ENFORCER®

MVE-AH030Q
HDMI® Extender over Single Cat5e/6

Manual

HDMI®
HIGH-DEFINITION MULTIMEDIA INTERFACE

Up to
1080p
Resolution
Up to 196' (60m)

- Extend HDMI over a single Cat5e/6 cable.
- Supports resolutions from 480i to 1080p with zero signal loss.
- Transmits up to 196' (60m) at 1080p over a Cat6 cable.
- Plug and play operation — comes as a complete set.
- Bi-directional IR for remote control extension.
- Multiple EDID management settings.
- ARC/Digital Audio Out for integration with existing sound systems.
- HDMI loop output for local HDMI output.
- Two (2) 5VDC power supplies included.

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Introduction:

The ENFORCER HDMI Extender over Single Cat5e/6 extends the range of traditional HDMI cabling methods by using an active transmitter and receiver to send video and audio over a single Cat5e/6. HDMI formats as large as 1080p can be transmitted up to 196ft (60m) between the two units with zero signal loss by using integrated circuits in the receiver and transmitter.

Features:

- **Signal Strength** – Active operation ensures that the signal strength will remain strong over the length of the cable.
- **Distance** – The HDMI Extender over Single Cat5e/6 is capable of providing a clear HDMI signal up to 196ft (60m).
- **Formats Supported** – The HDMI Extender over Single Cat5e/6 supports both progressive and interlaced formats: 1080p/1080i/720p/576p/480p/480i.
- **Plug and Play** – The HDMI Extender over Single Cat5e/6 comes as a complete set consisting of a transmitter and receiver, power supplies, and IR dongles.
- **Zero Signal Loss** – Integrated circuits in the transmitter and receiver clean, buffer, and amplify the HDMI signal to prevent signal loss and ensure a clear signal regardless of the length of the cable.
- **Bi-directional IR** – Send IR signals from the source to the monitor or from the monitor to the source for discrete operation of devices.
- **EDID Management** – Eliminate sync issues by choosing from 9 different internal EDID settings, the HDMI loop display, or the main HDMI display.
- **Digital Audio Out** – Send HDMI audio directly to an external sound bar or A/V Receiver.
- **ARC Option Switch** – Enable Audio Return Channel (ARC) to automatically switch the audio source to that shown by the display device.
- **HDMI Loop Output** – Secondary HDMI output for local displays.

Specifications:

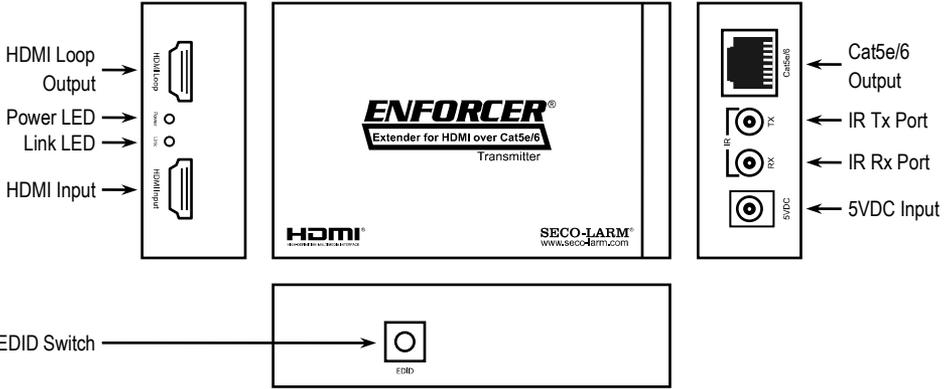|		
Input Video signal		3.3V
Input DDC signal		5Vp-p (TTL)
Maximum single link range		1080p
Deep color		24bit
Video formats supported		High-speed HDMI, HDCP 1.2
Audio formats supported		LPCM, Dolby-AC3, DTS7.1, DSD
Output video		HDMI
Resolutions supported		1080p/1080i/720p/576p/576i/480p/480i
Range – 1080p	Cat6	Up to 196' (60m)
	Cat5e	Up to 98' (30m)
Video amplifier bandwidth		1.65Gbps
Video input connector		HDMI Type A 19-pin female
Maximum input cable length		24AWG (15m), 26AWG (10m), 28AWG (5m)
Video output connector		HDMI Type A 19-pin female
Maximum output cable length		24AWG (15m), 26AWG (10m), 28AWG (5m)
Cat5e/6 Wiring standard		T-568B
Operating voltage		5VDC
Power supply		1A@5VDC (2 adapters) (2.1mm plug)
ESD protection (human body model)		±8kV (air-gap discharge), ±4kV (contact discharge)
Current draw	Transmitter	550mA@5VDC
	Receiver	450mA@5VDC
Operating temperature		32°~104° F (0°~40° C)
Operating humidity		20~90% RH (no condensation)
Dimensions		$3^{15}/_{16}$"x$2^{9}/_{16}$"x1" (100x65x26mm)
Weight		7.2-oz (205g) (each)

