

Crestron **MP2 & MP2E**
2-Series Integrated AV Control System
Operations Guide



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2-Series Integrated AV Control System: MP2 & MP2E

Introduction

Features and Functions

- 2-Series engine built on Motorola's 32-bit 257 MIPS Coldfire[®] technology
- 36 MB of Internal Memory¹
- Integrated AV Switcher/Processor
- 4x2 high-bandwidth video switch with video signal detectors, expandable with the Crestron C2N-MMS
- 7x1 stereo audio switch
- 6-band graphic/parametric EQ
- Built-in volume, bass and treble controls
- Cresnet[®] port – master/slave selectable
- 10/100 Ethernet with SSL encryption²
- Crestron e-Control^{®2} enabled²
- RoomView[®] enabled²
- Two Com ports (RS-232/422/485)
- Four IR/serial ports
- Four Versiport I/O ports
- Four Low-voltage relay ports
- IR Wireless compatible using CNXRMIRD
- External power supply included
- Single-space EIA rack-mountable

1. For more information on internal memory, refer to "2-Series Memory & Directory Structure" in the latest version of the Crestron 2-Series Control Systems Reference Guide (Doc. 6256), which is available from the Crestron website (<http://www.crestron.com/manuals>).

2. MP2E only.

2-Series Engine

At the heart of the MP2 & MP2E is the powerful 32-bit Freescale ColdFire[®] processor. Crestron's exclusive enhanced real-time operating system makes the MP2 & MP2E the fastest, most reliable control systems available.

Cresnet[®]

Cresnet is the communications backbone for many Crestron touchpanels, keypads, lighting controls and other devices. The Cresnet bus is a simple, yet flexible 4-wire network that provides rock-solid bidirectional communication and power for up to 252 Cresnet devices.

Cresnet Slave Mode

Selectable Cresnet Slave Mode enables the MP2 & MP2E to be configured as Cresnet slave devices, effectively transforming them into Cresnet expansion modules. Such flexibility can offer a cost-effective solution for system expansion, providing a host of additional control ports in a single module.

Ethernet (MP2E only)

Crestron pioneered the IP-based control system to harness the vast possibilities of Ethernet and the Internet for remote control, monitoring, programming and diagnostics. The MP2E is designed to deliver the world's most advanced IP control solution. The high-speed Ethernet port enables a full-duplex 10/100 Ethernet connection with built-in Web server and email client and support for both static and dynamic IP addressing.

Crestron e-Control[®]2 (MP2E only)

Crestron's award-winning e-Control 2 XPanel solutions offer the most flexible range of IP control possibilities available. Using a Windows[®] computer or CE/PocketPC[™] PDA device, e-Control 2 provides an amazing control GUI that looks and behaves just like a Crestron Isys[®] touchpanel.

Crestron RoomView[®] (MP2E only)

Every Ethernet-enabled 2-Series control system works directly with Crestron's exclusive RoomView Help Desk software for the industry's most comprehensive facility-wide asset management solution.

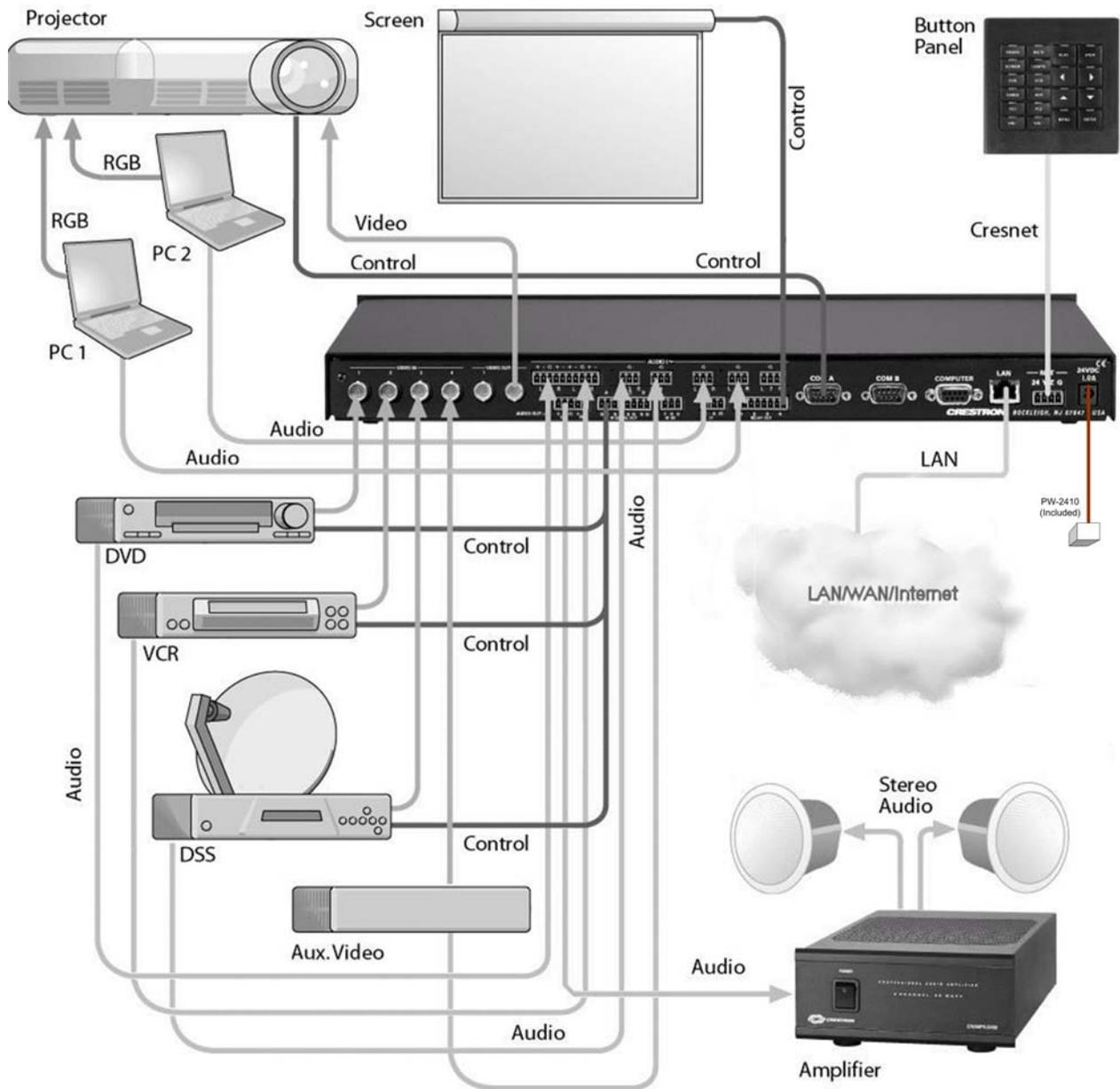
SSL (MP2E only)

All Ethernet-enabled 2-Series control systems support SSL (Secure Sockets Layer), the industry standard for protecting sensitive network communications.

