

Crestron **CAPTURE-HD** and **CAPTURE-HD-PRO**

Capture HD[®]

High-Definition Capture Recorder

Operations Guide



Important Safety Instructions

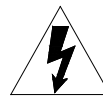
- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Disconnect power prior to connecting or disconnecting equipment.
- Do not install in direct sunlight.
- The apparatus must be installed in a way that the power cord can be removed either from the wall outlet or from the device itself in order to disconnect the mains power.
- Prevent foreign objects from entering the device.

WARNING:

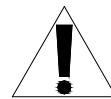
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THE APPARATUS.

WARNING:

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. THERE ARE NO USER SERVICEABLE PARTS INSIDE. ONLY QUALIFIED SERVICE PERSONNEL SHOULD PERFORM SERVICE.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

THIS IS AN APPARATUS WITH CLASS I CONSTRUCTION. IT SHALL BE CONNECTED TO AN ELECTRICAL OUTLET WITH AN EARTHING GROUND TERMINAL.

IMPORTANT:

This device can be used with Class 2 output wiring.

Regulatory Compliance

As of the date of manufacture, the CAPTURE-HD and CAPTURE-HD-PRO have been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following 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.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: 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

Industry Canada (IC) Compliance Statement

CAN ICES-3(B)/NMB-3(B)

The specific patents that cover Crestron products are listed at patents.crestron.com.

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Capture-HD High-Definition Capture Recorder: CAPTURE-HD/CAPTURE-HD-PRO

Introduction

The CaptureLiveHD™ system from Crestron® answers the call for a high-quality meeting and lecture capture solution that is simple enough for the entire faculty to use, and affordable enough for wide-scale deployment across any size campus or corporate enterprise. CaptureLiveHD delivers a complete end-to-end solution for scheduling, recording, and online delivery of captured content at the lowest cost of ownership on the market. Flexible enough to fit any education, government, medical, or corporate work-flow model, CaptureLiveHD translates to greater usage of resources and a more effective education experience while minimizing support overhead.

As part of a complete CaptureLiveHD system, the Capture HD® High-Definition Capture Recorder (CAPTURE-HD) provides a very simple, one-box component for capturing lectures, presentations, medical procedures, seminars, and training sessions. It is designed for easy integration in a classroom, lecture hall, training lab, or boardroom. It allows presenters and instructors to use their choice of multimedia sources, including high-definition videos, computers, whiteboards, and annotators. The CAPTURE-HD base model provides HDMI® and RGBHV inputs for such sources, plus a composite video input for a camera and line level audio input for a wireless mic. The CAPTURE-HD-PRO model adds a 3G-SDI input to support HD digital cameras. The CAPTURE-HD and CAPTURE-HD-PRO models are hereinafter referred to as “Capture recorder” unless otherwise noted.

Features and Functions

- Delivers a low-cost, high-performance HD presentation capture solution
- Designed for college, university, teaching hospital, government and business applications
- Records the complete AV presentation, classroom lecture, or training session
- Captures in high-quality H.264 format at up to HD 1080p resolution

(Continued on following page)

Features and Functions

(Continued)

- Allows live streaming to any device or server via RTSP (Real Time Streaming Protocol)
- Extremely easy to use and flexible enough to fit any workflow model
- Works with Crestron Fusion RV[®] software for a total workflow engine*
- Integrates easily into existing AV presentation systems and networks
- Provides inputs for high-definition digital and analog AV sources
- Built-in scaling ensures compatibility with a full range of sources
- Provides a composite video input for the presenter's camera
- CAPTURE-HD-PRO model includes high-definition 3G-SDI camera input
- Includes local AV output for confidence monitoring or presentation pass-through
- Allows Crestron control system integration via Ethernet
- Gigabit Ethernet enables high transfer rates for uploading of HD media files
- Easy out-of-the-box setup
- Single-space 19" rack-mountable

Without requiring any special training or extra effort from the presenter, the Capture recorder records the complete presentation in full-motion HD 1080p or 720p and uploads it to a network server for publishing. It can also stream live video to a touch screen, computer, mobile device, or third-party streaming server. Schools and businesses may easily implement a facility-wide media capture solution by equipping every room with Capture recorders, all centrally managed by Crestron Fusion RV[®] Remote Asset Management Software*.

A Closer Look at the Box

The Capture recorder is a compact unit, designed to sit on a shelf or mount in an equipment rack or podium. It captures presentation content from a computer or other source along with a live camera image and records them together in full-motion HD. The two images may be composited on screen side-by-side or picture-in-picture (PIP). The camera PIP window can be sized and positioned in any corner of the screen over the presentation content. Either image may be captured full screen as well.

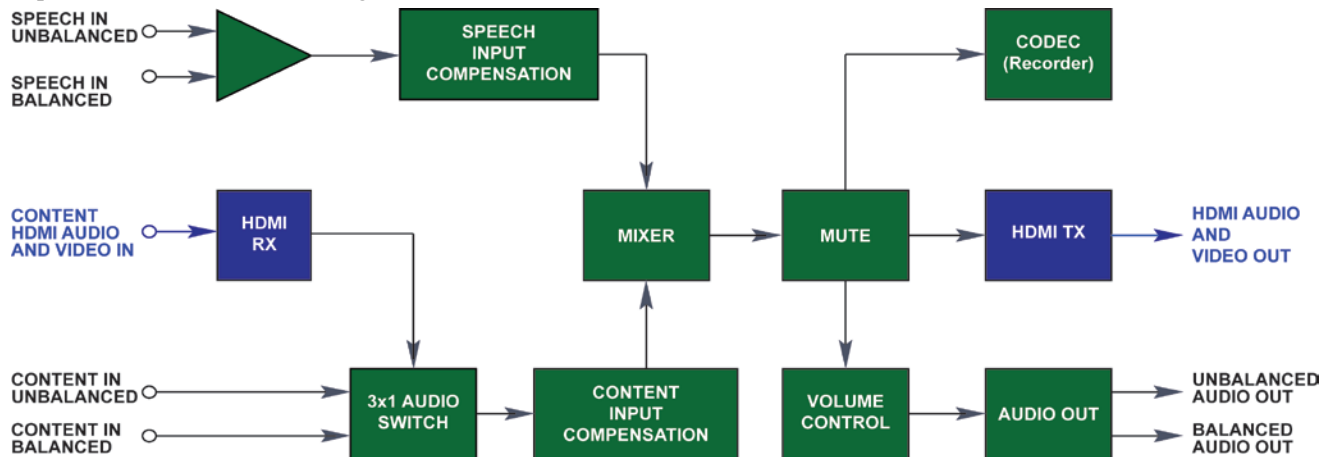
Audio content from the presentation source is captured in stereo along with the live “speech” signal from a wireless microphone. The two signals are mixed together and recorded as one high-quality stereo signal.

Additional Features:

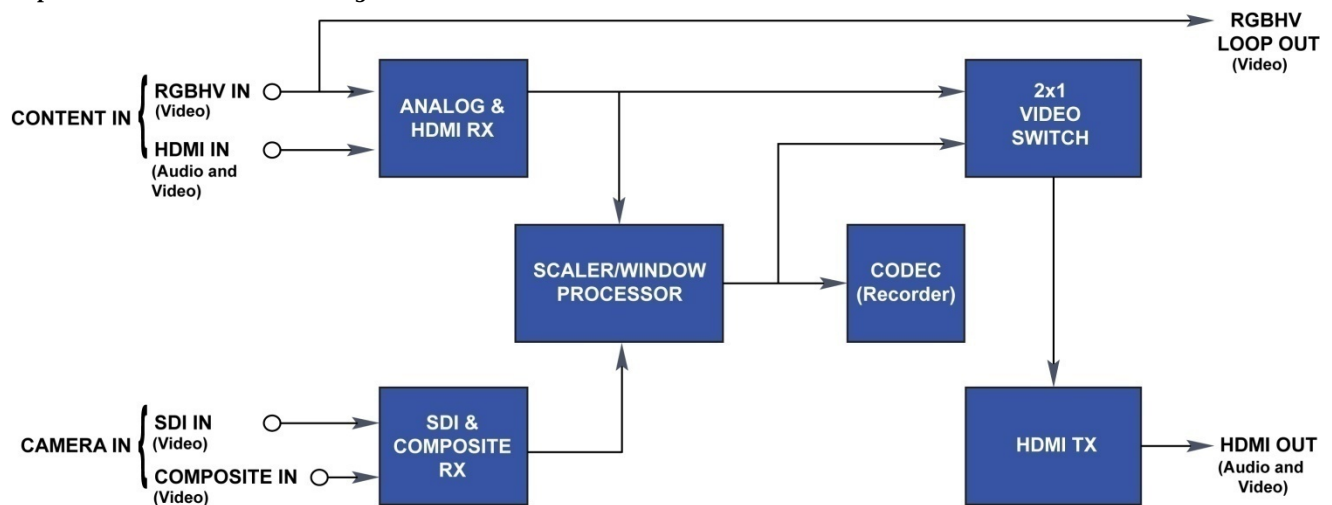
- **Front Panel** — Intuitive controls are provided on the front panel for starting, pausing, and stopping a recording. Each button lights up in a different color to provide clear indication of recording status. An LED bar graph meter provides indication of the speech signal level to confirm that it is being picked up loud and clear. A full-color LCD screen displays additional feedback and provides access to setup functions.

* Fusion RV software and hardware server(s) sold separately. Refer to the Crestron CaptureLiveHD Design Guide, Doc. 4552, at www.crestron.com/manuals, for complete system requirements and design guidelines.

