Introduction

The KanexPro EXT-HD4KEARC-70M extends uncompressed 4K HDMI and eARC/ARC signals over a single CAT6A/7 cable — up to 40m at 4K60 4:4:4 or 70m at 4K30/1080p — eliminating the need for a separate cable run to return audio from a remote TV back to a local AV receiver or soundbar. Built on the HDBaseT 3.0 VS310 chipset with HDCP 2.3 compliance, the kit supports HDR10, HDR10+, Dolby Vision LLM, and HLG alongside high-bitrate audio including Dolby Atmos, DTS:X, and DTS-HD Master Audio.

The transmitter accepts an HDMI source and outputs over HDBaseT to the receiver at the display end. eARC/ARC audio from the connected TV returns over the same link to the transmitter's HDMI port for delivery to an AVR or soundbar. Bi-directional IR, RS-232 pass-through, and 24V PoC complete a clean, single-cable installation.

FEATURES

- HDBaseT 3.0 VS310 chipset — extends uncompressed 4K60 4:4:4 up to 40m and 4K30/1080p up to 70m over a single CAT6A/7 cable
- eARC/ARC pass-through returns high-bitrate audio from the remote TV back to a local AV receiver or soundbar — no second cable required
- HDCP 2.3 compliant, 18Gbps; HDR10, HDR10+, Dolby Vision LLM, and HLG pass-through
- Full HD audio: LPCM, Dolby Atmos, Dolby TrueHD, DTS:X, DTS-HD Master Audio, and DSD
- Bi-directional 24V PoC — one PSU at either end powers both TX and RX; PoC on/off switch on each unit
- Bi-directional IR pass-through (wideband 20–60kHz, 12V) with IR blaster and receiver cables
- RS-232 pass-through for control system integration; USB-C service port for firmware upgrades and API commands
- Compact metal enclosure (144×78×23mm) with LED indicators; mounting ears included

SPECIFICATIONS

VIDEO	
HDMI / HDCP	HDMI 2.0b • HDCP 2.3 • 18 Gbps
HDBaseT	HDBaseT 3.0 (VS310) • 16 Gbps
Video Resolution	Up to 4K2K@60Hz (YUV 4:4:4); 4K@100/120Hz, 1080p, 720p, 480/576p/i
Color Space / Depth	RGB, YCbCr 4:4:4/4:2:2/4:2:0 • 8/10/12-bit
HDR Formats	HDR10, HDR10+, Dolby Vision LLM, HLG
AUDIO	
Audio Formats	LPCM, DD/Plus/EX, Dolby TrueHD, Dolby Atmos, DTS, DTS-HD MA, DSD
eARC/ARC	Pass-through from RX HDMI OUT (TV) to TX HDMI IN (AVR/soundbar)
DISTANCE	
4K60 4:4:4 (CAT6A/7)	Up to 131 ft / 40m
4K30 / 1080p (CAT6A/7)	Up to 230 ft / 70m
CONNECTIONS — TX	
Input	1× HDMI Type A [eARC/ARC out]
Output / Control	1× HDBaseT OUT (RJ45, PoC) • RS-232 • SERVICE (USB-C) • IR IN/OUT
CONNECTIONS — RX	
Input / Control	1× HDBaseT IN (RJ45, PoC) • RS-232 • SERVICE (USB-C) • IR IN/OUT
Output	1× HDMI Type A [eARC/ARC in]
MECHANICAL & POWER	
Housing / Dimensions	Metal, Black • 144 × 78 × 23 mm • TX: 308g, RX: 307g
Power Supply	AC 100–240V → DC 24V/1A (locking) • 11W total
PoC / IR	Bi-directional 24V, one PSU powers both • IR: 20K–60KHz, 12Vp-p, range 5–8m
API / Environment	USB-C virtual RS-232 • 115200 baud, 8N1 • 0–40°C • 20–80% RH

PACKAGE CONTENTS — 1× TX (Transmitter) • 1× RX (Receiver) • 2× 3-pin 3.5mm Phoenix Connector • 1× 24V/1A Locking PSU • 4× Mounting Ears • 8× Machine Screws (KM3×4) • 1× IR Blaster Cable (1.5m) • 1× IR Receiver Cable (1.5m) • 1× User Manual

Operation Controls and Functions

5.1 TRANSMITTER (TX) PANEL

NO.	NAME	FUNCTION DESCRIPTION
1	**HDBaseT OUT**	HDBaseT output (RJ45) to RX via CAT6A/7. Carries video, eARC, IR, RS-232, and 24V PoC.
2	**HDMI IN (eARC)**	HDMI Type A source input. Also receives eARC/ARC audio returned from remote TV for delivery to connected AVR/soundbar.
3	**IR IN**	3.5mm, 12V. Receives IR commands; passes through to RX IR OUT to control display from source location.
4	**IR OUT**	3.5mm. Outputs IR commands from RX IR IN — controls source from display location.
5	**RS-232**	3-pin 3.5mm phoenix connector. Bi-directional RS-232 pass-through for control systems.
6	**DC 24V**	24V/1A locking PSU input. With PoC switch ON, powers both TX and RX units.
7	**Power LED (Red)**	On: TX is powered. Off: TX is not powered.
8	**Link LED (Green)**	On: TX and RX are linked. Off: not linked.
9	**SERVICE (USB-C)**	USB-C (USB 2.0). Firmware upgrade and API control at 115200 baud.
10	**PoC Switch**	**ON** (default): powers remote RX over CAT cable. **OFF**: RX requires its own 24V supply.

