

Crestron **TPS-VID-1/TPS-VID-2**
Video Card for TPS/Tilt Panel

Operations & Installation Guide



CRESTRON

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Video Card for TPS/Tilt Panel: TPS-VID-1/TPS-VID-2

Introduction

Features and Functions

The TPS-VID-1 and TPS-VID-2 video cards are designed for Crestron's Isys™ TPS-4500, TPS-5000, and TPS-6000 tilt touchpanels. Each card contains a video digitizer that allows video signals to be displayed on a touchpanel. The TPS-VID-1 can display one S-video or composite video source while the TPS-VID-2 can display one S-Video source or two composite video sources. The video card accepts either National Television System Committee (NTSC) or Phase Alternating Line (PAL) signal types. Composite and S-Video formats are supported and can be displayed in a window or full screen page in an uploaded VisionTools™ Pro-e (VT Pro-e) touchpanel project.

Functional Summary

- Built-in Time-Based Correction for Stable Video & Graphics
- Scale video at full screen or window to any size
- Display picture-in-picture or place windows anywhere on the screen
- Supports NTSC/PAL Formats with Auto-Detect
- Coaxial or Balanced Video Input
- Auto-Detects Composite or S-Video Format within two seconds (TPS-VID-2 Auto-Detects format only on input 1 when input 2 is not used.)
- Simultaneous display of two real-time composite video windows on one touchpanel screen (TPS-VID-2 only)
- TPS touchpanels can display up to three sources on-screen simultaneously when TPS-VID-2 and TPS-XVGA cards are installed (two composite video, one VGA)

The TPS-VID-1 can automatically detect composite or S-video. The TPS-VID-2 uses the “C” input for a second composite video source (on the TPS-VID-2, Composite/S-Video can be auto-detected only when input signal 2 is not used). Video signals to the touchpanel are supplied through a Crestron TPS interface module (IMC) that is provided with the touchpanel or an optional TPS wall-mounted interface module (IMW). When using the TPS-VID-2 for receiving two video sources, the “Comp/Y” connection will be used for Video Source 1 while the chroma “C” connection will be used for Video Source 2.

Refer to the table below for touchpanel and interface modules that can be used with TPS-VID cards.

Touchpanel Interface Module Compatibility

ISYS™ TOUCHPANEL	INTERFACE MODULE	MODULE AVAILABILITY	MODULE DOC. #
TPS-4500	TPS-4500IMC	Supplied w/touchpanel	5890
	TPS-4500IMW	Sold Separately	5913
TPS-5000 and/or TPS-6000	TPS-IMC	Supplied w/touchpanel	5856
	TPS-IMC-BV	Sold Separately	5921
	TPS-IMW	Sold Separately	5857

*The TPS-IMC-BV is supplied with the optional TPS-XVGA-BV card that can only be installed into specific touchpanels. Refer to the TPS-XVGA-BV Operations and Installation Guide (Document 5920) for further information.

NOTE: For more information about the Crestron TPS interface or wall-mounted interface module(s), refer to the latest revision of the appropriate operations guide. The latest versions can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com).

Specifications

The following table provides a summary of specifications for the TPS-VID-1 and TPS-VID-2 cards.

Specifications of the TPS-VID-1/VID-2

SPECIFICATION	DETAILS
Power Requirements	TPS-VID-1: 7 Watts (0.29 Amp @ 24 VDC) TPS-VID-2: 12 Watts (0.50 Amp @ 24 VDC)
Control System Update Files ^{1,2,3} 2-Series Control System CEN/CN-TVAV CNMSX-AV/PRO CNRACKX/-DP ST-CP	Version C2-2004.CUZ or later Version 5.12.63v.UPZ or later Version 5.12.63x.UPZ or later Version 5.12.63w.UPZ or later Version 4.02.4S.UPZ or later
Isys™ Touchpanel Firmware ⁴	Version 1.018 or later
VT Pro-e Programming Software ¹	Version 3.0.0.8 or later
Video Types	NTSC or PAL
Video Formats	Composite or S-Video
Video Format Detection	Within 2 seconds
Operating Temperature and Humidity	50° to 113° F (10° to 45° C), 10 to 90% Relative Humidity (non-condensing)
Dimensions and Weight	Height: 0.71 in (1.81 cm) Width: 3.35 in (8.51 cm) Depth: 5.93 in (15.06 cm) Weight: 1.60 oz (0.05 kg)

