

Crestron **IM-WCVI-M**
iMedia Wall Plate Computer & Video
Center Interface

Operations & Installation Guide



This document was prepared and written by the Technical Documentation department at:



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iMedia Wall Plate Computer & Video Center Interface: IM-WCVI-M

Introduction

The IM-WCVI-M is the interface panel portion of a complete IM-WCCV-S-M iMedia Wall Plate Computer & Video Center. The IM-WCCV-S-M includes one (1) IM-WCVI-M and one (1) IM-WCVP-M control panel. These two components are designed to function together as a single product and cannot be used individually.

Features and Functions

- Separate interface panel for use with the IM-WCVP-M iMedia Wall Plate Computer & Video Center Control Panel¹
- Connects to IM-WCVP-M to create IM-WCCV-S-M Wall Plate Computer Center with Video using CresCAT™-IM iMedia cable (up to 40 feet)²
- Connects PC and composite video (with audio) sources to iMedia systems
- Mounts in a standard, 2½ inch deep, double-gang electrical box

1. The IM-WCVI-M is part of the IM-WCCV-S-M. It must be used with the IM-WCVP-M.
2. For more information on CresCAT-IM cable, refer to “IM Wiring” on page 8.

The iMedia Transport

The iMedia transport utilizes a single CAT5e* type cable to transmit computer RGB, video, and stereo audio signals to a single projector or plasma display. A typical XGA signal (1024 X 768 pixels at 60Hz) 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. Control and power signals are also contained on the same wire, eliminating the need for separate control or power cables.

- * For optimum performance, Crestron strongly recommends using CRESCAT-IM cable, available from Crestron. Other high-quality/low skew (15 ns per 100 m maximum) CAT5e/CAT6 wiring may also be used with varying performance.

2-Piece Wall Plate Multimedia Interface

The IM-WCCV-S-M is an iMedia (IM) transmitter featuring separate wall plates for interface and control. The interface panel (IM-WCVI-M) is designed to install in a standard 2-gang electrical box, providing video, RGB, and stereo audio inputs for connection to the output of a computer or AV source. The control panel (IM-WCVP-M) is a separate 1-gang wall plate, which may be installed up to 40 feet from the interface panel.

Installing wiring for the IM-WCCV-S-M is extremely simple using CRESCAT-IM cable. Up to three IM-WCCV-S-Ms, or other IM transmitters, may be installed as part of a complete system to provide multiple input locations within the room.