Capture Recorder Audio Block Diagram



Capture Recorder Video Block Diagram



- Content Inputs** — Connecting a computer, DVD player, or other presentation source is enabled via HDMI and RGBHV inputs on the rear panel. The HDMI input handles high-definition digital AV devices and computers with stereo audio. The RGBHV input handles analog computer sources. Built-in scaling ensures compatibility with a full range of signals. A stereo analog audio input is also provided.
- Camera Input** — A composite video input provides for the connection of a single camera or switcher. Crestron offers two cameras ideally suited for the application, the CAM-IFB-100 and CAM-IPTZ-101 (both sold separately). A 3G-SDI input (CAPTURE-HD-PRO model only) is also offered, allowing for the use of a high-definition camera with SDI, HD-SDI, or 3G-SDI output.
- Speech Input** — A wireless microphone or mic mixer can be connected for pickup of the presenter and other individuals speaking. Crestron FreeSpeech[®] wireless microphones (MP-FS100_PAK or MP-FS200_PAK, both sold separately) offer an ideal speech pickup solution.
- Local Output** — HDMI and analog audio outputs are included for connection to a confidence monitor or AV system. These outputs may be used to view and hear exactly what is being recorded, or to pass the selected content source through for local presentation

- **File Storage** — Captured AV files are stored locally on a memory card or USB flash drive prior to uploading to the network. A memory card slot and USB port are provided on the rear panel, and a 16 GB SDHC™ memory card is included. An additional USB port is provided on the front panel, allowing recordings to be saved directly to a USB flash drive.
- **Live Streaming** — As an alternative to capturing video, the Capture recorder can also be used to stream live HD video and audio via RTSP to a computer, mobile device, touch screen, or third-party streaming server
- **Gigabit Ethernet** — Connection to the LAN is via 10/100/1000BASE-T Ethernet, affording the highest possible transfer rate for uploading HD media files to the network server or streaming live video.

Touch Screen Remote

Adding the optional touch screen controller (CAPTURE-TPMC-4SM, sold separately) enables simplified operation of the Capture recorder from a lectern, desk, or wall mount location in the room. The presenter need only follow the prompts on the touch screen to easily start and stop a recording, pause or mute the recording and even add bookmarks during the session. The touch screen can also display a live view of the room camera and a microphone level meter to lend an extra level of confidence during operation. Refer to the CAPTURE-TPMC-4SM Operations Guide, (Doc. 7293) at www.crestron.com/manuals.

Control System Integration

The Capture recorder integrates seamlessly with a Crestron control system to enable expanded control over AV and room devices using a variety of touch screens, wireless remotes, computers, and mobile devices.

Specifications

Specifications for the Capture recorder are listed in the following table.

Capture Recorder Specifications

SPECIFICATION	DETAILS
Capture & Streaming	
Video Recording Formats	H.264 high profile @ 720p24, 720p30, 720p60, and 1080p24
Video Recording Bitrates	500 to 6000 kbps
Video Streaming Formats	H.264 high profile @ 720p10, 720p15, 720p30, 720p60, and 1080p10, 1080p15, 1080p30
Video Streaming Bitrates	500 to 6000 kbps
Audio Formats	AAC stereo
Container	MPEG-2 transport stream (.ts), MPEG-4 Part 14 (.mp4)
Streaming Protocol	RTSP (unicast)
Storage	
Memory Card	Supports SD™ and SDHC™ memory cards, 16 GB SDHC card included
USB Flash Drive	Supports USB flash drive
Network	Supports file transfer to network media server

(Continued on following page)

Capture Recorder Specifications (Continued)

SPECIFICATION	DETAILS
Video	
Scaling	VXP [®] video processing, 3D and 2D noise reduction, block artifact reduction, mosquito noise reduction, motion and edge adaptive deinterlacing, detail enhancement, adaptive contrast enhancement, adaptive de-banding, film cadence detection, picture-in-picture and side-by-side windowing
Input Signal Types (Content)	HDMI, DisplayPort Multimode ¹ , DVI ¹ , RGB
Input Signal Types (Camera)	Composite, 3G-SDI ²
Output Signal Types	HDMI, DVI ¹
Input Formats	HDMI, DVI ¹ , computer up to UXGA/WUXGA, HD up to 1080p60, NTSC or PAL, SD-SDI (SMPTE 259M) ² , HD-SDI (SMPTE 292M) ² , 3G-SDI (SMPTE 424M) ²
Input Resolutions, HDMI, Progressive	Any resolution and frame rate from 640 x 400 to 1920 x 1200 up to 162 MHz pixel clock
Input Resolutions, HDMI, Interlaced	480i, 576i, 1080i25 (1125 lines), 1080i30
Input Resolutions, RGB, Progressive	Any resolution and frame rate from 640 x 400 to 1920 x 1200 up to 162 MHz pixel clock
Input Resolutions, Composite	480i, 576i
Input Resolutions, 3G-SDI ²	SMPTE 425M (3G-SDI) 4:2:2 Colorspace: 1920 x 1080 @ 50 Hz (1080p50) 1920 x 1080 @ 60 Hz (1080p60) SMPTE 425M (3G-SDI) 4:4:4 Colorspace: 1280 x 720 @ 50 Hz (720p50) 1280 x 720 @ 60 Hz (720p60) 1920 x 1080 @ 24 Hz (1080p24) 1920 x 1080 @ 25 Hz (1080p25) 1920 x 1080 @ 30 Hz (1080p30) 1920 x 1080 @ 50 Hz (1080i50 or 1080sF25) 1920 x 1080 @ 60 Hz (1080i60 or 1080sF30) SMPTE 260M (HD-SDI): 1920 x 1035 @ 60 Hz (1035i60) SMPTE 295M (HD-SDI): 1920 x 1080 @ 50 Hz (1080i50) SMPTE 274M (HD-SDI): 1920 x 1080 @ 24 Hz (1080p24) 1920 x 1080 @ 24 Hz (1080sF24) 1920 x 1080 @ 25 Hz (1080p25) 1920 x 1080 @ 30 Hz (1080p30) 1920 x 1080 @ 50 Hz (1080i50 or 1080sF25) 1920 x 1080 @ 60 Hz (1080i60 or 1080sF30) SMPTE 296M (HD-SDI): 1280 x 720 @ 50 Hz (720p50) 1280 x 720 @ 60 Hz (720p60) SMPTE 259M-C (SD-SDI): 720 x 480 @ 59.94 (NTSC) 720 x 576 @ 50i (PAL)

(Continued on following page)

Capture Recorder Specifications (Continued)

SPECIFICATION	DETAILS
Video (Continued)	
Output Resolutions, HDMI	Same as CONTENT input (HDMI or RGBHV) when viewing the selected content source, or same as capture settings when viewing the capture image
A-D Conversion	10-bit 162 MHz per each of three channels
Audio	
Processing	Provides mixing of the stereo CONTENT audio signals with the mono SPEECH signal
A-D/D-A Conversion	24-bit 48 kHz
Input Signal Types	HDMI, DisplayPort Multimode ¹ , analog stereo, analog mono
Output Signal Types	HDMI, analog stereo
Formats, HDMI	2-channel PCM
Formats, Analog	Stereo 2-channel
Content Input Compensation	±10.0 dB
Content Mix Level	-80.0 to 0.0 dB
Content Bass	±15.0 dB
Content Treble	±15.0 dB
Content Audio Delay	0.0 to 40.0 ms
Speech Input Compensation	±10.0 dB
Speech Mix Level	-80.0 to 0.0 dB
Speech Bass	±15.0 dB
Speech Treble	±15.0 dB
Output Volume ³	-80 to +20 dB, adjustable from 0% to 100%, plus mute
Output Bass ³	±15.0 dB
Output Treble ³	±15.0 dB
Performance (analog)	
Frequency Response	20 Hz to 20 kHz ±0.75 dB typical
S/N Ratio	>90 dB, 20 Hz to 20 kHz A-weighted
THD+N:	<0.05% @ 1 kHz
Stereo Separation	>90 dB
Communications	
Ethernet	10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
USB	USB 2.0 host, supports USB flash drives and USB mass storage devices
Power Requirements	
Power Pack	5 amps @ 12 volts dc 100-240 volts ac, 50/60 Hz power pack, included
Default NET ID ⁴	03

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Capture Recorder Specifications (Continued)

SPECIFICATION	DETAILS
Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	69 Btu/h
Enclosure	
Chassis	Metal with matte black finish, vented sides, variable-speed fan-cooled
Faceplate	Metal, matte black finish with polycarbonate label overlay
Mounting	Freestanding or 1U 19-inch rack-mountable (adhesive feet and rack ears included)
Dimensions	
Height	1.91 in (49 mm), 1.70 in (44 mm) without feet
Width	17.03 in (433 mm), 19.00 in (483 mm) with ears
Depth	9.25 in (235 mm)
Weight	
CAPTURE-HD	4.1 lbs (1.9 kg)
CAPTURE-HD-PRO	4.2 lbs (1.9 kg)
Included Accessory	Universal Power Pack for Capture recorder
Available Accessories	
CAM-IFB-100	Camera for CAPTURE-HD
CAM-IPTZ-101	PTZ Camera for CAPTURE-HD
CAPTURE-TPMC-4SM B-S	Touch Screen Controller for CAPTURE-HD, Black Smooth
CAPTURE-TPMC-4SM W-S	Touch Screen Controller for CAPTURE-HD, White Smooth
CBL Series	Crestron Certified Interface Cables
CEN-FUSION-RVS-R310	Pre-configured Fusion RV Server System
Fusion RV (SW-FUSION-RV)	Remote Asset Management Software
MP-FS100_PAK	FreeSpeech Single-Channel Wireless Mic System Package
MP-FS200_PAK	FreeSpeech Dual-Channel Wireless Mic System Package

1. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI interface cables sold separately.
2. SDI input capability is available on the CAPTURE-HD-PRO model only.
3. Affects analog audio outputs only.
4. Requires setup with Crestron Toolbox™.

Physical Description

This section provides information on the connections, controls, and indicators available on the Capture recorder.

