BLACK BOX ACU1700A KVM Extender TX and RX User Manual

USER MANUAL
ACU1700A
KVM
EXTENDER
TX AND RX

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT **BLACKBOX.COM**
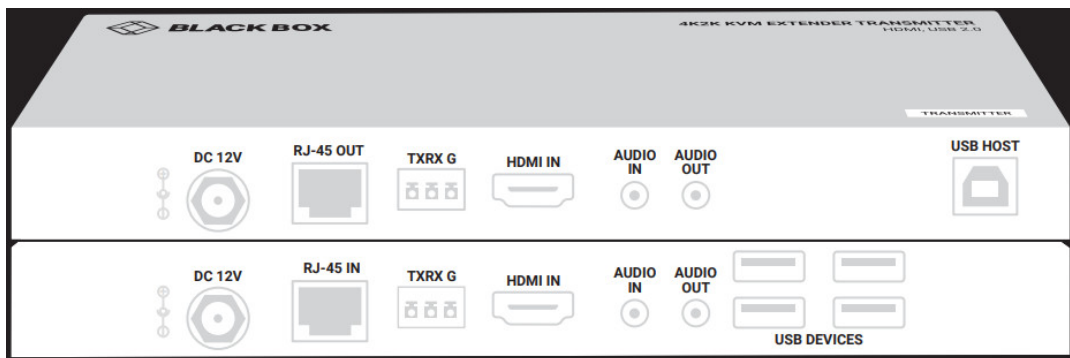
NEED HELP?
LEAVE THE TECH TO US
LIVE 24/7
TECHNICAL
SUPPORT
1.877.877.2269

1. 8 7 7. 8 7 7. 2 26 9 **BLACKBOX.COM**

Contents

SAFETY INFORMATION

SAFETY PRECAUTIONS

1. Do not expose this extender to rain, moisture, dripping, or splashing, and do not place any objects (such as vases) filled with liquids on the extender.
2. Do not install or place this extender in a bookcase, built-in cabinet, or in another confined space. Make sure the unit is well ventilated.
3. To prevent the risk of electric shock or fire hazard due to overheating, do not obstruct the extender's ventilation openings with newspapers, tablecloths, curtains or similar items.
4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
5. Do not place sources of open flames, such as lighted candles, on the unit.
6. Clean this extender only with a dry cloth.
7. Unplug this extender during lightning storms or when unused for long periods of time.
8. Protect the power cord from being walked on or pinched, particularly at plugs.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel.

CHAPTER 1: SPECIFICATIONS

1.1 TRANSMITTER

Video	
Input	(1) HDMI
Input Signal Type	HDMI 1.4 with 4K
Input Resolution Support	4096 x 2160 @ 24/25/30/50/60 Hz, 3840 x 2160 @ 24/25/30/50/60 Hz, 1080P, 10801, 720P, 576p, 576i, 480p
Input Video Level	0.5-1.0 V P-P
Input DDC Signal	5 V P-P
Maximum Pixel Clock	297 MHz
Output	(1) RJ-45 interconnect
Output Resolution Support	4096 x 2160 @ 24/25/30/50/60 Hz, 3840 x 2160 @ 24/25/30/50/60 Hz, 1080P, 10801, 720P, 576p, 576i, 480p
Video Impedance	100 ohms
Transmission Distance	Over CAT5e shielded cable: 3840 x 2160: max. 295 ft. (90 m); 1080P: max. 328 ft. (100 m);Over CAT6/6A/7 shielded cable: 3840 x 2160: max. 328 ft. (100 m); 1080P: max. 328 ft. (100 m)
Audio	
Audio Input	3.5-mm mini-jack, stereo
Audio Output	3.5-mm mini-jack, stereo
Control	
Control Method	(1) RS-232, (1) USB host