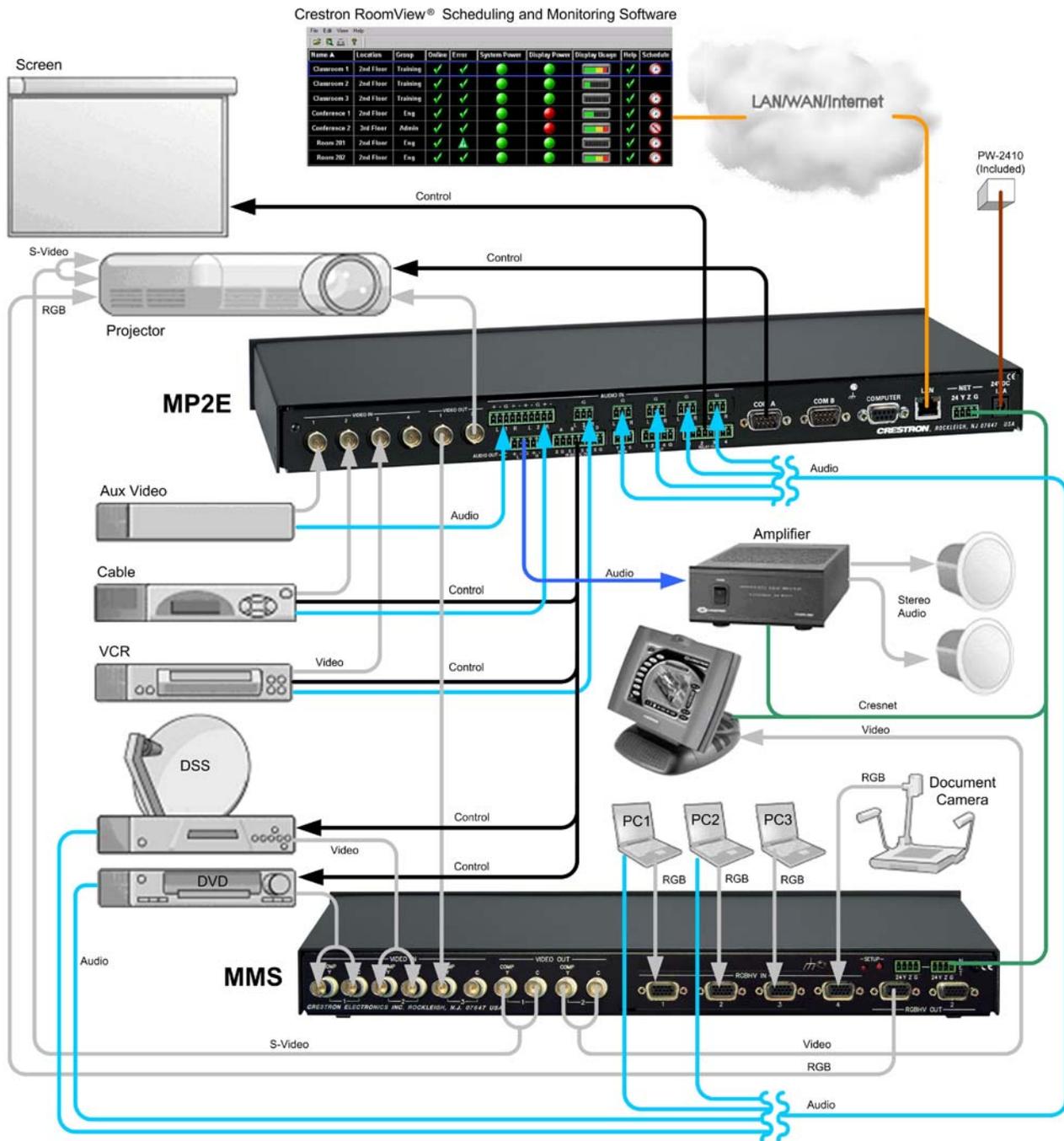
Applications

The following diagrams show an MP2E in a basic room master mode configuration with A/V switching and control and with an MMS multimedia switch.

Example of a Basic Room Master Mode Configuration with A/V Switching and Control



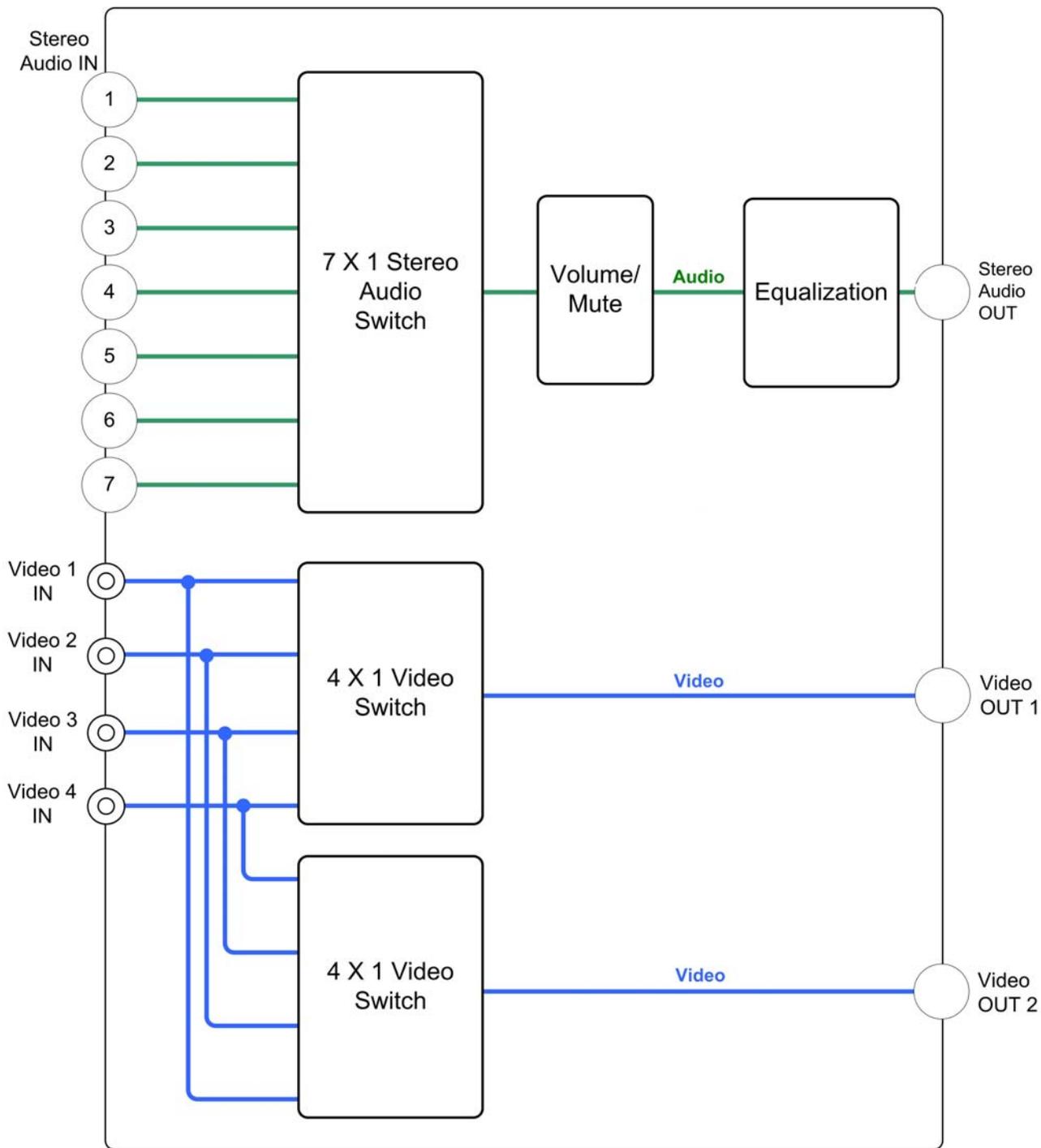
Example of a Basic Room Master Mode Configuration with MMS Multimedia Switch



Internal Block Diagram

The following diagram represents the AV switching abilities of the MP2 & MP2E. The diagram depicts the audio and video switching matrices and the equalization module available for the audio inputs. For more information refer to “Operation” on page 25.

AV Internal Block Diagram of the MP2 & MP2E



Specifications

Specifications for the MP2 & MP2E are listed in the following table.

MP2 & MP2E Specifications

SPECIFICATION	DETAILS
Processor CPU Processing Speed	32-bit Freescale Coldfire [®] Microprocessor 257 MIPS (Dhrystone 2.1 benchmark)
Memory SDRAM NVRAM Flash	32 MB 256 kB 4 MB
Operating System	Real-time preemptive multi-threaded/multitasking kernel; FAT32 file system with long names; supports SIMPL Windows and SIMPL+ [®]
Ethernet (MP2E only)	10/100BaseT, auto-negotiating, full/half duplex, static IP or DHCP/DNS, SSL, TCP/IP, UDP/IP, CIP, SMTP, built-in Web server and e-mail client; supports Crestron e-Control [®] 2 Xpanel and RoomView [®] applications
Video Features Bandwidth Crosstalk	4x2 composite matrix switcher or 2x1 Y/C (S-Video) switcher 100 MHz minimum -60 dB
Audio Features Master Volume Input Compensation Bass Gain Range Treble Gain Range Equalization Modes PEQ Filter Gain PEQ Filter Bandwidth PEQ Filter Center Frequency PEQ Filter Types	7x1 stereo audio switcher and digital parametric and/or graphic equalizer* -80 dB to +20 dB, in 1 dB steps (balanced I/O) ±10 dB per input channel, 0.1 dB steps from DMT, 0.2 dB steps from SIMPL ±15 dB, 0.5 dB steps at 100 Hz ±15 dB, 0.5 dB steps at 10 kHz 6-band parametric; 3-band graphic + 3-band parametric; 5-band graphic + 1-band parametric; 5-band graphic + 1-band parametric (speech optimized) ±12 dB, 0.01 dB steps from DMT; +24/-36 dB, 0.1 dB steps from SIMPL 0.02 to 2.0 octaves (1.0 to 3.0 for shelving) from DMT, 0.02 to 3.5 octaves from SIMPL 25 Hz - 19.9 kHz from DMT; 5 Hz - 24 kHz from SIMPL, 1 Hz steps Low pass, high pass, EQ filter (peaking/notching), bass shelf and treble shelf

