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EX-LYNX Series

HDMI Extender Set, 4K/60Hz, 60m

USER MANUAL

December 29, 2022

EX-LYNX-WPE-TX

EX-LYNX-WP-TX

EX-LYNX -TX

EX-LYNX-RX

Important Safety Instructions

1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
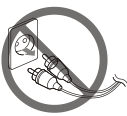
5. Do not place sources of naked flames, such as lighted candles, on the unit.

6. Clean this apparatus only with dry cloth.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

8. Protect the power cord from being walked on or pinched particularly at plugs.

9. Only use attachments / accessories specified by the manufacturer.

10. Refer all servicing to qualified service personnel.

Table of Contents

Introduction

OVERVIEW

The LYNX Series features extension of Ultra HD resolution, 4K2K@60Hz video signals with audio and control up to 60m (197ft) over a single category cable. Both the LYNX-TX and the LYNX-RX include local audio de-embedding via a 3.5mm stereo output. The LYNX-TX transmitter includes an HDMI Local Loop output to allow for monitoring and playback status of the local video source. Additionally, the LYNX-RX receiver includes an RJ45 Loop Output to allow up to eight receivers to be cascaded to create a larger distribution solution and/or to enable greater distribution distance. LYNX also supports bi-directional control pass-through for source and display control, and ships with a pair of infrared emitters.

FEATURES

- 4K2K@60Hz 4:4:4 signal extended up to 60m over a single category cable.
- Supports Cat5e, Cat6, Cat6a, Cat7 cables
- Resolutions: 4K2K@60Hz, 4K2K@30Hz, 1080p, 1080i, 720p, 576p, 576i, 480p, 480i
- 18 Gbps video bandwidth.
- HDMI 2.0
- HDCP 2.2 / 1.4
- Automatic EDID detection
- Bi-directional IR & RS232 (between transmitter & first receiver only).
- HDMI Local Loop Output with Receiver cascading via RJ45 port.
- Supports compressed audio signals such as DTS Digital, Dolby Digital (including DTS-HD & Dolby True HD) and uncompressed audio signals such as LPCM.
- Supports PoC (Power over Cable) so power is only needed at the receiver.

Package Contents

EX-LYNX-TX

- 1x Transmitter unit
- 1x IR Blaster cable
- 1x IR Receiver cable
- 1x Mounting bracket

EX-LYNX-WP-TX

- 1 x Wall Plate Transmitter (US Version)
- 1x IR Blaster cable
- 1x IR Receiver cable

EX-LYNX-WPE-TX

- 1 x Wall Plate Transmitter (EU Version)
- 1x IR Blaster cable
- 1x IR Receiver cable

EX-LYNX-RX

- 1x Receiver unit
- 1x IR Blaster cable
- 1x IR Receiver cable
- 1x Mounting bracket
- 1x Power adapter