1.2 RECEIVER

1.3 GENERAL (BOTH TRANSMITTER AND RECEIVER)

Approvals	
Approvals	
Compliance	CE, FCC
Environmental	
Operating Temperature	32 to 113° F (0 to 45° C)
Storage Temperature	-4 to +158° F (20 to +70° C)
Humidity	10 to 90% noncondensing
ESD Protection	
Human-Body Model	±8kV(Air-gap discharge)/t4kV(Contact discharge)
Surge Protection	
Voltage	±1 kV (Ten times respectively for the positive and negative voltage)
Electrical Fast Transient/Burst	
Data communication cord	1 kV
Power cord	2 kV
Power	
Power Supply	12 VDC, 2 A
Power Consumption (max.)	< or = 12 W (pair)
Mechanical	
Dimensions	Each unit: 0.98″H x 8.27″W x 3.55″D (2.5 x 21 x 9 cm)
Weight	Each unit: 1 lb. (0.46 kg)

1.4 CABLE SPECIFICATIONS

Cable Type	Range	Supported Video
CAT5e	328 ft. (100 m)	Up to 1080p @ 60 Hz, 36 bit (data rates lower than 5.3 Gbps or below 225 MHz TMDS clock)
	295.2 ft. (90 m)	1080p @ 60 Hz, 48 bit
CAT6/CAT6A/CAT7	328 ft. (100 m)	1080p @ 60 Hz 3D, 4K2K/30 Hz/4:4:4 and 4K2K/60 Hz/4:2:0 video formats

OVERVIEW

2.1 INTRODUCTION

The ACU1700A is a 4K Extender that distributes uncompressed 4K @ 60 Hz UHD video, analog stereo, power, RS-232, and USB 2.0 up to 328 ft. (100 m) over a single CAT6 or above cable.

The transmitter passes through USB 2.0 and connects to a USB host. The receiver connects to a USB device. The extender pair enables remote users to control PC sources with a keyboard and mouse where interactive display operation, data transmission, or USB streaming device over distance is required. The extender also supports audio (bI-directional 3.5-mm stereo passthrough).

With 48-V PoH integrated inside, the extender just needs one power supply connected to the transmitter to power both units. The 12-V power supply is secured with a screw-on connector to prevent the power from being accidentally disconnected. The extender has LEDs to indicate when power is on to the units and to show signal status when a connection is established to devices.

2.2 FEATURES

- Supports high-speed USB 2.0, up to 480 Mbps, and passthrough over the RJ-45 interconnect up to 328 feet (100 m).
- Offers bi-directional Analog Stereo, and RS-232 pass-through over the RJ-45 interconnect.
- Via CAT6/6A/7 cable, supports 4K x 2K @ 60 Hz or 1080p @ 60 Hz output up to 328 ft. (100 m)
- Via CAT5e cable, supports 4K x 2K @ 60 Hz or 1080p @ 60 Hz output up to 288 ft. (90 m) or 1080p @ 60 Hz output up to 32(100 m)
- Complies with HDMI 1.4 with 4K @ 60 Hz (chroma sub-sampling 4:2:0 8-bit only).
- Uses one-way POH, TX(PSE) with PSU to power both TX and RX (PD).
- The transmitter features a USB 2.0 passthrough and has a USB Host port.
- The receiver has four USB device ports

2.3 WHAT'S INCLUDED

Your package should contain the following items. If anything is missing or damaged, contact Black Box Technical Support at 877-877-2269 or **info@blackbox.com**

- (1) Transmitter
- (1) Receiver
- (1) 12VDC, 2A power supply
- (4) Power Cords (US, UK, EU, AU)
- (2) 3-Pin Phoenix Connectors
- (2) Mounting Brackets + 4 Screws

