1 Channel HDBaseT™ Sender

Analog Audio Extraction
HDMI input and HDMI Loop Output

ECHO-RX2

1 Channel HDBaseT™ Sender

2x HDMI Mirror Outputs
Analog Audio Extraction

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4 Channel HDBaseT™ (Sender)

Analog & Optical Audio Extraction
PoC ON/OFF Slide Switch
EDID Management Slide Switch
IR and RS-232 Loop Out

8 Channel HDBaseT™ Splitter (Sender)

Analog & Optical Audio Extraction
EDID Management Slide Switch
Dedicated power supply for PoC
IR and RS-232 Loop out

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Features

- 18 Gbps Bandwidth HDBaseT Extender

- Extend UHD 4K@60Hz 4:4:4 up to 70m & 1080p up to 100m

- HDCP 2.2, HDR10, 3D Support

- RS-232 Pass-Through & Control

- Bi-directional IR (Wide Band)

- HDMI loop output on the Sender

- Dual HDMI output on the Receiver

- Audio Extraction on the Sender and Receiver

- Daisy chain support of Senders up to eight

- EDID management

- Power over Cable (only Sender side needs power supply)
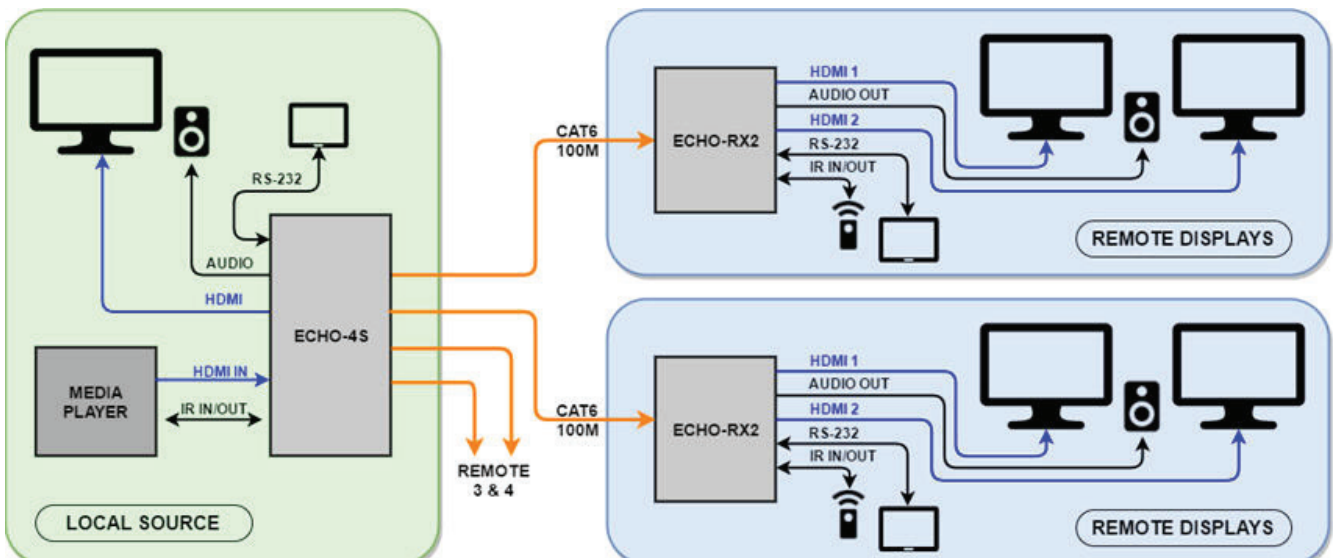
- Locking Power Supply Connector

Description

The ECHO family is a series of extension products designed to allow a single HDMI 2.0 source to be displayed remotely at up to eight different locations, using HDBaseT™ technology. HDMI resolutions up to 4K UHD (4K@60 4:4:4) can be extended up to 70m, while resolutions up to 1080p can be extended 100m over a single CAT5e or CAT6 cable. ECHO supports HDCP 2.2 and 1.4 content protection, as well as HDR10 High Dynamic Range video.

In addition to HDMI extension, the ECHO family also extends RS-232 serial data, and bi-directional IR for control of remote devices. All Senders include a local HDMI output, EDID routing control, de-embedded analog audio, and Power over Cable (PoC) to power remote Receivers. The ECHO-4S and ECHO-8S have built-in HDMI splitters to extend a single video to four and eight Receivers respectively, and have additional features including RS-232 and IR loop output for daisy-chaining Senders, and digital Toslink audio de-embedding.

