![LightSpeed Technologies logo]

LightSpeed Technologies™ FOX1-KIT

4K UHD Uncompressed Video over Fiber Optic Cable

Version: V1.0

Important Safety Instructions

1. **Do not expose this apparatus to rain, moisture, dripping, or splashing, and no objects filled with liquids, such as vases, shall be placed on the apparatus.**

2. **Do not install or place this unit in a bookcase, built-in cabinet, or confined space. Ensure the unit is well-ventilated.**

3. **To prevent the risk of electric shock or fire hazards due to 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 naked 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.**

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the decoder.
- Connect the equipment to an outlet on a circuit different from that to which the decoder is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Contents

Introduction

LightSpeed Technologies™ FOX1-KIT (encoder and decoder) comes in a compact size and is an economical, flexible HDMI extender solution. It allows uncompressed true 4K@60Hz video to be extended with zero frame latency at 300 meters over multi-mode fiber, and 20km over single-mode fiber with 10Gb SFP+ modules.

HDMI 2.0 and HDCP 2.2 Distribution with Zero Frame Latency

With HDMI 2.0 and HDCP 2.2 compliance, they support all HDMI 2.0 with a timing envelope of 594 MHz, e.g., 4K/60 8-bit 4:4:4, 4K/60 10- bit 4:2:2 and 4K/60 12-bit 4:2:0 (HDR). Light compression technology allows them to deliver video at lower compression ratios for keeping picture quality identical to the original source when the raw data exceeds the Ethernet bandwidth. Furthermore, the video is delivered with zero frame latency.

Compact design and Cost-Effective Solution

The compact size design is suitable for installation in a tight space and provides a cost-effective, flexible solution for HDMI extension.

LightSpeed Technologies™ FOX1-KIT
4K UHD Uncompressed Video over Fiber Optic Cable
Version: V1.0

Images

Models	FOX1-ENC	FOX1-DEC

Features

- Compact size and economical design

- HDMI 2.0 and HDCP 2.2 compliant

- Lossless distribution of most timing formats

- Light compression with the raw data rate exceeding 10Gb Ethernet bandwidth

- Supports input and output resolutions up to 4096x2160@60Hz 8-bit 4:4:4, 4096x2160@60Hz 10-bit 4:4:4 and 4096x2160@60Hz 12-bit 4:2:0 HDR

- Supports point-to-point transmission of 4K signal up to 300m over multi-mode fiber, and 20km over single-mode fiber with 10Gb SFP+ modules.

- Zero-frame latency

Available exclusively from Future Ready Solutions
www.lightspeed-tech.com | Email: info@lightspeed-tech.com | Phone: 239.948.3789   Page 7

Package Contents

FOX1-ENC Encoder:

- 1 x FOX1-ENC Encoder

- 1 x 5VDC 2A Power Adapter (with US Pins)

- 1 x SFP+ multi-mode optical transceiver

- 2 x Mounting Brackets (with Screws)

FOX1-DEC Decoder:

- 1 x FOX1-DEC Decoder

- 1 x 5VDC 2A Power Adapter (with US Pins)

- 1 x SFP+ multi-mode optical transceiver

- 2 x Mounting Brackets (with Screws)

Specifications

Model	FOX1-ENC	FOX1-DEC
Video		
Input Video Port	1 x HDMI	1 x SFP+ (10GBase-SR)
End-to-End Time Latency	Zero-frame latency	
Output Video Port	1 x SFP+ (10GBase-SR)	1 x HDMI
	640x480[8], 800x600[8], 1024x768[8], 1280x1024[8], 1360x768[8],	
	1440x900[8], 1440x1050[8], 1600x1200[8], 720x480[7](480i59),	
	720x480[7](480p59), 720x576[6](576i50), 720x576[6](576p50),	
	1280x720[5](720p50), 1280x720[7](720p59),	
	1280x720[8](720p60), 1920x1080[6](1080i50),	
	1920x1080[7](1080i59), 1920x1080[8](1080i60),	
	1920x1080[1](1080p23), 1920x1080[2](1080p24),	
Input/Output Video	1920x1080[3](1080p25), 1920x1080[4](1080p29),	
Resolutions	1920x1080[5](1080p30), 1920x1080[6](1080p50),	
	1920x1080[7](1080p59), 1920x1080[8](1080p60),	
	3840x2160[1](2160p23), 3840x2160[2](2160p24),	
	3840x2160[3](2160p25), 3840x2160[4](2160p29),	
	3840x2160[5](2160p30), 3840x2160[8](2160p60), 4096x2160[5],	
	4096x2160[8]	
	[1] = at 23.98 Hz, [2] = at 24 Hz, [3] = at 25 Hz, [4] = at 29.97 Hz,	
	[5] = at 30 Hz, [6] = at 50 Hz, [7] = at 59.94 Hz, [8] = at 60 Hz	