(Continued on following page)

MP2 & MP2E Specifications (Continued)

SPECIFICATION	DETAILS
Audio (Continued)	
GEQ Filter Gain	±12 dB, 0.1 dB steps from DMT; ±10 dB, 0.1 dB steps from SIMPL
GEQ Filter Center Frequencies	63, 250, 1k, 4k, 10k Hz (5-band); 160, 600, 1k, 2.5k, 5k Hz (5-band speech); 250, 1k, 4k Hz (3-band)
Frequency Response	20 Hz - 20 kHz +0/-0.5 dB
THD + Noise	<0.005% at 1 kHz, A-weighted, max I/O
S/N Ratio	>97 dB, 20 Hz - 20 kHz A-weighted
Channel Separation	>100 dB at 1 kHz, 90 dB 20 Hz - 20 kHz
Crosstalk	> -90 dB 20 Hz - 20 kHz
Common Mode Rejection	>85 dB 20 Hz - 20 kHz
Power Requirements	18 Watts (0.75 Amp) @ 24 Volts DC (PW-2410RU power supply included)
Available Cresnet Power	7 Watts using PW-2410RU (included) or 32 Watts using PW-2420RU (sold separately)
Cresnet Power Usage	18 Watts (0.75 Amp @ 24 Volts DC) with no power supply connected to the 24VDC connector
Environmental	
Temperature	41° to 113°F (5° to 45°C)
Humidity	10% to 90% RH (non-condensing)
Enclosure	Black metal, 1U 19" rack-mountable (rack ears included)
Dimensions	
Height	1.70 in (4.32 cm)
Width	19.00 in (48.26 cm) with ears; 17.03 in (43.25 cm) without ears
Depth	9.09 in (23.08 cm)
Weight	3.54 lbs (1.61 kg)
Included Accessories	
PW-2410RU	25 Watt Regulated Universal Power Supply
Available Accessories	
C2N-MMS	Video and RGBHV switcher
PW-2420RU	50 Watt Regulated Universal Power Supply
C2N-HBLOCK	Cresnet Network Distribution Block
CNSP-XX	Custom Serial Interface Cable
IRP2	IR Probe
CNXRMIRD	IR Receiver

* Minimum operating firmware version 3.26 is required to operate the parametric equalizer feature.

Physical Description

This section provides information on the connections, controls and indicators available on your MP2 & MP2E.

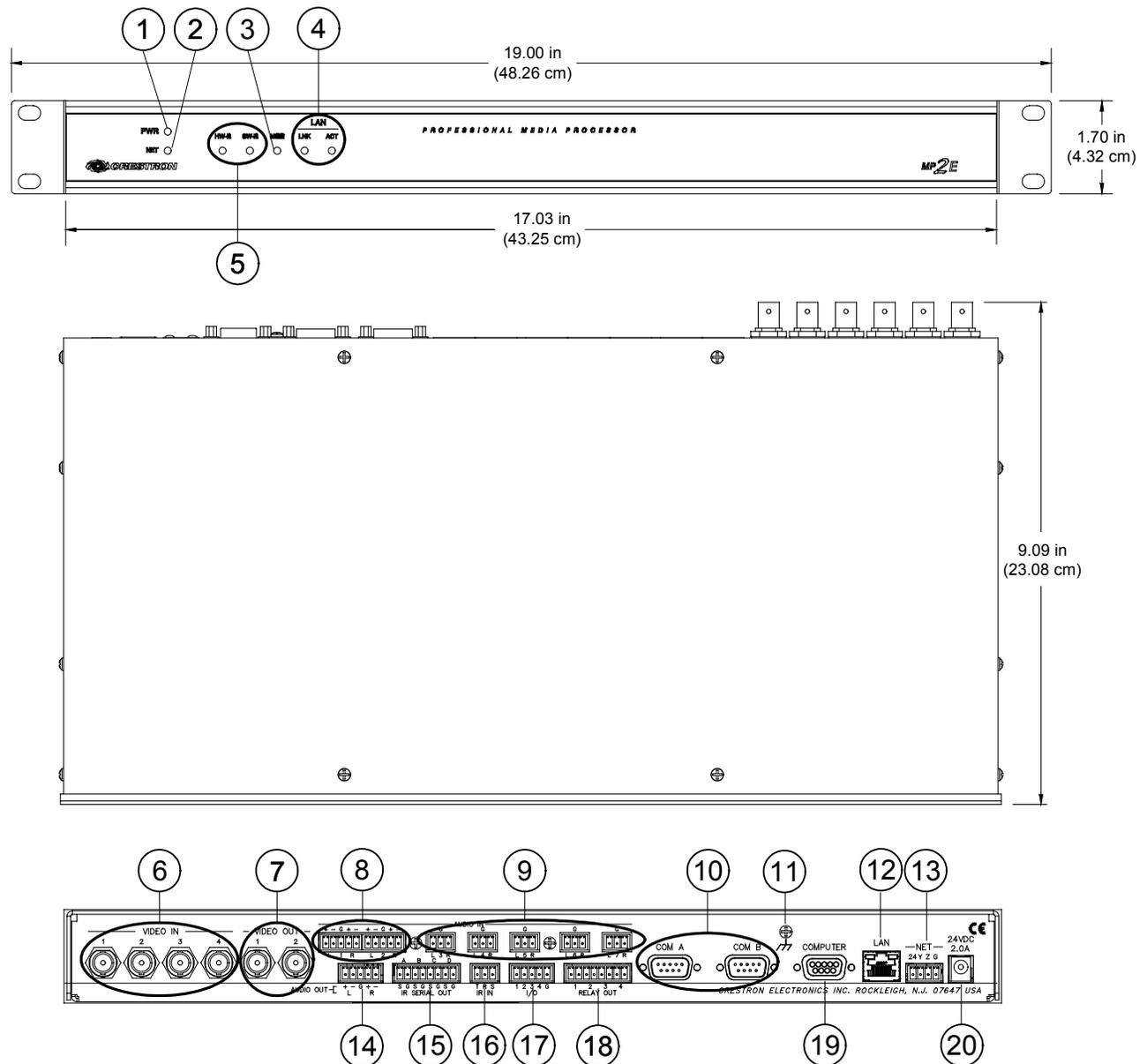
MP2 Physical Views



MP2E Physical Views



MP2 & MP2E Overall Dimensions

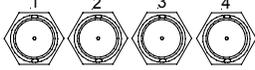
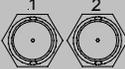
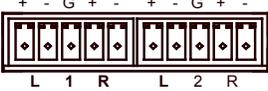
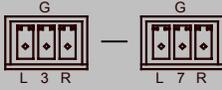


Connectors, Controls & Indicators

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION
1	PWR LED	Indicates 24 Volts DC power supplied from Cresnet control network or included PW-2410RU power supply.
2	NET LED	Indicates communication with Cresnet system.
3	MSG LED ²	Illuminates when a message is detected. To decipher content, examine the message through the Crestron Toolbox™.

