Crestron **TPS-IMC-BV**
Interface Module
Operations Guide

CRESTRON

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Contents

Interface Module: TPS-IMC-BV

Description

Functional Description

The TPS-IMC-BV is designed specifically to serve as an interface module for those Crestron TPS-5000 and TPS-6000 tilt touchpanels that have the RGB Computer Interface Card, TPS-XVGA-BV, installed.

A tilt touchpanel is not a stationary user interface; it is impractical to have an excessive amount of cable connections directly to the panel. The design of an interface module provides a multitude of interconnections for the versatile touchpanel. More importantly, this module may be favored in comparison to other interface modules because it minimizes the number of cables attached to the touchpanel and provides balanced video. The TPS-IMC-BV eliminates the need for up to three cables for a "fully-loaded" touchpanel.

Physical Description

The TPS-IMC-BV, shown on the next page, is an optional interface. It is only required when the TPS-XVGA-BV is installed into the touchpanel. The module is housed in a black enclosure with silk-screened top panel. Network, video, and audio connections are available at the longer sides of the unit. At the shorter sides, the enclosure extends to form feet at a right angle to the side. There are three holes per foot for inserting screws to further stabilize the unit to a mounting surface.

I/O Ports

There are 12 I/O ports available on the TPS-IMC-BV; not all ports require a connection. Refer to the diagram on the next page and the following bulleted items for descriptions of each port.

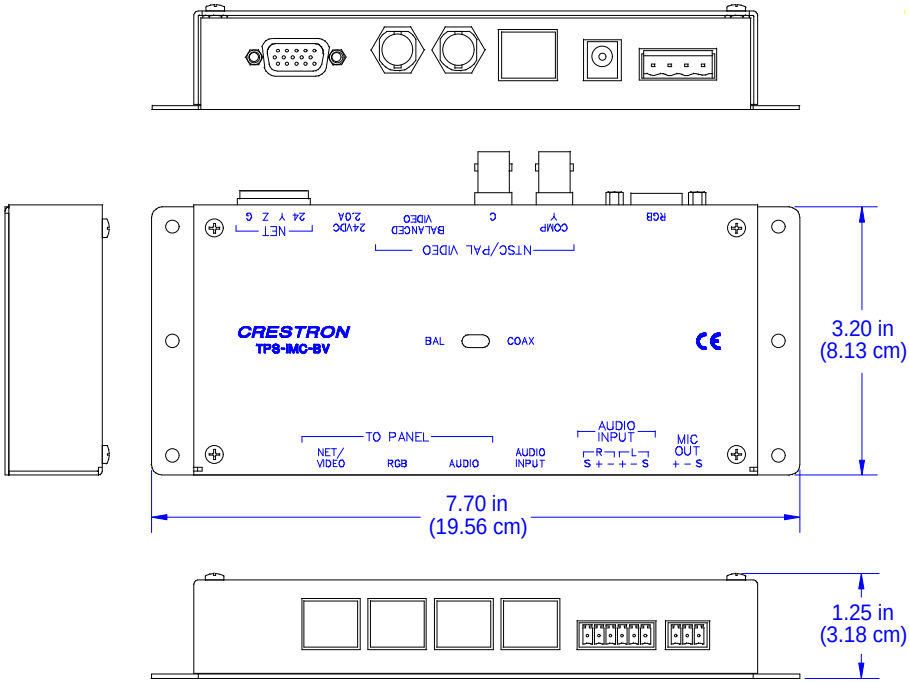
- RGB – This DB15F port connects to the PC video port and is functional with the purchase and installation of the TPS-XVGA-BV, RGB Computer Interface Card. Consult the latest revision of the TPS-XVGA-BV Operations & Installation Guide (Doc. 5920) for details.
- NTSC/PAL VIDEO – These three ports connect to a video source and are only necessary with the purchase and installation of the TPS-VID,

composite and S-video input for TV video card. Consult the latest revision of the TPS-VID Operations & Installation Guide (Doc. 5869) for details. Use either the two BNC connectors (unbalanced video) or the eight-pin RJ45 connector (balanced video) when connecting to a video source. Description of the pinouts for the RJ45 is shown in the table after this paragraph. Depending on which connector is used, toggle the BAL/COAX switch, centrally located on the top face, accordingly.