2.4 HARDWARE DESCRIPTION

2.4.1 TRANSMITTER

Figures 2-1 and 2-2 show the front, top and back panels of the transmitter. Table 2-1 describes its components.
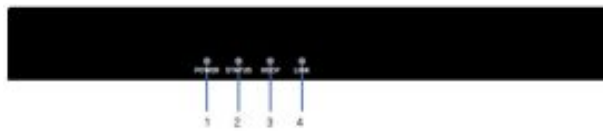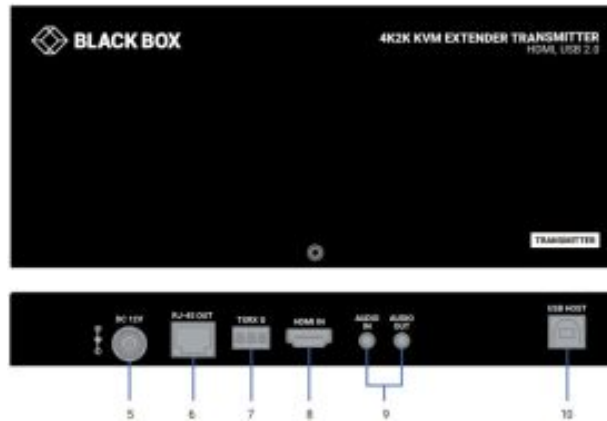
FIGURE 2-1. TRANSMITTER FRONT PANEL

FIGURE 2-2. TRANSMITTER TOP AND BACK PANEL

TABLE 2-1. TRANSMITTER COMPONENTS

NUMBER IN FIGURE 2-1 OR 2-2	COMPONENT	DESCRIPTION
1	Power LED	ON: The transmitter is powered on. OFF: The transmitter is powered off.
2	Status LED	Flashing Slowly: The transmitter is working properly. OFF: The transmitter is not working properly
3	HDCP LED	Flashing Quickly: Non-HDCP video is being transmitted OFF: No video is being transmitted
4	Link LED	ON: RJ-45 interconnect link is normal OFF: No RJ-45 interconnect Link
5	12-VDC connector	12-VDC power input, threaded port for standard or locking connection
6	RJ-45 OUT connector	Connects to RJ-45 IN port of the receiver
7	RS-232 connector	RS-232 passthrough
8	HDMI IN connector	Connects to an HDMI source
9	Audio connector	Input: Connects to audio devices Output: Connects to audio devices
10	USB Host connector	Connects to a USB host device, such as a PC

FIGURE 2-4. RECEIVER TOP AND BACK PANEL

2.4.2 RECEIVER

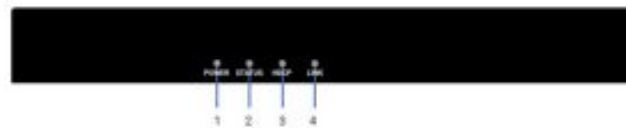Figures 2-3 and 2-4 show the front, top and back panels of the receiver. Table 2-2 describes its components.

