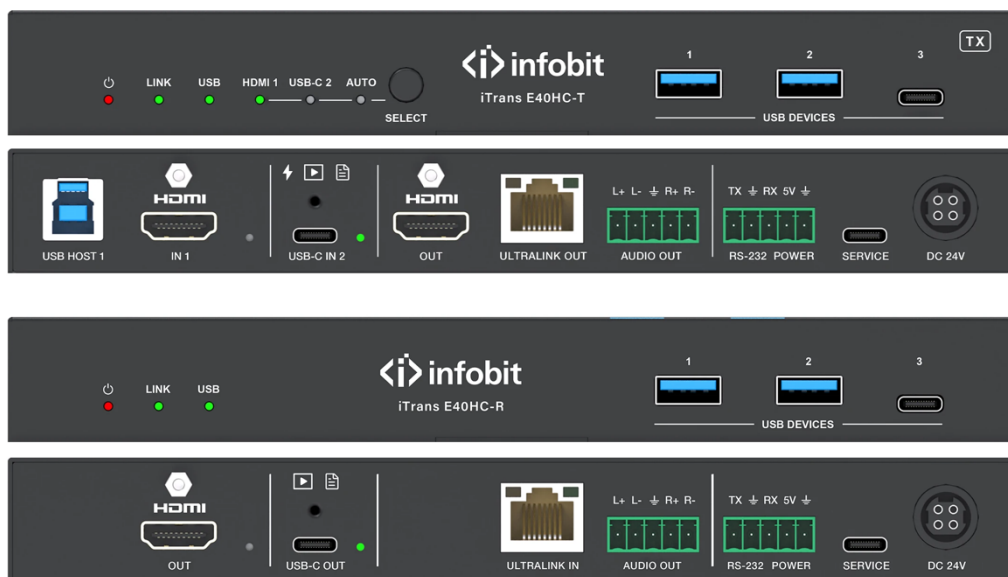


iTrans E40HC

5K USB-C & HDMI 40m UltraLink Extenders

User Manual V1.0





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 life of your equipment.

CAUTION

The network cable connection method required for this product is direct connection. Please do not cross connect.

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1. INTRODUCTION

The **iTrans E40HC UltraLink** extender kit can extend 5K HDMI™ video and USB 3.2 data up to 130ft/40m, via a single CAT6a U/FTP 23AWG cable.

The transmitter box (TX) features two optional inputs: one HDMI™ and one full USB-C, with DisplayPort Alt mode standards (v1.4a) A/V, USB 3.2 Gen 1 data, and PD 100W charging to a laptop, as well as one HDMI™ loop out, one USB 3.2 upstream port and three USB 3.2 downstream ports.

The receiver box (RX) features one HDMI™ output, one USB-C output and three USB 3.2 downstream ports. The transmitter and the receiver both support audio de-embedding, RS-232 pass-through and bi-directional PoC function.

This Extender offers the most convenient solution for BYOD extension via a single CAT cable, and it is a perfect solution for commercial A/V applications.

2. FEATURES

- 5K HDMI™/USB-C and USB 3.2 Extender with HDMI™/USB-C input and output
- Compliant with VESA DisplayPort 1.4a, HDCP 2.3/1.x.
- Extended distance is up to 40m/130ft for 4K signal, 35m/115ft for 5K signal via a single CAT6a cable.
- Supports USB 3.2 Gen 1 with data transfer rate up to 2.5 Gbps. It does not support 5Gbps operation.
- TX features 1x HDMI™ input, 1x full USB-C input, 1x HDMI™ loop out, 1x USB 3.2 upstream port and 3x USB 3.2 downstream ports.
- The full USB-C input supporting DP Alt mode standards (v1.4a) A/V, USB 3.2 Gen 1 data and up to 100W charging.
- Support auto switching and manual switching.
- RX features 1xHDMI™ output, 1xUSB-C output and 3xUSB 3.2 downstream ports
- TX and RX both support audio de-embedding.
- RS-232 pass-through and API control.
- HDR, HDR10+, Dolby Vision LLM and HLG pass-through.
- Bi-directional 24V PoC (power over cable), when TX or RX gets power, the other end does not need an external power supply.

