



ReThink

There's a better way.

RAV-EX-U40-Rx
User Manual

RAV-EX-U40-Rx

5K USB-C and USB 3.2 Receiver 40m

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-Rx is a high performance HDBaseT receiver capable of receiving video resolution of 5K combined with USB 3.2 signals up to distances of 40m via single Cat6a.

The device features one full USB-C output with DisplayPort Alt mode standards (v1.4a) A/V and USB 3.2 Gen 1 data, and three USB 3.2 downstream ports. 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 and output
- 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
- 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 output, supporting DP Alt mode standards (v1.4a) A/V and USB 3.2 Gen 1 data.
- 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.

Package Contents

- 1× 5K USB-C and USB 3.2 Extender (Receiver)
- 1× 3-pin 3.5mm Phoenix Connector
- 2× Mounting Ear
- 4× Machine Screw
- 1× User Manual

Specifications

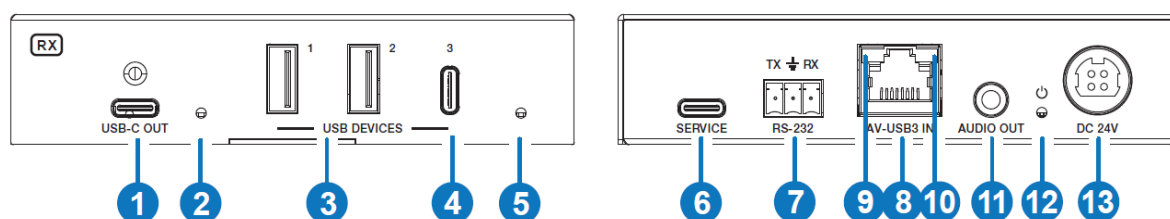
Technical	
USB Protocol	USB 3.2 Gen 1 and USB 2.0
Transfer Rate	Up to 2.5 Gbps
HDCP Compliance	HDCP 2.3 and HDCP 1.x
DP Compliance	DisplayPort 1.4a
Video Bandwidth	18Gbps
Video Resolution (Input & Output)	640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 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, 5120x1440p50Hz, 5120x1440p60Hz, 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	USB-C OUT: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio Analogue 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 (±0.5dB)
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: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Connections	
Receiver	Input: 1× AV-USB3 IN [RJ45 connector, 24V PoC] Output: 2× USB-A [Downstream, 9-pin female] 1× USB-C [Downstream, 24-pin female] 1× USB-C OUT [USB-C, 24-pin female] 1× AUDIO OUT [3.5mm audio jack] Control: 1× RS-232 [3pin-3.5mm phoenix connector] 1× SERVICE [USB-C, firmware update port]
Mechanical	
Housing	Metal Enclosure
Colour	Black
Dimensions	Receiver: 118mm [W] × 111mm [D] × 25.5mm [H]

