HDBaseT 3.0 4K HDMI Extender Kit with eARC & USB 2.0 — 328ft

Extend uncompressed 4K@60Hz 4:4:4 video, eARC/ARC audio return, USB 2.0, bi-directional IR, RS-232, and Gigabit Ethernet up to 100m/328ft over a single CAT6A/7 cable. The KanexPro EXT-HDBT3ARC-100M is an HDBaseT 3.0 extender kit (TX/RX pair) that delivers 18Gbps uncompressed video with full audio format pass-through, eARC/ARC return channel support, and USB 2.0 extension with configurable Host/Device modes. The Transmitter supports audio embedding and de-embedding; the Receiver supports audio de-embedding. Bi-directional 24V POC powers either unit from a single adapter.

Surge Protection Recommended — This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, or lightning strikes. Use of surge protection systems is highly recommended.

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FEATURES

- ✓ HDMI 2.0b, HDCP 2.2, and HDBaseT 3.0 compliant
- ✓ Uncompressed 4K@60Hz 4:4:4 up to 18Gbps video bandwidth
- ✓ HDR, HDR10, HDR10+, Dolby Vision, and HLG pass-through
- ✓ Full audio format pass-through: LPCM, Dolby Digital/Plus/EX, Dolby TrueHD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
- ✓ Transmission distance up to 328ft/100m via a single CAT6A/7 cable
- ✓ eARC/ARC function — audio returned to TX HDMI IN, HDMI OUT (Audio Only), and SPDIF OUT
- ✓ SPDIF audio reverse transmission
- ✓ Bi-directional IR, RS-232, and Gigabit Ethernet signal pass-through
- ✓ USB 2.0 transmission with configurable Host/Device mode
- ✓ Bi-directional 24V POC — power either TX or RX from a single adapter

PACKAGE CONTENTS

1× HDBaseT 3.0 Extender (Transmitter) • 1× HDBaseT 3.0 Extender (Receiver) • 1× IR Blaster Cable (1.5m) • 1× IR Receiver Cable (1.5m) • 2× 3-pin 3.81mm Phoenix Connectors • 4× Mounting Ears • 8× Machine Screws (KM3×4) • 1× 24V/1A Locking Power Supply • 1× User Manual

Specifications

TECHNICAL	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18 Gbps
Video Resolution	Up to 4K@60Hz 4:4:4
HDBaseT Bandwidth	16 Gbps main link • 2 Gbps return link
HDR Formats	HDR, HDR10, HDR10+, Dolby Vision, HLG
Color Space	RGB, YCbCr 4:4:4 / 4:2:2 / 4:2:0
Color Depth	8/10/12-bit
Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby TrueHD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
L/R Audio Formats	PCM 2.0
SPDIF Audio Formats	LPCM 2.0, AC3 5.1, DTS 5.1
IR Level	12Vp-p
IR Bandwidth	20K–60KHz
USB Bandwidth	Up to 350 Mbps
Ethernet	1000 Mbps (Gigabit)
RS-232	Up to 921600 bps
Transmission Distance	100m / 328ft (via single CAT6A/7 cable)
ESD Protection	±8kV (air-gap) & ±4kV (contact)

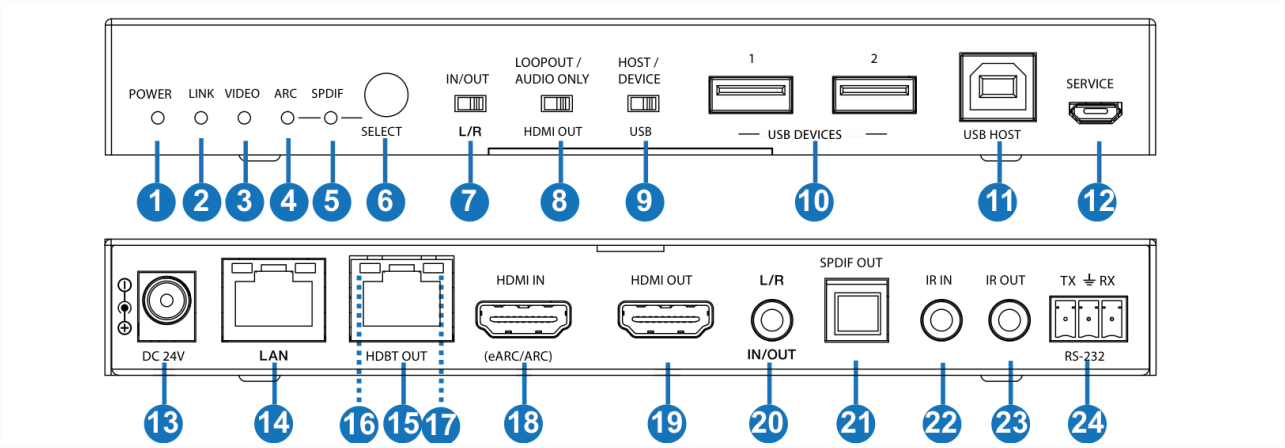
CONNECTION — TRANSMITTER	
Input	1× HDMI IN [Type A, 19-pin female]
Output	1× HDMI OUT [Type A, 19-pin female] 1× HDBT OUT [RJ45, 8-pin female] 1× SPDIF OUT [S/PDIF] 1× L/R OUT [3.5mm Stereo Mini-jack]
Control	1× IR IN • 1× IR OUT [3.5mm] 1× RS-232 [3-pin 3.81mm Phoenix] 1× SERVICE [Mini-USB] 1× USB HOST [Type B] • 2× USB DEVICES [Type A] 1× LAN [RJ45]

