



BK-EXB400R-K

**8K@30Hz HDBaseT HDMI™
Extender - 300ft (Cat6)**

USER MANUAL

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Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the service life of your equipment.

Registration Page

Please activate your warranty by registering our product through the link below - <https://www.orei.com/pages/warranty-registration>

Technical Support

Need Help?

Our experienced Technical Support Team is here for you to answer your questions, give technical advice or help troubleshoot your project to get you installed on time and on budget. Call, email or chat with us now.

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Introduction

The BK-EXB400R-K HDMI HDBaseT extender offers a reliable solution to extend media signals over long distances. It supports video resolutions up to 8K@30Hz, 4K@120Hz, and 1080p@60Hz with video bandwidth of 40Gbps FRL and 18Gbps TMDs. Featuring HDBaseT technology, it achieves transmission distances of 90m (295ft) at 8K@30Hz and 4K@120Hz, 120m (395ft) at 4K@60Hz, and 150m (492ft) at 1080p@60Hz. It also supports HDR10+, Dolby Vision, and HLG pass-through. Compatible with LPCM 2.0/5.1/7.1, Dolby Atmos, Dolby TrueHD, DTS-HD Master Audio, and Dolby Digital Plus audio formats. Analog audio extraction is available at both ends. Features RS-232, CEC, and bi-directional IR control. Its compact design enables flexible installation in residential and commercial environments.



Features

1. HDCP 2.3 compliant
2. Video resolution up to 8K@30Hz, 4K@120Hz, 1080p@60Hz
3. Video bandwidth up to 40Gbps FRL & 18Gbps TMDS
4. Features HDBaseT technology
5. Extend media signal up to:
90m (295ft) at 8K@30Hz, 4K@120Hz
120m (395ft) at 4K@60Hz
150m (492ft) at 1080p@60Hz
6. HDR10+, Dolby Vision, and HLG pass-through
7. VRR, FVA, and ALLM support
8. LPCM 2.0/5.1/7.1, Dolby Atmos, Dolby TrueHD, DTS-HD Master Audio and Dolby Digital Plus audio support
9. Analog audio output on both end for audio extraction
10. RS-232, CEC and Bi-directional IR control

Package Contents & Specifications

Package Contents

1.	BK-EXB400R-K Transmitter	1pcs
2.	BK-EXB400R-K Receiver	1pcs
3.	IR Blaster cable (1.5m)	1pcs
4.	IR Wideband Receiver cable (1.5m)	1pcs
5.	Power adapter	1pcs
6.	3pin-3.5mm Phoenix connector	4pcs
7.	Mounting Ear	4pcs
8.	Machine Screw (KM3*4)	8pcs
9.	User Manual	1pcs

Specifications

Technical	
HDMI Compliance	HDMI 2.1
HDCP Compliance	HDCP 2.3
Video Bandwidth	40Gbps FRL and 18Gbps TMDS
Video Resolution (Input & Output)	Up to 8K@30Hz (4:4:4) * All available resolutions are shown as follow
IR Level	5Vp-p
IR Frequency	Wideband 20K-60KHz

Specifications

Technical	
Color Depth	8/10/12-bit
Color Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Formats	LPCM 2.0, LPCM 5.1, LPCM 7.1, (32K/44.1K/48K/88.2K/96K/176.4K/192K) (16/20/24); Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos; DTS Surround, 96/24, ES, DTS Express, DTS-HD HRA, DTS HD Master, DTS:X
Transmission Distance	150m/492ft for 1080p; 120m/394ft for 4K@60Hz; 90m/295ft for 8K@30Hz over CAT6 cable
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Transmitter	Input: 1× HDMI IN [HDMI Type A, 19-pin female] Output: 1× HDBT OUT [RJ45, 8-pin female] Control: 1× IR IN [3.5mm stereo mini-jack] 1× IR OUT [3.5mm stereo mini-jack] 1× RS-232 [3pin-3.5mm phoenix connector] 1× SERVICE [USB Type C]
Receiver	Input: 1× HDBT IN [RJ45, 8-pin female] Output: 1× HDMI OUT [HDMI Type A, 19-pin female] Control: 1× IR IN [3.5mm stereo mini-jack] 1× IR OUT [3.5mm stereo mini-jack] 1× RS-232 [3pin-3.5mm phoenix connector] 1× SERVICE [USB Type C]

Specifications

Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	L: 140mm / 5.51in; W: 65mm / 2.55in; H: 18mm / 0.70in
Weight	Transmitter/Receiver: 240g / 8.46oz
Power Supply	DC 24V/1A; Support bi-directional POC function
Power Consumption	Transmitter: 11.28W; Receiver: 10.8W
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Operating Humidity	20%~80% (relative humidity, non-condensing)
Storage Humidity	10%~90% (relative humidity, non-condensing)

* All available input/output resolutions:

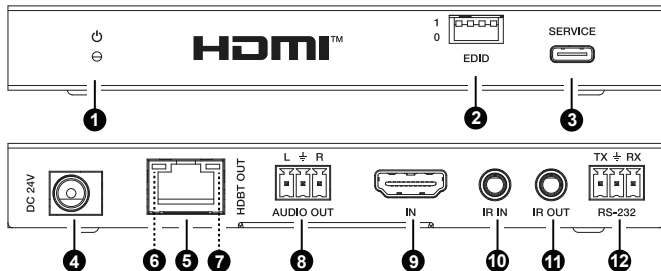
640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1680x1050p60Hz, 1920x1200p60Hz, 480i60Hz, 480p60Hz, 576i50Hz, 576p50Hz, 720p50Hz, 720p60Hz, 1080i50Hz, 1080i60Hz, 1920x1080p24/25/30/50/60/100/120Hz, 3840x2160p24/25/30/50/60/100/120Hz, 4096x2160p24/25/30/50/60/100/120Hz, 5120x2160p24/25/30/50/60/100/120Hz, 7680x4320p24/25/30Hz, 4096x2160P60/59.94/50/30/25/24/23.976Hz, 3840x2160P60/50/30/25/24Hz, 2560x2048P60Hz, 2560x1600P60/75/85/60(RB), 2560x1440P60/60(RB), 2560x1080P60/50/24/25/30Hz, 2048x1280P60Hz, 2048x1152P60Hz, 1920x1440P60/75Hz, 1920x1200P50/60Hz,

Specifications

1920x1080P120/100/60/50/24/25/30Hz, 1920x1080i60/50/i30Hz,
1856x1392P75/60Hz, 1792x1344P75/60Hz, 1680x1050P50/60/24/25/30Hz,
1680x720P24/25/30/50/60/100/120Hz, 1600x1200P65/75/85/50/60/7
0/24/25/30Hz, 1600x1024P60/24/25/30Hz, 1600x900P60/24/25/30Hz,
1440x960P72/50/60(RB), 1440x900P60/75/85Hz, 1400x1050P60Hz,
1400x788P60Hz, 1366x768P60/24/25/30Hz, 1360x768P60Hz,
1280x1024P96/75/85/60Hz, 1280x960P60/85Hz, 1280x800P120/
P85/75/60Hz, 1280x768P120/75/85/60(RB)/60Hz,
1280x720P60/50/24/25/30Hz, 1152x870P75Hz, 1152x864P75Hz,
1024x768P85/75(RB)/75/70/60Hz, 1024x576P60Hz, 852x480P60Hz,
848x480P60Hz, 832x624P75Hz, 800x600P120/85/75/72/60/56Hz,
720x400P70/85Hz, 720x576P200/100/50Hz, 720x480P120/60Hz,
640x480P75/85/67/72/60/59.94Hz, 640x400P85Hz, 640x350P85Hz,
1920x2160P60Hz, 5120x2160P100/75Hz, 5120x2160P60/59/30Hz,
3440x1440P60Hz

Operation Controls and Functions

Transmitter Panel



No.	Name	Function Description
1.	Power LED	The green light turns on when the Transmitter is powered on.
2.	EDID DIP switch	Used to configure EDID settings. <i>Refer to the EDID settings list on Page 11.</i>
3.	SERVICE	USB-C port, used to debug serial and update firmware.
4.	DC 24V	Connect the included power adapter. Note: The extender supports POC (Power Over Cable), so you only need to connect the power adapter to either the Transmitter or the Receiver.
5.	HDBT OUT	Connect a CAT 6/7 cable. The other end connects to the Receiver.

Operation Controls and Functions

No.	Name	Function Description
6.	Link Signal Indicator (Green)	▪ On: The Transmitter and Receiver are successfully connected. ▪ Off: No connection between Transmitter and Receiver.
7.	Data Signal Indicator (Yellow)	▪ On: HDMI signal detected with HDCP. ▪ Flashing: HDMI signal detected without HDCP. ▪ Off: No HDMI signal present.
8.	AUDIO OUT (L/R)	Analog audio output port that provides unbalanced audio output, supporting up to 1Vrms. Unbalanced connection method: L+ (Left), GND (Ground), R+ (Right).
9.	HDMI IN	Connect a media device such as DVD player, streaming device, etc.
10.	IR IN	Connect the included IR receiver cable.
11.	IR OUT	Connect the included IR blaster cable.
12.	RS-232	Connect to a laptop/PC to control the device through RS-232 commands.

