

# 12G-SDI Optical Fiber Extender

## FE1SP-1V12R

### Features

- SD,HD,3G,6G,12G input data rate detected Automatically
- Reachable distance:
  - 80km(@3G SDI SFP Receiver),
  - 20km(@12G SDI SFP Receiver)
- Transport 8k (uncompressed) signals up to 20km
- Each channel supports resolutions up to 2160p/60Hz
- Each channel individually reclocked
- Supported format :
  - SMPTE ST 2082-1 (11.88Gbps/s),
  - SMPTE ST 2081-1 (5.94Gbps/s),
  - SMPTE ST 424 (2.97Gbps/s),
  - SMPTE ST 292 (1.485Gbps/s),
  - SMPTE ST 259(360Mb/s),DVB-ASI(270Mb/s),MADI (125Mb/s)
- Co-axis cable equalizer embedded in the transmitter:
  - 70m at 11.88Gb/s: <0.2UI output jitter
  - 90m at 5.94Gb/s: <0.15UI output jitter
  - 180m at 2.97Gb/s: <0.1UI output jitter
  - 240m at 1.485Gb/s: <0.1UI output jitter
  - 300m at 270Mb/s: <0.1UI output jitter
- CDR embedded in the receiver
- SDI signal connecting status indicated by LED
- 5-12V DC power supply
- Operating case temperature range: -10 to +70°C (Power adapter not included)



### Applications

- Live Broadcast
- 8K Screen
- 8K Camera
- Video Meeting
- Security Monitoring

### Description

12G-SDI fiber optical extender makes possible transmission of 12G SDI signals in long-distance, which are independent. The maximum transmission distances can reach 80km at 3G-SDI data rate and 20km at 12G-SDI data rate. Operating data rate is from 125Mbps to 11.88Gbps. Besides, MADI, DVB-ASI, SD-SDI, HD-SDI, 3G-SDI, 6G UHD-SDI formats are backward compatible.

One lanes of SDI signals are receiver independently.

With FIBERSTAMP 12/6/3G SDI SFP transmitter, it extends one lanes of SDI signals.

Hardware Configuration

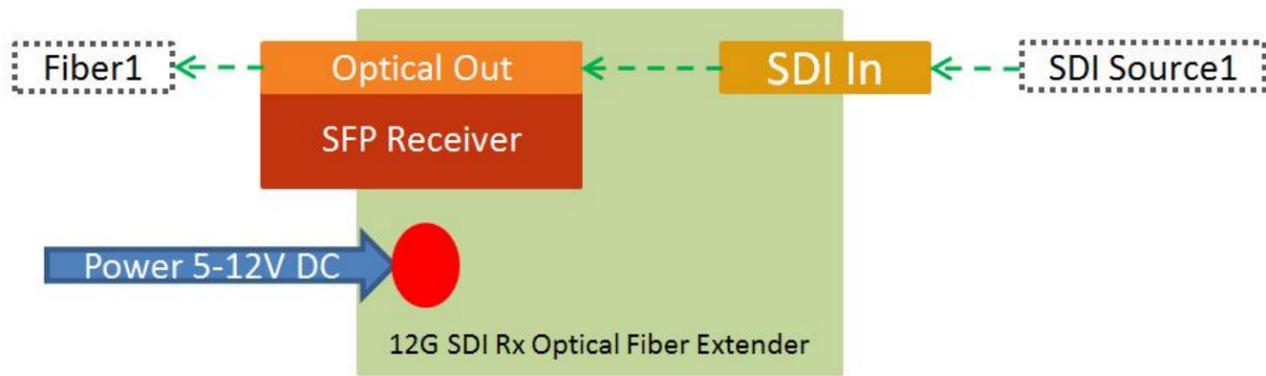


Figure 1. Block diagram

LED	Display	Description
POWER	Off	Power off
	Green	Power on
LOCK	Off	SDI OUT signal connecting NG
	Green	SDI OUT signal connecting OK

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T <sub>s</sub>	-20	+105	°C
Power Supply Voltage	V <sub>cc</sub>	5	26	V

Technical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
12G-SDI Optical fiber extender Operating Temperature	T <sub>c</sub>	-10		70	°C
AC to DC Power adapter Operating Temperature	T <sub>c</sub>	0		40	°C
Operating Humidity	-	5		85 non-condensing	%
Power Supply Voltage	V <sub>cc</sub>	4.5	12	24	V
Power Supply current(without transceivers )	I <sub>cc</sub> (5V)		140	190	mA
Physical Dimensions		79.8(W)x57.6 (D) x23(H)			mm
Weight		80			g

