Cablesson HDelity HDMI 3D Extender Single CAT5/6 (Bi-directional IR)

User Manual

ⓘ SAFETY AND NOTICE

The HDelity HDMI 3D Extender Single Cat5/6 (Bi-Directional IR) has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the HDelity 3D Extender 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 those objects away that might damage the device and assure that the placement of this unit is on a stable surface
- Use only Power Adapter, 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.

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"We believe in creating thoughtful products for you"

The Cablesson HDelity HDMI 3D Extender Single Cat5/6 (Bi-Directional IR) boosts up your video/audio transmission distance up to 50m (165ft) in HDTV 1080i format, 40m (130ft) in HDTV 1080p format, and 20m (65ft) in HDTV 1080p with 36-bit colour depth. The HDelity 3D Extender also supports the most advanced 3D video format and therefore guarantees the highest 3D video compatibility on the market. With only one cost effective CAT-5/5e/6 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 to distant display monitors including HDMI or DVI enabled TV sets or LCD PC monitors. With the advanced design for the latest HDMI technology, Deep Colour video, DTS-HD Master Audio or Dolby True-HD audio, and HDCP supports and compatibility are all further insured. This flexibility makes HDCP compliant DVD players or PS3 transmit utmost high quality video and audio with a greater distance at the minimal cost, when integrating several components apart. In addition, the Cablesson HDelity 3D Extender is also equipped with Bi-directional IR pass-through path. This bonus feature allows users to boost IR control distance up to 100m (330 ft) and makes IR control possible through only single CAT-5/5e/6 cable including HDMI signals. In addition, serial port offers the convenient path for interactive application, such as touch panels. The HDelity Extender includes two units: Transmitting unit (TX) and Receiving unit (RX). The transmitting unit is used to capture the input HDMI/DVI signals with IR control packets and carry the signals via one cost effective CAT-5/5e/6 cable. The receiving unit is responsible for equalizing the transmitted HDMI signal and reconstructing IR signals. The transmission distance between the sending and receiving units can be up to 50m (165ft) at HD 720p or 1080i; or 40m (130ft) at Full HD 1080p. With an 8-level equalization rotary control on the receiving unit, users can adjust the equalization strength to the received HDMI signals accordingly, and therefore optimize the transmission distance between source and destination.

Cablesson HDelity HDMI 3D EXTENDER SINGLE CAT5/6 (BI-DIRECTIONAL IR)

- Support HDMI Deep Colour & Full 3D
- Extends the transmission up to 50m (165ft) from the HDMI source at HD 1080i or 720p 24-bit
- Extends the transmission up to 40m (130ft) from the HDMI source at Full HD 1080p 24-bit
- Extends the transmission up to 20m (65ft) from the HDMI source at Full HD 1080p 36-bit
- HDCP 1.1 compliant
- Auto EDID feature
- Minimizes the cable skew by adjustable 8-level equalization control
- Pure unaltered uncompressed 7.1ch digital HDMI over CAT-5/5e/6 cable transmission
- DTS-HD and Dolby True-HD high bit rate audio support
- Supports full frequency IR signal from 20KHz to 60KHz
- Bi-directional IR path
- Allows cascading
- Wall mounting housing design for easy and robust installation
- Perfectly integrated with other HDMI over CAT5 series products

"A product that will exceed your expectations"

Cablesson HDelity 3D EXTENDER		
Technical	**Cablesson HDelity**	**Cablesson HDelity**
Role of usage	Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI Deep Colour & Full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gbps]	
Video support	480i / 480p / 720p / 1080i / 1080p60	
Audio support	Surround sound (up to 7.1ch) or Stereo Digital Audio	
HDMI over UTP transmission [24-bit]	Full HD (1080p) - 40m (130ft) [CAT.X] HD (720p/1080i) - 50m (165ft) [CAT.X]	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
Signal Equalization	8-level digital 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 model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
IR pass-thru	Full-duplex bi-directional	IR Remote Control
RS-232 support	Yes	
Input	1x HDMI + 1x 3.5mm	1x RJ45 + 1x 3.5mm
Output	1x RJ45 + 1x 3.5mm	1x HDMI + 1x 3.5mm
In/ Out	1x DIN9	1x DIN9
HDMI source control	Controllable via IR pass-through from RX to TX and from TX to RX with IR extenders	
IR remote control	Electro-optical characteristics: τ = 25° / Carrier frequency: 20-60kHz	
HDMI connector	Type A [19-pin female]	
Min DIN connector	DIN-9	
RJ45 connector	WE/SS 8P8C with 2 LED indicators	
3.5mm connector	IR Blaster & IR Receiver	
Rotary control switch	EDID Mode selection	Signal level equalization