3. SPECIFICATIONS

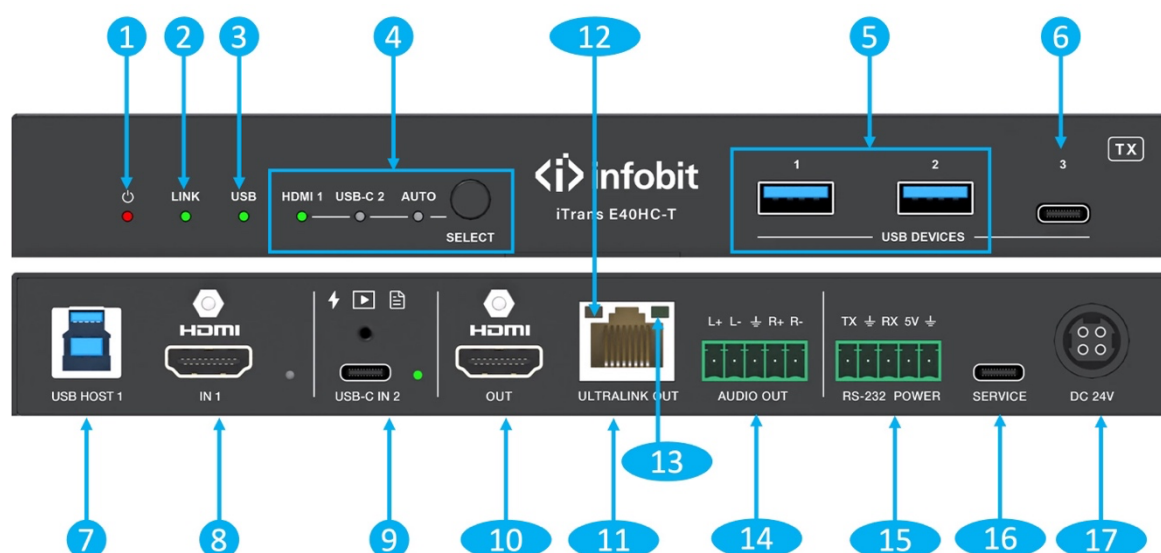
Model	iTrans E40HC
Name	5K USB-C & HDMI 40m UltraLink Extenders
Technical	
USB Protocol	USB 3.2 Gen 1
HDCP Compliance	HDCP 2.3/1.x
HDMI™ Compliance	HDMI™ 2.0b
Transmission Rate	Up to 2.5Gbps
DP Compliance	DisplayPort 1.4a
HDMI™ Video Bandwidth	18Gbps
Video Resolution (Input & Output)	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1600x1200p60Hz, 720x480i59.94Hz(480i59), 720x480p59.94Hz(480p59), 720x576i50Hz(576i50), 720x576p50Hz(576p50), 1280x720p50Hz(720p50), 1280x720p59.94Hz(720p59), 1280x720p60Hz(720p60), 1920x1080i50Hz(1080i50), 1920x1080i59.94Hz(1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz(1080p23), 1920x1080p24Hz(1080p24), 1920x1080p25Hz(1080p25), 1920x1080p29.97Hz(1080p29), 1920x1080p30Hz(1080p30), 1920x1080p50Hz(1080p50), 1920x1080p59.94Hz(1080p59), 1920x1080p60Hz(1080p60), 2560x1080p60Hz, 3440x1440p60Hz, 3840x2160p23.98Hz(2160p23), 3840x2160p24Hz(2160p24), 3840x2160p25Hz(2160p25), 3840x2160p29.97Hz(2160p29), 3840x2160p30Hz(2160p30), 3840x2160p50Hz(2160p50), 3840x2160p59.94Hz(2160p59), 3840x2160p60Hz(2160p60), 4096x2160p23.98Hz, 4096x2160p24Hz, 4096x2160p25Hz, 4096x2160p29.97Hz, 4096x2160p30Hz, 4096x2160p50Hz, 4096x2160p59.94Hz, 4096x2160p60Hz, 5120x2160p50Hz, 5120x2160p60Hz
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Color Depth	8/10/12-bit, 8-bit (5K60Hz, 4:2:2)
Color Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
Audio Format	HDMI™ IN/OUT, USB-C IN/OUT: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD Analog Audio De-embedding: LPCM 2CH (sample rate 32~192kHz)

