

Crestron **TPS-XVGAL**
RGB Computer Interface Card for TPS/Lectern Panel

Operations & Installation Guide



CRESTRON

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Contents

RGB Computer Interface Card for TPS/Lectern Panel: TPS-XVGAL	1
Description	1
Functional Description	1
Physical Description	1
Leading Specifications	2
Computer Video Connector Signals	4
Installation and Hookup	4
TPS User Interface Setup	10
Configuring the TPS User Interface	10
SIMPL™ Windows® Programming	10
VT Pro-e Setup	10
Problem Solving	11
Troubleshooting	11
Further Inquiries	12
Future Updates	12
Future Firmware Upgrades	12
Appendix: Optional TPS User Interface Setups	13
Serial Mouse Control Driver	13
Telestrator Video Annotation Device	14
Return and Warranty Policies	15
Merchandise Returns / Repair Service	15
CRESTRON Limited Warranty	15

RGB Computer Interface Card for TPS/Lectern Panel: TPS-XVGAL

Description

Functional Description

The TPS-XVGAL RGB computer interface card is an optional feature designed for Crestron's Isys™ wall/lectern mounted TPS user interfaces.

NOTE: TPS user interfaces include all TPS touchpanels and the touchpanel interface unit.

Through an RGB window on a page within the uploaded VisionTools™ Pro-e (VT Pro-e) touchpanel project, the card allows computer video to be displayed on the touchpanel full screen or in a window. Non-interlaced input video resolutions of up to 1600x1200 are supported. The resolutions are supported by scaling or sub-sampling in the H-direction and scaled down in the V-direction to the native resolution (or lower) of the interface. Lower resolutions may be scaled up to fill the screen.

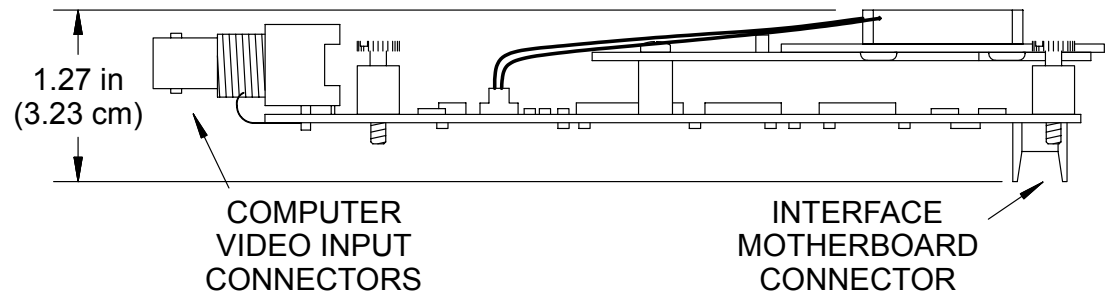
Optional TPS user interface setups are also available to utilize the TPS-XVGAL. Serial mouse control driver software and instructions to integrate a Boeckeler Pointmaker® Video Marker telestrator with the TPS user interface are provided. For further information, refer to “Appendix: Optional TPS User Interface Setups” that begins on page 13.

