

VGA to TV Video Scan Converter

Operation Manual
(Ambery Model: PC-TVIII)



Applications

This Professional Ambery Series PC-TVIII VGA to TV Video scan converter is designed to be integrated into industrial TV broadcast equipments and other demanding video production setups. Ideal for applications like video conferencing, computer video editing, online gaming, educational training, multimedia presentation environment or lecturing room for viewing computer image on TV or recording computer screen by video recorder.

This unit guarantees converting any computer images, from 320x200 pixels to the supreme high 2560x1600 pixels, into composite video, s-video, component Video(YcbCr), YUV, RGBS outputs for viewing or broadcasting the computer-generated images onto any NTSC/PAL big screen TV systems/projection displays.

The sync and video output timings is guaranteed to match exactly broadcast video specifications, making your video recording and broadcasting top notch production. In addition, this scan converter supports wide-screen 16:9 aspect ratio, suitable for video outputs to wide-screen displays such as HDTV set or plasma displays.

Features

1. Automatically detects the incoming PC/Mac VGA images.
2. Supports any VGA resolution from 320x200 pixels and up to 2560x1600 pixels.
3. Selectable multi video output formats between composite video, S- video, component video/YUV/RGB.
4. Ultra high vertical frequency support – refresh rate up to 240 Hertz vs 100 Hz from other comparable models.
5. Adjustable image sizing support so users can manually adjust output video imaging both horizontally and vertically to fit with all screen.
6. Pan, Position, and Zoom functions for more detailed image presentations.
7. Advanced 3-D flicker filter ensures flicker-free picture.
8. Adjustable contrast, brightness, color, sharpness.
9. Last memory function to memorize all existing setups after a power outage.
10. Easy control through keypad, IR remote controller or RS232 port.
11. Useful functions, overscan, freeze, test pattern, magnifier.
12. OSD operation display.
13. Adjustable video output aspect ratio of 16:9/ 4:3 support for both wide screen & standard TV screen.
14. VGA loop-through connection for simultaneous computer VGA display and TV viewing.
15. Easy integration with any other thirty-party system via RS-232 interface.
16. Full compatibility with all video broadcasting equipments. The sync and video output timings match exactly broadcast video quality specifications.
17. Selectable NTSC & PAL output standards.

PC-TVIII RS-232 Remote Control Protocol

PC-TVIII Model transmits command codes to Remote Controller

Code	Comment	
'PW'+0	POWER	power off
'PW'+1		power on
'NP'+0	N/P	NTSC output
'NP'+1		PAL output
'FZ'+0	FREEZE	freeze image off
'FZ'+1		freeze image on
'OV'+0	OVERSCAN	underscan
'OV'+1		overscan
'ZM'+0	ZOOM	zoom off
'ZM'+1		zoom on
'RS'+0	RESET	system reset
'RS'+1		reset image location
'RS'+2		reset image size
'RS'+3		reset video settings
'TP'+0	PATTERN	test pattern off
'TP'+1		test pattern on
'OF'+0	Output Format	CV/SV output
'OF'+1		RGB output
'OF'+2		YUV output
'AR'+value	zoom AREA	'AR'+1 ~ 'AR'+9 zoom area1 ~ area9
'AS'+0	ASPECT	aspect is 4:3
'AS'+1		aspect is wide screen
'VR'+value	VERSION	PC-TVIII firmware version

RS-232 Remote Control Protocol

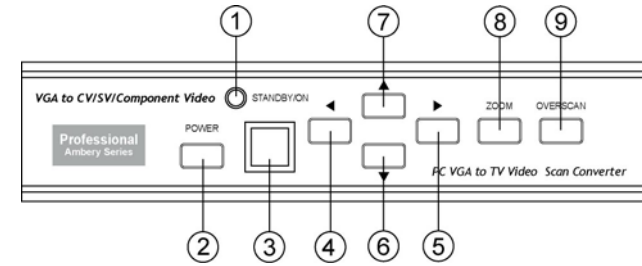
* Command / Response codes of RS-232 transmission:

" The command / response codes are the combination of 3 bytes. the 1st, 2nd byte are text and the 3rd byte is value.