Optical and Electrical Characteristics

Main Frame	
BNC	Standard BNC, 75 Ohm
Transmission rate	125 Mbps to 11.88 Gbps
Standard	SMPTE ST 2082-1, SMPTE ST 2081-1, SMPTE ST 424, SMPTE ST 292-1, SMPTE ST 259, DVB-ASI(270M),MADI(125M)
RL	>15dB @1.5GHz

Main Frame	
	>10dB @3GHz
	>7 dB @6GHz
	>4 dB @12GHz
Wavelength	1270nm/1290nm/1310nm/1330nm
Jitter	< 2.0UI @10Hz
	< 0.3UI @100KHz
Output Swing	800mV (+/-10%)
Overshoot	<10%
Rise/fall time	<135ps @3G-SDI
	<80ps @6G UHD-SDI
	<45ps @12G UHD-SDI

**Mechanical Dimensions**

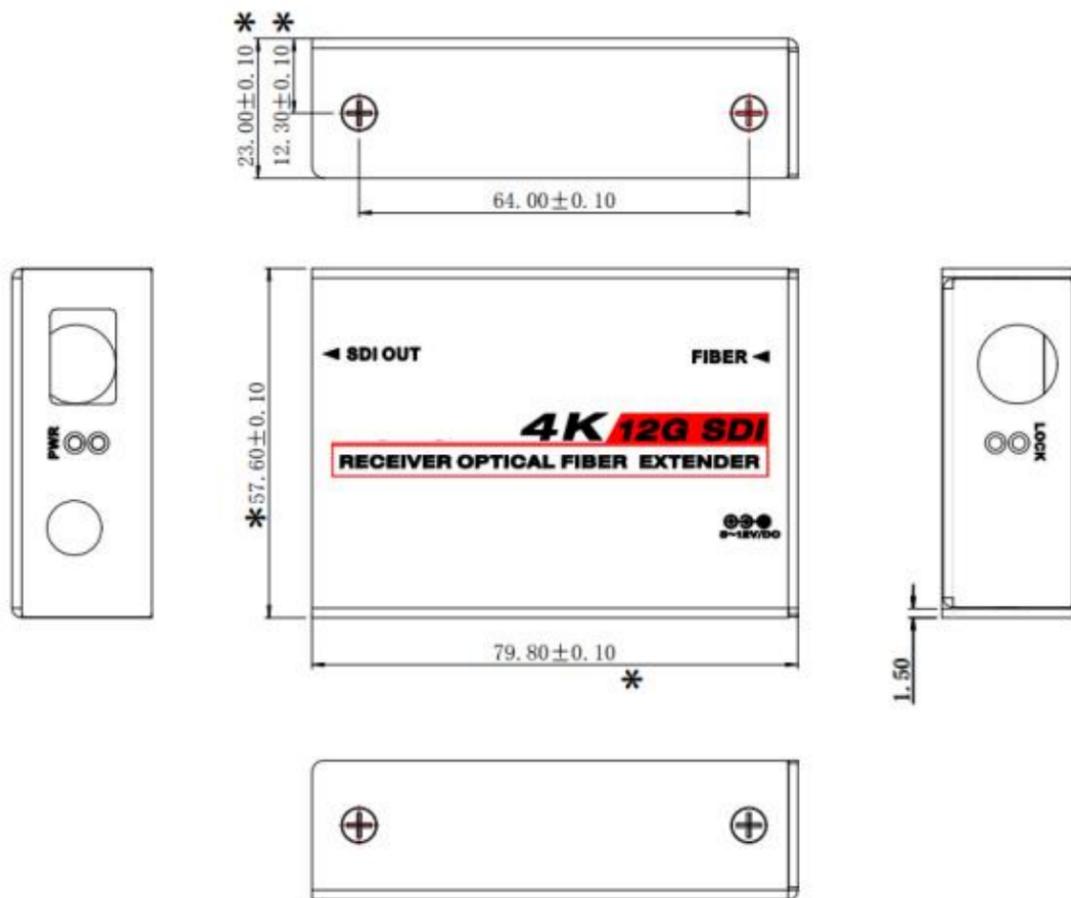


Figure 2. Mechanical Specifications

**Ordering Information**

Part Number	Product Description
FE1SP-1V12R	1 x 12G-SDI Receiver Optical Extender

**Optional SFP optical transceivers of FIBERSTAMP**

Part Number	Product Description
GHR-12G-xxCD(M)	Single Receiver, 12Gbps, 10/20km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHR-3G-xxCD(M)	Single Receiver, 3Gbps, 2/20/40/80km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHR-3G-xxND(M)	Single Receiver, 3Gbps, 2/20/40/80km, -20°C ~ +85°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA

**Note:**

1. xx means different distances, including 2km, 10km, 20km, 40km, 80km.
2. SFP transceivers with dual transmitters and receivers are not suggested to use.

**⚠ CAUTION:**

Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

**Important Notice**

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