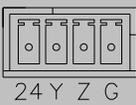
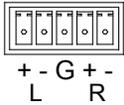
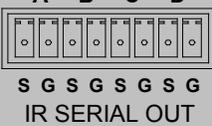
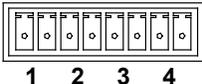
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Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION																														
4	LAN LEDs ³	LNK – Indicates when there is a connection to the rear panel LAN port. ACT – Indicates communication (activity) at the rear panel LAN port.																														
5	RESET BUTTONS	HW-R - Initiates system hardware reset. SR-R - Pressing this in combination with HW-R button performs a system restart without loading the program. Pressing it alone while the system is running restarts the program.																														
6	VIDEO IN (1 – 4) 	(4) BNC female comprising (4) composite or (2) S-video inputs. Input impedance: 75 Ω. For S-video use connectors 1 (Y1) & 2 (C1) for first input and 3 (Y2) & 4 (C2) for second input.																														
7	VIDEO OUT (1 – 2) 	(2) BNC female comprising (2) composite or (1) S-video outputs. Output impedance: 75 Ω.																														
8	AUDIO IN (1 - 2) 	(2) 5-pin 3.5 mm detachable terminal blocks comprising (2) balanced/unbalanced stereo line-level inputs. Input impedance: 15 kΩ balanced, 10 kΩ unbalanced; Maximum input level: 4 V _{RMS} balanced, 2 V _{RMS} unbalanced.																														
9	AUDIO IN (3 - 7) 	(5) 3-pin 3.5 mm detachable terminal blocks comprising (5) unbalanced stereo line-level inputs. Input impedance: 10 kΩ; Maximum input level: 2 V _{RMS} .																														
10	COM (A – B) ^{4, 5, 6} 	(2) DB9 male, bidirectional RS-232/422/485 ports. Up to 115.2k baud, hardware and software handshaking support. All ports support C2N-NPA8 Network Poll Accelerator ⁷ .																														
		<table border="1"> <thead> <tr> <th>PIN</th> <th>DIRECTION</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1*</td> <td>To MP2 or MP2E</td> <td>(RXD-) RS-422 Receive Data (Idles low)</td> </tr> <tr> <td>2</td> <td>To MP2 or MP2E</td> <td>(RXD) RS-232 Received Data</td> </tr> <tr> <td>3</td> <td>From MP2 or MP2E</td> <td>(TXD) RS-232 Transmitted Data</td> </tr> <tr> <td>4</td> <td>From MP2 or MP2E</td> <td>(TXD+) RS-422 Transmit Data (Idles high)</td> </tr> <tr> <td>5</td> <td></td> <td>RS-232 and RS-422 Signal Common</td> </tr> <tr> <td>6</td> <td>To MP2 or MP2E</td> <td>(RXD+) RS-422 Receive Data (Idles high)</td> </tr> <tr> <td>7</td> <td>From MP2 or MP2E</td> <td>(RTS) RS-232 Request to Send</td> </tr> <tr> <td>8</td> <td>To MP2 or MP2E</td> <td>(CTS) RS-232 Clear to Send</td> </tr> <tr> <td>9</td> <td>From MP2 or MP2E</td> <td>(TXD-) RS-422 Transmit Data (Idles low)</td> </tr> </tbody> </table>	PIN	DIRECTION	DESCRIPTION	1*	To MP2 or MP2E	(RXD-) RS-422 Receive Data (Idles low)	2	To MP2 or MP2E	(RXD) RS-232 Received Data	3	From MP2 or MP2E	(TXD) RS-232 Transmitted Data	4	From MP2 or MP2E	(TXD+) RS-422 Transmit Data (Idles high)	5		RS-232 and RS-422 Signal Common	6	To MP2 or MP2E	(RXD+) RS-422 Receive Data (Idles high)	7	From MP2 or MP2E	(RTS) RS-232 Request to Send	8	To MP2 or MP2E	(CTS) RS-232 Clear to Send	9	From MP2 or MP2E	(TXD-) RS-422 Transmit Data (Idles low)
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7	From MP2 or MP2E	(RTS) RS-232 Request to Send																														
8	To MP2 or MP2E	(CTS) RS-232 Clear to Send																														
9	From MP2 or MP2E	(TXD-) RS-422 Transmit Data (Idles low)																														
11	GROUND 	(1) 6-32 screw, chassis ground lug.																														

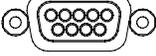
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Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION																				
12	<p>LAN^{3, 8}</p> 	<p>(1) 8-wire RJ-45 with 2 LED indicators; 10/100BaseT Ethernet port; Green LED indicates link status. Yellow LED indicates Ethernet activity.</p> <table border="1"> <thead> <tr> <th>TYPE</th> <th>PIN</th> <th>SIGNALS</th> </tr> </thead> <tbody> <tr> <td rowspan="8">8-Position RJ-45</td> <td>1</td> <td>TD+</td> </tr> <tr> <td>2</td> <td>TD-</td> </tr> <tr> <td>3</td> <td>RD+</td> </tr> <tr> <td>4</td> <td>Connected to pin 5</td> </tr> <tr> <td>5</td> <td>Connected to pin 4</td> </tr> <tr> <td>6</td> <td>RD-</td> </tr> <tr> <td>7</td> <td>Connected to pin 8</td> </tr> <tr> <td>8</td> <td>Connected to pin 7</td> </tr> </tbody> </table>	TYPE	PIN	SIGNALS	8-Position RJ-45	1	TD+	2	TD-	3	RD+	4	Connected to pin 5	5	Connected to pin 4	6	RD-	7	Connected to pin 8	8	Connected to pin 7
TYPE	PIN	SIGNALS																				
8-Position RJ-45	1	TD+																				
	2	TD-																				
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	4	Connected to pin 5																				
	5	Connected to pin 4																				
	6	RD-																				
	7	Connected to pin 8																				
	8	Connected to pin 7																				
13	<p>NET⁹</p> 	<p>Four-position terminal block connector for data and power. Connects to Cresnet control network.</p> <ul style="list-style-type: none"> Pin 1 (24) Power Pin 2 (Y) Data Pin 3 (Z) Data Pin 4 (G) Ground 																				
14	<p>AUDIO OUT (L/R)</p> 	<p>(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level output; Output impedance: 200 Ω balanced, 100 Ω unbalanced; Maximum output level: 3.6 V_{RMS} balanced, 1.8 V_{RMS} unbalanced.</p>																				
15	<p>INFRARED-SERIAL OUTPUT (A – D)^{10, 11}</p> 	<p>(4) 2-pin 3.5 mm detachable terminal blocks IR/Serial output ports. IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 115.2k baud. Individual signal generator per port, allowing simultaneous firing of all ports.</p>																				
16	<p>IR IN</p> 	<p>(1) 3-pin 3.5 mm detachable terminal block; For connection of the CNXRMIIRD IR Receiver (sold separately); Allows IR wireless control from Crestron or third-party remotes using RC-5 IR commands.</p>																				
17	<p>I/O^{12, 13}</p> 	<p>(1) 5-pin 3.5 mm detachable terminal block comprising (4) digital input/output or analog input ports (referenced to GND); Digital Input: Rated for 0-24 Volts DC, input impedance 20 kΩ, logic threshold 1.24 Volts DC; Digital Output; 250 mA sync from maximum 24 Volts DC, catch diodes for use with “real world” loads; Analog Input: Rated for 0-10 Volts DC, protected to 24 Volts DC maximum, input impedance 20 kΩ; Programmable 5 Volts, 2 kΩ pull-up resistor per pin.</p>																				
18	<p>RELAY OUT</p> 	<p>(1) 8-pin 3.5 mm detachable terminal block comprising (4) normally open, isolated relays; Rated 1 Amp, 30 Volts AC/DC, MOV arc suppression across contacts.</p>																				

(Continued on following page)

Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS & INDICATORS	DESCRIPTION																		
19	<p>COMPUTER¹⁴ COMPUTER</p> 	<p>(1) DB9 female, RS-232 computer console port. Connector is used when programming with a PC. The port is modem compatible (modem and PC cables not included). Supports baud rate of up to 115 kB. Use with a standard DB9 straight through cable. Pins 1, 4, 6 and 9 are not used but may be connected.</p> <table border="1"> <thead> <tr> <th>PIN #</th> <th>ABBREVIATION</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>TXD</td> <td>Transmit Data</td> </tr> <tr> <td>3</td> <td>RXD</td> <td>Receive Data</td> </tr> <tr> <td>5</td> <td>SG</td> <td>Signal Ground</td> </tr> <tr> <td>7</td> <td>CTS</td> <td>Clear To Send</td> </tr> <tr> <td>8</td> <td>RTS</td> <td>Request To Send</td> </tr> </tbody> </table>	PIN #	ABBREVIATION	DESCRIPTION	2	TXD	Transmit Data	3	RXD	Receive Data	5	SG	Signal Ground	7	CTS	Clear To Send	8	RTS	Request To Send
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2	TXD	Transmit Data																		
3	RXD	Receive Data																		
5	SG	Signal Ground																		
7	CTS	Clear To Send																		
8	RTS	Request To Send																		
20	<p>24 VDC⁹ 24VDC 2.0A</p> 	<p>(1) 2 mm barrel DC power jack, 24 Volt DC power input; (PW-2410RU power included); Passes through to NET port to power Cresnet devices.</p>																		

- Interface connectors for NET, Infrared-Serial, I/O and Relay Output ports are provided with the unit.
- This LED was labeled “ERR” on units manufactured prior to 2005. It is functionally the same; only the labeling has changed.
- MP2E only.
- The pinout of each 9-pin port is non-standard; it contains RS-422 pins in addition to RS-232. This may result in a conflict with some equipment and therefore all nine pins should **not** be used. Only the required pins for each communication type should be connected. For RS-232 and -422, pins 2, 3, 5, 7 and 8 are wired straight through.
- Data Set Ready (DSR) and Data Terminal Ready (DTR) are not supported.
- To support RS-485, tie pin 1 (RXD-) to pin 9 (TXD-) and pin 4 (TXD+) to pin 6 (RXD+) in the cable. (Refer to table at right.)

