Capture HD® High-Definition Capture Recorder

- 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
- Allows live streaming of HD video and audio over an IP network
- 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-thru
- 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

The CaptureLiveHD® system from Crestron® answers the call for a high-quality meeting and lecture capture solution that’s simple enough for the entire faculty to use, and affordable enough for wide-scale deployment across any sized 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, AV 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.

Without requiring any special training or extra effort from the presenter, the CAPTURE-HD 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, DigitalMedia™ system, or third-party streaming media system. Schools and businesses may easily implement a facility-wide media capture solution by equipping every room with CAPTURE-HD recorders, all centrally managed by Crestron Fusion RV® Remote Asset Management Software.

A Closer Look at the Box

The CAPTURE-HD 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 bargraph meter provides indication of the speech signal level so you’ll know that you’re being picked up loud and clear. A full-color LCD screen displays additional feedback and provides access to setup functions.

- **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. Crestron offers the CAM-IFB-100 camera, which is ideally suited for the application. 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 (with line level output) can be connected for pickup of the presenter. A mic mixer such as the Crestron MMX-6-USB may also be added to enable the connection of both wired and wireless microphones.
CAPTURE-HD — Rear View

- **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 hard 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 portable USB hard drive.

- **Live Streaming** — As an alternative to capturing video, the CAPTURE-HD can also be used to stream live HD video and audio to a computer, mobile device, touch screen, DigitalMedia system, or third-party streaming media system. The CAPTURE-HD supports both unicast and multicast, with or without RTSP (Real Time Streaming Protocol). Streaming connections can be configured to stream directly to one or more specific IP addresses, or to use RTSP to manage the configuration of multiple connections automatically.

- **Gigabit Ethernet** — Connection to the LAN is via 1000Base-T Ethernet, affording the highest possible transfer rate for uploading HD media files to your network server or streaming live video.

**Touch Screen Remote**

Adding the optional touch screen controller (CAPTURE-TPMC-4SM) enables simplified operation of the CAPTURE-HD 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.

**Control System Integration**

The CAPTURE-HD 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**

**Capture & Streaming**

<table>
<thead>
<tr>
<th>Video Recording Formats:</th>
<th>H.264 high profile @ 720p24, 720p30, 720p60, 1080p24, and 1080p30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Recording Bitrates:</td>
<td>500 to 6000 kbps</td>
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<tr>
<td>Video Streaming Formats:</td>
<td>H.264 high profile @ 720p10, 720p15, 720p30, 720p60, 1080p10, 1080p15, and 1080p30</td>
</tr>
<tr>
<td>Video Streaming Bitrates:</td>
<td>500 to 6000 kbps</td>
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<tr>
<td>Audio Format:</td>
<td>AAC stereo</td>
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<tr>
<td>Container:</td>
<td>MPEG-2 transport stream (.ts), MPEG-4 Part 14 (.mp4)</td>
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<tr>
<td>File Transfer Protocols:</td>
<td>FTP, SFTP, SCP</td>
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<tr>
<td>Streaming Protocols:</td>
<td>RTP, RTSP, SDP</td>
</tr>
<tr>
<td>Session Initiation Modes:</td>
<td>By receiver (unicast), by transmitter (unicast), multicast via RTSP, multicast via UDP</td>
</tr>
</tbody>
</table>

**Storage**

- Memory Card: Supports SD and SDHC memory cards, 16 GB SDHC card included
- USB: Supports USB hard drives
- Network: Supports file transfer to network media server

**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-bandng, film cadence detection, picture-in-picture and side-by-side windowing
- Input Signal Types (Content): HDMI, DisplayPort Multimode, RGB
- Input Signal Types (Camera): composite, 3G-SDI
- Output Signal Types: HDMI, DVI
- Input Formats: HDMI, DVI, RGBHV up to UXGA/WUXGA, HD up to 1080p60, NTSC or PAL, SD-SDI (SMPTE 259M), HD-SDI (SMPTE 292M), 3G-SDI (SMPTE 424M)
- Input Resolutions, HDMI, Progressive: Any resolution and frame rate from 640x400 to 1920x1200 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 640x400 to 1920x1200 up to 162 MHz pixel clock