Capture Recorder Physical View - Front (CAPTURE-HD Shown)



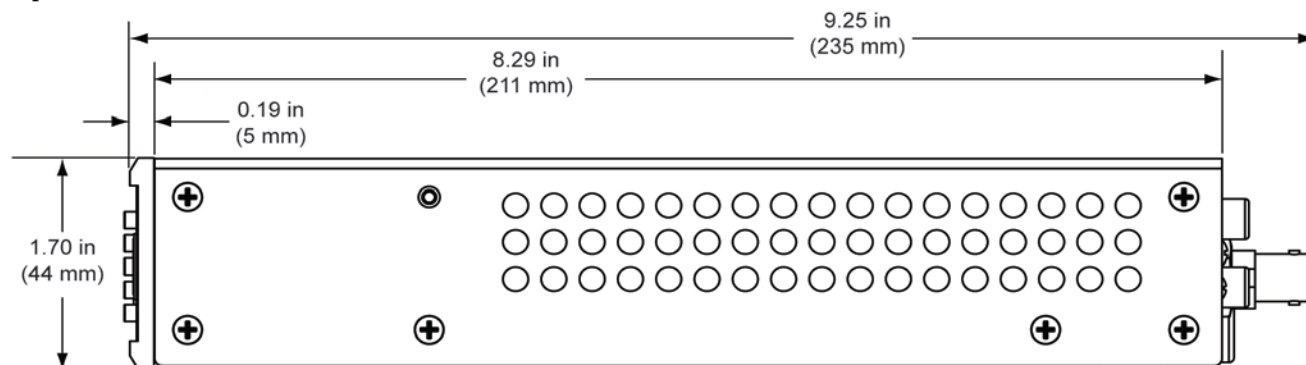
Capture Recorder Physical View - Rear (CAPTURE-HD Shown)



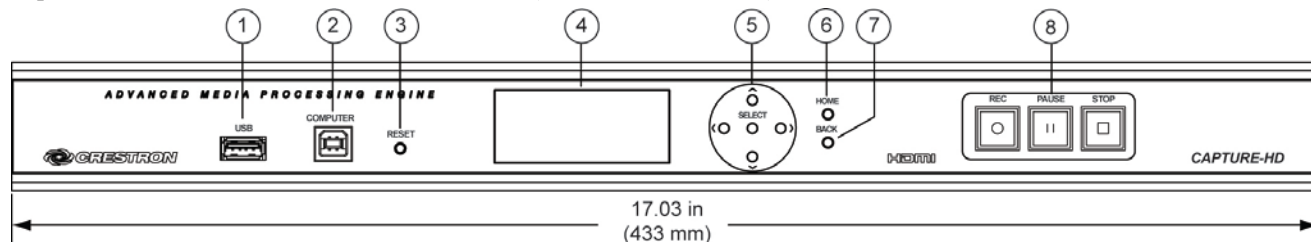
Capture Recorder Physical View - Rear (CAPTURE-HD-PRO Shown)



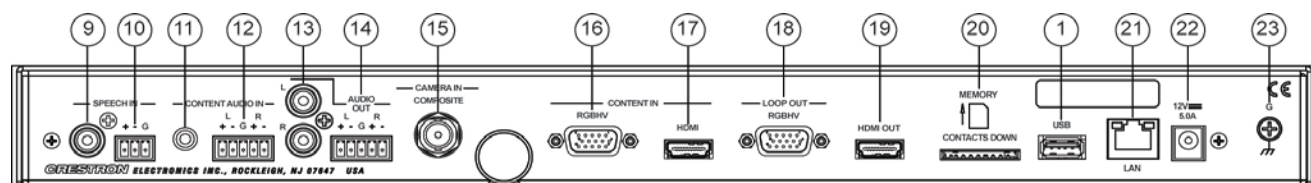
Capture Recorder Overall Dimensions – Side View

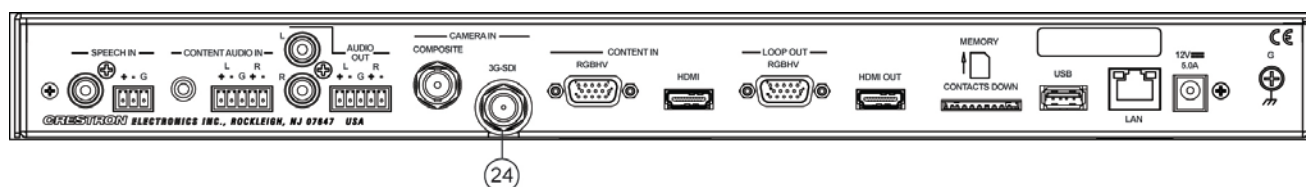


Capture Recorder Overall Dimensions – Front View (CAPTURE-HD Shown)



CAPTURE-HD – Rear View

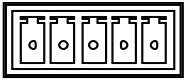
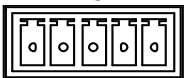
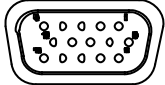


CAPTURE-HD-PRO – Rear View

Connectors, Controls & Indicators

#	CONNECTORS ¹ , CONTROLS AND INDICATORS	DESCRIPTION
1		(2) USB Type A female (1 front, 1 rear); USB 2.0 host port for connection of a USB flash drive or mass storage device
2		(1) USB Type B female, for future use
3	RESET	(1) Recessed miniature push button for hardware reset
4	Display	Display Type: 16-bit TFT active matrix color LCD; Size: 1.8 inch (46 mm) diagonal; Resolution: 220 x 176 pixels; Functions: Displays recording status, time counter, audio levels, setup parameters, and other details
5	^, v, <, >, SELECT	(4) Push buttons, for 4-way LCD menu navigation and parameter adjustment; (1) Push button, used to select or execute the highlighted menu item or value
6	HOME	(1) Push button, returns to the home menu
7	BACK	(1) Push button, steps menu back one level
8		(3) Transport style buttons with translucent button caps and color-coded LED backlighting for feedback, used to control the capture function
9		(1) RCA female; Unbalanced line-level audio input; Input impedance: 10 k Ω nominal; Input level: 2 V _{rms} maximum ²
10		(1) 3-pin 3.5 mm detachable terminal block; Balanced/unbalanced line-level audio input; Input impedance: 17.5 k Ω nominal balanced/unbalanced; Balanced input level: 4 V _{rms} maximum; Unbalanced input level: 2 V _{rms} maximum ²
11		(1) 3.5 mm TRS mini phone jack; Unbalanced stereo line-level audio input; Input impedance: 18.5 k Ω nominal; Input level: 1 V _{rms} maximum

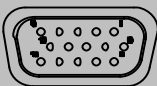
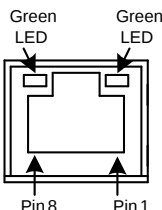
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Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS AND INDICATORS	DESCRIPTION
12	CONTENT AUDIO IN (Balanced) L R + - G + - 	(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio input; Input impedance: 24 k Ω nominal balanced/unbalanced; Balanced input level: 4 Vrms maximum; Unbalanced input level: 2 Vrms maximum
13	AUDIO OUT L, R (Unbalanced) 	(2) RCA female; Unbalanced stereo line-level audio output; Output impedance: 100 Ω nominal; Output level: 2 Vrms maximum
14	AUDIO OUT (Balanced): L R + - G + - 	(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio output; Output impedance: 200 Ω balanced, 100 Ω unbalanced; Balanced input level: 4 Vrms maximum; Unbalanced input level: 2 Vrms maximum
15	CAMERA IN, COMPOSITE 	(1) BNC female analog composite video input; RCA adapter included; Input impedance: 75 Ω nominal; Input level: 1 Vp-p nominal
16	CONTENT IN, RGBHV 	(1) DB15HD female, RGB (VGA) input; Formats: RGBHV; RGBS, RGsB; Input levels: 0.5 to 1.5 Vp-p with built-in dc restoration; Input impedance: 75 Ω nominal; Sync Detection: RGBHV, RGBS, RGsB Sync input level: 3 to 5 Vp-p; Sync input impedance: 511 Ω nominal Pin 1 Red Video Pin 2 Green Video Pin 3 Blue Video Pin 4 Reserved Pin 5 Ground Pin 6 Red Ground Pin 7 Green Ground Pin 8 Blue Ground Pin 9 +5 Volt DC in Pin 10 Ground Pin 11 No Connect Pin 12 Monitor Sense Data Pin 13 Horizontal Sync Pin 14 Vertical Sync Pin 15 Monitor Sense Clock

(Continued on following page)

Connectors, Controls & Indicators (Continued)

#	CONNECTORS ¹ , CONTROLS AND INDICATORS	DESCRIPTION																																			
17	CONTENT IN, HDMI 	(1) 19-pin Type A HDMI female; Signal Types: HDMI, DVI, DisplayPort Multimode ³																																			
18	LOOP OUT, RGBHV 	(1) DB15HD female; Buffered pass-thru from RGBHV input (pinout same as CONTENT IN, RGBHV , except Pin 9 +5 Vdc out)																																			
19	HDMI OUT 	(1) 19-pin Type A HDMI female; Signal Types: HDMI, DVI ³																																			
20	MEMORY 	(1) SD memory card slot for local storage; Supports SD and SDHC cards. (16 GB SDHC card included)																																			
21	LAN 	(1) 8-pin RJ-45 with two LED indicators; 10/100/1000BASE-TX Ethernet port; 802.3af Power over Ethernet compliant; Green LED indicates link status; Yellow LED indicates Ethernet activity <table><tr><th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr><tr><td>1</td><td>A+</td><td>5</td><td>C-</td></tr><tr><td>2</td><td>A-</td><td>6</td><td>B-</td></tr><tr><td>3</td><td>B+</td><td>7</td><td>D+</td></tr><tr><td>4</td><td>C+</td><td>8</td><td>D-</td></tr></table> <table><tr><th>LEFT LED</th><th>RIGHT LED</th><th>LINK STATUS*</th></tr><tr><td>OFF</td><td>OFF</td><td>No Link</td></tr><tr><td>ON</td><td>OFF</td><td>10 Link</td></tr><tr><td>OFF</td><td>ON</td><td>100 Link</td></tr><tr><td>ON</td><td>ON</td><td>1000 Link</td></tr></table> * Blinking indicates activity	PIN	SIGNAL	PIN	SIGNAL	1	A+	5	C-	2	A-	6	B-	3	B+	7	D+	4	C+	8	D-	LEFT LED	RIGHT LED	LINK STATUS*	OFF	OFF	No Link	ON	OFF	10 Link	OFF	ON	100 Link	ON	ON	1000 Link
PIN	SIGNAL	PIN	SIGNAL																																		
1	A+	5	C-																																		
2	A-	6	B-																																		
3	B+	7	D+																																		
4	C+	8	D-																																		
LEFT LED	RIGHT LED	LINK STATUS*																																			
OFF	OFF	No Link																																			
ON	OFF	10 Link																																			
OFF	ON	100 Link																																			
ON	ON	1000 Link																																			
22	12VDC 5.0A 	(1) 2.5 mm barrel dc power jack; 12 Vdc power input; Power pack included																																			
23	G 	(1) 6-32 screw, chassis ground lug																																			
24	CAMERA IN, 3G-SDI 	BNC female, SDI, HD-SDI, or 3G-SDI video input; Input impedance: 75 Ω nominal. (CAPTURE-HD-PRO only)																																			