CONNECTION — RECEIVER	
Input	1× HDBT IN [RJ45, 8-pin female] 1× SPDIF IN [S/PDIF]
Output	1× HDMI OUT [Type A, 19-pin female] 1× L/R OUT [3.5mm Stereo Mini-jack]
Control	1× IR IN • 1× IR OUT [3.5mm] 1× RS-232 [3-pin 3.81mm Phoenix] 1× SERVICE [Mini-USB] 1× USB HOST [Type B] • 2× USB DEVICES [Type A] 1× LAN [RJ45]

MECHANICAL	
Housing	Metal Enclosure, Black
Dimensions (each)	170mm (W) × 102mm (D) × 22mm (H)
Weight	TX: 425g • RX: 437g
Power Supply	AC 100–240V 50/60Hz → DC 24V/1A (CE/FCC/UL)
Power Consumption	15.36W (POC)

Operation Controls & Functions

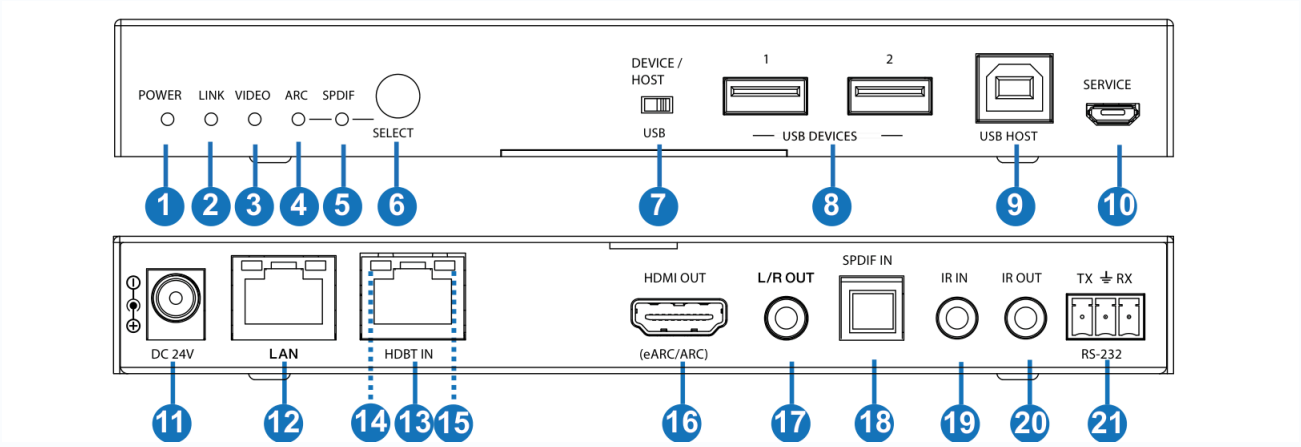
5.1 TRANSMITTER PANEL



Transmitter — Front & Rear Panel

No.	Name	Function Description
1	**Power LED**	Red LED indicates the Transmitter is powered on.
2	**LINK LED**	On: TX/RX connected. Flashing: Low Power Mode. Off: Not connected.
3	**VIDEO LED**	On: Video encrypted (HDCP). Flashing: Video not encrypted. Off: No HDMI input.
4	**ARC LED**	On: ARC mode active. Off: SPDIF mode active.
5	**SPDIF LED**	On: SPDIF mode active. Off: ARC mode active.
6	**SELECT Button**	Press to toggle between ARC mode and SPDIF mode.
7	**L/R IN/OUT Switch**	Left: Audio embedding (external audio in). Right: Audio de-embedding (HDMI audio out).
8	**LOOPOUT / AUDIO ONLY Switch**	Left: HDMI OUT = loop output of HDMI IN. Right: HDMI OUT = 720p black screen with ARC/SPDIF audio.
9	**HOST/DEVICE USB Switch**	Left: USB Host mode. Right: USB Device mode. Power cycle after switching.
10	**USB DEVICES**	Two USB Type A ports for peripherals (keyboard, mouse, USB drive).
11	**USB HOST**	USB Type B host extension port — connect to PC.
12	**SERVICE**	Mini-USB firmware update port.
13	**DC 24V**	24V/1A power input. POC: powering one unit powers both.
14	**LAN**	Gigabit Ethernet port (green = 1GbE, yellow = 100M).
15	**HDBT OUT**	RJ45 HDBaseT output — connect to RX via CAT6A/7 cable.
16	**Data Signal LED**	Yellow. On: HDCP signal. Flashing: No HDCP. Off: No signal.
17	**Link Signal LED**	Green. On: Good link. Flashing: Poor link. Off: No connection.
18	**HDMI IN**	HDMI input from source device. Supports eARC/ARC amplifier connection.
19	**HDMI OUT**	Loop output or Audio Only output (per switch #8).
20	**L/R IN/OUT**	3.5mm stereo jack — audio embed or de-embed (per switch #7).
21	**SPDIF OUT**	Optical audio output.
22	**IR IN**	3.5mm IR receiver cable input.
23	**IR OUT**	3.5mm IR blaster cable output.
24	**RS-232**	3-pin 3.81mm Phoenix serial control port.

5.2 RECEIVER PANEL



Receiver — Front & Rear Panel

No.	Name	Function Description
1	**Power LED**	Red LED indicates the Receiver is powered on.
2	**LINK LED**	On: TX/RX connected. Flashing: Low Power Mode. Off: Not connected.