Remote Controller Command Codes for PC-TVIII Model

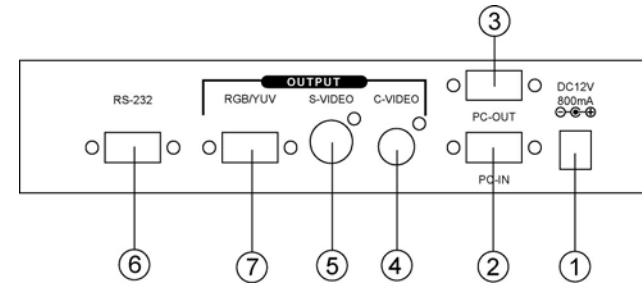
Code	Comment
'PW'+0	power off
'PW'+1	power on
'NP'+0	NTSC output
'NP'+1	PAL output
'FZ'+0	freeze image off
'FZ'+1	freeze image on
'OV'+0	underscan
'OV'+1	overscan
'ZM'+0	zoom off
'ZM'+1	zoom on
'MU'+0	move UP button release
'MU'+1	move UP button press
'MD'+0	move DOWN button release
'MD'+1	move DOWN button press
'ML'+0	move LEFT button release
'ML'+1	move LEFT button press
'MR'+0	move RIGHT button release
'MR'+1	move RIGHT button press
'SU'+0	shorter height image button release
'SU'+1	shorter height button press
'SD'+0	higher height image button release
'SD'+1	higher height image button press
'SL'+0	narrower width image button release
'SL'+1	narrower width image button press
'SR'+0	wider width image button release
'SR'+1	wider width image button press
'RS'+0	system reset
'RS'+1	reset image location
'RS'+2	reset image size
'RS'+3	reset video settings
'TP'+0	test pattern off
'TP'+1	test pattern on
'OF'+0	CV/SV output
'OF'+1	RGB output
'OF'+2	YUV output
'AR'+value	'AR'+1 ~ 'AR'+9 zoom area 1 ~ area 9
'AS'+0	ASPECT aspect is 4:3
'AS'+1	aspect is wide screen
'CO'+value	CONTRAST value = 0 ~ 63
'BR'+value	BRIGHTNESS value = 0 ~ 255
'SA'+value	SATURATION value = 0 ~ 63
'FF'+value	FLICKER value = 0 ~ 21
'VR'+1	VERSION require PC-TVIII unit firmware version
	retrive PC-TVIII all status
'AL'+1	ALL retrive 'PW'+0 only when unit power off 'PW'+1 'NP'+? 'OV'+? 'AS'+? 'ZM'+? 'CO'+? 'BR'+? 'SA'+? 'SH'+? 'FF'+?

Operation Controls and Functions Front Panel



1. Standby/On indicator: The indicator illuminates in red when it is in Standby mode, illuminates in green when it is in ON mode.
2. Power button: Push the button to turn power ON or Standby.
3. Remote control sensor.
4. ◀ Button: Under zoom mode push the button to adjust the picture leftward.
5. ▶ Button: Under zoom mode push the button to adjust the picture rightward.
6. ▼ Button: Under zoom mode push the button to adjust the picture downward.
7. ▲ Button: Under zoom mode push the button to adjust the picture upward.
8. Zoom button: Push the button to zoom in or zoom out of a picture.
9. Overscan button: Push the button to overscan/underscan the picture.