- Interface connectors for **SPEECH IN**, **CONTENT AUDIO IN**, and **AUDIO OUT** ports are provided with the unit.
- SPEECH IN** balanced and unbalanced inputs are summed.
- HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI interface cables available separately.

Setup

Network Wiring

When wiring the Ethernet network, consider the following:

- Use Crestron power supplies for Crestron equipment.
- Provide sufficient power to the system.

Unlike other Crestron network devices, the Capture recorder does not use Cresnet[®] for communications between the device and the control system. The Capture recorder requires the use of a high-speed Ethernet connection for control system communications.

For general information on connecting Ethernet devices in a Crestron system, refer to the Crestron e-Control[®] Reference Guide (Doc. 6052), at www.crestron.com/manuals.

Identity Code

NOTE: The latest software can be downloaded from the Crestron Web site (www.crestron.com/software).

The IP ID is set within the Capture recorder's IP table using Crestron Toolbox[™]. For information on setting an IP table, refer to the Crestron Toolbox help file. The IP IDs of multiple Capture recorder devices in the same system must be unique.

When setting the IP ID, consider the following:

- The IP ID of each device must match an IP ID specified in the Crestron Studio[™] or SIMPL Windows program.
- Each device using IP to communicate with a control system must have a unique IP ID.

Installation

Ventilation

The Capture recorder should be used in a well-ventilated area. The venting holes should not be obstructed under any circumstances.

To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications. Consider using forced air ventilation and/or incrementing the spacing between devices to reduce overheating. Contact with thermal insulating materials should be avoided on all sides of the device.

Rack Mounting

The Capture recorder can be mounted in a rack or stacked with other equipment. Two "ears" are provided with the Capture recorder so that the device can be rack mounted. These ears must be installed prior to mounting. Complete the following procedure to attach the ears to the device. The only tool required is a #1 or #2 Phillips screwdriver.

WARNING: To prevent bodily injury when mounting or servicing this device in a rack, observe the following guidelines:

- When mounting this device 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 device in the rack.

NOTE: Observe the following guidelines when installing equipment in a rack:

- **Elevated Operating Ambient Temperature** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - 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)

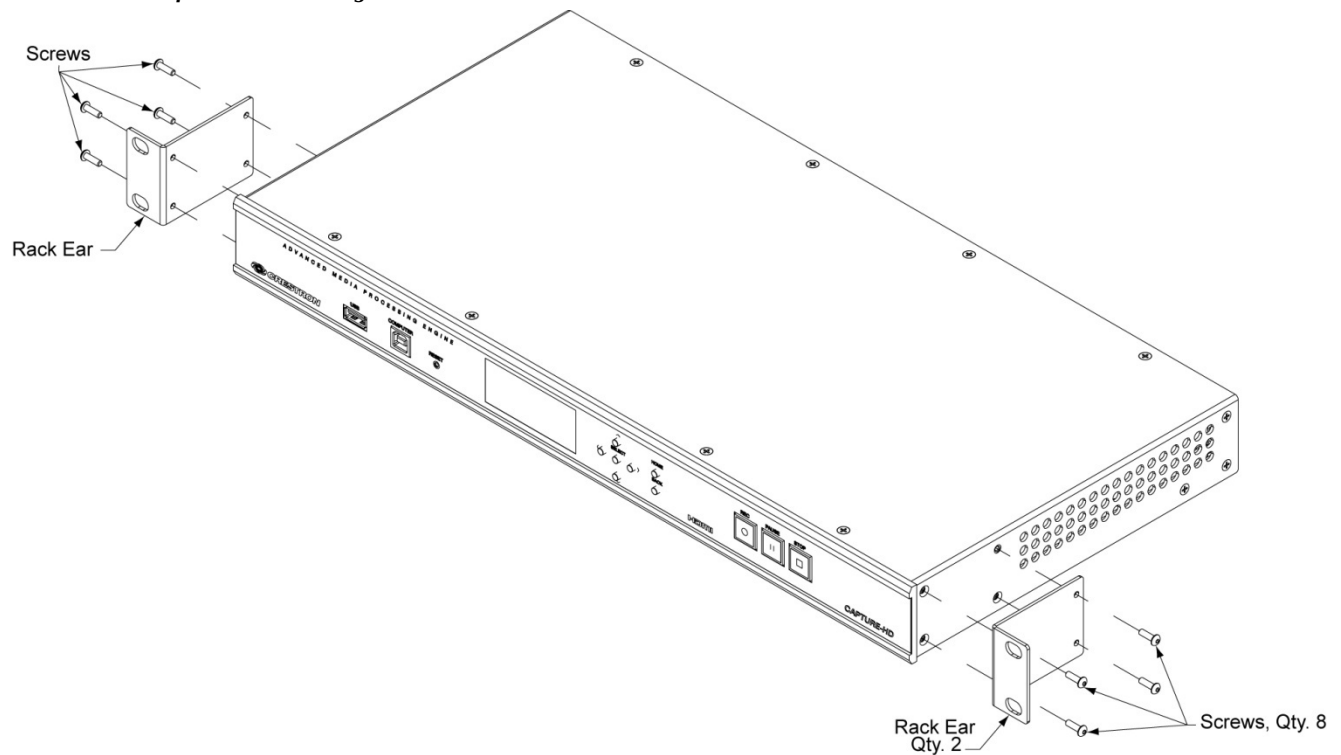
NOTE: If rack mounting is not required, rubber feet are provided for tabletop mounting or stacking. Apply the feet near the corner edges on the underside of the unit.

To install the ears, use the following procedure.

CAUTION: To prevent equipment damage, use only the rack ears Crestron provides for this device.

1. There are screws that secure each side of the Capture recorder top cover. Using a #1 or #2 Phillips screwdriver, remove the four screws closest to the front panel from one side of the device. 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 device with four of the eight longer screws supplied, as shown in the following diagram.

Ear Attachment for Rack Mounting

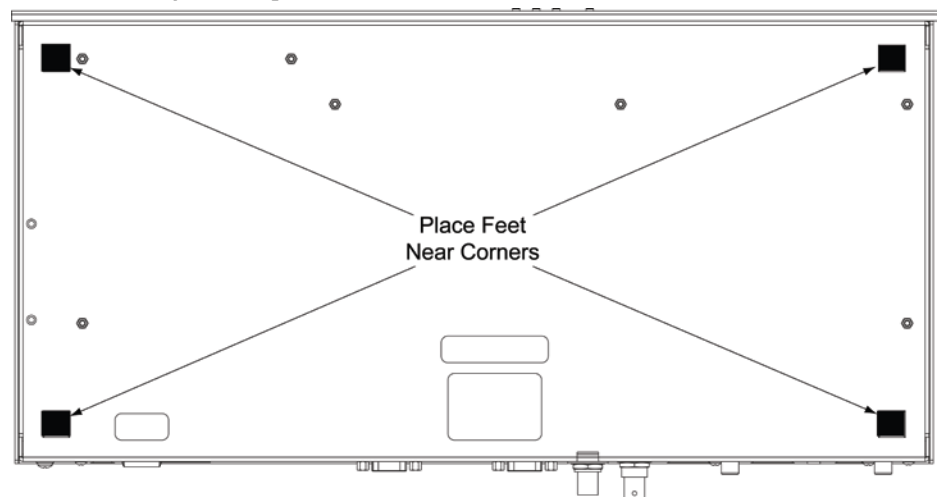


4. Repeat procedure (steps 1 through 3) to attach the remaining ear to the opposite side.

Stacking

Four “feet” are provided with the Capture recorder so that if the unit is not rack mounted, the rubber feet can provide stability when the unit is placed on a flat surface or stacked. These feet should be attached prior to the hookup procedure. Refer to the following illustration for placement of the feet.

Foot Placement for the Capture Recorder

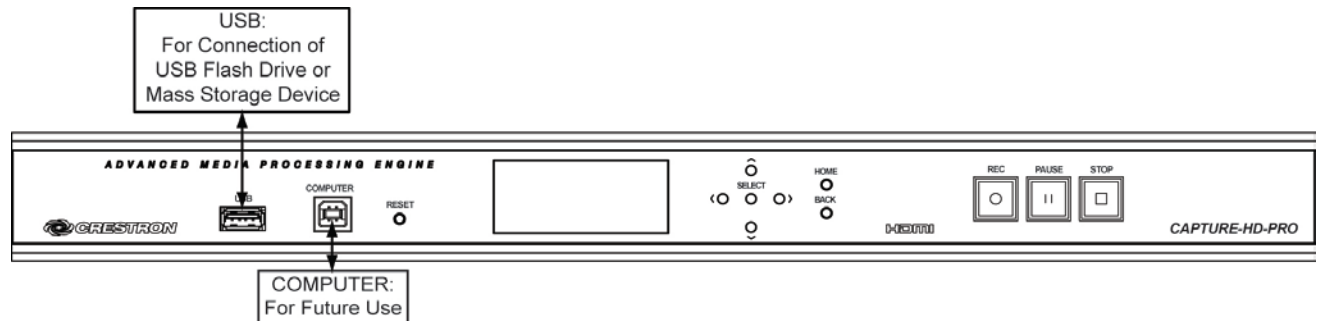


NOTE: No more than two Capture recorder devices should be stacked.