COM (DB9) CONNECTOR	RS-485 BUS
Tie Pins 1 & 9	-
Tie Pins 4 & 6	+
Pin 5	G
- The Cresnet Poll Accelerator effectively increases the network speed, fan-out and device addresses by a factor of 8 for each Poll Accelerator added to the system.
- 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.
- Use care in wiring installations to avoid applying 24 VDC to Cresnet wiring from an AC power pack as well as from a system device that contains its own power supply. Although this condition should not cause any damage, Crestron does not recommend it. In those network configurations that require more power than can be supplied by the primary power supply alone, disconnect the +24 VDC Cresnet wire from those devices that will be powered by an AC power pack.
- Transmission levels on the infrared-serial output connectors are in the 0 to +5 VDC range, which may not be compatible with all RS-232 devices.
- When configured for one-way RS-232 serial data, you cannot stack multiple RS-232 devices or combine/mix with IR devices on the same port.
- Digital outputs are TTL values and may not work with devices requiring a “dry” contact closure (e.g. low voltage motor controllers).
- Ports can be in or out but not both. For additional information, refer to the SIMPL Windows help file.
- DTR (pin 4) and DSR (pin 6) are not normally used.

Industry Compliance

As of the date of manufacture the MP2 & MP2E have 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. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (<http://www.crestron.com/calculators>).

- For larger networks, use a Cresnet Hub/Repeater (CNXHUB) to maintain signal quality.

For more details, refer to “Check Network Wiring” on page 29.

Identity Code

Net ID

The Net IDs of the MP2 & MP2E has been factory set to **02**. This Net ID is defined as the “Master” control system. The Net IDs of multiple MP2 & MP2E devices in the same system must be unique; this means there will be a master/slave relationship between units (only the Net ID of the master will be left at **02**). Net IDs are changed from a personal computer (PC) via the Crestron Toolbox™. When setting the Net ID, consider the following:

- The Net ID of each unit must match an ID code specified in the SIMPL Windows program.
- Each network device must have a unique Net ID.

For more details, refer to the Crestron Toolbox help file.

IP ID

The IP ID is set within the MP2’s or MP2E’s table using Crestron Toolbox. For information on setting an IP table, refer to the Crestron Toolbox help file.

The IP IDs of multiple MP2 & MP2E devices in the same system must be unique. When setting the IP ID, consider the following:

- The IP ID of each unit must match an IP ID specified in the SIMPL Windows program.
- Each device using IP to communicate with a control system must have a unique IP ID.

Hardware Hookup

Ventilation

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

Rack Mounting

The MP2 & MP2E can be mounted in a rack or stacked with other equipment. Two “ears” are provided with the MP2 & MP2E so that the unit can be rack mounted. These ears must be installed prior to mounting. Complete the following procedure to attach the ears to the unit. The only tool required is a #2 Phillips screwdriver.

WARNING: To prevent bodily injury when mounting or servicing this unit in a rack, take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

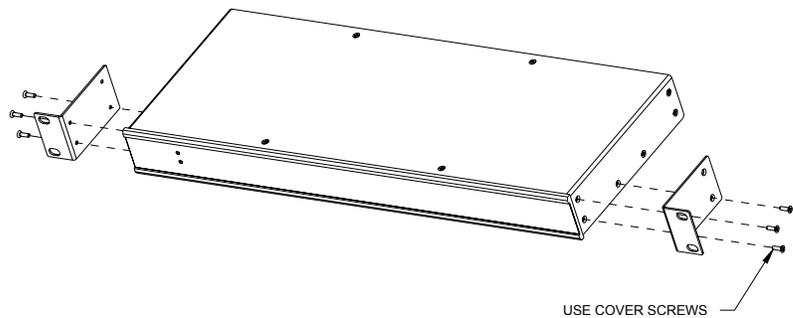
NOTE: If rack mounting is not required, rubber feet are provided for tabletop mounting or stacking. Apply the feet near the corner edges on the underside of the unit.

NOTE: Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

To install the ears:

1. There are screws that secure each side of the MP2 & MP2E top cover. Using a #2 Phillips screwdriver, remove the three screws closest to the front panel from one side of the unit. Refer to the diagram following step 3 for a detailed view.
2. Position a rack ear so that its mounting holes align with the holes vacated by the screws in step 1.
3. Secure the ear to the unit with three screws from step 1, as shown in the following diagram.

Ear Attachment for Rack Mounting (this image shows a IRU device)



4. Repeat procedure (steps 1 through 3) to attach the remaining ear to the opposite side.

Bussing Strip Installation

The 2-Series integrated AV control system is supplied with two brass bussing strips to facilitate commoning (linking) of multiple terminal block connections. The bussing strips are constructed with four terminal block positions and may be trimmed to size for various applications or different devices. One strip is supplied for each 8-position terminal block.

1. To utilize the bussing strip, determine the number of relays to be commoned for the equipment being installed. If less than four, the strip can be trimmed to size with a pair of scissors or wire snips.
2. Loosen the terminal block screws and insert the first leg of the bussing strip into the first common position of the terminal block. The strip engages the other common positions automatically.
3. Remove approximately 1/8" of the jacket from the common wire and insert the conductor into one of the terminal block common positions. Tighten the terminal block screws to lock the wire and bussing strip into place. Insulate the strip by folding a piece of 3/4" wide vinyl electrical tape (such as Scotch 33+) over the spine and as much of the individual legs as possible. Excess tape at each end of the strip should be pressed closed, then trimmed to within approximately 1/16" of the end of the strip.
4. When wiring the remaining conductors, remove approximately 1/8" of the jacket and insert the wires into the proper terminal block positions. To prevent the possibility of electrical shorts, it is essential that these conductors do not touch any uninsulated portion of the bussing strip.
5. Securing a tie wrap around the bussing strip is a useful way to provide strain relief for the wires connected to the terminal block.

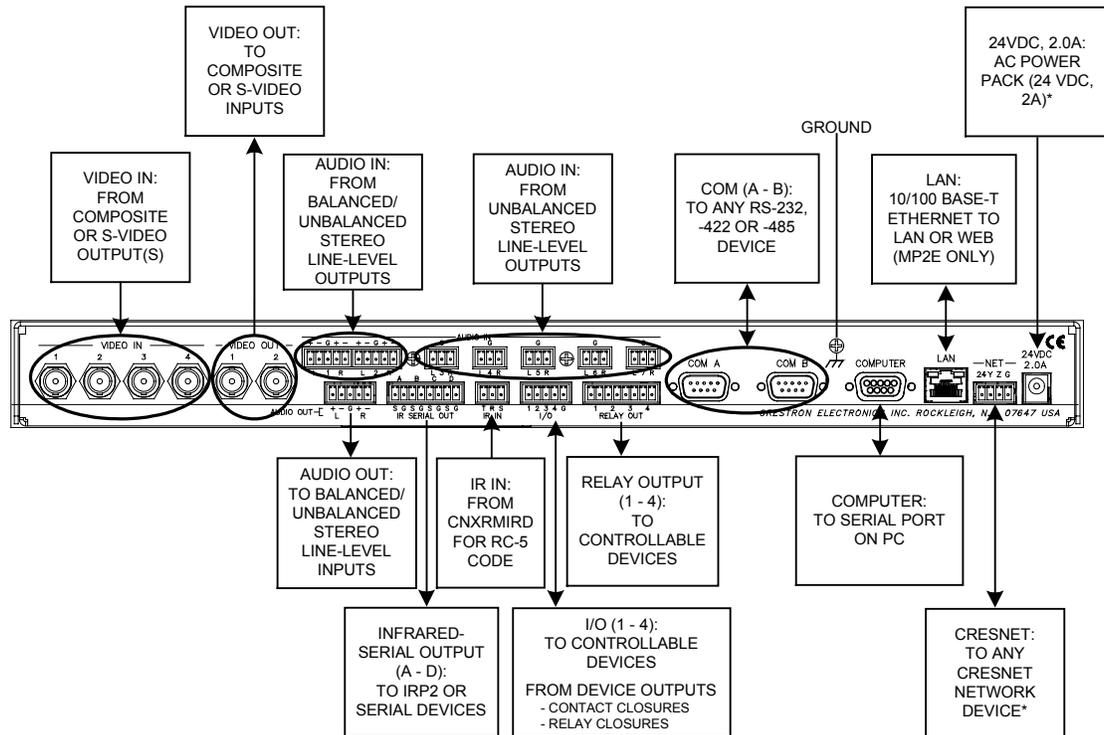
Connect the Device

Make the necessary connections as called out in the illustration that follows this paragraph. Refer to "Network Wiring" on page 14 before attaching the 4-position terminal block connector. Apply power after all connections have been made.