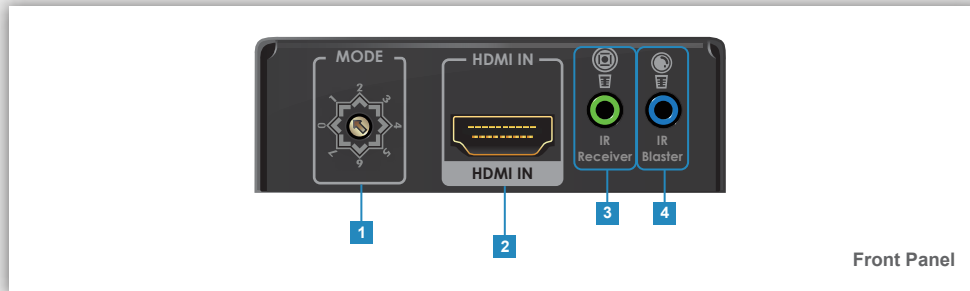| Cablesson HDelity 3D EXTENDER		
Mechanical	**Cablesson HDelity**	
Housing	Metal enclosure	
Dimensions (L x W x H)	Model	71 x 91 x 35mm [2.8" x 3.6" x 1.4"]
	Package	270 x 175 x 80mm [10.6" x 6.9" x 3.1"]
	Carton	450 x 370 x 300mm [1'6" x 1'3" x 11.8"]
Weight	Model	239g [8.4oz]
	Package	1000g [2.2 lbs]
Fixedness	Wall-mounting case with screws	
Power supply	5V 2A DC	
Power consumption	1.5 Watts	
Operation temperature	0~40°C [32~104°F]	
Storage temperature	-20~60°C [-4~140°F]	
Relative humidity	20~90% RH [no condensation]	

PACKAGE CONTENTS

- 1x Cablesson HDelity 3D Extender (Transmitter and Receiver)
- 2x DC 5V 2A wall wart
- 1x User Manual
- 1x IR blaster
- 1x IR receiver

i 1) *The claimed transmission distance here is subject to the grade of installed cable(s), source device and display.*
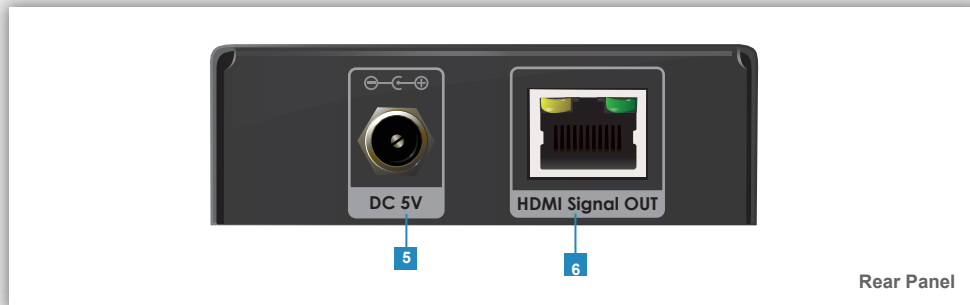
2) *For over CAT5/COAX transmission, the cable(s) has to be solid, not stranded. Any keystone jack along the transmission path will kill the transmission performance significantly!*

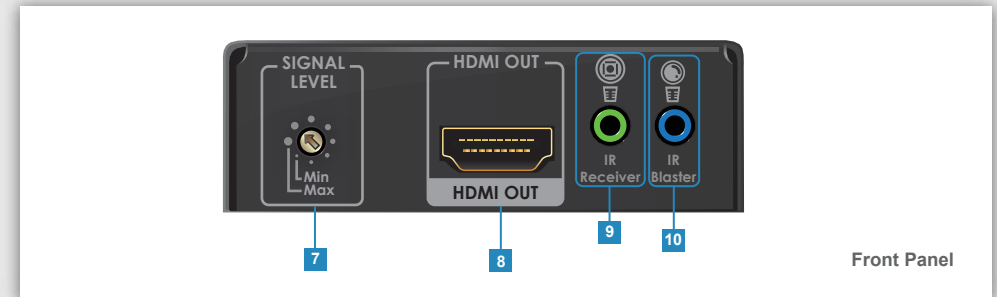## PANEL DESCRIPTIONS FOR TRANSMITTING UNIT