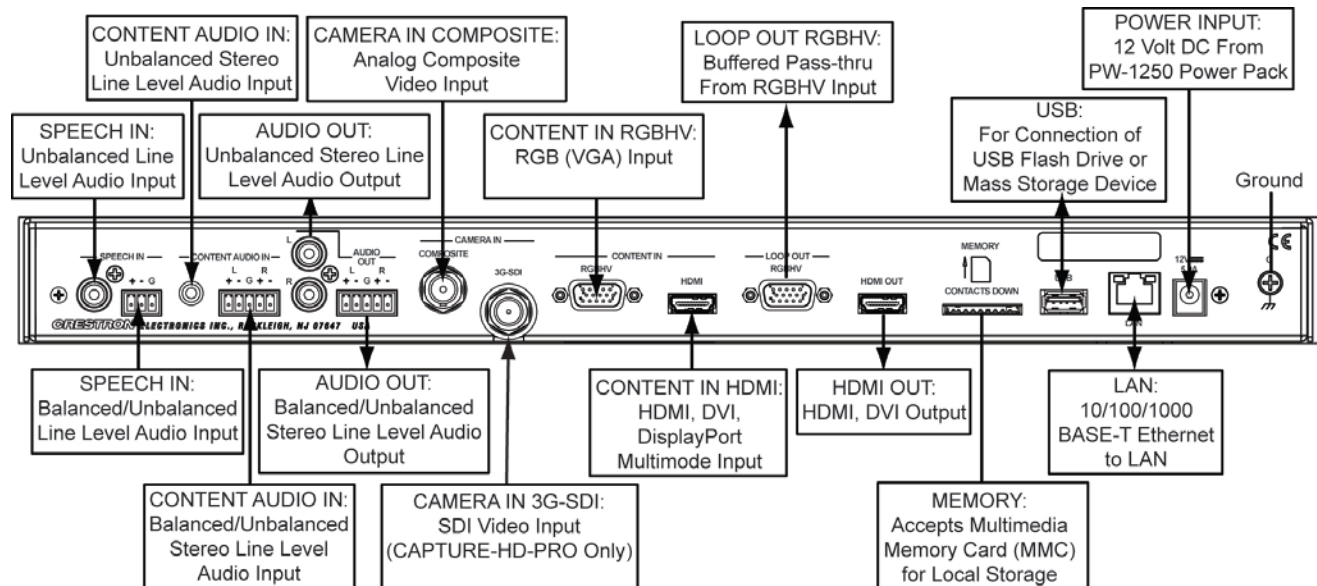
Hardware Hookup

Make the necessary connections as called out in the illustrations that follow this paragraph. Apply power after all connections have been made.

Hardware Connections for the Capture Recorder, Front View (CAPTURE-HD-PRO Shown)



Hardware Connections for the Capture Recorder, Rear View (CAPTURE-HD-PRO Shown)



NOTE: Ensure the unit is properly grounded by connecting the chassis ground lug to an earth ground (building steel).

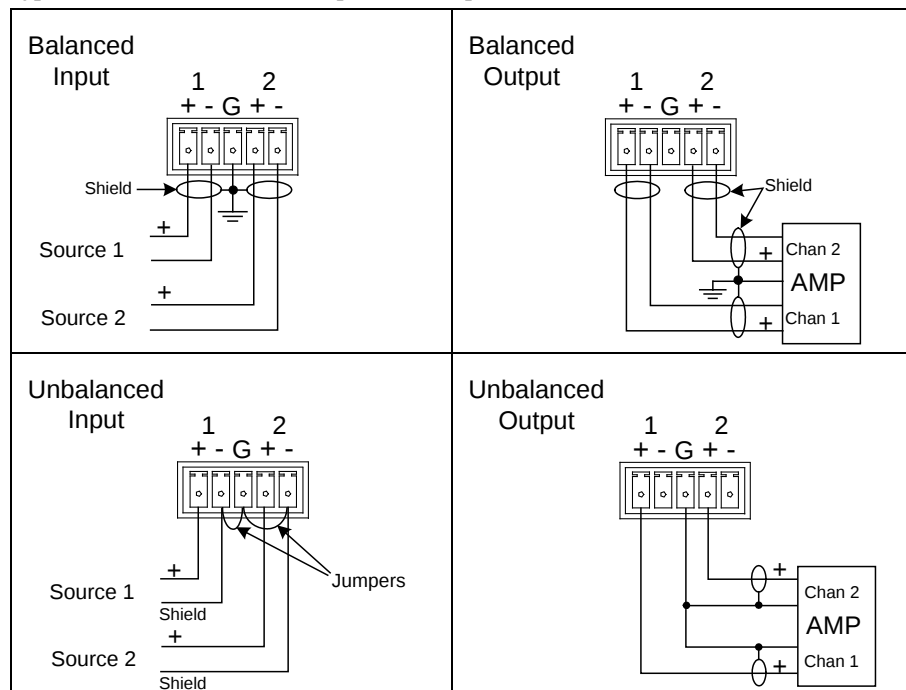
NOTE: To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications.

One balanced/unbalanced audio output and one balanced/unbalanced audio input is provided, utilizing 5-pin terminal block connectors. For connection details, refer to the table and diagrams on the following page.

Audio Connections

SIGNAL NAME	BALANCED AUDIO INPUT	BALANCED AUDIO OUTPUT	UNBALANCED AUDIO INPUT	UNBALANCED AUDIO OUTPUT
+	L +	L +	L + In	L + Out
-	L -	L -	L – signal return, jumper to GND	Open
G	Shield/Ground	Shield/Ground	Ground	Common ground
+	R +	R +	R + In	R + Out
-	R -	R -	R – signal return, jumper to GND	Open

Typical Balanced/Unbalanced Inputs and Outputs



Uploading and Upgrading

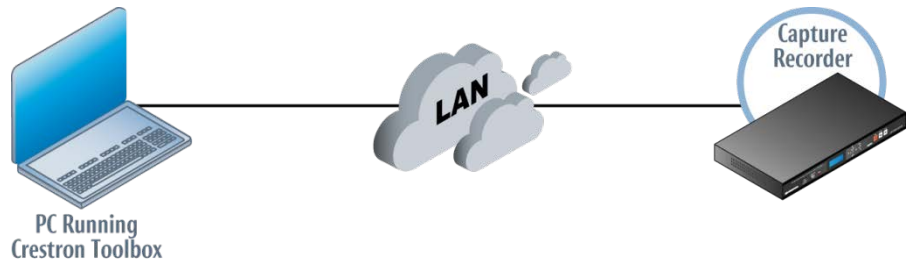
Crestron recommends using the latest programming software and that each device contains the latest firmware to take advantage of the most recently released features. However, before attempting to upload or upgrade it is necessary to establish communication. Once communication has been established, files (for example, programs or firmware) can be transferred to the control system (and/or device). Finally, program checks can be performed (such as creating an IP table) to ensure proper functioning.

NOTE: Crestron software and any files on the Web site are for authorized Crestron dealers and Crestron Service Providers (CSPs) only. New users must register to obtain access to certain areas of the site (including the FTP site).

Establishing Communication

Use Crestron Toolbox for communicating with the Capture recorder; refer to the Crestron Toolbox help file for details. There is a single method of communication: TCP/IP.

Ethernet Communication



The Capture recorder connects to PC via Ethernet:

1. Use the Device Discovery Tool (click the  icon) in Crestron Toolbox to detect all Ethernet devices on the network and their IP configuration. The tool is available in Toolbox version 1.15.143 or later.
2. Click on the Capture Recorder to display information about the device.

Programs and Firmware

Program or firmware files may be distributed from programmers to installers or from Crestron to dealers. Firmware upgrades are available from the Crestron Web site as new features are developed after product releases. One has the option to upload programs via the programming software or to upload and upgrade via the Crestron Toolbox. For details on uploading and upgrading, refer to the Crestron Studio help file, SIMPL Windows help file, or the Crestron Toolbox help file.

*Crestron Studio /
SIMPL Windows*

If a Crestron Studio (or SIMPL Windows) program is provided, it can be uploaded to the control system using SIMPL Windows or Crestron Toolbox.

Firmware

Check the Crestron Web site to find the latest firmware. (New users must register to obtain access to certain areas of the site, including the FTP site.)

Upgrade Capture recorder firmware via Crestron Toolbox.

1. Establish communication with the Capture recorder and display the “System Info” window.

2. Select **Functions | Firmware...** to upgrade the Capture recorder firmware.

Program Checks

For Ethernet connections, using Crestron Toolbox, display the “System Info” window (**Tools | System Info**) and select the **Functions** menu to display actions that can be performed on the Capture recorder.

Be sure to use Crestron Toolbox to create the Capture recorder IP table.

1. Select **Functions | IP Table Setup**.
2. Add, modify or delete entries in the IP table. The Capture recorder can have only one IP table entry.
3. A defined IP table can be saved to a file or sent to the device.

Edit the control system’s IP table to include an entry for the Capture recorder. The entry should list the Capture recorder’s IP ID (specified on the Capture recorder’s IP table) and the internal gateway IP address 127.0.0.1.

Operation

Overview

The Capture recorder has two options for storage: local storage and storing on a remote server.