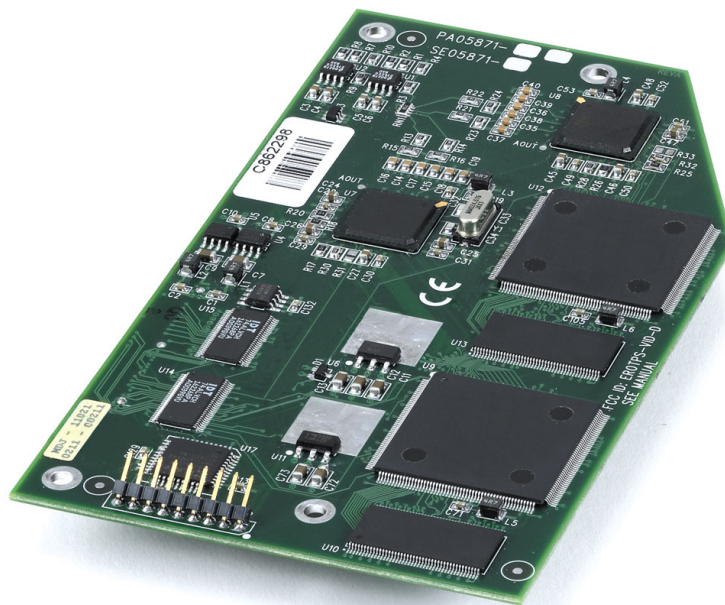
1. The latest versions can be obtained from the Downloads | Software Updates section of the Crestron website (www.crestron.com). Refer to NOTE after last footnote.
2. Crestron 2-Series control systems include the AV2, CP2, CP2E, MP2, MP2E, PAC2, PRO2, and RACK2.
3. CNX update files are required for either 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. To avoid program problems, make certain you are using the update file with the correct suffix letter (e.g., S, V, W, X).
4. Touchpanels with later versions of firmware may include features not mentioned in this guide. Check the Downloads | Product Manuals section of the Crestron website (www.crestron.com) for newer versions of this guide or contact a Crestron technical support representative.

NOTE: Crestron software and any files on the Crestron website are for Authorized Crestron dealers only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

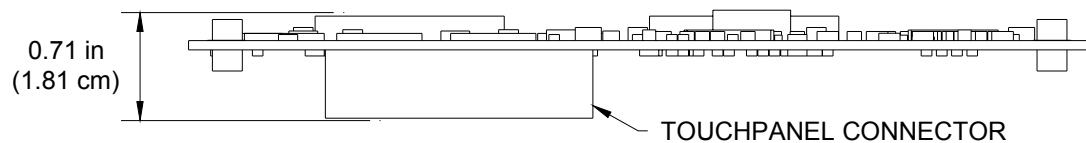
Physical Description

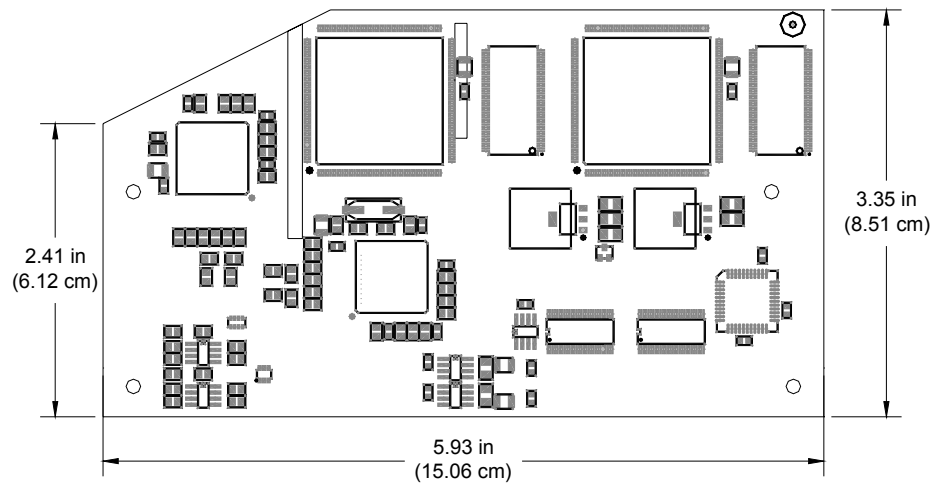
The TPS-VID-1 and TPS-VID-2 card, shown in the following diagrams below, is a printed circuit board (PCB) that is designed for installation into a dedicated expansion slot on the touchpanel motherboard. The card contains a 60-pin connector that attaches directly to the motherboard and is secured with four mounting screws (supplied with each model of the video card). A 10-position RJ45 port (labeled **NET/VIDEO** on the touchpanel) is permanently attached to the motherboard and is accessible through the connector panel at the rear of the touchpanel base. Refer to the following diagrams for physical dimensions.

