

## Data Sheet F-12G-SDI-D-TX/RX / F-12G-SDI-TX/RX



## SDI fiber extender for SD HD 3G and 4K 12G SDI with return RS485 Data

### INTRODUCTION

Experience the pinnacle of broadcasting with our state-of-the-art Thor Fiber Transmitter and Receiver devices, engineered for uncompromising performance. Each Thor Fiber Transmitter boasts a singular SDI input alongside a convenient SDI loopout, while its counterpart Receiver graciously offers two SDI outputs. Seamlessly integrating single-mode fiber optics, this multirate Ultra High Definition solution boasts unparalleled efficiency with zero latency, ensuring flawless operation even in the most demanding real-world scenarios.

Our units feature transparent, loss-free transmission technology, meticulously crafted to uphold broadcast-grade image quality while seamlessly preserving embedded audio signals. Whether it's the production of immersive 4K/8K ultra high-definition television programs or the live broadcast of monumental concerts or sporting spectacles, our Thor Fiber Transmitter and Receiver devices stand as the trusted backbone for delivering uncompromised visual and auditory excellence.

Empower your workflow with our 12G-SDI solutions, designed to streamline production and post-production processes with unparalleled bandwidth capabilities. By effortlessly connecting cameras directly to fiber optics, our solutions simplify workflows, enabling the seamless handling of high-resolution, high-frame-rate, and deep-color content over a singular, robust cable infrastructure. Elevate your broadcasting endeavors with Thor Fiber – where cutting-edge technology meets unparalleled reliability.

