



**NETWORK
TECHNOLOGIES
INCORPORATED**

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XTENDEX® Series

ST-FO4K18GB-RSLA-LCV2

**4K 18Gbps HDMI Extender with Stereo Audio
And Local HDMI Loop-Through via One LC
Singlemode or Multimode Fiber Optic Cable**

Installation and Operation Manual



Front View (Remote Unit) and Rear View (Local Unit)

TRADEMARK

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CHANGES

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

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INTRODUCTION

The XTENDEX® 4K 18Gbps HDMI Extender via Fiber Optic Cable locates an Ultra-HD 4Kx2K 60Hz 4:4:4 HDMI display, IR, stereo audio, and RS232 up to 6.21 miles (10 km) away from a 4K HDMI source using a single LC singlemode fiber optic strand and 984 feet (300 meters) using OM3 multimode fiber optic cable. Each extender consists of a transmitter that connects to an HDMI source and a local display via the HDMI loop output, and a receiver that connects to an HDMI display.

Features

- Signal transmission via single-strand singlemode or multimode LC fiber optic cable.
 - Using singlemode 9-micron cable, extend to 6.21 miles (10kilometers).
 - Using multimode 50-micron OM3 (or better) cable, extend to 984 feet (300 meters).
- Supports Ultra-HD 4Kx2K resolutions to 3840x2160 and 4096x2160 @30/50/60Hz YUV 4:4:4, HDTV resolutions to 1080p @120Hz, and up to 1920x1200 (WUXGA).
- HDMI features supported:
 - HDMI 2.0
 - 8-bit, 10-bit, and 12-bit Deep Color
 - Dolby TrueHD, DTS-HD Master Audio, Dolby Digital, Dolby Digital+, Dolby Atmos, LPCM 2/5.1/7.1CH, DTS 5.1, and DTS:X
 - YUV 4:4:4, 4:2:2, and RGB
 - Bandwidth up to 600 Mhz (18Gbps)
 - 3D (1080p @60Hz)
 - HDR
- HDCP 2.2 and 1.4 compliant.
- Supports local and remote HDMI displays.
- Supports audio embedding and de-embedding.
 - Use the switch on the transmitter to select HDMI digital audio or analog stereo audio source.
 - Simultaneously outputs both HDMI digital audio and analog stereo audio.
 - When HDMI audio is selected, the extender passes the embedded digital audio to the HDMI connector and also converts/de-embeds the digital signal to analog stereo audio.
 - When LINE audio is selected, the extender passes the analog stereo audio to the 3.5mm analog audio connector and also converts/embeds the analog signal to digital audio.
- Bi-directional IR control from input and output locations.
- Support full-duplex RS232 up to 115200 baud.
- Plug-and-play functionality – no software needed.
- Low RFI/EMI for sensitive applications.
- Cables can be installed in conduit prior to extender installation.
- Integrated mounting brackets for easy surface/wall mounting.

MATERIALS

Materials supplied with this kit:

- One transmitter unit with fiber transmitter module installed
- One receiver unit with fiber receiver module installed
- Two IR emitters
- Two IR receivers
- Two AC Adapters- 100 to 240 VAC at 50 or 60Hz; DC 5V, 1A
 - US, UK, EU, AUS power supply plugs included.
- Two 3-screw terminal blocks for RS232
- URL Slip with path to this manual

Materials *Not* supplied but **REQUIRED**:

- Interface cables between the video source/display and the transmitter/receiver are required for proper operation.
 - Supports cable lengths to 20 feet.
 - Cables longer than 20 feet can be used provided they have a built-in video equalizer (also known as "active HDMI cables").
- Use HD-xx-MM cable to connect an HDMI source or display.
- Use DVI-HD-xx-MM cable to connect a DVI source or display.
- Use HD-ACT-xx-MM 4K HDMI Active Cables to connect an HDMI source or display up to 100 feet.
 - HD-ACT-20/25/30/40/50/60-MM supports resolutions to 4K@60Hz (18 Gbps).
 - HD-ACT-75/100-MM supports resolutions to 4K@30Hz (10.2 Gbps).
- Use a simplex LC singlemode 9/125-micron fiber optic cable to extend the receiver from the transmitter up to 6.21 miles (10 km).
- Use a simplex LC multimode 50/125-micron OM3 (or better) fiber optic cable to extend the receiver from the transmitter up to 984 feet (300 meters).

