8K HDMI™ over HDBaseT Extender (150m)

TX/RX Kit — Extend 8K/4K60/1080p over CAT6

SKU: EXT-HD8K-150M

1. Introduction

The KanexPro **EXT-HD8K-150M** is a professional-grade HDMI over HDBaseT extender kit that transmits HDMI 2.1 signals over a single CAT6 cable at distances up to 150 meters. Designed for installations where source equipment must be located far from displays — including large conference rooms, auditoriums, broadcast studios, and digital signage deployments — the EXT-HD8K-150M supports 8K@30Hz at 40m, 4K60 4:2:0 at 100m, and 1080p@60Hz at 150m.

The TX unit accepts an HDMI 2.1 source and transmits the signal over CAT6 to the RX unit, which outputs via HDMI 2.0 to the connected display. Both units feature analog stereo audio de-embedding, bi-directional IR pass-through, RS-232 pass-through, and 24V Power over CAT6 (PoC). A 7-mode DIP-switch EDID manager on both TX and RX enables configuration without a laptop or control system.

2. Features

- Extends HDMI 2.1 (48Gbps) signals up to 150m/492ft over a single CAT6 cable — 8K@30Hz at 40m, 4K60 4:2:0 at 100m, 1080p@60Hz at 150m
- HDMI 2.1 input on TX accepts 8K, 4K, and 1080p sources — HDMI 2.0 output on RX delivers to any compatible display
- HDCP 2.3 compliant with full HDR support — HDR10, HDR10+, Dolby Vision, and HLG pass-through end-to-end
- Bi-directional IR pass-through (20–60kHz) enables remote control of source and display from either end of the cable run
- RS-232 pass-through via 3-pin phoenix connector on both TX and RX for third-party control system integration
- Analog stereo audio de-embedding (L+R phoenix) on both TX and RX — local speaker feed without a separate audio extractor
- 24V Power over CAT6 (PoC) — power the RX from the TX over the same CAT6 cable, reducing power outlet requirements at the display end
- 7-mode DIP-switch EDID manager (1080p, 4K30, 4K60 × 2CH/7.1CH + sink copy) — no software required for setup
- Locking HDMI connector on TX prevents accidental disconnection in rack or behind-wall installations

3. Package Contents

- 1× TX (Transmitter) unit
- 1× RX (Receiver) unit
- 2× DC 24V/2.7A power supply
- 2× IR receiver cable
- 2× IR blaster cable
- 2× Mounting ears
- 1× User manual

Note: CAT6 cable is not included. Use a high-quality solid-core CAT6 or CAT6a cable for best performance. Avoid patch cables for runs over 30m.

4. Specifications

VIDEO	
HDMI Compliance	HDMI 2.1 (TX Input) • HDMI 2.0 (RX Output)
HDCP Compliance	HDCP 2.3 / 1.x
Video Bandwidth	48Gbps (HDMI 2.1 input)
Video Resolution	8K@30Hz (40m) • 4K60 4:4:4 (60m) • 4K60 4:2:0 (100m) • 1080p@60Hz (150m)
Color Space	RGB • YCbCr 4:4:4 / 4:2:2 / 4:2:0
Color Depth	8-bit, 10-bit, 12-bit
HDR Formats	HDR10 • HDR10+ • Dolby Vision • HLG

AUDIO	
HDMI Audio Pass-Through	LPCM 2.0–7.1 • Dolby Digital • DTS 5.1 • Dolby TrueHD • DTS-HD Master Audio • Dolby Atmos • DTS:X
Analog Audio De-embed	L+R stereo via 5-pin phoenix (both TX and RX)

TRANSMISSION	
Transmission Medium	HDBaseT over CAT6 / CAT6a / CAT7
Max Distance — 8K@30Hz	40m / 131ft
Max Distance — 4K60 4:4:4	60m / 197ft
Max Distance — 4K60 4:2:0	100m / 328ft
Max Distance — 1080p@60Hz	150m / 492ft

CONTROL & SIGNAL	
IR Frequency	20–60kHz (bi-directional)
RS-232	300–115200 baud • 3-pin phoenix connector (TX↔RX pass-through)
CEC	Pass-through
EDID Management	7-mode DIP switch (see Section 5.3)
Power over Cable	24V PoC — TX powers RX or RX powers TX over CAT6

CONNECTION	
TX Input	1× HDMI 2.1 Type A (locking connector)
TX Output	1× RJ45 (HDBaseT) • 1× L+R phoenix (audio) • 1× 3.5mm IR IN • 1× 3.5mm IR OUT • 1× 3-pin phoenix RS-232 • 1× DC 24V barrel
RX Input	1× RJ45 (HDBaseT)
RX Output	1× HDMI 2.0 Type A • 1× L+R phoenix (audio) • 1× 3.5mm IR IN • 1× 3.5mm IR OUT • 1× 3-pin phoenix RS-232 • 1× DC 24V barrel