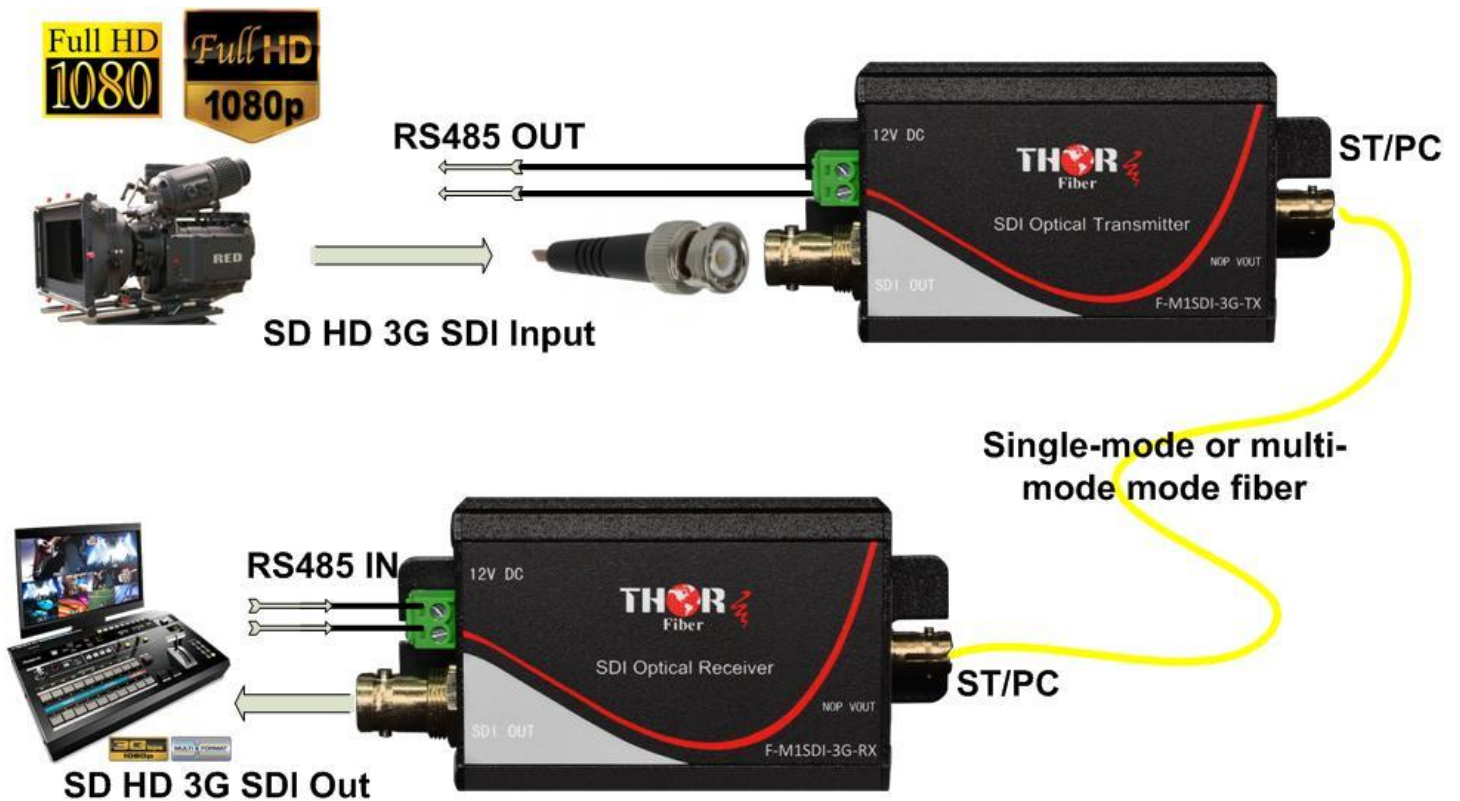
## FEATURES

1. Compact design with a casing size of 93.0mm×45.0mm×29.2mm
2. Unidirectional 12G/6G/3G/HD/SD-SDI signal transparent transmission, the bit rate is auto-adaptive
3. PAL/NTSC auto-detection
4. Pass SDI pathological code test and compliant with SMPTE RP178 standard
5. **Transmitter**
  - Integrated cable equalizer and Re-Clocker for SDI input
  - Provides one SDI loop output, supports long-distance driver
  - Provides SDI input lock indicator and power indicator
6. **Receiver**
  - Provides dual SDI outputs, with integrated re-clocker
  - Provides optical input lock indicator and power indicator
7. BNC input/output interface has 15kV electrostatic protection ability, which can meet indoor application
8. Compliant with SMPTE ST297, ST2081, ST2082, SMPTE 424M, SMPTE 292M, SMPTE 344M, SMPTE 259M, and DVB-ASI standard
9.
  - Standards:
  - SD Video Standards: 525i59.94 NTSC, 625i50 PAL
  - HD Video Standards:
    - 720p50, 720p59.94, 720p60
    - 1080p23.98, 1080p24, 1080p25, 1080p29.97, 1080p30, 1080p50, 1080p59.94, 1080p60
    - 1080P@23.98, 1080P@24, 1080P@25, 1080P@29.97, 1080P@30
    - 1080i50, 1080i59.94, 1080i60
  - 2K Video Standards:
    - 2K DCI 23.98p, 2K DCI 24p, 2K DCI 25p
    - 2K DCI 23.98PsF, 2K DCI 24PsF, 2K DCI 25PsF
  - Ultra HD Video Standards: 2160p23.98, 2160p24, 2160p25, 2160p29.97, 2160p30
  - 4K Video Standards: 4K DCI 23.98p, 4K DCI 24p, 4K DCI 25p
10. SFP LC/PC optical module INCLUDED, with 1310nm, 20km long haul, compliant with SFP MSA and SFF-8472 standard
  - With higher overload power, allows for short jumpers to connect for testing purposes
  - Optional LC/ST cable
11. Video Input Digital: 1-Channel independent 12G-SDI , SMPTE-259/292/424/2081/2082
12. Video Output Digital: 1-Channel independent 12G-SDI Loop out, SMPTE-259/292/424/2081/2082; 1-Channel Single Mode LC Fiber connector, SMPTE-297/259/292/424/2081/2082
13. Reclocking: 270 Mbps, 1.483 Gbps, 1.485 Gbps, 2.967 Gbps, 2.970 Gbps, 5.934 Gbps, 5.940 Gbps, 11.868 Gbps, 11.880 Gbps - Auto Select; All other rates are passed through and not reclocked
14. Power adaptor
  - Input :AC 90~264V @50~60Hz
  - Output DC +12V
  - The power plug has anti-shedding protection function
15. Provides CLI interface for failure location
16. Working temperature: -40°C~+85°C

## Model Selection

- F-12G-SDI-D-TX/RX -12G SDI fiber optic transmitter receiver kit
- F-12G-SDI-D-TX - 12G SDI fiber optic transmitter
- F-12G-SDI-D-RX - 12G SDI fiber optic receiver
- F-12G-SDI-TX/RX - 12G SDI fiber optic transmitter / receiver

## Application Examples:



# SPECIFICATION

Item		Typical value
<b>SD/HD/ 3G/6G/ 12G-SDI</b>  <b>Interface</b>	Connector	BNC for SDI LC connector via SFP
	Bit rate	12Gb/s, 6Gb/s, 2.97Gb/s, 1.485Gb/s and 270Mb/s auto adaption
	impedence	75Ω
	Return loss	≤-4dB@12G-SDI ≤-7dB@6G-SDI ≤-10dB@3G-SDI ≤-15dB@HD-SDI
	Output level	800mVp-p±10%
	Amplitude overshoot	<10%
	Rise and fall time (SD-SDI)	≤1.50ns
	Rise and fall time (HD-SDI)	≤270ps
	Rise and fall time (3G-SDI)	≤130ps
	Rise and fall time (6G-SDI)	≤84ps
	Rise and fall time (12G-SDI)	≤64ps
	SD-SDI alignment jitter (1KHz)	≤0.15UI
	SD-SDI timing jitter (10Hz)	≤0.15UI
	HD-SDI alignment jitter (100KHz)	≤0.15UI
	HD-SDI timing jitter (10Hz)	≤1.0UI
	3G-SDI alignment jitter (100KHz)	≤0.2UI
	3G-SDI timing jitter (10Hz)	≤0.35UI
	6G-SDI alignment jitter	≤0.3UI
	6G-SDI timing jitter	≤0.6UI
	12G-SDI alignment jitter	≤0.3UI
12G-SDI timing jitter	≤0.6UI	
<b>Power</b>	Power supply	DC 12V
	Input voltage range	11V~13V
	Power consumption	Transmitter: 3.6W±10% Receiver: 2.6W±10%
<b>Environment Requirements</b>	Working temperature	-40°C ~ 85°C
	Relative Humidity	≤95%, no condensation
	Storage temperature	-40°C 85°C
<b>Mechanical Dimension</b>		93.0mm×45.0mm×29.2mm