where:

xx is the length of the cable in feet

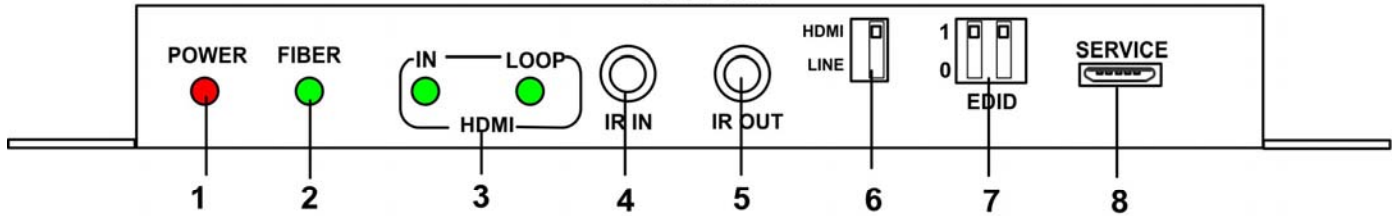
MM indicates male-to-male connector

Cables can be purchased from Network Technologies Inc by calling **(800) 742-8324** (800-RGB-TECH) in the US and Canada or **(330) 562-7070** (worldwide).

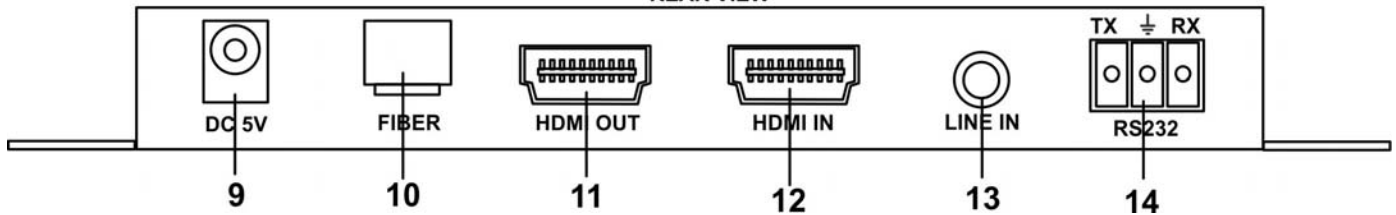
FEATURES AND FUNCTIONS

**ST-FO4K18GB-RSLA-LCV2
LOCAL UNIT**

FRONT VIEW



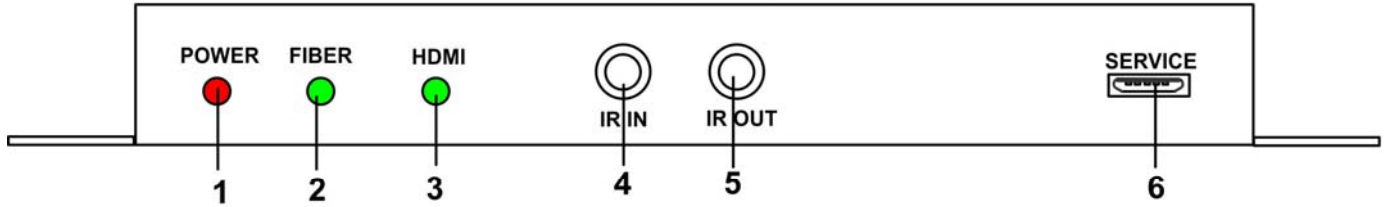
REAR VIEW



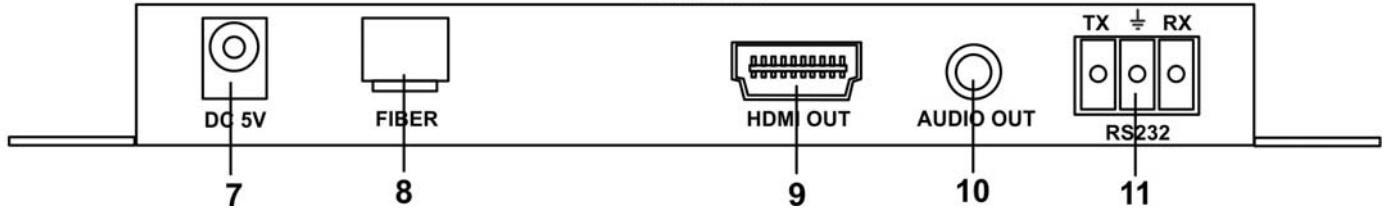
#	LABEL	CONNECTOR/LED	DESCRIPTION
1	POWER	Red LED	Illuminates to indicate proper power to the unit
2	FIBER	Green LED	Illuminates solid to indicate the Local and Remote units have a normal signal connection
3	HDMI IN-LOOP	Green LED (x2)	IN: ON when there is a signal on the HDMI IN port LOOP: ON when the HDMI OUT port of the Transmitter is sending signals to the HDMI display device.
4	IR IN	3.5mm Jack	Connect the IR Receiver cable here. Signal will be sent to the IR OUT port on the Remote Unit
5	IR OUT	3.5mm Jack	Connect the IR Blaster cable here. The IR signal is from the IR IN port of the Remote Unit.
6	HDMI-LINE	Audio Switch	Switch to select audio signal source (HDMI IN for digital or LINE IN for analog stereo). When there is no video signals input, audio signals can be transmitted separately
7	EDID	DIP Switch	Dial switch to set EDID: 11 : Copy the RX HDMI OUT 10: Copy the TX HDMI LOOP OUT 01: 4K60_2CH 00: 1080P_2CH
8	SERVICE	USB Female	For performing a firmware update
9	DC 5V	2.1x5.5mm Power Jack	For connection of power supply
10	FIBER	Fiber module socket	Installed Transmitter optical fiber module for connection of the fiber optic signals to the Remote Unit.
11	HDMI OUT	HDMI Female	HDMI video loop output port for connection to an HDMI display device
12	HDMI IN	HDMI Female	HDMI signal input port for connection to an HDMI source.
13	LINE IN	3.5mm Jack	Audio signal input port, connect to audio source device
14	RS232	Terminal Block	Pass-through terminals for transmitting RS232 command signals between the Local and Remote Unit