Rear Panel

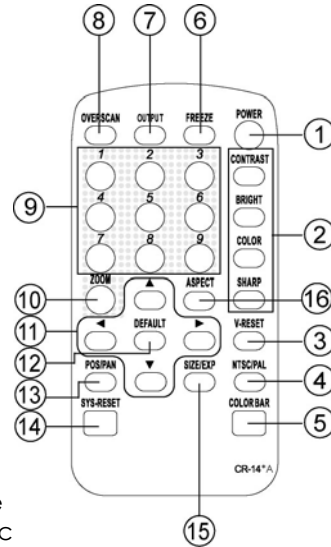


1. DC power supply 12V 800mA.
2. PC VGA input connector.
3. VGA loop-through output connector.
4. Composite video out RCA connector.
5. S-video out connector.
6. RS-232 DB-9 connector.
7. Component Video out connector.

Operation Controls and Functions

Remote controls and Functions

1. Power: Power ON/Off.
2. Video setting adjustments for picture, contrast, bright, color and sharpness.
3. V-Reset: Press the button to reset picture adjustment to factory default value.
4. NTSC/PAL: Press the button to select NTSC or PAL as video output.
5. Color bar pattern ON/Off: Press the button to show color bar pattern on the screen. Press again to close color bar.
6. Image freeze ON/Off: Press the button to freeze/unfreeze an image.
7. Output format: Press the button to select your desired output format. Press repeatedly to toggle through CV/SV→RGB→YUV
8. Under/Over Scan: Press the button to choose a underscan image or overscan image.
9. 9-blocks selection(Zoom): Under zoom mode press one of the buttons to select its corresponding sub-area which is 1/9 of of the full screen.
10. Zoom ON/Off: Press the button to zoom in an picture, press again to zoom out.
11. Horizontal/Vertical adjust knob:
 - Adjust the size or position of a image when it is under Zoom, Pan/Position, or Size/EXP mode.
 - Adjust setting value of picture adjustment in ② .
12. Default: Press the button to revert the following parameters to factory preset value:
 - Zoom
 - Position
 - Size
 - Picture adjust
13. Pos/Pan: When a picture is in underscan mode, press the button to do position adjustment. When a picture is in overscan mode, press the button to do pan adjustment.
14. System reset: Press the button to revert all system parameters back to factory preset value. The system parameters are default as follows:
 - Overscan
 - NTSC output
 - 4:3 aspect
 - Normal brightness
 - Video settings reset, position/ pan/size /expand reset.
15. Size/EXP: When in underscan mode, press the button to do size adjustment. When in overscan mode, press the button to do expand adjustment.
16. Aspect: Press the button to switch between standard 4:3 and widescreen 16:9 ratio.

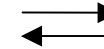


RS-232 Remote Control Protocol

* The connection between PC-TVIII model and remote controller with RS-232 modem cable.

Pins definition of modem cable

PC-TVIII		Remote Controller	
PIN	Definition	PIN	Definition
1	NC	1	NC
2	TxD	2	RxD
3	RxD	3	TxD
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC



* RS-232 transmission format:

Baud Rate : 9600 bps
 Data Bit : 8 bits
 Parity : None
 Stop Bit : 1 bit

Specifications

Input Video terminal: HD-15 pin VGA or R/G/B/H/V

Input resolution Support :

Common VGA resolution lists:

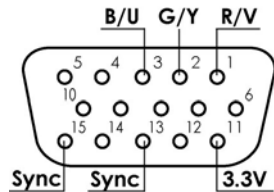
VGA 640 x 480 pixels@60Hz up to 140Hz refresh rate
 SVGA 800 x 600 pixels@60Hz up to 120Hz refresh rate
 XGA 1024 x 768 pixels @60Hz up to 85Hz refresh rate
 SXGA 1280 x 1024 pixels @60Hz refresh rate
 UXGA 1600 x 1200 pixels @60Hz refresh rate

Output Video Interface:

Composite Video Out : RCA connector
 S-Video out : Mini-din connector
 PC-VGAOut (pass through) : HD-15 pin VGA connector
 PC- VGA In : HD-15 pin VGA connector
 Component Video/YUV/RGB Out : HD-15 pin VGA connector

Output Video system:

NTSC or PAL TV system
 R/G/B/H/V (PC VGA pass through)
 R/G/B/Sync Fh=15 KHz, Fv=50/60Hz
 Y/U/V/Sync Fh= 15KHz, Fv=50/60Hz
 (Note: For YUV out, (See connection (C)) a separate sync. connection to the display unit is required in order to provide the sync signal to the TV. The YUV signal it self does not contain sync. signal therefor a separate sync connection to the TV(from Pin 13) is required.
 RGB/YUV HD-15 pins definition:



The Sync pin is composite sync(H+V)

Controls:

Front panel control, IR remote control, RS-232 control.

