



VX-HDMI-TP-70M

## 4K HDMI IR Extender 70M

Send an HDMI signal to an HDMI display up to 230 feet (70 meters) away from the source.



### Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500) • FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746  
[www.blackbox.com](http://www.blackbox.com) • [info@blackbox.com](mailto:info@blackbox.com)

## Trademarks Used in this Manual

---

### Trademarks Used in this Manual

Black Box and the Double Diamond logo are registered trademarks of BB Technologies, Inc.

Blu-ray is a trademark of Blu-ray Disc Association.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

### 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.

## NOM Statement

---

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 connectado 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.
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.

# Table of Contents

---

## Table of Contents

<a href="#">1. Specifications</a>	7
<a href="#">2. Overview</a>	9
<a href="#">2.1 Introduction</a>	9
<a href="#">2.2 Features</a>	9
<a href="#">2.3 What's Included</a>	9
<a href="#">2.4 Hardware Description</a>	10
<a href="#">2.4.1 Transmitter</a>	10
<a href="#">2.4.2 Receiver</a>	12
<a href="#">3. Connection Pattern</a>	14

## 1. Specifications

### Technical Specifications

Approvals	RoHS2, CE
Technology	
Standards	HDMI
*Video Resolution (Maximum)	UHD (3840 x 2160 @ 30 Hz)
*Extension Distance	Full HD (1920 x 1080): 230 ft. (70 m); UHD (3840 x 2160): 115 ft. (35 m)
<p><i>*NOTE: Above video resolution and extension distance are based on a single CAT6 24-AWG solid cable. CAT5e cable is also supported but may affect distance. We recommend STP cabling for environments with high EMI or RFI. For the best performance results, do not use stranded cabling or other thinner cables, and do not coil excess cable lengths.</i></p>	
Mechanical	
Enclosure	Metal
Connectors	Transmitter: Input: (1) HDMI, Output: (1) RJ-45; Receiver: Input: (1) RJ-45, Output: (1) HDMI
Indicators	Transmitter: (2) LEDs: (1) Power on (green), (1) Link (blue); Receiver: (2) LEDs: (1) Power on (red), (1) Link (blue);
IR Extension	Each unit: (1) IR interface

### Technical Specifications (continued)

Mechanical (continued)	
Dimensions	Transmitter: 0.8"H x 3.2"W x 1.9"D (2 x 8 x 5 cm); Receiver: 0.9"H x 3.2"W x 2.6"D (2.3 x 8 x 6.7 cm)
Weight	Transmitter: 0.38 lb. (0.173 kg); Receiver: 0.56 lb. (0.257 kg)
Environment	
Operating Temperature	32°F to 104°F (0°C to 40°C)
Humidity	90%, noncondensing
Power	
Voltage	(1) 12-VDC power supply

*NOTE: Only one power supply is required for each transmitter/receiver pair. When the power supply is connected to the transmitter, the receiver derives phantom power from the transmitter. When the power supply is connected to the receiver, the transmitter derives phantom power from the receiver.*



## 2. Overview

### 2.1 Introduction

The 4K HDMI IR Extender 70M contains one transmitter unit and one receiver unit. Via CATx cable, the transmitter sends an HDMI signal from a connected source device to the receiver attached to the HDMI display device up to 70 m away from the source.

### 2.2 Features

- Send HDMI signal to multimedia display over CAT6 cable\* of up to 230 feet (70 meters).

*\*NOTE: CAT5e cable is also supported but may affect distance.*

- Provides bi-directional IR extension.
- EDID Migration ensures optimum video performance.
- HDTV, 3D HDTV compatible.
- HDCP compliant and Blu-ray™ ready.
- Support Phantom Power—requires a single power supply at either TX or RX unit (not both). Unit not connected directly to power supply derives phantom power from the other unit.
- Compact size. Easy to set up; simple to install.

### 2.3 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](mailto:info@blackbox.com).

- (1) 4K HDMI IR Extender 70M - Transmitter
- (1) 4K HDMI IR Extender 70M - Receiver
- (1) 12-VDC power adapter
- (1) IR Extension Kit
- (2) sets of foot pads

You may also need:

- HDMI cable

## Chapter 2: Overview

---

### 2.4 Hardware Description

#### 2.4.1 Transmitter

Figures 2-1 through 2-3 show the top, front, and back of the transmitter. Table 2-1 describes its components.