Parts List:

1x Transmitter
1x Receiver
2x 5VDC power adapters
1x Manual
2x IR Transmitters (w/ double sided tape)
2x IR Receivers (w/ double sided tape)

Overview:
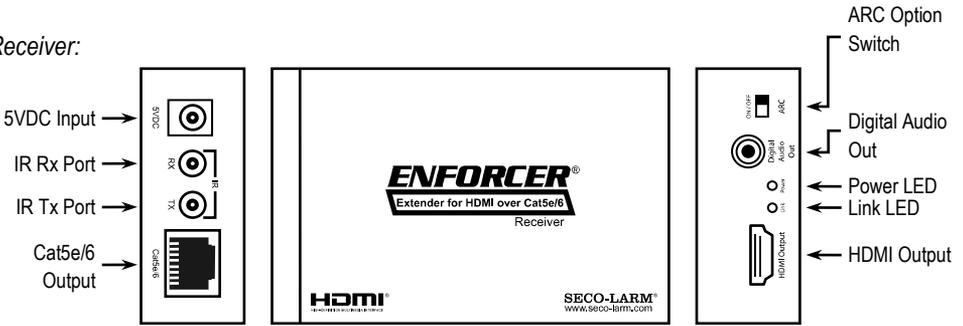
Transmitter:

HDMI Loop Output →	← Cat5e/6 Output
Power LED →	← IR Tx Port
Link LED →	← IR Rx Port
HDMI Input →	← 5VDC Input

EDID Switch →

Receiver:

ARC Option Switch

5VDC Input →	← Digital Audio Out
IR Rx Port →	← Power LED
IR Tx Port →	← Link LED
Cat5e/6 Output →	← HDMI Output

Dimensions:

1" (26mm)

2⁹/₁₆" (65mm)

3¹⁵/₁₆" (100mm)
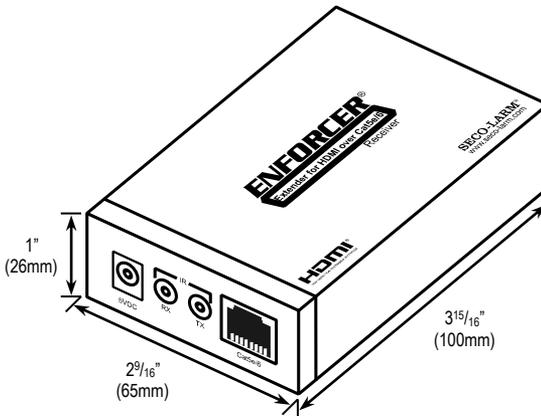
*Transmitter and Receiver unit have the same dimensions.

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Bi-directional IR:

The MVE-AH030Q supports bi-directional IR pass-through signals. This allows for remote operation of either the source device from the display location, or the display device from the source location. The MVE-AH030Q bi-directional IR Transmitter unit and IR Receiver unit support signals from 20~60 kHz.