Weight	Receiver: 365g
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

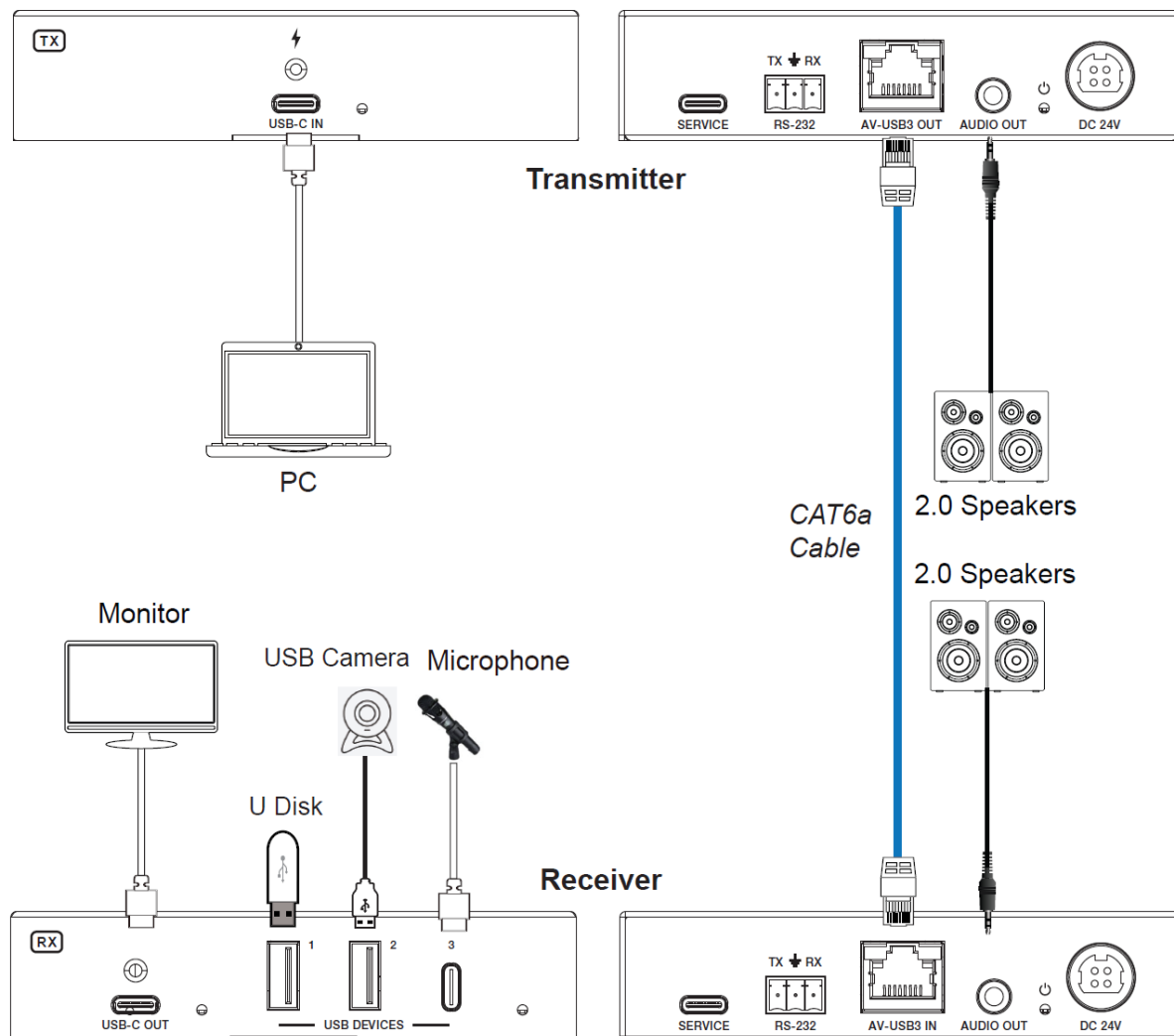
Receiver



No.	Name	Function Description
1	HDMI OUT	HDMI signal output port, connected to a display device such as a monitor with HDMI cable.
2	HDMI OUT LED	The green LED will light up, when the HDMI OUT port is connected to a display device.
3	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.
4	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.
5	USB LED	USB signal indicator. • Light On: USB 3.2 signal is detected. • Light Blinking: USB 2.0 signal is detected. • Light Off: There is no USB signal.

6	SERVICE	USB 2.0 port, used for firmware upgrade and API control.
7	RS-232	3-pin phoenix connector, connected to a control system for RS-232 signal pass-through.
8	AV-USB3 IN	Connects to the AV-USB3 OUT port on TX with CAT6a cable, used for AV and 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 encryption. • Light Blinking: There is video signal transmission without HDCP encryption. • Light Off: There is no video signal transmission.
11	AUDIO OUT	HDMI audio de-embedding output port, connected to an audio device.
12	Power LED	The red LED will light up, when the receiver is powered on.
13	DC 24V	DC 24V/2A power input port.

Application Diagram



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