

## Mini 12G-SDI Video to Fiber Optical Converter, 1080P

### ➤ Features

- Support ST-2082-1 (12G), ST-2081-1 (6G), ST-424 (3G), ST-292 (HD) and ST-259 (SD);
- Compatible with DVB-ASI and AES10 (MADI);
- Support clock recovery function(clock restorer can reduce high frequency jitter and completely regenerate data with pure low jitter clock);
- The clock restorer is locked to 11.88Gbps, 5.94Gbps, 2.97Gbps, 1.485Gbps or 1.001 frequency division sub rate and SMPTE rate of 270Mbps;
- Signal input has automatic cable equalization (EQ) function, output has drive (CD) function;
- Support one channel reverse RS485 data;
- Support multi-mode transmission distance 500M, single mode 20KM;
- Delay < 2ms;
- Plug and play, no setup required;
- Support status light display;
- Support USB device power supply;
- Devices are used in pairs which including transmitter and receiver;
- Wide range of operational temperature (-20°C ~75°C);
- Warranty: 3 years;



### ➤ Introduction

UPCOM Mini 12G-SDI UHD video to fiber optical converter is widely used in broadcast applications for the transport of uncompressed digital video streams up to 4K resolutions over coax cable. It can transmit one channel forward 12G-SDI video and one channel reverse RS485 Data / Tally signal (optional) through a single fiber optic cable, realizing no delay, no compression, high-quality signal extension of 20km with LED status indication on the body of device. The working status of devices can be visually observed. Besides, the switch value, voltage, working status and other reverse useful signal information can be controlled by RS485 or RS232. This ensures our devices more flexible when meet different customer requirements.

12G-SDI UHD audio and video optical converter built-in serial clock recovery, signal equalization and line drive, input automatic detection signal. It supports plug-and-play SFP optical modules, and the corresponding optical modules can be replaced according to the actual needs of the site. (multi-mode support transmission distance 500M, single mode can reach up to 60km). The equipment power consumption is less than 1.5W, the Type-C port is used for power supply, support USB power supply system, which is flexible in use;

The 12G-SDI UHD video optical converter circuit board adopts a multi-layer design, which is stable and reliable, and has strong anti-interference ability; all components including connectors are made by internationally renowned manufacturers, and the quality is reliable; Aluminum shell design, corrosion resistance, outstanding thermal conductivity;

12G-SDI/6G-SDI/3G-SDI/HD-SDI/SDI/ASI, compatible with SMPTEST2082-1 (12GUHD-SDI), ST2081-1 (6GUHD-SDI), SMPTE424M, SMPTE292M, SMPTE259M, SMPTE297M, SMPTE305M, SMPTE310M standards.

## ➤ Application

- HD monitor transmission and power supply
- Security protection system, TV medical treatment
- Network telephone transmission, Intelligent house and home system
- Intelligent transportation supervisory system (ITS)
- UHDTV / 4K / 8K / HDTV / SDTV video
- Long-distance Multi-media Schooling, Campus monitoring
- Long-distance broadcast television transmission system
- High-building Security Protection, Military Tele-Com project
- Smart City

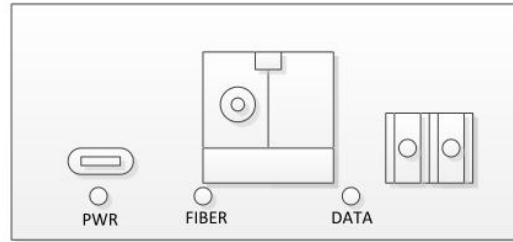
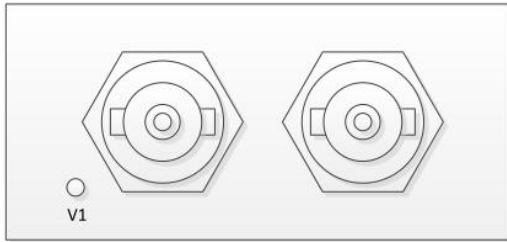
## ➤ Specification