* EDID Setting List:

[DIP]=1111: Copy RX HDMI OUT port sink EDID

[DIP]=1110: 8K30(444)_HDR, 7.0CH; [DIP]=1101: 8K30(444)_HDR, 2.0CH

[DIP]=1100: 4K120(444)_HDR, 7.1CH; [DIP]=1011: 4K120(444)_HDR, 2.0CH

[DIP]=1010: 4K120(420)_HDR, 7.1CH; [DIP]=1001: 4K120(420)_HDR, 2.0CH

[DIP]=1000: 5K60(444)_HDR, 7.1CH; [DIP]=0111: 5K60(444)_HDR, 2.0CH

[DIP]=0110: 4K60(444)_HDR, 7.1CH; [DIP]=0101: 4K60(444)_HDR, 2.0CH

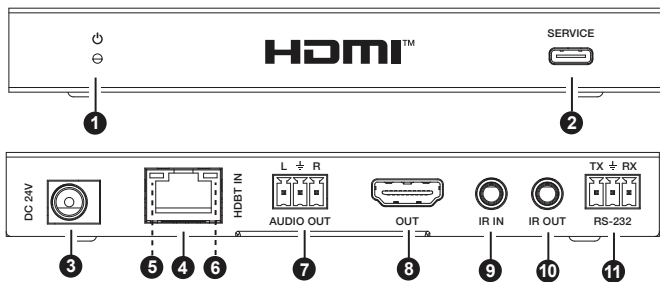
[DIP]=0100: 4K30(444)_HDR, 7.1CH; [DIP]=0011: 4K30(444)_HDR, 2.0CH

[DIP]=0010: 1920x1200_SDR, 2.0CH; [DIP]=0001: 1080P60_SDR, 7.1CH

[DIP]=0000: 1080P60_SDR, 2.0CH

Operation Controls and Functions

Receiver Panel



No.	Name	Function Description
1.	Power LED	The green light turns on when the Receiver is powered on.
2.	SERVICE port	Firmware update port.
3.	DC 24V	Connect the included power adapter.
4.	HDBT IN	Connect a CAT 6/7 cable. The other end connects to the Transmitter.
5.	Link Signal Indicator (Green)	▪ On: The Transmitter and Receiver are successfully connected. ▪ Off: No connection between Transmitter and Receiver.

Operation Controls and Functions

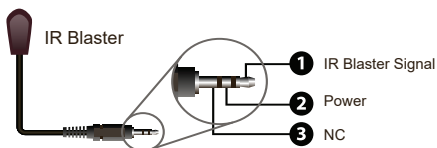
No.	Name	Function Description
6.	Data Signal Indicator (Yellow)	• On: HDMI signal detected with HDCP. • Flashing: HDMI signal detected without HDCP. • Off: No HDMI signal present.
7.	AUDIO OUT (L/R)	Analog audio output port that provides unbalanced audio output, supporting up to 1Vrms. Unbalanced connection method: L+ (Left), GND (Ground), R+ (Right).
8.	HDMI OUT	Connect a display device such as TV, monitor, etc.
9.	IR IN	Connect the included IR receiver cable.
10.	IR OUT	Connect the included IR blaster cable.
11.	RS-232	Connect to a laptop/PC to control the device through RS-232 commands.

Operation Controls and Functions

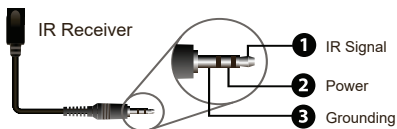
IR Pin Definition



IR BLASTER



IR RECEIVER



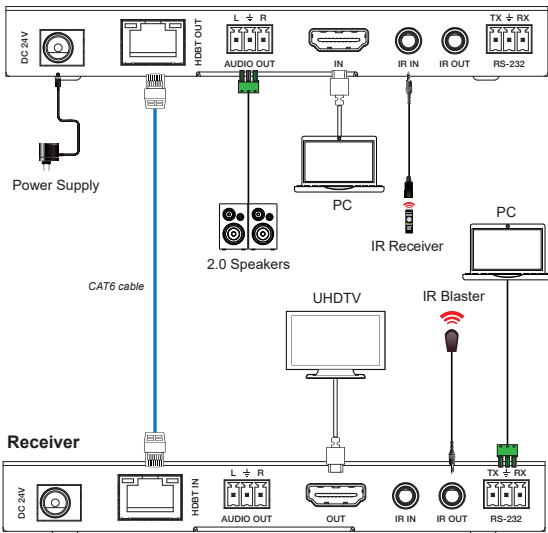
Note:

When the angle between the IR receiver and the remote control is $\pm 45^\circ$, the transmission distance is 0-5 meters;

When the angle between the IR receiver and the remote control is $\pm 90^\circ$, the transmission distance is 0-8 meters.

Application Example

Transmitter



HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

The terms HDMI and HDMI High-Definition Multimedia interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

FAQ & Troubleshooting

1. No video output on the Receiver

Please confirm the following details

- > What is the status of the green and yellow lights on the CAT ports on both ends?
- > Try changing the CAT cable. We recommend using a shielded CAT 6 cable.
- > Try lowering the resolution from the media source.

2. Can I connect this to my home network?

No, this model requires a direct connection between the Transmitter and the Receiver. They cannot be connected to a network switch.

Still have some questions?

Our experienced Technical Support Team is here for you to answer your questions, give technical advice or help troubleshoot your project to get you installed on time and on budget. Call, email or chat with us now.

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