

Crestron **CNTV**
CRESNET Television Control Unit

Operations Guide



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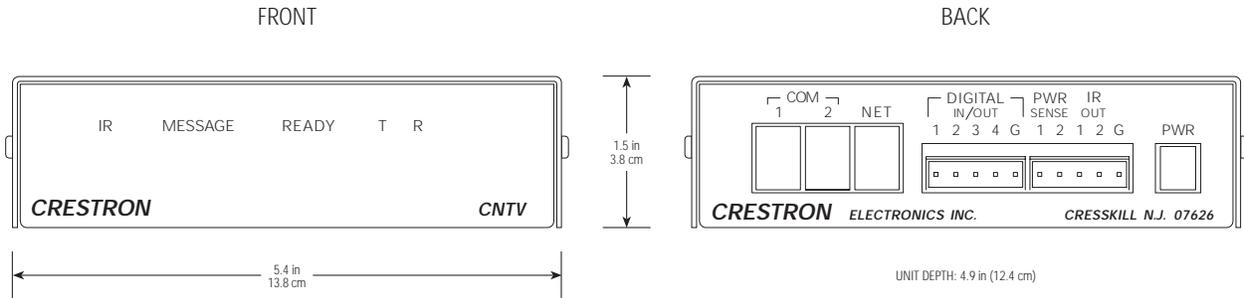


Figure 1. CNTV, Panel Views

DESCRIPTION:

Functional Description

The CNTV, illustrated in figure 1, is part of the MRMT-21 RF Classroom System or may be used separately as a Cresnet network device. Regardless of the system, the primary function of the CNTV is to accept and process system commands to control televisions or other associated audio/video devices in a remote location. The scope of this document provides technical information of the CNTV as a stand-alone Cresnet network device. Refer to the latest revision of MRMT-21 (Doc. 5602) for operation of the unit within the MRMT-21 system.

Physical Description

The CNTV is housed in a black enclosure with silk-screened labels on the front and back of the case. On the front, there are five red LEDs for indicating the current status of the unit. All connections are made on the back of the unit.

There are four rubber feet on the base of the unit for stability and to prevent slippage. If necessary, the user can apply Dual Lock fasteners to the unit's underside. The rubber feet do not need to be removed. The fasteners may be preferred for additional stability when mounting the unit onto the surface of a TV.

LEADING SPECIFICATIONS:

Table 1 provides a summary of leading specifications for the CNTV. Dimensions and weight are rounded to the nearest tenth unit.

Table 1. Leading Specifications

SPECIFICATION	DETAILS
Power Requirements	1.2 Watts, 9 - 28 VDC
SIMPL Windows	Version 1.30.11 or later ¹
CNMSX Upgrade File	Version 5.04.11x.upz or later ²
CNRACKX Upgrade File	Version 5.07.06w.upz or later ²

Table 1. Leading Specifications (Continued)

SPECIFICATION	DETAILS
Dimensions & Weight	Height: 1.5 in (3.8 cm) Width: 5.4 in (13.8 cm) Depth: 4.9 in (12.4 cm) Weight: 1.3 lb (0.6 kg)

- 1 The latest software versions can be obtained from the Downloads page (SIMPLWIN Library) of Crestron's website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.
- 2 UPZ extension files can be obtained from the Downloads page (OPSYS Library) of Crestron's website.

As of the date of manufacture, the unit has been tested and found to comply with specifications for CE marking.



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.

CONTROLS AND INDICATORS:

Controls

The CNTV has an IR receiver on the front-right side, located above the CNTV label. Verify that the receiver is in a line-of-sight path and unobstructed. The LED flashes when IR is received, confirming a good line-of-sight path.

CAUTION

Direct sunlight or other light sources may prevent the unit from working properly by desensitizing the CNTV IR receiver.

All CNTVs contain an IR receiver port, two IR outputs, two power sensors, four VersiPorts, two serial ports, and a CRESNET port. The IR receiver port receives signals from the MRHC transmitter. The two IR outputs are designed to work with IR controlled devices including TVs and other classroom equipment. The digital connector of the CNTV-CS (supplied) attaches to the DIGITAL IN/OUT back panel connector of the CNTV. The CNTV-CS senses whether a single television set (9" color or larger) is OFF or ON. The NET port is provided for connection to the Cresnet system. There are four bidirectional TTL lines (or VersiPorts) on the unit which are capable of sensing TTL voltage levels, analog voltage levels, or contact closures to ground. They can also output TTL/CMOS logic levels. These lines provide control or sensing of additional classroom equipment (i.e., security systems).

The ports are preconfigured by Crestron to determine which of the following functions each port performs. The serial ports are capable of several different functions.

1. Connection of wired control panel (MRWP or MRWPLCD).
2. Connection to a classroom computer running Crestron's IBM Linkway interface, Crestron's Course Director software, or Crestron's MacIntosh Transmitter software.

Indicators

There are five LED indicators located on the front panel of the CNTV.

IR

This red LED turns "on" when an IR signal from the hand transmitter is received by the CNTV.

MESSAGE

This red LED "lights" when a message has been sent to the classroom in which the unit resides. To turn "off" the LED, depress the Message button on the transmitter (MRHC) or wired panel (MRWP or MRWPLCD).

READY

This red LED "lights" when sources have been scheduled and are active for the classroom in which the unit resides.

