SIMPLIFIED
MFG

EXeARC1
HDMI 2.0b (18Gbps)
Extender set with eARC/ARC

User Manual

VER 1.0

Thank you for purchasing the EXeARC1

At Simplified MFG, we strive to make reliable cutting-edge devices and the EXeARC1 is the result of a commitment to deliver cutting-edge devices first. First means nothing if it is not reliable. The EXeARC1 was constructed with the highest grade components available and should provide years of reliable service. Please keep this manual for future reference.

Surge protection device recommended

The EXeARC1 is designed to operate in the HDMI realm with an external 24V supply at one end. The supply is very robust, but a surge device is always good insurance in electrically active storms or areas where the power grid is unreliable. If connected to satellite or cable boxes, the HDSURGE is recommended to prevent surges through the HDMI cable.

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1. Introduction

The EXeARC1 is the world's first eARC HDMI extender kit on category cable. It is designed to return eARC or ARC via the HDMI cable plugged into the TX portion of the extender set. The EXeARC1 supports the HDMI2.0b format (18Gbps) HDR/HDR+/DolbyVision® You can now return Dolby+/Atmos to the AVR from the display. The EXeARC1 also transmits RS232 and 2-Way 12V IR signals as well. The device is powered on a single end (either TX or RX) with a 24V 1A supply.

2. Features

- eARC and ARC is fully supported
- HDMI 2.0b (18Gbps)
- HDCP 2.2 / 1.4 compliant
- Video resolution up to 4K2K@50/60Hz4:4:4
- HDR, HDR10+, Dolby Vision®, HLG are supported
- 50m (165ft) of transmission distance on single Cat5e/6/6a
- eARC supports audio formats: LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD master audio, DSD
- ARC supports PCM2.0- 32K,44.1K, 48K. DTS5.1- 32K, 44.1K, 48K. Dolby 5.1- 32K,44.1K, 48K
- 2-Way 12V IR, RS232, & CEC
- 24V Single end power (either RX or TX)

3. Package Contents

Qty	Item
1	18Gbps 50M /W eARC Extender (Transmitter)
1	18Gbps 50M /W eARC Extender (Receiver)
2	IR Blaster Cable (1.5 meters)
2	20~60KHz IR Receiver Cable (1.5 meters)
4	Mounting Ears
2	3-pin Phoenix Connector
1	24V/1A Locking Power Supply
1	User Manual

4. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 / HDCP 1.4
Video Bandwidth	18Gbps
Video Resolution	480i ~1080p50/60Hz, 4Kx2K@24/30Hz, 4k2k@60Hz
Color Space	RGB, YCbCr 4:4:4 / 4:2:2. YUV 4:2:0
Color Depth	8/10/12-bit (1080P60Hz) 8-bit (4K60Hz)
Audio Formats supported by HDMI OUT port	PCM2.0 32K,44.1K,48K. DTS 5.1 32K, 44.K,48K Dolby 5.1 32K, 44.1K 48K
Audio Formats supported by Audio OUT port	LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)

Connection	

Transmitter	Input: 1x HDMI Type A [19-pin female]
	Output: 1x HDMI Type A [19-pin female]
	     1x CAT OUT [RJ45, 8-pin female]
	Control: 1x IR IN [3.5mm Stereo Mini-jack]
	     1x IR OUT [3.5mm Stereo Mini-jack]
	     1x RS-232 [Phoenix jack]
	     1x SERVICE [Micro USB, Update port]

Receiver	Input: 1x CAT IN [RJ45, 8-pin female]
	Output: 1x HDMI Type A [19-pin female]
	Control: 1x IR IN [3.5mm Stereo Mini-jack]
	     1x IR OUT [3.5mm Stereo Mini-jack]
	     1x RS-232 [Phoenix jack]
	     1x SERVICE [Micro USB, Update port]

Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 150mm (6") [W] x 105.7mm (4.26") [D] x 20mm (.79") [H]
Weight	Transmitter: 428g (15oz.), Receiver: 424g (15oz.)
Power Supply	Input: AC100~240V 50/60Hz, Output: DC 24V/1A (US/EU standards CE/FCC/UL certified)
Power Consumption	12 W
Oper.Temperature	32 - 104°F / 0 - 40°C
Storage Temperature	-4 - 140°F / -20 - 60°C
Relative Humidity	20 - 90% RH (no condensation)
Resolution / Distance	
4K2K	164ft / 50M

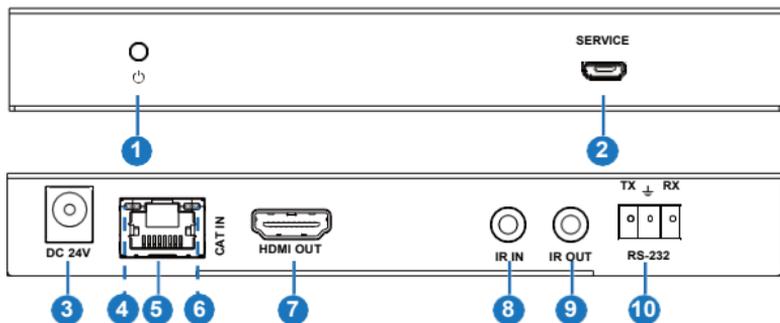| Resolution / Cable Length	4K60 - Feet / Meters	4K30 - Feet / Meters	1080P60 - Feet / Meters
HDMI IN / OUT	16ft / 5M	32ft / 10M	50ft / 15M
The use of "Premium High Speed HDMI" cable is highly recommended.			

5. Operation Controls and Functions

5.1 Transmitter Panel

No.	Name	Function Description
1	Power LED	Illuminated Red when power is applied
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. *Note that the extender supports POC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, only one end needs a power supply.*
4	CAT OUT	RJ45 connector for connecting the CAT IN port of receiver with a CAT 5e/6/6A cable.
5	Connection Signal Indicator LED (Green)	▪ Illuminated: Transmitter and Receiver are connected. ▪ Flashing: Transmitter and Receiver are not connected well. ▪ Dark: Transmitter and Receiver are not connected.
6	Data Signal Indicator LED (Yellow)	▪ Illuminated: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
7	HDMI IN	Connect HDMI source to this input port.
8	Audio OUT	Audio output port, connect to amplifier, monitor or TV. ▪ When eARC/ARC function is turned on, Audio OUT outputs the audio returned from the HDMI OUT port of the receiver; ▪ When eARC/ARC function is turned off, Audio OUT outputs the audio extracted from the HDMI IN port of the transmitter.

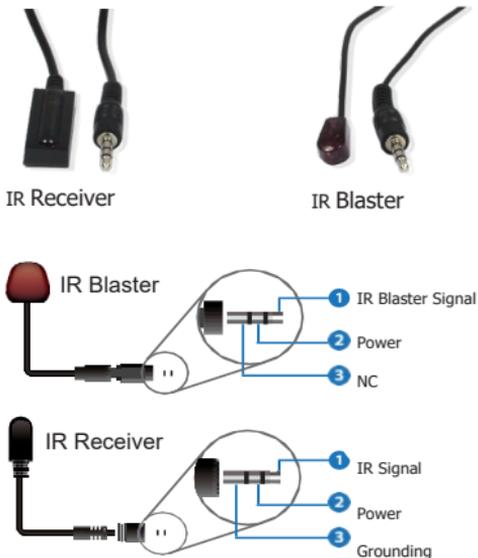| 9	IR IN	IR input port for receiving the signal of IR remote.
10	IR OUT	IR output port for control of source device. This IR output signal is from the IR IN port of the receiver.
11	RS-232	3-pin Phoenix connector, connect to a PC or control system for RS-232 command pass-through.
12	MODE switch	Use the switch to set different application scenarios: 11: eARC mode under amplifier control, the TV connected to the receiver supports CEC control, but the Audio OUT doesn't support CEC control. 01: eARC/ARC mode under extender control, both the TV connected to the receiver and the Audio OUT support CEC control. 00: ARC mode under amplifier control, the TV connected to the receiver supports CEC control, but the Audio OUT doesn't support CEC control. 10: eARC/ARC is unsupported.