Fiber Optical	
Wavelength	1310nm(dual -fiber) 1270-1330nm (single fiber)
Fiber type	9/125um single-mode
Rate	12G bps
Tx power	0~-3dB
Rx sensitivity	-12dB
Fiber connector	LC
Transmission distance	Multi-mode fiber, 550m, Single-mode fiber, 20km
SDI Video	
Protocol Standard	SMPTE ST-2082
SMPTE rate	270Mbit/s,1.48Gbit/s,2.97Gbit/s,5.94Gbit/s,11.88Gbit/s
Support resolution	SMPIE 259M, SD-SDI, 480i, 576i
	SMPIE 344M, ED-SDI, 480P, 576P
	SMPIE 292M, HD-SDI, 720P, 1080i
	SMPIE 424M, 3G-SDI, 1080P60Hz
	SMPIE ST-2081, 6G-SDI, 2160P30Hz
	SMPIE ST-2082, 12G-SDI, 2160P60Hz
EQ mode cable transmission distance	75m at 11.88Gbps
	120m at 5.94 Gbps
	200m at 2.97 Gbps
	300m at 1.485 Gbps
	600m at 270Mbps
Signal amplitude	800mV±10%
Impedance	75 Ohm

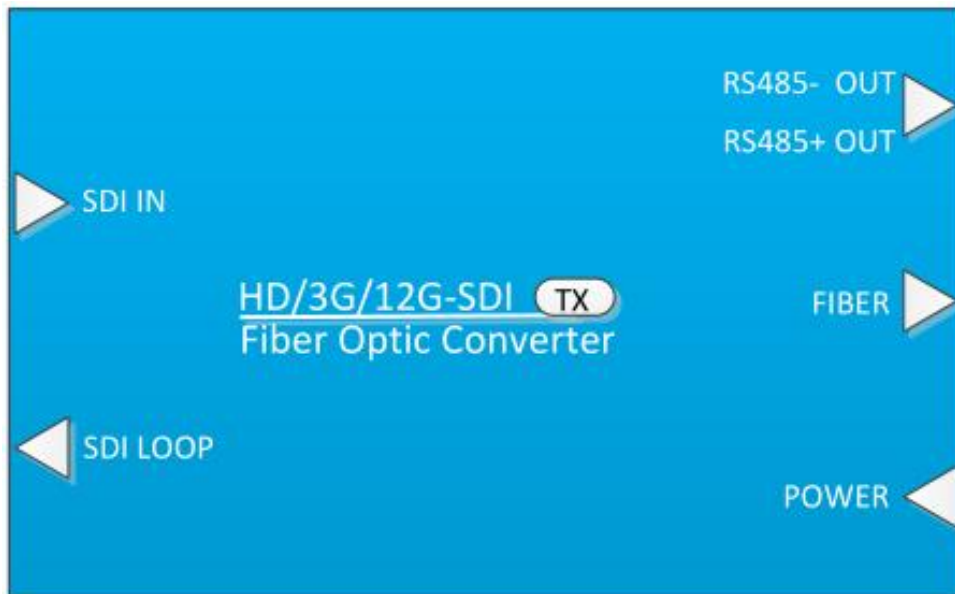
Connector	The BNC meet the IEC169-8 standard
<b>RS485 Data</b>	
Standard	Compliance with the EIA RS-485 standard
Transmission mode	Synchronous transmission
Baud rate	50bps to 520 kbps (support non-standard baud rates)
RS485	2-wire (A, B), half-duplex, point to multi-master-slave communication
Physical interface	Industrial terminal / 3.81mm
<b>RS485 circuit</b>	
RS-485 pull-up/pull-down resistance	4.7 k $\Omega$ , 4.7 k $\Omega$
RS-485 terminal resistance	N / A, 120 $\Omega$ , and 120 k $\Omega$
<b>Tally signal</b>	
Level type	TTL (5V) /LVTTTL (3.3V)
Input level range	3.3V~12V
Output level parameters	0V or 3.3V
Default state	No-voltage output (0V)
Physical interface	Industrial terminal / 3.81mm
<b>Other</b>	
Input current	$\leq$ 300MA
Input voltage	5V
Overload current protection	Support
Power supply physical interface	Type-C
Power consumption	<1.5W
Housing	Aluminum alloy
Product size	100 * 55 * 25 (mm)
Net weight	0.15kg
<b>Packing</b>	
Material	Kraft paper
Package size	210*160*46mm
Gross weight	0.5kg
Accessory	USB charging head * 2, Type-C power cable * 2, User's manual * 1, Certificate of quality * 1
Working Temperature	-20 $^{\circ}$ C ~75 $^{\circ}$ C
Storage Temperature	-40 $^{\circ}$ C ~85 $^{\circ}$ C
Relative Humidity	0%~95% ( no condensation)
MTBF	100,000 hours
Warranty	3 Years