T and R

These two red LEDs "light" or flash rapidly when there is communication between the associated control system and the CNTV. The LEDs should illuminate when power is supplied to the CNTV.

INSTALLATION/SETUP:

Optional Equipment

Due to variations in installation requirements, not all possible peripheral pieces of equipment are supplied with the CNTV. Table 2 provides a list of all optional equipment that can be used in conjunction with the CNTV.

Table 2. Optional Equipment

EQUIPMENT	PART NUMBER	MANUFACTURER	RATIONALE
Wall Jack	048-0059-ND	Digi-Key	Provides interface to Cresnet system.
RJ11 (6-position, 6-pin) modular telephone connector cable	Consult catalog regarding application requirements.	Digi-Key	Provides connection to Cresnet system.

Table 2. Optional Equipment (Continued)

EQUIPMENT	PART NUMBER	MANUFACTURER	RATIONALE
MRIRP	MRIRP	Crestron	Connects system to additional IR devices. One MRIRP is supplied with CNTV.
Diagnostic cable (9-pin D to 6-position, 6-pin modular telephone jack)	15676-2	Crestron	Supplied by Crestron (with MRSC) to provide connection to PC for software setup and diagnostics. Refer to figure 2.
Power Sensor Loop	N/A	Refer to figure 3.	Detects electromagnetic fields. Use in place of CNTV-CS or on second TV.
MRWP	MRWP	Crestron	Wired control panel.
MRWPLCD	MRWPLCD	Crestron	Wired control panel with LCD.
MRHC	MRHC	Crestron	IR handheld remote.

Identity Code

The CNTV identity code (ID CODE) consists of a two-digit hexadecimal number. These codes are vital for proper communication and typically factory set. An ID CODE label is affixed to each unit. The ID CODE can range from 03 to FE. The ID CODE of each unit must match the ID CODE specified in the SIMPL Windows program in order for the device to be addressed properly.

If the CNTV ID CODE needs to be altered, it can be set from a PC via CNTV SETUP menus. Refer to the Appendix in this guide for details that describe the method of setting the CNTV ID CODE.

Power and IR Testing

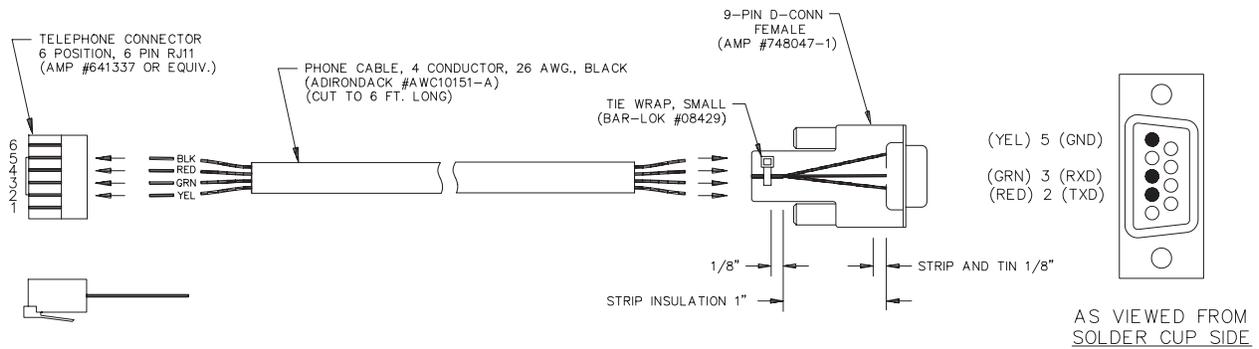
Power and IR testing consists of equipment placement and running a software test. Placement of sensing devices must be performed before running the software test. Make proper connections as shown in figure 4. Refer to the Appendix in this guide for details that describe how to run a power sensor test. If a wired panel is employed, an abridged power sensor test consists of observing illumination of the "POWER" LED while turning TV power on and off manually.

Power Sensor Placement

Use a CNTV-CS (supplied) or power sensor loop (optional) to detect power from television or other equipment to be controlled. The CNTV-CS should be plugged into an AC outlet and the television to be current sensed is plugged into the CNTV-CS. The digital connector of the CNTV-CS is attached to the DIGITAL IN/OUT back panel connector of the CNTV. Alternatively, a wire loop (as shown in figure 3) can be constructed and placed in the electromagnetic field of the television flyback transformer. Perform Power Sensor Test (refer to Enter Test Menu in the Appendix of this guide) to determine if the device is OFF or ON or in the electromagnetic field.

NOTE

The loop is less reliable than the CNTV-CS, since it depends heavily on position and the low-power emissions of the television.



NOTE:

This cable is provided as a "Ship With" item for the MRSC computer (SchoolNet).