Transmission Distance	Up to 40m/130ft for 4K and 35m/115ft for 5K via CAT6a (minimum required U/FTP 23AWG) cable; 1.5m/4.9ft via USB 3.2 Gen 1 5Gbps passive cable; 3m/9.8ft via HDMI™/USB-C passive cable
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Audio Parameters	
Output Level (Max)	8.2dBu(2Vrms)
Frequency Response	20Hz to 20kHz (±0.5dB)
Dynamic Range	>90dB@0dBu, 1kHz, A-weighted
Audio S/N Ratio	>90dB@0dBu, 1kHz, A-weighted
Audio THD+N	TBD
Connections	
Transmitter	Input: 1× HDMI™ IN [HDMI™ type A, 19-pin female] 1× USB-C IN [USB-C, 24-pin female] 1× USB-B [Upstream, 9-pin female] Output: 1× LOOP OUT [HDMI™ type A, 19-pin female] 1× AUDIO OUT [5-pin 3.5mm phoenix connector] 1× ULTRALINK OUT [RJ45 connector, 24V PoC] 2× USB-A [Downstream, 9-pin female] 1× USB-C [Downstream, 24-pin female] Control: 1× RS-232 [5-pin 3.5mm phoenix connector] 1× SERVICE [USB-C, firmware update port]
Receiver	Input: 1× ULTRALINK IN [RJ45 connector, 24V PoC] Output: 2× USB-A DEVICE [USB-A, 9-pin female] 1× USB-C DEVICE [USB-C, 24-pin female] 1× HDMI™ OUT [HDMI™ Type A, 19-pin female] 1× USB-C OUT [USB-C, 24-pin female] 1× AUDIO OUT [5-pin 3.5mm phoenix connector] Control: 1× RS-232 [5-pin 3.5mm phoenix connector] 1× SERVICE [USB-C, firmware update port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter/Receiver: 200mm [W] × 120mm [D] × 25mm [H]
Weight	Transmitter: TBD; Receiver: TBD
Power Supply	Input: AC 100~240V 50/60Hz; Output: DC 24V/7.5A (US/EU standards, CE/FCC/UL certified)
Power Consumption	TBD

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

4. OPERATION CONTROLS AND FUNCTIONS

4.1 TRANSMITTER PANEL

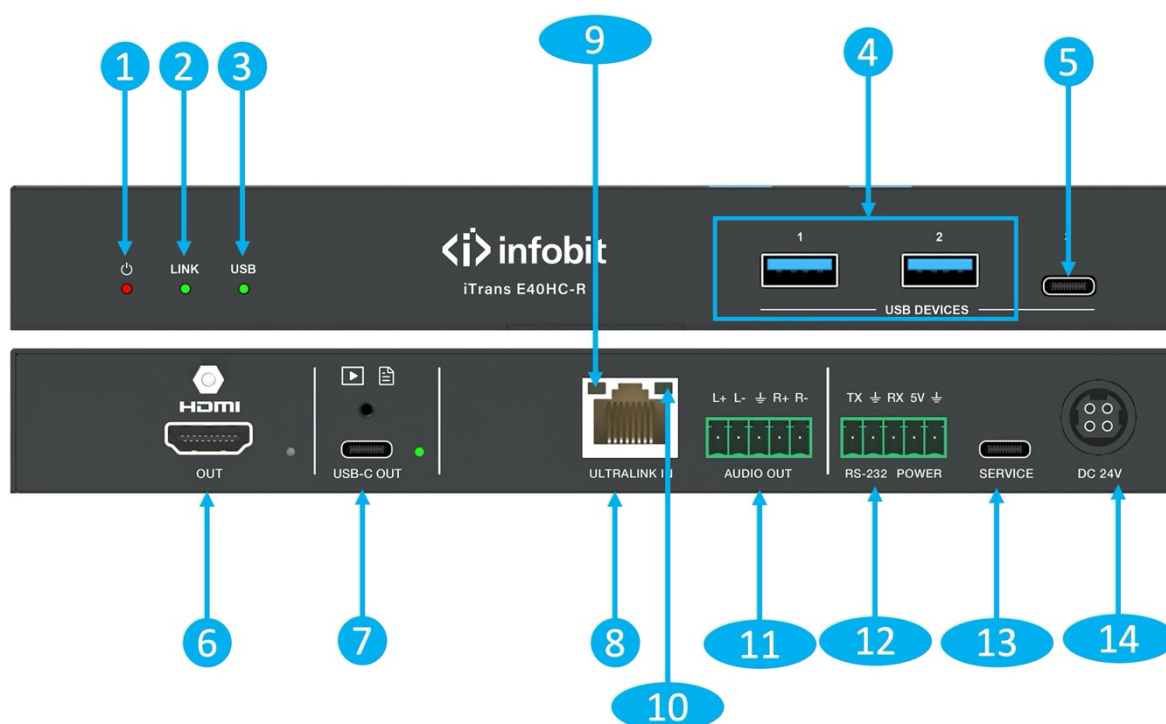


No.	Name	Description
1	Power LED	The red LED will light up, when the transmitter is powered on.
2	LINK LED	Light On: TX and RX are connected with signal transmission. Light Off: TX and RX are not connected.
3	USB LED	USB signal indicator. Light On: USB 3.0 signal is detected. Light Blinking: USB 2.0 signal is detected. Light Off: There is no USB signal.

