



HDMI™ EXTENDER

ELE8082

INSTALLATION MANUAL





SAFETY AND NOTICE

The **ELE8082 HDMI™ EXTENDER** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the ELE8082 should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.



INTRODUCTION

The **ELE8082 HDMI™ EXTENDER** boosts up your audio/video transmission distance up to 25m (80ft) in HDTV 1080i format and 15m (50ft) in HDTV 1080p format. With only one cost effective Cat-5/5e/6 solid cable, users can readily extend HDTV sources from DVD players, Blu-ray Disc player, PS3, PC, and any other kinds of sources compliant with TMDS standard to distant display monitors including HDMI™ or DVI supported TV sets or LCD PC monitors. With the state-of-the-art Silicon Image chipsets embedded, Deep Color video, HDMI™ 1.3 audio standards, HDCP and HDMI™ compatibility are all further insured. This flexibility makes HDCP compliant source devices transmit utmost high quality audio and video over a great distance at the minimal cost.

The ELE8082 includes two units: transmitting and receiving units. The transmitting unit is used to transfer the HDMI™ signals input and carry the signals through one low cost Cat-5/5e/6 solid cable. The transmission distance between the transmitting and receiving units can be up to 25m (80ft) under HD (720p/1080i) or 15m (50ft) under Full HD (1080p). With direct plug-in to the HDTV, users do not need to have to find a power outlet for the traditional HDMI™ over CAT5 receiver and can save an HDMI™ cable with ease of use.

► Features

- » HDMI™ founder Silicon Image chipsets embedded for utmost compatibility and reliability
- » HDMI™ 1.3c compliant
- » Extends the transmission distance up to 25m (80ft) from the sources under 1080i or 720p
- » Extends the transmission distance up to 15m (50ft) from the sources under 1080p
- » HDCP compliant
- » Pure unaltered uncompressed 7.1ch digital HDMI™ over solid category cable transmission
- » Wall mounting housing design at TX and direct plug-in at RX for easy and robust installation
- » Perfectly integrated with other HDMI™ over CAT5 series products



The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

▶ Package Contents

- » ELE8082 x1 (TX unit & RX unit)
- » Installation manual x1
- » +5V DC power supply unit x1