The ECHO-RX2 Receiver has a built-in HDMI splitter for connection to a secondary display, RS-232 and bi-directional IR for control, and de-embedded analog audio output. When used with an ECHO-1S, power can be supplied at either Sender or Receiver – whichever is more convenient.

Block Diagram

Specifications

Video Standards	HDMI 2.0 video specifications including HDR10, 3D video HDCP 2.2, 1.4 DVI (single link)
Video Connectors	ECHO-1S - (1) HDMI Input, (1) HDMI Output ECHO-4S - (1) HDMI Input, (1) HDMI Output ECHO-8S - (1) HDMI Input, (1) HDMI Output ECHO-RX2 - (2) HDMI Outputs
Resolutions	HDTV signal - 480p through 4K@60 4:4:4 DVI signal VGA (640x480) thru WUXGA (1920x1200)
Audio	Formats - LPCM 2CH Audio (32-192kHz sample rate) DTS-HD, DOLBY-HD
Other Signals	RS-232 ECHO-1S, ECHO-RX-2 (1) RX, TX and GND on Terminal Strip RS-232 pass-through ECHO-4S, ECHO-8S (2) RX, TX and GND on Terminal Strip (Input and Loop Output) RS-232 Input Baud Rate: 115200, N, 8, 1 RS-232 Output to ECHO-RX2 Baud Rate: Configurable at 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200
IR	Wide-band IR pass-through: 38 – 56 kHz supported ECHO-1S, ECHO-RX-2 (1) 3.5mm IR Input (1) 3.5mm IR Output ECHO-4S, ECHO-8S (2) 3.5mm IR Inputs (Input and Loop) (2) 3.5mm IR Outputs (Input and Loop)
USB	USB USB 2.0 Micro type B (for firmware update only)
General	Power Supply 100 VAC to 240 VAC, 47-63 Hz, External; 24 VDC ECHO-1S, ECHO-RX-2 24 VDC 1A ECHO-4S 24 VDC 4A ECHO-8S MAIN: 24 VDC 2A PoC: 24 VDC 4A
Temp/Humidity	Storage: -40 to +158°F (-40 to +70°C) / 5% to 90%, non-condensing Operating: +14 to +131°F (-10 to +55°C) / 5% to 90%, non-condensing
Typical Power Consumption	ECHO-1S & ECHO-RX2 = 12W total ECHO-4S & ECHO-RX2 = 15W (Sender) 30W (PoC) ECHO-8S & ECHO-RX2 = 36W (Sender) 60W (PoC)
Cooling	Convection
Enclosure type	Metal (Steel)
Dimensions	ECHO-1S – 0.82" H x 6.06" W x 3.09" D (22.8mm H x 153.9mm W x 78.5mm D) ECHO-4S – 1.74" H x 10.64" W x 7.46" D (44.2mm H x 270mm W x 189.5mm D) ECHO-8S – 1.72" H x 18.9" W x 7.46" D (43.7mm H x 480mm W x 189.5mm D) ECHO-RX2 – 0.82" H x 6.06" W x 3.09" D (22.8mm H x 153.9mm W x 78.5mm D) (All dimensions include mounting flange width)
Safety	CE
EMI/EMC	CE, FCC Class A
MTBF	90,000 hours (estimate)
Warranty	3 years parts and labor

ECHO Family

HDMI 2.0 HDBaseT Extenders

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Specifications

ECHO-1S

       Unit only - .75lbs
       Unit in model box - 1.45lbs - 8.75 x 7.5 x 2.5
       Shipping box - 2lbs - 12″ x 10″ x 4″

ECHO-RX-2

       Unit only - .75lbs
       Unit in model box - 1.25lbs - 8.75 x 7.5 x 2.5
       Shipping box - 2lbs - 12″ x 10″ x 4″

ECHO-4S

       Unit only - 3.85lbs
       Unit in model box - 7.7lbs - Unit Box approx. 14.75" x 14.25" x 3.5"
       Shipping box - 10lbs - 18″ x18″ x 18″ box

ECHO-8S

       Unit only - 10.8lbs
       Unit in model box - 13lbs - 20″ x 15″ x 3.5″
       Shipping box - 15lbs - 24″ x 15″ x 12″