When making connections to the MP2 & MP2E, consider the following:

- Use Crestron power supplies for Crestron equipment.
- The included cable cannot be extended.

Hardware Connections for the MP2 & MP2E



* The units can be powered through the NET network connector or by an AC power pack (PW-2410RU included). If an alternate external power supply is to be used, Crestron recommends its CNPWS-75 External Power Supply or PW-2420RU Universal Power Pack or equivalent.

NOTE: Use care in wiring installations to avoid applying 24 VDC power to Cresnet wiring from an AC power pack as well as from a system device that contains its own power supply. Although this condition should not cause any damage, Crestron does not recommend it. In those network configurations that require more power than can be supplied by Crestron’s Power Control Unit alone, disconnect the +24VDC Cresnet wire from those devices that will be powered by an AC power pack.

Video Connections

VIDEO IN

Four 75Ω video inputs are provided for four composite or two S-video inputs. A video sensor on each input reports to the CPU. S-video must use port 1 (luma) and 2 (chroma) for the first input, and port 3 (luma) and 4 (chroma) for the second input.

Example: Signal connections for S-video source 1 and 2

- Video In 1: luma (Y1) The brightness and contrast of video signal source 1
- Video In 2: chroma (C1) The color portion of video signal source 1
- Video In 3: luma (Y2) The brightness and contrast of video signal source 2
- Video In 4: chroma (C2) The color portion of video signal source 2

VIDEO OUT

Two 75Ω video outputs are provided for two composite or one S-video output. For S-video, use port 1 for luma (Y) and port 2 for chroma (C).

Audio Connections

AUDIO IN

Two balanced inputs utilizing five-position mini-connectors and five unbalanced inputs utilizing three-position mini-connectors are provided for audio input. Balanced audio inputs use (+) and (-) inputs and a separate shield (ground). Unbalanced audio input uses L and R (+) inputs for left and right signal and connects (-) to ground connector (G) [max. 2Vrms].

NOTE: An unbalanced input may use a balanced or unbalanced output.
A balanced input may use a balanced or unbalanced output.

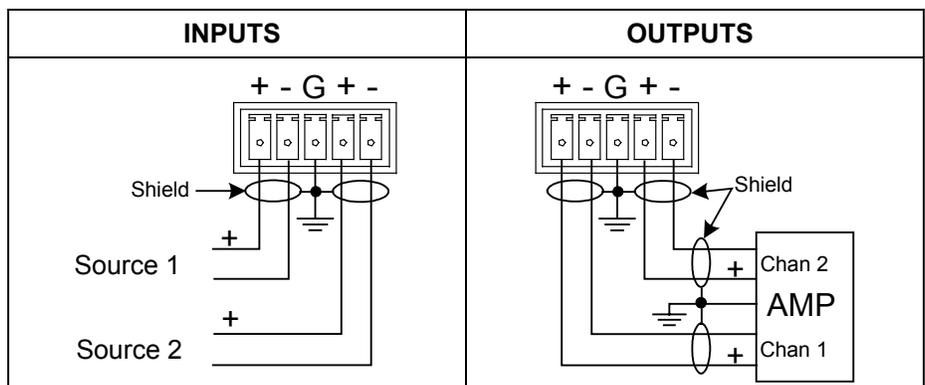
AUDIO OUT

One stereo balanced/unbalanced output is provided, utilizing a five-position mini-connector.

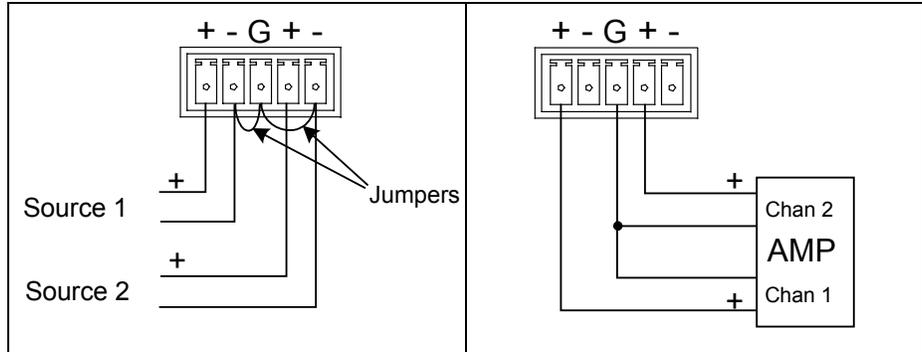
Balanced and Unbalanced Audio Connections on the Five Position Mini Connector

PIN #	SIGNAL NAME	BALANCED AUDIO INPUT	BALANCED AUDIO OUTPUT	UNBALANCED AUDIO INPUT	UNBALANCED AUDIO OUTPUT
1	+	Left +	Left +	Left In	Left Out
2	-	Left -	Left -	Left signal return, jumper to GND	OPEN
3	G	Shield/GND	Shield/GND	GND	Left & Right GND
4	+	Right +	Right +	Right In	Right Out
5	-	Right -	Right -	Right signal return, jumper to GND	OPEN

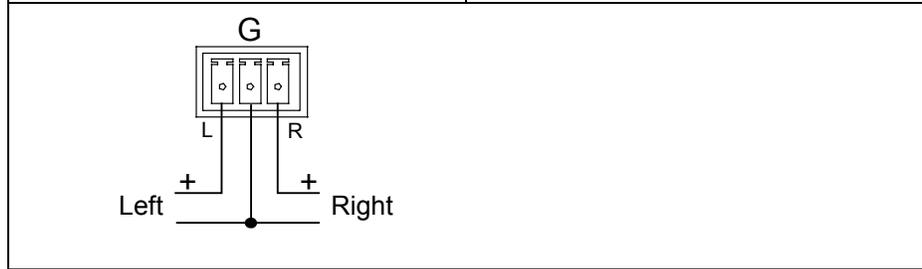
Balanced Audio Connections using a Five-Position Mini Connector



Unbalanced Audio Connections using a Five-Position Mini Connector



Unbalanced Audio Connections using a Three-Position Mini Connector



NOTE: Using the unbalanced configuration for the audio output reduces the total audio gain by 6 dB.

Programming Software

Have a question or comment about Crestron software?

Answers to frequently asked questions (FAQs) can be viewed in the Online Help section of the Crestron website. To post a question or view questions you have submitted to Crestron's True Blue Support, log in at <http://support.crestron.com>. First-time users will need to establish a user account.

Earliest Version Software Requirements for the PC

NOTE: Crestron recommends that you use the latest software to take advantage of the most recently released features. The latest software is available from the Crestron website.

Crestron has developed an assortment of Windows[®]-based software tools to develop a Cresnet system. The following are the minimum recommended software versions for the PC:

Software

TASK	REQUIRED SOFTWARE VERSION
Program control system to operate MP2 & MP2E.	SIMPL Windows version 2.04.11 or later with SIMPL+ Cross Compiler version 1.1 or later and Library update 232 or later; Also requires Crestron Database version 15.9.9 or later.
Upload program and firmware.	Crestron Toolbox 1.02.30 or later.
Program with simple wizards (optional but recommended).	Crestron SystemBuilder™ version 2.0.6 or later. Refer to software release notes or Crestron website for other required Crestron software packages.
Perform sophisticated audio equalization (optional).	Digital Media Tools™ version 3.01.00 or later.

Programming with Crestron SystemBuilder

Crestron SystemBuilder is the easiest method of programming but does not offer as much flexibility as SIMPL Windows. For additional details, download SystemBuilder from the Crestron website and examine the extensive help file.

Programming with SIMPL Windows

NOTE: While SIMPL Windows can be used to program the MP2 & MP2E, it is recommended to use SystemBuilder for configuring a system.

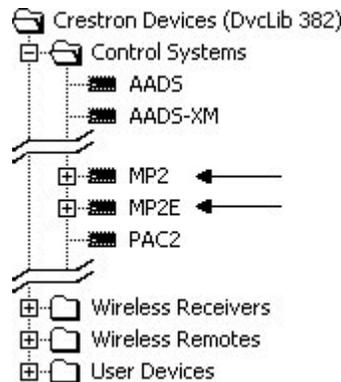
SIMPL Windows is Crestron's premier software for programming Crestron control systems. It is organized into two separate but equally important "Managers".

Configuration Manager

Configuration Manager is the view where programmers "build" a Crestron control system by selecting hardware from the *Device Library*.

- To incorporate the MP2 or MP2E into the system, drag the MP2 or MP2E from the Control Systems folder of the *Device Library* and drop it in the *System Views*.

Locating the MP2 & MP2E in the Device Library



Programming Manager

Programming Manager is the view where programmers “program” a Crestron control system by assigning signals to symbols. The symbol can be viewed by double clicking on the icon or dragging it into *Detail View*. A description for each signal in the symbol is described in the SIMPL Windows help file (F1).