Foolproof Operation

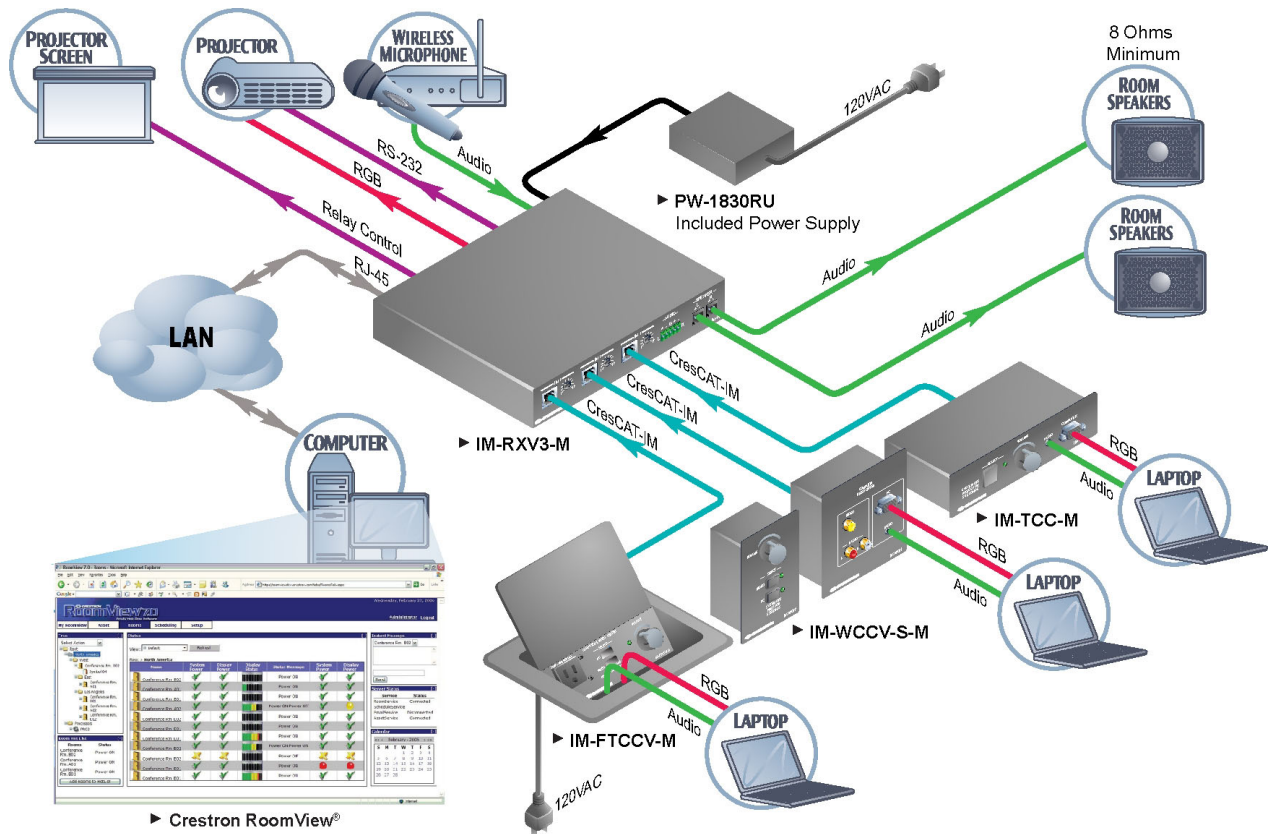
Every iMedia system is easy and intuitive to use. A simple press of the **VIDEO** or **PC** buttons on the control panel selects the appropriate input, turns on the projector (or plasma, etc.), lowers the screen or lift, and routes all the signals where they need to go. The volume control affords easy adjustment of the audio level and the microphone level (when connected to IM-RXV1-M or IM-RXV3-M). The entire system can be turned off at any time by simply holding down either button for five seconds.

For systems having more than one IM transmitter, selecting an input at a given input location overrides the previously selected input at any other location. The audio level for each input location is controlled individually by its respective volume control.

Application

The IM-WCVI-M is part of the IM-WCCV-S-M iMedia transmitter. As shown in the following diagram, iMedia transmitters provide input points for video and PC sources on an iMedia receiver.

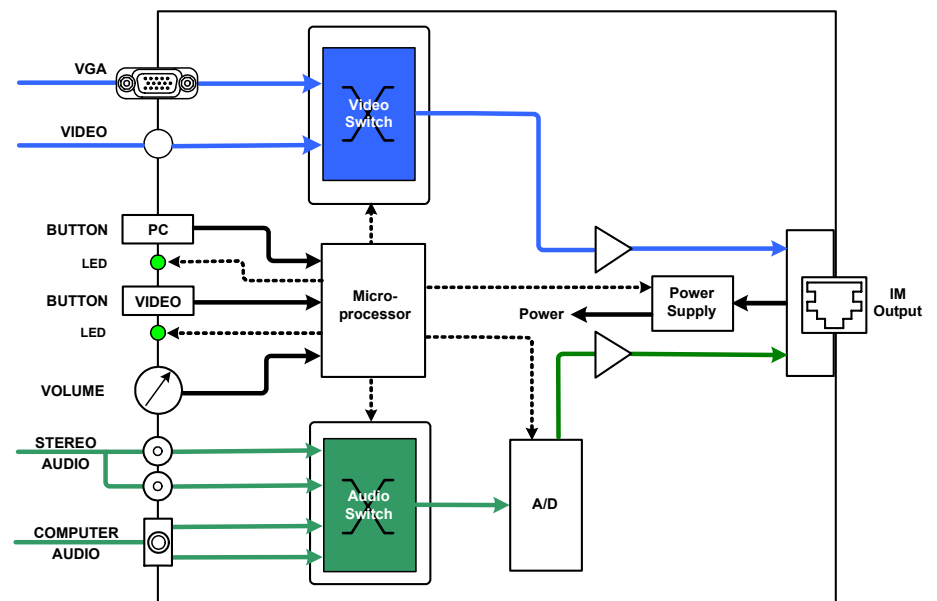
iMedia System Diagram



Internal Block Diagram

The following diagram represents the abilities of the IM-WCCV-S-M.