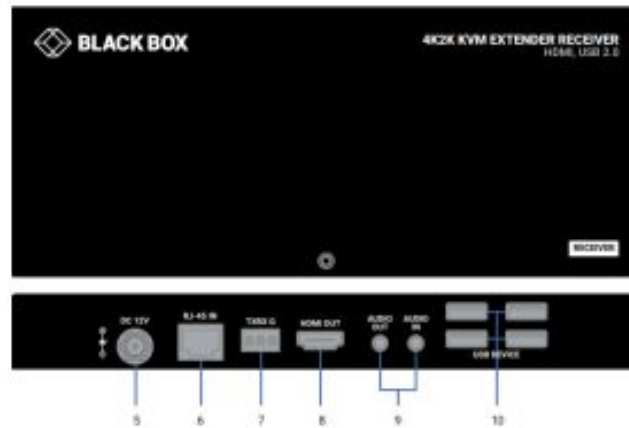
FIGURE 2-3. RECEIVER FRONT PANEL


TABLE 2-2. RECEIVER COMPONENTS

NUMBER IN FIGURE 2-3 OR 2-4	COMPONENT	DESCRIPTION
1	Power LED	ON: The receiver is powered on. OFF: The receiver is powered off.
2	Status LED	Flashing Slowly: The receiver is working properly. OFF: The receiver is not working properly
3	HDCP LED	Flashing Quickly: Non-HDCP video is being received OFF: No video is being received
4	Link LED	ON: RJ-45 link is normal OFF: No RJ-45 Link
5	12-VDC connector	12-VDC power input, threaded port for standard or locking connection
6	RJ-45 IN connector	Connects to RJ-45 OUT port of transmitter
7	RS-232 connector	RS-232 passthrough
8	HDMI OUT connector	Connects to an HDMI monitor
9	Audio connector	Input: Connects to audio devices Output: Connects to audio devices
10	(4) USB Type-A connectors	Connects to USB devices

INITIAL INSTALLATION

- Using quality HDMI cables, connect an HDMI source (such as Blu-ray, games console, satellite/cable TV,

media server, etc.) to the HDMI IN connector of the Transmitter.

- Connect a good-quality, well-terminated CAT5e or better cable between the RJ-45 OUT connector of the Transmitter to the RJ-45 IN Input port of the Receiver. Using quality HDMI cables, connect the HDMI display device (LED/LCD display or projector) to the HDMI OUT port of the Receiver.

- Connect the included 12-V power supply to the Transmitter. The PoH function carries power along the length of the cable one way to power the Receiver. No additional power supply is required for the receiver.

- Power on all devices. Check the status of indicators on the front panel. The Power and Link LEDs will light ON solid while the Status LED should be blinking.

- Most USB devices are supported, however, some are not. Gaming controllers and keyboards are not compatible with this extender.
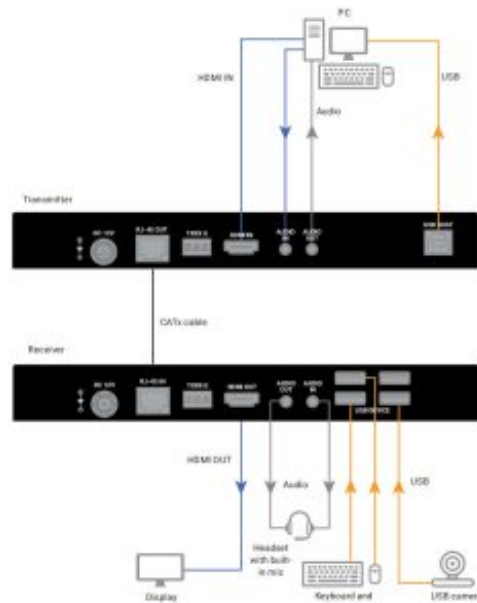
TECHNICAL SUPPORT

4.1 CONTACTING BLACK BOX

If you determine that your extender is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 877-877-2269 or info**@blackbox.com**.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

4.2 SHIPPING AND PACKAGING
If you need to transport or ship your extender:

- Package it carefully. We recommend that you use the original container.
- If you are returning the unit, make sure you include everything you received with it. Before you ship for return

or repair, contact Black Box to get a Return Authorization (RA) number.

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential
area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Shielded cables must be used with this equipment to maintain compliance with radiofrequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances.

All power supplies are certified to the relevant major international safety standards.

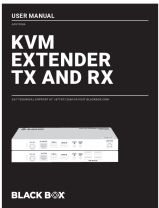### DISCLAIMER/TRADEMARKS

B.1 DISCLAIMER
Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential, or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document, and Black Box Corporation may revise this document at any time without notice.

B.2 TRADEMARKS USED IN THIS MANUAL
Black Box and the Black Box logotype and mark are registered trademarks of Black Box Corporation.
Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

**NOTES
NEED HELP?
LEAVE THE TECH TO US
LIVE 24/7
TECHNICAL
SUPPORT
1.877.877.2269**

Documents / Resources

BLACK BOX ACU1700A KVM Extender TX and RX [pdf] User Manual
ACU1700A, KVM Extender TX and RX