3	**VIDEO LED**	On: Video encrypted (HDCP). Flashing: Video not encrypted. Off: No HDMI input.
4	**ARC LED**	On: ARC mode active. Off: SPDIF mode active.
5	**SPDIF LED**	On: SPDIF mode active. Off: ARC mode active.
6	**SELECT Button**	Press to toggle between ARC mode and SPDIF mode.
7	**DEVICE/HOST USB Switch**	Left: USB Device mode. Right: USB Host mode. Power cycle after switching.
8	**USB DEVICES**	Two USB Type A ports for peripherals (keyboard, mouse, USB drive).
9	**USB HOST**	USB Type B host extension port — connect to PC.
10	**SERVICE**	Mini-USB firmware update port.
11	**DC 24V**	24V/1A power input. POC: powering one unit powers both.
12	**LAN**	Gigabit Ethernet port (green = 1GbE, yellow = 100M).
13	**HDBT IN**	RJ45 HDBaseT input — connect to TX via CAT6A/7 cable.
14	**Data Signal LED**	Yellow. On: HDCP signal. Flashing: No HDCP. Off: No signal.
15	**Link Signal LED**	Green. On: Good link. Flashing: Poor link. Off: No connection.
16	**HDMI OUT**	HDMI output to display. Supports eARC/ARC TV connection.
17	**L/R OUT**	3.5mm stereo audio de-embedding output.
18	**SPDIF IN**	Optical audio input (for eARC/ARC reverse path).
19	**IR IN**	3.5mm IR receiver cable input.
20	**IR OUT**	3.5mm IR blaster cable output.
21	**RS-232**	3-pin 3.81mm Phoenix serial control port.

Input & Output Switching

The Extender switches between ARC/SPDIF mode via the SELECT button on both TX and RX. The TX HDMI OUT port toggles between LOOP OUT and AUDIO ONLY via the front panel switch. The six operating scenes are:

Scene 1 — SPDIF Mode + Audio Only

SPDIF mode active. TX HDMI OUT set to AUDIO ONLY. Source → HDMI IN → TX → CAT6A/7 → RX → HDMI OUT (TV). SPDIF OUT on TX feeds an audio amplifier. The TX HDMI OUT port outputs a 720p black screen carrying the SPDIF audio.

Scene 2 — SPDIF Mode + Loop Out

SPDIF mode active. TX HDMI OUT set to LOOP OUT. Source video loops out to a local TV via TX HDMI OUT while extending to the remote display via RX. SPDIF OUT feeds an audio amplifier.

Scene 3 — ARC Mode + Audio Only

ARC mode active. TX HDMI OUT set to AUDIO ONLY. A soundbar with ARC connects to TX HDMI IN. The RX HDMI OUT connects to an ARC-capable TV. ARC audio returns from the TV through the extender to the TX SPDIF OUT → audio amplifier.

Scene 4 — ARC Mode + Loop Out

ARC mode active. TX HDMI OUT set to LOOP OUT. Soundbar connects to TX HDMI IN (ARC). ARC audio from the remote TV returns to TX SPDIF OUT for an amplifier. TX HDMI OUT provides loop output.

Scene 5 — eARC Mode + Audio Only

eARC mode active. TX HDMI OUT set to AUDIO ONLY. A soundbar with eARC connects to TX HDMI IN. The RX HDMI OUT connects to an eARC TV. Full eARC audio returns through the extender. TX SPDIF OUT outputs up to 5.1CH audio.