Product Description

EX-LYNX-WP-TX

LYNX US Wall Plate

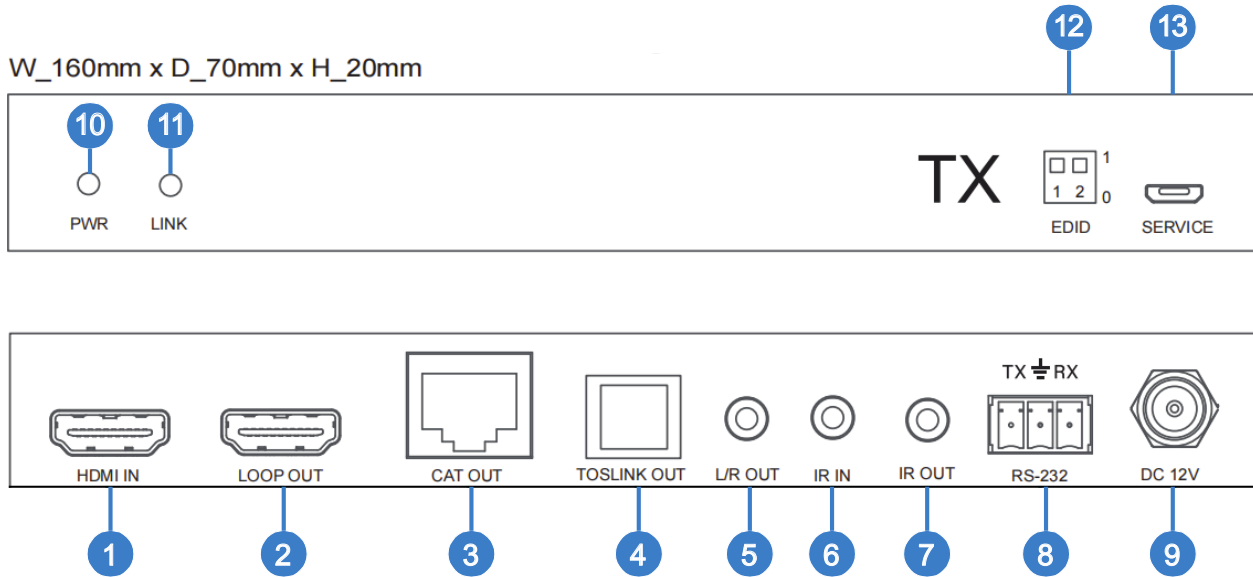**EX-LYNX-WPE-TX**

LYNX European Wall Plate
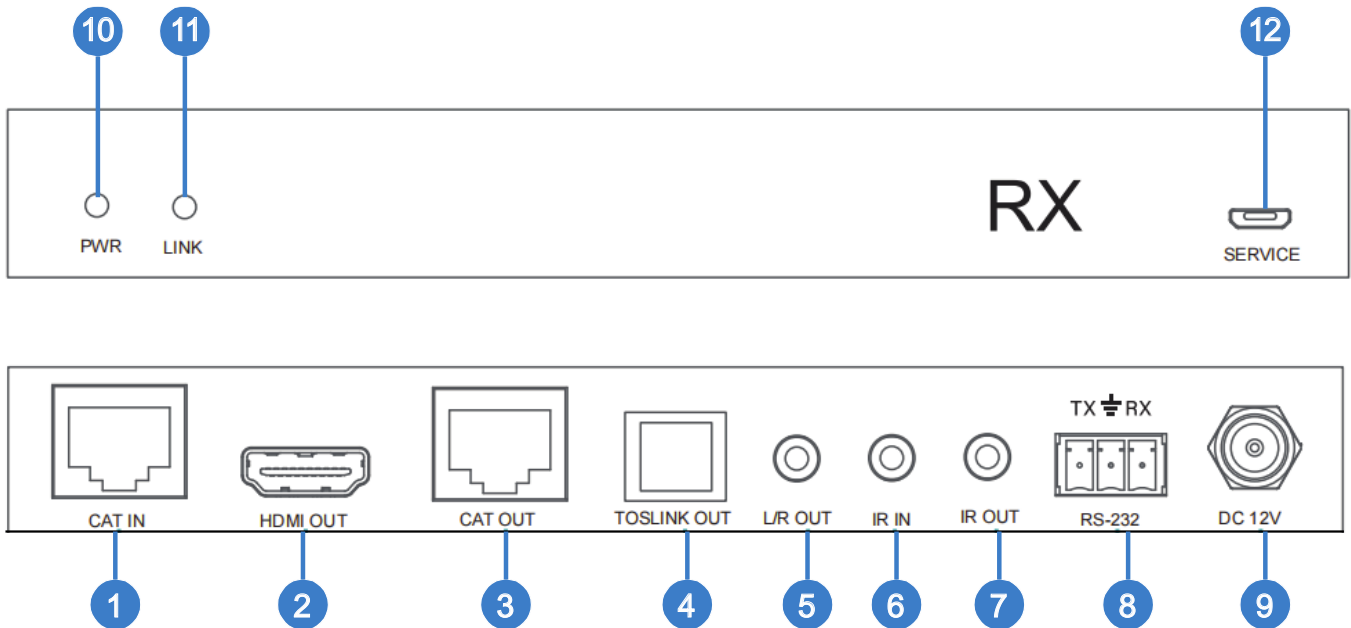

EX-LYNX-RX

LYNX Receiver

EX-LYNX-TX

LYNX Transmitter

Connectors & Indicators
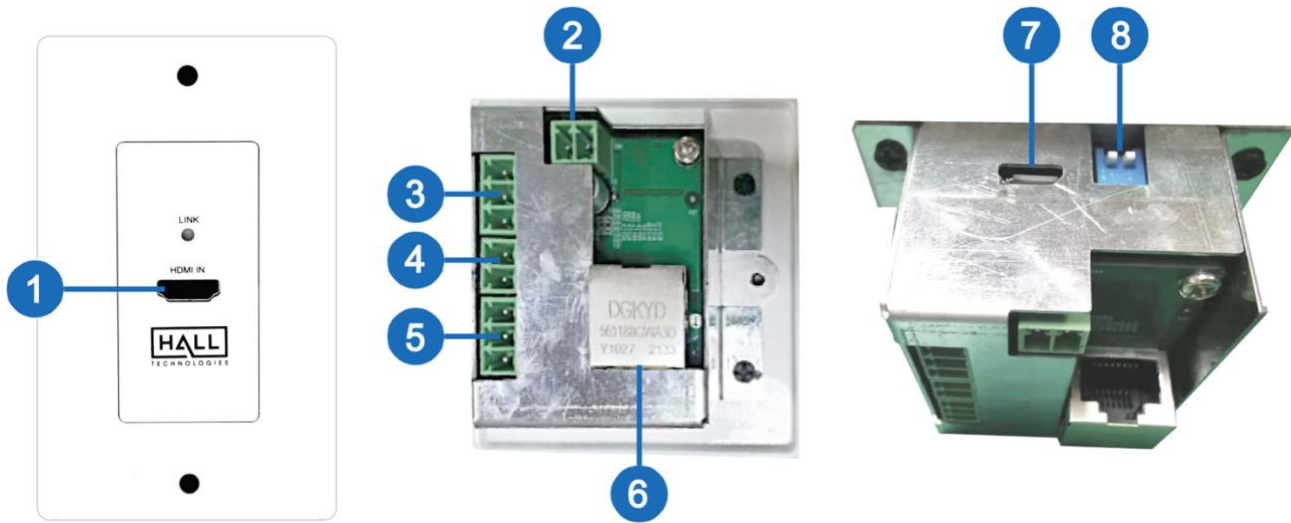
EX-LYNX-TX PANEL

W_160mm x D_70mm x H_20mm

No.	Name	Description
1	HDMI IN	HDMI input
2	LOOP OUT	HDMI loop output for local monitor
3	CAT OUT	RJ45 output port for connection to the RJ45 input port on the EX-LYNX-RX
4	TOSLINK OUT	Fiber optic output with de-embedded audio
5	L/R OUT	3.5mm stereo output with de-embedded audio
6	IR IN	IR emitter port input (sent to the EX-LYNX-RX IR output)
7	IR OUT	IR emitter port output (received from the EX-LYNX-RX IR input)
8	RS-232	RS232 port on a phoenix connector for control pass-through
9	DC 12V	DC 12V/1A power supply connection for local power **NOTE:** Only one side (transmitter or receiver) needs to be powered locally – the EX-LYNX-RX is typically locally powered and includes the needed power supply.
10	PWR	LED will illuminate when device is powered up
11	LINK	LED will illuminate when the link to the EX-LYNX-RX is connected
12	EDID	Sets EDID information (see dipswitch settings in the connections diagram).
13	SERVICE	Used to update the firmware.

