Safety Notice: For optimum performance and safety, please read these instructions carefully before connecting, operating, or adjusting this product. Keep this manual for future reference. Use of surge protection systems is strongly recommended.

1. Introduction

The KanexPro EXT-4KHD150M2 HDMI Extender extends high-definition video/audio, RS-232, and bi-directional IR up to 492 ft / 150 m between transmitter and receiver via a single Cat5e/6 cable. It supports resolutions up to 4K2K@60Hz 4:4:4 with 18Gbps bandwidth and full HDCP 2.2 compliance. One HDMI loop output is available on the transmitter for local monitoring, and the receiver provides de-embedded analog stereo audio output.

The extender ships as a TX/RX pair. Power over Cable (PoC) allows either unit to supply power to the other through the Cat cable — only one power adapter is required. Two-way IR pass-through enables control of both source and display from either end of the installation.

2. Features

- ✓ HDCP 2.2 / HDCP 1.4 and DVI 1.0 compliant
- ✓ Supports 18Gbps video bandwidth
- ✓ Maximum extended transmission via single Cat5e/6: 394 ft / 120 m (4K2K); 492 ft / 150 m (1080P)
- ✓ Supports one HDMI loop output on the transmitter for local monitoring
- ✓ De-embedded audio to analog stereo output on receiver (3.5mm)
- ✓ Bi-directional IR, RS-232, and CEC pass-through
- ✓ HDR, HDR10+, Dolby Vision, and HLG supported
- ✓ Supports PoC (Power over Cable) — only one power adapter required
- ✓ Compact metal enclosure with mounting ears for rack installation

3. Package Contents

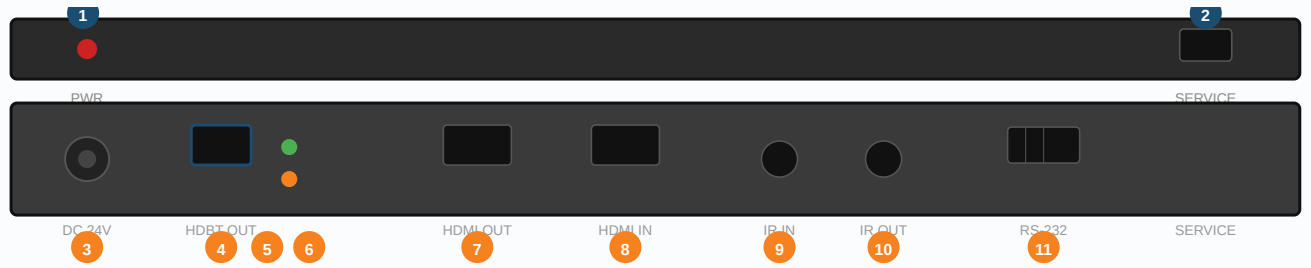
Qty	Item
1	18Gbps HDMI over HDBaseT Extender (Transmitter)
1	18Gbps HDMI over HDBaseT Extender (Receiver)
1	IR Blaster cable (1.5 m)
1	20–60KHz IR Receiver cable (1.5 m)
4	Mounting Ear
2	3-pin Phoenix connector
1	24V/1A Locking Power adapter
1	User Manual