Figure 2-1. Transmitter top panel.



Figure 2-2. Transmitter side 1 panel.



Figure 2-3. Transmitter side 2 panel.

Table 2-1. Transmitter components.

Number in Figures 2-1 through 2-3	Component	Description
1	IR output connector	Connect to IR transmitter.
2	HDMI connector	Connect to an HDMI source.
3	IR input connector	Connect to IR receiver.
4	LED indicator	Green (Power ON), Blue (Link OK)
5	Power supply connector	Apply power to either the transmitter or the receiver (not both). The unit without the power supply derives phantom power from the unit that is connected to the power supply.
6	RJ-45 jack	Use a CATx cable to connect the transmitter and receiver together.
7	Ground	Direct physical connection to the earth.

**NOTE:**

- 1. The system will disable the video output signal when it detects non-HDCP compliant display(s) on playing the HDCP video source. All the connected output displays MUST be HDCP compliant when the video source is HDCP compliant.*
- 2. The quality of the output signal will depend largely upon the quality of video source, cable, and display device used. Low-quality cables degrade the output signal causing elevated noise levels. Use the proper cable and make sure the display device can handle the resolution and refresh rate selected.*

## Chapter 2: Overview

---

### 2.4.2 Receiver

Figures 2-4 through 2-6 show the top, front, and back of the receiver. Table 2-2 describes its components.



Figure 2-4. Receiver top panel.



Figure 2-5. Receiver side 1 panel.



Figure 2-6. Receiver side 2 panel.

Table 2-2. Receiver components.

Number in Figures 2-4 through 2-6	Component	Description
1	IR input connector	Connect to IR receiver.
2	HDMI connector	Connect to an HDMI display.
3	IR output connector	Connect to IR transmitter.
4	LED indicator	Green (Power ON), Blue (Link OK)
5	Power supply connector	Apply power to either the transmitter or the receiver (not both). The unit without the power supply derives phantom power from the unit that is connected to the power supply.
6	RJ-45 jack	Use a CATx cable to connect the transmitter and receiver together.
7	Ground	Direct physical connection to the earth.

**NOTE:**

- The system will disable the video output signal when it detects non-HDCP compliant display(s) on playing the HDCP video source. All the connected output displays MUST be HDCP compliant when the video source is HDCP compliant.*
- The quality of the output signal will depend largely upon the quality of video source, cable, and display device used. Low-quality cables degrade the output signal causing elevated noise levels. Use the proper cable and make sure the display device can handle the resolution and refresh rate selected.*

## Chapter 3: Connection Pattern

---

### 3. Connection Pattern

A typical installation of the 4K HDMI IR Extender 70M is shown in the diagram below.

*NOTE: Using low-quality cables elevate noise levels and degrade output signals. Be sure to use the proper type of cables and display devices that can handle the resolution and refresh rate you select.*

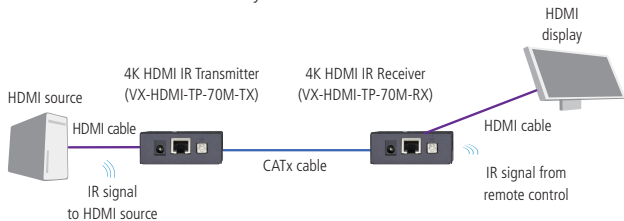


Figure 3-1. Typical installation.



**Black Box Tech Support: FREE! Live. 24/7.**

Tech support the  
way it should be.



Great tech support is just 60 seconds away  
at 724-746-5500 or [blackbox.com](http://blackbox.com).



## About Black Box

Black Box provides an extensive range of networking and infrastructure products. You'll find everything from cabinets and racks and power and surge protection products to media converters and Ethernet switches all supported by free, live 24/7 Tech support available in 60 seconds or less.

© Copyright 2015. Black Box Corporation. All rights reserved. Black Box® and the Double Diamond logo are registered trademarks of BB Technologies, Inc. Any third-party trademarks appearing in this manual are acknowledged to be the property of their respective owners.

VX-HDMI-TP-70M, version 1

---

724-746-5500 | [blackbox.com](http://blackbox.com)