EX-LYNX-RX PANEL

| No.	Name	Description
1	CAT IN	RJ45 input port for connection to the RJ45 output port on the EX-LYNX-TX
2	HDMI OUT	HDMI output
3	CAT OUT	RJ45 output port for connection to the RJ45 input port on a cascading EX-LYNX-RX (up to 8 can be cascaded)
4	TOSLINK OUT	Fiber optic output with de-embedded audio
5	L/R OUT	3.5mm stereo output with de-embedded audio
6	IR IN	IR emitter port input (sent to the EX-LYNX-TX IR output)
7	IR OUT	IR emitter port output (received from the EX-LYNX-TX IR input)
8	RS-232	RS232 port on a phoenix connector for control pass-through
9	DC 12V	DC 12V/1A power supply connection for local power **NOTE:** Only one side (transmitter or receiver) needs to be powered locally – the EX-LYNX-RX is typically locally powered and includes the needed power supply.
10	PWR	LED will illuminate when device is powered up
11	LINK	LED will illuminate when the link to the EX-LYNX-RX is connected
12	SERVICE	Used to update the firmware.

EX-LYNX-WP-TX PANEL

No.	Name	Description
1	HDMI IN	HDMI input
2	DC 12V	DC 12V/1A power supply connection for local power **NOTE:** Only one side (transmitter or receiver) needs to be powered locally – the EX-LYNX-RX is typically locally powered and includes the needed power supply.
3	RS-232	RS232 port on a phoenix connector for control pass-through
4	IR OUT	IR emitter port output (received from the EX-LYNX-RX IR input)
5	IR IN	IR emitter port input (sent to the EX-LYNX-RX IR output)
6	CAT OUT	RJ45 output port for connection to the RJ45 input port on a cascading EX-LYNX-RX (up to 8 can be cascaded)
7	UPDATE	Used to update the firmware.
8	EDID	Sets EDID information (see dipswitch settings in the connections diagram).

Product Wiring and Connection Diagram

IR Blaster

	① IR Blaster Signal
	② Power
	③ NC

IR Receiver

	① IR Signal
	② Power
	③ Ground
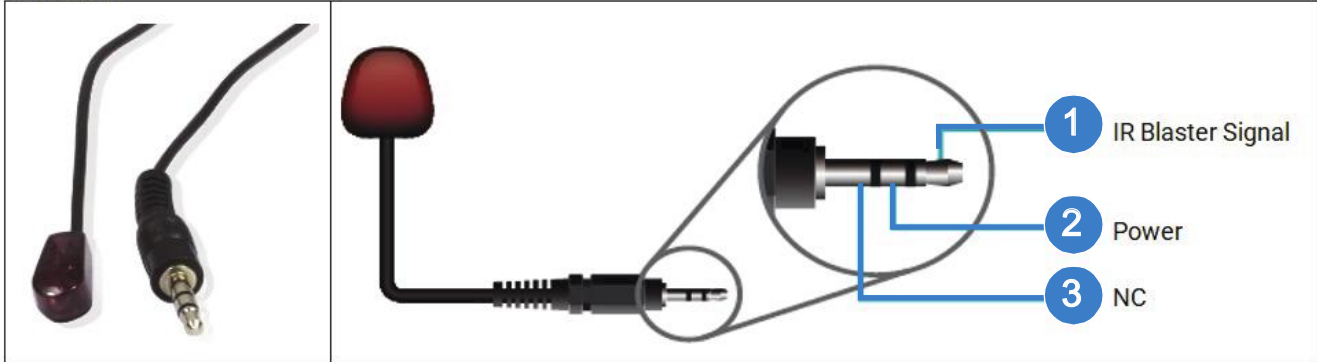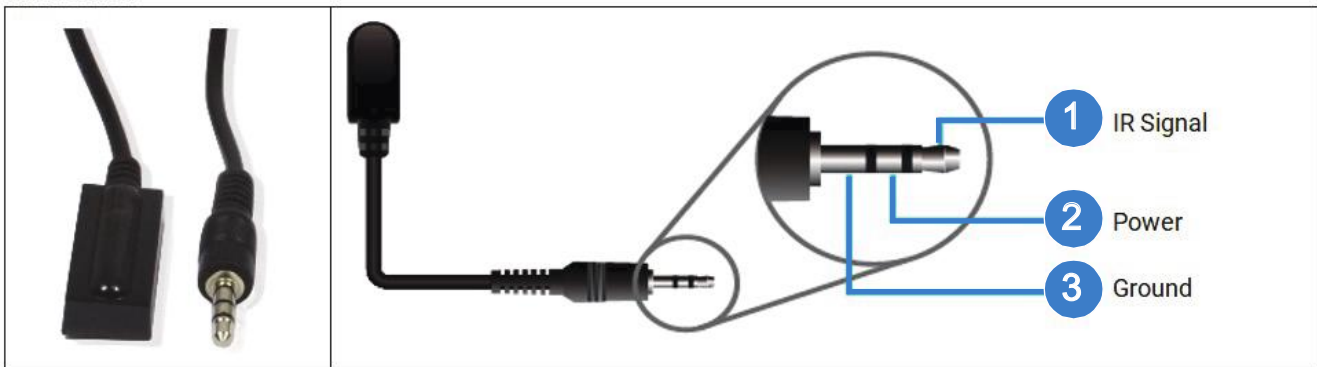
EDID	Dipswitch Toggles		Description
	1	2	
	0	0	Copy the EDID from the connected EX-LYNX-RX
	0	1	Default 1080P EDID
	1	0	Copy the local EX-LYNX-TX EDID
	1	1	Default 4K EDID