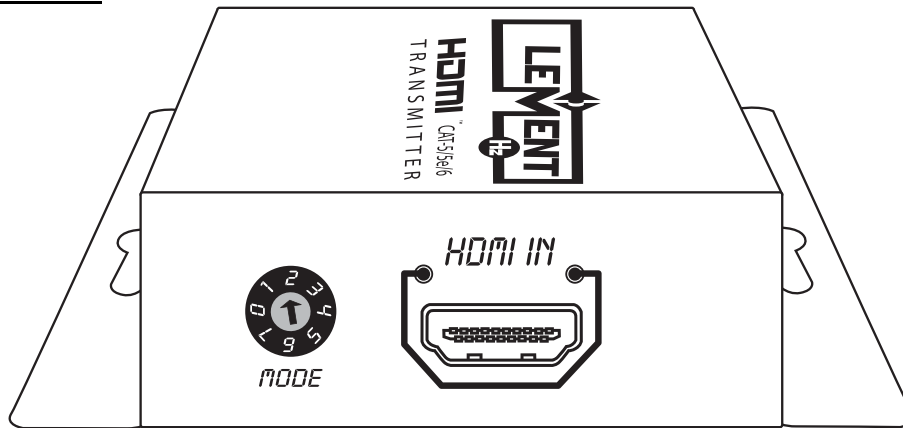
► Specifications

Model Name		ELE8082		ELE8081		
Technical						
Role of usage		Transmitter (TX)	Receiver (RX)	Transmitter (TX)	Receiver (RX)	
HDMI™ compliance		HDMI™ 1.3c				
HDCP compliance		Yes				
Video bandwidth		Single-link 225MHz (6.75Gbps)				
Video support		480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color				
HDMI™ over CAT5e transmission (24-bit)		Full HD (1080p60) – 15m (50ft)		Full HD (1080p60) – 40m (80ft)		
		HD (720p/1080i) – 25m (50ft)		HD (720p/1080i) – 60m (130ft)		
Audio support		Surround sound (up to 7.1ch) or stereo digital audio				
Equalization		None		Adjustable rotary tuner for signal level control at RX		
Input TMDS signal		1.2 Volts (peak-to-peak)				
Input DDC signal		5 Volts (peak-to-peak, TTL)				
ESD protection		[1] Human body — ±19kV (air-gap discharge) & ±12kV (contact discharge) [2] Core chipset — ±8kV				
PCB stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]				
Input		1x HDMI™	1x RJ-45	1x HDMI™	1x RJ-45	
Output		1x RJ-45	1x HDMI™	1x RJ-45	1x HDMI™	
HDMI™ connector		Type A (19-pin female)				
RJ-45 connector		WE/SS 8P8C with 2 LED indicators				
Rotary control		Audio/video mode	None	None	Signal EQ level	
Mechanical						
Housing		Metal enclosure				
Dimensions [L x W x H]	Model	TX	3.7" x 2.4" x 1" (93x60x25mm)		3.7" x 2.4" x 1" (93x60x25mm)	
		RX	1.8" x 1" x 0.9" (45x25x22mm)		3.7" x 2.4" x 1" (93x60x25mm)	
	Package	10.6" x 6.9" x 3.1" (270 x 175 x 80mm)				
Weight	Model	12oz (340g)		14oz (405g)		
	Package	1.5 lbs (685g)		1.8 lbs (815g)		
Fixedness		Wall-mounting case with screws				
Power supply		5V 2A DC	None	5V 2A DC		
Power consumption		1 Watt (max)				
Operation temperature		32~104°F (0~40°C)				
Storage temperature		-4~140°F (-20~60°C)				
Relative humidity		20~90% RH (no condensation)				

INPUT/OUTPUT PANELS

➤ Transmitting unit (TX)

INPUT PANEL



HDMI IN: Connect to a HDMI™ source with a HDMI™ male-male cable.

MODE:

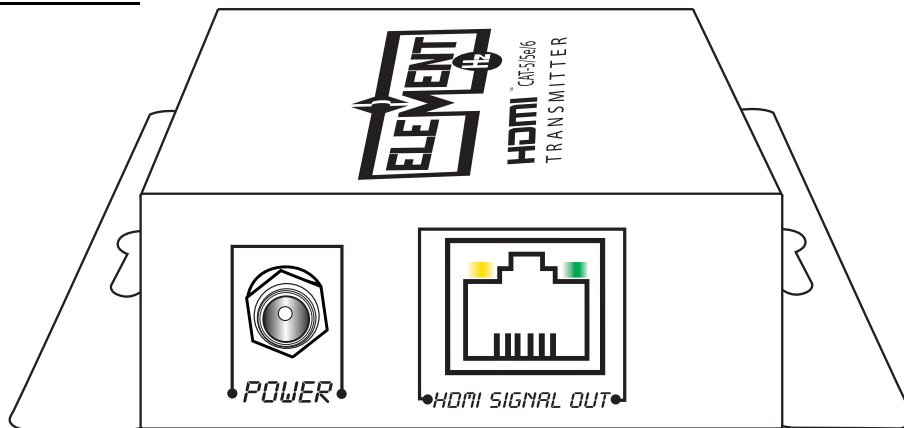
- 0 = video – up to HDMI™ 1.3a output; audio – up to 7.1ch output
- 1 = video – up to HDMI™ 1.3a output; audio – lock to stereo audio output
- 2 = video – lock to HDMI™ 1.2a output; audio – up to 7.1ch output
- 3 = video – lock to HDMI™ 1.2a output; audio – lock to stereo audio output
- 4 = DVI mode for connecting to DVI source/display
- 5 = [safe mode] – up to 1080p60 video and 2ch stereo audio
- 6 = [default mode] – up to 1080p60 video and up to 7.1ch surround sound
- 7 = [EDID learning mode] – learn EDID from the display



