

## Enhanced Room Solution Box

Crestron room solution boxes are designed to provide a convenient one-box signal interface solution for the connection and control of local room AV devices as part of a complete Crestron Home® AV distribution system. The CNXRMCLV packs a ton of functionality, serving as a bidirectional CAT5 video and audio interface, matrix switcher, stereo preamp, and control module. Numerous inputs and outputs are provided to support composite, S-Video, and high-definition component video, stereo audio, and IR and serial device control. The CNXRMCLV can be installed at the display device (television, plasma, etc.) or local AV equipment location, connected to the head end by a single Cresnet cable and up to three CAT5E cables (available as **CresCAT®Q**, sold separately). Crestron's CAT5 video distribution technology permits cable lengths up to 750 feet (500 feet for component video).

Crestron room solution boxes are designed to provide maximum flexibility through the use of CAT5 balanced technology. The CAT5 video input port on the CNXRMCLV receives up to four simultaneous signals based upon the selected head end source. For instance, a component signal utilizes the first, second, and third pairs of the CAT5 cable to transmit the Y, Pb, and Pr components. Switching to an S-Video signal then utilizes just the first and second pairs to transmit S-Video's Y and C components. Composite utilizes only the first CAT5 pair. The fourth pair is ordinarily intended for digital audio.

To maximize the performance of video over CAT5, Crestron employs adjustable video compensation on each of the three CAT5 video input pairs. The fourth pair, which is uncompensated, is optimized for digital audio but may also be suitable for composite video.

The CNXRMCLV includes a built-in 8 X 8 video matrix switcher, accepting inputs from the four CAT5 pairs plus four local unbalanced inputs, all routed to up to eight local unbalanced outputs. Used with the **CNX-PVID8X3** or **CNX-PVID8X4** video distribution switchers, the CNXRMCLV automatically routes the incoming CAT5 video signals to the appropriate inputs on the local display device allowing the viewer to select any head end video source using a touchpanel, keypad, or handheld remote. In addition, the four local inputs may be used to accept video signals (typically composite or S-Video) from local AV devices (VCR, DVD, etc.) Source selection is transparent to the end-user with all switching occurring smoothly under the command of the control system.

Built-in video signal sensing is included on each local input to report the presence of video signals to the control system, providing verification of device power status and enabling auto-switching capability.

In addition to video, the CNXRMCLV also includes a CAT5 audio port to receive stereo audio from a **CNX-BIPAD8** audio distribution processor at the head end. The audio switcher built into the CNXRMCLV allows selection between the head end CAT5 signal and three local stereo inputs. A built-in stereo preamp provides control over volume, bass, treble, balance, loudness, mono, and mute using any touchpanel, keypad, or handheld remote. The preamp output may be connected to a line-level input on the local television, or used to drive a local room amplifier such as the **CNAMPX-2X60**. A second unprocessed output fed by its own independent switcher is provided to feed a local recording device or secondary zone.

Routing of digital audio signals can also be supported by the CNXRMCLV when fed from a **CNX-PVID8X4** switcher. The digital audio signal is received on the fourth pair of the CAT5 video input, passing through the CNXRMCLV's internal video matrix to a local RCA output for connection to



the S/PDIF coaxial input of any local device. Local digital audio sources may also be connected to any of the CNXRMCLV's RCA video inputs. Note that digital audio signals are not converted or processed by the CNXRMCLV's audio preamp.

The CNXRMCLV also supports a "return" feed to allow the audio and video signals from local AV sources to be routed to the head-end for redistribution to other rooms. The analog audio return is handled over the same CAT5E cable that carries the analog audio signal coming from the head end, while a dedicated CAT5E cable is required to enable the video and digital audio return.

Control ports on the CNXRMCLV include four IR/serial ports and one bi-directional RS-232 port, providing a powerful interface for control of numerous devices including video projectors, plasma displays, televisions, VCRs, DVD players, and more. A single digital input port is also provided to support the optional **CNXRMCS** TV current sensor, or any low-voltage contact closure device.

The CNXRMCLV functions as a slave device to any 2-Series control system communicating via the Cresnet control network. Any of Crestron's touchpanels, keypads, and handheld remotes may be used to provide the user interface to control the CNXRMCLV and all connected devices. Adding an optional **CNXRMIRD** IR receiver affords cost-effective control from any Crestron or third-party universal IR remote.

> *CAT5 audio & video receiver and control interface*

> *Composite, S-Video, and HDTV/component outputs*

> *Digital audio output (requires CNX-PVID8X4)*

> *Up to 4 video and 3 stereo audio inputs for local AV sources*

> *Integrated stereo preamp | independent record out*

> *CAT5 balanced audio and video returns — share local sources with other rooms*

# CNXRMCLV Enhanced Room Solution Box

- > Built-in video signal sensing
- > 1) RS-232 and 4) IR control ports
- > Optional current sensor
- > Optional IR remote receiver
- > Single-cable hookup using CresCAT-Q wire
- > Supports 1080i HDTV up to 500 feet
- > Adjustable video compensation
- > Controllable via Cresnet communications

## SPECIFICATIONS

### Video & Digital Audio

**Signal Types:** Component (YPbPr), S-Video (Y/C), or composite video; digital audio

**Video/HDTV Formats:** 480i (NTSC), 576i (PAL), 480p, 576p, 720p, 1080i

**Digital Audio Format:** S/PDIF coaxial

**Bandwidth:** 70MHz (unbalanced); 47MHz (CAT5) per pair

**Crosstalk:** -60dB

### Audio

**Controls:** Volume, Balance, Bass, Treble, Loudness, Mute, Mono

**Volume Gain Range:** -80dB to +20dB, 1 dB steps

**Mute:** -100dB

**Bass Gain Range:** ±12dB

**Treble Gain Range:** ±12dB

**S/N Ratio:** >100dB

**THD+N:** <0.02%

### Connectors

**VIDEO IN:** (1) 8-pin RJ45 female, shielded;

CAT5 balanced video input port;

