

ENFORCER®

MVE-AH1T1-01YQ

HDMI Extender over Two Wires

Manual

HDMI®
HIGH-DEFINITION MULTIMEDIA INTERFACE



Features:

- Extends HDMI over two wires
- Supports resolutions from 480i to 1080p with zero signal loss
- Transmits up to 984ft (300m) at 1080p over two wires
- HDMI Loop output for local HDMI display
- Plug and play operation – comes as a complete set
- Two (2) 12VDC power supplies included
- Bi-directional RS-232 pass-through
- IR Pass-through for remote control extension and operation

ENFORCER HDMI Extender over Two Wires

Introduction:

The ENFORCER HDMI Extender over Two Wires extends the range of traditional HDMI cabling methods by using an active transmitter and receiver to send video and audio over any two copper wires including Cat5e/6 cables, telephone wires, and coaxial cables. HDMI formats as large as 1080p can be transmitted up to 984ft (300m) between the two units with zero signal loss by using integrated circuits in the receiver and transmitter.

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Features:

- **Signal Strength** – Active operation ensures signal strength remains strong over the length of the wiring.
- **Distance** – The HDMI Extender over Two Wires is capable of providing a clear HDMI signal up to 984ft (300m).
- **Formats Supported** – The HDMI Extender over Two Wires supports both progressive and interlaced formats: 1080p/1080i/720p/576p/576i/480p/480i.
- **Plug and Play** – The HDMI Extender over Two Wires 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.
- **IR Pass-Through** – Send IR signals from the monitor to the source for discrete operation of devices.
- **Bi-Directional RS-232** – Send RS-232 commands from a control system to the display and back without extra cabling.
- **HDMI Loop Output** – Secondary HDMI output for local displays.

Parts List:

1x Transmitter (MVE-AH1T1-01YTQ)	2x Terminal 2-pin connectors
1x Receiver (MVE-AH1T1-01YRQ)	2x RS-232 3-Pin connectors
2x 12VDC Power adapters	1x IR Transmitter (with double sided tape)
1x Manual	1x IR Receiver (with double sided tape)

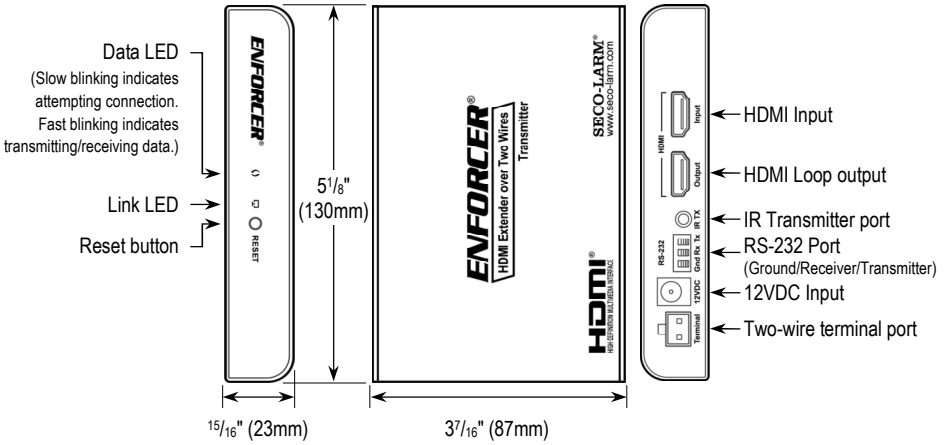
Specifications:

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 1.3	
Audio formats supported	PCM	
Output video	HDMI	
Resolutions supported	1080p/1080i/720p/576p/576i/480p/480i	
Range	Up to 984' (300m)	
Video input/output connector	HDMI Type A 19-pin female	
Max. input/output cable length	24AWG (15m), 26AWG (10m), 28AWG (5m)	
IR Pass-through frequency	20~60 kHz	
RS-232 Pass-through baud-rate	Up to 115,200	
Operating voltage	12VDC	
Power supply	2A@12VDC (2 Adapters) (2.1mm plug)	
ESD Protection (human body model)	±8kV (Air-gap discharge), ±4kV (contact discharge)	
Current draw	Transmitter	625mA@12VDC
	Receiver	580mA@12VDC
Operating temperature	32°~140° F (0°~60° C)	
Dimensions	5 ¹ / ₈ "x1 ⁵ / ₁₆ "x3 ⁷ / ₁₆ " (130x23x87 mm)	
Weight	7.4-oz (210g) (Each)	

