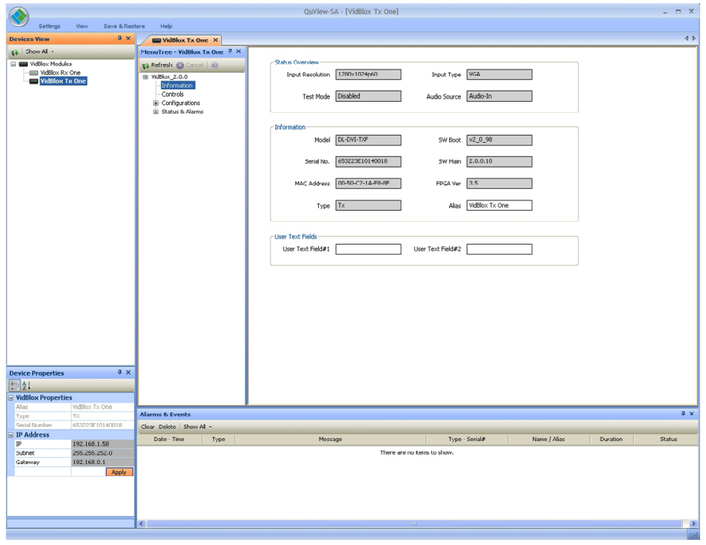
- Start the Cattrax Cub software control application
- Cattrax will discover and display the ID of the active Vidblox module
- Double click the entry for the active module (shown in bold letters) you wish to control and proceed to the **Configuration Screens** portion of this guide

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

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

NE-3G TX 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



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 computer graphics video signal entering Video Input connector
  - **Input Type** – Displays format of input signal
  - **Test Mode** – Identifies when user-selectable test pattern signal is enabled or disabled
  - **Audio Source** – Displays embedded audio source as input signal, 1 kHz test tone or audio muted

INFORMATION MENU

- **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

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

CONTROLS MENU

- **Input Selection**
  Video Input Type:
  - Auto – Auto is default selection. Vidblox automatically determines format of incoming video as digital or analog
  - DVI – Manually selects incoming video as a digital DVI source
  - Analog – Manually selects incoming video as an analog source
- **Tx Output Control**
  Aspect Ratio:
  - Minimal – Minimal is default selection - Vidblox attempts to process incoming images without scaling and will only scale images that do not fit into selected transport stream
  - Scale-to-Fit – Scales image to just fit within selected SMPTE transport stream while maintaining aspect ratio of original image
  - Full Screen – Scales input image both horizontally and vertically to completely fill output transport format – this setting can alter aspect ratio of input signal

  Field Rate:
  - 50Hz – Selects field rate of SDI transport stream at 50Hz
  - 59.94Hz – Selects field rate of SDI transport stream at 59.94Hz
  - 60Hz – Default selection: selects field rate of SDI transport stream at 60Hz
- **EDID Source**
  Type:
  - Standard – Standard is default selection - reads EDID data from video source signal
  - Custom – Allows user to define a custom EDID data stream
- **Audio**
  Audio Gain:
  - Provides a slider control for gain adjustment of incoming audio from -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 SDI output signal
  - Disabled – Removes test pattern and restores source video to SDI output – disabled is default selection

  Test Pattern:
  Clicking arrow opens a listing of available test patterns
- **Analog Video Adjustments**
  H position:
  Slider control that adjusts horizontal screen position of output display area
  V position:
  Slider control that adjusts vertical screen position of output display area
  Sampling Phase:
  Slider control that shifts phase of analog sample - adjust slider for best video quality
- **DVI Equalizer Settings**
  DVI Input:
  Eight position slider control that selects amount of equalization offered to input video signal – zero (slider fully left) is minimum and seven (slider fully right) is maximum
- **Audio Source**
  Audio Source:
  - Audio-In – Embedded audio is taken from signal present at Audio In connector on Vidblox
  - 1 kHz Tone – Inserts internally generated 1 kHz tone into embedded output stream
  - Mute – Inserts audio silence into embedded output stream

NE-3G TX CONFIGURATION SCREENS CONTINUED ON NEXT PAGE

Part No. 81-9059-0689-0 Rev. A

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

NE-3G TX CONFIGURATION SCREENS CONTINUED FROM PREVIOUS PAGE

CONFIGURATIONS MENU (CONTINUED)

- **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.)

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 video signal

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

  TXFault:
  - Indicates presence (OK) or absence (Error) of output channel signal

  Temperature:
  - Analog readout of fiber channel transmitter operating temperature

  Power:
  - Analog readout in dBm of fiber channel transmitter optical output power

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 NE-3G TX User Manual

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

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