5.2 RECEIVER (RX) PANEL

NO.	NAME	FUNCTION DESCRIPTION
1	**HDBaseT IN**	HDBaseT input (RJ45) from TX via CAT6A/7.
2	**HDMI OUT (eARC)**	HDMI Type A output to TV. TV's eARC/ARC returns audio back over the CAT cable to TX HDMI IN for AVR/soundbar.
3	**IR IN**	3.5mm, 12V. Receives IR commands from display location; passes through to TX IR OUT to control source.
4	**IR OUT**	3.5mm. Outputs IR commands from TX IR IN — controls display from source location.
5	**RS-232**	3-pin 3.5mm phoenix connector. Bi-directional RS-232 pass-through.
6	**DC 24V**	24V/1A locking PSU input. With PoC switch ON, powering RX also powers TX.
7	**Power LED (Red)**	On: RX is powered. Off: RX is not powered.
8	**Data LED (Yellow)**	On: video signal with HDCP. Flashing: video without HDCP. Off: no video signal.
9	**Link LED (Green)**	On: TX and RX are linked. Off: not linked.
10	**SERVICE (USB-C)**	USB-C (USB 2.0). Firmware upgrade and API control at 115200 baud.
11	**PoC Switch**	**ON** (default): receives 24V power from TX over CAT. **OFF**: requires its own 24V supply.

IR PIN DEFINITION

IR Blaster: Pin 1 = + (signal) | Pin 2 = − (Ground)

IR Receiver: Pin 1 = IR Signal | Pin 2 = Ground | Pin 3 = Power 12V

API COMMANDS

Connect SERVICE (USB-C) to a PC. **115200 baud, 8N1.**

COMMAND	FUNCTION	EXAMPLE FEEDBACK
`?`	`List all commands`	`List all commands`
`get version`	`Firmware version`	`TX: BOOT V1.00.01 MCU V1.00.01 / RX: BOOT V1.00.01 MCU V1.00.01`
`reboot`	`Reboot device`	`Reboot... / Initialization Finished!`
`status`	`Device status (ARC/eARC CEC, FW)`	`Status Info ... ARC/eARC CEC: REPORT_ARC_INITIATED`
`get arc`	`ARC status`	`ARC enable`
`get cec`	`CEC status`	`REPORT_ARC_INITIATED`
`set hdbt update`	`HDBT UART FW update mode`	`HDBT update...`

Application Example

TYPICAL SETUP **4K Source + AVR at Equipment Rack — eARC TV at Display Location**

← eARC/ARC audio returns over same CAT cable ←

Setup: Connect 4K source and AVR/soundbar to TX HDMI IN. Run CAT6A/7 to RX. Connect RX HDMI OUT to eARC TV. One 24V/1A PSU at either end powers both units via PoC.
eARC: TV returns Dolby Atmos/DTS:X/DTS-HD MA audio over the CAT cable to TX; AVR/soundbar decodes it. No second cable run needed.
IR/Control: IR blaster on TX IR OUT controls source from TV location. IR receiver on RX IR IN relays commands back. RS-232 and USB-C API support Crestron, Control4, AMX.

TROUBLESHOOTING

Q: No picture on the display?
Verify CAT6A/7 is direct (non-crossover), T568B both ends. For 4K60, run must not exceed 40m. Check LINK LED on both TX and RX. Confirm source outputs a supported resolution.

Q: eARC audio not returning to AVR/soundbar?
Confirm TV eARC/ARC and CEC are enabled in the TV audio menu. Verify AVR is on TX HDMI IN with eARC input selected. Run `get arc` via SERVICE port to confirm ARC is active.

Q: IR pass-through not working?
Confirm IR blaster is on correct IR OUT port, aimed at device IR window. IR receiver must be in IR IN at the remote end. IR operates 20–60kHz, 12V.

Q: PoC not powering remote unit?
Confirm PoC switch on the powered unit is ON (factory default). Remote unit PoC switch must also be ON. If issues persist, power both units independently with separate 24V/1A supplies.

Q: How do I upgrade firmware?
Connect SERVICE (USB-C) port to a PC. Open a serial terminal at 115200 baud, 8N1. Contact KanexPro support at support@kanexpro.com for the firmware update package and instructions.