

RB-12GSDI-485

Single 12G SDI Channel with return RS485 data

Fiber Extender Set

Quick User Guide



Overview

The RB-12GSDI-485 set can transmit one 12G SDI video channel forward over a single strand of fiber, up to 20Km SMF (or 500m for MMF) and carry a return 2-wire RS-485 serial data, with no delay and no compression high-quality signal extension. The set uses a single LC fiber optic connector (SFP transceiver) and implements a serial clock recovery, signal equalization and line drive technologies and has an automatic SDI detection between 12G-SDI/6G-SDI/3G-SDI/HD-SDI/SDI/ASI video signals. Units are compatible with SMPTEST2082-1 (12GUHD-SDI), ST2081-1 (6GUHD-SDI), SMPTE424M, SMPTE292M, SMPTE259M, SMPTE297M, SMPTE305M and SMPTE310M standards.

The design of RB-12GSDI-485 is minimalistic, with reduced footprint and twist and lock BNC connectors for SDI and SFP slot for fiber connectivity. It metal casing for extended temperature operation and heavy EMI environment resistance and adopts a ubiquitous USB-C connector for power.

Ordering Information

P/N	Description	Size	Power Supply	Fiber Connector
RB-12GSDI-485	1 channel 12G-SDI video & return RS485fiber extender set	80*17*17mm	DC 5V USB-C AC adapters	LC/UPC simplex (SFP)

Applications

SMPTE compatible with serial digital interface

UHDTV/4K/8K/HDTV/SDTV video signal transport

IP media gateway applications

Digital video processing and editing

Features

- Supports ST-2082-1(12G), ST-2081-1(6G), ST-424(3G), ST-292(HD) and ST-259(SD) SMPTE standards, compatible with DVB-ASI and AES10 (MADI)
- Both transmitter and receiver have clock recovery function
- Clock retiming is locked to 11.88Gbps, 5.94Gbps, 2.97Gbps, 1.485Gbps or 1.001Gbps frequency division sub rate and SMPTE rate of 270Mbps
- Signal input has an automatic cable equalization (EQ) function
- Single/multi-mode fiber compatibility, multi-mode transmission distance up to 500m, single mode transmission distance up to 10Km
- Status light display
- Plug and play, no settings required

Technical Specifications

Fiber Interface			
Wavelength	1270/1330nm		
Rate (max)	12Gbps		
Transmitter Power	-2~1dB		
Receiver Sensitivity	-12dB		
Fiber Connector	Single LC/UPC (SFP transceiver)		
Max. reach	Multi-mode fiber, 500m Single-mode fiber, 20Km		
Video Interface			
Protocol Standard	SMPTE ST-2082 and downwards compatible		
SMPTE Rate	270Mbit/s,1.48Gbit/s,2.97Gbit/s,5.94Gbit/s,11.88 Gbit/s		
	SMPTE 259M	SD-SDI	480i, 576i
	SMPTE 344M	ED-SDI	480P, 576P
	SMPTE 292M	HD-SDI	720P, 1080i

Support standard (digital video format)	SMPTE 424M	3G-SDI	1080P60Hz
	SMPTE ST-2081	6G-SDI	2160P30Hz
	SMPTE 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	75Ω		
Connector	BNC male (IEC169-8 standard)		
RS-485 Specs			
Transmission	RS-485 standard, 2-wire		
Baud Rate	Up to 500Kbps		
Serial Protocol	Half Duplex, Point to Multi-point, A and B 2-wire		
Connector	2 pin green block		
Pull-up/Pull-down	4.7kOhms/ 4.7kOhms		
Termination option	Open/ 120Ohms/ 120kOhms		
Mechanical and Power			
Casing	Aluminum alloy		
Installation	Direct plug-in (in-line)		
Product size	100x 55x 25mm		
Product net weight (unit)	150g		
Set gross weight (including package)	0.5Kg		
Packing size	210x 160x 46mm		
Package contents	Set Tx & Rx units, 2x USB-C AC adapters		
Input voltage	100VAC~242VAC,50-60Hz USB AC adapter		
Power supply	DC 5V USB-C connector		
Power consumption	<1.5W		
Environment			
Operating temperature	-20°C ~+75°C		
Storage temperature	-40°C ~+85°C		
Relative humidity	From 5 to 95% (non-condensing)		
MTBF	>100,000 hours		