IR Transmitter   IR Receiver
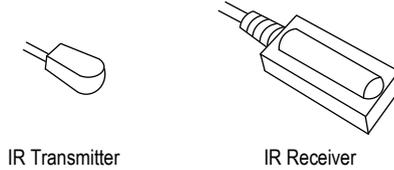
EDID Management:

The MVE-AH030Q includes manual Extended Display Identification Data (EDID) management settings to match the display settings to the source device. This setting is used when the display is not properly displaying an image from the source device. Please see the below table for available EDID settings.

1. Disconnect power from the MVE-AH030Q transmitter.
2. Adjust the EDID switch to the desired position.
3. Reconnect power to the MVE-AH030Q transmitter.
   NOTE: If the image is still not displaying, then please restart from step 1 and choose a different EDID switch position.

Position	EDID Description
0 (Default)	1080p, 2ch Audio
1	1080p, Dolby/DTS 5.1
2	1080p, HD Audio
3	1080i, 2ch Audio
4	1080i, Dolby/DTS 5.1
5	1080i, HD Audio
6	3D, 1080p, 2ch Audio
7	3D, 1080p, Dolby/DTS 5.1
8	3D, 1080p, HD Audio
9	Copy EDID from Transmitter HDMI Loop Output
A	Copy EDID from the Receiver HDMI Output
B	Not used
C	Not used
D	Not used
E	Not used
F	Not used

Digital Audio Out:

The MVE-AH030Q includes a digital audio out jack for connecting external sound bars or A/V Receivers. This allows the source HDMI audio to be output through external speakers. To use this feature connect a digital audio cable between the Transmitter unit Digital Audio Out and the sound bar or A/V Receiver digital audio in.

ARC Option Switch:

The Audio Return Channel (ARC) Option Switch on the MVE-AH030Q allows ARC-enabled displays to automatically switch the audio output to the display's selected video output. This allows for an included sound bar or A/V Receiver to output the audio that matches the video output on the display, even if not utilizing a source connected by the MVE-AH030Q.

NOTE: The display unit and HDMI cables used must support ARC for this switch to function correctly.

HDMI Loop Output:

The MVE-AH030Q also includes a secondary HDMI output on the MVE-AH030Q Transmitter unit. This HDMI output can be used for local displays that are in the same location as the HDMI source.

Installation:

1. Determine the location where the MVE-AH030Q units will be wired as well as how much Cat5e/6 cable will be necessary.
2. Connect the transmitter to the HDMI output of the source device.
3. Connect the Cat5e/6 cable to both the receiver and transmitter units.
   NOTE: For maximum range please use a Cat6 cable.
4. Connect the receiver to the HDMI input of the display or other device.
5. Connect one 5VDC adapter to the transmitter and another to the receiver.
6. Determine which device, if any, will be controlled by the remote control. Install the IR transmitter to the IR-TX port, pointing the IR transmitter at the device to be controlled. Install the IR receiver to the IR-RX port of the other device, pointing the IR receiver to where the remote control will be. Point the remote control at the IR receiver when in use.
7. Determine if an external sound bar or A/V Receiver will be used and connect the Digital Audio Out jack to the Digital Audio In on the sound bar or A/V Receiver using a digital audio cable.
   NOTE: If the ARC Switch is set to ON, then the display must support ARC and the display's CEC control must be turned on. When the ARC Switch is in the ON position, then the audio will automatically switch based on the display's selected source.
8. Switch on the HDMI source and display to verify that the system is functioning properly.
   NOTE: It may be necessary to move the EDID Switch to a different position if the system is not displaying a correct image.