Programming with Digital Media Tools



A full Graphic/Parametric Equalizer is built into the MP2 & MP2E control systems. The equalizer module provides both graphic and parametric equalization, programmable using Crestron's Digital Media Tools software or SIMPL Windows. The Digital Media Tools (DMT) software is free and available from the download section of the Crestron website (<http://www.crestron.com>).

Almost all users will use the Digital Media Tools and not the SIMPL Windows symbol to adjust equalization. From the point of view of the symbol everything is a parametric equalizer; graphic equalizers are just parametric equalizers with specific default frequencies, Q (bandwidth) and type. If you want to use a graphic equalizer you *must* use Digital Media Tools because this is the only place where the default graphic equalizer frequencies are set up. The only possible exception is that programmers might want to set up sliders from the TrimBand gains to let the user modify slightly what the programmer has stored.

The MP2 & MP2E adjustments in Digital Media Tools contain five tabs:

- Master Volume tab – for adjusting the overall volume (+5 to -40 dB).
- Input Settings tab – for naming sources, setting up decoding, and adjusting input gain.
- Graphic EQ tab – for choosing the number of graphic equalizers, and provides access to the graphic equalizer sliders
- Parametric EQ tab – for making parametric equalization adjustments
- Communications tab – for setting up communications and adjusting the equalizer in real-time.

For additional details, refer to the Digital Media Tools help file.

NOTE: Minimum operating firmware version 3.26 is required to operate the parametric equalizer feature.

NOTE: The SIMPL Windows symbol will allow any valid value. Programming the parametric equalizer through SIMPL Windows may override the Digital Media Tools settings. For example, if the 5-band graphic equalizer mode is specified in Digital Media Tools and the SIMPL Windows program then changes one of the graphic filters, the system reverts to full parametric mode. SIMPL Windows permits any legal change without regard to the effect on the rest of the filters.

NOTE: The Mute On/Off button is the “hot” button for muting the system when Real-Time mode is enabled in Digital Media Tools. Once muted, you can only un-mute the system through the menu. This feature protects the speakers if, during Real Time mode, unreasonable values for filters and fields are entered in the program. You may also use **F8** as a mute button and **Shift+F8** to un-mute. An emergency **MUTE** button is also provided at the bottom of each screen. The **MUTE** button on the tool bar and the **MUTE** selection on the Tools Menu toggle **MUTE** on and off.

Example Program

An example program for the MP2 & MP2E is available from the Crestron website (<http://www.crestron.com/exampleprograms>).

Uploading and Upgrading

Crestron recommends using the latest programming software and that each device contains the latest firmware to take advantage of the most recently released features. However, before attempting to upload or upgrade it is necessary to establish communication.

While the next section provides an overview for communication, refer to “Establishing Communications with the Control System” in the Crestron 2-Series Control Systems Reference Guide (Doc. 6256) for serial and TCP/IP connection details. If communications cannot be established, refer to “Troubleshooting Communications” in the same guide.

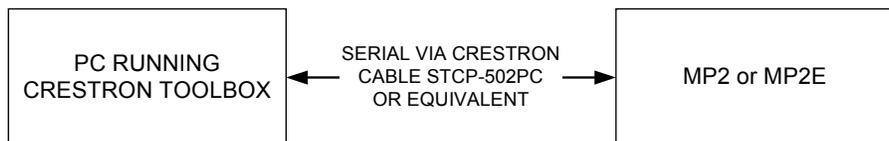
Establishing Communication

Use Crestron Toolbox for communicating with the MP2 & MP2E; refer to the Crestron Toolbox help file for details. With the MP2 the connection to the computer must be a direct serial connection; with the MP2E the connection can be either serial or TCP/IP.

Direct Serial Communication

NOTE: Required for initial setup of Ethernet parameters.

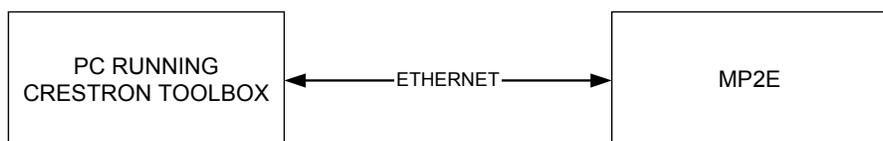
Direct Serial Communication



- The **COMPUTER** port on the MP2 & MP2E connects to the serial port on the PC via a serial cable (Crestron STCP-502PC or equivalent).
- Use the Address Book in Crestron Toolbox to create an entry using the expected serial communication protocol (RS-232, auto-detect baud rate, no parity, 8 data bits, 1 stop bit, XON/XOFF disabled, RTS/CTS enabled).
- Display the MP2's or MP2E's "System Info" window (click the  icon); communications are confirmed when the device information is displayed.

TCP/IP Communication

Ethernet Communication (MP2E only)



- Establish direct serial communication between MP2E and PC.
- Enter the IP address, IP mask and default router of the MP2E via the Crestron Toolbox (**Functions | Ethernet Addressing**); otherwise enable DHCP.
- Confirm Ethernet connections between MP2E and PC. If connecting through a hub or router, use CAT5 straight through cables with 8-pin RJ-45

connectors. Alternatively, use a CAT5 crossover cable to connect the two **LAN** ports directly without using a hub or router.

- Use the Address Book in the Crestron Toolbox to create an entry for the MP2E with the MP2E's TCP/IP communication parameters.
- Display the “System Info” window (click the  icon) and select the MP2E entry.
- Use the Crestron Toolbox to create the MP2E IP table.
 - ⇒ Select **Functions | IP Table Setup**.
 - ⇒ Add, modify or delete entries in the IP table. The MP2E can have only one IP table entry.
 - ⇒ A defined IP table can be saved to a file or sent to the device.
- When using the MP2E as a “slave”, edit the “master” control system's IP table to include an entry for the MP2E. The entry should list the MP2E's IP ID (specified on the MP2E's IP table) and the internal gateway IP address 127.0.0.1.

Programs and Firmware

- Display the network device tree (**Tools | Network Device Tree**) to show all network devices connected to the control system. Right-click on the MP2 or MP2E to display actions that can be performed on the MP2 or MP2E:
 - ⇒ Upgrade firmware
 - ⇒ Change Net ID
- Upload the SIMPL Windows file to the control system using SIMPL Windows or Crestron Toolbox.
- Upgrade MP2 & MP2E firmware via Crestron Toolbox.
 - ⇒ Establish serial or TCP/IP communications with the MP2 (serial only) or MP2E and display the “System Info” window.
 - ⇒ Select **Functions | Firmware...** to upgrade the MP2 or MP2E firmware.

For details on uploading and upgrading, refer to the SIMPL Windows help file or the Crestron Toolbox help file.

Operation

Crestron 2-Series Control Systems are the brain of a complete integrated audio/visual or automation solution, serving as the central processor and I/O interface. Every audio, video and environmental element of the home, boardroom, classroom or command center becomes integrated and accessible through the control system. No matter how complex or basic, Crestron control systems are entirely custom-programmable to attain the exact functionality required.

The MP2 & MP2E combine a control system (with Ethernet on the MP2E) and audio/video switcher in a single box to provide a cost-effective total room control system. Easily configured with Crestron SystemBuilder™ software, an MP2 or MP2E is all that is needed to select and control all of the room's AV and environmental resources including VCRs, DVD/CD players, projectors, screens, lighting and more. The MP2 & MP2E are ideal as master control processors for a small stand-alone AV system and serve equally well slaved to other 2-Series control processors to add audio/video switching and control port expansion.

The high-bandwidth 4x2 video crosspoint switcher distributes video from four composite sources to two destinations – great for displaying one source on a plasma display while previewing another on a Crestron touchpanel. Alternatively, the switcher may be configured as a 2x1 S-Video switcher. Built-in video sensing on each input can be used to provide device power status information to the control system and to detect signal presence for auto-switching. The video routing capabilities of the MP2 & MP2E can be extended by adding the C2N-MMS S-Video/RGBHV matrix switcher.

The 7x1 audio switcher provides balanced and unbalanced inputs for seven stereo audio sources. Built-in volume, bass, treble and mute controls and a 6-band graphic/parametric equalizer allow for precise adjustment and complete control of the audio signal. All audio settings and presets may be recalled and controlled from a Crestron touchpanel, keypad or other user interface. Crestron's DMT (Digital Media Tools) software provides the installer with a simple utility for adjusting input levels and equalization settings.