Diagram of unit's front panel

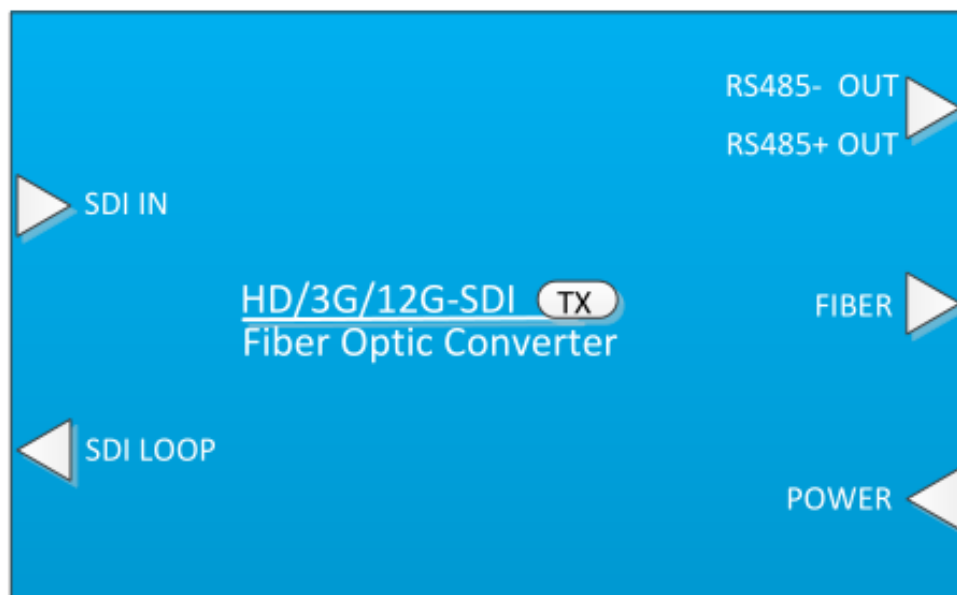
12GSDI video with local loop out and 1 channel reverse RS485 data



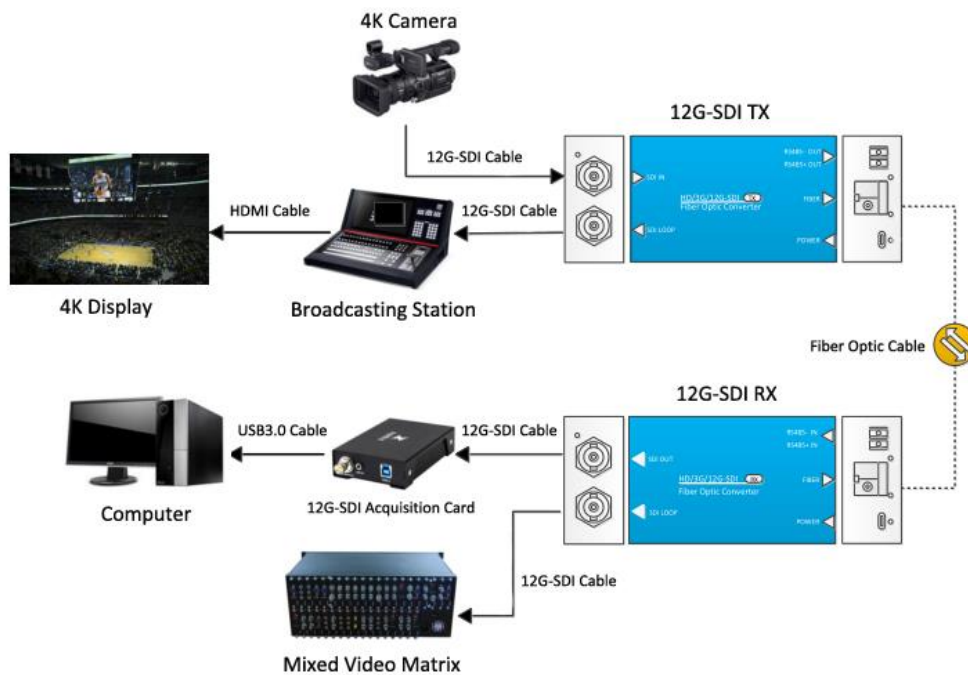
LED indicators

Mark	Description	
PWR	ON: device is powered	OFF: device is not powered
FIBER	ON: fiber signal is present	OFF: no fiber signal
DATA	ON/BLINK: Data transmission	OFF: no data signal
V1	ON: SDI video signal present	OFF: no video signal

Top cover markings



Application Diagram



Example of application for RB-12GSDI-485 set

Packing List

#	Name	Quantity
1	Transmitter (Tx)	1
2	Receiver (Rx)	1
3	USB AC cube	2
4	USB to Type-C power cable	2

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