**ST-FO4K18GB-RSLA-LCV2
REMOTE UNIT**

FRONT VIEW



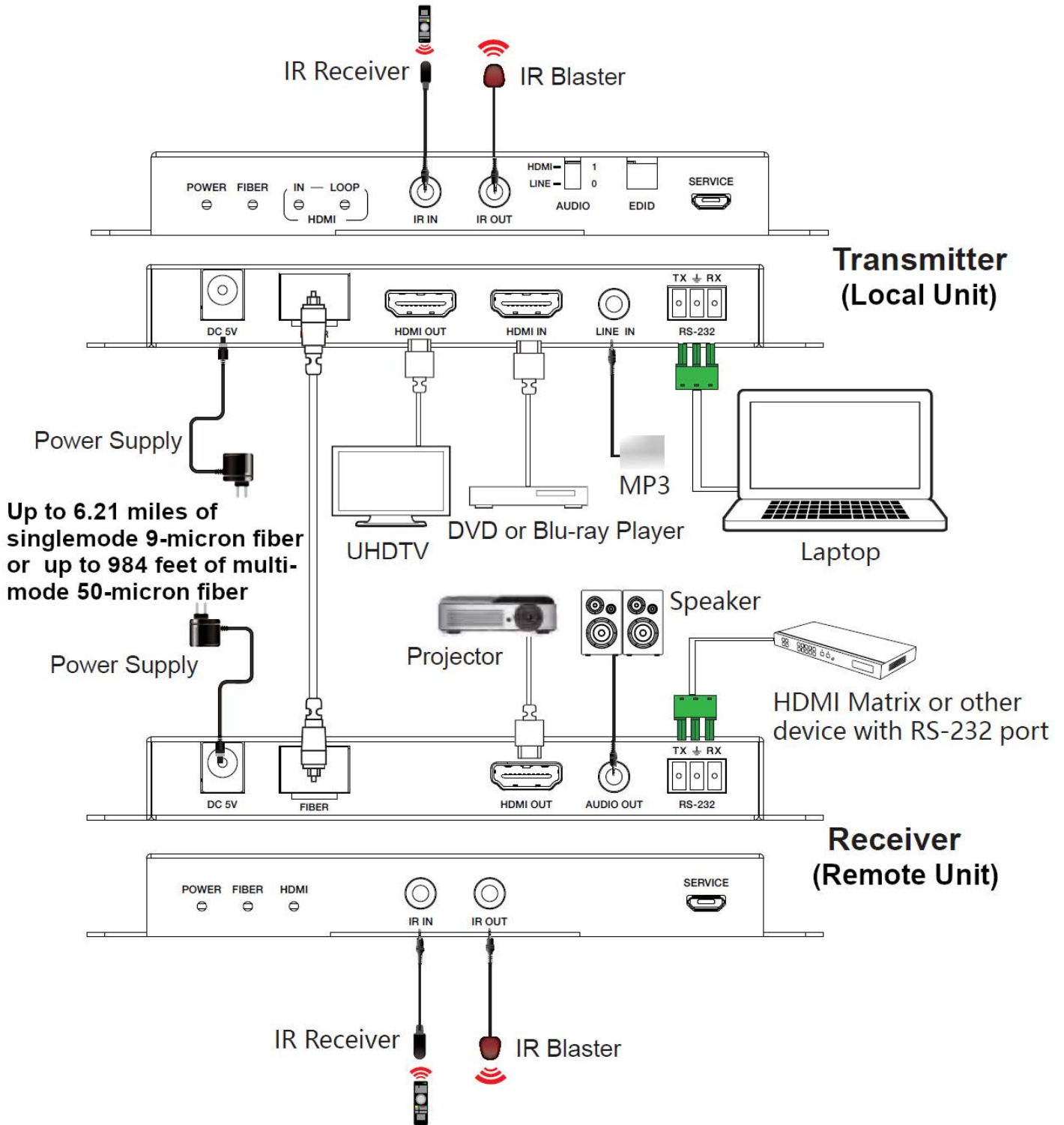
REAR VIEW



#	LABEL	CONNECTOR/LED	DESCRIPTION
1	POWER	Red LED	Illuminates to indicate proper power to the unit
2	FIBER	Green LED	Illuminates to indicate the Local and Remote units have a proper signal connection
3	HDMI	Green LED	Illuminates when the HDMI OUT port is sending signals to the HDMI display device.
4	IR IN	3.5mm Jack	Connect the IR Receiver cable here. Signal will be sent to the IR OUT port on the Local Unit
5	IR OUT	3.5mm Jack	Connect the IR Blaster cable here. The IR signal is from the IR IN port of the Local Unit.
6	SERVICE	USB Female	For performing a firmware update
7	DC 5V	2.1x5.5mm Power Jack	For connection of power supply
8	FIBER	Fiber module socket	Installed Receiver optical fiber module for connection of the fiber optic signals to the Remote Unit.
9	HDMI OUT	HDMI Female	HDMI video loop output port for connection to an HDMI display device
10	AUDIO OUT	3.5mm Jack	For connection of self-powered amplifier or speakers - Audio signal extracted from the HDMI OUT signal
11	RS232	Terminal Block	Pass-through terminals for transmitting RS232 command signals between the Local and Remote Unit

CONNECTIONS

See below connections made in a typical application.