BALANCED VIDEO Pinouts (RJ45 Port)

PIN #	DESIGNATION	DESCRIPTION
1	N/C	Not Connected
2	N/C	Not Connected
3	C+	Chrominance (Positive)
4	Y+	Luminance (Positive)/Composite
5	Y-	Luminance (Negative)/Composite
6	C-	Chrominance (Negative)
7	N/C	Not Connected
8	N/C	Not Connected

Physical Views of the TPS-IMC-BV



- 24VDC 2.0A – This direct current (DC) power socket connector is used to supply power to the touchpanel via the external power pack. Use of this connector and power pack is optional and depends on whether network power is available. If necessary, connect an external power pack to the stationary interface module rather than the touchpanel directly. Crestron recommends specific power packs for its devices. The supplied power pack for the TPS-IMC-BV is Crestron part number **PW-2420RU**. If a power pack other than this crestron model is obtained, verify that it meets the required specifications and polarity as shown after this paragraph.

Power Pack Specifications

CRESTRON POWER PACK	OUTPUT SPECS
PW-2420RU	24VDC 2A, regulated

Power Pack Output Connector Polarity

- NET – This four-pin connector is used to connect to other four-wire devices in the Cresnet system. If making network connections to control system or Cresnet peripherals, refer to "Network Wiring" on page 5.
- NET/VIDEO – This 10-position RJ45 mates with the TPS-5000 or TPS-6000 touchpanel and has a dual purpose. Refer to the descriptions and pinout table that follow this paragraph. A Triamese cable (15884) is supplied with the TPS-XVGA-BV.

  1. This port provides network connection to the touchpanel.

  2. This port also makes available composite and S-video input for TV video card (with the purchase and installation of the TPS-VID). Consult the latest revision of the TPS-VID Operations & Installation Guide (Doc. 5869) for details.

NET/VIDEO Pinouts

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)

- RGB – This 10-pin RJ45 port connects to the panel and is made active with the purchase and installation of the TPS-XVGA-BV, RGB Computer Interface Card. Consult the latest revision of the TPS-XVGA-BV Operations & Installation Guide (Doc. 5920) for details. A Triamese cable (15884) is supplied with the TPS-XVGA-BV. Description of the pinouts is shown in the table after this paragraph.

RGB to the Panel Pinouts (RJ45 Port)

PIN #	DESIGNATION	DESCRIPTION
1	V-	Vertical Sync (Negative)
2	H-	Horizontal or Composite (Negative)
3	R-	Red Video (Negative)
4	R+	Red Video (Positive)
5	G-	Green Video (Negative)
6	G+	Green Video (Positive)
7	B-	Blue Video (Negative)
8	B+	Blue Video (Positive)
9	H+	Horizontal or Composite (Positive)
10	V+	Vertical Sync (Positive)

- AUDIO – This 8-position RJ45 mates with the TPS-5000 or TPS-6000 touchpanel. A Triamese cable (15884) is supplied with the TPS-XVGA-BV. This port provides audio input to the touchpanel and mic out from the touchpanel to audio amplifiers. Description of the pinouts is shown in the table after this paragraph.

AUDIO Pinouts

PIN #	DESCRIPTION
1	Audio Shield
2	Audio Left +
3	Audio Left -
4	Audio Right +
5	Audio Right -
6	Mic Out Shield
7	Mic Out +
8	Mic Out -

- AUDIO INPUT – This port is designed for future use. This 8-pin RJ45 port mates with an audio switcher, if available. Description of the pinouts is shown in the table after this paragraph.

AUDIO INPUT Pinouts (RJ45 Port)

PIN #	DESCRIPTION
1	Mic +
2	Mic -
3	Mic +
4	Audio Left +
5	Audio Left -
6	Mic -
7	Audio Right +
8	Audio Right -

- AUDIO INPUT – The port mates with a six-pin connector, supplied, and provides differential/single ended audio input and output. Description of the pinouts is shown in the table after this paragraph.

AUDIO INPUT Pinouts (6-Pin Port)

PIN	DESCRIPTION
S	Shield
R+	Right Positive
R-	Right Negative
L+	Left Positive
L-	Left Negative
S	Shield

- MIC OUT – The port mates with a three-pin connector, supplied, and produces line level differential output. Description of the pinouts is shown in the table after this paragraph.