Front Panel

1. **Mode:** 0 - EDID Full-HD(1080p@60) - 24bit 2D video & 7.1ch audio
   - 1 - EDID Full-HD(1080p@60) - 24bit 2D video & 2ch audio
   - 2 - EDID Full-HD(1080p@60) - 36bit 2D video & 7.1ch audio
   - 3 - EDID Full-HD(1080p@60) - 36bit 2D video & 2ch audio
   - 4 - EDID HD(1080p@30)(1080i@60)(720p@60) - 24bit 2D video & 7.1ch audio
   - 5 - EDID HD(1080p@30)(1080i@60)(720p@60) - 24bit 2D video & 2ch audio
   - 6 - EDID Full-HD(1080p@60) - 36bit 3D video & 2ch audio
   - 7 - EDID learning mode
2. **HDMI IN:** Connects to an HDMI source with an HDMI male-male cable
3. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
4. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster
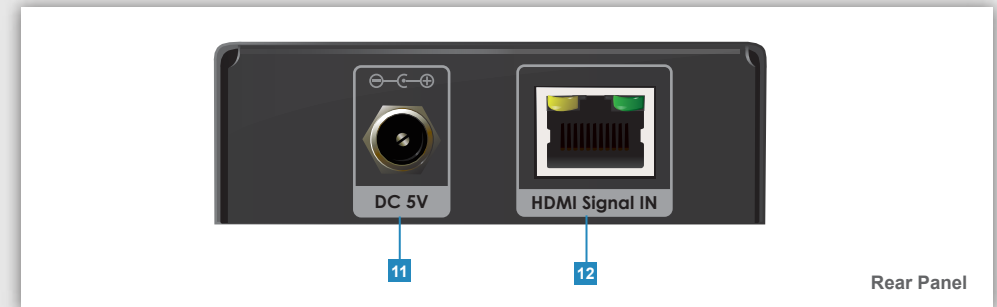
Rear Panel

5. **+5V DC:** Connect to 5V DC power supply
6. **HDMI Signal IN:** Plug-in a CAT-5/5e/6 cable that needs to be linked to the receiving unit

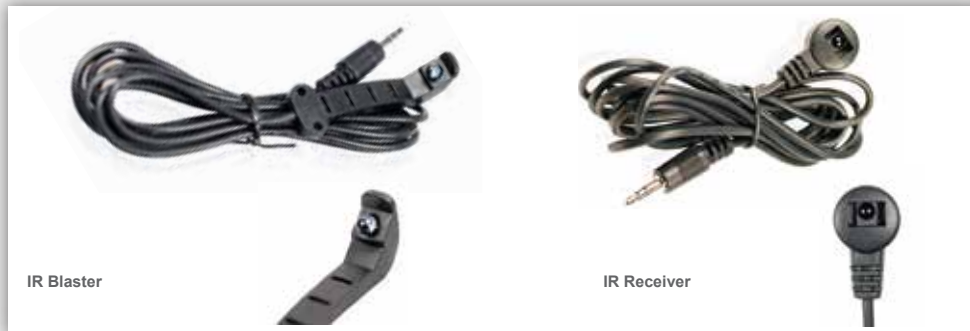## PANEL DESCRIPTIONS FOR RECEIVING UNIT

Front Panel

7. **Signal Level:** Adjust the 8-level equalization control to the received HDMI signals. The HDMI signal level varies from MAX (strongest) to MIN (weakest) for respective transmission length from longest possible range to short distance. Please adjust the signal level from MIN to MAX and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
8. **HDMI OUT:** Connect to an HDMI display with an HDMI male-male cable
9. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
10. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster

Rear Panel

11. **+5V DC:** Connect to 5V DC power supply
12. **HDMI Signal IN:** Plug-in a CAT-5/5e/6 cable that needs to be linked to the receiving unit

IR EXTENDERS

IR Blaster

IR Receiver

IR SOCKETS

IR Blaster: Plug in the IR blaster to emit all IR command signals received from the IR receiver from the other end to control the devices corresponding to the IR signals.

