



RAV-EX-U40-Tx
User Manual

RAV-EX-U40-Tx

5K USB-C and USB 3.2 Transmitter 40m. 100W.

Osiris family of extenders



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, lighting strikes, etc. Use of surge protection systems is highly recommended to protect and extend the life of your equipment.

Introduction

RAV-EX-U40-Tx is a high performance HDBaseT transmitter capable of extending full USB-C signal (up to 5K video and USB 3.2 data) up to 40m/ 130ft via a single CAT6a cable. The transmitter box (TX) features one full USB-C input, with DisplayPort Alt mode standards (v1.4a) A/V, USB 3.2 Gen 1 data, and PD 100W charging to a laptop. It supports audio de-embedding, RS-232 signal pass-through and bi-directional 24V PoC function.

The extender offers the most convenient solution for full USB-C extension via a single CAT cable, and it is a perfect solution for commercial A/V applications

Key Features

- 5K full USB-C and USB 3.2 extender with USB-C input.
- Extended distance is up to 40m/130ft for 4K signal, 35m/115ft for 5K signal via a single CAT6a cable.
- Compliant with VESA DisplayPort 1.4a.
- Compliant with USB-C Power Delivery 3.0.
- HDCP 2.3 compliant, to create a secure connection between the source and display.
- Supports USB 3.2 Gen 1 with data transfer rate up to 2.5 Gbps. It does not support 5 Gbps operation.
- Features one full USB-C input, supporting DP Alt mode standards (v1.4a) A/V and USB 3.2 Gen 1 data.
- Up to 100W charging
- Supports audio de-embedding.
- RS-232 pass-through.
- 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.

(**Note:** USB-C charging is supported only when TX gets power supply.)

Package Contents

- 1× 5K USB-C and USB 3.2 Extender (Transmitter)
- 1× 24V/7.5A Power Adapter
- 1× 3-pin 3.5mm Phoenix Connector
- 2× Mounting Ear
- 4× Machine Screw
- 1× User Manual

Specifications

Technical	
USB Protocol	USB 3.2 Gen 1 and USB 2.0
Transfer Rate	Up to 2.5 Gbps
HDCP Compliance	HDCP 2.3 and HDCP 1.x
DP Compliance	DisplayPort 1.4a
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, 5120x1440p50Hz, 5120x1440p60Hz, 5120x2160p50Hz, 5120x2160p60Hz

HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Colour Depth	8/10/12-bit, 8-bit (5K60Hz, 4:2:2)
Colour Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
Audio Format	USB-C IN: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio 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 passive cable; 2m/6.6ft via USB 2.0 passive cable
Audio Output Level (Max)	2.2dBu(1Vrms)
Audio Frequency Response	20Hz to 20kHz (± 0.5 dB)
Audio Dynamic Range	>90dB@0dBu, 1kHz, A-weighted
Audio S/N Ratio	>90dB@0dBu, 1kHz, A-weighted
Audio THD+N	< 0.006%@+2.2dBu, 1kHz
ESD Protection	IEC 61000-4-2: ± 8 kV (Air-gap discharge), ± 4 kV (Contact discharge)

Connections

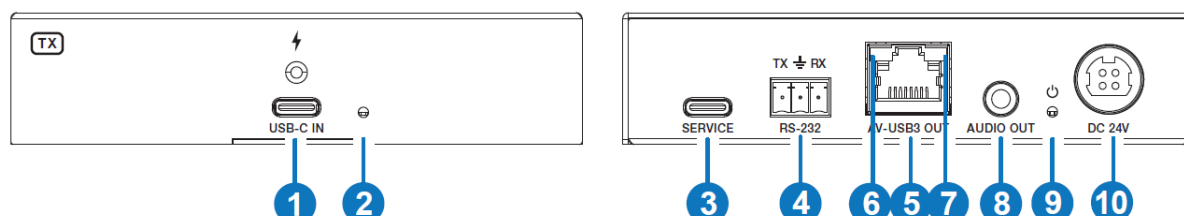
Transmitter	Input: 1× USB-C IN [USB-C, 24-pin female] Output: 1× AUDIO OUT [3.5mm audio jack], 1× AV-USB3 OUT [RJ45 connector, 24V PoC] Control: 1× RS-232 [3-pin 3.5mm phoenix connector] 1× SERVICE [USB-C, firmware update port]
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Mechanical

Housing	Metal Enclosure
Colour	Black
Dimensions	Transmitter: 118mm [W] × 111mm [D] × 25.5mm [H]
Weight	Transmitter: 359g
Power Supply	Input: AC 100~240V 50/60Hz; Output: DC 24V/7.5A (US/EU standards, CE/FCC/UL certified)
Power Consumption	33W (Max)
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