Physical Description

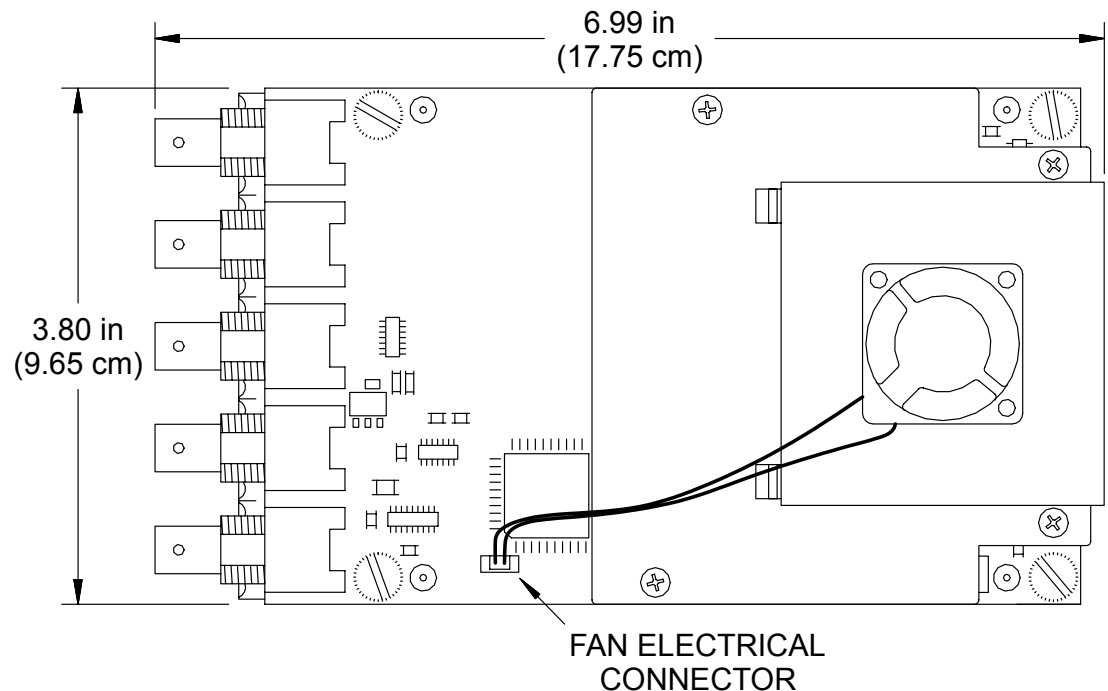
The TPS-XVGAL, shown on the next page, is a printed circuit board (PCB) designed to be installed into a specific expansion slot in the TPS user interface. The card contains a 60-pin connector that attaches directly to the motherboard of the interface and the card is secured with four attached knurled mounting screws. Computer video input is through five BNC connectors although, depending upon the individual installation,

only four may be used. The ports (labeled **RGB INPUT** on the user interface) are accessible through the connector panel at the rear of the case. Mounted on top of the card is a cooling fan assembly to maintain the proper operating temperature of the card during operation.

TPS-XVGAL Side View



TPS-XVGAL Top View



Leading Specifications

The table below and continued on the next page provides a summary of leading specifications for the TPS-XVGAL. Dimensions and weight are rounded to the nearest hundredth unit.

Leading Specifications of the TPS-XVGAL

SPECIFICATION	DETAILS
Power Requirements	10 Watts (0.417 Amps @ 24VDC)
SIMPL™ Windows®	Version 1.50.05 or later ¹

Leading Specifications of the TPS-XVGAL (continued)

SPECIFICATION	DETAILS
VisionTools™ Pro-e	Version 2.2.0.0 or later ¹
Isys Touchpanel Firmware	Version 1.008.0 or later ²
CEN/CN-TVAV Update File	Version 51233V.UPZ or later ³
CNMSX-AV/Pro Update File	Version 51011X.UPZ or later ³
CNRACKX/-DP Update File	Version 51011W.UPZ or later ³
ST-CP Update File	Version 40104S or later ^{3 & 4}
CNMS, CNRACK, CNLCOMP Operating System	Version 3.18.09m, l, c or later ³
Max. Input Resolution	1600x1200
Max. Input Refresh Rate	85Hz at 1600x1200 Resolution ⁵
Video Sampling Rate	140MHz (Limited by Crestron)
Dimensions & Weight	Height: 1.23 in (3.13 cm) Width: 3.80 in (9.65 cm) Depth: 7.01 in (17.80 cm) Weight: 5.20 oz (0.15 kg)

- 1 The latest software versions can be obtained from the What's New page (SIMPL Windows and VisionTools Pro-e sections) or Downloads page (SIMPLWIN and VTPRO-E Libraries) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.
- 2 TPS user interfaces with later versions of firmware may include features not mentioned in this guide. Check the MANUAL Library on the Crestron FTP site for newer versions of this guide or contact Crestron customer service. Firmware upgrade files can be obtained from the What's New page (Touchpanels section) or the Downloads page (TOUCHPNL Library) of Crestron's website.
- 3 CNX update files are required for either CNMSX-AV/Pro or CNRACKX/-DP. Filenames for CNX update files have a UPZ extension and ST-CP files are in one EXE or zipped UPZ file. All can be obtained from the What's New page (Control Systems Update Files section) or Downloads page (OPSYS Library) of Crestron's website. Update files are specifically designed for certain control systems. If an update file is loaded into a control system other than the device for which it was intended, it may lockup the control system which would then have to be returned to Crestron. Update files with an "S" designator are for the ST-CP, "V" designator for CEN/CN-TVAV, "W" for CNRACKX/-DP, and "X" for CNMSX-AV/Pro control systems. Control systems are able to recognize and reject incorrect update files. However, when updating control systems, do not ignore any Crestron Viewport warning prompts or messages.
- 4 These control systems do not support loading of firmware or VT Pro-e files to the TPS-series user interfaces through the RS-232 port of the control system. In order to load these files to the TPS user interface when using these control systems, either use the RS-232 port on the TPS user interface or use Ethernet direct to the panel (assuming the TPS-ENETL is installed).

