

Crestron **IM-TCC**
iMedia Table Mount Computer Center
Operations & Installation Guide



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iMedia Table Mount Computer Center: IM-TCC

Introduction

Features and Functions

The IM-TCC is part of the Crestron® iMedia line of network devices, room control systems and signal routing solutions. The line of IM devices currently includes two receivers, IM-RX1 and IM-RX3, and three transmitters, IM-WCC, IM-TCC, and IM-FTCC-B.

The iMedia Table Mount Computer Center supports a single computer video and audio connection mounted to the underside of a table. Mounting brackets are included.

This device uses iMedia (IM) technology utilizing a single CresCAT-IM cable to transmit computer RGB and stereo audio signals to a single projector or plasma display. A typical XGA signal (1024 X 768 pixels at 60 Hz) can be transmitted up to 84 feet using iMedia, while higher resolutions up to 1600 x 1200 can be handled over shorter distances. Audio is transmitted digitally at 20-bit, 48 kHz resolution. To facilitate connection of audio, video, and computer equipment, all media, power and control signals are routed via a single CresCAT-IM cable for an uncomplicated installation.

NOTE: The IM-TCC is not a Cresnet® device.

Functional Summary

- One computer RGB input connector
- One computer audio input connector
- One iMedia RJ-45 output connector (on the rear side)
- Power on/off SELECT button and indicator
- Rotary local volume control

The iMedia System

Using a new, proprietary signal routing solution, RGBHV, audio, power and control signals are all transported using a single cable solution called iMedia.

The iMedia transport system port is capable of managing computer RGB and audio signals simultaneously through one CresCAT-IM wire, simplifying installations.

Routing CresCAT-IM cable is less expensive and much simpler than routing multi-colored, multi-conductor coax cable. All Crestron products using the iMedia transport system are capable of sending and receiving iMedia signals via CresCAT-IM cable. Installation of any iMedia device is as simple as installing one iMedia cable from output to input. Installations are flexible, affordable, and fast.

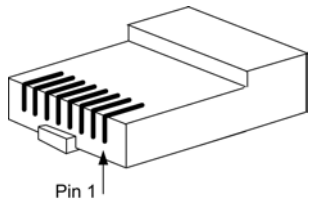
Up to three iMedia transmitters can be installed in an iMedia system. Pressing the SELECT button on any iMedia transmitter makes that input active, overriding the previously selected input. Holding the SELECT button for five seconds powers down the system.

The pin assignment is based on the EIA/TIA 568B RJ-45 Jack standard.

Power is supplied to the IM transmitters via the audio circuit.

To determine which pin is number 1, hold the cable so that the end of the eight pin modular jack is facing you, with clip down and copper side up. When looking down at the copper connections, pin 1 is on the far right.

iMedia Pin Assignment

RJ-45 Male Connector	RJ-45 Pin Number	Wire Colors	iMedia Assignment RGB and Audio
	1	White/Orange	- RGB Red
	2	Orange	+ RGB Red
	3	White/Green	- RGB Green
	4	Blue	+ Audio/Power
	5	White/Blue	- Audio/Power
	6	Green	+ RGB Green
	7	White/Brown	- RGB Blue
	8	Brown	+ RGB Blue

NOTE: Power is supplied to pins 4 and 5 from the IM-RX1 or IM-RX3.

Signal Selection

The VGA signal connected to the IM transmitter is delivered to the display device (e.g., projector) via the RGBHV output of an IM receiver (IM-RX1 or IM-RX3). Each IM transmitter possesses a SELECT button, which activates that input. The receiver automatically routes the last activated input to the RGB output and deactivates any prior selection. In addition, the display's power and input selection commands can be controlled via the IR or COM port.

Video Resolution and Cable Length

The receiver can accomplish frequency compensation on each input to achieve correct operation. This compensation scheme is effective for CresCAT-IM cables as long as the maximum skew of 15 ns per 100 m is not exceeded.