Figure 2. Diagnostic Cable, Part Number 15676-2

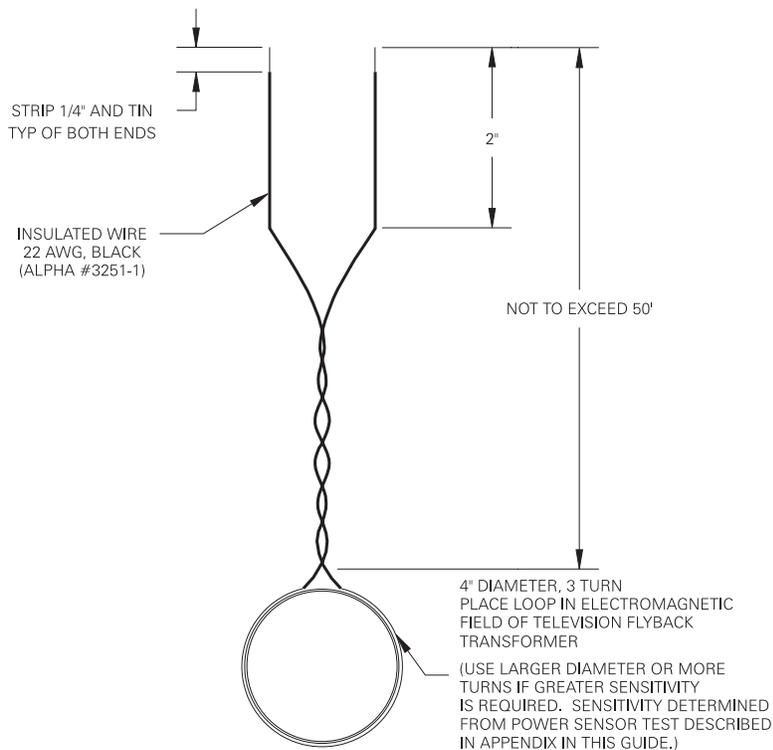
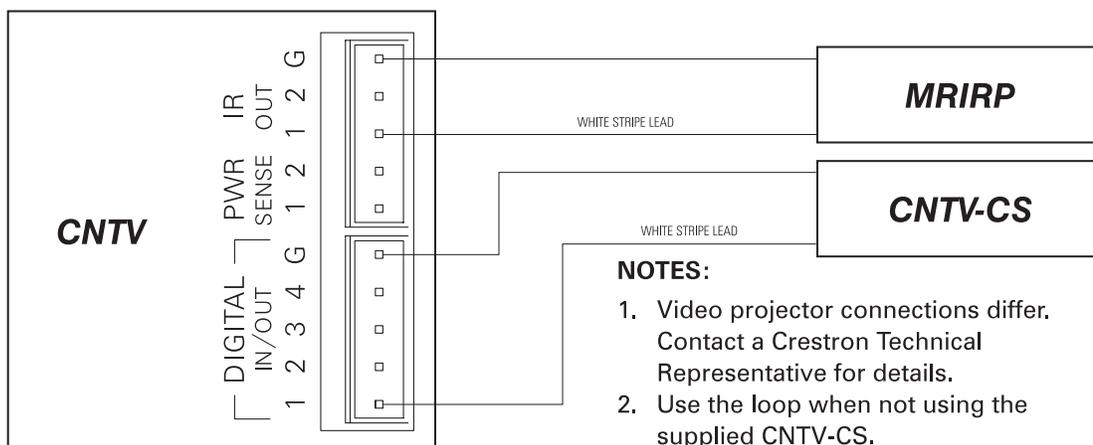


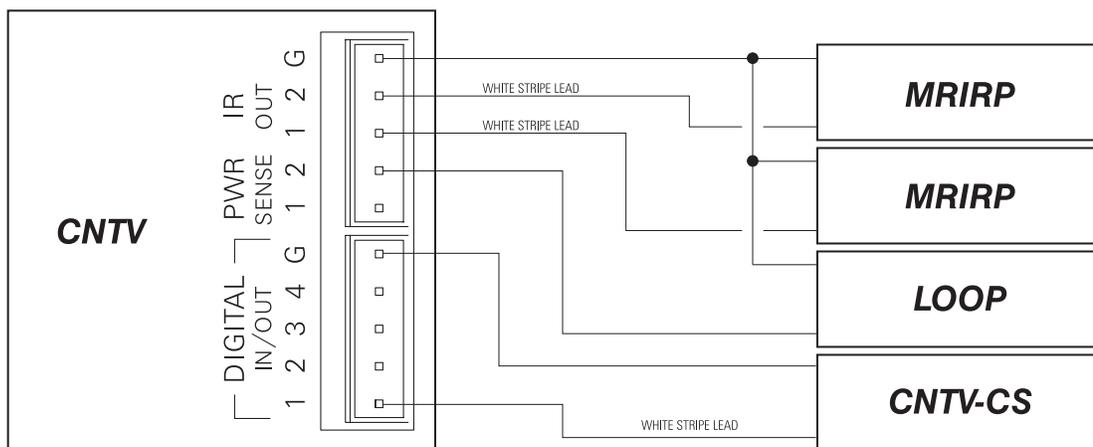
Figure 3. Power Sensor Loop

ONE TV:



- NOTES:**
1. Video projector connections differ. Contact a Crestron Technical Representative for details.
 2. Use the loop when not using the supplied CNTV-CS.