- 5 At the maximum input resolution of 1600x1200, the maximum refresh rate is 85Hz. Lower resolutions may use higher refresh rates.

As of the date of manufacture, the card has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling (N11785).



NOTE: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Computer Video Connector Signals

Video Connector Pinouts

PORT	TYPE	SIGNAL(S)
R	BNC	Red video input
G	BNC	Green video input ¹
B	BNC	Blue video input
HS / CS	BNC	Horizontal sync or composite sync
VS	BNC	Vertical sync ²

- 1 RGsB (sync on green) is not supported.
2 This connector is not used if composite sync is utilized.

Installation and Hookup

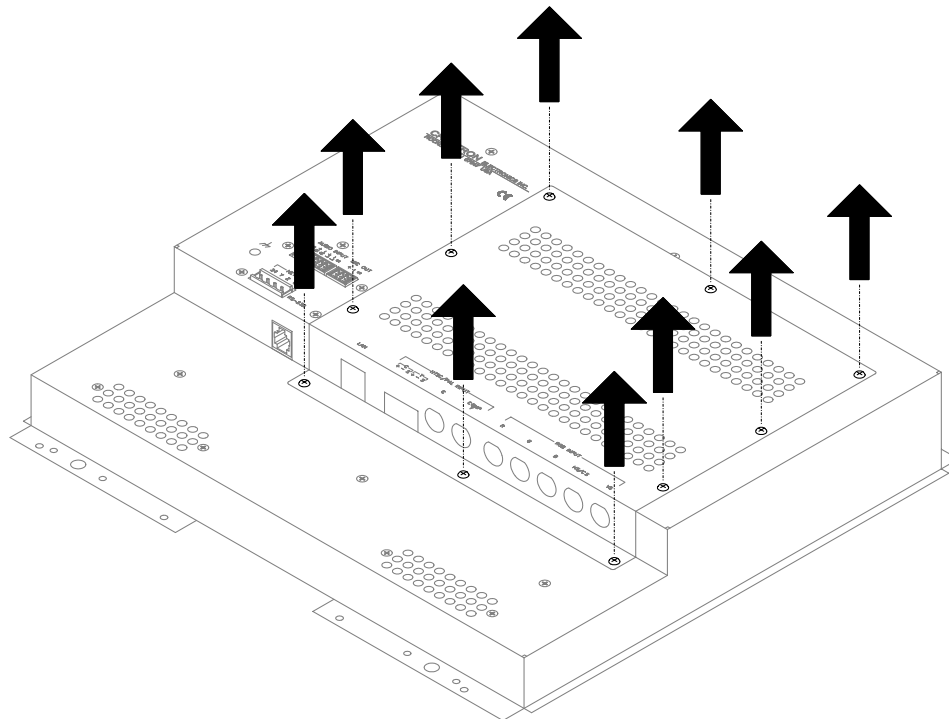
The TPS-XVGAL is designed to be installed into a specific expansion slot in the TPS user interface. The tools required for installation are a #1 Phillips screwdriver and a grounding strap (or grounded workstation).

CAUTION: The TPS-XVGAL and the TPS user interface contains electrostatic discharge (ESD) sensitive devices. Perform the following procedure while wearing a grounding strap that is properly grounded or on a grounded work station to avoid damaging the card and/or the TPS user interface.

NOTE: The diagrams in this procedure show a TPS-6000L touchpanel but the steps for installation into all TPS user interfaces are identical. This procedure pertains to a unit that is *not* installed into a wall or lectern. If already installed, consult the latest revision of the appropriate operations & installation guide, disconnect power and perform the installation procedure in reverse to remove the unit. The latest version of the appropriate guide can be obtained from the Products page (PRODUCT MANUALS section) or Downloads page (MANUAL Library) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.

1. To prevent scratching of the screen (TPS-TPI excluded), place the unit face-down onto a padded surface.
2. Refer to the diagram below. Using a #1 Phillips screwdriver, loosen and remove the **10** screws that secure the rear cover.