Maximum Resolution and Cable Length

RESOLUTION	REFRESH RATE (HZ)	PIXEL RATE (MHZ)	PIXEL TIME (NS)	MAX LENGTH (FEET)
VGA (640 X 480)	60	25.18	39.7	218.5
	72	31.50	31.7	174.6
	85	36.00	27.8	152.8
SVGA (800 X 600)	56	36.00	27.8	152.8
	72	50.00	20.0	110.0
	85	56.25	17.8	97.8
XGA (1024 X 768)	60	65.00	15.4	84.6
	70	75.00	13.3	73.3
	85	94.50	10.6	58.2
SXGA (1280 X 1024)	60	108.00	9.3	50.9
	75	135.00	7.4	40.7
	85	157.50	6.3	34.9
UXGA (1600 X 1200)	60	162.00	6.2	34.0
	70	189.00	5.3	29.1
	85	229.50	4.4	24.0

Specifications

Specifications for the IM-TCC are given in the following table.

IM-TCC Specifications

SPECIFICATION	DETAILS
Connectors	
Computer Input	(1) DB15HD Female
Computer Audio	(1) 3.5mm Mini-Jack, Computer Soundcard Type
iMedia Output	(1) RJ-45 CAT5E/CAT6
Ground	(1) Ground Terminal
Video Formats	RGBHV (VGA), RGBS, and RGsB
RGB Video	R/G/B: 0 dB (Unity gain, 75 Ω termination), for 1.0 V _{p-p} max input. Input Impedance 75 Ohms.
Gain / Bandwidth	Supports videos up to XGA @ 60 Hz vertical rate with maximum cable length of 84 feet and maximum compensation at receiver. For higher pixel resolutions (up to 1600 X 1200 pixels at 60 Hz vertical rate) refer to the chart on page 3.
H and V Sync	5 V _{p-p} max into 1 K Ohm
Computer Associated Audio	
Max. Line level input	2 V _{RMS}
Input Impedance	10 K Ohm
Level / Bandwidth	Audio Bandwidth 20 Hz to 20 KHz

Continued on the following page

IM-FTCC-B Specifications (continued)

SPECIFICATION	DETAILS
Audio Analog/Digital conversion	20-bit, 48 kHz
Frequency Response	20 Hz to 20 kHz
Operating Temperature and Humidity	41° to 104° F (5° to 40° C) 10 to 90% relative humidity (non-condensing)
Dimensions and Weight	Width: 6.61 in (16.79 cm) Height: 1.50 in (3.80 cm) Depth: 3.05 in (7.75 cm) Weight: 1.0 lbs (0.46 kg)

Physical Description

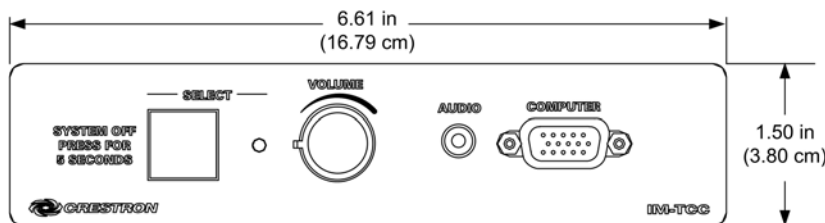
The IM-TCC is enclosed in a metal housing. The front and rear sides are labeled. The front side includes; one SELECT button, one VOLUME control, one COMPUTER DB15HD female connector and one AUDIO mini-jack connector. The rear side includes an IM connector and a ground connector.

Refer to the following physical views.

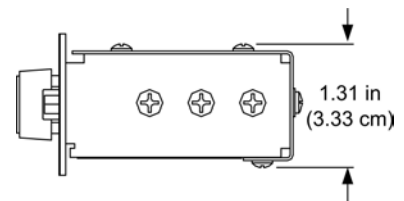
IM-TCC Front View – Shown with Mounting Brackets