TPS-VID-1/VID-2 VIDEO CARD (TPS-VID-2 Shown)



TPS-VID-1/VID-2 Side View



TPS-VID-1/VID-2 Top View

NOTE: The TPS-VID-1 circuit board is slightly less populated than the TPS-VID-2

Industry Compliance

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.

Installation and Hookup

The TPS-VID-1 and TPS-VID-2 video cards are designed for installation into a dedicated expansion slot on the TPS touchpanel. The only tools required for installation are a #1 Phillips screwdriver and a grounding strap (or grounded workstation).

CAUTION: The TPS-VID-1, TPS-VID-2, and the touchpanel contain electro-static discharge (ESD) sensitive devices. Perform the following

procedure while wearing a grounding strap that is properly grounded and on a grounded workstation to avoid damaging the TPS-VID card and/or the touchpanel.

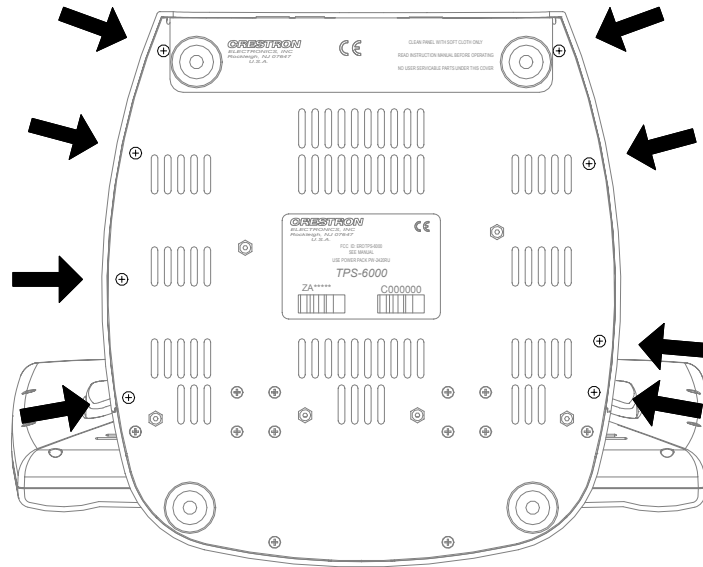
CAUTION: To prevent stripping of screw heads, threads, or mounting holes, **DO NOT** overtighten screws. Tighten only to the specification listed in the individual step(s).

NOTE: If the angle of the touchscreen needs to be adjusted, consult the latest revision of the appropriate operations guide for instructions of how to use the touchpanel position lock buttons. The latest versions of operations guides can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com).

NOTE: The diagrams in this procedure show a TPS-6000 touchpanel but the installation steps for the TPS-4500 and TPS-5000 Isys™ tilt touchpanels are identical.

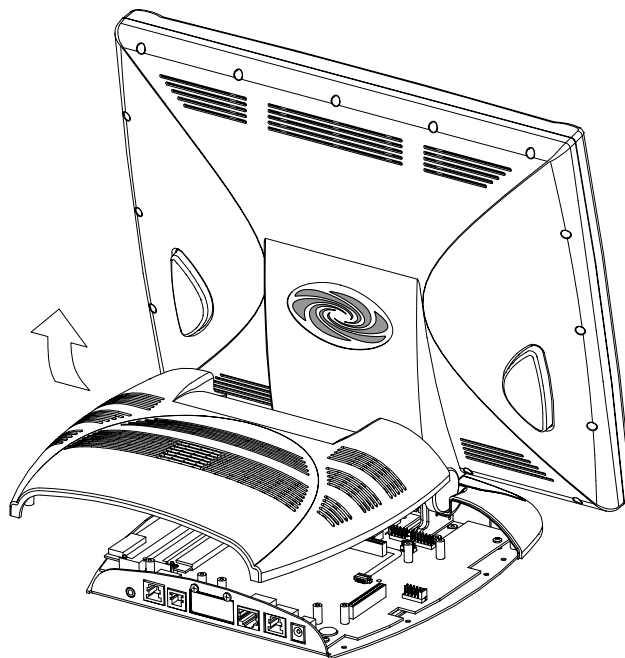
1. To prevent errors when re-connecting, label and disconnect all cables attached to the touchpanel's rear ports.
2. If necessary, use the touchpanel position lock buttons to adjust the touchscreen to the maximum (most vertical/upright) angle.
3. To prevent scratching of the screen, place the touchpanel face-down onto a padded surface.
4. With one hand, hold the touchpanel base cover in place.
5. Using a #1 Phillips screwdriver, loosen and remove the **eight** screws that secure the touchpanel base cover. Refer to the following diagram for screw locations.