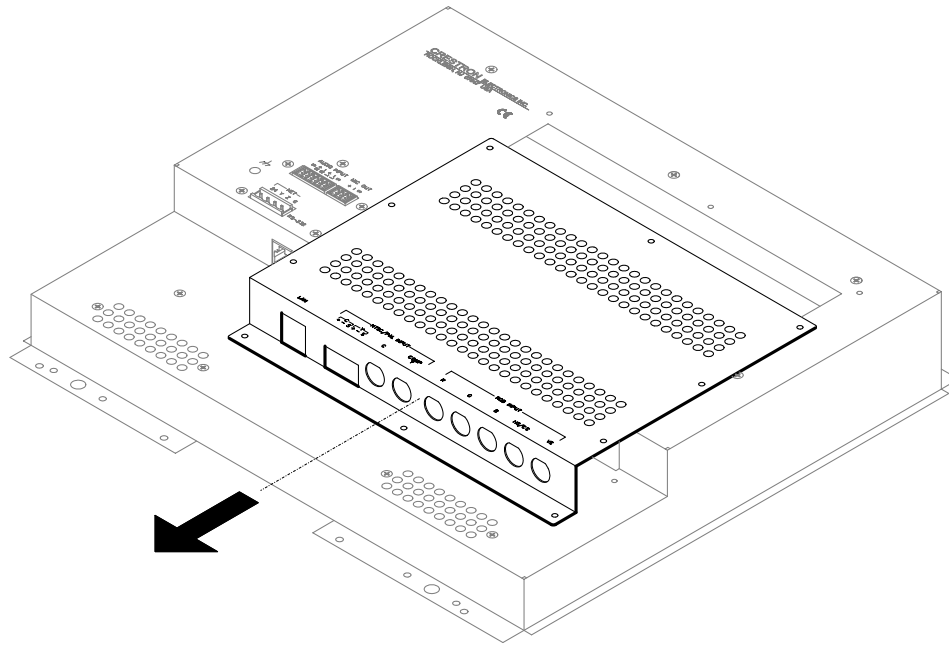
Installation Diagram 1 of 7 - Remove Rear Cover Screws



CAUTION: The external connectors of any optional card that is already installed may have to be aligned slightly to allow the rear cover to be removed. Align the connectors **carefully** to prevent damage to the card(s), cover, or TPS user interface.

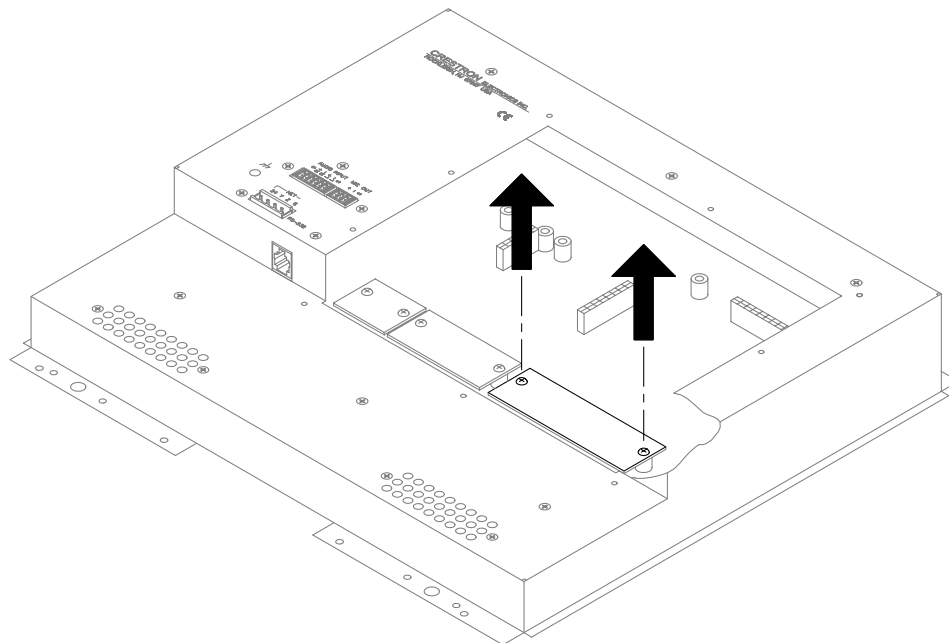
3. As shown below, remove the rear cover by sliding it towards the bottom of the unit.