4. Specifications

Technical	
HDCP Compliance	HDCP 2.2 / HDCP 1.4
Video Bandwidth	18 Gbps
Video Resolution	4K2K 50/60Hz 4:4:4/4:2:2/4:2:0; 4K2K 30Hz 4:4:4; 1080p/i; 720p/i; 480p/i; All HDMI 3D; PC up to 1920×1200
Color Space	RGB / YCbCr 4:4:4, 4:2:2, 4:2:0
Color Depth	8/10/12-bit (1080P60, 4K30, 4K60 4:2:2/4:2:0); 8-bit (4K60 4:4:4)
HDR Formats	HDR, HDR10+, Dolby Vision, HLG
HDMI Audio	LPCM 2.0–7.1, Dolby Digital, Dolby TrueHD, DD+, DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
L/R Audio	PCM 2.0
ESD Protection	HBM ±8kV (Air-gap) / ±4kV (Contact)
Connection — Transmitter	
TX Inputs	1× HDMI Type A [19-pin female]
TX Outputs	1× HDMI Type A (Loop), 1× HDBT OUT [RJ45, 8-pin female]
TX Control	1× IR IN, 1× IR OUT [3.5mm Stereo], 1× RS-232 [3-pin Phoenix], 1× SERVICE [Mini-USB]
Connection — Receiver	
RX Inputs	1× HDBT IN [RJ45, 8-pin female]
RX Outputs	1× HDMI Type A [19-pin female], 1× AUDIO OUT [3.5mm Stereo]
RX Control	1× IR IN, 1× IR OUT [3.5mm Stereo], 1× RS-232 [3-pin Phoenix], 1× SERVICE [Mini-USB]
Mechanical	
Housing	Metal Enclosure, Black
Dimensions (TX/RX)	5.51″ (W) × 2.56″ (D) × 0.71″ (H) / 140 × 65 × 18 mm
Weight	TX: 0.35 lbs (160 g) | RX: 0.34 lbs (155 g)
Power Supply	AC 100–240V, 50/60Hz → DC 24V/1A (Locking connector); PoC supported; 9.36W
Operating Temp	32–104°F (0–40°C) | 20–90% RH non-condensing
Storage Temp	−4–140°F (−20–60°C)
Extension Range (Cat5e/6)	
4K2K	394 ft / 120 m
1080P	492 ft / 150 m
HDMI Cable Length	4K60: up to 16 ft / 5 m | 4K30: 32 ft / 10 m | 1080P60: 50 ft / 15 m

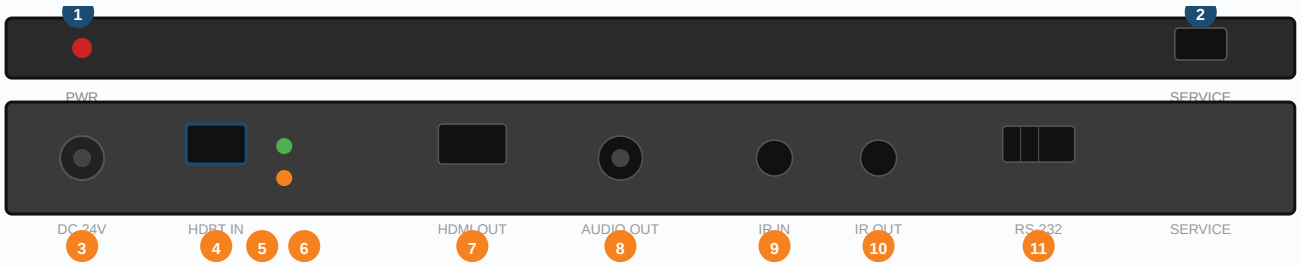
5. Operation Controls and Functions

5.1 TRANSMITTER PANEL



No.	Name	Function Description
1	**Power LED**	Red LED indicates the transmitter is powered on.
2	**SERVICE Port**	Mini-USB firmware update port.
3	**DC 24V**	DC 24V/1A power input (locking connector). PoC supported — when TX or RX is powered, the other unit draws power over the Cat cable and does not require a separate adapter.
4	**HDBT OUT**	RJ45 connector. Connect to the HDBT IN port on the receiver via Cat5e/6 cable.
5	**Connection Indicator**	Illuminating: good TX↔RX link. Flashing: poor connection. Dark: no connection.
6	**Data Indicator**	Illuminating: HDMI signal with HDCP. Flashing: HDMI without HDCP. Dark: no HDMI signal.
7	**HDMI OUT**	HDMI loop output. Connect to a local display for source monitoring.
8	**HDMI IN**	HDMI source input.
9	**IR IN**	IR input. Receives IR remote signals; output appears at RX IR OUT.
10	**IR OUT**	IR output for source control. Emits IR signal received at RX IR IN.
11	**RS-232**	3-pin Phoenix connector. Bidirectional RS-232 pass-through between TX and RX.