## ➤ Appearance

### 12G-SDI Video Converter Transmitter:

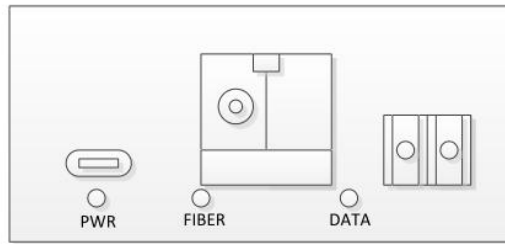
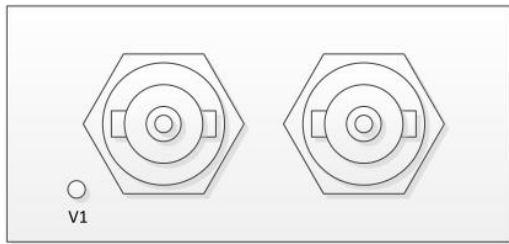


LED Indicator	Description	
PWR	Light on:the device is powered on	Light off:the device is powered off
FIBER	Light on:fiber signal	Light off:no fiber signal
DATA	Light on:the device is connected Blinking: Data works	Light off:no data signal
V1	Light on:video signal	Light off:no video signal

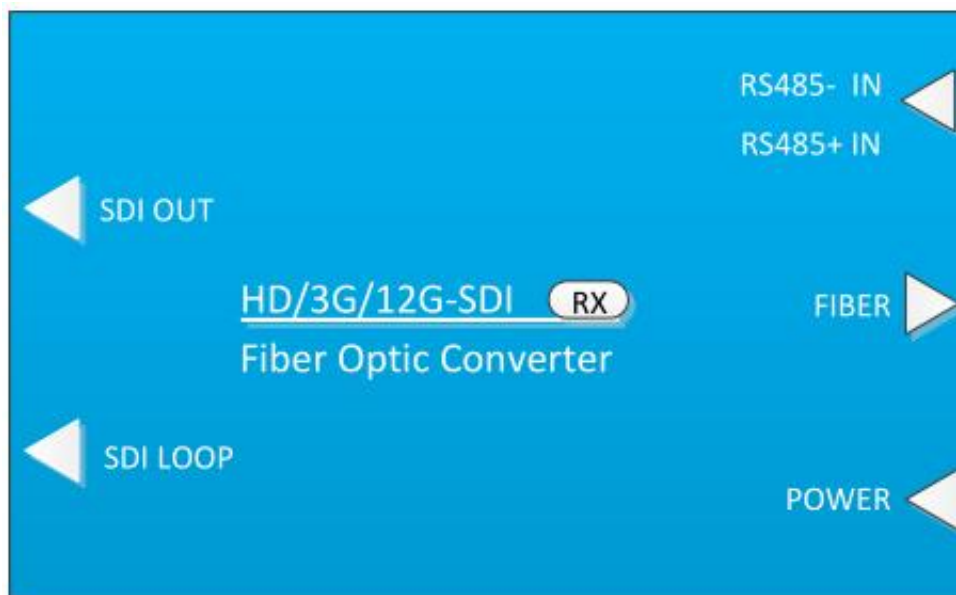


Silk-screen	Corresponding indicator light	Description
POWER	PWR	Power
FIBER	FIBER	Fiber optical
RS485+ OUT	DATA	RS485 + output
RS485- OUT		RS485 - output
SDI IN	V1	The SDI video signal input
SDI LOOP		The SDI video signal loop output