Installation Diagram 2 of 7 - Remove Rear Cover



4. Refer to the diagram below. Using a #1 Phillips screwdriver, loosen and remove the **two** screws that secure the blank plate and remove the plate. The screws and plate may be discarded.

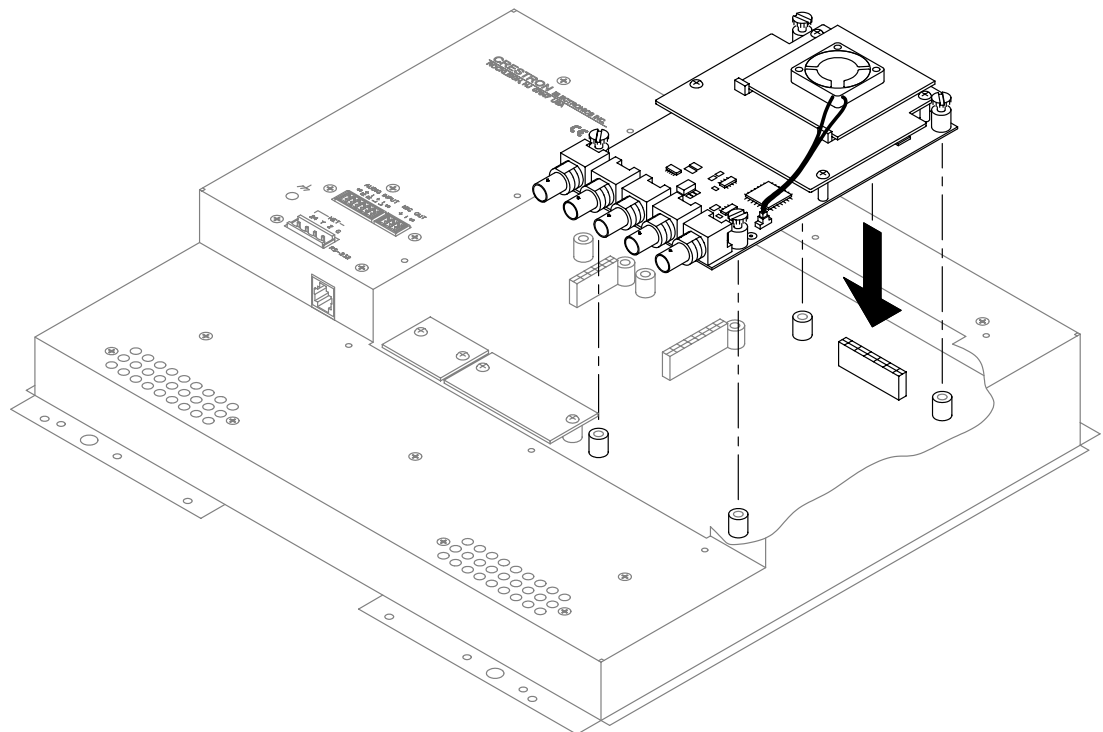
Installation Diagram 3 of 7 - Remove Blank Plate



NOTE: The TPS-XVGAL interface connector pins are more easily inserted by gently “rocking” the TPS-XVGAL side-to-side while pressing onto motherboard connector.

5. As shown below, align the pins on the interface connector of the card with the motherboard connector. **Do not** force pins into connector. Press the TPS-XVGAL until pins are fully seated. Make sure that the four attached knurled mounting screws align with mounting posts of the motherboard.

Installation Diagram 4 of 7 - Install TPS-XVGAL



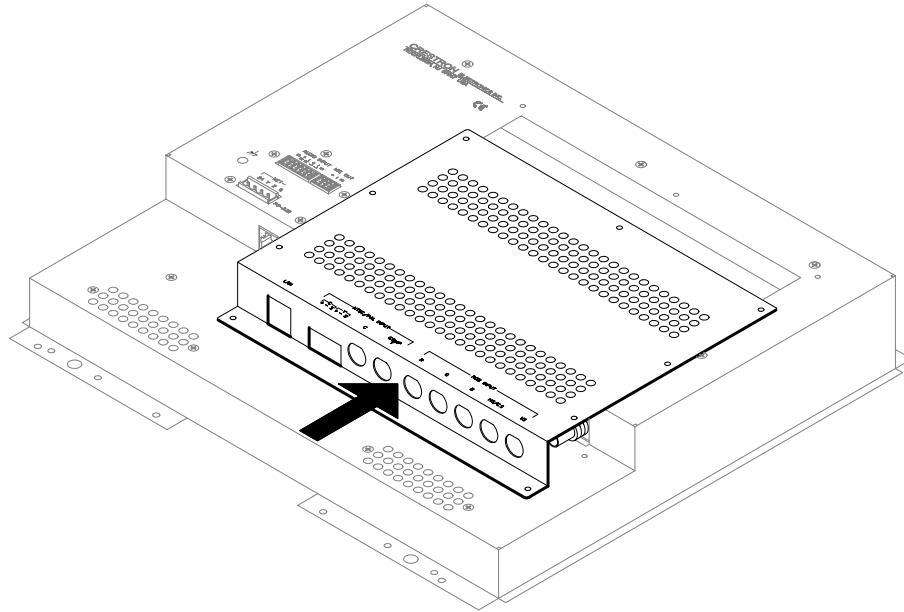
6. Tighten the knurled mounting screws to **finger-tight**.