Note for EDID (Extended Display Identification Data) learning

1. Connect the display which you want to read EDID with a HDMI™ cable to the **HDMI IN** on the transmitting unit and turn **MODE** to 7 so the TX can learn the EDID information from the connected HDTV. The LED on the **HDMI SIGNAL OUT** port of the TX will dim and light again in a few seconds, which indicates the EDID learning process is complete.
2. Turn **MODE** clockwise (↻) from 7 to 0~4 for desired audio/video setting respectively and enjoy the experience. DO NOT let the rotary arrow pass by 6 which will erase the EDID just learned and restore the default EDID.

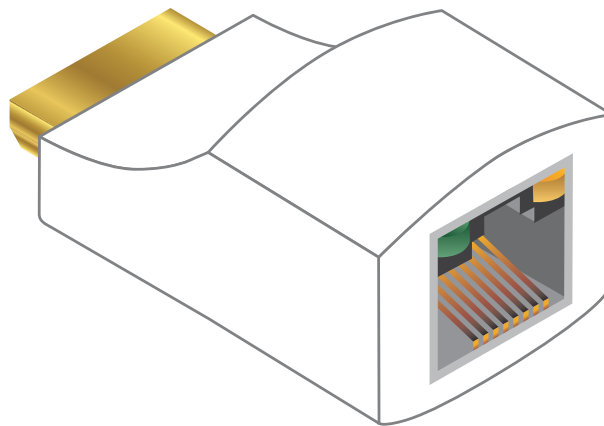
OUTPUT PANEL



POWER: Connect to a +5VDC locking power supply unit.

HDMI SIGNAL OUT: Connect a Cat-5/5e/6 cable between the RJ-45 port on TX and RX units.

➤ Receiving unit (RX)



RJ-45: Connect a Cat-5/5e/6 cable between the RJ-45 port on TX and RX units.

HDMI: Plug into the HDMI™ port of the display.

INSTALLATION

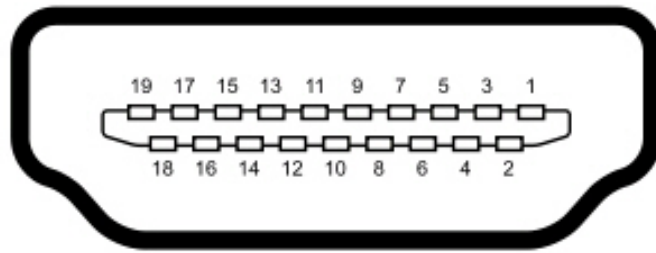
1. Connect a HDMI™ source such as a Blu-ray Disc player to the transmitting unit.
2. Connect a HDMI™ display such as a LCD HDTV to the receiving unit.
3. Connect one Cat-5/5e/6 cable between the **HDMI SIGNAL OUT** port on the transmitting unit and the RJ-45 port on the receiving unit.
4. Make sure this Cat-5/5e/6 cable is tightly connected and not loose.
5. Plug in a +5V DC power supply unit to the power jack of the transmitting unit.

EDID LEARNING

1. Turn on the transmitting unit of ELE8082.
2. Turn the **MODE** of ELE8082 counterclockwise (↺) from 0 (for surround sound) or 1 (for stereo) to 7.
3. Use a HDMI™ cable to connect the transmitting unit of ELE8082 and the display. The LED on the **HDMI SIGNAL OUT** RJ-45 port of the transmitting unit of ELE8082 will dim and light again, which indicates the EDID learning process is finished.
4. Turn the **MODE** of ELE8082 clockwise (↻) from 7 to 0 (for surround sound) or 1 (for stereo). The most important thing is don't let the rotary arrow pass through 6 which will erase the EDID just learned and restore to default EDID.
5. Connect the transmitting unit of ELE8082 and the video source through a HDMI™ cable and enjoy the experience.