TPS-VID-1/VID-2 Installation (1 of 6) – Remove Touchpanel Base Cover Screws



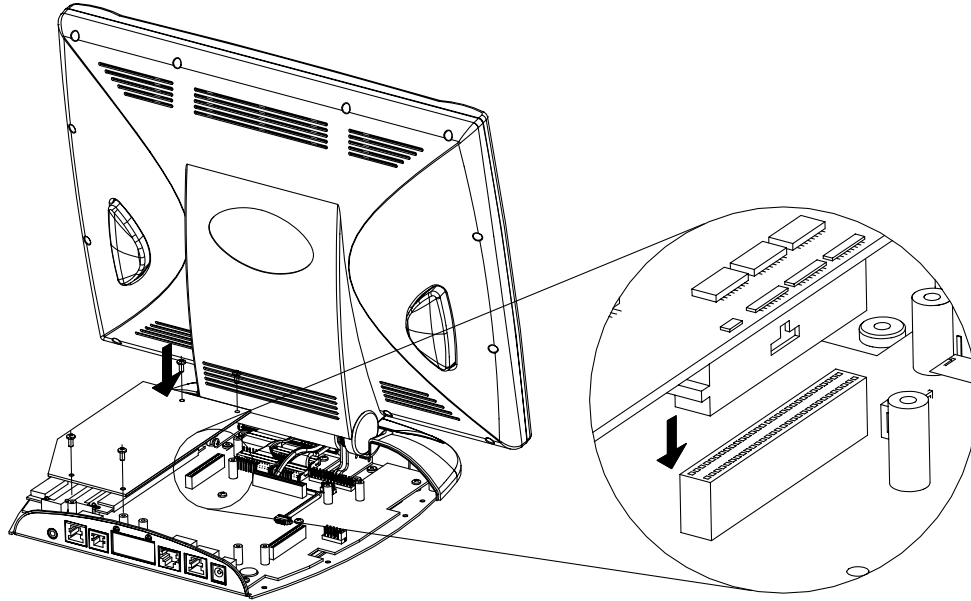
6. Place the touchpanel upright on the work surface.
7. Remove the touchpanel base cover by raising it upwards and rearward. Refer to the diagram on the following page for a detailed view.

TPS-VID-1/VID-2 Installation (2 of 6) – Remove Touchpanel Base Cover



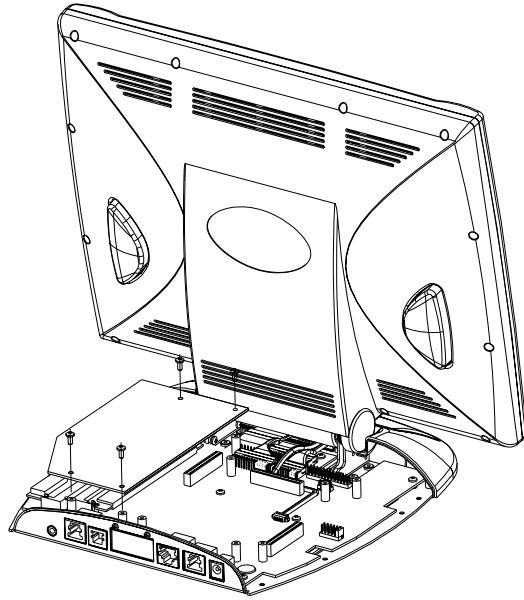
- Align the pins on the touchpanel interface connector of the TPS-VID-1 or TPS-VID-2 with the touchpanel motherboard connector. **DO NOT** force pins into connector. Press the TPS-VID-1/VID-2 until the pins are fully seated. Make sure that the screw holes of the card align with the mounting posts on the motherboard. Refer to the following diagram for a detailed view.