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Sample Application:
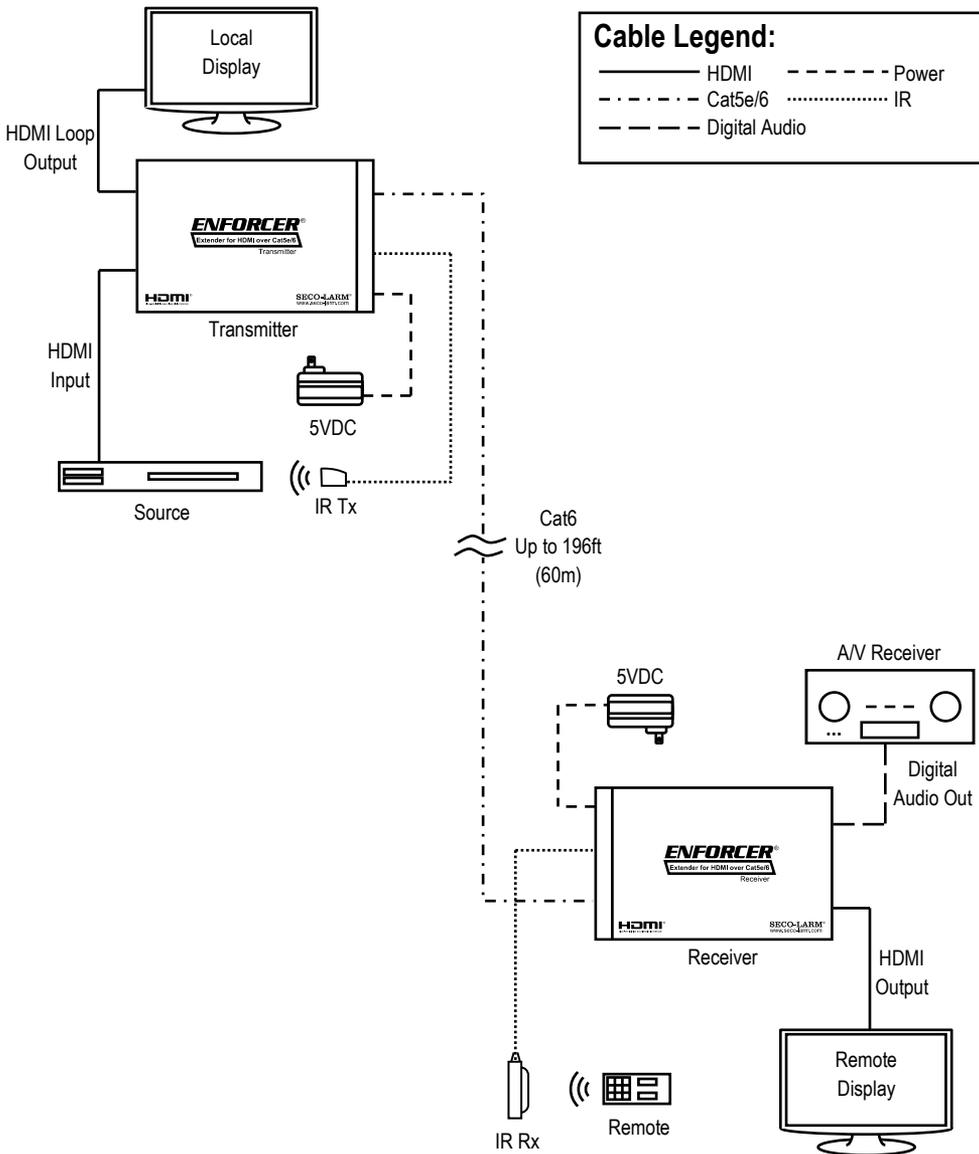
Troubleshooting:

HDMI device does not function correctly	• Use T568-B wiring standard • Make sure the extender is powered on both sides. • Make sure the source and the display are powered. • Test the Cat5e/6 cable between the receiver and transmitter and make sure it is functional. • Make sure that there are no problems with the HDMI source, HDMI cables, or HDMI display by plugging the source directly into the display using an HDMI cable.
Screen flickering or brief image loss	• Use a higher grade of twisted pair category cable. • Switch the source device to a lower HDMI output (1080p to 1080i).
A/V Receiver (or sound bar) is not outputting the correct audio	• Ensure the source device supports ARC. • Make sure CEC is activated on the source device.

Also Available from SECO-LARM:

MVE-AH010Q HDMI Extender over Dual Cat5e/6	**MVE-AH030AQ** Basic HDMI Extender over Single Cat5e/6	High-Speed HDMI Cables

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