TWO TVs:



OR

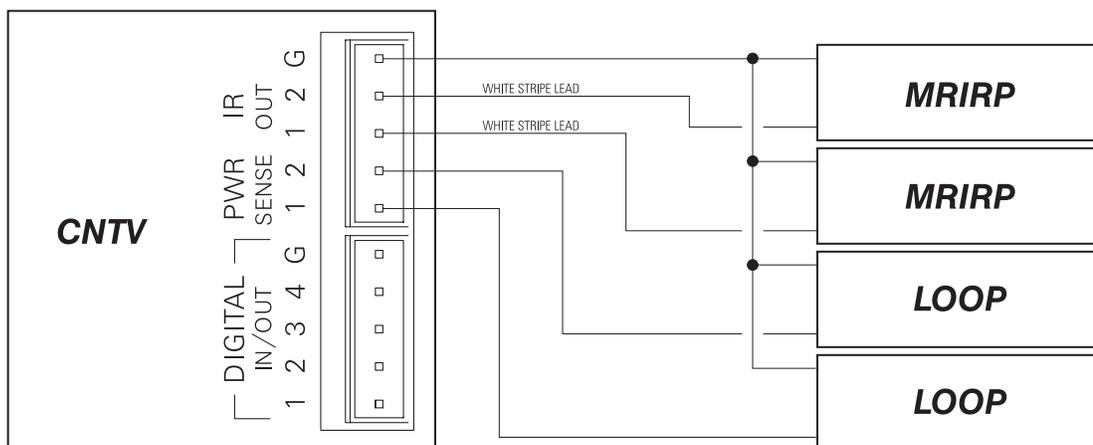


Figure 4. CNTV, Power and IR Sense Connections

IR Probe Placement

Place a MRIRP over the IR window on a television or other equipment to be controlled. MRIRP must completely cover IR window and other extraneous light should be blocked with opaque tape. Turn the TV on manually. If the TV does not respond to "MUTE" or "VOLUME" commands from the transmitter or wired panel, change the position of the MRIRP.

Preparation for Use

NOTE

The CNTV should be powered from a 12 VDC power pack. Obtaining power from the power pack and the network does not result in damage to the unit. If system design prevents use of power pack (i.e., absence of AC outlet) contact a Crestron technical support representative for power alternatives.

Crestron recommends specific power packs for its network devices. The recommended power pack for the CNTV is Crestron part number PW-1205. If an external power pack other than this Crestron model is obtained, verify that it meets the required specifications and polarity as shown in table 3.

Table 3. DC Power Pack Specifications

CRESTRON POWER PACK	INPUT SPECS	OUTPUT SPECS
PW-1205	120VAC 60Hz 18W	12VDC 500mA



DC Power Pack Polarity

Refer to figure 5 for a typical hook-up diagram of the CNTV within a Cresnet system. Connecting cables and hardware are not supplied with the unit, due to variations of installation requirements. Crestron recommends that wall jacks with an RJ11 (6-6) receptacle be located in the room with a CNTV. Use a telephone cable of appropriate length to connect the CNTV to the wall jack. Wire a Cresnet cable to the four terminals at the rear of the wall jack.

CAUTION

The modular NET port on the CNTV requires unique wiring. Wiring the port according to Crestron Network Modular Cable Requirements (latest version of Doc. 5682) will result in damage to the CNTV.

Due to the wire order within the cable, the connecting color scheme is non-standard and illustrated in Detail A of Figure 5. Local power is provided, so the fourth wire (+ 24V) is not needed. If a wall jack connection is not an option, Detail A also illustrates a direct to Cresnet alternative. Detail B provides a detailed illustration of the communication cable required if a wired panel is employed as an interface.