MICROPHONE Pinouts

PIN	DESCRIPTION
M+	Positive
M-	Negative
S	Shield

BAL/COAX Video Switch

A single two-position toggle switch is centrally located on the top panel of the TPS-IMC-BV. Each position is labeled on the unit. Use the switch to select between balanced video (BAL) and unbalanced video (COAX).

Leading Specifications

The table after this paragraph provides a summary of leading specifications for the TPS-IMC-BV. Dimensions and weight are rounded to the nearest hundredth unit.

Leading Specifications for the TPS-IMC-BV

SPECIFICATION	DETAILS
Dimensions	Height: 3.20 in (8.13 cm) Width: 7.70 in (19.56 cm) Depth: 1.25 in (3.18 cm)
Weight	1.15 lb (0.52 kg)

As of the date of manufacture, the TPS-IMC-BV has been tested and found to comply with specifications for CE marking.

CE

Setup

Network Wiring

NOTE: When making wire connections, refer to the latest revision of the Cresnet Network Interconnect Drawing (Doc. 5411). The document can be obtained from the Downloads page (CABLES and MANUAL Libraries) of the Crestron website (www.crestron.com). Search for the CRESNET.PDF files.

When calculating the wire gauge for a particular network run, the length of the run and the power factor of each network unit to be connected must be taken into consideration. If network units are to be daisy-chained on the run, the power factor of each network unit to be daisy-chained must be added together to determine the power factor of the entire chain. The length of the run in feet and the power factor of the run should be used in the following resistance equation to calculate the value on the right side of the equation.

Resistance Equation

$$R < \frac{40{,}000}{L \times PF}$$

Where: R = Resistance (refer to table below).
L = Length of run (or chain) in feet.
PF = Power factor of entire run (or chain).

The required wire gauge should be chosen such that the resistance value is less than the value calculated in the resistance equation. Refer to the table after this paragraph.

Wire Gauge Values

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	24 (Doubled-CAT 5)

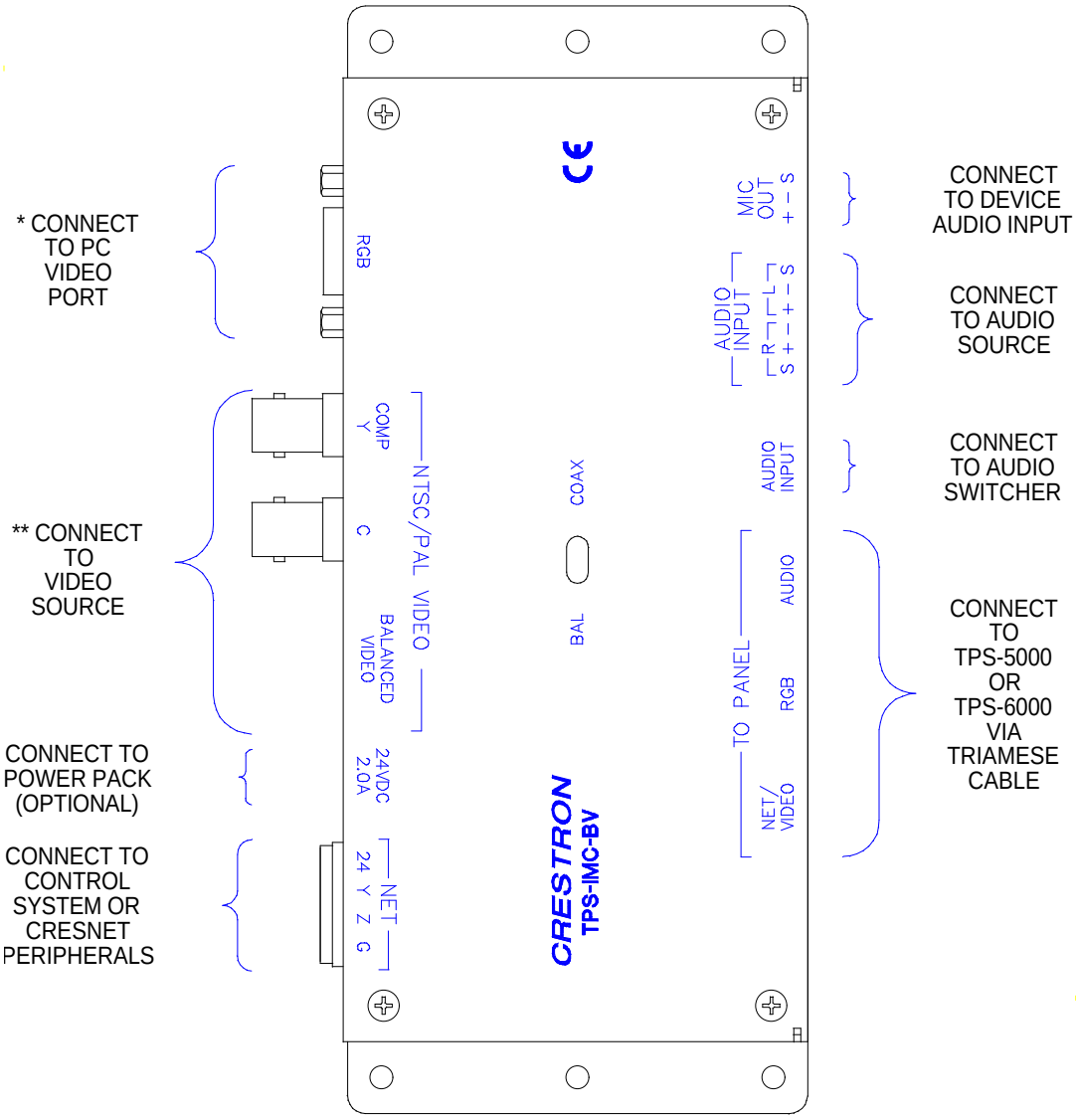
NOTE: All network wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