Applications

There are two different application methods with wiring examples shown below each.

APPLICATION 1

This first application uses a transmitter (wall plate or standalone version) to send video to a single receiver.

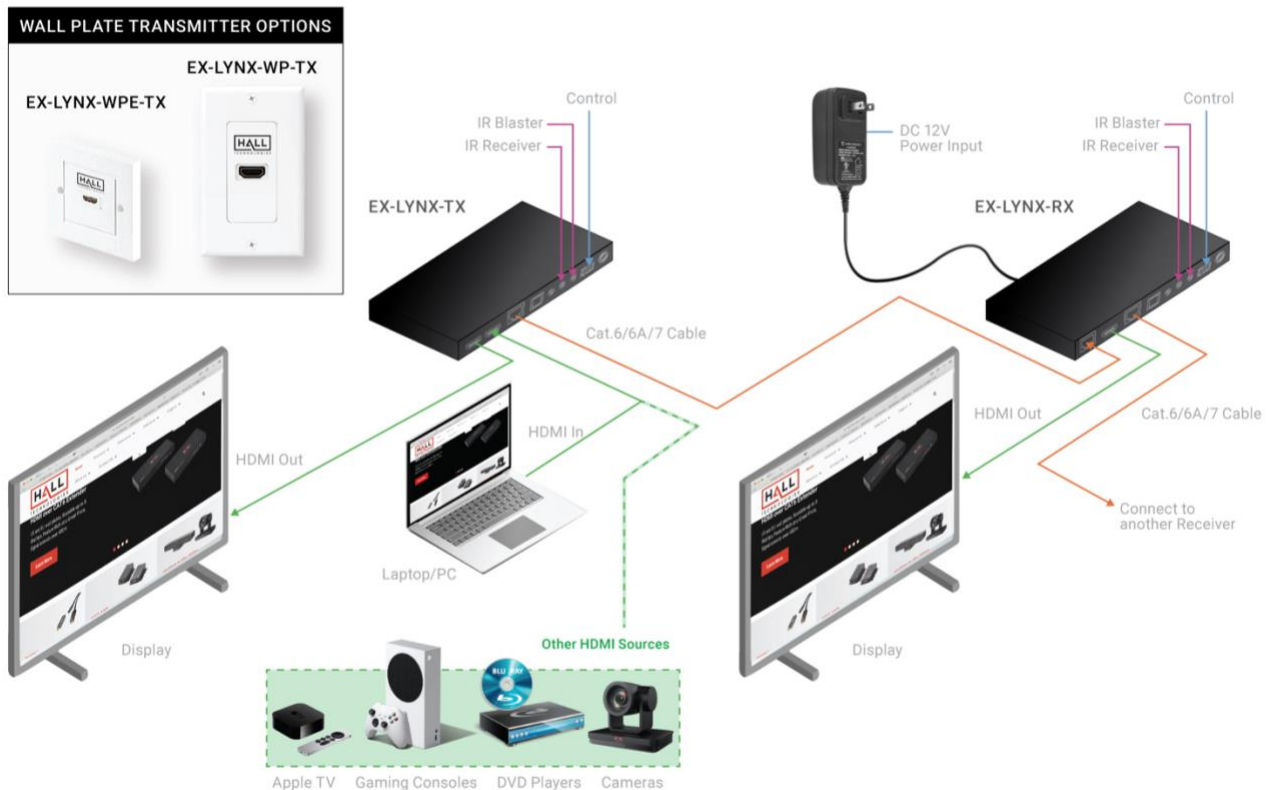A laptop, or other HDMI source, is connected to the HDMI input on the EX-LYNX-TX and then transmitted over the category cable to the EX-LYNX-RX, where a display, connected to the HDMI output, shows the HDMI source. A local monitor can be connected to the EX-LYNX-TX HDMI loop-through output. Control via RS232 or IR is also passed through the category cable for display control.