CAUTION: To prevent over-heating of the card during operation, make sure that the fan electrical connector has remained attached to the PCB connector of the TPS-XVGAL.

CAUTION: The TPS-XVGAL video input connectors may have to be aligned slightly to fit through the openings in the rear cover. Align the connectors of this card (or any other optional card that is installed) **carefully** to prevent damage to the card, cover, or TPS user interface.

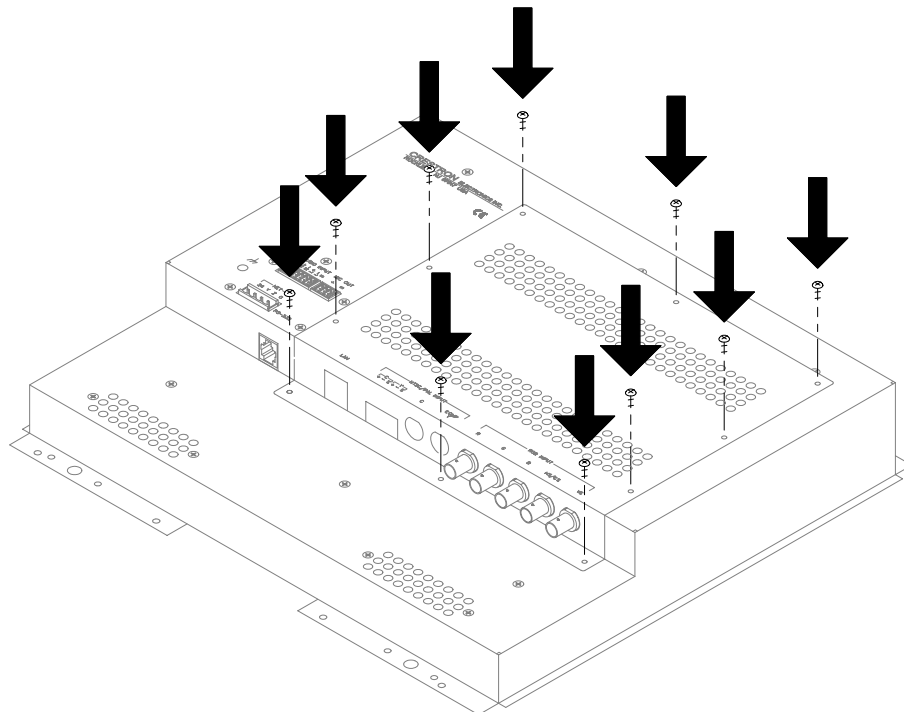
7. As shown below, install the rear cover by sliding it over the TPS-XVGAL video input connectors.

Installation Diagram 5 of 7 - Install Rear Cover



8. Refer to the diagram below. Re-install the **ten** cover screws to **finger-tight** then, using a #1 Phillips screwdriver, tighten the mounting screws an additional **1/8-turn** to secure cover.

