



VX-1003-RX

VX1000 Series Extender Scaling Receiver

Scales the video from an CATx transmitter or presentation switcher to a pre-defined resolution.



Contact Information

Order toll-free in the U.S. or for FREE 24/7 technical support:
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FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication.

It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Normas Oficiales Mexicanas (NOM) Electrical Safety Statement INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

NOM Statement

17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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Important Safety Instructions

1. Do not expose this apparatus to rain, moisture, dripping or splashing water and do not place objects filled with liquids, such as vases, on the apparatus.
2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Make sure the unit is well ventilated.
3. To prevent risk of electric shock or fire hazard caused by overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and 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 flames, such as lighted candles, on the unit.
6. Clean this apparatus only with a dry cloth.
7. Unplug this apparatus 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.

Disclaimer

Black Box Network Services 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 Network Services may revise this document at any time without notice.

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1. Specifications

Scaling Receiver (VX-1003-RX) Specifications

Video	
Connectors	<p>Input:</p> <ul style="list-style-type: none"> (1) RJ-45 CATx, (1) 3.5-mm IR, (2) RJ-45 (Ethernet) for passthrough or control, (1) 3-position Phoenix connector (RS-232 (TX, RX, GND)), (1) USB Type A female (front); <p>Output:</p> <ul style="list-style-type: none"> (1) HDMI Out, (1) 3.5-mm IR, (1) RCA S/PDIF, (1) 3-position Phoenix audio (left, right, ground)
Input/Output Resolution Support	<p>Input: Up to 3840 x 2160 @30 Hz (UHD);</p> <p>Output: UHD30: 3840 x 2160 @30 Hz;</p> <p>FHD: 1920 x 1080 @60 Hz;</p> <p>HD: 1280 x 720 @60 Hz;</p> <p>WUXGA: 1920 x 1200 @60 Hz;</p> <p>WXGA: 1280 x 800 @60 Hz</p>
Maximum Distance	<p>Via CAT6a/7 cables:</p> <p>Up to 328 feet (100 m) at 3840 x 2160 @30 Hz, 4:2:0, or 1080p @60 Hz output resolution;</p> <p>Via CAT5e/6 cables:</p> <p>Up to 224 feet (70 m) at 3840 x 2160 @30 Hz;</p> <p>Up to 328 feet (100 m) at 1080p @30 Hz resolution</p>
Indicators	
LEDs	<p>(5) front-panel LEDs:</p> <ul style="list-style-type: none"> (1) Power, (1) Scaler, (1) Status, (1) HDCP, (1) Link LED for CATx; <p>(4) back-panel LEDs on RJ-45 connectors:</p> <ul style="list-style-type: none"> (2) Link, (2) Status

Chapter 1: Specifications

1. Specifications (continued)

Environment	
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
Power	
Power Input	100–240 VAC, 50/60 Hz, 1.5 A
Input Connector Type	IEC320, C14
Power Output	12 VDC, 3.0 A
Power Supply Cord Length	6 ft. (1.8 m)
Mechanical	
Dimensions	0.98"H x 9.21"W x 5.67"D (23.4 x 14.4 x 2.5 cm)

2. Overview

2.1 Introduction

The VX-1003-RX (VX1000 Series Extender Scaling Receiver - 4K, HDMI, CATx, Audio) is a 4K CATx receiver with a 4K@30 Hz Scaler. It distributes uncompressed UHD video, Ethernet, RS-232, and bidirectional IR together up to 330 feet (100 m) over a single CAT6a/7 cable.

With a 4K @ 30 Hz scaler built in, the receiver combines the benefits of an extended-distance CATx receiver with the capabilities of automatic display control by CEC or RS-232, volume adjustment, Ethernet switching, and optional third-party control.

When used with a presentation switcher (AVSC-0401H), the scaling receiver offers a multi-room AV switching system with video scaling that enables old 1080p and new 4K displays to show 4K sources simultaneously.

Use the scaling receiver in applications where high-quality video scaling to 4K 1080p down-scaling is required because of mix of displays in different aspect ratios or preferred timing.

2.2 Features

- Via CAT6a/7 cables, the extenders support 4K @30 Hz up to 330 feet (100 meters).
- Offers a single CATx cable solution that transmits 4K Audio/Video, RS-232, Ethernet, and PoH power.
- Complies with HDMI 1.4 with 4K @ 30 Hz and HDCP 2.2.
- Supports USB-KVM control.
- Supports Power over CATx (PoC). The scaling receiver can send power to an CATx Transmitter.
- Provides RS-232 passthrough.
- Manages EDID automatically.
- Cable termination follows IEEE-568B standards.