Internal Block Diagram of the IM-WCCV-S-M



Specifications

Specifications for the IM-WCVI-M are listed in the following table.

IM-WCVI-M Specifications

SPECIFICATION	DETAILS
Video Formats RGB Video Gain Resolutions Composite Video Gain	RGBHV (VGA), RGBS, RG _s B, composite R/G/B: 0 dB (unity gain, 75 ohm termination) 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 8. Composite: 0 dB (unity gain, 75 ohm termination)
Audio Analog / Digital conversion Frequency Response	20-bit, 48 kHz 20 Hz to 20 kHz
Power Requirements	Power is provided by the iMedia receiver via the IM transport
Environmental Temperature Humidity	41° to 104°F (5° to 40°C) 10% to 90% RH (non-condensing)
Enclosure	2-gang wall plate, mountable in a 2.5 in (6.35 cm) deep electrical box
Dimensions Height Width Depth	4.50 in. (11.43 cm) 4.56 in. (11.58 cm) 2.64 in. (6.71 cm)
Weight	14.7 oz. (417 g)

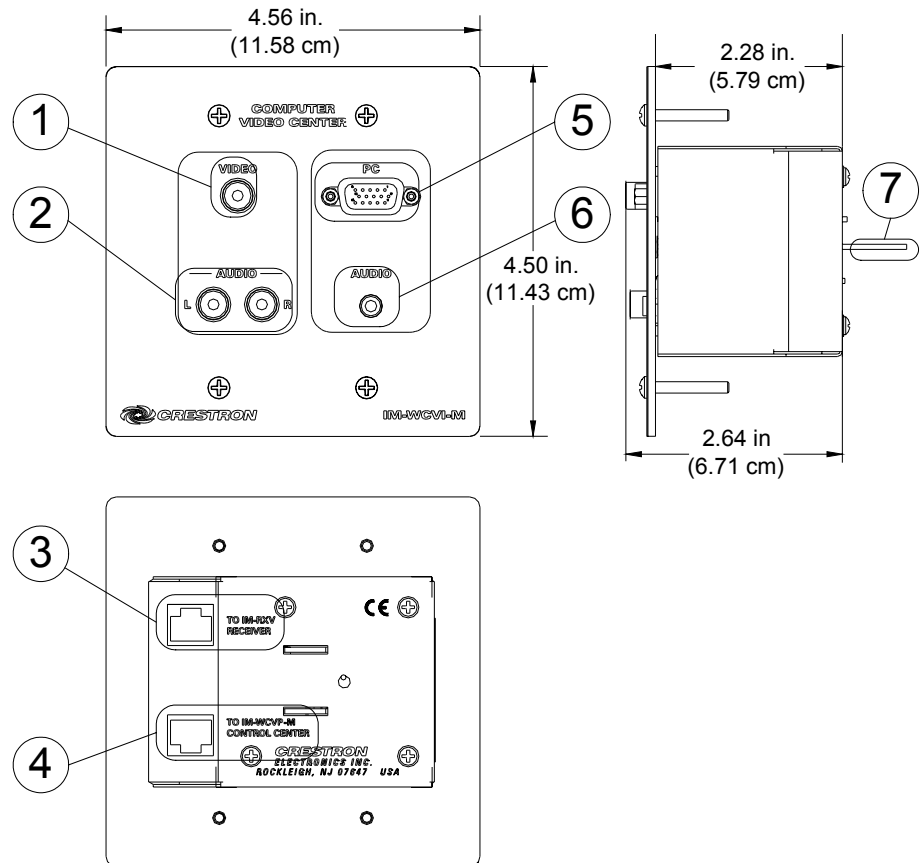
Physical Description

This section provides information on the connections, controls, and indicators available on your IM-WCVI-M.