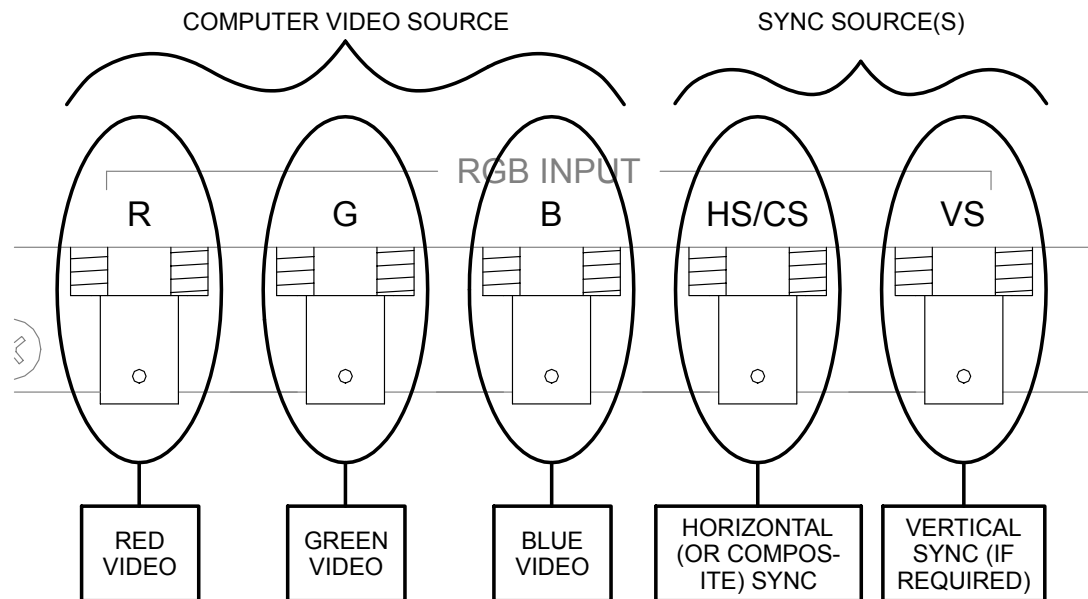
Installation Diagram 6 of 7 - Install Rear Cover Screws



NOTE: Depending upon the individual installation, either the horizontal sync and vertical sync connectors **or** only the composite sync connector is used. RGSB (sync on green) is not supported.

9. Refer to the diagram below and make the appropriate connections as shown.

Installation Diagram 7 of 7 - Attach Computer Video and Appropriate Sync Cables



NOTE: Consult the latest revision of the appropriate TPS user interface Operations & Installation Guide or, if applicable, BB-5000 or BB-6000 Installation Guide (Doc. 5826 or 5827, respectively) for the installation procedure of the unit. The latest version of the Operations & Installation Guides can be obtained from the Products page (PRODUCT MANUALS section) or Downloads page (MANUAL Library) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.

TPS User Interface Setup

Configuring the TPS User Interface

To configure the TPS user interface to accept the RGB computer video input, consult the latest revision of the appropriate interface operations guide. The latest version of the guide can be obtained from the Products page (PRODUCT MANUALS section) or Downloads page (MANUAL Library) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.

Configure the TPS user interface with the TPS-XVGAL properly installed. Upon entering the Setup Menu, an RGB button will be available and displayed. Selection of this button opens the RGB Menu from which RGB settings are adjusted.

SIMPL™ Windows® Programming

No special programming is required in SIMPL Windows for TPS-XVGAL operation.

NOTE: Join number remapping allows the TPS user interface to perform features in a new way. One group of features pertains specifically to use of the RGB computer interface card. Refer to the latest revision of the Join Number Remapping Reference Guide (Doc. 5969) for specific details. This document can be obtained from the Downloads page (MANUAL Library, search for JNR.PDF) of Crestron's website (www.crestron.com).

VT Pro-e Setup

In order for the RGB video to be displayed, the TPS-XVGAL must be installed into the proper expansion slot of the TPS user interfaces and a RGB window object must reside on a page within the uploaded VT Pro-e project. If the card is not present, the Viewport will display a warning message during the upload and the RGB window would be blank. For details regarding RGB window objects, refer to the VT Pro-e help file.

Problem Solving

Troubleshooting

The table below provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

TPS-XVGAL Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
RGB window of has no display.	Vertical refresh rate from PC too high.	At PC, adjust vertical refresh rate to a lower rate. *
	Incorrect TPS user interface firmware/software.	Update firmware/software versions.
	Incorrect VT Pro-e project file loaded.	Make sure that RGB window object resides in project, re-compile, and reload.
	TPS-XVGAL improperly installed.	Check that RGB button on the Setup Menu is displayed. If not, card is not being recognized by the TPS user interface. Follow "Installation and Hookup" procedure in this guide.
	Damaged connector pins.	Inspect connector pins. If bent, carefully re-straighten. If broken, contact Crestron customer service.
Video colors in RGB window incorrect or display "rolling".	Improper computer video connection(s).	Verify proper video color or sync connections at RGB INPUT ports.
Display is distorted in RGB window.	TPS user interface not configured correctly.	Refer to the "Configuring the TPS User Interface" section of this guide for reference to the appropriate operations guide.
RGB window has display when PC turns-on but then no display.	Energy saving features of monitor in PC are activated.	If serial mouse control driver is installed, touch the touchscreen to deactivate the energy saving features.
		In the display properties of the PC, deselect the monitor energy saving features.