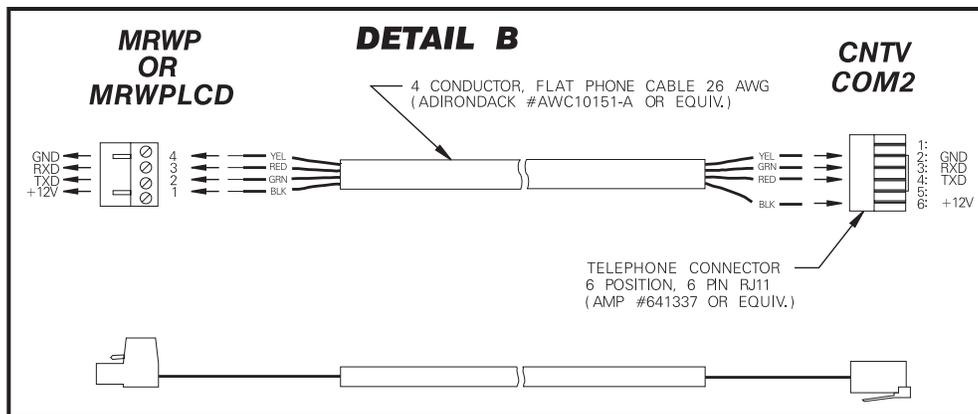
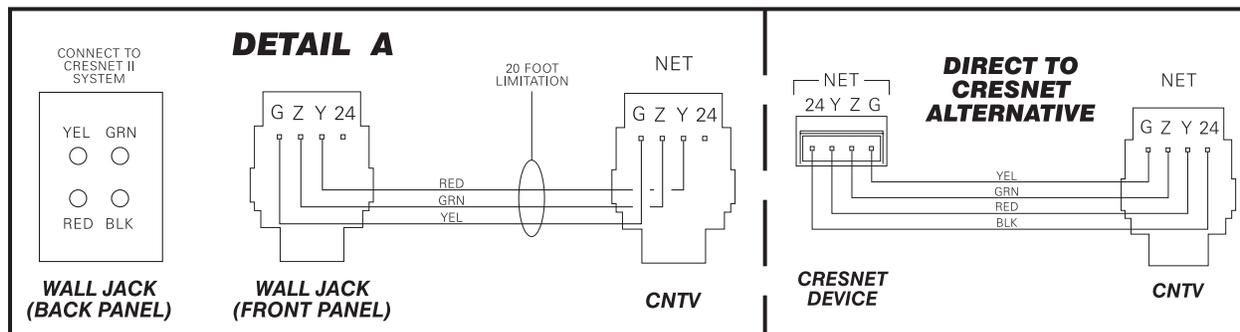
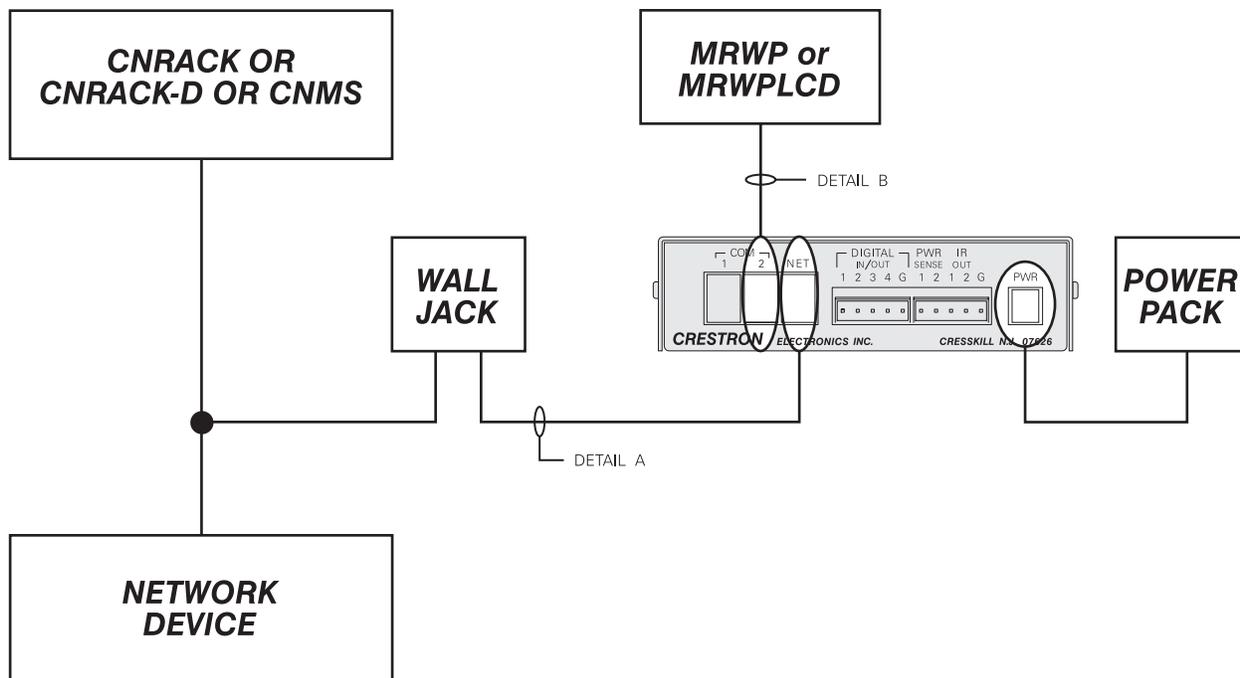


Figure 5. CNTV, Typical Hook-up Diagram of the Cresnet System

PROGRAMMING:

The CNTV requires custom configuration in order to program. Prior to closing your order, it was necessary to complete the Crestron CNTV Worksheet. This worksheet permits Crestron to prepare a specific configuration file based on the intended use of the CNTV. Append this file to the overall control system program in SIMPL Windows. For more details regarding programming the CNTV, consult a Crestron technical representative.

TEST/TROUBLESHOOTING:

Table 4 provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron technical representative.

Table 4. Troubleshooting Guide

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
TV is not responding to hand control.	Batteries in hand control may be dead.	Replace batteries.
	Interference with IR commands from other source or obstructions.	Verify a direct line-of-sight path between the emitters at the top of the hand control and the IR receptor on the CNTV front panel. Do not allow direct sunlight or other light sources to shine directly on the CNTV IR receptor.
	Transmitter is near maximum range.	Move closer and try again until IR LED "lights" when a button is depressed.
TV is not responding to hand control.	IR transmitter in hand control may not be pointed directly at CNTV.	Correct the position of the hand control or the position of the CNTV for optimum performance.
	Power sensor may not be attached to TV.	Verify that power sensor is correctly positioned. Perform Power Sensor Test, refer to Enter Test Menu in this guide.
	IR probe may not be attached to TV.	Verify that IR probe is correctly positioned. Depress the MUTE button to see if the TV responds.
	Incorrect IR driver assigned for TV (during installation only).	Verify make of TV and obtain correct IR driver number from Crestron.
MESSAGE LED is illuminated.	Message has been sent to the classroom by the headend or scheduling computer.	Call media center to obtain message. Depress Message button to extinguish MESSAGE LED.