Note: In this application the EX-LYNX-RX is locally powered and providing power via PoC (Power over Cable) to the EX-LYNX-TX. Only one side needs to be powered, meaning the local power supply could be moved to the EX-LYNX-TX if that is more convenient for installation.

APPLICATION 2

This second application uses a transmitter (wall plate or standalone version) to send video to multiple receivers, with each receiver cascading off the first receiver.

Similar to the first application, a laptop, or other HDMI source, is connected to the HDMI input on the EX-LYNX-TX and then transmitted over the category cable to the EX-LYNX-RX, where a display, connected to the HDMI output, shows the HDMI source. A local monitor can be connected to the EX-LYNX-TX HDMI loop-through output. Control via RS232 or IR is also passed through the category cable for display control.

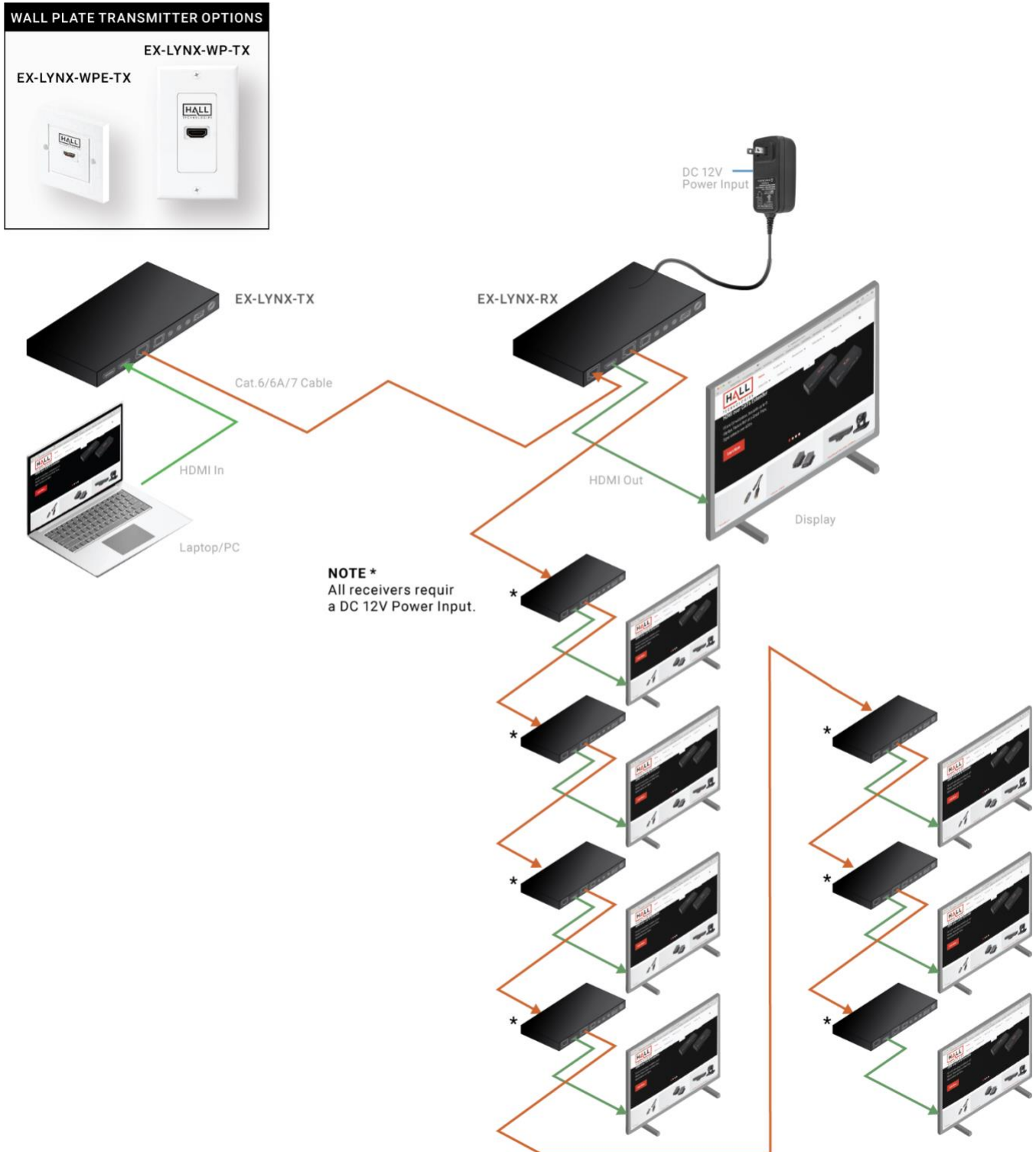A category cable is connected to the output of the first EX-LYNX-RX and connected to the input of the second EX-LYNX-RX, and up to 8 receivers are connected in a similar manner.

Note: In this application each EX-LYNX-RX needs to be locally powered, and the first EX-LYNX-RX provides power via PoC (Power over Cable) to the EX-LYNX-TX.

Note: The pass-through control works only on the transmitter to the first receiver.

APPLICATION 2 cont'd