5.2 Receiver Panel

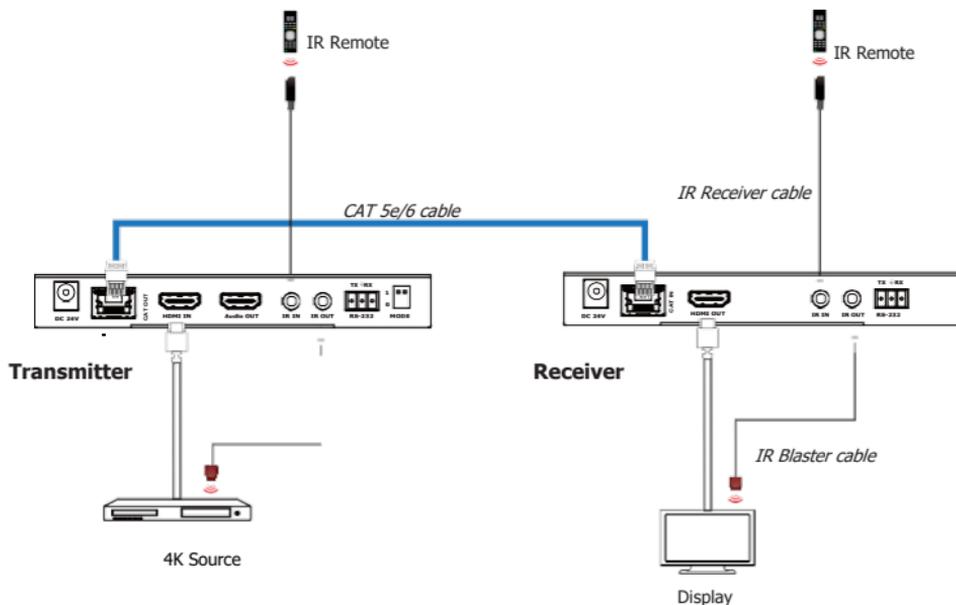| No.	Name	Function Description
1	Power LED	Red LED will be on when the receiver is powered on.
2	SERVICE port	Firmware update port.
3	DC 24V	DC 24V/1A power supply input port. *Note that the extender supports POC function, it means that either transmitter or receiver is powered on by 24V/1A power adapter, the other one doesn't need power supply.*
4	CAT IN	RJ45 connector for connecting the CAT OUT port of transmitter with a CAT 5e/6 cable.

5	Connection Signal Indicator LED (Green)	▪ Illuminated: Transmitter and Receiver are connected ▪ Flashing: Transmitter and Receiver are not connected well. ▪ Dark: Transmitter and Receiver are not connected.
6	Data Signal Indicator LED (Yellow)	▪ Illuminated: HDMI signal with HDCP. ▪ Flashing: HDMI signal without HDCP. ▪ Dark: No HDMI signal.
7	HDMI OUT	HDMI signal output port. Connect to TV or amplifier.
8	IR IN	IR input port for receiving the signal of IR remote.
9	IR OUT	IR output port for control of source device. This IR output signal is from the IR IN port of the transmitter.
10	RS-232	3-pin Phoenix connector, connect to a PC or control system for RS-232 command pass-through.

5.3 IR Pin Definition

IR Receiver and Blaster pin's definition is as below:

IR Receiver   IR Blaster

IR Blaster
1 IR Blaster Signal
2 Power
3 NC

IR Receiver
1 IR Signal
2 Power
3 Grounding

The following is IR system diagram about IR cable use method.