Local Storage

For local storage, the device records a presentation either on the provided MMC card or on a USB storage device inserted in the front or rear USB port. (Either storage device must be formatted for FAT32.) Before starting, the front panel controls are used to specify where the file is to be saved (the default is the MMC card).

When the presentation is about to begin, the presenter simply presses the **REC** button; when finished presses **STOP**; and the video file (for example, CAPTURE-HD61ecf4_2011-10-17_09_43_29.ts) is saved in the specified location. After the front panel indicates that the recording is done, the media can be removed, if desired, and made available for other presentations.

Storing on Remote Server

The presentation can also be saved to local media, and then uploaded via FTP to a remote server. Distribution is then controlled by FTP settings from the SIMPL Windows symbol, the optional CAPTURE-TPMC-4SM touch screen, or Fusion RV.

When the Capture recorder is used in conjunction with Fusion RV, the presentation is automatically transferred via FTP to a “Watch” directory that Fusion RV monitors. When Fusion RV detects the new file, it takes the file and processes it for distribution.

Functional Basics

Storage

- Selectable storage location
 - ⇒ MMC
 - ⇒ Front USB
 - ⇒ Back USB
- Location selected via front panel menu controls.
- Files are always automatically deleted from local storage after upload.
- Maximum file size is 4 GB per file due to FAT32 formatting.
 - ⇒ Equivalent to over three hours of recording time, at a bit rate of 2000 kbps, and a resolution of 720p60.
 - ⇒ Recording always stops if limit is reached.
- Each Capture recorder ships with a 16 GB MMC card.
- MMC card is default storage location.
- Files are automatically named as follows:
Hostname_YYYY-MM-DD_HH_MM_SS

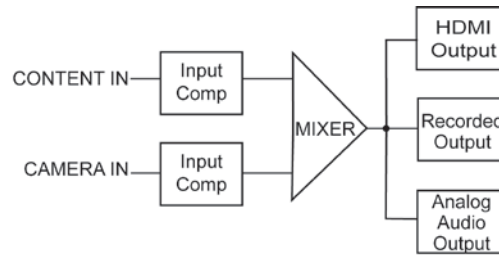
Video Parameters

NOTE: The Capture recorder does not display HDCP protected content.

- Operational mode selection
 - ⇒ Ability to select whether to record or stream the video content.
 - ⇒ Accessible from the “Video” menu.
- Camera selection (CAPTURE-HD-PRO only)
 - ⇒ Ability to choose whether content comes from the Composite or SDI inputs. Default is Auto Detect which uses SDI if present; otherwise uses Composite.
 - ⇒ Accessible from “Video” menu.
- Content selection
 - ⇒ Ability to choose whether content comes from the VGA or HDMI input. Default is Auto Detect which uses HDMI if present; otherwise uses VGA.
 - ⇒ Accessible from “Video” menu.
- Recording Options
 - ⇒ Format: defines the resolution and frame rate of the recording.
 - 1080p24
 - 720p60
 - 720p30
 - 720p24
 - ⇒ Bitrate (500-6000 kbps): Defines the quality of the recording. Higher bitrates yield higher quality (less pixelation), but take up more bandwidth. Default is 2000.
 - ⇒ File Type: Enables selection of the desired recording file type: TS or MP4. There are no adjustments for these selections.
- Streaming Options
 - ⇒ Format: defines the resolution and frame rate of the streamed signal.
 - 720p60
 - 720p30
 - 720p15
 - 720p10
 - 1080p30
 - 1080p15
 - 1080p10
 - ⇒ Bitrate (500-6000 kbps): Defines the quality of the recording. Higher bitrates yield higher quality (less pixelation), but take up more bandwidth. Default is 1000.
 - ⇒ Profile: High, Main, Base. These represent encoder quality settings. The higher the quality, the more bandwidth that is used.

Audio Parameters

- Ability to mix the audio from both the speech input as well as from the content input, as shown in the following diagram.



- Ability to choose source of content audio. Default is *Auto* (picks HDMI if present; otherwise uses unbalanced input).

NOTE: *Auto* mode does not include selection of the balanced audio input. If this is needed, it must be directly selected.

Time

- The Capture recorder attempts to get the time from a national time server upon boot-up. Menu options enable specific time sources.
- Select Fusion RV (default) to have Fusion RV server set the time.
- Select Control System to have a Crestron control system set the time.
- Select Network Time to have the Capture recorder use Network Time Protocol to connect to internet servers to set the time.

Recording

- Media must be present in the default storage location in order for the recording to start.
- After pressing the **REC** button there is an approximately 10 second “preparing to record” process that needs to complete before the recording actually starts.
- NEVER remove the media while a recording is in progress. (This action could corrupt the file.)
- Press the **PAUSE** button to pause the recording (yellow **PAUSE** button lights up). Press **REC** again to continue recording.
- Press the **STOP** button to end recording. Wait for a “Done” message to appear before removing media.

Streaming

- With the streaming parameters defined, press **REC** to start streaming; the button turns red while streaming.
- Press **STOP** to stop streaming. Press **REC** again to continue streaming.

Front Panel

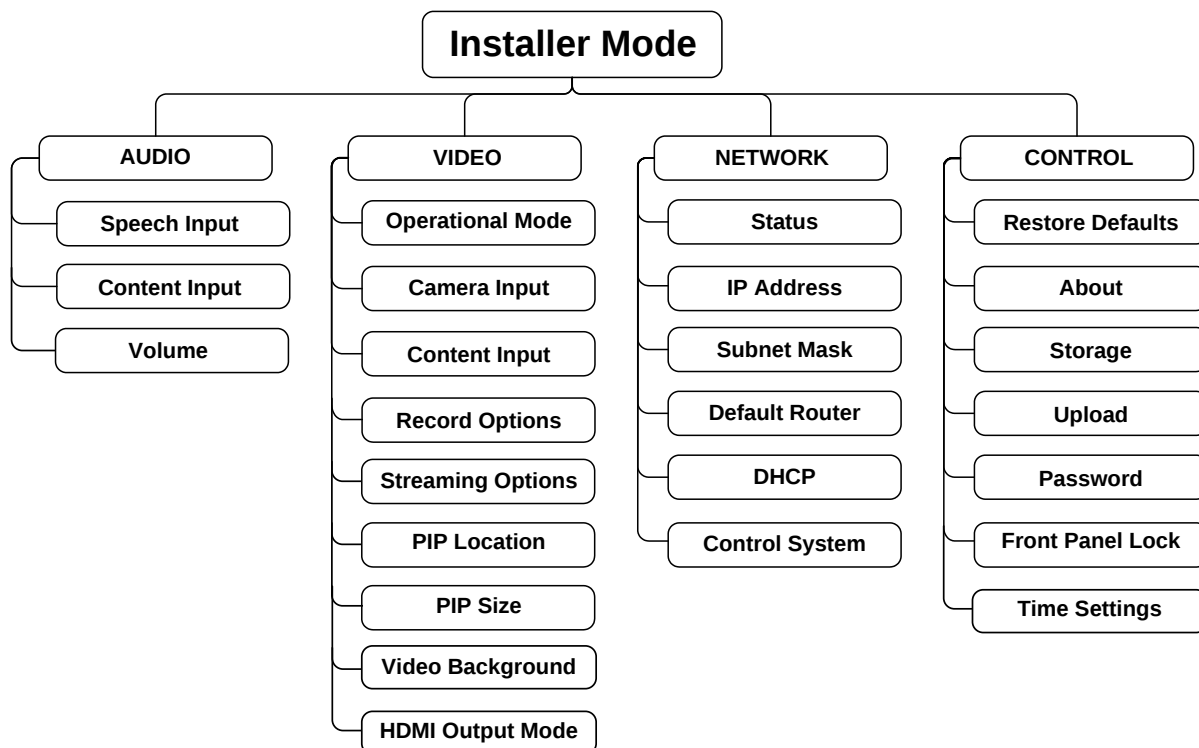
- The “Front Panel Lock” menu enables the use of a password to prevent unauthorized access. A custom password can be assigned with front panel controls via the “PASSWORD” menu.

- A level gauge (bar graph at left side of the display) shows relative speech level. The level can be adjusted via the CAPTURE-TPMC-4SM, the symbol, or front panel controls. Adjust the level so that all but the top 1-2 bars are lit while speaking. Samples are averaged so there is a slight delay in the gauge's response to incoming speech audio.

Installer Mode

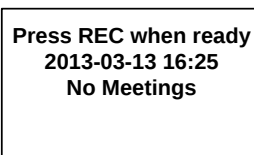
The following paragraphs describe the various setup and information screens that are included in the installation process for the Capture recorder. These are accessed using the front panel display and the adjacent navigation and value adjustment push button controls. The Capture recorder's front panel *Installer* mode menu structure is shown in the following illustration.

Installer Mode Menu Structure

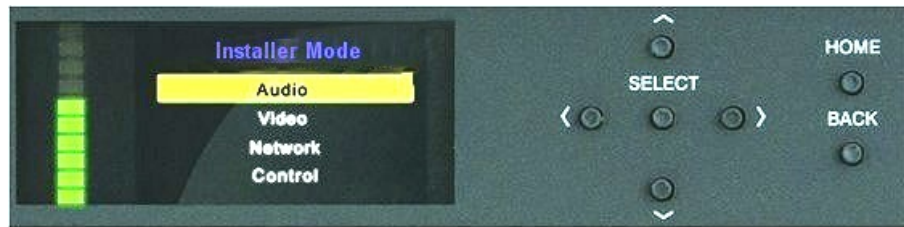


When power is first applied to the Capture recorder, the device runs an initialization process that takes approximately two minutes (the front panel screen displays a countdown). When this process is complete, the initial display is similar to the following.

Initial Display



From the initial display, press the **BACK** button to enter *Installer* mode. The “Installer Mode” menu appears as follows.