TPS-VID-1/VID-2 Installation (3 of 6) – Install TPS-VID-1/VID-2



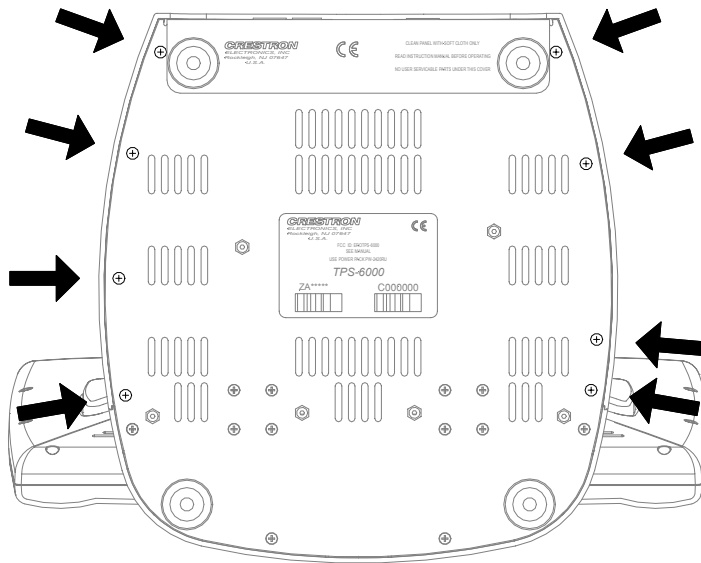
- Install the four mounting screws (supplied), tighten to finger-tight then, using a Phillips screwdriver, tighten each screw an additional 1/8-turn. Refer to the following diagram for screw locations.

TPS-VID-1/VID-2 Installation (4 of 6) – Install TPS-VID-1/VID-2 Mounting Screws



10. Position the touchpanel base cover onto the base by tilting the front of the cover downward under the touchpanel pivot and lowering the base cover.
11. Hold the touchpanel base cover in place and position the touchpanel face-down onto a padded surface to prevent scratching of the screen.
12. Re-install the **eight** base cover screws to **finger-tight** then, using a Phillips screwdriver, tighten each screw an additional **1/8-turn**. Refer to the following diagram for screw locations.

TPS-VID-1/VID-2 Installation (5 of 6) – Re-install Touchpanel Base Cover Screws



The following table is provided as reference information about the pinouts of the NET/VIDEO connector.

Pin Assignments

TYPE	PIN	DESIGNATION	DESCRIPTION
	1	+24V	Power (Network)
	2	GND	Ground (Network)
	3	C+	Chrominance (Positive)
	4	C-	Chrominance (Negative)
	5	Y	Data (Network)
	6	Z	Data (Network)
	7	Y+	Luminance (Positive)/Composite
	8	Y-	Luminance (Negative)/Composite
	9	GND	Ground (Network)
	10	+24V	Power (Network)