Physical Dimensions - Front View



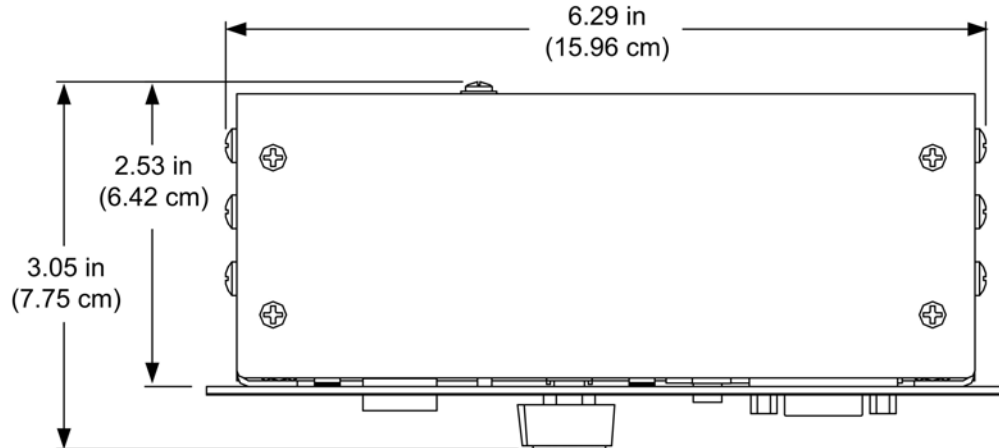
Side View



Rear View

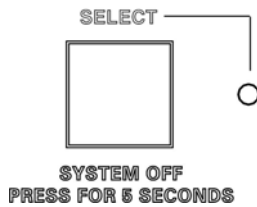


Top View



Ports and Controls

Select Button



The IM-TCC has one momentary SELECT button and a power on/selected green LED indicator. Press to turn on the system and select this transmitter as the input to the iMedia receiver (IM-RX1 or IM-RX3). Press and hold for five seconds to power down the system. The LED blinks while powering down. When the LED stops blinking and the button is released, the unit powers down.

Volume Control



The IM-TCC has a rotary local volume control. Adjusting this knob sets the audio level for the local input.

AUDIO

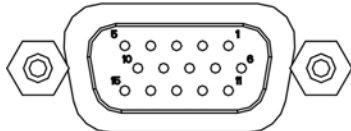


AUDIO

The 3.5 mm computer audio connector provides an unbalanced stereo line-level audio input.

- Maximum input level 2 V_{RMS}
- Input impedance 10k Ohms

COMPUTER



COMPUTER

This female DB15HD connector is used for connecting a computer’s RGB video output to the display device. A corresponding 3.5mm mini-jack is provided for the computer sound card output.

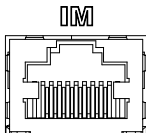
- Maximum input voltage 1.0 V_{p-p} (R/G/B), 5.0 V_{p-p} (H/V)
- Input Impedance 75 Ohms (R/G/B), 1 k Ohms (H/V)

Refer to the following table for pin-assignments.

RGB DB15HD Pin Assignments

PIN	FUNCTION	PIN	FUNCTION
1	Red Video	9	No Connect
2	Green Video	10	Ground
3	Blue Video	11	No Connect
4	Reserved	12	Monitor Sense 1
5	Ground	13	Horizontal Sync
6	Red Ground	14	Vertical Sync
7	Green Ground	15	Monitor Sense 2
8	Blue Ground		

IM



This eight-pin RJ-45 transport port allows connection of the iMedia cable. It carries audio and video signals over CresCAT-IM cable to an iMedia receiver (IM-RX1 or IM-RX3). For more information on iMedia cable length refer to the chart on page 3.

NOTE: Always use CresCAT-IM cable to make iMedia connections.

Industry Compliance

As of the date of manufacture, the IM-TCC has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



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.

Setup

Network Wiring

CAUTION: In order to ensure optimum performance over the full range of your installation topology, Crestron Certified Wire, and only Crestron Certified Wire, should be used. Failure to do so, may incur additional charges if support is required to identify performance deficiencies as a result of using improper wire.

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty

Installation

The IM-TCC is designed to mount to the underside of a horizontal surface, such as a desktop, lectern, or podium, in a cutout area.