**Input Resolutions, Composite:** 480i, 576i

**Input Resolutions, 3G-SDI:**
- SMPTE 425M (3G-SDI) 4:2:2 Colorspace: 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60);
- SMPTE 425M (3G-SDI) 4:4:4 Colorspace: 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@30Hz (1080p30), 1920x1080@50Hz (1080i50 or 1080sF25), 1920x1080@60Hz (1080i60 or 1080sF30);

**Input Resolutions, 3G-SDI:**
- SMPTE 260M (HD-SDI): 1920x1035@60Hz (1035i60);
- SMPTE 295M (HD-SDI): 1920x1080@50Hz (1080i50);
- SMPTE 274M (HD-SDI): 1920x1080@24Hz (1080p24), 1920x1080@30Hz (1080p30), 1920x1080@50Hz (1080i50 or 1080sF25), 1920x1080@60Hz (1080i60 or 1080sF30);
- SMPTE 296M (HD-SDI): 1280x720@50Hz (720p50), 1280x720@60Hz (720p60);
- SMPTE 259M-C (SD-SDI): 720x480@59.94 (NTSC), 720x576@50i (PAL)

**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 3 channels

**Audio Processing:** Provides mixing of the stereo CONTENT audio signals with the mono SPEECH signal

**A-D/A Conversion:** 24-bit 48 kHz

**Input Signal Types:** HDMI, DisplayPort Multimode, analog stereo, analog mono

**Output Signal Types:** HDMI, analog stereo

**Formats, HDMI:** 2ch 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

**Speech Volume:** -80 to +20 dB, adjustable from 0% to 100%, plus mute

**Speech Bass:** ±15.0 dB

**Speech Treble:** ±15.0 dB

**Performance:**
- **Frequency Response:** 20Hz to 20kHz ±0.75dB typical;
- **S/N Ratio:** >90dB, 20Hz to 20kHz A-weighted;
- **THD+N:** <0.05% @ 1kHz;
- **Stereo Separation:** >90dB

**Communications**

**Ethernet:** 10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

**USB:** USB 2.0 host, supports USB hard drives

**Connectors**

**SPEECH IN (Unbalanced):** (1) RCA female;
- Unbalanced line-level audio input;
- Input Impedance: 10k Ohms nominal;
- Input Level: 2 Vrms maximum

**SPEECH IN (Balanced):** (1) 3-pin 3.5mm detachable terminal block;
- Balanced/unbalanced line-level audio input;
- Input Impedance: 17.5k Ohms nominal balanced/unbalanced;
- Balanced Input Level: 4 Vrms maximum;
- Unbalanced Input Level: 2 Vrms maximum

**CONTENT AUDIO IN (Unbalanced):** (1) 3.5mm TRS mini phone jack;
- Unbalanced stereo line-level audio input;
- Input Impedance: 18.5k Ohms nominal;
- Input Level: 1 Vrms maximum

**CONTENT AUDIO IN (Balanced):** (1) 5-pin 3.5mm detachable terminal block;
- Balanced/unbalanced stereo line-level audio input;
- Input Impedance: 24k Ohms nominal balanced/unbalanced;
- Balanced Input Level: 4 Vrms maximum;
- Unbalanced Input Level: 2 Vrms maximum

**AUDIO OUT L, R (Unbalanced):** (2) RCA female;
- Unbalanced stereo line-level audio output;
- Output Impedance: 100 Ohms nominal;
- Output Level: 2 Vrms maximum

**AUDIO OUT (Balanced):** (1) 5-pin 3.5mm detachable terminal block;
- Balanced/unbalanced stereo line-level audio output;
- Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;
- Balanced Output Level: 4 Vrms maximum;
- Unbalanced Output Level: 2 Vrms maximum

**CAMERA IN, COMPOSITE:** (1) BNC female analog composite video input;
- RCA adapter included;
- Input Impedance: 75 Ohms nominal;
- Input Level: 1 Vp-p nominal