* At the maximum input resolution of 1600x1200, the maximum refresh rate is 85Hz. Lower resolutions may use higher refresh rates.

Further Inquiries

If after reviewing this Operations & Installations Guide, you cannot locate specific information or have questions, please take advantage of Crestron's award winning customer service team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876].
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-2016.
- In Latin America, call Crestron Latin America at +5255-5093-2160.
- In Australia and New Zealand, call Crestron Pacific at +613-9480-2999.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the TPS-XVGAL, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website (www.crestron.com) periodically for manual update availability and its subjective value. Updates are available from the Download | Product Manuals section and are identified as an "Addendum" in the Download column.

Future Firmware Upgrades

To take advantage of all the TPS-XVGAL features, it is important that the touchpanel contains the latest firmware available. Therefore, please check the (http://www.crestron.com/downloads/software_updates.asp) for the latest version of firmware. Not every product has a firmware upgrade, but as Crestron improves functions, adds new features, and extends the capabilities of its products, firmware upgrades are posted.

Appendix: Optional TPS User Interface Setups

Optional TPS user interface setups that utilize the TPS-XVGAL include serial mouse control driver software and instructions to integrate a Boeckeler Pointmaker® Video Marker telestrator with the TPS user interface and Cresnet system.

Serial Mouse Control Driver

The serial mouse control driver allows the TPS user interface to function as a touchscreen monitor. The driver enables a physical press on the touch screen to simulate a computer mouse, and thus control the movement of the cursor. The driver is compatible with Microsoft® Windows™ 95/98/Me and NT/2000. (For use with the TPS-TPI, refer to the TPS-TPI Operations Guide, Doc. 5855 or Addendum 5915, for configuration options of non-Crestron touch screens.) The latest version of the driver and documentation (Serial Mouse Control Driver Programmer's Guide, Doc. 5916) can be obtained from the What's New page (Touchpanels section, search for PC Serial Mouse Driver) or Downloads page (TOUCHPNL Library, search for TPAD2560.EXE) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the page.

NOTE: This software is licensed for use only in conjunction with the TPS-XVGA, TPS-XVGA-BV and TPS-XVGAL cards.

NOTE: The serial mouse control driver may be operated via the following options:

- RS-232 port located on the rear of the TPS user interface case
- CNMSX internal COM port, one COM port required
- CNRACKX/-DP with optional CNXCOM-2 RS-232/422/485 Expansion Card, one COM port required
- ST-COM, one COM port required (CNMSX/CNRACKX required in Cresnet system)
- CEN-COM, one COM port required (CNMSX/CNRACKX with optional CNXENET/+ Ethernet Expansion Card required in Cresnet system)

Contact Crestron customer service for further information.

Telestrator Video Annotation Device

TPS user interfaces equipped with TPS-XVGAL expansion cards can be integrated with the Boeckeler Pointmaker® Video Marker (model PVI-83) telestrator, a video annotation device by Boeckeler Instruments (www.pointmaker.com). This device (acquired separately) is used to enhance a video presentation by enabling users to emphasize key points or annotate details of an image. By utilizing the touch screen instead of a light pen and digitizing tablet, users draw and point on video or computer images by pressing and dragging a finger over the screen. In addition, a solid background can replace the video input to create an “electronic chalkboard.”

NOTE: Installation of the serial mouse control driver software is not required for telestrator operation.

For further information, refer to the latest revision of Pointmaker Telestrator (Doc. 5929). This document can be obtained from the Downloads page (MANUAL and TOUCHPNL Libraries) of Crestron’s website (www.crestron.com). Search for TELE.PDF. New users are required to register in order to obtain access to the FTP site.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange, or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address.
2. Products may be returned for credit, exchange, or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, Cresskill, N.J., or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from CRESTRON, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touchscreen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from CRESTRON or an authorized CRESTRON dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

CRESTRON shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON is not liable for any claim made by a third party or made by the purchaser for a third party.

CRESTRON shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supercedes all previous warranties.

Trademark Information

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Operations & Installation Guide - DOC. 5945
08.01

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change without notice.