NOTE: When daisy chaining network units, always twist the ends of the incoming wire and outgoing wire which share a pin on the network connector. After twisting the ends, tin the twisted connection with solder. Apply solder only to the ends of the twisted wires. Avoid tinning too far up or the tinned end becomes brittle and breaks. After tinning the twisted ends, insert the tinned connection into the network connector and tighten the retaining screw. Repeat the procedure for the other three network conductors.

Hardware Hookup

The TPS-IMC-BV serves as an interface between the touchpanel and the Cresnet system. Refer to the illustration after this paragraph for proper connections; apply power last. When making network connections to the control system or Cresnet peripherals, refer to "Network Wiring" on page 5. It is not necessary to make connections to a video source or PC video port unless the TPS-VID or TPS-XVGA-BV, respectively, has been installed into the touchpanel. Connections to video source also require that a video window object reside on a page within the uploaded VisionTools™ Pro-e project.

Hardware Hookup for the TPS-IMC-BV



* Connect to a PC video port only if the TPS-XVGA-BV expansion card is installed in the touchpanel.

** Connect to a video source only if the TPS-VID expansion card is installed in the touchpanel. The BNC connectors and RJ45 connector are connected in parallel. Use one or the other. For unbalanced video, use the coax cable connectors. For balanced video, use the RJ45.

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-IMC-BV Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Touchpanel does not function.	Touchpanel is not communicating to the network.	Use Performance Viewport (via SIMPL Windows or VT Pro-e) to poll the network. Verify network connection to the touchpanel.
	Touchpanel is not receiving network power.	Confirm that power is supplied via the network connection or the external power pack.
Touchpanel is not responding and screen displays "Network Poll Error" message.	Incorrect network wiring.	Touch screen to remove message and verify correct wiring to all connectors.

Further Inquiries

If after reviewing this Operations Guide for the TPS-IMC-BV, 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] or 1-201-767-3400.
- 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 +525-260-4336.

For local support from exclusive Crestron factory-trained personnel call:

- In Australia, call Soundcorp at +613-9488-1555.
- In New Zealand, call Amber Technologies at +649-410-8382.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the TPS-IMC-BV, 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.

The Downloads page of the Crestron website (www.crestron.com) directs the reader to the location and description of each update. Check the site periodically for update availability and its subjective value.

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 Cresnet products, denoted by a "CN" prefix model number, to be free from manufacturing defects in materials and workmanship for a period of three (3) years from the date of shipment to purchaser. Disk drives and any other moving or rotating mechanical parts are covered for a period of one (1) year. CRESTRON warrants all its other products for a period of one year from the defects mentioned above, excluding touchscreen display components which are covered for 90 days. Incandescent lamps are completely excluded from Crestron's Limited Warranty. 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.

CRESTRON shall not be liable to honor warranty terms 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 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 makes no other warranties nor authorizes any other party to offer any warranty, expressed or implied, including warranties of merchantability for this product. This warranty statement supersedes all previous warranties.

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