

## 12G-SDI Optical Fiber Extender G-SDI-E-1\*12G-TR

### Features

- ✓ SD,HD,3G,6G,12G input data rate detected Automatically
- ✓ Reachable distance:
  - 80 km(@3G SDI SFP transceiver),
  - 20 km(@12G SDI SFP transceiver)
- ✓ 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.

Each lane of SDI signals are transmitted and received independently.

With Gigalight 12/6/3G SDI SFP transceivers, it extends one or two lanes of SDI signals.

## Hardware Configuration

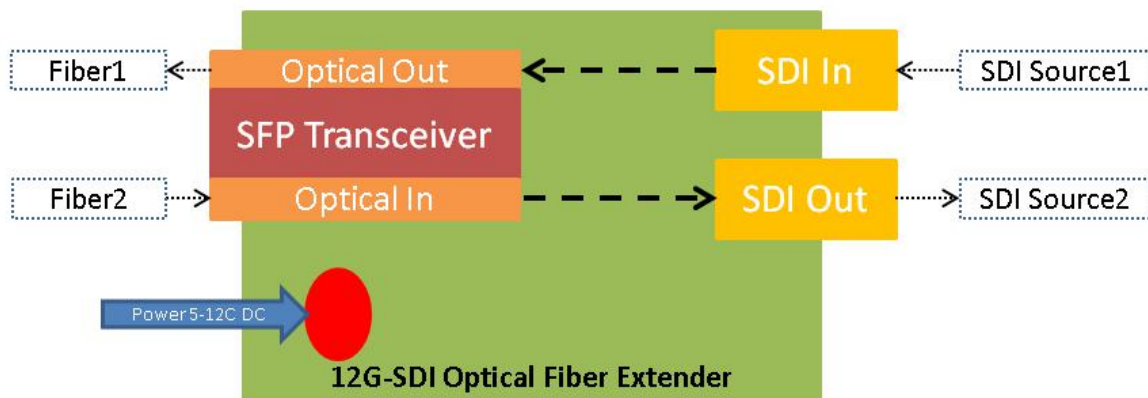


Figure 1. Block diagram

LED	Display	Description
POWER	Off	Power off
	Green	Power on
LOCK1	Off	SDI IN signal connecting NG
	Green	SDI IN signal connecting OK
LOCK2	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	Tc	-10		70	°C
AC to DC Power adapter Operating Temperature	Tc	0		40	°C
Operating Humidity	-	5		85 non-condensing	%
Power Supply Voltage	Vcc	4.5	12	24	V
Power Supply current(without transceivers)	Icc(5V)		280	350	mA
Physical Dimensions		79.8(W)x57.6 (D) x23(H)			mm
Weight		132			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
	>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