The MP2 & MP2E employ the identical processing engine to that in Crestron's larger control systems and support Crestron's full range of touchpanels, keypads and Cresnet peripherals. When equipped with an optional CNXRMIRD IR receiver, the MP2 & MP2E allow any universal IR remote to be used as a low-cost handheld remote control.

The MP2E's built-in high-speed Ethernet port and Web server provide full connectivity and e-Control 2 Xpanel support for extensive IP-based control capability, remote programming and diagnostics and seamless integration into very large control networks.

The MP2 & MP2E both require 18 watts of power to operate. Therefore, if you use a PW-2410RU power supply (rated at 25 watts), you will have 7 watts of power left over to run additional Cresnet devices. As long as the sum total of the devices on Cresnet does not exceed 7 watts, you will be fine. If the application requires more than 7 watts of network power, use a PW-2420RU or CNPWS-75 in place of the PW-2410RU.

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.

MP2 & MP2E Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unexpected response from control system.	Network devices are not communicating with the control system.	Use Crestron Toolbox to poll the network. Verify network connection to the device.
PWR LED does not illuminate.	Control system is not receiving power.	If power is supplied through an AC adapter, verify the DC output plug is properly attached to the control system and that the adapter is securely plugged into an outlet. If power is supplied through Cresnet cabling, ensure the cable is securely plugged into the NET connector.
MSG LED illuminates.	Hardware or software failure, hardware incompatibility with software definitions or programming error.	Verify that hardware configuration matches software configuration. Use Crestron Toolbox to display the error log. Refer to “Error Message Definitions” in the latest version of the Crestron 2-Series Control Systems Reference Guide (Doc. 6256) for more details.
Compilation error RLCMCVT166 & RLCMCVT177.	Poor analog versus serial signal definition in the SIMPL Windows program.	Confirm properly defined signal definition in the program.
System locks up.	Various.	Press front panel SW-R and HW-R buttons at the same time to bypass program and communicate directly with the processor. (Refer to “Troubleshooting Communications” in the Crestron 2-Series Control Systems Reference Guide (Doc. 6256) for more details.
Cresnet device does not respond.	Device not wired correctly.	Verify Cresnet wiring.
	Improper NET ID used.	Verify that device ID matches NET ID in the program.

(Continued on following page)

MP2 & MP2E Troubleshooting (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
A/V system device does not respond.	IRP2 or serial port not placed properly.	Verify placement of IRP2 (hold phosphor card under IRP2 while pressing button) and tighten serial cables.
	Used wrong IR/serial port.	Verify that proper IR or serial port is defined.
	Serial cable not wired correctly.	Verify that serial cable is wired correctly for RS-232, 422 or 485.
	Device is not receiving sufficient power.	Use the Crestron Power Calculator to help calculate how much power is needed for the system.

NOTE: If communication cannot be established or the control system is locked-up, refer to “Troubleshooting Communications” in the Crestron 2-Series Control Systems Reference Guide (Doc. 6256).

NOTE: *Passthrough Mode* enables Viewport access to any serial controlled device on the network. This aids in troubleshooting by allowing direct communication between the PC and a network device (effectively “passing through” the MP2 or MP2E). For information pertaining to Passthrough Mode, refer to “Passthrough Mode” in the Crestron 2-Series Control Systems Reference Guide (Doc. 6256)

System Monitor

The System Monitor allows you to reload firmware into the MP2 & MP2E in the event that you cannot load the firmware in the normal mode.

If the system does not function, perform the following procedure:

1. Connect the **COMPUTER** port on the MP2 or MP2E to one of the COM ports (usually COM1) on the PC. Use a straight-through RS-232 cable with a DB9 male connector on one end and a DB9 female connector on the other. Most commercially available cables are acceptable; they should have at least five pins for transmit, receive, ground and hardware handshaking (pins 2, 3, 5, 7 and 8).
2. Open Toolbox and start the Text Console (click the  icon). Then, click on the Address Book icon in the lower left corner of the window to open the “Address Book” window.
3. In the “Address Book” window, click the “Add Entry” button and give the new entry a name (e.g. “System Monitor”).
4. Click the arrow next to the “Device Type” drop down list. A “Warning” window will open to inform you that this is an advanced feature. Click **Okay**, then select “2-Series Control System Monitor” from the drop down list and click **Okay**. When you are returned to the “Address Book” window, make sure to choose **RS-232** as the “Connection Type” and the correct Com port next to “Port”.
5. Power down the MP2 or MP2E.
6. While powering up the MP2 or MP2E, press and hold **Alt+K** on the keyboard until the following text (or similar) appears in Toolbox.

```

System Monitor [v1.001 (0001)]
12-19-01 16:25:23 32MB RAM, 4MB FLASH
CS>

```

7. At the Toolbox prompt, type **erase** and press **Enter**. The following text appears in Toolbox.

```

CS>erase
->25%->50%->75%->100%
Done
CS>

```

NOTE: There are two methods for loading firmware through System Monitor (using **Alt+O** or using **Alt+U**). Because the first MP2 & MP2E firmware version 3.016 had special memory requirements, you must use the following **Alt+U** procedure when reverting to firmware version 3.016 from version 3.050 or when upgrading from 3.016 to 3.050.

For versions 3.050 and later, skip to step 13 below.

8. The *.CSU file must be extracted from the *.CUZ file to load from the firmware. Use WinZip to open the *.CUZ file and extract the *.CSU file.
9. At the CS> prompt, type **SYSTEM** and press **Enter** (you will see a series of capital “C”s appear in Toolbox).
10. Press **Alt+U** on the keyboard or from Toolbox, select **Communications | XModem Send...**
11. Find and select the correct firmware file (.CSU not .CUZ) and click **Open**.
12. Once “Completed Successfully” appears in Toolbox, type **quit** at the Toolbox prompt and press **Enter**.

NOTE: The steps for firmware versions prior to 3.050 are now complete. For versions 3.050 and later, use the steps below.

13. Press **Alt+O** (not zero) on the keyboard to open the “Firmware” window, then click **Browse**.
14. Find and select the correct firmware file (.CUZ or .zip) and click **Open**.
15. In the “Firmware” window, click **Send**. You will see a “Confirmation” window asking if you’ve selected the right file. Click **Okay** and you’ll see the “File Transfer” window.
16. When file transfer is completed, you’ll see a window asking you to re-connect. Click **Okay**, then close the “Firmware” window and re-connect using the normal Address Book entry.

Network Analyzer

To assist with troubleshooting, the unit contains Crestron’s patent-pending network analyzer to continuously monitor the integrity of the Cresnet network for wiring faults and marginal system performance or other network errors. For more information on how to use the network analyzer, refer to the Crestron Toolbox help file and use the index to search for “Network Analyzer”.

Battery Replacement

A Lithium battery is used to power the system clock within the MP2 & MP2E. Under normal conditions, it will last for approximately 10 years. In the event that the clock fails, only an authorized technician should replace it. Refer to caution statement below.

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Check Network Wiring

Use the Right Wire

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

Calculate Power

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

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. Please use the Crestron Power Calculator to help calculate how much power is needed for the system (<http://www.crestron.com/calculators>).

When calculating the length of wire for a particular Cresnet run, the wire gauge and the Cresnet power usage of each network unit to be connected must be taken into consideration. Use Crestron Certified Wire only. If Cresnet units are to be daisy-chained on the run, the Cresnet power usage of each network unit to be daisy-chained must be added together to determine the Cresnet power usage of the entire chain. If the unit is home-run from a Crestron system power supply network port, the Cresnet power usage of that unit is the Cresnet power usage of the entire run. The wire gauge and the Cresnet power usage of the run should be used in the following equation to calculate the cable length value on the equation's left side.

Cable Length Equation

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

<p>Where: L = Length of run (or chain) in feet R = 6 Ohms (Crestron Certified Wire: 18 AWG (0.75 MM²)) or 1.6 Ohms (Cresnet HP: 12 AWG (4 MM²)) P = Cresnet power usage of entire run (or chain)</p>

Make sure the cable length value is less than the value calculated on the right side of the equation. For example, a Cresnet run using 18 AWG Crestron Certified Wire and drawing 20 watts should not have a length of run more than 333 feet. If Cresnet HP is used for the same run, its length could extend to 1250 feet.

NOTE: All Crestron certified Cresnet 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.

Strip and Tin Wire

When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Add Hubs

For larger networks (i.e., greater than 28 network devices), it may become necessary to add a Cresnet Hub/Repeater (CNXHUB) to maintain signal quality throughout the network. Also, for networks with lengthy cable runs it may be necessary to add a Hub/Repeater after only 20 devices.

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 Documents

DOCUMENT TITLE
2-Series Control Systems Reference Guide

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 (<http://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 MP2 & MP2E, 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.

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