Table 4. Troubleshooting Guide (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
READY LED is not illuminated.	Event is not scheduled for this classroom at the current time.	Call media center to check scheduling time. Verify correct date and time (AM or PM).
	Scheduled event has not been prepared.	Call media center to determine if event is prepared.
	Communication between scheduling computer and CNTV has been disrupted.	Check the message window on the scheduling computer to determine if a network failure has occurred. Check that the scheduling software (SchoolNet) is running. Check all connections between PC and network. Verify that the ID for the CNTV is properly set to match the SIMPL program and scheduling computer.
T and R LEDs are not illuminated.	CNTV is not communicating with its associated control system.	Verify that power is supplied to the CNTV and control system.
		Verify that the ID for the CNTV is properly set to the network ID which matches the SIMPL program.

FURTHER INQUIRIES:

If after reviewing this Operations Guide for the CNTV, you cannot locate specific information or have questions, please take advantage of Crestron's award winning technical support team by calling:

In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.

In Europe, call Crestron International at +32-15-50-99-50.

In Asia, call Crestron Asia at +852-2341-2016.

In Latin America, call Crestron Latin America at +525-574-15-90.

For local support from exclusive Crestron factory-trained personnel call:

In Australia, call Soundcorp at +613-9488-1555.

In New Zealand, call Amber Technologies at +649-410-8382.

APPENDIX

Software Setup and Diagnostics

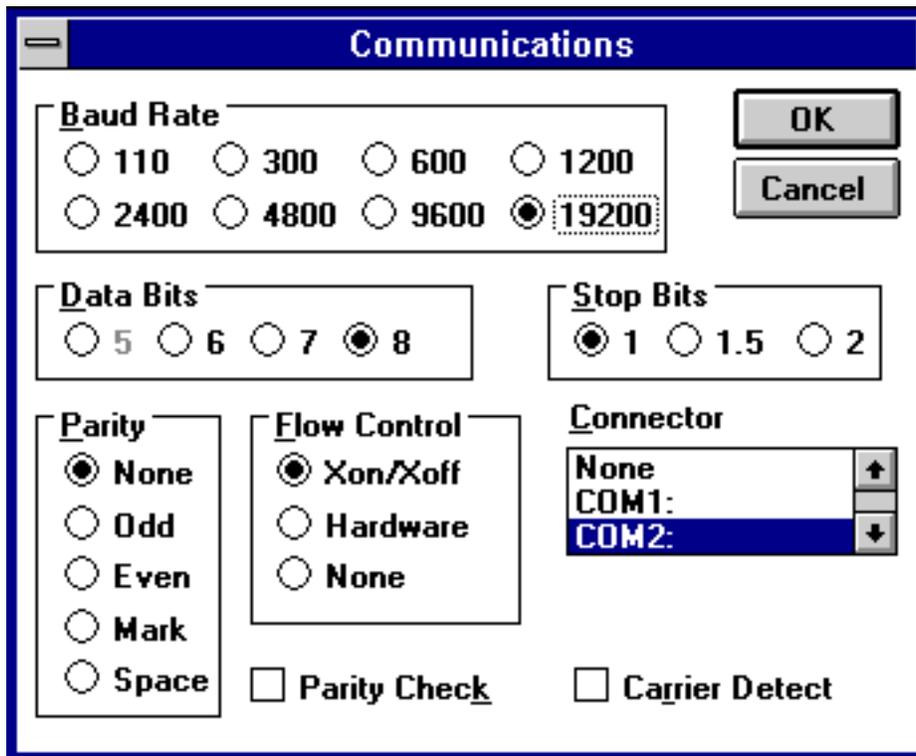
CNTV setup parameters and diagnostic tools are accessible via a PC. A diagnostic cable, illustrated in figure 2, is used to connect the PC to COM1 port of the CNTV for setup and diagnostic purposes.

Connect a computer running a terminal emulator, such as Windows Terminal (included with Windows™), ProComm Plus, or Telix. Set the communication parameters and text transfer parameters, as follows.

1. From the Windows Terminal program (Accessories menu), select Settings and Communications to open the Communications dialog box.
2. Alter the terminal's communication parameters. Crestron requires the following settings.

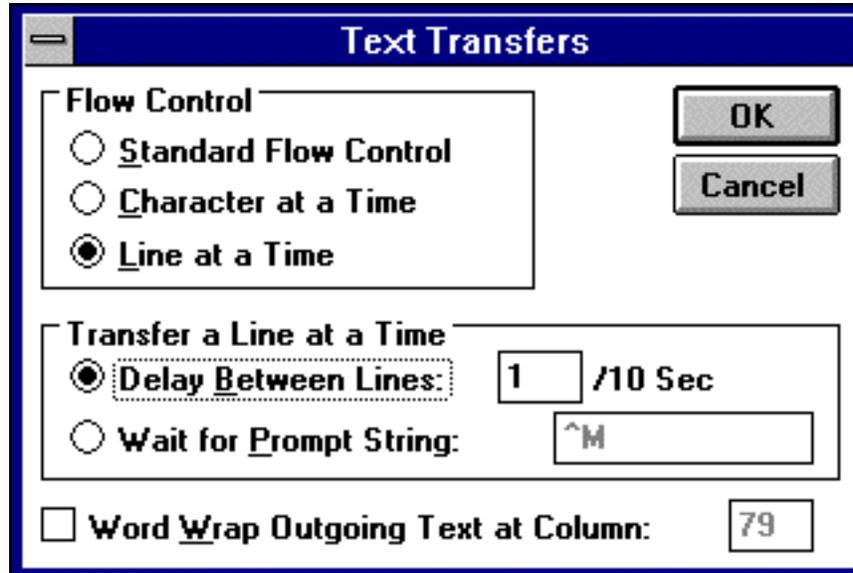
Baud Rate:	19200
Data Bits:	8
Parity:	None
Stop Bits:	1

The COM port on the PC is open to the discretion of the user. The Communications dialog box will appear, as shown below.



