

EHA-FTX/FRX

HD-SDI to Fiber Converter

User's Manual



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Please read this manual first for correct installation and operation. This manual should be retained for future reference. The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

PRECAUTIONS

1. Do not install the EHA-FTX/FRX near electric or magnetic fields.
Install the EHA-FTX/FRX away from TV/radio transmitters, magnets, electric motors, transformers and audio speakers since the electromagnetic fields generated from these devices may distort the video image.
2. Never disassemble the EHA-FTX/FRX beyond the recommendations in this manual nor introduce materials other than those recommended herein.
Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.
3. Keep the power cord away from water and other liquids and never touch the power cord with wet hands.
Touching a wet power cord with hands or touching the power cord with wet hands may result in electric shock.
4. Never install the EHA-FTX/FRX in areas exposed to water, oil or gas.
Water, oil or gas may result in equipment failure, electric shock or, in extreme cases, fire.
5. Do not operate the camera beyond the specified temperature, humidity or power source ratings.
Use the camera at temperatures within 0°C ~ 50°C (32°F~122°F) and humidity between 20~80%. The input power source is 12VDC.

1. INTRODUCTION

The EHA-FTX / FRX are a pair of converters for transporting high definition digital video in HD-SDI standards over fiber optics. The EHA-FTX modulates the HD-SDI video signal to be transmitted over fiber optics, while EHA-FRX offloads the video signal at the receiving end and converts it back to HD-SDI video compliant with SMPTE 292M, 296M standards, at data rates up to 1.485Gb/s. With integrated cable equalizer technology, the EHA-FTX / FRX is capable of transmitting and receiving HD-SDI digital video at up to 1920 x 1080 resolution over fiber optics without loss of quality . This provides an effective solution for deploying HD-CCTV digital video systems over large-span geographic areas.

2. FEATURES

- Support high-definition HD-SDI digital video at 720p60, 1080i60 and 1080p30 formats at all frame rates
- HD-SDI standard at SMPTE 292M, 296M at 1.485Gb/s data rate
- Integrated cable equalizer for long distance video transmission without loss of quality
- Capable of transmitting and receiving HD-CCTV digital video over fiber optics
- High quality digital video transmission with near zero latency.



3. SPECIFICATIONS

Model Name	EHA-FTX / FRX HD-SDI to Fiber Converter
Technical	
Fiber module	Multi Mode/Single Mode
SDI standards	HD-SDI
Video bandwidth	1.485Gbps
Video support	720p @50/59.94/60Hz, 1080i @50/59.94/60Hz, 1080p @25/30Hz
Input Connector	FTX: 1x BNC [HD-SDI] 3G 75Ω inter-locked socket FRX: 1 X Simplex LC SFP (Hot Pluggable)
Output Connector	FTX: 1 X Simplex LC SFP (Hot Pluggable) FRX : 1 X BNC [HD-SDI] 3G 75Ω inter-locked socket
Mechanical	
Housing	Metal case
Dimensions	77.4 (W) x 38.4 (H) x 117 (D) mm / 3 "(W) x 1.5 "(H) x 4.6 "(D) inch (without fiber module)
Weight	215g / 0.48lbs , 225 / 0.5lbs (without fiber module)
Power supply	12VDC
Power consumption	1.8 W max.
Operation temperature	0~50°C / 32~122°F
Relative humidity	(20%~80% Humidity)

4. PACKAGE CONTENTS

- EHA-FTX / FRX HD-SDI to Fiber Converter
- Accessory packet (x1)
- Power adaptor (x1)
- Printed Installation Guide (x1)

5. OPTIONAL FIBER MODULE

—Fiber Module (Multi Mode)

SPM-9100V-1TG: Fiber Module Multi-Mode TX HD_SDT 500m

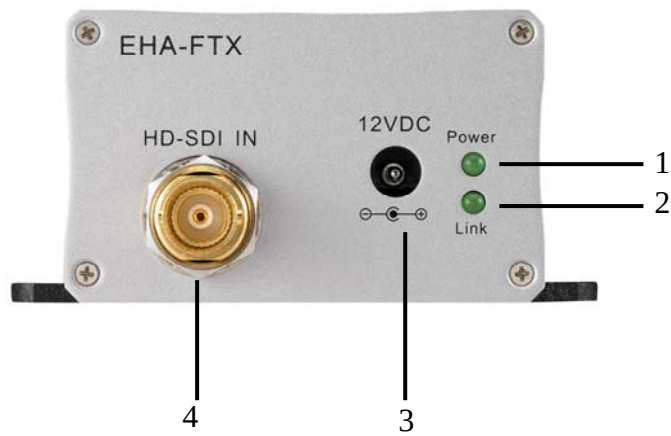
SPM-9100V-1RG: Fiber Module Multi-Mode RX HD_SDT 500m

—Fiber Module (Single Mode)

SPS-9110V-1TG: Fiber Module Single-Mode TX HD_SDT 21km

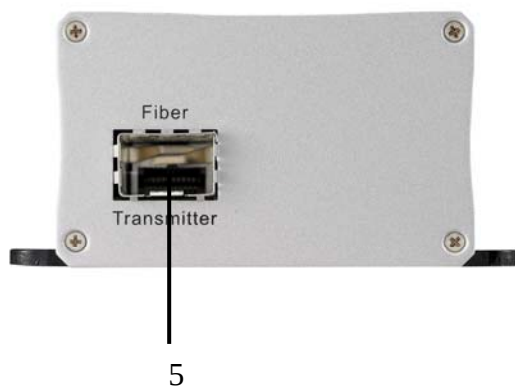
SPS-9110V-1RG: Fiber Module Single-Mode RX HD_SDT 21km

6. FRONT PANEL



1. Power LED indicator
2. Link LED indicator
3. Power 12VDC
4. SDI Input

7. REAR PANEL



5. Fiber Transmitter

8. CABLE REQUIREMENTS FOR BNC CONNECTOR

8.1 Cable Types

The EHA-FTX/FRX allows a total signal attenuation of up to 43.5 dB along the cable between devices. The actual maximum cable length depends on the attenuation characteristic of the particular cable used. Generally speaking, the better the cable quality, the lower the signal attenuation, thus the longer the distance the HD-CCTV video signal can be carried.

The following table gives examples of different cable types, losses and the distances that can be achieved. These are only examples and the actual distance is determined by the attenuation characteristic of the cable in your application.

The table below gives an orientation for achievable cable distances:

Cable Type	Attenuation in dB at 1 GHz per 100 m / 328 ft	Max. Cable distance in	
		m	ft
RG-59	24 ~ 40 *	70 ~ 160	230~520
RG-6	15 ~ 35 *	100 ~ 190	330~620
RG-11, CATV-lowloss cables	8 ~ 16 *	180 ~< 250	590~<820

* Low quality cable may have higher attenuation

8.2 Cable Installation

Please make sure, that the coaxial cable is not squeezed at any position.

Also the max. bending radius defined by the cable manufacturer should be considered.

General rule: maximum bending radius = 10 x outer cable diameter

Bending creates pressure on the center conductor, causing it to move through the dielectric toward the inside of the bend. This affects impedance and return loss and reduces the maximum possible cable length.

Please try to avoid any BNC - adapter or any connectors in the BNC cable.

Looping HD-SDI signals by BNC T-connectors to other devices is not possible.

8.3 BNC-plug

Also the BNC - plug plays an important role for clear HD-CCTV signal transmission.

Standard BNC plugs for CCTV have a quite high attenuation and may cause return losses due to reflection effects.

We recommend using of HD-Video approved BNC plugs.

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