Tools Required

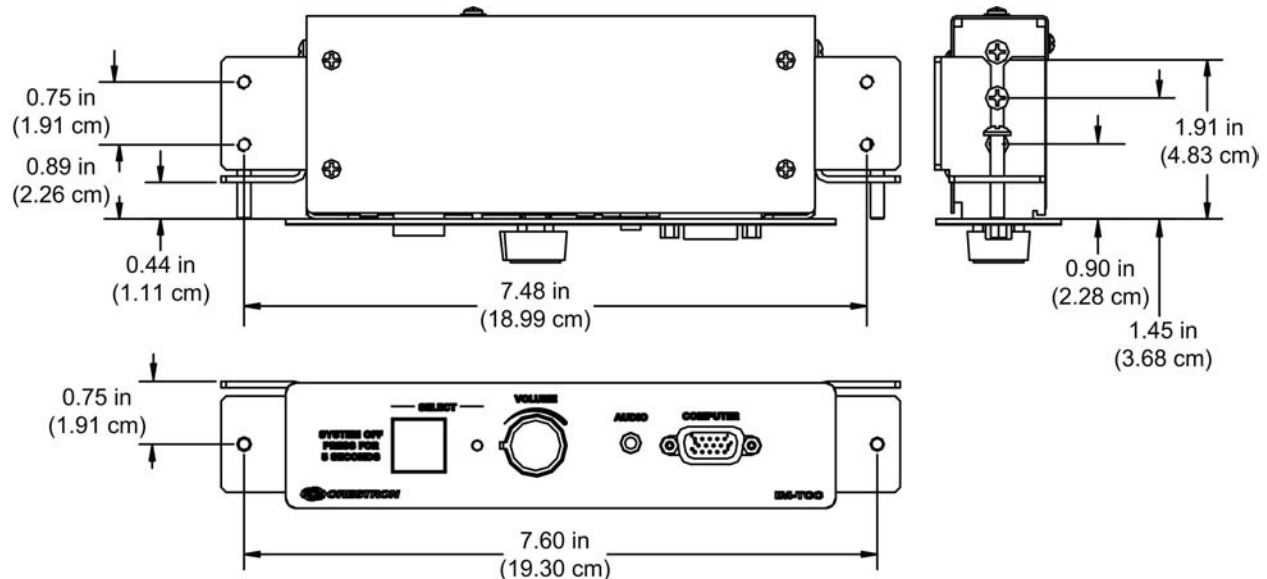
- Phillips screwdriver
- Small flat-blade screwdriver (for connecting the VGA cable)

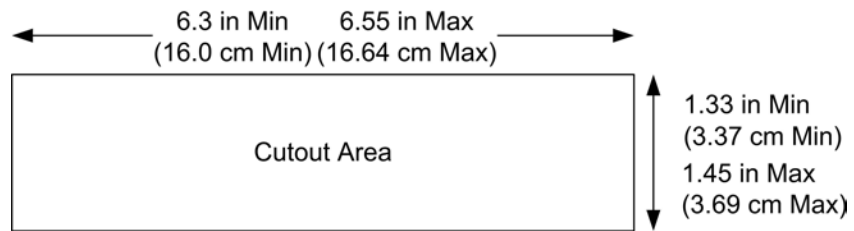
NOTE: The IM-TCC mounting brackets can accommodate virtually any thickness.

Mounting Parts Supplied with the IM-TCC

PART DESCRIPTION	QUANTITY
Screw #8-32 x 1 in, Pan Head, Phillips	4
Mounting Bracket, Right (2012702)	1
Mounting Bracket, Left (2012704)	1

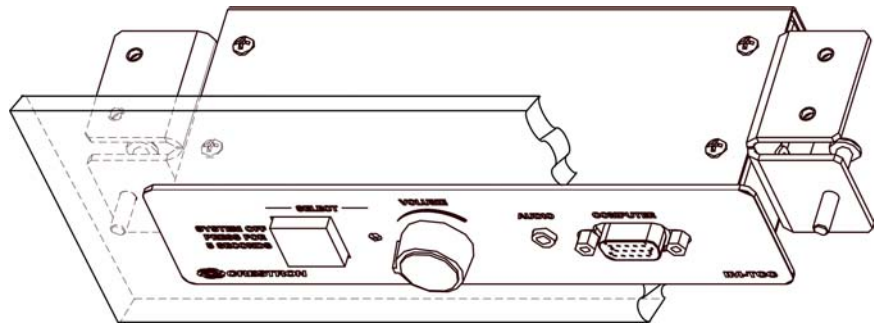
Bracket Dimensions



Cutout Diagram

1. Position the IM-TCC in the mounting hole or in the underside location.
2. Install the left and right brackets using the cover screws provided.
(Note that steps 1 and 2 should be reversed for an underside location installation.)
3. For cutout mounting, install the supplied #6-32 screws and tighten the screws equally until they contact the backside of the mounting surface.
For underside location mounting, use four #6 hardware (not supplied) to secure the unit to the underside of the surface.