3. Click OK. The program assigns communication parameters.

4. Select Settings and Text Transfers to open the Text Transfers dialog box.
5. Select "Line at a Time" Flow Control. The Text Transfers dialog box will appear, as shown below.



6. Click OK. The program alters the flow control to provide support for ASCII file transfers with a 0.1 second delay between lines.

MRMT11 Setup Menus

The MRMT11 SETUP menus can be accessed only after connecting the communication port of the PC (specified in the previous section) to the COM1 port of the CNTV with the diagnostic cable and applying power. Refer to the Preparation for Use section for details that describe CNTV power connections. Immediately after applying power to the CNTV, depress the letter "x" on the keyboard. The menu selections are not case sensitive. The MRMT11 Setup Menu appears on the screen as six lines of text.

- MRMT11 Setup Menu**
- 1 - Net ID Tasks
 - 2 - Downloading Tasks
 - 3 - Configuration Information
 - 4 - Enter Test Menu
 - 0 - Return to normal operation

The menu consists of five options. Selection is made by depressing the appropriate number for each menu option.

Net ID Tasks

Depressing "1" from the MRMT11Setup Menu opens the Net ID Setup Menu which appears on the screen as four lines of text.

Net ID Setup Menu

- 1 - Display Current Net ID**
- 2 - Enter new Net ID**
- 0 - Return to previous menu**

To display the current CNTV ID CODE setting, depress "1". To enter a new CNTV ID CODE, depress "2", enter the new ID CODE, and depress "Enter". The program responds by displaying the ID CODE as verification. Refer to the Identity Code section of this guide for details on choosing a proper ID CODE. To return to the MRMT Setup Menu, depress "0".

Downloading Tasks

Depressing "2" from the MRMT11 Setup Menu opens the MRMT11 Downloading Tasks Menu which appears on the screen as six lines of text.

MRMT11 Downloading Tasks Menu

- 1 - Load Scratch Page**
- 2 - Verify Scratch Page**
- 3 - Program Data**
- 4 - Program Code**
- 0 - Return to previous menu**

The options available from the MRMT11 Downloading Tasks Menu are beyond the scope of this operations guide and should only be used under supervision from a Crestron technical support representative during telephone support.

Configuration Information

Depressing "3" from the MRMT11 Setup Menu opens the MRMT11 Retrieve Information Menu which appears on the screen as six lines of text.

MRMT11 Retrieve Information Menu

- 1 - Firmware Version**
- 2 - Current Configuration File Name**
- 3 - Show all Configuration Files**
- 4 - Change Current Configuration File**
- 0 - Return to previous menu**

The options available from the MRMT11 Retrieve Information Menu are beyond the scope of this operations guide and should only be used under supervision from a Crestron technical support representative during telephone support.

Enter Test Menu

Depressing "4" from the MRMT11 Setup Menu opens the MRMT11 Test Menu which appears on the screen as four lines of text.

MRMT11 Test Menu

- 1 - Power Sensor Test**
- 2 - VersiPort Tests**
- 0 - Return to previous menu**

To display the MRMT11 Power Sensor Test Menu and begin power sense testing, depress "1". To display the CNTV VersiPort Test Menu and begin testing, depress "2". To return to the MRMT11 Setup Menu, depress "0".

Power Sensor Tests

Depressing "1" from the MRMT11 Test Menu opens the MRMT11 Power Sensor Test Menu which appears on the screen as four lines of text.

MRMT11 Power Sensor Test Menu

- 1 - Power Sensor 1**
- 2 - Power Sensor 2**
- 0 - Return to previous menu**

Before beginning a power sensor test, refer to figure 4 for wiring connections of the power sense (PWR SENSE) and infrared output (IR OUT) ports of the CNTV. The figure provides connections to one or two TVs. The test requires additional equipment: CNTV-CS, MRIRP, and possibly a power sensor loop. The quantity of each piece of equipment depends on whether one or two TVs are being sensed. A single CNTV-CS and MRIRP is shipped with each CNTV. The power sensor loop is a make item (not supplied). Figure 3 describes the loop materials and how to make one. If the CNTV is driving more than one TV, an additional MRIRP must be ordered.

To initiate the Power Sensor Test for the power sense (PWR SENSE) 1 port, depress "1". To initiate the Power Sensor Test for the power sense (PWR SENSE) 2 port, depress "2". To return to the MRMT11 Test Menu, depress "0".

The MRMT11 Power Sensor Test for either port begins by the PC prompting the user to depress the space bar to initialize the test. Turn on power to the TV. As long as the power sensor hardware is detecting power, an asterisk (*) appears on the screen every quarter second. If the power sensor hardware is not detecting power, a dash (-) appears on the screen at quarter second intervals. Move the loop while watching the screen to determine the best placement of the sensors. To end the test, depress the space bar.