4	SELECT button & HDMI 1 LED/ USB-C 2 LED/ AUTO LED	Press the SELECT button to select the input source HDMI 1 or USB-C 2, and then the corresponding LED will light up. Press and hold the button for 3 seconds to enable or disable the auto switching function. The AUTO LED will light up when the auto switching is enabled.
5	USB DEVICES 1/2	Downstream USB-A ports, with output power up to 5V/1.5A. Connect to USB devices such as U disk or hard disk.
6	USB DEVICES 3	Downstream USB-C port, with output power up to 5V/1.5A. Connects to USB device such as U disk or hard disk.
7	USB HOST	Upstream USB-B port, connected to the host port on a computer.
8	HDMI IN & LED	HDMI signal input port, connected to a source device such as a computer with HDMI cable. The green LED will light up when an active source is connected.
9	USB-C IN & LED	Full-featured USB-C port, connected to a laptop. Supporting DP-Alt mode, USB 3.2 Gen 1 data and PD 100W charging. The LED lights up red, when the USB-C IN port is used for charging. The LED lights up green, when the USB-C IN port is connected an active source device but not for charging.
10	HDMI OUT	HDMI signal loop output port, connected to a display device such as a monitor with HDMI cable.
11	ULTRALINK OUT	Connects to the ULTRALINK IN port on RX with CAT6a cable, used for AV and USB signal transmission and 24V PoC power supply.
12	LINK LED	Light On: TX and RX are connected and linked. Light Off: TX and RX are not connected.
13	VIDEO LED	Light On: There is video signal transmission with HDCP. Light Blinking: There is video signal transmission without HDCP. Light Off: There is no video signal transmission.
14	AUDIO OUT	Analog audio output port, supporting balanced audio (up to 2Vrms) and unbalanced audio (up to 1Vrms). Balanced connection method: L+, L-, GND, R+, R- Unbalanced connection method: L+, GND, R+
15	RS-232	5-pin phoenix connector, connected to a computer for RS-232 signal pass-through, supporting 5V/0.5A power output.
16	SERVICE	USB 2.0 port, used for firmware upgrade and API control.

17	DC 24V	DC 24V/7.5A power input port.
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4.2 RECEIVER PANEL



No.	Name	Description
1	Power LED	The red LED will light up, when the receiver is powered on.
2	LINK LED	Light On: TX and RX are connected with signal transmission. Light Off: TX and RX are not connected.
3	USB LED	USB signal indicator. Light On: USB 3.0 signal is detected. Light Blinking: USB 2.0 signal is detected. Light Off: There is no USB signal.
4	USB DEVICES 1/2	Downstream USB-A ports, with output power up to 5V/1.5A. Connect to USB devices such as U disk or hard disk.
5	USB DEVICES 3	Downstream USB-C port, with output power up to 5V/1.5A. Connects to USB device such as U disk or hard disk.

6	HDMI OUT & LED	HDMI signal output port, connected to a display device such as a monitor with HDMI cable. The green LED will light up, when a display device is connected.
7	USB-C OUT & LED	USB-C output port, connected to a display device such as a monitor with USB cable. The green LED will light up, when a display device is connected.
8	ULTRALINK IN	Connects to the ULTRALINK OUT port on TX with CAT6a cable, used for AV, USB signal transmission and 24V PoC power supply.
9	LINK LED	Light On: TX and RX are connected and linked. Light Off: TX and RX are not connected.
10	VIDEO LED	Light On: There is video signal transmission with HDCP. Light Blinking: There is video signal transmission without HDCP. Light Off: There is no video signal transmission.
11	AUDIO OUT	Analog audio output port, supporting balanced audio (up to 2Vrms) and unbalanced audio (up to 1Vrms). Balanced connection method: L+, L-, GND, R+, R- Unbalanced connection method: L+, GND, R+
12	RS-232	5-pin phoenix connector, connected to a computer for RS-232 signal pass-through, supporting 5V/0.5A power output.
13	SERVICE	USB 2.0 port, used for firmware upgrade and API control.
14	DC 24V	DC 24V/7.5A power input port.

6. DIAGRAM