Scene 6 — eARC Mode + Loop Out

eARC mode active. TX HDMI OUT set to LOOP OUT. Soundbar with eARC connects to TX HDMI IN. eARC audio returns from the remote TV. TX HDMI OUT provides loop output. SPDIF OUT limited to 5.1CH in eARC mode.

Note: In eARC mode, the SPDIF OUT port can only output audio up to 5.1CH.

Audio, USB & IR

AUDIO EMBEDDING & DE-EMBEDDING

The Transmitter L/R IN/OUT port supports both audio embedding and de-embedding, controlled by the L/R IN/OUT switch.

TX Audio Embedding

Switch L/R IN/OUT to **left**. External audio from an MP3 player or microphone is embedded into the HDMI stream via the 3.5mm L/R IN port and transmitted to the Receiver along with the source video.

TX Audio De-embedding

Switch L/R IN/OUT to **right**. The L/R OUT port outputs the de-embedded audio from the HDMI IN source, allowing connection to an external amplifier or powered speakers.

USB MODE APPLICATIONS

The Extender supports USB 2.0 transmission (up to 350 Mbps). Host/Device mode is configurable via front panel switches. **Power cycle both units after changing USB mode.**

Mode 1 — USB Forward (TX → RX)

TX set to HOST (switch left). RX set to DEVICE (switch left). A PC connected to TX USB HOST controls peripherals (keyboard, mouse) connected to RX USB DEVICES at the remote location. The remote monitor receives HDMI video via the extender.

Mode 2 — USB Reverse (RX → TX)

TX set to DEVICE (switch right). RX set to HOST (switch right). A PC at the remote (RX) location controls peripherals connected to TX USB DEVICES. Useful for KVM-style remote desktop access where the computer is at the display end.

IR PIN DEFINITION

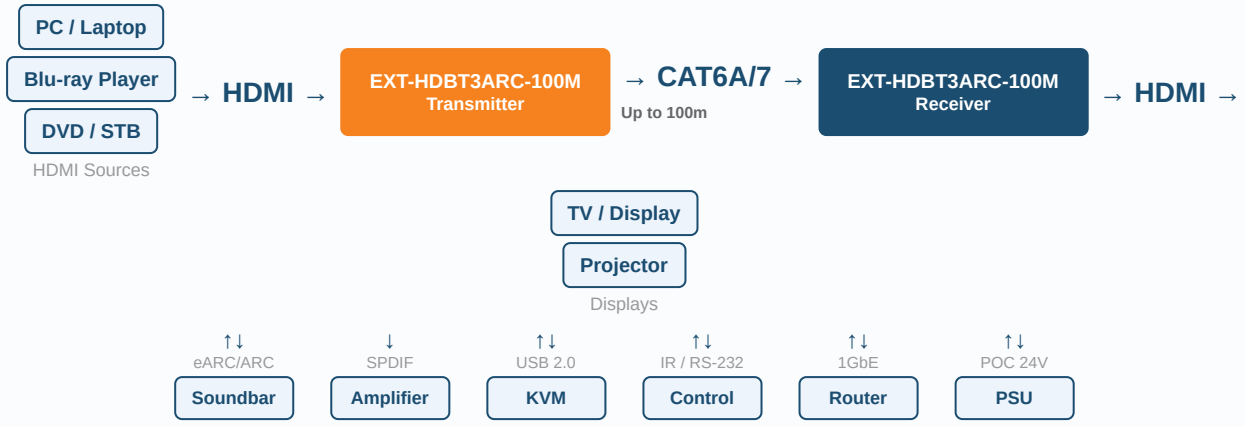
IR Receiver and Blaster cable pin assignments:

CABLE	PIN 1 (TIP)	PIN 2 (RING)	PIN 3 (SLEEVE)
IR Blaster	Signal (+)	Power 12V	GND (−)
IR Receiver	Signal (+)	Power 12V	GND (−)

IR range: 0–5m at ±45°; 0–8m at ±90°.

Application Example

Full-Featured HDBaseT 3.0 Extension — Home Theater / Commercial AV



How it works: Connect an HDMI source to the TX HDMI IN. A single CAT6A/7 cable carries video, audio, eARC/ARC, USB 2.0, IR, RS-232, Gigabit Ethernet, and 24V POC up to 100m to the Receiver. The RX outputs HDMI to the remote display.
eARC/ARC: Audio from an eARC/ARC TV at the RX returns through the CAT cable to the TX's HDMI IN, HDMI OUT (Audio Only), and SPDIF OUT ports — ideal for soundbar or amplifier integration.
USB 2.0: Configurable Host/Device mode enables KVM extension — control remote peripherals from a local PC or vice versa.
POC: Power either the TX or RX from a single 24V adapter — the other unit is powered over the CAT cable.