Last memory.

Accessories:

HD-15(male) to HD-15(male) VGA cablex1,
 IR remote control x 1
 Application software CD x 1

Power: DC 12V 800mA center;positive

Dimensions: 204(W) x 155(D) x 50(H)mm

Weight: 1kg

RS-232 Software Operation

* **PC OS: Windows 98/ME/2000/XP**

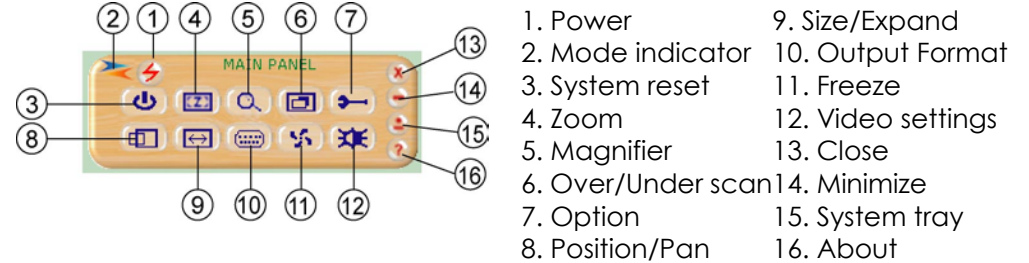
* **Software installation:**

1. Place installation CD on CD-ROM drive.
2. Execute setup.exe on installation CD.
3. OS maybe requires to update some files.
Please re-start PC. After starting PC ready, execute setup. exe again.
4. Click taskbar menu (START)->(Programs)->(PC-TVIII) to execute software.

* **If RS-232 or PC-TVIII is not ready then software enters virtual mode.**

After RS-232 and PC-TVIII connection being ready, start the software again and enters real mode.

* Main Panel



1. Power: Power ON/Off.

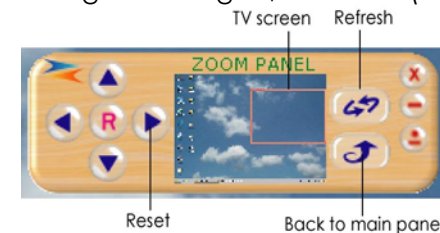
2. Mode indicator:

Grey icon:Virtual mode operation.

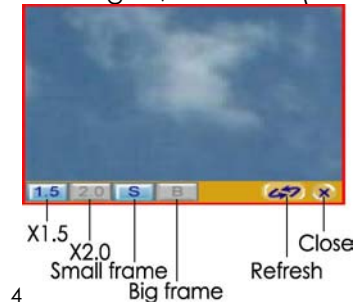
Colored icon: Real mode operation.

3. System reset: Reset PC-TVIII unit.

4. Zoom: Drag and move (TV-screen) to the place where you want to see.
 If the PC screen image is changed, then click(refresh).



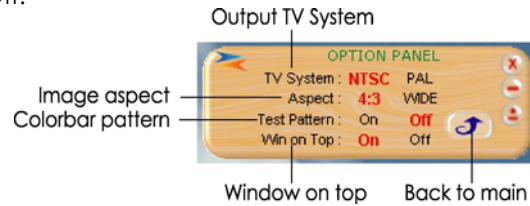
5. Magnifier: Drag and move magnifier to the place where you want to see.
 If the screen image is changed, then click(refresh).