Note: All receivers require a DC 12V Power Input.

WALL PLATE TRANSMITTER OPTIONS

EX-LYNX-WP-TX

EX-LYNX-WPE-TX

DC 12V Power Input

EX-LYNX-TX

EX-LYNX-RX

Cat.6/6A/7 Cable

HDMI In

HDMI Out

Display

Laptop/PC

NOTE *
All receivers requir
a DC 12V Power Input.

Setup

INSTALLATION

Note: Before installation, please ensure the devices are disconnected from the power source.

<u>To install the device on a surface:</u>

1. Secure the included L-bracket mounts to each side of the transmitter/receiver using the included screws.

2. The bottom part of the L-bracket should be flush with the bottom of the transmitter/receiver.
3. Using the appropriate hardware (not included), mount the bottom of the L-brackets to the desired surface.

FIRMWARE UPDATES

1. Locate Tera Term software in the firmware folder, or download it at: https://osdn.net/projects/ttssh2/releases/
2. Connect the EX-LYNX device to the laptop using a Micro USB cable.
3. Run the Tera Term software
4. Select the correct Serial Port (typically CH340) and then click **Ok**.
5. Set the serial port connection to have a baud rate of 115200.
6. Go to File, Transfer, YMODEM, and then connect Send.
7. Select the firmware file "xxxxx.bin" then click **Open**.
8. The upgrade progress bar will show the status of the upgrade.
9. A pop-up window saying "Programming Completed Successfully" when complete.