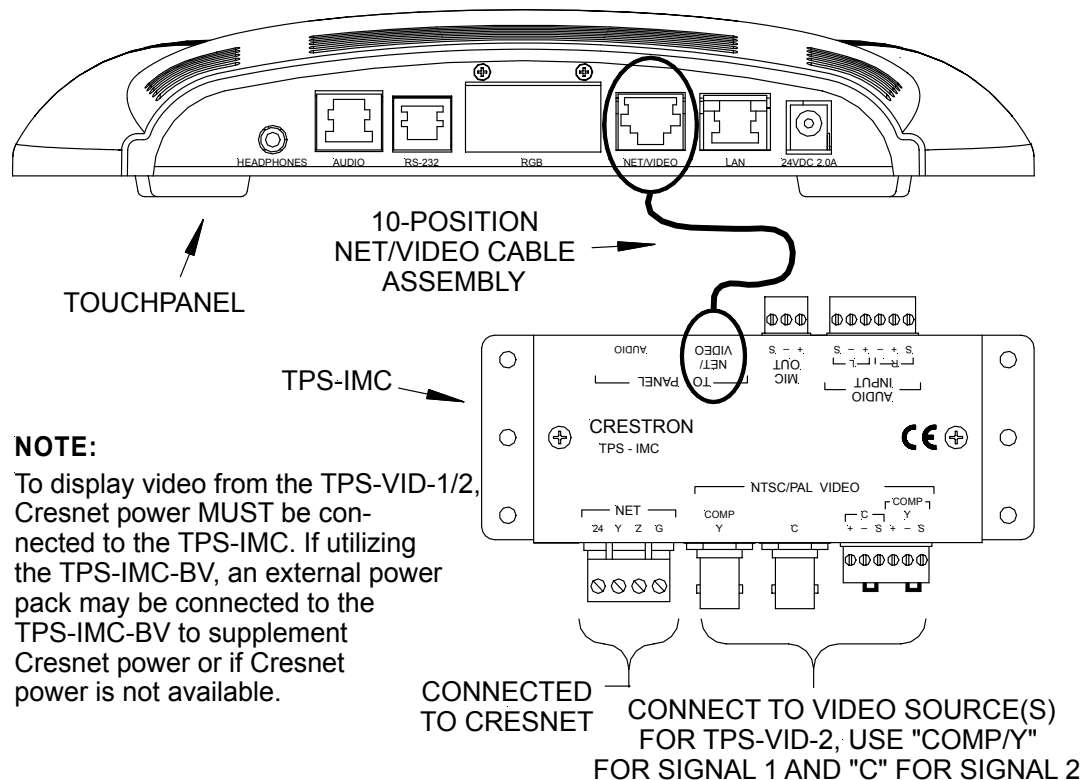
CAUTION: The 10-pin RJ45 Net/Video connector cable supplied by Crestron is a custom cable and is the only one that should be used. The end of the cable has a metal shield that is required to protect the equipment. Using non-Crestron cables will result in damage to the product.

- Refer to the following diagram for the video connector signals and attach the supplied **10-pin** Net/Video cable assembly (or the triamese cable assembly supplied with the TPS-IMC-BV) to the Net/Video port of the touchpanel. Connect the other end of

the cable assembly to the NET/VIDEO port of the appropriate interface module (TPS-IMC is shown) or to the TPSBLOCK-10 interface (refer to the latest version of the TPSBLOCK-10 Installation Guide, Doc. 5979 for functional and physical description).

NOTE: When connecting the Net/Video cable from the interface module to the touchpanel, exceeding a cable length of 30 feet will significantly degrade the video signal. To maintain high-quality video, DO NOT daisy-chain cables or Crestron TPSBLOCK-10 cables longer than 30-feet. Contact Crestron for the maximum available cable length.

TPS-VID-1/VID-2 Installation (6 of 6) – Attach 10-Pin Net/Video Cable Assembly



CAUTION: When running unbalance video, the respective twisted-pair jumper(s) must be installed to avoid damage to the TPS-IMC. Refer to the latest version of the TPS-IMC Operations Guide (Doc. 5856) for hardware hookup details.

NOTE: When using the TPS-VID-2 for receiving two composite video sources, the “Comp/Y” connection will be used for Video Source 1 while the chroma (C) connection will be used for Video Source 2.

NOTE: A variety of video wiring combinations can be used. For example, Signal 1 can be connected to the BNC connector while Signal 2 can use the twisted pair connector. Do not apply different video signals to the BNC and twisted pair connector for the same input (i.e. one signal on BNC “Y” input and a different source signal on the twisted pair “Y” input).

NOTE: When connecting cables to a TPS-IMC-BV, select the connection to use (BAL or COAX) by sliding the switch to the appropriate setting that is accessible through the opening in the cover of the TPS-IMC-BV. Only one connection type can be used at a time.

NOTE: For additional information on video connections over CAT 5, refer to the latest version of the Crestron CAT 5 Wiring Reference Guide (Doc. 6137) which is available from the Downloads | Product Manuals section of the Crestron website (www.crestron.com).