Chapter 1: Specifications

2.3 What's Included

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

VX-1003-RX:

- VX1000 Series Extender Transmitter - 4K, HDMI, CATx, Audio (VX-1001-TX)
- (1) VX-1003-RX Presentation Switcher Scaling Receiver
- (1) (1) 12-VDC, 1.5-A power supply with US, EU, UK, and AU power clips
- (2) IR sensors
- (2) mounting brackets
- This user manual

2.4 Hardware Description

Figures 2-1 and 2-2 show the front and back panels of the receiver. Table 2-1 describes its components.



Figure 2-1. Scaling Receiver front panel.

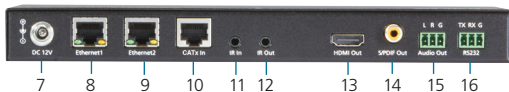


Figure 2-2. Scaling Receiver back panel.

Table 2-2. Receiver components.

Number	Component	Description
1	Power LED	ON: The receiver is powered on. OFF: The receiver is powered off.
2	Scaler LED	ON: The receiver is scaling. OFF: The receiver is not scaling.
3	Status LED	Blinking: The receiver is working properly. OFF: The receiver is not working properly.
4	HDCP LED	ON: HDCP video is being transmitted. Flashing quickly: Non-HDCP video is being transmitted.
5	Link LED	ON: CATx link is normal. OFF: No CATx link.
6	USB Type A connector	Used for firmware upgrades
7	(1) Barrel connector	Links to 12-VDC power input (optional).
8, 9	(1) RJ-45 port and (2) LEDs	RJ-45 port connects to an Ethernet device. Speed LED (Amber) Link/Activity LED (Green)
10	CATx IN	Connects to CATx OUT port of CATx transmitter.
11, 12	IR IN, IR OUT	Infrared signal IN/OUT
13	HDMI OUT port	Connects to an HDMI display device.
14	S/PDIF OUT	Connects to audio OUT.
15	(1) 3-pin terminal block	Connects to a audio OUT.
16	(1) 3-pin terminal block	RS-232 serial control and passthrough

Chapter 3: Initial Installation

3. Initial Installation

1. Using quality HDMI cables, connect a CATx transmitter (VX-1001-TX, VX-1002-TX) or presentation switcher (AVSC-0401H) to the CATx IN port of the scaling receiver.

NOTE: Make sure that the source and display are 4K compatible if you are attempting to transmit an Ultra HD signal—check that all devices are correctly configured for input/output compatibility.

2. Connect a good quality, well-terminated CAT5e or higher cable between the CATx OUT of the transmitter or switcher to the CATx IN of the VX-1003-RX Scaling Receiver.

NOTE: The maximum transmission distances for the extenders are 230 feet (70 meters) with CAT5e/CAT6 or 328 feet (100 meters) with CAT6a/CAT7. This value applies to perfect transmission conditions—including straight cable runs with no electrical interference, bends, kinks, patch panels, or wall outlets.

If any of the above is a factor in your installation, transmission range may be affected—avoid this where possible.

3. Connect the HDMI display device (LED/LCD display or projector) to the HDMI OUT of the VX-1003-RX Scaling Receiver.
4. Connect the audio system to the S/PDIF OUT or Audio OUT port of the VX-1003-RX.

NOTE: We strongly recommend using the supplied mounting brackets to secure the receiver to a flat surface behind/near the display device. Sudden movement of these devices could lead to loss of picture/sound if connections loosen or strain, resulting in unnecessary service call-backs.

4. Connect the included 12-VDC power supply to the VX-1001-TX Transmitter or AVSC-0401H Presentation Switcher and power it on. The PoH function carries power along the length of the cable one way to power the Receiver. No additional power supply is required at the display end of the cable run.

Power, Status, and HDCP, and Link LEDs illuminated on transmitter/switcher and scaling receiver units indicates a successful connection. An HDCP light illustrates the presence of encryption within the signal. The Power and Link LEDs are static lights. The Status LED should be blinking.

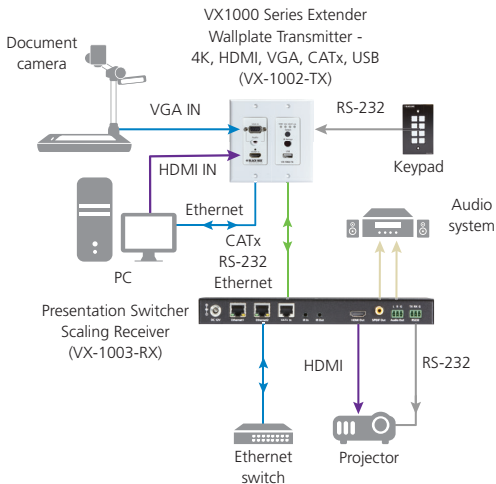


Figure 3-1. Installation diagram.

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