## 12G-SDI Video Converter Receiver:

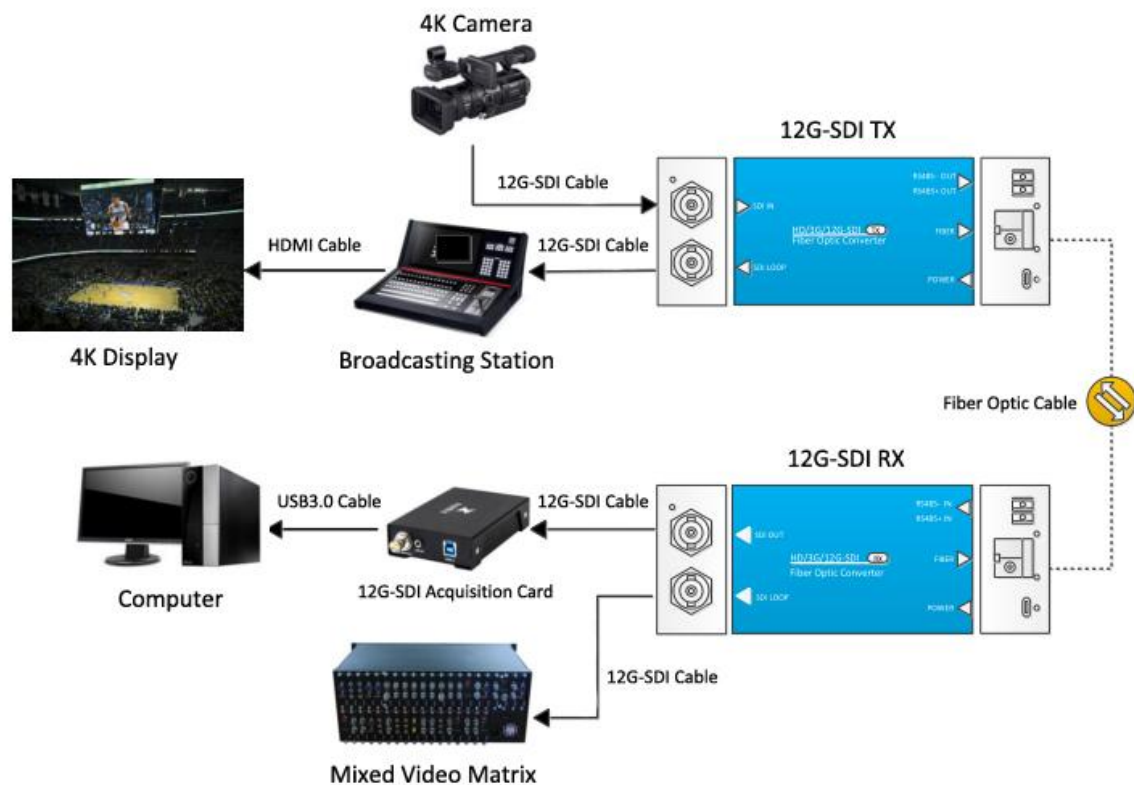


Silk-screen	State description	
PWR	Light on:the device is powered on	Light off:the device is powered off
FIBER	Light on:fiber signal	Light off:no fiber signal
DATA	Light on:the device is connected Blinking: Data works	Light off:no data signal
V1	Light on:video signal	Light off:no video signal



Silk-screen	Corresponding indicator light	Description
POWER	PWR	Power
FIBER	FIBER	Fiber optical
RS485+ IN	DATA	RS485 + input
RS485- IN		RS485 - input
SDI OUT	V1	The SDI video signal output
SDI OUT		The SDI video signal loop output

## ➤ Connection



### Equipment and installation procedures:

1. Connect the 12G-SDI optical transmitter to the signal source;
2. Insert the LC fiber optical into the 12G-SDI optical transmitter;
3. Insert the 5V power supply to USB power port of the 12G-SDI optical transmitter;
4. Insert the 12G-SDI optical receiver into the display;
5. Insert the LC fiber cable into the 12G-SDI optical receiver;
6. Insert the 5V power supply to USB power port of the 12G-SDI optical receiver;

## Attention

### Lightning protection, static electricity and grounding:

It is recommended that when install the device, consideration should be given to the impact of grounding by lightning, and take prevention measures. Strong static electricity will damage the optical device and data chip in the equipment. It is recommended that when plug/unplug the data port of the optical converter, please disconnect the power supply of the optical converter first.

### Fiber and optical components:

Be careful when plugging the optical fiber as optical components of the optical converter is very fragile, and it should avoid causing damage to the optical components. It should be noted that the light source produced by the optical components of the optical converter will be harmful to eyes, so do not have direct eye contact with the optical components of optical converter. If you need to detect the optical power of the optical converter, please use the optical power meter.

## ➤ Ordering Information

Model NO.	Description
3G-SDI0101	1 channel forward 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
3G-SDI0201	2 channel forward 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
3G-SDI0401	4 channel forward 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
3G-SDI0801	8 channel forward 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
3G-SDI1601	16 channel forward 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
MN-3G-SDI0101	Mini 1 channel 3G-SDI video +1-channel Reverse RS485, 1080P, DC5V
MN-12G-SDI0101	Mini 1 channel 12G-SDI video +1-channel Reverse RS485, 1080P, DC5V

## ➤ Packing List

- Mini 12G SDI Video Over Fiber Converter \*1
- USB charging head \*2
- USB to Type-C power cable \*2
- User manual \* 1
- Certificate of quality \* 1
- Warranty card \* 1