Partial Front Panel Showing “Installer Mode” Menu and Controls

Use the buttons adjacent to the left, right, up, and down arrow symbols on the front panel to navigate the various menus and options. The **SELECT** button accepts the displayed menu option or value; the **HOME** button returns the display to the initial display; the **BACK** button always returns the display to the previous screen. There are four options within the “Installer Mode” menu.

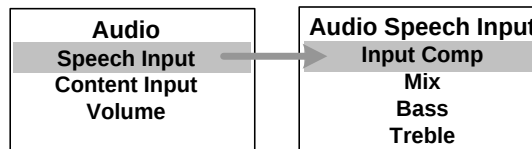
- **Audio:** Contains controls for setting operational values for camera audio and content audio input.
- **Video:** Contains controls for setting operational values for camera and content video input type, recording options for format and bit rate, and PIP (picture-in-picture) size and location options.
- **Network:** Contains controls for reviewing the current MAC address, IP address, subnet mask address, and default router address for the Capture recorder; for setting new addresses, for turning DHCP on and off, and for setting the control system IP ID and IP address.
- **Control:** Contains controls for restoring default settings, for reviewing the current firmware version, for selecting the preferred internal storage location for recorded programs, for reviewing the upload path and username information, and for setting time and location controls.

Audio

The audio characteristics of the Capture recorder are configured using the “Audio” menu, which is displayed by highlighting *Audio* in the “Installer Mode” menu and pressing **SELECT**.

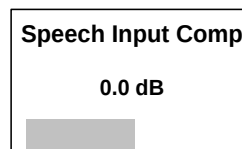
Audio Speech Input

From the “Audio” menu, select *Speech Input* to display the “Audio Speech Input” menu.



This menu enables setting of the input compensation, mix, bass, and treble values. Use the front panel buttons to select each item.

1. From the “Audio Camera Input” menu, select *Input Comp* to display the “Speech Input Comp” adjustment screen, shown in the following illustration.

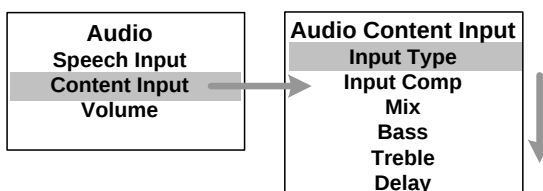


- Use the front panel left and right buttons to set the level of input compensation.

- Input compensation is used to normalize the audio input level
 - From its default value of 0.0 dB, input compensation can be set between -10 dB and +10 dB in 1 dB steps. The bar graph at the bottom of the screen provides a visual reference.
2. Similarly, from the “Audio Speech Input” menu, select *Mix*, *Bass*, or *Treble* to display their respective adjustment screens. Each has a default value of 0.0 dB.
 - *Mix* value can be set between 0.0 dB and -80.0 dB in 8 dB steps. Listen to the analog audio output or HDMI audio output (or to a recorded output) to adjust the mix value to a satisfactory level.
 - *Bass* and *Treble* values can each be set between -15 dB and +15 dB in 1.5 dB steps.

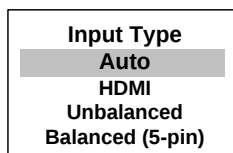
Audio Content Input

From the “Audio” menu, select *Content Input* to display the “Audio Content Input” menu.



This menu enables setting of the input type, input compensation, mix, bass, and treble values. (The down arrow next to the illustration indicates the need to scroll down to see all the menu items.) Use the front panel buttons to select each item.

1. From the “Audio Content Input” menu, select *Input Type* to display the “Input Type” menu.



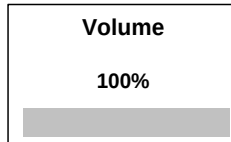
Use the front panel controls to select the desired input type (there are no adjustments for these selections), and then press **BACK** to return to the “Audio Content Input” menu.

NOTE: *Auto* mode selects HDMI audio, if present. Otherwise, it selects the unbalanced input from the TRS mini phone jack. If balanced audio is desired, it must be manually selected by choosing *Balanced (5-pin)* from this menu or by using a SIMPL Windows program to set the analog join value.

2. From the “Audio Content Input” menu, select *Input Comp*, *Mix*, *Bass*, *Treble* or *Delay*. *Input Comp*, *Bass* and *Treble* have a default value of 0.0 dB; *Mix* has a default value of -80 dB; *Delay* has a default value of 0.0 ms.
 - *Input Comp* values can be set between -10 dB and +10 dB in 1 dB steps.
 - *Mix* values can be set between -80.0 dB and 0.0 dB in 8 dB steps.
 - *Mix*, *Bass* and *Treble* values can each be set between -15 dB and +15 dB in 1.5 dB steps.
 - *Delay* can be set between 0.0 and +40.0 ms in 5 ms steps.

Audio Volume

From the “Audio” menu, select *Volume* to display the “Volume” screen.



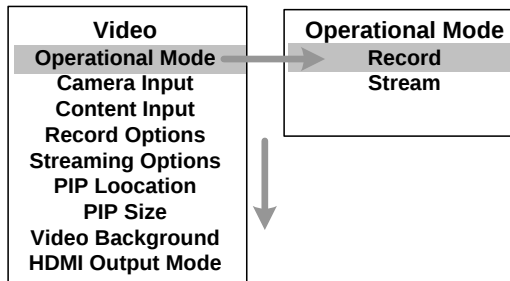
This screen enables setting of the overall volume level from 100% (default) down to 0% in 5% steps.

Video

The video characteristics of the Capture recorder are configured using the “Video” menu, which is displayed by highlighting *Video* in the “Installer Mode” menu and pressing **SELECT**.

Video Operational Mode

From the “Video” menu, select *Operational Mode* to display the “Operational Mode” menu.

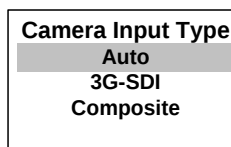


This menu enables selection of the desired operating mode, *Record*, the default, or *Stream*. There are no adjustments for these selections.

Video Camera Input

From the “Video” menu, select *Camera Input* to display the “Camera Input Type” screen.

NOTE: The 3G-SDI option is functional only on the CAPTURE-HD-PRO.

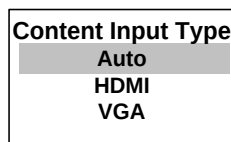


This screen enables selection of the desired camera input type: *Auto*, *3G-SDI*, or *Composite*. There are no adjustments for these selections.

NOTE: *Auto* mode selects 3G-SDI, if present. Otherwise, composite is selected.

Video Content Input

From the “Video” menu, select *Content Input* to display the “Content Input Type” screen.

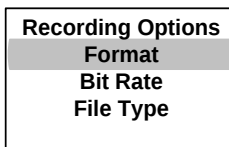


This screen enables selection of the desired content input type: *Auto*, *HDMI* or *VGA*. There are no adjustments for these selections.

NOTE: *Auto* mode selects HDMI, if present. Otherwise, VGA is selected.

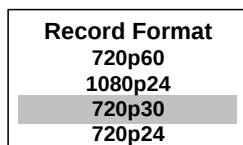
Video Record Options

From the “Video” menu, select *Record Options* to display the “Recording Options” menu.



This menu enables selection of the desired recording format and bit rate.

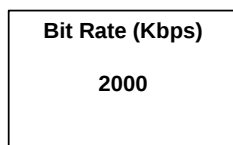
1. Press **SELECT** to display the “Record Format” screen.



This screen enables selection of the desired recording format. The default setting is 720p30. There are no adjustments for these selections.

NOTE: This is also the format that is used on the HDMI output when it is displayed on the confidence monitor.

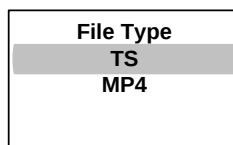
2. Press **BACK** to return to the “Record Options” menu, and select *Bit Rate* to display the “Bit Rate (Kbps)” screen.



Bit rate can be set from 500 kbps to 6000 kbps in 500 kbps steps. The default is 2000.

NOTE: Lower bit rates use less storage space, but the quality is lower. Higher bit rates yield higher quality, but use more storage space.

3. Press **BACK** to return to the “Record Options” menu, and select *File Type* to display the “File Type” screen.



This screen enables selection of the desired recording file type: TS or MP4. There are no adjustments for these selections.

- a. The TS file type is a very robust format and can handle interruptions to the recording. If a user removes their recording media before the recording is finished, the file is still playable. However, this file type is not widely supported.
- b. The MP4 format is playable in many media players; however it is not as robust. If the user removes their recording media before the recording is finished, the recording can be corrupted and may not be recoverable

Video Streaming Options

From the “Video” menu, select *Streaming Options* to display the “Streaming Options” menu.

Streaming Options
Format
Bit Rate
Profile

This menu enables selection of the desired streaming format, bit rate, and profile.

1. Press **SELECT** to display the “Streaming Format” screen.

Streaming Format
720p60
720p30
720p15
720p10
1080p30
1080p15
1080p10

This screen enables selection of the desired streaming format. The default setting is 720p60. There are no adjustments for these selections.

2. Press **BACK** to return to the “Streaming Options” menu, and select *Bit Rate* to display the “Bit Rate (Kbps)” screen.

Bit Rate (Kbps)
500

Bit rate can be set from 500 kbps to 6000 kbps in 500 kbps steps. The default is 1000 kbps.

NOTE: Lower bit rates use less file space, but the quality is lower. Higher bit rates yield higher quality, but require more bandwidth.

3. Press **BACK** to return to the “Streaming Options” menu, and select *Profile* to display the “Profile” screen.

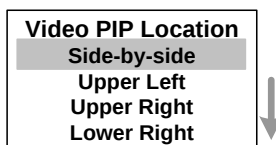
Profile
High
Main
Base

This screen enables selection between three H.264 profiles (video encoding techniques). *Main* is the default setting. There are no adjustments for these selections.

NOTE: The profiles represent encoding quality settings; the higher the quality, the more bandwidth that is used.

