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WyreStorm SW-130-TX-Ux Base Extender with Earc

WyreStorm SW-130-TX-Ux Base Extender with Earc User Guide

Contents

WyreStorm SW-130-TX-Ux Base Extender with Earc

Product Information

Specifications

- Model: EX3-100-EARC
- Transmission Distance: 100m
- Resolution: 4K at 60Hz
- Color Sampling: 4:4:4
- Technology: HDBaseT 3.0
- Features: eARC support

Product Usage Instructions

Installation
Before starting the installation process, ensure you have all components from the box including the transmitter, power supply, cables, mounting ears, connectors, and the quickstart guide.

Wiring and Connections
It is recommended to run and terminate all wiring before making connections. Refer to the provided diagram for proper wiring setup.

Transmitter Setup

1. Connect the power supply to the transmitter.
2. Connect the HDMI input source to the HDMI Input port.
3. Connect the HDBaseT Output to the receiver's HDBaseT Input using an RJ-45 cable.
4. Connect any additional audio or control devices as needed.
5. Power on the transmitter.

Receiver Setup

1. Connect the power supply to the receiver.
2. Connect the display device to the HDMI Output port.
3. Connect the HDBaseT Input to the transmitter's HDBaseT Output using an RJ-45 cable.
4. Connect any additional audio or control devices as needed.
5. Power on the receiver.

Frequently Asked Questions (FAQ)

Q: What is eARC?

A: Enhanced Audio Return Channel (eARC) allows for high-quality audio transmission between compatible devices over an HDMI connection.

Q: How far can this extender transmit signals?
A: The extender can transmit signals up to a distance of 100 meters.

100m 4K 60 4:4:4 HDBaseT 3.0 Extender with eARC EX3-100-EARC

WyreStorm recommends reading through this document in its entirety to become familiar with the product's features prior to starting the installation process.
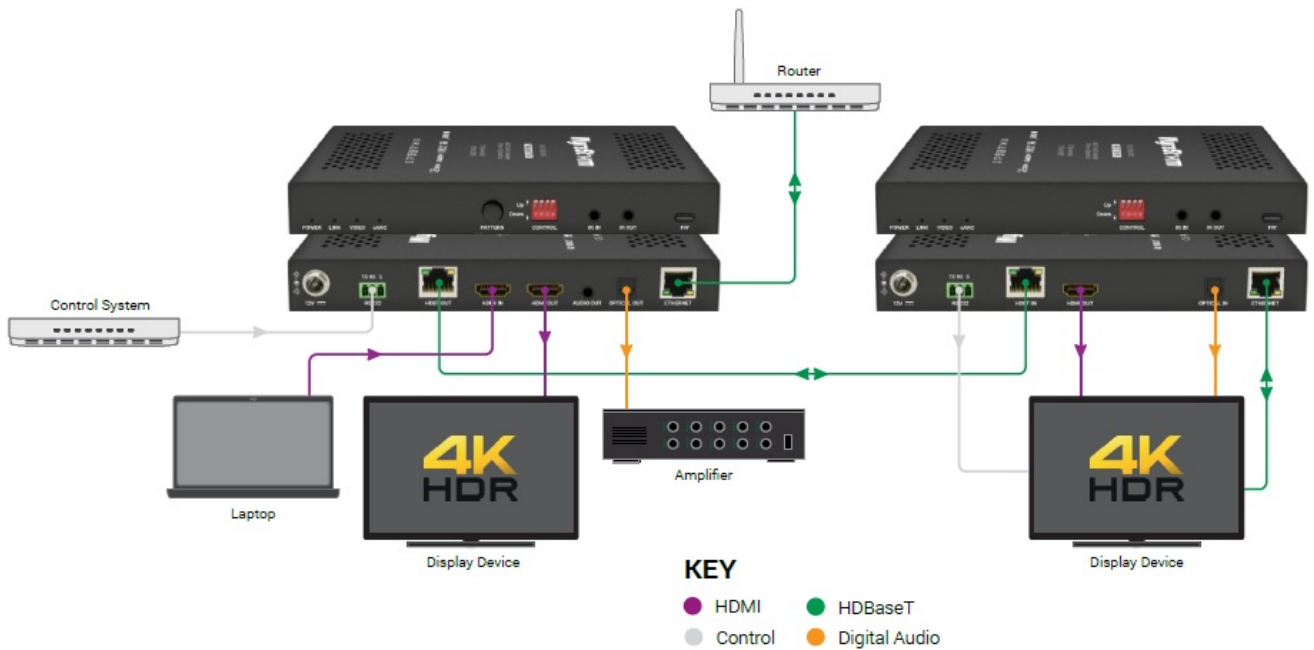
IMPORTANT! Installation Requirements