Model	FOX1-ENC	FOX1-DEC
Audio		
Input Audio Port	1 x HDMI	1 x SFP+ (10GBase-SR)
Output Audio Port	1 x SFP+ (10GBase-SR)	1 x HDMI
Input/Output Audio Format	LPCM, 2.0/5.1/7.1 channel, 44.1/48/96/192 kHz Dolby True HD, up to 7.1,192kHz DTS-HD Master, up to 7.1,192kHz Dolby Digital AC-3 (DVD format) DTS version 1 (DVD format)	

General	
Operating Temperature	32°F ~ 104°F (0°C ~ 40°C) 10% ~ 90%, non-condensing
Storage Temperature	-4°F ~ 158°F (-20°C ~ 70°C) 10% ~ 90%, non-condensing
Power Supply	5V 2 A DC
Power Consumption (Max)	FOX1-ENC: 4.26W | FOX1-DEC: 4.78W
Transmission Distance	300m with OM-3 multimode optical fiber cable
ESD Protection	Human body model: • ±8kV (air-gap discharge) • ±4kV (contact discharge)
Product Dimensions (W x H x D)	64mm x 22mm x 87mm (2.52" x 0.87" x 3.43") each
Net Weight	0.35lb (0.16kg) each

Panel Description

Encoder

No.	Name	Description
1	SYSTEM LED	- On: The device is connected to a source but doesn't transmit any streams. - Blinking quickly: The device is connected to a source and transmitting streams. - Blinking slowly: The device is not connected to a source. - Off: Not connected to a source.
2	VIDEO LED	- On: Stable video signal is detected. - Off: No video signal is detected.
3	HDMI	Connect to an HDMI source
4	10G FIBER	Connect to an optical fiber cable using the optical transceiver provided.
5	Reset Button (Recessed)	Use a pointed stylus to press this button to restart or reset the device. - Short press: To restart the device. - Long press for more than 5 seconds: To reset the device to factory defaults. Note: When you reset the device, your custom data is lost. Therefore, exercise caution in using this button.
6	5V	Connect to the power adapter provided for DC 5V power input.

Panel Description

Decoder

No.	Name	Description
1	SYSTEM LED	▪ On: The device is connected to a display but doesn't receive any streams. ▪ Blinking quickly: The device is connected to a display and is receiving streams. ▪ Blinking slowly: The device is not connected to a display. ▪ Off: The device is connected to neither a display.
2	VIDEO LED	▪ On: Video signal is being transmitted to the connected display. ▪ Off: No video signal is transmitted
3	HDMI	Connect to an HDMI display
4	10G FIBER	Connect to an optical fiber cable using the optical transceiver provided.
5	Reset Button (Recessed)	Use a pointed stylus to press this button to restart or reset the device. ▪ Short press: To restart the device. ▪ Long press for more than 5 seconds: To reset the device to factory defaults. Note: When you reset the device, your custom data is lost. Therefore, exercise caution in using this button.
6	5V	Connect to the power adapter provided for DC 5V power input.

INSTALLATION

Typical Application

HDMI 2.0 Extender

Features:

- 4K Video transmission
- Zero latency from end to end
- Maximum extension distance is 300 meters over multi-mode fiber, and 20km over single mode fiber

TX　　　　　　　　　　　　　　　　**RX**

4K Media Player　　　　　　　　　　　Display