

4K 60Hz HDMI 2.0 Extender with HDBaseT, Dual Output & PoC

Model: PANIO HD6000K

1. Product Overview

The HD6000K is a high-performance 4K60 HDMI 2.0 Extender powered by HDBaseT technology, designed for seamless long-distance AV signal transmission. It supports uncompressed video and audio delivery via a single CAT6/7 Ethernet cable, featuring a flexible 1-input (HDMI) and 2-output (local HDMI + remote HDMI) configuration. Equipped with audio de-embedding, bidirectional IR/RS-232/CEC control, PoC (Power over Cable) supply, and EDID management, the extender ensures zero latency, plug-and-play functionality, and broad compatibility with modern AV devices. Ideal for corporate meeting rooms, multimedia classrooms, commercial display spaces, home theaters, and remote monitoring centers, it delivers exceptional visual and audio performance for diverse professional and entertainment scenarios.

2. Key Features

4K@60Hz Ultra HD & HDR Support

- Supports maximum resolution of 3840×2160@60Hz (YUV 4:4:4) with 18Gbps video bandwidth.
- Compatible with HDR10+, HLG, and Dolby Vision HDR standards, restoring vivid colors and dynamic contrast for immersive visuals.
- Works seamlessly with standard 3D formats and full computer resolutions.

Dual HDMI Output (Local + Remote Synchronous Display)

- Features 1× HDMI near-end output and 1× HDMI remote output, enabling simultaneous display of content at both transmitter and receiver ends.
- Flexible setup for scenarios requiring local monitoring (e.g., presentation previews) and remote playback.

Long-Distance Stable HDBaseT Transmission

- Transmits 1080P@60Hz (4:4:4) signals up to 150m/492ft via CAT6/7 cable with zero latency or signal attenuation.
- Supports 4K@60Hz (4:4:4) transmission up to 120m/394ft, ensuring ultra HD quality even in large-scale venues.

Audio De-Embedding & Rich Audio Compatibility

- Extracts PCM 2.0CH audio via 3.5mm stereo output for independent connection to external speakers.
- Supports high-quality audio formats including LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, DD+, DTS-ES, DTS HD Master, DTS HD-HRA, and DTS-X.

Bidirectional Control & Intelligent EDID Management

- Bidirectional IR control (wideband frequency) enables remote operation of connected devices from both ends.
- Supports RS-232 bidirectional command transmission and HDMI CEC (Consumer Electronics Control) for seamless device integration.
- Built-in EDID management ensures optimal compatibility and automatic resolution matching between source and display.

PoC Power Supply & Plug-and-Play Design

- Unilateral PoC (Power over Cable) function allows powering either transmitter or receiver via the transmission cable, eliminating the need for additional power wiring.
- Plug-and-play hardware design requires no software installation, enabling quick and hassle-free setup.

High Compatibility & ESD Protection

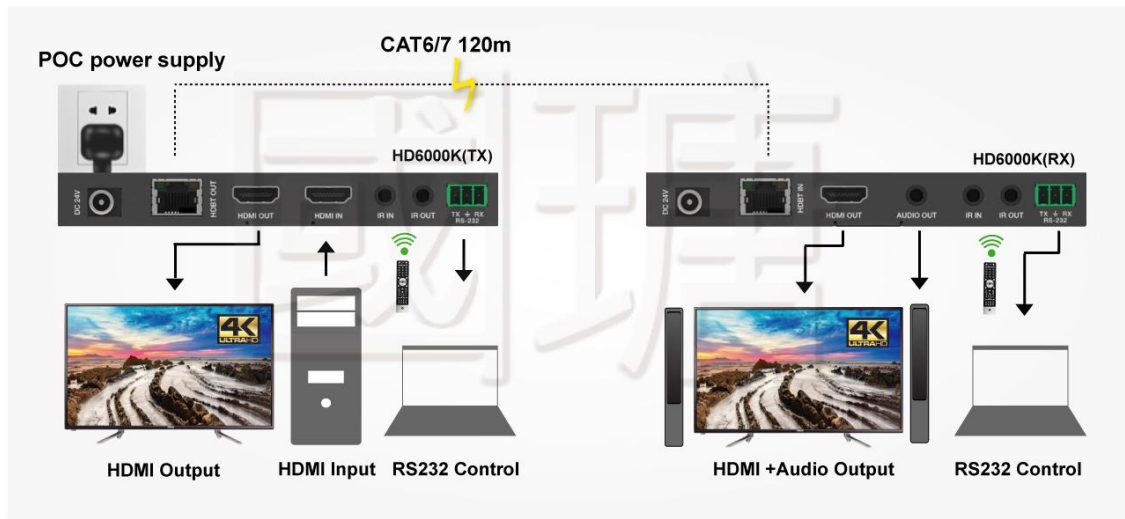
- Complies with HDMI 2.0, HDCP 2.2/1.4, and CEC standards, widely compatible with TVs, projectors, Blu-ray players, computers, and other AV devices.
- Equipped with ESD protection (human body model: $\pm 8\text{kV}$ air-gap discharge / $\pm 4\text{kV}$ contact discharge) to enhance system stability and extend product lifespan.