**CAMERA IN, 3G-SDI:** (1) BNC female, SDI video input;
- Input Impedance: 75 Ohms nominal

**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 Ohms nominal;
- Sync Detection: RGBHV, RGBS, RGsB;
- Sync Input Level: 3 to 5 Vp-p;
- Sync Input Impedance: 511 Ohms nominal
**CONTENT IN, HDMI:** (1) 19-pin Type A HDMI female; 
Signal Types: HDMI, DVI, DisplayPort Multimode

**LOOP OUT, RGBHV:** (1) DB15HD female, buffered pass-thru from 
RGBHV input

**HDMI OUT:** (1) 19-pin Type A HDMI female; 
Signal Types: HDMI, DVI

**MEMORY:** (1) SD memory card slot; for local storage; 
Supports SD and SDHC cards (16 GB SDHC card included)

**USB:** (2) USB Type A female (1 front, 1 rear); USB 2.0 host ports for 
connection of a USB hard drive

**LAN:** (1) 8-wire RJ45, female; 
10Base-T/100Base-TX/1000Base-T Ethernet port

**12VDC 5.0A:** (1) 2.5 x 5.5 mm DC power connector; 
12 Volt DC power input; PW-1250DU power pack included

**G:** (1) 6-32 screw, chassis ground lug

**COMPUTER (front):** (1) USB Type B female, for future use

**Display**

Display Type: TFT active matrix color LCD

Size: 1.8 inch (45 mm) diagonal

Resolution: 220 x 176 pixels

Functions: Displays recording status, time counter, audio levels, setup 
parameters, and other details

**Controls & Indicators**

**RESET:** (1) recessed miniature pushbutton for hardware reset

**Meter:** (1) 10-segment LED bargraph, indicates Speech audio signal level 

**SELECT:** (1) pushbutton, used to select or execute the highlighted menu 
item or value

**HOME:** (1) pushbutton, returns to the home menu

**BACK:** (1) pushbutton, steps menu back one level

**REC, PAUSE, STOP:** (3) transport style buttons with translucent button 
caps and LED backlighting for feedback, used to control the 
capture function

**LAN (rear):** (2) green LEDs, indicate Ethernet link status, speed, 
and activity

**Power Requirements**

Power Pack: 5 Amps @ 12 Volts DC; 
100-240 Volts AC, 50/60 Hz power pack, model PW-1250DU included

**Environmental**

Temperature: 32° to 104°F (0° to 40°C)

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

Heat Dissipation: 69 BTU/hr

**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 lb (1.9 kg)

CAPTURE-HD-PRO: 4.2 lb (1.9 kg)

**MODELS & ACCESSORIES**

**Available Models**

CAPTURE-HD: Capture HD® High-Definition Capture Recorder

CAPTURE-HD-PRO: Capture HD® High-Definition Capture Recorder 
w/3G-SDI

**Included Accessories**

PW-1250DU: Universal Power Pack for CAPTURE-HD (Quantity 1 included)

**Available Accessories**

SW-FUSION-RV: Fusion RV® Remote Asset Management Software

CEN-FUSION-RVS-R320: Pre-configured Fusion RV® Server System

CAPTURE-TPMC-4SM: Touch Screen Controller for CAPTURE-HD

CAM-IFB-100: Camera for CAPTURE-HD

MMX-6-USB: 6-Channel USB Microphone Mixer

CBL Series: Crestron® Certified Interface Cables
Notes:

1. Fusion RV software and hardware server(s) sold separately. Refer to the Crestron CaptureLiveHD Design Guide, Doc. #4552 for complete system requirements and design guidelines.

2. Items(s) sold separately.

3. Due to inconsistencies in the performance and quality of USB flash drives (a.k.a., "memory sticks" or "thumb drives"), their use with Capture HD is not recommended.

4. The bookmark feature requires integration with Fusion RV software (sold separately). Playback of bookmarked recordings is exclusively supported using Crestron Media Player. Crestron Media Player is a Web-based streaming media player that is included as part of the Media Services component of Fusion RV. Refer to the Crestron CaptureLiveHD spec sheet for additional information.

5. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI interface cables available separately.

6. SDI input capability is available on the CAPTURE-HD-PRO model only.

7. Affects analog audio outputs only.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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

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