PIN DEFINITION

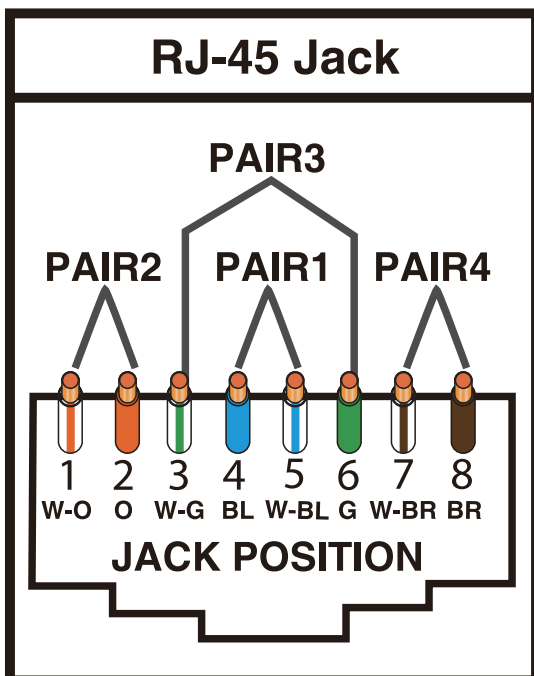
➤ HDMI™



Type A (Receptacle) HDMI

- | | | |
|---------------------------|------------------------------------|--------------------------|
| Pin 1 – TMDS Data2+ | Pin 8 – TMDS Data0 Shield | Pin 15 – SCL |
| Pin 2 – TMDS Data2 Shield | Pin 9 – TMDS Data0- | Pin 16 – SDA |
| Pin 3 – TMDS Data2- | Pin 10 – TMDS Clock+ | Pin 17 – DDC/CEC Ground |
| Pin 4 – TMDS Data1+ | Pin 11 – TMDS Clock Shield | Pin 18 – +5 V Power |
| Pin 5 – TMDS Data1 Shield | Pin 12 – TMDS Clock- | Pin 19 – Hot Plug Detect |
| Pin 6 – TMDS Data1- | Pin 13 – CEC | |
| Pin 7 – TMDS Data0+ | Pin 14 – Reserved (N.C. on device) | |

➤ RJ-45 / CAT5



Pair of Cat-5/5e/6 Cable		Definition
	White/orange stripe	TX0-
	Orange solid	TX0+
	White/green stripe	TX1-
	Blue solid	TX2-
	White/blue stripe	TX2+
	Green solid	TX1+
	White/brown stripe	TXC-
	Brown solid	TXC+

NOTICE

1. All HDMI™ over CAT5 transmission distances are measured using Belden CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C.
2. The transmission length is largely affected by the type of category cables, the type of HDMI™ sources, and the type of HDMI™ displays. The testing result shows solid UTP cables (usually in the form of 300m or 1,000ft bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). A solid UTP Cat-5e cable shows longer transmission range than a stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
3. EIA/TIA-568-B termination (T568B) for category cables is recommended.
4. To reduce the interference among the unshielded twisted pairs of wires in a category cable, double shielded STP cables are better suited than unshielded UTP cables to improve EMI problems, which is worse in long transmission.
5. Because the quality of the category cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
6. If the HDMI™ display has multiple HDMI™ inputs, it is found that the first HDMI™ input (HDMI™ input 1) generally can produce better transmission performance among all HDMI™ inputs.



➤ Performance Rating Guide


		Type of CAT5/6 cable		
Wiring	Shielding	CAT5	CAT5e	CAT6
Solid	Unshielded (UTP)	★★★	★★★★★	★★★★★
	Shielded (STP)	★★★	★★★	★★★★★
Stranded	Unshielded (UTP)	★	★★	★★
	Shielded (STP)	★	★	★★
Termination	Please use EIA/TIA-568-B termination (T568B) at any time			




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