Input Impedance: 100 ohms per pair;

Connects to **CNX-PVID8X3**, **CNX-PVID8X4**, or any "CH" CAT5 video output port\*

**VIDEO OUT:** (1) 8-pin RJ45 female, shielded;

CAT5 balanced video output port;

Output Impedance: 100 ohms per pair;

Connects to **CNX-PBVR4** or any "CH" CAT5 video input port\*

**AUDIO:** (1) 8-pin RJ45 female, shielded;

Bi-directional CAT5 balanced audio port;

Maximum Input/Output Levels: 4 Vrms;

Input/Output Impedances: 600 ohms;

Connects to **CNX-BIPAD8**, **CNX-PBAR4**, or any "CH" CAT5 audio port\*

**VIDEO IN 5 - 8:** (4) RCA female comprising up to (4) video or digital audio inputs;

Input Impedance: 75 ohms;

Input Level: 1 Vp-p nominal;

Signal Sensing Threshold: 0.25 Vp-p;

Connect to video/digital audio outputs of local source devices

**VIDEO OUT A - H:** (8) RCA female comprising up to (8) video or digital audio outputs;

Output Impedance: 75 ohms;

Output Level: 1 Vp-p nominal;

Connect to video/digital audio inputs of local display/amplifier devices;

Note: Outputs E - H function in parallel with the CAT5 VIDEO OUT port

**AUDIO IN A - C:** (6) RCA female comprising (3) unbalanced stereo line-level audio inputs;

Maximum Input Level: 3.2 Vrms;

Input Impedance: 10k ohms;

Connect to audio outputs of local source devices

**AUDIO OUT:** (2) RCA female;

Unbalanced stereo line-level audio output (variable level/tone);

Maximum Output Level: 2.5 Vrms;

Output Impedance: 10 ohms;

Connects to audio inputs of local **CNAMPX-2X60** room amplifier

**REC OUT:** (2) RCA female;

Unbalanced stereo line-level audio output (fixed level/tone);

Maximum Output Level: 2.5 Vrms;

Output Impedance: 10 ohms;

Connects to audio inputs of local recording device, AV receiver, or TV

**RS-232:** (1) 6-pin RJ11 female;

Bidirectional RS-232 COM port and computer console port;

Up to 115.2k baud, RTS/CTS hardware handshaking

**IR IN:** (1) 3.5 mm TRS mini-phone female;

For connection of the **CNXRMIRD** IR receiver (sold separately);

Allows IR wireless control from Crestron or third-party remotes using RC-5 IR commands

**IR OUT A - D:** (4) 3.5mm mini-phone female;

IR/Serial output ports;

IR output up to 1.2 MHz;

1-way serial TTL/RS-232 (0-5 Volts DC) up to 9600 baud;

Connect to **STIRP** IR probes (sold separately)

**SENS:** (1) 2-pin 3.5mm detachable terminal block

TTL level digital input port, 5 Volts DC, 2k ohms pull-up resistor

Connects to **CNXRMCS** current sensor (sold separately) or contact closure

**NET:** (1) 4-pin 3.5mm detachable terminal block;

Cresnet slave port, connects to Cresnet control network

### Controls & LED Indicators

**VIDEO INPUT COMP 1 - 3:** (3) screwdriver-adjustable pots for CAT5 video input compensation

**PWR:** (1) green LED, indicates 24 Volts DC power supplied from Cresnet control network

**NET:** (1) yellow LED, indicates communication with Cresnet system

**SETUP:** (1) recessed miniature pushbutton and (1) red LED, used for touch-settable ID (TSID)

### Power Requirements

**Cresnet Power Usage:** 12 Watts (0.5 Amps @ 24 Volts DC)

### Environmental

**Temperature:** 41° to 122°F (5° to 50°C)

**Humidity:** 10% to 90% RH (non-condensing)

### Enclosure

Black metal, surface mount box with (2) integral mounting flanges

### Dimensions

**Height:** 1.94 in (4.93 cm)

**Width:** 11.60 in (29.46 cm)

**Depth:** 7.22 in (18.34 cm)

# CNXRMCLV Enhanced Room Solution Box

## Weight

2.31 lbs (1.05 kg)

\* Maximum CAT5 Distance: 500 feet for component, 750 feet for composite and S-Video, 1000 feet for audio

## Available Models

**CNXRMCLV:** Enhanced CAT5 Room Solution Box

## Available Accessories

**CNAMPX-2X60:** 2 Channel Room Amplifier

**CNAMPXI-2X60:** 2 Channel Room Amplifier - International Version, 230VAC

**CNXRMCS:** TV Current Sensor

**CNXRMIRD:** IR Receiver

**CRESCAT-Q-NP-SP500:** Crestron Home® CAT5 AV Cable, 4x CAT5e & Cresnet, non-plenum, 500 ft spool

**ST-MB:** Master Blaster™ IR Sprayer

**ST-SPL:** IR Splitter

**ST-XX:** Custom Serial Interface Cable

**STCP-501:** Serial Adapter Cable

**STI-MB:** Master Blaster™ IR Sprayer - International Version, 230V

**STIRP:** IR Emitter Probe

## Typical CNXRMCLV Connections