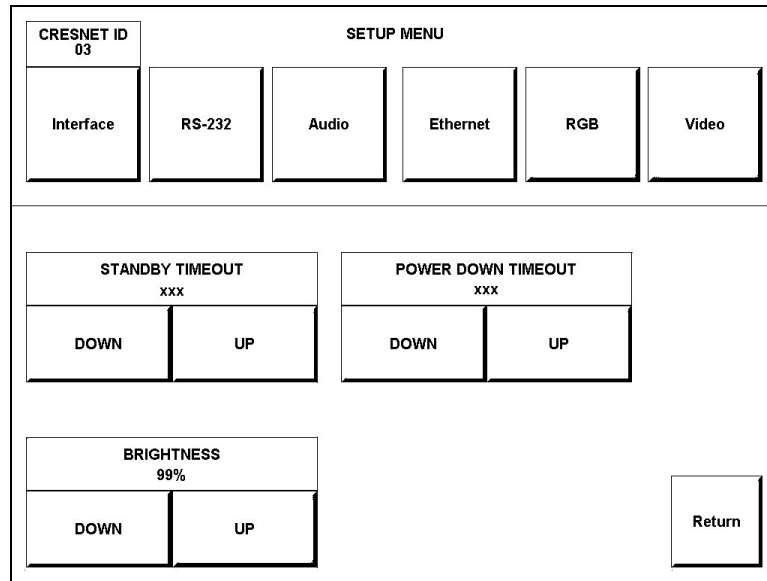
14. Re-connect all cables to the appropriate ports on the rear of the touchpanel.

Setup

Configuring the Touchpanel

NOTE: Refer to the latest revision of the TPS-4500, TPS-5000, or TPS-6000 Operations & Installation Guide (Doc. 5891, 5863, or 5864, respectively) for instructions to access the touchpanel setup screen. The latest version of the operations guide can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com).

1. From the MAIN MENU, select the **SETUP** button to access the touchpanel SETUP MENU.

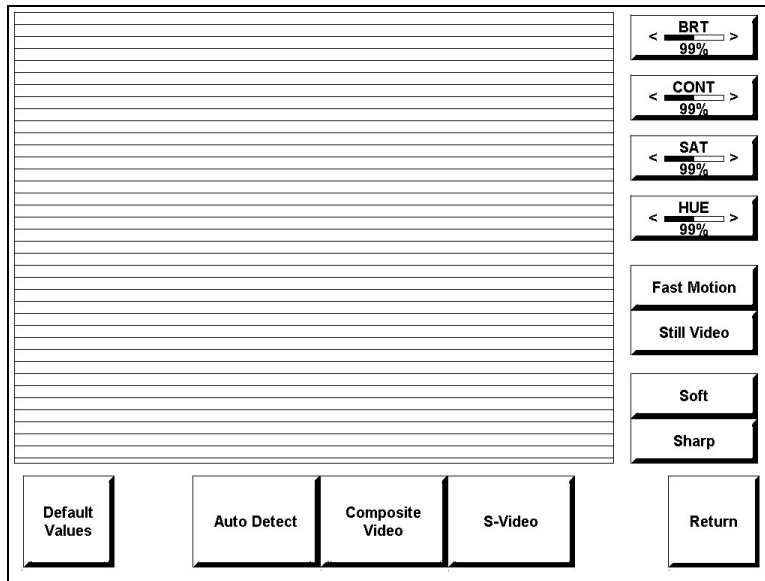
SETUP MENU (TPS-VID-1 shown)

NOTE: If the TPS-VID-1 is installed, a single “Video” button will be displayed. If the TPS-VID-2 is installed, buttons labeled “Video 1” and “Video 2” will be displayed instead of the single “Video” button.

NOTE: If the video card is not properly installed, the “Video” button(s) will not be displayed.

2. Select the **Video** button from the SETUP MENU to set preferences for the video source. If a TPS-VID-2 is installed, buttons labeled “Video 1” and “Video 2” will be displayed instead of the single Video button. Select the appropriate “Video” button to set preference for the video source.

Video Setup



3. The touchpanel can be configured to auto-detect the signal type (S-Video or Composite) coming in to the touchpanel or can be set to a specific signal type (S-Video or Composite). Select the appropriate signal type.

NOTE: When configuring the TPS-VID-2, the Video 1 signal type can be automatically detected as long as one signal is sent to the touchpanel.

NOTE: A solid blue screen is displayed in the video window if a video signal is not detected or is very weak. Verify that the video source is functioning and properly connected. If the source is properly connected and functioning, a distribution amplifier may need to be used.

4. Select the preferences for the video signals appearance. Refer to the following table for further information.

Video Setup Details

VIDEO SCREEN BUTTONS	DESCRIPTION
Brightness	Use to increase or decrease image brightness.
Contrast	Use to increase or decrease image contrast.