- Visit the product page to download the latest firmware, document version, additional documentation, and configuration tools.
- Read through the Wiring and Connections section for important wiring guidelines before creating or choosing pre-made cables.
- While this product supports CEC, WyreStorm cannot guarantee compatibility with all forms of CEC communication.
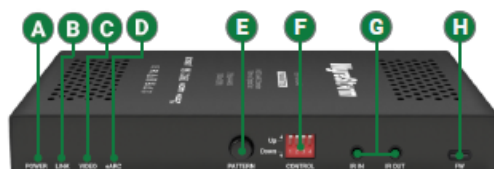
In the Box

- 1x EX3-100-EARC
- 1x 12V Power Supply (US/UK/EU/AU)
- 1x IR Receiver Cable
- 1x IR Emitter Cable
- 4x Mounting Ears with screws
- 2x 3-pin Phoenix Connector
- 1x Quickstart Guide (This Document)

Basic Wiring Diagram

KEY

- ● HDMI
- ● HDBaseT
- ○ Control
- ● Digital Audio

EX3-100-EARC Transmitter (Front)

A	**Power LED**	**Solid:** The unit is powered On **Off:** The unit is powered Off
B	**Link LED**	**On:** Indicates link with receiving device **Off:** No link with receiver/powered off
C	**Video LED**	**Green:** Source video is being transmitted **Red:** Pattern is being transmitted with HDCP **BLUE:** Pattern is being transmitted without HDCP **OFF:** No video is transmitted
D	**eARC LED**	**ON:** EARC Audio is transmitted **OFF:** No eARC audio is transmitted
E	**Pattern Select**	Press to manually change pattern
F	**SET Dip Switches**	Adjust RS-232 Function
G	**IR IN/OUT**	3.5mm jack: Bidirectional IR
H	**Firmware Update**	USB-C for firmware updates

EX3-100-EARC Transmitter (Rear)
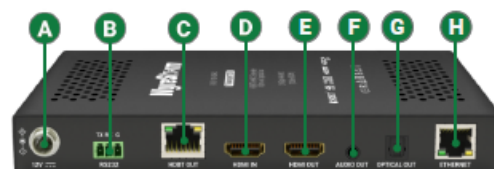
A	**Power Input**	12V 6A Screw Down Jack
B	**RS-232**	3-pin Phoenix: Passthrough Serial Input
C	**HDBT Output**	8-pin RJ-45 female Connect the transmitter's **HDBT OUT** to receiver's **HDBT IN**.
D	**HDMI Input**	19-pin type A HDMI female Supports HDMI and DVI/D with adapter
E	**HDMI Output**	19-pin type A HDMI female Supports HDMI and DVI/D with adapter
F	**Audio Output**	3.5mm jack: 2ch analog audio input
G	**Optical Output**	Supports up to 5.1ch when used as passthrough. 2ch when used for audio de-embed
H	**Ethernet**	Passthrough ethernet connection

EX3-100-EARC Receiver (Front)

EX3-100-EARC Receiver (Rear)

A	Power LED	**Solid:** The unit is powered On **Off:** The unit is powered Off
B	Link LED	**On:** Indicates link with receiving device **Off:** No link with receiver/powered off
C	Video LED	**Green:** Source video is being transmitted **Red:** Pattern is being transmitted with HDCP **BLUE:** Pattern is being transmitted without HDCP **OFF:** No video is transmitted
D	eARC LED	**ON:** EARC Audio is transmitted **OFF:** No eARC audio is transmitted
E	SET Dip Switches	Adjust RS-232 Function
F	IR IN/OUT	3.5mm jack: Bidirectional IR
G	Firmware Update	USB-C for firmware updates

|		
A	Power Input	12V 6A Screw Down Jack
B	RS-232	3-pin Phoenix: Passthrough Serial Input
C	HDBT Input	8-pin RJ-45 female Connect the receiver's **HDBT IN** to transmitter's **HDBT OUT.**
D	HDMI Output	19-pin type A HDMI female Supports HDMI and DVI/D with adapter
E	Optical Input	Supports up to 5.1ch
F	Ethernet	Passthrough ethernet connection

Wiring and Connections

WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in it's entirety before running or terminating the wires to ensure proper operation and to avoid damaging equipment.

IMPORTANT! Wiring Guidelines

- The use of patch panels, wall plates, cable extenders, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results.
- WyreStorm recommends using pre-terminated HDMI and USB cables due to the complexity of these connector types. Using pre-terminated cables will ensure that these connections are accurate and will not interfere with the performance of the product.

RS-232 Wiring

The EX3-100-EARC uses a 3-pin RS-232 with no hardware flow control. Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionally to ensure that the correct connections can be made.
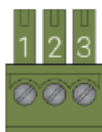
| WyreStorm Connector			3rd Party Device
Pin 1	TX (Transmit)	---> To --->	RX (Receive)
Pin 2	RX (Receive)	---> To --->	TX (Transmit)
Pin 3	G (Ground)	---> To --->	G (Ground)

Dipswitch Settings

The dipswitches on the TX and RX allow for changing the audio transmitting mode. Use the table to the right to configure the extender's audio mode based on the application's requirement.