MECHANICAL	
Dimensions (TX)	215 × 155 × 26mm (W×D×H)
Dimensions (RX)	215 × 155 × 26mm (W×D×H)
Weight (TX / RX)	660g each
Power Supply	DC 24V/2.7A (each unit)
Operating Temp	0–40°C / 32–104°F
Storage Temp	−20–60°C / −4–140°F

5. Operation Controls and Functions

5.1 TX (TRANSMITTER) PANEL

NO.	NAME	FUNCTION DESCRIPTION
1	DC 24V	24V/2.7A power input. Can power the RX unit via PoC over CAT6.
2	HDBT OUT	RJ45 HDBaseT output. Connect to RX HDBT IN port via CAT6 cable.
3	AUDIO OUT	Analog stereo L+R audio de-embed output via 5-pin phoenix connector.
4	HDMI IN	HDMI 2.1 source input with locking connector. Accepts 8K, 4K, and 1080p signals.
5	IR IN	Connects to IR receiver cable. IR signal is forwarded to the IR OUT port of the RX unit.
6	IR OUT	Connects to IR blaster cable. IR signal is received from the IR IN port of the RX unit.
7	RS-232	3-pin phoenix connector for RS-232 pass-through to/from the RX unit.

5.2 RX (RECEIVER) PANEL

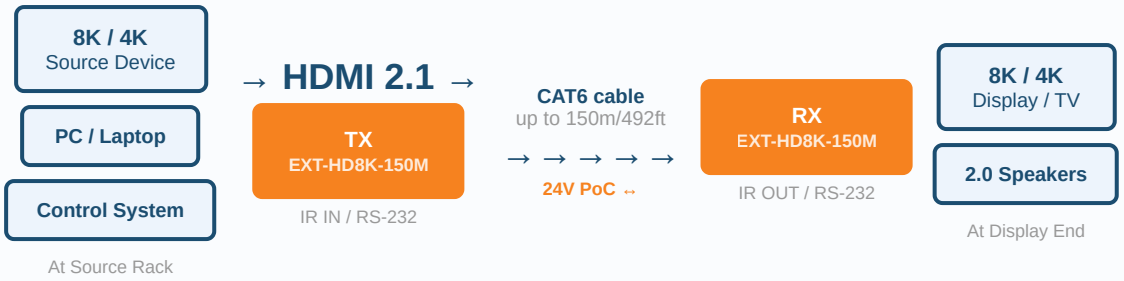
NO.	NAME	FUNCTION DESCRIPTION
1	DC 24V	24V/2.7A power input. Can power the TX unit via PoC over CAT6.
2	HDBT IN	RJ45 HDBaseT input. Connect from TX HDBT OUT port via CAT6 cable.
3	AUDIO OUT	Analog stereo L+R audio de-embed output via 5-pin phoenix connector.
4	HDMI OUT	HDMI 2.0 output to display device such as TV, monitor, or projector.
5	IR IN	Connects to IR receiver cable. IR signal is forwarded to the IR OUT port of the TX unit.
6	IR OUT	Connects to IR blaster cable. IR signal is received from the IR IN port of the TX unit.
7	RS-232	3-pin phoenix connector for RS-232 pass-through to/from the TX unit.

5.3 EDID DIP SWITCH MODES

POSITION	EDID MODE
1	1080p — 2CH audio
2	1080p — 7.1CH audio
3	4K30 — 2CH audio
4	4K30 — 7.1CH audio
5	4K60 — 2CH audio
6	4K60 — 7.1CH audio
	Copy from sink (pass-through EDID)

6. Application Example

Long-Run HDMI Distribution over CAT6 with Bi-Directional IR & RS-232



How it works: Connect an HDMI 2.1 source to the TX HDMI IN port. Run a single CAT6 cable from TX HDBT OUT to RX HDBT IN. Connect the RX HDMI OUT to the display. Use 24V PoC to power the RX from the TX — no second power outlet required at the display end.

IR Control: Attach the IR receiver to TX IR IN to control the source from the display end. Attach the IR blaster to RX IR OUT to control the display from the source end.

Audio: Connect the L+R phoenix on TX or RX to a local amplifier or speakers for analog stereo audio without an additional extractor.

7. Troubleshooting

Q: No video at the display after connection?

A: Verify the CAT6 cable is connected straight-through (not crossover). Confirm both TX and RX power LEDs are lit. Try setting the EDID DIP switch to match the display resolution (e.g., position 5 for 4K60 2CH). Check that the HDMI source is outputting a supported resolution.

Q: Image appears but signal drops intermittently at long distances?

A: Ensure solid-core CAT6 cable is used — stranded patch cables degrade signal quality significantly at distances over 30m. Avoid cable runs near high-voltage power lines. For runs over 100m, use CAT6a or CAT7.

Q: IR remote does not control the source from the display end?

A: Connect the IR receiver cable to the TX IR IN port and ensure it has line-of-sight to the remote control. The IR signal is transmitted to the RX IR OUT port — confirm the IR blaster is aimed at the source device's IR sensor.

Q: Only one power supply available — can I still power both units?

A: Yes. Connect the power supply to the TX DC 24V input. The TX will power the RX via 24V PoC over the CAT6 cable. No power supply is required at the RX end in this configuration.