(continued on next page)

Video Setup Details (continued)

VIDEO SCREEN BUTTONS	DESCRIPTION
Saturation	Use to increase or decrease image saturation.
Hue	Use to shift the color balance.
Fast Motion / Still Video (toggle)	The Fast Motion setting eliminates motion artifacts caused by the difference between the first and second halves of a video field and softens the image. The Still Video setting yields a much sharper image, however, motion artifacts may occur if fast moving objects are displayed.
Soft / Sharp (toggle)	Used to soften images that are too sharp or sharpen video images that are too soft.
Default	Returns you to the default settings* .
Return	Saves the settings and returns to the SETUP MENU

* Video default is 50% for each of the video parameters (brightness, contrast, saturation, and hue) fast motion, sharp picture, and Composite Video on BNC connector

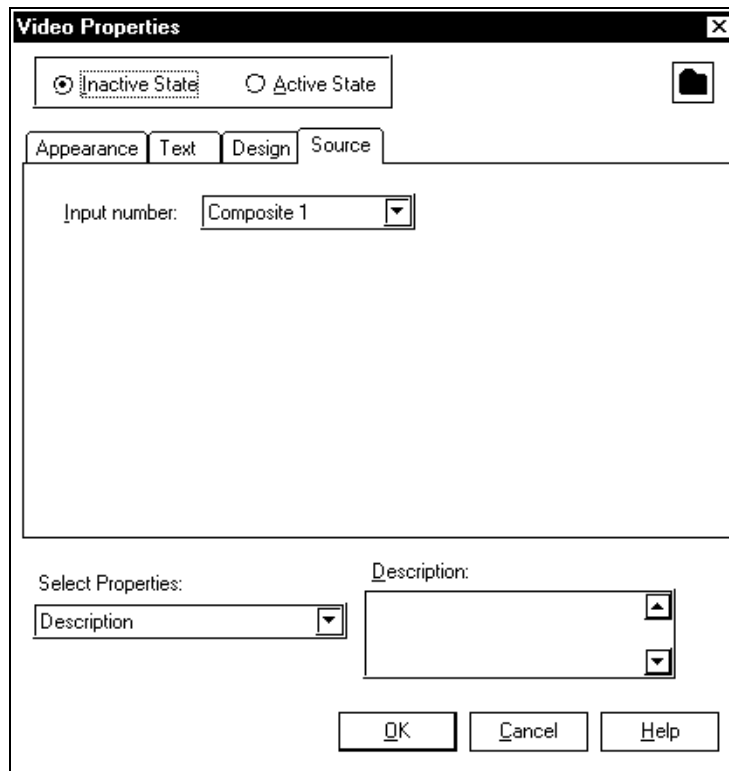
5. Select the **Return** button to save settings and return to the SETUP MENU.

VT Pro-e Setup

A video window object must reside on a page within the uploaded VT Pro-e touchpanel project and the TPS-VID-1 or TPS-VID-2 must be properly installed into the touchpanel in order for video signals to be displayed.

When using the TPS-VID-2, the video window object properties must have the video source specified in the *Input number* field (“Composite 1” for Video 1 or “Composite 2” for Video 2) of the *Source* tab. Refer to the following illustration that shows selection of the video source.

Selecting the Video Source



NOTE: If the card is not present, the Crestron Viewport displays a warning message during the upload and the video window remains blank. For further information regarding video window objects, refer to the VT Pro-e help file.

SIMPL Windows Setup

The touchpanel does not require special programming in SIMPL Windows to display video.

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-VID-1/VID-2 Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Video window touchpanel has no display.	Improper video connection.	Verify proper connections on the touchpanel
	Incorrect video cable used.	Verify that the 10-pin Net/Video cable assembly is used to connect the NET/VIDEO port of the touchpanel to the TPS-IMC (or equivalent)
	Incorrect video format selection.	Select the proper video input configuration in the touchpanel configuration SETUP MENU.
	Incorrect firmware/software.	Update firmware/software versions as per "Specifications".
	Incorrect VT Pro-e project file loaded.	Make sure that video window object resides in project, re-compile, and reload.
	TPS-VID-1/2 improperly installed.	Follow installation procedures in this guide.
	Damaged connector pins.	Inspect connector pins. If bent, carefully re-straighten. If broken, contact Crestron customer service.

(continued on next page)

TPS-VID-1/VID-2 Troubleshooting (continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Video colors are wrong and/or moving	Touchpanel is set to Auto-Detect or S-Video when two composite signals plugged into TPS-IMC.	Switch to “Composite” video.

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-VID-1 or TPS-VID-2, 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.

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.

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Specifications subject to
change without notice.