NOTE: Do not over-tighten the screws as this may damage the surface and/or the unit.

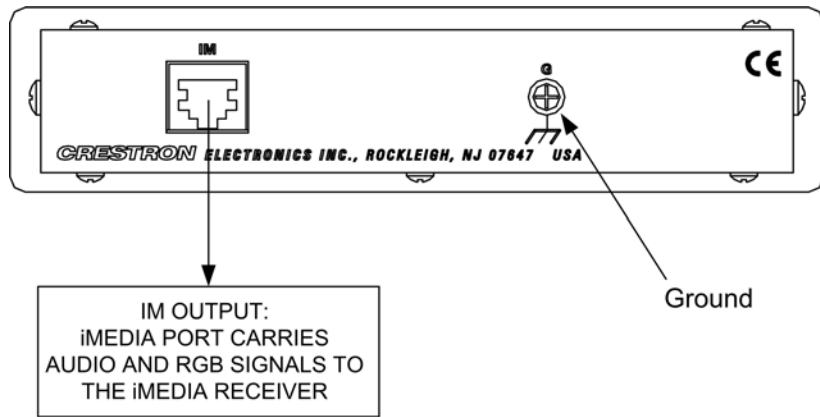
Cutaway View of Cutout Mounting**Hardware Hookup**

Refer to the following hookup diagram and, aside from attaching power last, complete the connections in any order.

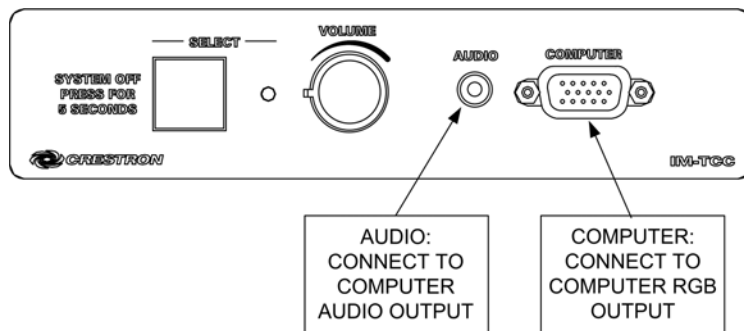
NOTE: To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the specifications table. Consideration must be given if installed in a closed or multi-unit rack assembly, inside a closed desk, or in a closed podium since the operating ambient temperature of these environments may be greater than the room ambient. Contact with thermal insulating materials should be avoided on all sides of the unit.

NOTE: The maximum continuous current from equipment under any external load conditions shall not exceed a current limit that is suitable for the minimum wire gauge used in interconnecting cables. The ratings on the connecting unit's supply input should be considered to prevent overloading the wiring.

Rear Connections



Front Connections



System Configuration

Refer to the latest version of the IM-RX1 & IM-RX3 Operations and Installation Guide (Doc. 6384) available from the Crestron website (<http://www.crestron.com/manuals>) for detailed IM system configuration instructions.

Problem Solving

Troubleshooting

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

IM-TCC Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
PWR LED does not illuminate.	Not receiving power.	Verify that the iMedia cable and the AC cable are properly attached.
	Incorrect power supply.	Only use Crestron power supplies.
No video output displayed.	Incorrect cable connection.	Verify computer cable connection.
		Verify iMedia output cable connection is secure.
Video from RGB source is garbled or no output.	Incorrect cable connections.	Verify 15-pin computer cable connection. Verify iMedia output cable connections.
		Verify maximum iMedia cable length.
Button does not function when pressed.	Incorrect cable connection.	Verify that the iMedia output cable connection is secure.
Other functions operate, but does not control the projector.	Connections to projector.	Verify cable wiring and connections between receiver and projector.

Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling the Crestron corporate headquarters at 1-888-CRESTRON [1-888-273-7876]. For assistance in your local time zone, refer to the Crestron website (www.crestron.com) for a listing of Crestron worldwide offices.

You can also log onto the online help section of the Crestron website to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the IM-TCC, 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 periodically for manual update availability and its relevance. Updates 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, 6 Volvo Drive, Rockleigh, N.J. 07647, 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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change without notice.