VersiPort Tests

Depressing "2" from the MRMT11 Test Menu opens the MRMT11 VersiPort Test Menu which appears on the screen as six lines of text.

MRMT11 VersiPort Test Menu

- 1 - Test Digital Inputs**
- 2 - Read Analog Inputs**
- 3 - Set Analog Input Thresholds**
- 4 - Test Analog Inputs**
- 0 - Return to previous menu**

There are four types of VersiPort tests. Selection is made by depressing the appropriate number for each menu option.

Test Digital Inputs

Depressing "1" from the MRMT11 VersiPort Test Menu opens the MRMT11 VersiPort Digital Input Test Menu which appears on the screen as six lines of text.

MRMT11 VersiPort Digital Input Test Menu

- 1 - VersiPort 1**
- 2 - VersiPort 2**
- 3 - VersiPort 3**
- 4 - VersiPort 4**
- 0 - Return to previous menu**

To initiate the VersiPort Digital Input Test for each pin in the DIGITAL IN/OUT port, depress the corresponding menu number. For example, to test pin 1, depress 1 on the keyboard.

The MRMT11 VersiPort Digital Input Test begins by the PC prompting the user to depress the space bar to initialize the test. As long as the VersiPort is detecting an active signal, an asterisk (*) appears on the screen every quarter second. If the VersiPort is not detecting an active signal, a dash (-) appears on the screen at quarter second intervals. An active signal is defined by a contact closure to ground or TTL logic "0". Inactive signals are defined as open or TTL logic "1". To end the test, depress the space bar.

Read Analog Inputs

Depressing "2" from the MRMT11 VersiPort Test Menu opens the MRMT11 VersiPort Display Analog Input Menu which appears on the screen as six lines of text.

MRMT11 VersiPort Display Analog Input Menu

- 1 - VersiPort 1**
- 2 - VersiPort 2**
- 3 - VersiPort 3**
- 4 - VersiPort 4**
- 0 - Return to previous menu**

To initiate a reading of the VersiPort Analog Input for each pin in the DIGITAL IN/OUT port, depress the corresponding menu number. For example, to test pin 1, depress 1 on the keyboard.

The MRMT11 VersiPort Display Analog Input begins by the PC prompting the user to depress the space bar to initialize the reading. The actual value read from the VersiPort is displayed on the screen every quarter second. Acceptable input levels range between 0 and 5 volts or contact closure (equivalent to logic "0"). Readings are provided in a two-digit hexadecimal format. The values range from 00 to FF which corresponds to 0 to 5 volts (e.g., 40 is equivalent to 1.25 volts, 80 is equivalent to 2.50 volts, etc.). To end the test, depress the space bar.

Set Analog Input Thresholds

Depressing "3" from the MRMT11 VersiPort Test Menu opens the MRMT11 VersiPort Set Analog Threshold Menu which appears on the screen as six lines of text.

MRMT11 VersiPort Set Analog Threshold Menu

- 1 - VersiPort 1**
- 2 - VersiPort 2**
- 3 - VersiPort 3**
- 4 - VersiPort 4**
- 0 - Return to previous menu**

To set the VersiPort Analog Threshold for each pin in the DIGITAL IN/OUT port, depress the corresponding menu number. Therefore, to set pin 1, depress 1 on the keyboard. Enter two hexadecimal digits as the threshold value for each VersiPort pin. For example, entering the hexadecimal value of 40 (1.25 volts) is a good threshold for TTL logic.

Test Analog Inputs

Depressing "4" from the MRMT11 VersiPort Test Menu opens the MRMT11 VersiPort Analog Input Test Menu which appears on the screen as six lines of text.

MRMT11 VersiPort Analog Input Test Menu

- 1 - VersiPort 1**
- 2 - VersiPort 2**
- 3 - VersiPort 3**
- 4 - VersiPort 4**
- 0 - Return to previous menu**

To initiate the VersiPort Analog Input Test for each pin in the DIGITAL IN/OUT port, depress the corresponding menu number. For example, to test pin 1, depress 1 on the keyboard.

The MRMT11 VersiPort Analog Input Test begins by the PC prompting the user to depress the space bar to initialize the test. This test indicates whether the threshold value is exceeded. As long as the value read at the VersiPort is greater than or equal to the threshold value, an asterisk (*) appears on the screen every quarter second. If the value read at the VersiPort is less than the threshold value, a dash (-) appears on the screen at quarter second intervals. To end the test, depress the space bar.

RETURN AND WARRANTY POLICIES:**Merchandise Returns / Repair Service**

1. No merchandise may be returned for credit, exchange, or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address.
2. Products may be returned for credit, exchange, or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, Cresskill, 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 Cresnet products, denoted by a "CN" prefix model number, to be free from manufacturing defects in materials and workmanship for a period of three (3) years from the date of shipment to purchaser. Disk drives and any other moving or rotating mechanical parts are covered for a period of one (1) year. CRESTRON warrants all its other products for a period of one year from the defects mentioned above, excluding touchscreen display components which are covered for 90 days. Incandescent lamps are completely excluded from Crestron's Limited Warranty. 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.

CRESTRON shall not be liable to honor warranty terms 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 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 makes no other warranties nor authorizes any other party to offer any warranty, expressed or implied, including warranties of merchantability for this product. This warranty statement supersedes all previous warranties.

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