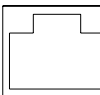
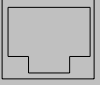
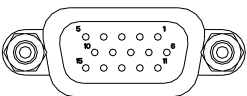

IM-WCVI-M Physical View



IM-WCVI-M Overall Dimensions



Connectors, Controls, & Indicators

#	CONNECTORS, CONTROLS, & INDICATORS	DESCRIPTION																																				
1	<p>VIDEO</p> 	<p>(1) RCA female, composite video input; Input Impedance: 75 Ω; Maximum Input: 1 V_{p-p}</p>																																				
2	<p>AUDIO L & R</p> 	<p>(2) RCA female; Unbalanced stereo line-level audio input (linked with VIDEO); Maximum Input Level: 2 V_{rms}; Input Impedance: 10 kΩ;</p>																																				
3	<p>TO IM-RXV RECEIVER^{1, 2, 3}</p>  <p>TO IM-RXV RECEIVER</p>	<p>(1) 8-wire RJ-45 female, iMedia output port; Connects to IM input port of an iMedia receiver via CresCAT-IM cable.</p>																																				
4	<p>TO IM-WCVP-M^{2, 3, 4}</p>  <p>TO IM-WCVP-M CONTROL CENTER</p>	<p>(1) 8-wire RJ-45 female; Connects to IM-WCVP-M Control Panel via CresCAT-IM cable; Maximum cable length: 40 feet (12.2 m)</p>																																				
5	<p>PC</p> 	<p>(1) DB15HD female, RGB (VGA) input; Formats: RGBHV, RGBS, RG_sB; Input Impedance: 75 Ω; Sync Impedance: 1 kΩ; Maximum Input Level: 1 V_{p-p}; Maximum Sync Level: 5 V_{p-p};</p> <table border="1"> <thead> <tr> <th>PIN</th> <th>FUNCTION</th> <th>PIN</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Red Video</td> <td>9</td> <td>No Connect</td> </tr> <tr> <td>2</td> <td>Green Video</td> <td>10</td> <td>Ground</td> </tr> <tr> <td>3</td> <td>Blue Video</td> <td>11</td> <td>No Connect</td> </tr> <tr> <td>4</td> <td>Reserved</td> <td>12</td> <td>Monitor Sense 1</td> </tr> <tr> <td>5</td> <td>Ground</td> <td>13</td> <td>Horizontal Sync</td> </tr> <tr> <td>6</td> <td>Red Ground</td> <td>14</td> <td>Vertical Sync</td> </tr> <tr> <td>7</td> <td>Green Ground</td> <td>15</td> <td>Monitor Sense 2</td> </tr> <tr> <td>8</td> <td>Blue Ground</td> <td></td> <td></td> </tr> </tbody> </table>	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		
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7	Green Ground	15	Monitor Sense 2																																			
8	Blue Ground																																					
6	<p>AUDIO (PC)</p> 	<p>(1) 3.5mm TRS mini phone jack; Unbalanced stereo line-level audio input (linked with PC); Maximum Input Level: 2 V_{rms}; Input Impedance: 10 kΩ</p>																																				
7	<p>GROUND WIRE⁵</p>	<p>(1) flying lead, green, chassis ground wire.</p>																																				

1. The eight-pin RJ-45 **TO IM-RXV** port accepts CresCAT-IM or CAT5E/CAT6 carrying video, audio, power and control signals. Refer to the table below for connector pinouts. Power is supplied to pins 4 and 5 from the IM receivers.

PIN	WIRE COLORS (EIA 568B)	iMEDIA ASSIGNMENT: RGB, COMPOSITE 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 / COMPOSITE
8	BROWN	+ RGB BLUE / COMPOSITE

2. For optimum performance, Crestron strongly recommends using CRESCAT-IM cable, available from Crestron. Other high-quality/low skew (15 ns per 100 m maximum) CAT5e/CAT6 wiring may also be used with varying performance.
3. To determine which is pin 1 on the cable, hold the cable so that the end of the eight pin modular jack is facing away from you, with the clip down and copper side up. Pin 1 is on the far left.
4. The eight-pin RJ-45 **TO IM-WCVP-M** port uses the same color wire assignments as the **TO IM-RXV** port.
5. Ensure that the unit is properly grounded.