5.2 RECEIVER PANEL



No.	Name	Function Description
1	**Power LED**	Red LED indicates the receiver is powered on.
2	**SERVICE Port**	Mini-USB firmware update port.
3	**DC 24V**	DC 24V/1A power input (locking connector). PoC supported — when TX or RX is powered, the other unit draws power over the Cat cable and does not require a separate adapter.
4	**HDBT IN**	RJ45 connector. Connect to the HDBT OUT port on the transmitter via Cat5e/6 cable.
5	**Connection Indicator**	Illuminating: good TX↔RX link. Flashing: poor connection. Dark: no connection.
6	**Data Indicator**	Illuminating: HDMI signal with HDCP. Flashing: HDMI without HDCP. Dark: no HDMI signal.
7	**HDMI OUT**	HDMI output to the remote display.
8	**AUDIO OUT**	3.5mm stereo connector. De-embedded analog stereo audio output (PCM 2.0).
9	**IR IN**	IR input at the display end. Output appears at TX IR OUT.
10	**IR OUT**	IR output for display control. Emits IR signal received at TX IR IN.
11	**RS-232**	3-pin Phoenix connector. Bidirectional RS-232 pass-through between TX and RX.

5.3 IR PIN DEFINITION

IR Receiver and Blaster pin definitions:

IR RECEIVER

Pin	Signal
Tip	IR Signal
Ring	Power (5V)
Sleeve	Ground

IR BLASTER

Pin	Signal
Tip	IR Blaster Signal
Ring	Power
Sleeve	NC

IR Range: At ±45° angle between IR receiver and remote control: 0–5 m (0–16 ft). At ±90°: 0–8 m (0–26 ft).

IR SYSTEM DIAGRAM

Remote Control → **TV Remote** ↓ IR Receiver cable → **IR Receiver** → Cat5e/6 → **TX ↔ RX** → IR Blaster cable → **IR Blaster** ↓ Controlled device → **TV / Display**

Connect IR Receiver cable to IR IN at one end. The IR signal passes over the Cat5e/6 cable and exits through the IR Blaster at IR OUT on the opposite end. Control is bidirectional — works TX→RX and RX→TX simultaneously.

Troubleshooting

Q: The connection signal indicator is flashing — what does this mean?

A: Flashing indicates a poor TX↔RX connection. Check Cat5e/6 cable termination at both ends, verify no sharp bends or damage, and confirm the run does not exceed the rated distance (394 ft / 120 m for 4K2K; 492 ft / 150 m for 1080P).

Q: No video at the remote display?

A: Use Premium High Speed HDMI cables for HDMI IN/OUT runs (max 16 ft / 5 m for 4K60; 32 ft / 10 m for 4K30; 50 ft / 15 m for 1080P60). Confirm the HDBT link indicator is illuminated. Verify both source and display are HDCP 2.2 compliant.

Q: No audio from the AUDIO OUT port on the receiver?

A: Confirm the source outputs LPCM 2.0 (PCM stereo). AUDIO OUT de-embeds analog stereo only — Dolby Digital, DTS, and other encoded formats pass through HDMI only, not via the 3.5mm output.

Q: The HDMI loop output on the transmitter shows no image?

A: The loop output mirrors TX HDMI IN. Confirm a valid HDMI source is connected and active. No source signal = no loop output.

Q: IR control is not working from the display end?

A: Confirm IR Receiver cable is at RX IR IN and IR Blaster is at TX IR OUT. Aim the IR receiver toward the remote within rated angle (±45° for up to 16 ft; ±90° for up to 26 ft).

Q: RS-232 commands are not passing through?

A: Confirm 3-pin Phoenix connectors are correctly wired (TX/RX/GND) and fully seated on both units. Verify baud rate matches the control system specification.

Q: Only one end of the kit powers on?

A: PoC requires the Cat5e/6 cable to be connected before applying power. Connect the cable first, then power one unit. If the second unit still does not power on, test cable continuity end-to-end.