IR Receiver: Plug in the IR receiver here to receive all IR command signals from the IR remote controls of HDMI source devices.
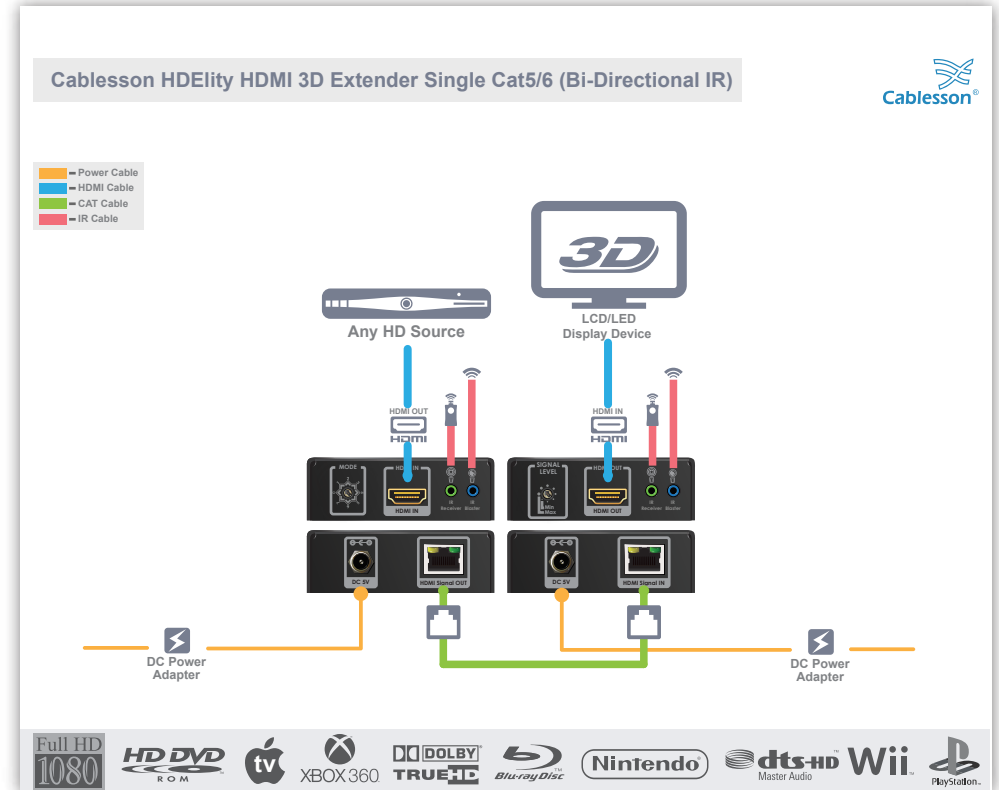
DEFINITION OF IR EARPHONE JACK

IR Blaster	IR Receiver
1. IR Signal	1. IR Signal [20-60 kHz]
2. Grounding	2. Grounding
	3. Power

Incorrect insertion of IR blaster and IR receiver to wrong 3.5mm infrared sockets may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets

You can buy any IR extension cables in the market that are compatible to the definition of the IR sockets for the matrix if necessary for replacement use. However, IR cables longer than 2m (6-ft) may not work.
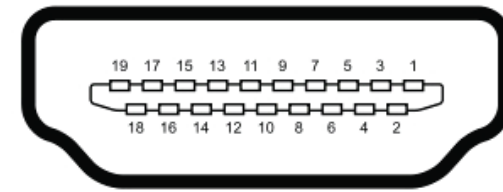
CONNECTION DIAGRAM

Cablesson HDElity HDMI 3D Extender Single Cat5/6 (Bi-Directional IR)

- Power Cable
- HDMI Cable
- CAT Cable
- IR Cable

Any HD Source

LCD/LED Display Device

DC Power Adapter

DC Power Adapter

1. Connect an HDMI or DVI source (such as a Blu-ray Disc player) to the transmitting unit
2. Connect an HDMI or DVI display (such as a LCD TV) to the receiving unit
3. Connect IR Blaster/Receiver to both TX and RX units
4. Connect a CAT-5/5e/6 cable between the transmitting and receiving units
5. Make sure this CAT-5/5e/6 cable is tightly connected and not loose
6. Plug in 5V DC power supply unit to the power jack of the receiving unit
7. Plug in 5V DC power supply unit to the power jack of the transmitting unit
8. If you see flickering or blinking image on the display, please adjust the rotary control switch to improve the cable skew. MAX stands for the strongest HDMI signal level for longest possible transmission length while MIN stands for the weakest HDMI signal level for short transmission length. Please adjust the signal level from MIN to MAX and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!

HDMI

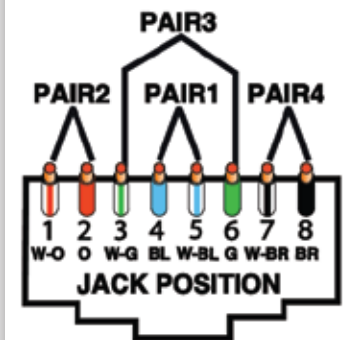**Type A (Receptacle) HDMI**

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 Cloc k–	Pin 19	Hot Plug Detect
Pin 6	TMDS Data1–	Pin 13	CEC		
Pin 7	TMDS Data0+	Pin 14	Reserved (N.C. on device)		

CAT5 [RJ-45]

Data Link TIA/EIA-568-B			RJ-45 Jack
Pin	**Colour**	**Function**	
1	W-O	TX0-	
2	O	TX0+	
3	W-G	TX1-	
4	BL	TX2-	
5	W-BL	TX2+	
6	G	TX1+	
7	W-BR	TXC-	
8	BR	TXC+	

LIMITED WARRANTY

The SELLER warrants the Cablesson HDElity HDMI 3D Extender Single Cat5/6 (Bi-Directional IR) free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. If this product fails to be in good working order within 1 year warranty period, The SELLER, at its option, will either repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Europe are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 days warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the HDelity HDMI 3D Extender's features and specifications is subject to change without further notice.