Industry Compliance

As of the date of manufacture, the IM-WCVI-M 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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Setup

Network Wiring

When wiring the network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.

IM Wiring

Using a 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 cable, simplifying installations.

Routing CresCAT-IM cable (low-skew CAT5e) is less expensive and a much simpler solution for wiring iMedia systems 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 affordable and fast.

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 meters is not exceeded.

NOTE: For optimum performance, Crestron strongly recommends using CRESCAT-IM cable, available from Crestron. Other high-quality/low skew (15 ns per 100 m maximum) CAT5e/CAT6 wiring may also be used with varying performance.

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

(Continued on following page)

Maximum Resolution and Cable Length (Continued)

RESOLUTION	REFRESH RATE (HZ)	PIXEL RATE (MHZ)	PIXEL TIME (NS)	MAX LENGTH (FEET)
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
COMPOSITE VIDEO				218.5

For more information on CresCAT and other wire products, visit the Crestron website (http://www.crestron.com/downloads/pdf/product_line_overviews/overview-wire_and_cable.pdf).

Installation

The IM-WCVI-M is designed to mount in a standard 2.5-inch (6.35 cm) deep, double-gang, electrical box.

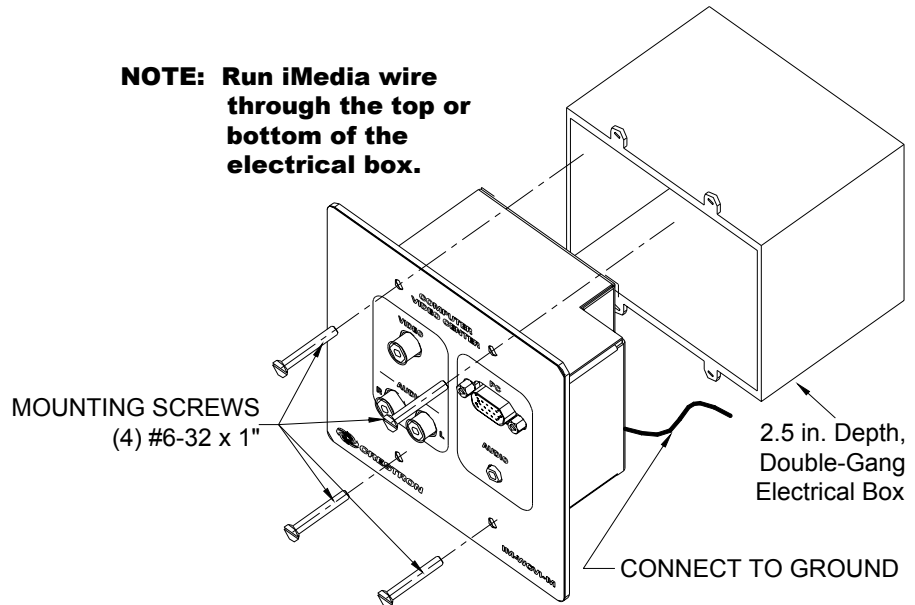
Required Tools:

- Phillips screwdriver

Mounting Parts Supplied with the IM-WCVI-M

PART DESCRIPTION	QUANTITY
Screw #6-32 x 1 in, Pan Head, Phillips	4

Installation in a Double-Gang Electrical Box

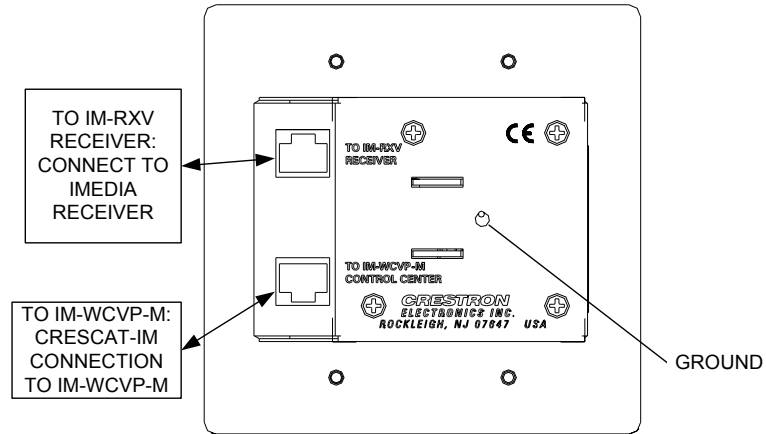


To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications. Contact with thermal insulating materials should be avoided on all sides of the unit.

Hardware Hookup

Make the necessary connections as called out in the illustration that follows this paragraph. Turn on the system only after all connections have been made.

Hardware Connections for the IM-WCVI-M (Rear)



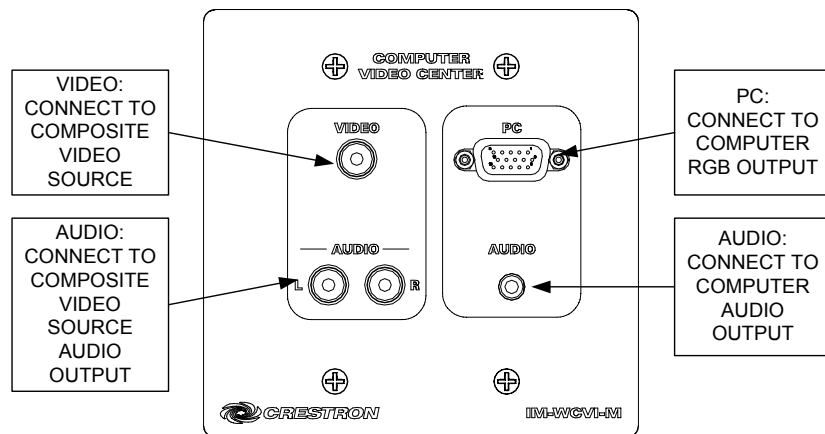
NOTE: The IM-WCVI-M can be connected to the IM-RXV1, IM-RXV1-M, IM-RXV3, and IM-RXV3-M iMedia receivers.

NOTE: For optimum performance, Crestron strongly recommends using CRES-CAT-IM cable, available from Crestron. Other high-quality/low skew CAT5e/CAT6 wiring may also be used with varying performance.

NOTE: The maximum cable length between the IM-WCVP-M and the IM-WCVI-M is 40 feet.

NOTE: Ensure that the unit is properly grounded.

Hardware Connections for the IM-WCVI-M (Front)



System Configuration

Refer to the latest version of the IM-RXV1 & IM-RXV3 guide (Doc. 6478), or the IM-RXV1-M & IM-RXV3-M guide (Doc. 6593), available from the Crestron website (<http://www.crestron.com/manuals>) for iMedia system configuration instructions.

Operation

For operation instructions, refer to the latest version of the IM-WCVP-M guide (Doc. 6623) which is available for download from the Crestron website.

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-WCVI-M Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
No video output displayed.	Incorrect cable connection.	Verify computer cable connection.
		Verify video cable connection.
		Verify iMedia output cable connection is secure.
No audio output.	Incorrect cable connection.	Verify computer audio cable connection.
		Verify video input's audio cable connection.
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. Adjust delay on iMedia receiver.
Button does not function when pressed.	Incorrect cable connection.	Verify that the iMedia output cable connection from the IM-WCVI-M to the iMedia receiver is secure.
Other functions operate, but does not control the projector.	Incorrect connections to projector.	Verify cable wiring and connections between receiver and projector.

Reference Documents

The latest version of all documents mentioned within the guide can be obtained from the Crestron website (<http://www.crestron.com/manuals>). This link will provide a list of product manuals arranged in alphabetical order by model number.

List of Related Reference

DOCUMENT TITLE
IM-RXV1 & IM-RXV3 iMedia Receiver/Processor with Video
IM-RXV1-M & IM-RXV3-M iMedia Receiver with Video & Mic Input
IM-WCVP-M iMedia Wall Plate Control Panel

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/offices) for a listing of Crestron worldwide offices.

You can also log onto the online help section of the Crestron website (www.crestron.com/onlinehelp) 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-WCVI-M, 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 an authorized CRESTRON dealer. Only authorized CRESTRON dealers may 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. 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 supersedes all previous warranties.

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