TECHNICAL SPECIFICATIONS

Local Unit	
Connections	<p>One female HDMI connector for source. One female HDMI connector for local display. Two female 3.5mm ports for connecting an IR emitter and receiver (included). -IR frequency: 20KHz to 60KHz One female 3.5mm port for stereo audio input. 3-pin screw terminal for RS232. -Supports full-duplex RS232 up to 115200 baud. One simplex female LC fiber optic port for sending video/audio, IR, and RS232 signals. Female USB Micro Type B connector for firmware updates.</p>
Resolution	Supports Ultra-HD 4Kx2K resolutions to 3840x2160 and 4096x2160 @30/50/60Hz YUV 4:4:4, HDTV resolutions to 1080p @120Hz, and up to 1920x1200 (WUXGA).
HDCP	Supports HDCP 2.2 and 1.4
Remote Unit	
Connections	<p>One female HDMI connector for display. Two female 3.5mm ports for connecting an IR emitter and receiver (included). -IR frequency: 20KHz to 60KHz One female 3.5mm port for stereo audio output. 3-pin screw terminal for RS232. -Supports full-duplex RS232 up to 115200 baud. One simplex female LC fiber optic port for sending video/audio, IR, and RS232 signals. Female USB Micro Type B connector for firmware updates.</p>
Resolution	Supports Ultra-HD 4Kx2K resolutions to 3840x2160 and 4096x2160 @30/50/60Hz YUV 4:4:4, HDTV resolutions to 1080p @120Hz, and up to 1920x1200 (WUXGA).
HDCP	Supports HDCP 2.2 and 1.4
Data Rate	18Gbps
General	
Max Distance	<ul style="list-style-type: none"> • 6.21 miles (10 km) over singlemode 9/125-micron LC simplex fiber optic cable. • 984 feet (300 meters) over multimode 50/125-micron OM3 (or better) LC simplex fiber optic cable.
Operating environment temperatures and RH	<p>Operating temperature: 32 to 104°F (0 to 40°C). Storage temperature: -4 to 140°F (-20 to 60°C). Operating and storage relative humidity: 20 to 90% non-condensing RH.</p>
Power Supply	<p>Local and remote unit: 100 to 240 VAC at 50 or 60Hz via AC adapter.</p> <ul style="list-style-type: none"> • Input voltage: 5VDC, 1A • US, UK, EU, AUS power supply plugs included.
Power Consumption	<p>Local unit: 3.75W Remote unit: 3W</p>
Weight	2.305 lbs.
Size (In.) WxDxH	6.32x3.20x0.73 (161x81x18 mm)
Approvals	CE,FCC,RoHS

IR Receiver and Blaster Pinout

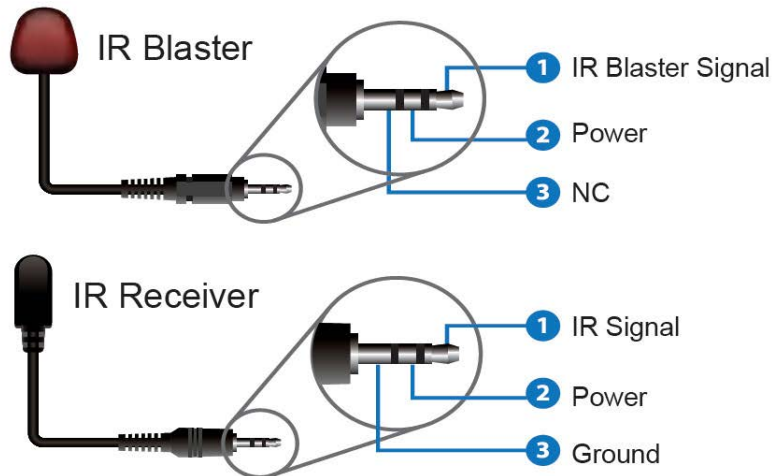
IR Receiver and Blaster pin's definition as below:



IR RECEIVER



IR BLASTER



WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at <http://www.networktechinc.com> for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.