Troubleshooting

Problem Type	Problem	Options
Video	No video on display	Confirm the connectors are properly seated on each device
		Confirm at least one side (typically the receiver) has local power connected
		Test the category cable to confirm proper pinout and no shorts in the cable
		Confirm the distance between the transmitter and receiver does not exceed specifications (depending on the desired resolution)
		Confirm the HDMI input of the display is correctly selected
		Confirm the connected source is sending video to the EX-LYNX-TX (i.e. verify laptop is in duplicate or extend mode)
	When cascading, first receiver displays video, however subsequent receivers do no	Confirm the connectors are properly seated on each device
		Confirm each subsequent receiver has local power connected
		Test the category cable to confirm proper pinout and no shorts in the cable
		Confirm the distance between each receiver does not exceed specifications (depending on the desired resolution)
		Confirm the input on the display is correctly selected

Specifications

Technical	
HDMI Compliance	HDMI 2.0
HDCP Compliance	HDCP 2.2 / 1.4
Video Bandwidth	18 Gbps
Video Resolution	4K2K@60Hz, 4K2K@30Hz, 1080p, 1080i, 720p, 576p, 576i, 480p, 480i
Color Space	RGB / YPbPr 4:4:4, YPbPr 4:2:2/4:2:0, YUV 4:4:4
Color Depth	8/10/12-bit (1080p@60Hz, 4K@30Hz, 4K@60Hz YPbPr 4:2:2/4:2:0) 8-bit (4K@60Hz 4:4:4)
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus (DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
Resolution / Distance	**4K60:** • Cat5e: 164ft (50m) • Cat6/6a/7: 197ft (60m) • HDMI: 10ft (3m) **4K30 / 1080p:** • Cat5e: 164ft (50m) • Cat6/6a/7: 230ft (70m) • HDMI: 15ft (4.5m) **NOTE:** Premium High Speed HDMI cable is highly recommended.

EX-LYNX-TX	
Video Input	1x HDMI Type-A (19-pin Female)
Video Outputs	1x HDMI Type-A (19-pin Female) *[Loop through]* 1x RJ45 *[video send to receiver]*
Audio Outputs	1x Fiber Optic TOSLINK 1x 3.5mm Stereo
Control Inputs/Outputs	1x 3.5mm *[IR OUT]* 1x 3.5mm *[IR IN]* 1x Phoenix *[RS-232 pass-through]*
Service	1x Micro USB
Power	1x DC 12V/1A (not included)
Dimensions	180mm W x 75mm D x 25mm H (7.087" W x 2.953" D x 0.984" H)
Weight	295g (0.65 lbs.)

EX-LYNX-WP-TX

Video Input	1x HDMI Type-A (19-pin Female)
Video Outputs	1x RJ45 *[video send to receiver]*
Control Inputs/Outputs	1x Phoenix *[IR OUT]* 1x Phoenix *[IR IN]* 1x Phoenix *[RS-232 pass-through]*
Service	1x Micro USB
Power	1x DC 12V/1A (not included)
Dimensions	1-gang plate, 38.1mm D (1.50") (from back of plate to rear)
Weight	159g (0.35 lbs.)

EX-LYNX-RX

Video Input	1x HDMI Type-A (19-pin Female) 1x RJ45 *[video receive from transmitter]*
Video Outputs	1x HDMI Type-A (19-pin Female) *[Loop through]* 1x RJ45 *[video send to cascading receiver(s)]*
Audio Outputs	1x Fiber Optic TOSLINK 1x 3.5mm Stereo
Control Inputs/Outputs	1x 3.5mm *[IR OUT]* 1x 3.5mm *[IR IN]* 1x Phoenix *[RS-232 pass-through]*
Service	1x Micro USB
Power	1x DC 12V/1A (included)
Dimensions	180mm W x 75mm D x 25mm H (7.087" W x 2.953" D x 0.984" H)
Weight	295g (0.65 lbs.)

General

Operating Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	20% to 90%, non-condensing
Power Consumption	2.5W

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1234 Lakeshore Drive, Coppell, TX 75019
halltechav.com / support@halltechav.com
(714)641-6607