3. Technical Specifications

Model Name	HD6000K 4K60 HDMI 2.0 Extender
Compliant Standards	HDMI 2.0, HDCP 2.2/1.4, CEC, HDBaseT
Video Specifications	Resolution: Max 4K2K@60Hz (3840×2160) YUV 4:4:4 (including 3D formats and standard computer resolutions)Bandwidth: 18GbpsColor Depth: 8-bit, 10-bit, 12-bitColor Space: YUV 4:4:4, YUV 4:2:2, YUV 4:2:0, RGBHDR Support: HDR10+, HLG, Dolby Vision
Audio Specifications	HDMI Audio: 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-XL/R Audio: PCM 2.0CHAudio Output: 3.5mm Stereo Mini Jack (Receiver Side)
Transmission Distance	4K2K@60Hz (YUV 4:4:4): Up to 120m/394ft (CAT6/7 cable)1080P@60Hz (4:4:4): Up to 150m/492ft (CAT6/7 cable)HDMI Cable Length: Max 5m for input/output (certified HDMI 2.0 cable recommended)
Port Configuration - Transmitter	Input: 1× HDMI IN (Type A, 19-pin female)Output: 1× HDMI OUT (Local, Type A, 19-pin female), 1× HDBT OUT (RJ45, 8-pin female)Control: 2× IR Ports (for bidirectional control), 1× RS-232 (3-pin Phoenix Connector)Power: 1× DC 24V (Power Input Port, PoC-enabled)
Port Configuration - Receiver	Input: 1× HDBT IN (RJ45, 8-pin female)Output: 1× HDMI OUT (Remote, Type A, 19-pin female), 1× AUDIO OUT (3.5mm Stereo Mini Jack)Control: 2× IR Ports (for bidirectional control), 1× RS-232 (3-pin Phoenix Connector)Power: 1× DC 24V (Power Input Port, PoC-enabled)
Control Interfaces	IR Frequency: Wideband (compatible with standard AV remote controls)RS-232: Bidirectional Command TransmissionCEC: Consumer Electronics Control (for seamless device integration)EDID: Built-in EDID ManagementPoC: Unilateral PoC Power Supply (single-end power, no additional power required for the other end)
Power Requirements	Input: AC 100-240V 50/60HzOutput: DC 24V/1A (PoC-enabled power adapter, CE/FCC/UL certified)Power Consumption: Transmitter max 5W, Receiver max 5W
Operating Environment	Temperature: 0°C ~ 40°C (32°F ~ 104°F)Humidity: 20%~80% RH (no condensation)Storage Temperature: -20°C ~ 60°C (-4°F ~ 140°F)Storage Humidity: 10%~90% RH (no condensation)
Physical Dimensions	Transmitter: 140mm(L)×65mm(W)×18mm(H), Weight 160g, Metal Housing (Black)Receiver: 140mm(L)×65mm(W)×18mm(H), Weight 155g, Metal Housing (Black)
Protection Design	ESD Protection: Human Body Model — ±8kV (Air-gap discharge) / ±4kV (Contact discharge)

Diagram



4. Important Installation Notes

1. The product contains precision electronic components; use a surge protection device to prevent damage from voltage surges or lightning strikes.
2. Use certified HDMI 2.0 cables (max 5m) for input/output connections to ensure stable signal transmission.
3. Adopt CAT6/7 standard Ethernet cables (8-cores full) for HDBaseT transmission; follow T568B wiring standard and use direct interconnection (avoid cross wiring).
4. Do not connect uncertified switchers, distributors, or converters in series, as this may cause compatibility issues.
5. Use only the original DC 24V/1A PoC power adapter provided to maintain safety and optimal performance.
6. Ensure secure connections when hot-swapping devices to avoid signal interruption or device damage.
7. Place the device in a well-ventilated area; do not block the metal housing to ensure effective heat dissipation.
8. For CEC functionality: Both connected devices (e.g., Blu-ray player, TV) must support CEC, and some TVs may require enabling CEC in system settings.
9. Inform the manufacturer before using the extender with non-standard AV devices to verify compatibility.

5. Package Contents

Item	Quantity	Remarks
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HD6000K Transmitter	1 unit	
HD6000K Receiver	1 unit	
DC 24V/1A PoC Power Adapter	1 piece	Compatible with AC 100-240V, CE/FCC/UL certified
IR Cables	2 pieces	For bidirectional IR control between transmitter and receiver
3-pin Phoenix Connectors (Male)	2 pieces	For RS-232 control connections
Rack Mounting Accessories	1 set	Includes mounting ears and mechanical screws for rack installation
User Manual	1 piece	

6. Ideal Applications

Corporate Meeting Rooms

Eliminates cable clutter in large meeting spaces by enabling long-distance transmission between presentation devices (laptops, Blu-ray players) and displays. Dual HDMI output supports local preview (for presenters) and remote display (for attendees), while PoC power supply reduces reliance on power outlets. Bidirectional IR/CEC control allows convenient operation of AV equipment from anywhere in the room, boosting meeting efficiency.

Multimedia Classrooms

Enables teachers to connect computers or media players to remote projection screens or interactive whiteboards via long-distance wiring (up to 150m for 1080P). Simultaneous local and remote output allows teachers to monitor content while students view it on the main display. Bidirectional IR control eliminates frequent movement between devices, and plug-and-play design ensures quick setup for dynamic teaching sessions.

Commercial Display Spaces

Perfect for exhibition halls, retail stores, and digital signage networks requiring long-distance AV transmission. 4K ultra HD resolution and HDR support deliver stunning visual content, while the 150m 1080P transmission capability covers large venues. PoC power supply simplifies installation in hard-to-reach areas, and the compact metal housing blends seamlessly with commercial decor.

Home Theaters

Elevates home entertainment with uncompressed 4K HDR transmission and high-fidelity audio. Audio de-embedding allows connection to external sound systems for immersive surround sound, while CEC control enables one-touch operation of TVs, projectors, and media players. Plug-and-play setup and compact design make it easy to integrate into existing home theater systems without cable chaos.

Remote Monitoring Centers

Facilitates long-distance video transmission between surveillance cameras, recorders, and monitors in factories, shopping malls, or large-scale facilities. RS-232 bidirectional control enables unified management of multiple devices, and stable 150m transmission ensures clear, real-time monitoring. ESD protection and rugged metal housing enhance reliability in 24/7 operating environments.