When setting a dipswitch setting, power off both the transmitter and receiver before making a change. Once set, the units can be powered back on.

Note: When DIP is switched to Optical De-embed, extender will automatically filter EDID and only support PCM

2CH.

Functions	Setting
eARC/ARC	
Optical Audio Return	
Optical Audio De-embed	
FW Update Valens	
FW Update - MCU	
High Bandwidth Mode	
Low Bandwidth Mode	

Troubleshooting

No or Poor Quality Picture (snow or noisy image

- Verify that power is being supplied to the transmitter and receiving device.
- Verify that all HDMI and HDBaseT connections are not loose and are functioning properly.
- Verify that the HDBaseT cable is properly terminated following EIA568B standard.
- Verify that the output resolution of the source and display is supported by this extender.
- If transmitting 4K, verify that the HDMI cables used are 4K rated.

No or Intermittent 3rd party Device Control

- Verify that the RS-232 cables are properly terminated following the Wiring and Connections section.

Troubleshooting Tips

- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.

Specifications

Audio and Video		
	Transmitter	**Receiver**

Inputs	1x HDMI: 19-pin Type A Female	1x HDBT: 8-pin RJ45 1x Optical In
Outputs	1x HDBT: 8-pin RJ45 1x HDMI: 19-pin Type A Female 1x Optical Out	1x HDMI: 19-pin Type A Female
Max. Video Resolution by Cable Type	**Cat 5e/6 (UTP):** 40m/131ft – 4K@60Hz 4:4:4 24bpp **Cat 6A (F/FTP or U/FTP)** 100m/330ft – 4K@60Hz 4:4:4 24bpp **Note:** When the extender is set to Low-bandwidth mode (set the pin3 of the DIP switch on the transmitter to "Down" position): **Cat 5e/6 (UTP)** 70m/230ft – 4K@60Hz 4:4:4 24bpp **Cat 6A (F/FTP or U/FTP)** 100m/330ft – 4K@60Hz 4:4:4 24bpp	
Output Video Encoding	- Format: HDBaseT - Encoding Data Rate: 18Gbps - End to End Latency: 10µs (microseconds)	
Audio Formats	**HDMI:** HDMI 2.0 formats including multi-channel PCM, Dolby True-HD and DTS-HD master audio **ARC Mode:** 5.1-ch compressed audio (such as Dolby Digital, DTS 5.1, and Dolby Digital Plus), and 2.0-ch uncompressed PCM audio **eARC Mode:** Up to 8-ch L-PCM of 24 bit, 192kHz audio. Supports encoded audio formats, such as Dolby Atmos and DTS-X **OPTICAL Audio Return Mode:** 5.1-ch compressed audio, such as Dolby Digital, DTS 5.1, and Dolby Digital Plus, and 2.0-ch uncompressed PCM audio **OPTICAL De-embed Mode:** 2.0-ch uncompressed PCM audio **AUDIO OUT:** PCM 2.0	
HDR Support	HDR 10, HDR 10+, HLG, and Dolby Vision (low-latency mode)	
Supported Standards	DCI	RGB	HDR10	Dolby Vision	HLG	BT.2020	BT.2100	
Maximum Pixel Clock	600Mhz	
Communication and Control		
HDMI	HDMI	HDCP 2.3	EDID	CEC Pass-through	
HDBaseT	HDMI	HDCP 2.3	EDID	RS-232 Pass-through	IR Pass-Through	2- WAY PoH	CEC Pass-through	
IR	1x IR RX: 3.5mm (1/8in) TRS Stereo	1x IR TX: 3.5mm (1/8in) TS Mono (Transmitter and Receiver)	
RS-232	1x RS-232: 3-pin Phoenix (Transmitter and Receiver)	
Ethernet	Ethernet Pass-through of up to 1Gb	
Power		
Power Supply	12V DC 2A (Sold separately)	

Power Consumption	20.04W
Environmental	
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing
Dimensions	
Length x Width x Height	300mm x 180mm x 25mm
Weight	0.59Kg/1.30lbs
Regulatory	
Safety and Emission	CE | FCC | RoHS | RCM | EAC | UKCA

Note: WyreStorm reserves the right to change product specification, appearance or dimensions of this product at any time without prior notice.

Warranty Information

WyreStorm Technologies LLC warrants that its products to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. Refer to the Product Warranty page on **wyrestorm.com** for more details on our limited product warranty.

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Documents / Resources

WyreStorm SW-130-TX-Ux Base Extender with Earc [pdf] User Guide
SW-130-TX-Ux, EX3-100-EARC, SW-130-TX-Ux Base Extender with Earc, SW-130-TX-Ux, Base Extender with Earc, Extender with Earc, with Earc, Earc

References

- **User Manual**