RS-232 Software Operation

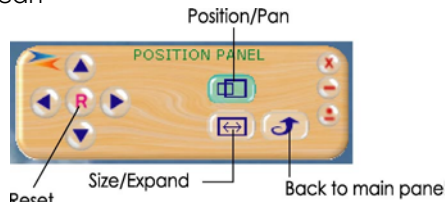
6. Over/Under scan: TV overscan adjustments are "pan" and "expand"; underscan adjustments are "position" and "size".

7. Option: TV system: NTSC or PAL output Aspect pattern: 4:3 or widescreen.
Test pattern: Colorbar test pattern ON/Off.
Window ON Top: Application software window always on top ON/Off.



8/9. Position/Pan and Size/Expand adjustments

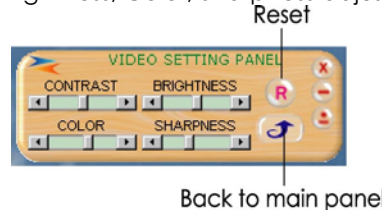
Position/Size for underscan
Pan/Expand for overscan



10. Output Format: Select output format-Press repeatedly to circle through CV/SV→RGB→YUV

11. Screen freeze: Still screen.

12. Video settings: Contrast, Brightness, Color, Sharpness adjustment.

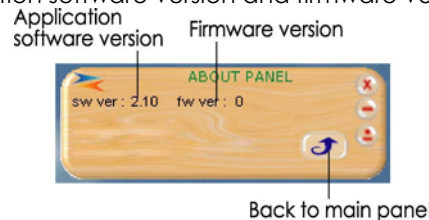


13. Close: Terminate application software.

14. Minimize: Shrink application software to window taskbar.

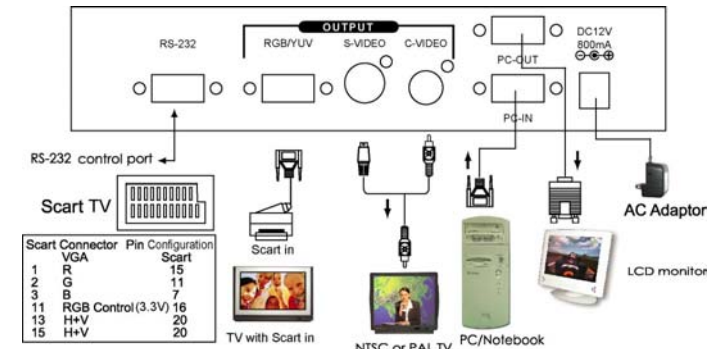
15. System tray: Shrink application software to system tray click the icon and return to normal window.

16. About: Display application software version and firmware version.

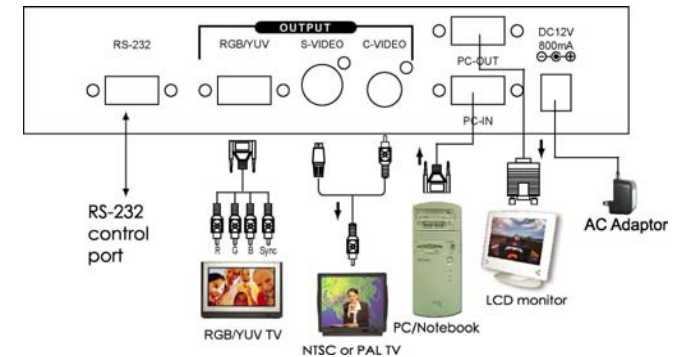


Component Video/RGB/YUV/SCAT Connection and Installation

A. Connecting the component YcbCr out to the TV via a VGA to 3 RCA cable. Select YUV for the output mode:



B. Connecting the RGB/YUV out to the TV through a VGA to 4 BNC cable. Select RGB/YUV accordingly for the output mode:



C. Connecting the RGB output to the scart input of the TV using enclosed VGA to SCART cable. Select RGB as output mode:

