

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

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: IM-WCCV-M

Introduction

Features and Functions

- A simple, affordable wall plate multimedia interface
- Streamlined user controls for foolproof operation
- iMedia transport for fast and easy single cable installation
- Supports XGA resolution up to 84 feet (25.6 meters), UXGA maximum up to 34 feet (10.4 meters)
- Supports composite video signals
- Complete system setup in minutes using iMedia Wizard software

The iMedia Transport

The iMedia (IM) 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 60 Hz) can be transmitted up to 84 feet (25.6 meters) 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.

Wall Plate Multimedia Interface

The IM-WCCV-M is an iMedia transmitter designed to install in a standard three-gang electrical box, providing composite video, RGB and stereo audio inputs for connection to the output of a computer or AV source. Installing wiring for the IM-WCCV-M is extremely simple requiring just a single CrestCAT-IM cable for audio and video. Up to three IM-WCCV-Ms or other IM transmitters may be installed as part of a complete system to provide multiple input locations within the room.

Foolproof Operation

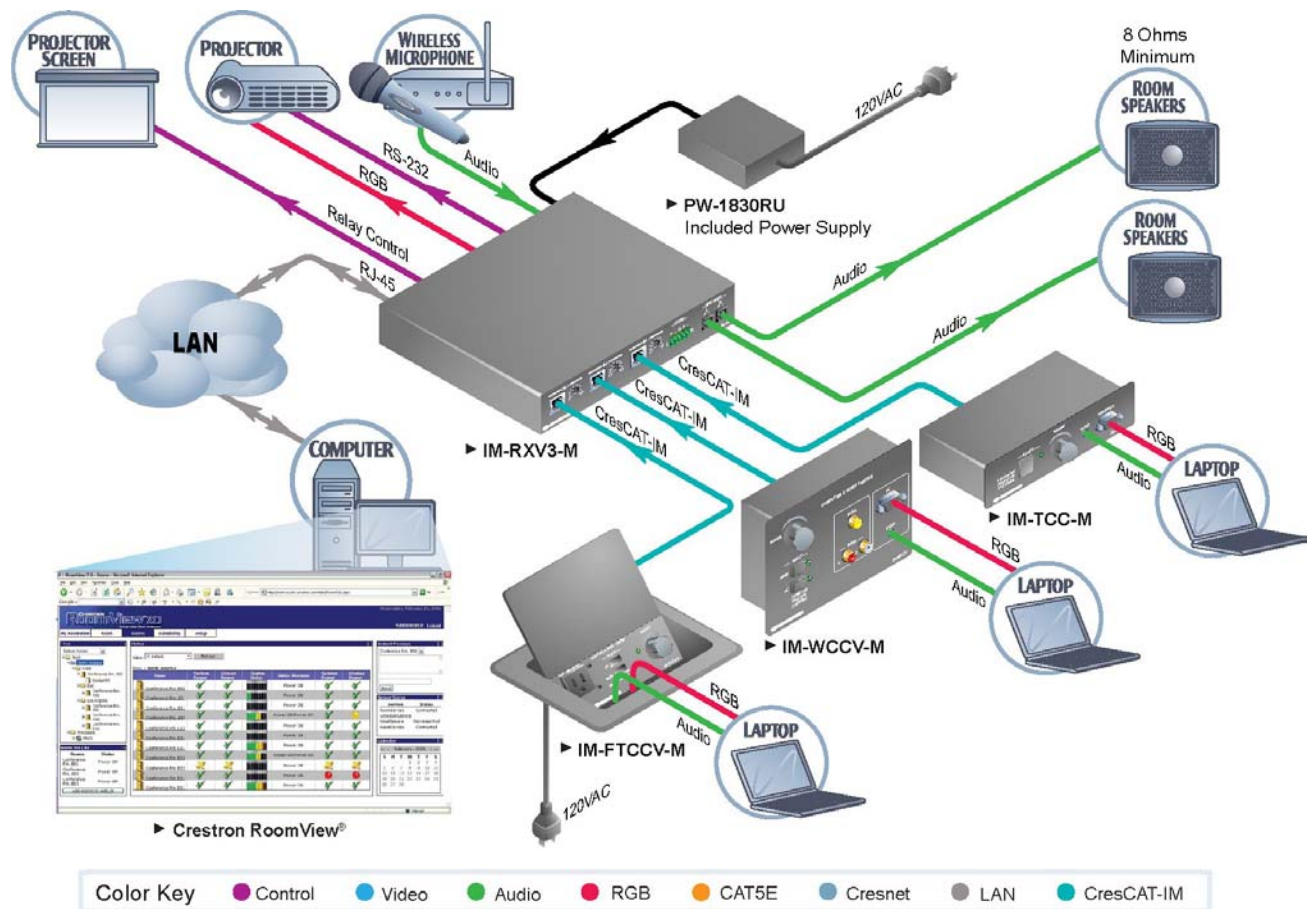
Every iMedia system is easy and intuitive to use. A single press of the **VIDEO** or **PC** buttons on the face of the IM-WCCV-M selects the appropriate input, lowers the screen or lift, turns on the projector (or plasma, etc.) and routes all the signals where they need to go. The front panel volume control affords easy adjustment of the audio level or wireless microphone level and 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.

Applications

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

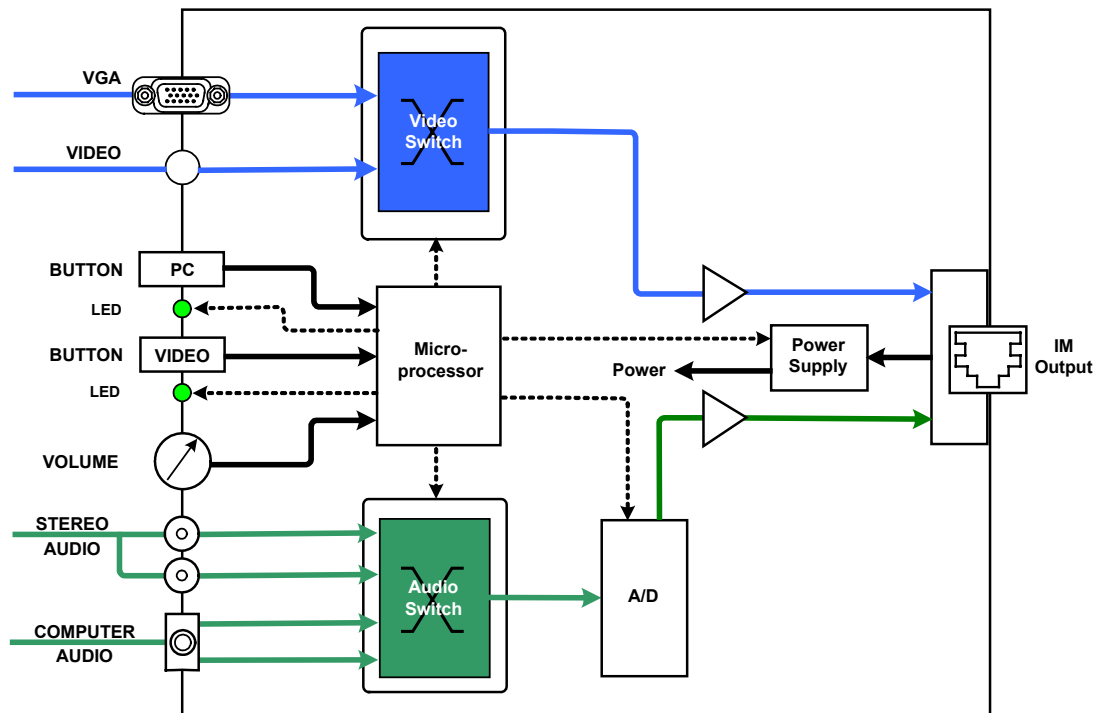
iMedia System Diagram



Internal Block Diagram

The following diagram represents the signal routing and functions of the IM-WCCV-M.

Internal Block Diagram of the IM-WCCV-M



Specifications

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

IM-WCCV-M Specifications

SPECIFICATION	DETAILS
RGB	
Gain	0 dB (75 Ω termination)
Formats	RGBHV, RGBS or RG _s B
Resolution	1024 x 768 @ 60 Hz with maximum cable length of 84 feet, 1600 x 1200 @ 60 Hz with maximum cable length of 34 feet; refer to "IM Wiring" on page 8 for other resolutions
Video	
Gain	0 dB (75 Ω termination)
Formats	480i (NTSC), 576i (PAL)
Audio	
A-D Conversion	20 bit, 48 kHz
Frequency Response	20 Hz to 20 kHz ±1 dB
Power Requirements	Power is provided by the IM receiver via the IM transport

(Continued on following page)

IM-WCCV-M Specifications (Continued)

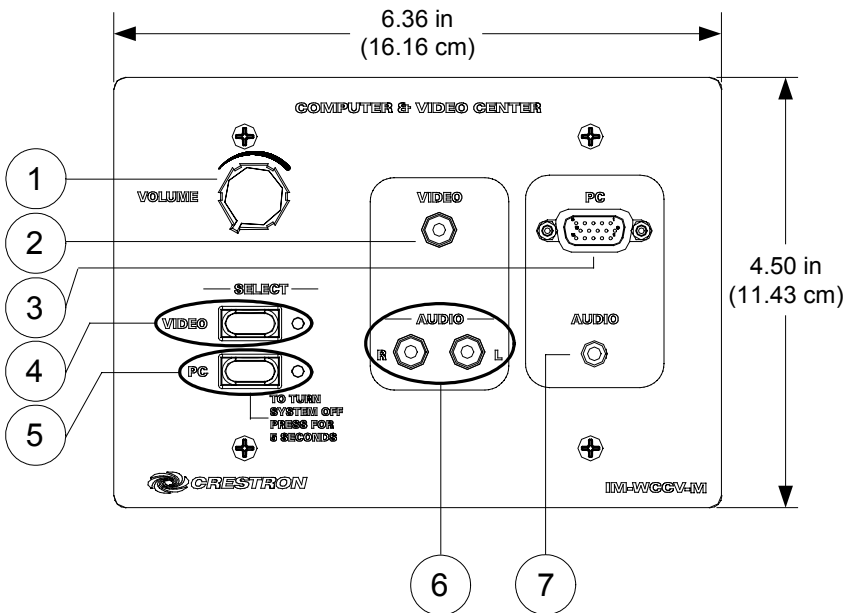
SPECIFICATION	DETAILS
Environmental	
Temperature	41° to 104°F (5° to 40°C)
Humidity	10% to 90% RH (non-condensing)
Enclosure	Three-gang wall plate, mountable in a 2.5 in (6.35 cm) deep electrical box; NOTE: Conduit must enter box via top or bottom knockouts only
Dimensions	
Height	4.50 in (11.43 cm)
Width	6.36 in (16.16 cm)
Depth	2.95 in (7.48 cm)
Weight	1.29 lbs (0.58 kg)

Physical Description

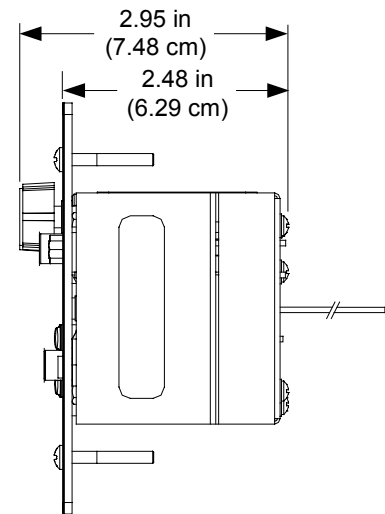
This section provides information on the connections, controls and indicators available on your IM-WCCV-M.

IM-WCCV-M Physical View

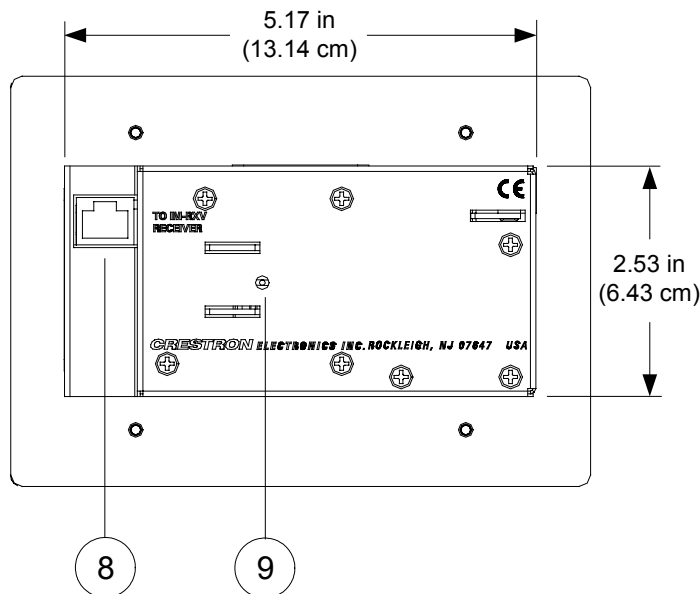
IM-WCCV-M Physical Dimensions - Front View



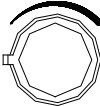
Side View



Rear View


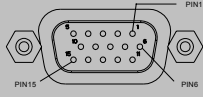
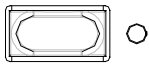

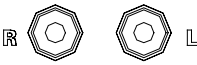




Connectors, Controls & Indicators

#	CONNECTORS, CONTROLS & INDICATORS	DESCRIPTION
1	VOLUME 	(1) Rotary knob, adjusts audio level for local input. Microphone level is adjusted by holding the VIDEO or PC button and turning the VOLUME knob.

(Continued on following page)

Connectors, Controls & Indicators (Continued)

#	CONNECTORS, CONTROLS & INDICATORS	DESCRIPTION																																				
2	<p>VIDEO</p> 	(1) RCA female, composite video input; Input impedance: 75 Ω; Maximum input: 1 V _{p-p}																																				
3	<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																																					
4	<p>VIDEO</p> 	(1) Pushbutton with green LED; Momentary press initiates “system power on” command and selects local VIDEO input; press and hold for five seconds or more initiates “system power off”.																																				
5	<p>PC</p> 	(1) Pushbutton with green LED; Momentary press initiates “system power on” command and selects local PC input; press and hold for five seconds or more initiates “system power off”.																																				
6	<p>AUDIO</p> 	(2) RCA female; Unbalanced stereo line level audio input (linked with VIDEO); Maximum input level: 2 V _{rms} ; Input impedance: 10 kΩ																																				
7	<p>AUDIO</p> 	(1) 3.5 mm TRS mini phone jack; Unbalanced stereo line level audio input; Maximum input level: 2 V _{rms} ; Input impedance: 10 kΩ																																				
8	<p>IM^{1, 2, 3}</p> 	(1) 8-wire RJ-45 female, iMedia output port; Connects to IM input port of an iMedia receiver via CresCAT-IM cable.																																				
9	<p>GROUNDING WIRE</p>	(1) flying lead, green, chassis ground wire ⁴ .																																				

1. The eight-pin RJ-45 iMedia port accepts CresCAT-IM or CAT5E/CAT6 carrying video, audio, power and control signals. Refer to the table on the following page 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

- 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.
- 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.
- Ensure the unit is properly grounded.

Industry Compliance

As of the date of manufacture, the IM-WCCV-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.
- Provide sufficient power to the system.

CAUTION: Insufficient power can lead to unpredictable results or damage to the 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

(Continued on following page)

Maximum Resolution and Cable Length (Continued)

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

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

Installation

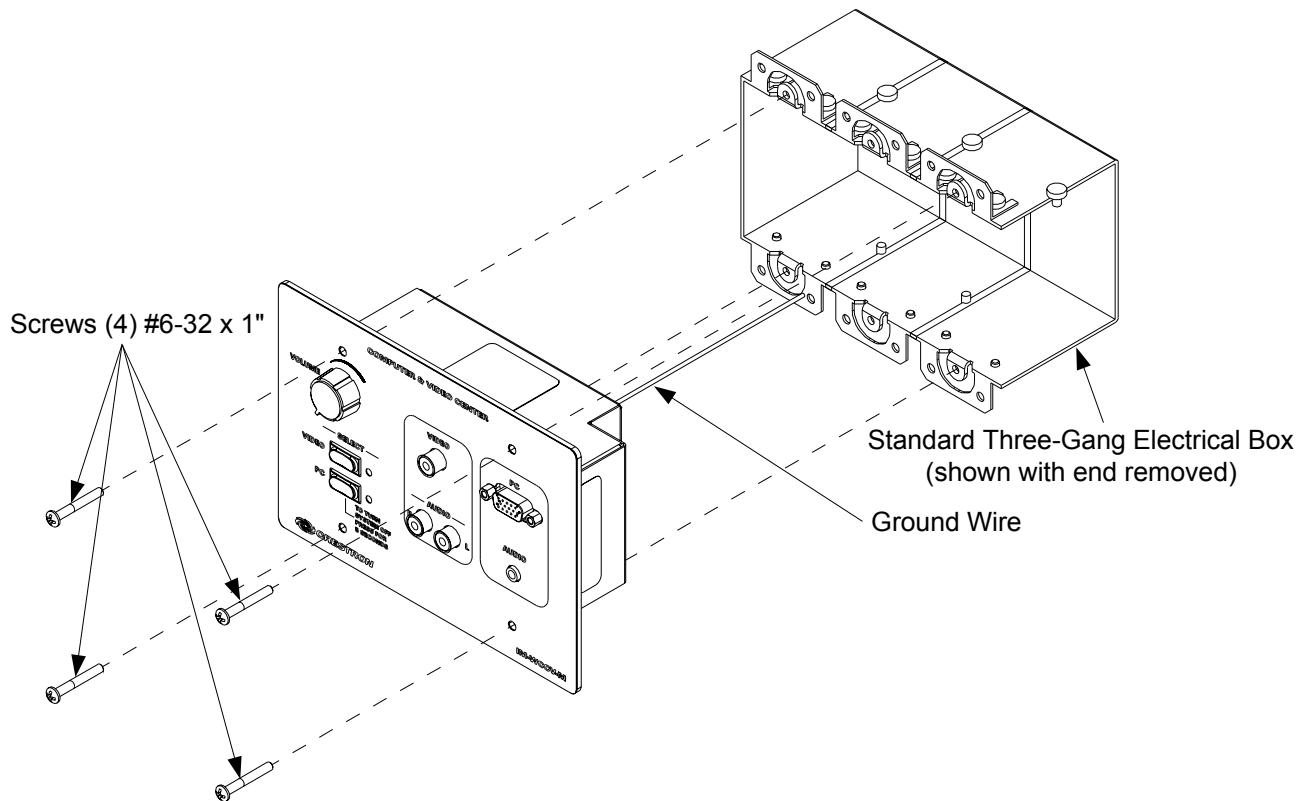
The IM-WCCV-M is designed to mount in a standard 2.5 inch (6.35 cm) deep, three-gang electrical box.

Tools required:

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

Supplied Hardware for the IM-WCCV-M

DESCRIPTION	PART NUMBER	QUANTITY
Screw #6-32 x 1", Pan Head, Phillips	2007250	4

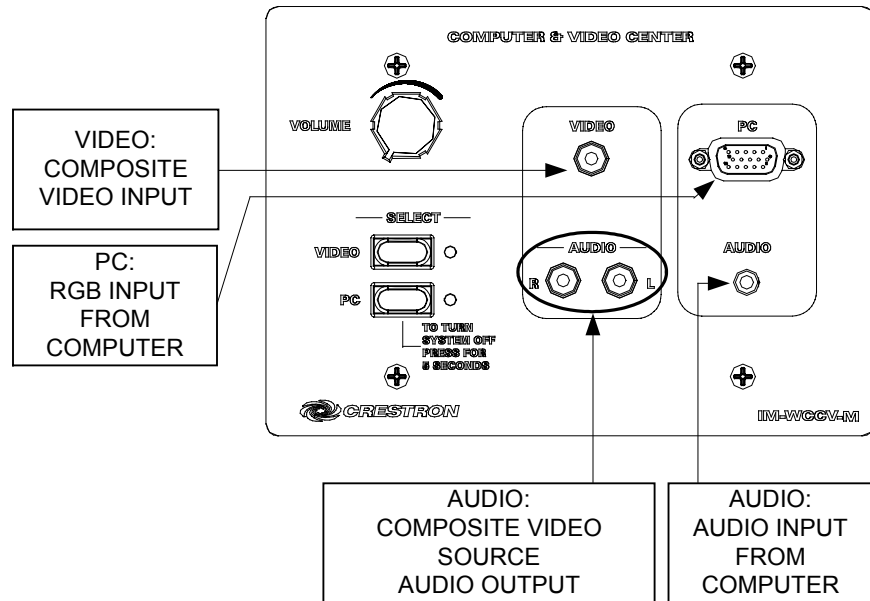
IM-WCCV-M Installation in a Three-Gang Electrical Box

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.

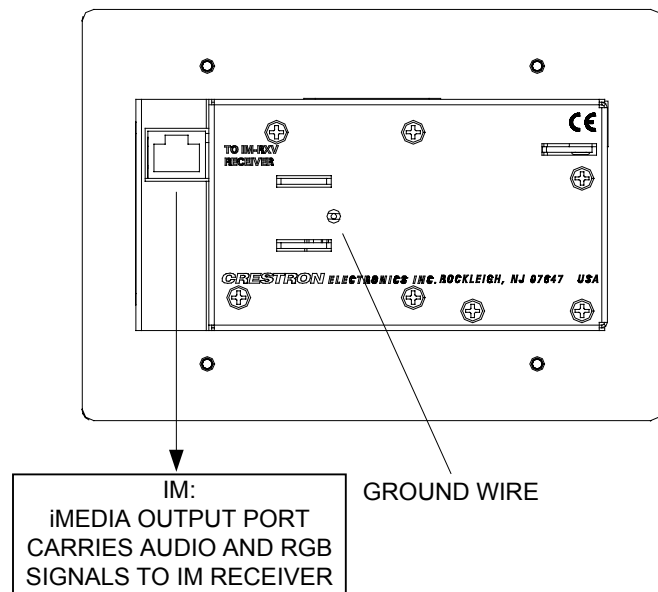
Hardware Hookup

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

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



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



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.

NOTE: Ensure the unit is properly grounded.

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.

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 (www.crestron.com/manuals) for detailed iMedia system configuration instructions.

Operation

The IM-WCCV-M can be used to turn a system on or off, select a source, adjust volume or adjust the microphone level.

Turn on the System

Press the **PC** button to turn on the system with the PC signals routed to the IM receiver or press the **VIDEO** button to turn on the system with the video signals routed to the IM receiver. The associated LED will light to indicate the selected source.

Select a Source

Press the **PC** button to route PC signals to the IM receiver or press the **VIDEO** button to route video signals to the IM receiver. The associated LED will light to indicate the selected source.

Adjust Volume

Turn the volume knob clockwise to raise the volume of the selected input; turn counterclockwise to lower the volume of the selected input.

Adjust Microphone Level

Microphone level is adjusted by holding either the **PC** button or the **VIDEO** button and turning the rotary **VOLUME** knob, depending on the source that is currently selected. For example, if the **PC** source is selected you would need to hold the **PC** button while adjusting the **VOLUME** knob to adjust the microphone.

When the **PC** button or **VIDEO** button is released after adjusting the microphone volume level, the selected source will remain at the volume setting it had prior to adjustment of the microphone volume.

Control over the source audio volume level is regained by adjusting the **VOLUME** knob without holding down either the **PC** button or the **VIDEO** button. The source volume level will gradually ramp up or down to the level set by the rotary **VOLUME** knob.

Turn off the System

Press and hold the selected source button for five seconds. The source button LED will flash and then turn off.

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-WCCV-M Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Source LED does not illuminate.	Not receiving power.	Verify that the iMedia cable is connected to the IM-WCCV-M and the IM-WCCV-M is connected to the iMedia receiver.
	Incorrect power supply.	Only use Crestron power supplies.
	Source is not selected.	Push a source button to select a source.
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.
No microphone output.	Microphone level is incorrectly set.	Set microphone level as described on page 13.
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-WCCV-M to the iMedia receiver is secure.
Other functions operate but unit does not control the projector.	Incorrect connections to projector.	Verify cable wiring and connections between receiver and projector.
Loss of functionality due to electrostatic discharge.	Improper grounding.	Verify that all ground connections have been made properly.

Reference Documents

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

List of Related Reference Documents

DOCUMENT TITLE
IM-RXV1 & IM-RXV3 iMedia Receiver/Processor with Video
IM-RXV1-M & IM-RXV3-M iMedia Receiver/Processor with Video and Mic Input

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-WCCV-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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