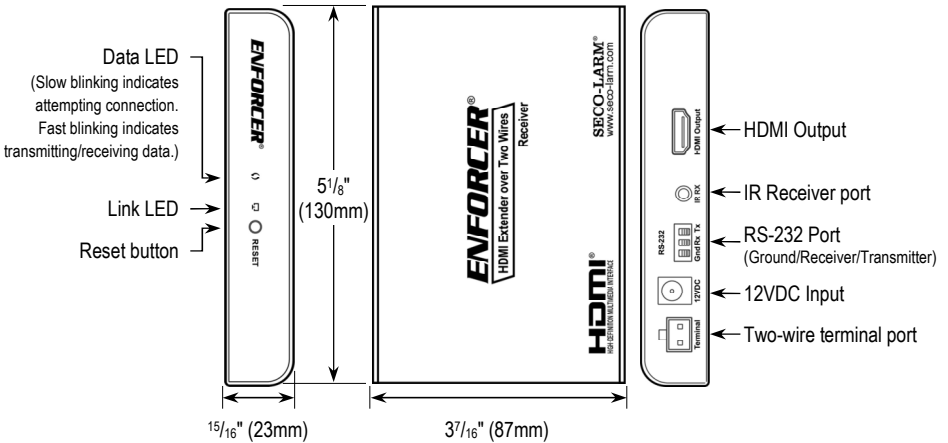
ENFORCER HDMI Extender over Two Wires

Overview:

Transmitter MVE-AH1T1-01YTQ:



Receiver MVE-AH1T1-01YRQ:



IR Pass-Through:

The MVE-AH1T1-01YQ supports IR pass-through signals to allow for remote operation of the source device from the display location. The IR transmitter and IR receiver support a frequency range between 20~60 kHz.

HDMI Loop Output:

The MVE-AH1T1-01YQ includes a secondary HDMI output on the transmitter unit. This HDMI output can be used for local displays that are in the same location as the HDMI source.

Bi-directional RS-232:

The MVE-AH1T1-01YQ supports bi-directional RS-232 data transmission to allow for control, debugging, and monitoring from a connected control system.

Configuring Baud-Rate

1. To set the baud-rate (default: 9600) to match the baud-rate of the connected control system, connect the control system to the MVE-AH1T1-01YTQ transmitter unit and connect the MVE-AH1T1-01YRQ receiver unit to the remote device to be controlled.
 2. Once connected, use the desired RS-232 software on the control system to set the correct baud-rate. The MVE-AH1T1-01YQ supports the following baud-rates: 2400 / 4800 / 9600 / 19200 / 28800 / 38400 / 57600 / 115200.
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Installation:

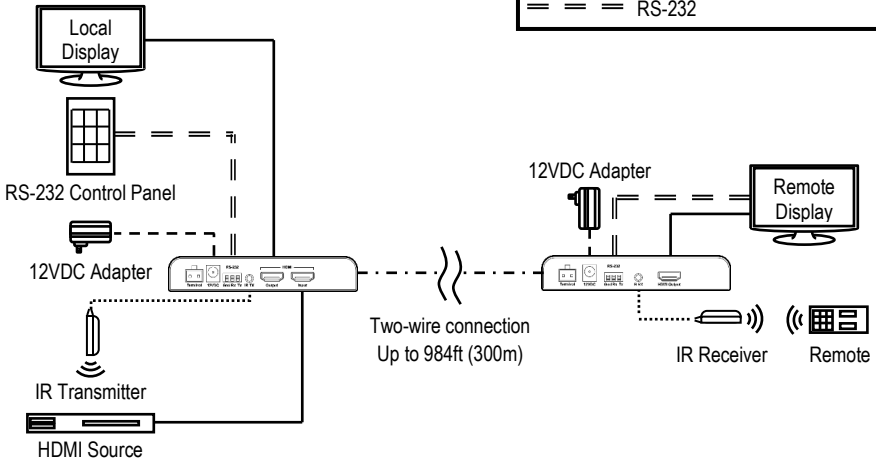
1. Determine the location where the MVE-AH1T1-01YQ units will be wired as well as length of two conductor wire necessary.
2. Connect the transmitter to the HDMI output of the source device.
3. Connect two copper conductor wires to the terminal ports on both the receiver and transmitter units. Any two copper wires will work, including network Cat5e/6 cables, telephone wires, and coaxial cables. Shielded wiring is recommended to avoid cross-talk and digital noise.
NOTE: The maximum length of conductor wire for all installations is 984ft (300m).
4. Connect the receiver to the HDMI input of the display or other device.
5. Connect one 12VDC adapter to the transmitter and the other 12VDC adapter to the receiver.
6. Install the IR transmitter to the IR-TX port located on the transmitter unit, pointing the IR transmitter at the device to be controlled.
7. Install the IR receiver to the IR-RX port located on the receiver unit, pointing the IR receiver to where the remote control will be. Point the remote control at the IR receiver when in use.
8. Connect an RS-232 controller unit to the MVE-AH1T1-01YTQ transmitter unit and connect the MVE-AH1T1-01YRQ receiver unit to the remote device to be controlled.
9. Switch on the HDMI source and display to verify that the system is functioning properly.

ENFORCER HDMI Extender over Two Wires

Sample Application:

Cable Legend:

—————	HDMI	- - - - -	Power
- - - - -	Two wires	IR
== == ==	RS-232		



Troubleshooting:

HDMI device does not function correctly

- Verify the extender is powered on both sides
- Verify the source and the display are powered
- Test the two conductor wires between the receiver and transmitter to confirm they are functional
- Verify 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

- Switch the source device to a lower HDMI output (e.g., 1080p to 1080i)

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