4. Operation

The extender units have LEDs that light when data is being exchanged between the Transmitter Unit and the Receiver Unit.

For a high-quality output signal, make sure you are using a high-quality video source, cable, and display device.

NOTE: The system will disable the video output signal if it detects non-HDCP-compliant display(s) when playing the HDCP video source. All the connected output displays MUST be HDCP compliant when the video source is HDCP compliant.

The LED indicators are described in Table 2-1.

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Table 2-1. Transmitter and receiver's components.

ID in Fig. 2-1–2-3	Component	Description
La	(3) LAN LEDs	LED 1, 2, or 3 lights yellow when the corresponding LAN is active.
Ls	Status LED, TX	Lights blue when the TX link is active. Lights green when power is on. Flashes blue and green when the transmitter is in power-saving mode.
	Status LED, RX	Lights blue when the RX link is active. Lights red when power is on. Flashes blue and red when the receiver is in power-saving mode.
T1, R1	RJ-45 connector	Connects to Ethernet devices.
T2, R2	HDMI connector	T2: Connects to an HDMI video source. R2: Connects to an HDMI display.
T3, R3	RJ-45 connector	Uses CAT5e/6 for connection between two units.
T4, R4	Serial port	T4 (DCE): Connects to a computer. R4 (DTE): Connects to a serial device.
IR1 (in)	IR remote jack	Connects to an IR receiver.
IR1 (out)		Connects to an IR transmitter.
IR2 (in)		Connects to an IR receiver.
IR2 (out)		Connects to an IR transmitter.
P	Power supply*	Applies power to the unit.

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3. Installation

• Before installation, power off all devices that will be connected to this system.

• Make sure that all devices you will connect are properly grounded.

• Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

Using EIA/TIA 568B-compliant CAT5e/6 cable, connect the video source to the Transmitter Unit and connect the monitor to the Receiver Unit (LAN ports). Also use industry-standard CAT5e/6 cable (EIA/TIA 568B compliant) between the Transmitter (Link Port) and Receiver Unit (Link Port). After all devices are connected, attach the provided power cord to an appropriate power source and plug the opposite end into the power connector* on the transmitter or receiver.

CAUTION: The CAT5e/6 cables that connect the Transmitter and Receiver Units carry electrical current and should not be plugged into other devices, because they may cause damage to them. We strongly recommend marking the CAT5e/6 cables you are using with this product at both locations for easy identification.

Figure 3-1. Typical installation.

*NOTE: For phantom power, only one power adapter is required to power the entire system. You can connect the power adapter to either the transmitter unit OR the receiver unit.

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VX-HDMI-TP-E100M

XR HDMI Extender with IR, RS-232, and Ethernet

Extend the distance up to 330 feet (100 m) over CAT5e or higher cable with a single PSU.

User Manual

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1. Specifications

Enclosure — Metal

*Maximum Extension Distance — 330 feet (100 m)

Maximum Video Resolution — Full HD 1080p/2048 x 1152

Connectors — Transmitter: (3) RJ-45 Ethernet ports, (1) DB9 F DCE; Receiver: (3) RJ-45 Ethernet ports, (1) DB9 M DTE

Indicators — Transmitter: (4) LEDs: (1) dual-color Status LED, (3) single-color LAN LEDs; Receiver: (4) LEDs: (1) dual-color Status LED, (3) single-color LAN LEDs

Power — (1) 12-VDC power supply (provides phantom power to transmitter or receiver)

Size — 5.5"H x 3.4"W x 1.4"D (14 x 8.5 x 3.4 cm)

Weight — 18.6 to 19.1 lb. (41 to 42 kg)

2. Overview

*Distance depends on the characteristics and quality of the cable and the type of HDMI source and display.

2.1 Features

• Sends an HDMI signal to multimedia displays over CAT5e/6 cable up to 330 feet (100 meters) from the source using only a single PSU. HDBaseT™ technology ensures reliable transmission and superb video quality.

• Transmits full uncompressed HD video and audio over cable.

• 100BASE-T Ethernet Pass-Thru enables the extender to simultaneously distribute HDMI and Ethernet streaming video from source to display.

• Uses low-cost standard CAT5e/6 LAN cable.

• Complies with HDCP and is Blu-ray ready.

• Supports Deep Color, HD-3D video and HD audio formats.

• Supports resolutions up to Full HD 1080p/2048 x 1152.

• Uses bidirectional LAN and serial communications.

• Supports IR extension.

• Line Powered—A single power supply connects to either the transmitter or receiver.

• Compact size; easy to set up; simple to install.

• Ideal for hotels, conference rooms, control rooms, digital signage (airports, shopping malls), surveillance cameras, and whole-home networking applications.
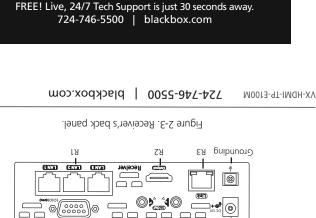
2.2 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

• (1) Transmitter Unit
• (1) Receiver Unit
• (1) 12-V, 1.5-A power adapter with cord
• This user's manual
• (1) IR external sensor kit
• (2) sets of foot pads

You might also need:
• (1) 5-ft. (1.5-m) CAT5e cable
• HDMI cable
• Serial cable

2.3 Cabling Requirements

HDMI transmission over CATx Ethernet cabling is susceptible to electromagnetic interference (EMI) or radio-frequency interference (RFI). This may occur if the extender units are too close to fluorescent lighting or power cabling. Follow these precautions:

1. Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

2. Shielded cable is recommended and will improve performance in applications with a high level of EMI or RFI.

3. For superior video quality, uncoiled cables work better than coiled.

4. Solid cable works better than stranded cable. Using stranded cable or cable with 24 AWG or lower diameter may affect the maximum transmission distance.

5. Patched cables can result in signal loss and can shorten transmission distance. For optimal transmission distance, we recommend using only one cable (without any intermediate patches) between transmitter and receiver units.

Other Notices

1. EMI or RFI may cause fuzzy or snowy screens on monitors and TVs. If this happens, restart the displays.

2. Because the system transmits large amounts of data, the temperature on the unit will increase. Do not open the transmitter or receiver unit. They contain no user-serviceable parts.

3. If you are not a registered installer, do not tamper with the transmitter and receiver units. They are housed in a protective sealed enclosure.

2.4 Hardware Description

Figure 2-1 shows the front panel of the transmitter or receiver. Figures 2-2 and 2-3 show the back panels. Table 2-1 describes their components.

Figure 2-1. Transmitter or Receiver's front panel.

Figure 2-2. Transmitter's back panel.

Figure 2-3. Receiver's back panel.