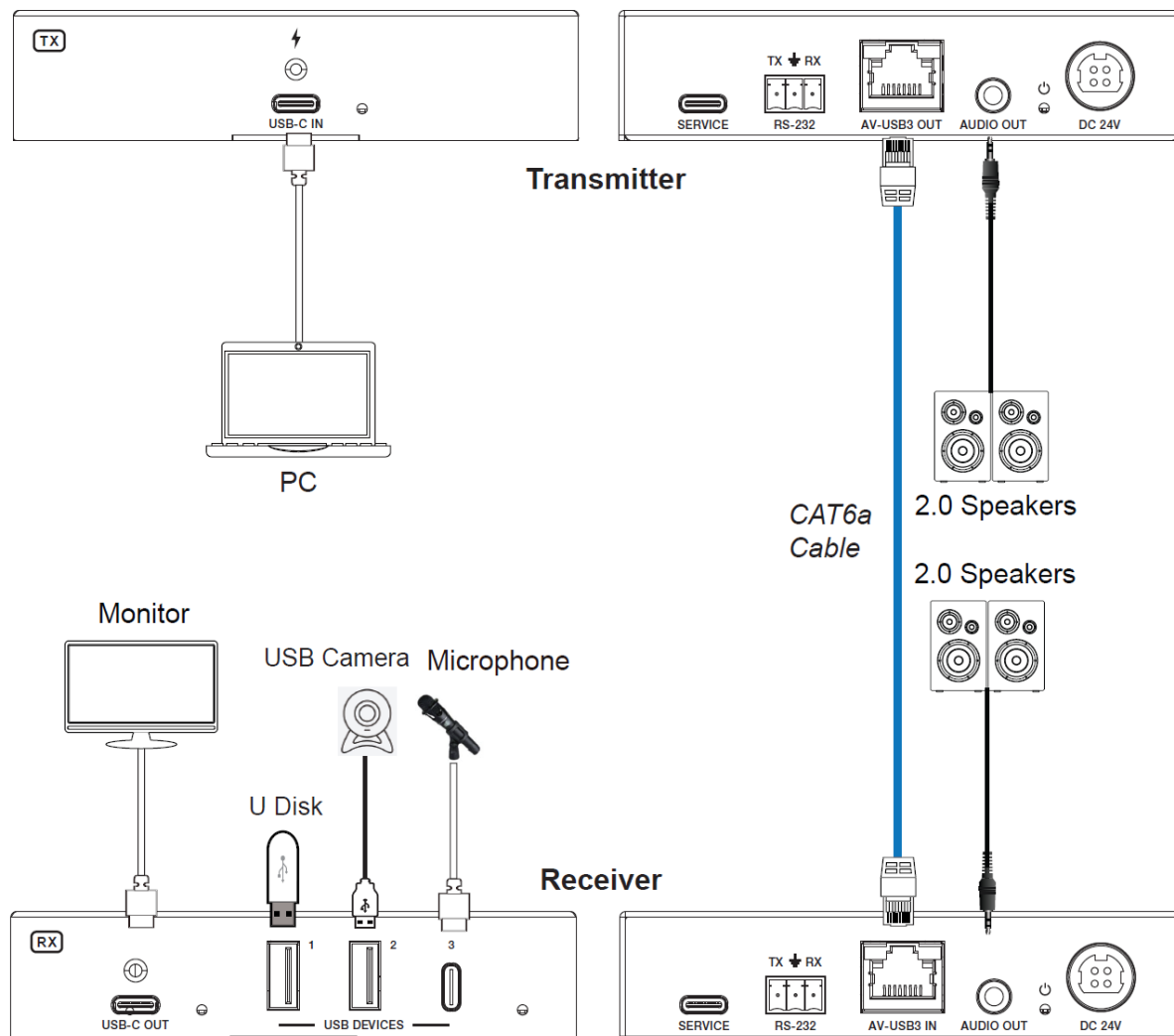
Operation Controls and Functions

Transmitter



No.	Name	Function Description
1	USB-C IN	Full-featured USB-C port, connected to a laptop. Supporting DP-Alt mode and USB 3.2 Gen 1 data and PD 100W charging.
2	USB-C IN LED	- 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.
3	SERVICE	USB 2.0 port, used for firmware upgrade and API control.
4	RS-232	3-pin phoenix connector, connected to a computer for RS-232 signal pass-through.
5	AV-USB3 OUT	Connects to the AV-USB3 IN port on RX with CAT6a cable, used for AV and USB signal transmission and 24V PoC power supply.
6	LINK LED	Light On: TX and RX are connected and linked. Light Off: TX and RX are not connected.
7	VIDEO LED	Light On: There is video signal transmission with HDCP encryption. Light Blinking: There is video signal transmission without HDCP encryption. Light Off: There is no video signal transmission.
8	AUDIO OUT	Audio de-embedding output port, connected to an audio device.
9	Power LED	The red LED will light up, when the transmitter is powered on.
10	DC 24V	DC 24V/7.5A power input port.

Application Diagram



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