Note: When the angle between the IR receiver and the remote control is ± 45 °, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is ± 90 °, the transmission distance is 0-8 meters.

6. Application Example

Transmitter

CAT 5e/6 cable

Receiver
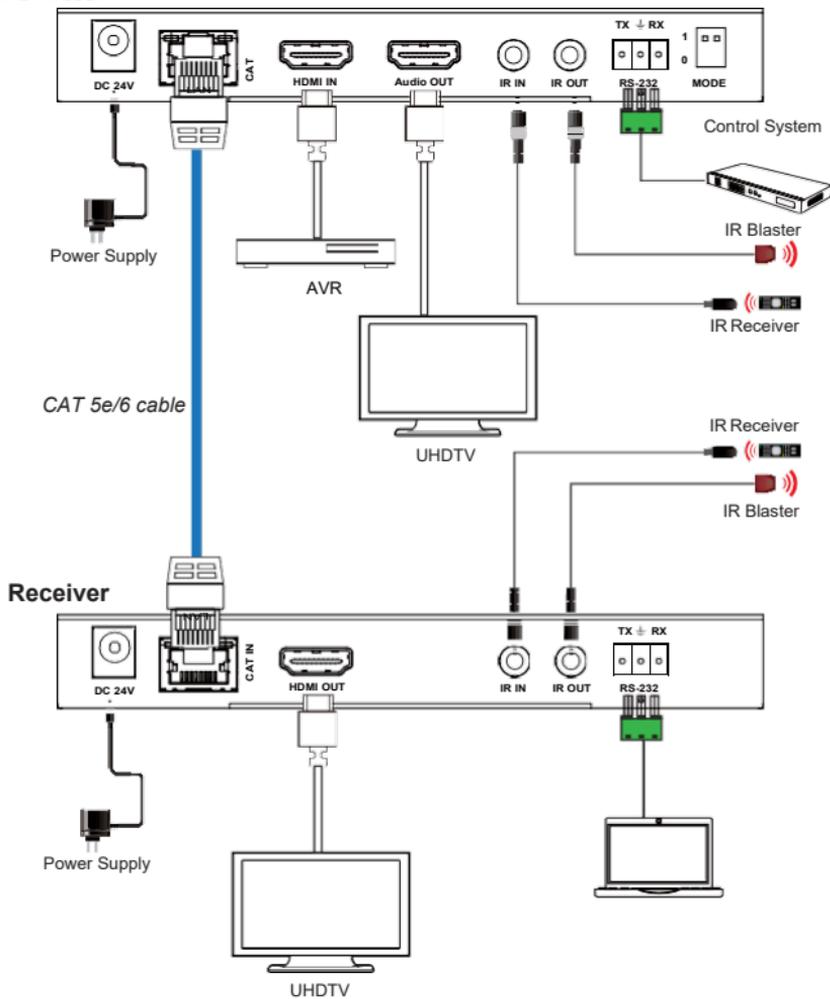
7. Warranty

Should you feel that this product does not function adequately due to defects in materials or workmanship, we (referred to as "the warrantor") will, for the length of the period indicated below (starting from the original date of the purchase) either a) repair the product with new or refurbished parts. Or b) Replace the product with new or refurbished product. All Simplified MFG products are covered by a 3-year PARTS and LABOR warranty. During this period there will be no charge for unit repair, replacement of unit components or replacement of the product if deemed necessary. The decision to repair or replace is made by the warrantor. The purchaser must mail in the product during the warranty period. This limited warranty only covers the product purchased as new and is extended to the original purchaser only. It is non-transferrable to subsequent owners, even during the warranty period. A purchase receipt or other proof of purchase date is required for the limited warranty service.

8. Contact

Sales and tech support;

P. 833-HDMI-411 (833-436-4411)

E. info@simplifiedmfg.com

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Simplified MFG • 550 W Baseline Rd Ste 102-121 • Mesa, AZ 85210