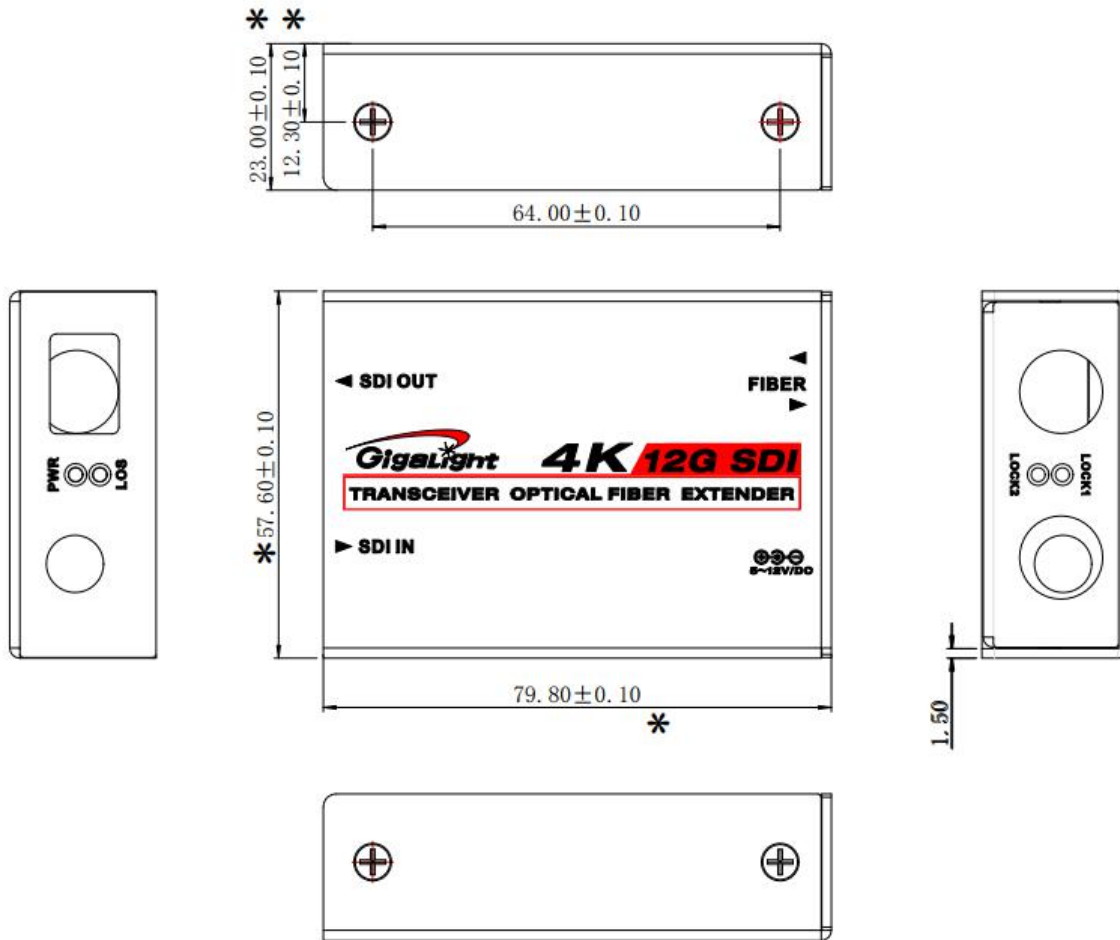


Figure 2. Mechanical Specifications

## Ordering Information

Part Number	Product Description
G-SDI-E-1*12G-TR	1 x 12G-SDI Transceiver Optical Extender

## Optional SFP optical transceivers of gigalight

Part Number	Product Description
GHP-xx12G-yyCD(M)	Receiver and Transmitter, 12Gbps, 10/20km, 0°C~+70°C, Compatible without/with SFP MSA
GHP-xx3G-yyC(T)D(M)	Receiver and Transmitter, 3Gbps, 2/10/20/40/80km, 0°C~+70°C(或 -40°C~+85°C), Compatible without/with SFP MSA
GHPC-xx3G-yyCD	Receiver and Transmitter, 3Gbps, CWDM Wavelengths, 2/40/80km, 0°C~+70°C, Compatible without SFP MSA

GHT-xx12G-yyCD(M)	Single Transmitter, 1310nm, 12Gbps, 10/20km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHTC-xx12G-yyCD(M)	Single Transmitter, CWDM Wavelengths, 12Gbps, 10km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHT-xx3G-yyCD(M)	Single Transmitter, 1310/1550nm, 3Gbps, 2/20/40/80km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHTC-xx3G-yyCD(M)	Single Transmitter, CWDM Wavelengths, 3Gbps, 40/80km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHR-12G-yyCDM	Single Receiver, 12Gbps, 10/20km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHR-3G-xxC(N)D(M)	Single Receiver, 3Gbps, 2/20/40/80km, 0°C ~ +70°C(或-20°C ~ +85°C), With Digital Diagnostic Monitoring, Compatible without/with SFP MSA
GHRC-3G-xxCD	Single Receiver, CWDM Wavelengths, 3Gbps, 40km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without SFP MSA
GTT-xxxx3G-yyC(N)D	Dual Transmitters, 1310/1550nm, 3Gbps, 2/20/40km, 0°C ~ +70°C(或-20°C ~ +85°C), With Digital Diagnostic Monitoring, Compatible without SFP MSA
GTTC-xxxx3G-yyCD	Dual Transmitters, CWDM Wavelengths, 3Gbps, 40km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without SFP MSA
GRR-3G- yyC(N)D	Dual Receivers, 3Gbps, 2/20/40km, 0°C ~ +70°C(或-20°C ~ +85°C), With Digital Diagnostic Monitoring, Compatible without SFP MSA
GRRC-3G- yyCD	Dual Receivers, CWDM Wavelengths, 3Gbps, 2/20/40km, 0°C ~ +70°C, With Digital Diagnostic Monitoring, Compatible without SFP MSA

**Note:**

- 1、xx stands for wavelength, such as 31(1310nm)、55(1550nm) and CWDM Wavelengths.
- 2、yy means different distances, including 2km、10km、20km、40km、80km.

**⚠ 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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## Revision History

Revision	Date	Description
V0	22-Mar- 2022	Advance Release.
V1	19-Oct-2022	Change the adapter temperature range.