Video PIP Location

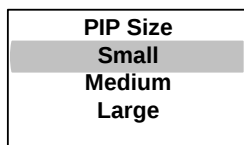
From the “Video” menu, select *PIP Location* to display the “Video PIP Location” screen.



This screen enables selection of the desired location for the picture-in-picture image. Two choices not shown above are *Lower Left* and *Full-frame*.

Video PIP Size

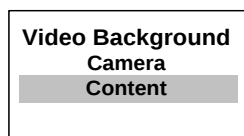
From the “Video” menu, select *PIP Size* to display the “PIP Size” screen.



This screen enables selection of the desired size for the picture-in-picture image.

Video Background Options

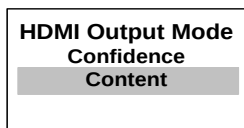
From the “Video” menu, select *Video Background* to display the “Video Background” screen



This screen enables selection of *Camera* or *Content* as the background.

Video HDMI Output Mode Options

From the “Video” menu, select *HDMI Output Mode* to display the “HDMI Output Mode” screen



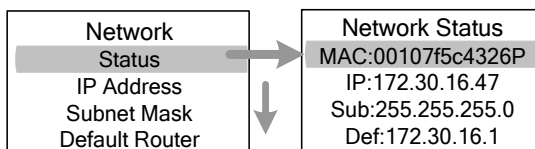
This screen enables selection of *Confidence* or *Content* as the HDMI output signal.

Network

The network characteristics of the Capture recorder are configured using the “Network” menu, which is displayed by highlighting *Network* in the “Installer Mode” menu and pressing **SELECT**.

Network Status Options

From the “Network” menu, select *Status* to display the “Network Status” screen.



Use this screen to review the preset MAC address of the Capture recorder and, if the device is connected to an active Ethernet network, the current IP address, subnet mask address, default router address, DHCP setting (on or off), the host name for the device, and, if a control system is part of the network, the control system address (if not defined, the address is shown as 0.0.0.0).

Network Setup Options

The “Network” menu also permits override of network settings by selecting the other menu items: *IP Address*, *Subnet Mask*, *Default Router*, *DHCP*, and *Control System*. If necessary, enter new IP addresses for *IP Address*, *Subnet Mask*, and *Default Router*; select *DHCP* to turn that feature off or on, and select *Control System* to enter a new control system IP ID and IP address.

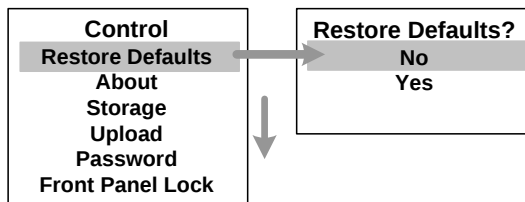
To enter new IP addresses, use the front panel left and right buttons to select each octet, and use the up and down buttons to change the octet value.

Control

The control characteristics of the Capture recorder are configured using the “Control” menu, which is displayed by highlighting *Control* in the “Installer Mode” menu and pressing **SELECT**.

Control Restore Defaults Options

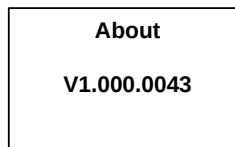
From the “Control” menu, select *Restore Defaults* to display the “Restore Defaults?” screen.



This screen makes it possible to restore system defaults or not.

Control About Display

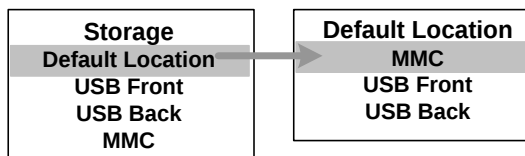
From the “Control” menu, select *About* to display the “About” screen.



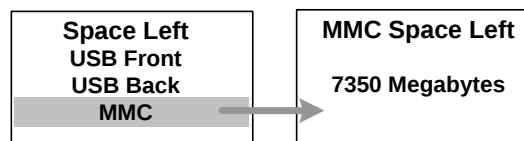
This screen displays the current firmware version of the Capture recorder.

Control Storage Options

From the “Control” menu, select *Storage* to display the “Storage” menu.

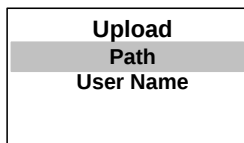


1. Select *Default Location* to display the “Default Location” screen. Use this screen to select the location for local storage of programs. At the time of installation, the default location is the MMC card.
2. Press **BACK** to return to the “Storage” menu and select *Space Left* to display the “Space Left” menu. This menu enables review of the amount of storage space remaining on the installed storage device(s).
3. Select the storage device and press **SELECT**. The display shows the remaining storage space available for that device.



Control Upload Options

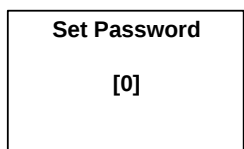
From the “Control” menu, select *Upload* to display the “Upload” menu.



Select *Path* or *User Name* to view the current path or user name specified for FTP uploads. Use the left and right buttons as needed to view the complete path information.

Control Password Options

From the “Control” menu, select *Password* to display the “Set Password” screen.

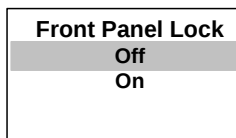


Passwords can be from one to five digits long. Use the right and left buttons to set the desired number of digits in the password. Then use the up and down buttons to set the number for each digit, using the left and right buttons to move between digits. Press **SELECT** to save the password.

NOTE: Setting a password enables use of the front panel lock feature.

Control Front Panel Lock Options

From the “Control” menu, select *Front Panel Lock* to display the “Front Panel Lock” screen.



This screen enables locking the front panel controls to prevent unauthorized changes in the front panel settings.

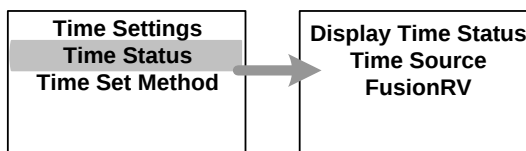
NOTE: In order for this feature to function, a password must be set.

When the front panel lock feature is enabled, the user is prompted to enter the password in order to access the *Installer* mode.

Control Time Settings Options

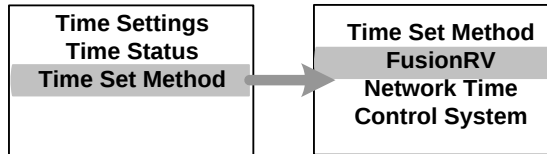
From the “Control” menu, select *Time Settings* to display the “Time Settings” menu.

1. Select *Time Status* to display the current time source.

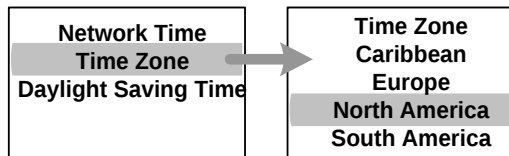


This screen displays the current method used to set the time parameters for the Capture recorder. In the above illustration, the screen shows that the default, FusionRV, is the time source.

2. Select *Time Set Method* to display the “Time Set Method” screen used to select the time setting parameters for the Capture recorder



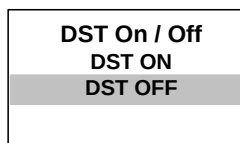
- a. Select *FusionRV* (default) to have the device use a FusionRV server to set the Capture recorder's time. This option has no additional parameters.
 - b. Select *Control System* to have the device use a Creston control system as the time source. This option has no additional parameters.
 - c. Select *Network Time* to have the device use the Network Time Protocol to connect to internet servers to set the device's time. This option has additional parameters which are detailed below.
3. Select *Network Time* to display the "Network Time" screen which enables selecting the desired time zone and activating or deactivating the daylight saving time feature.



- a. On the "Time Zone" screen, use the up and down buttons to highlight a desired geographic region. There are eight regions listed. In addition to the four shown above, the list includes *Africa*, *Asia*, *Australia*, and *USA Off Mainland*.
- b. Selecting a region produces a list of cities or general areas in that region, each preceded by an offset time relative to the GMT reference. For example, selecting *North America* yields a list of eleven cities/areas:
 (-3:30)*Newfoundland*, (-4:00)*New Brunswick*, (-5:00)*Eastern*,
 (-5:00)*Montreal*, (-5:00)*Toronto*, (-5:00)*Winnipeg*, (-6:00)*Central*,
 (-7:00)*Arizona*, (-7:00)*Mountain*, (-8:00)*Pacific*, (-10:00)*Alaska*.
- c. Select the closest city or area to set the proper offset and daylight saving time rules

NOTE: If the time zone settings are changed, the unit reboots after exiting the time zone menu.

4. Selecting *Daylight Saving Time* on the "Network Time" screen displays the "DST On/Off" screen which shows the current status of that feature.



5. Use the up and down buttons to set the daylight saving time feature on or off as appropriate.
6. Press **BACK** to exit the "Control" menu and return to *Installer Mode*. Press **BACK** or **HOME** to exit *Installer Mode*.

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.

Capture Recorder Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Device does not function.	Device is not receiving power from a Crestron power source.	Use the provided Crestron power source. Verify connections.
Loss of functionality due to electrostatic discharge.	Improper grounding.	Check that all ground connections have been made properly.
Cannot record.	Storage location is incorrect	Select appropriate storage location
	Not enough space left on selected storage device.	Make sure storage device has at least 4 GB of free space.

Reference Documents

All documents mentioned in this guide are available at www.crestron.com/manuals.

List of Related Reference Documents

DOCUMENT TITLE
CAPTURE-TPMC-4SM Capture HD Interface Operations Guide
Crestron CaptureLiveHD Design Guide
Crestron e-Control Reference Guide

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or, for assistance within a particular geographic region, refer to the listing of Crestron worldwide offices at www.crestron.com/offices.

To post a question about Crestron products, log onto Crestron's Online Help at www.crestron.com/onlinehelp. First-time users must 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 Capture recorder, 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 Web site periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.



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Operations Guide – DOC. 7233F
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Specifications subject to
change without notice.