THOR BROADCAST

F-4SDI-3G

4-ch 3G-SDI Optical Transmitter and Receiver

V1.00

2017. 6

Contents

Chapter 1. Introduction

1.1 Overview

Thor part numbers F-4SDI-Tx and F-4SDI-Rx are standard configuration Fiber Optic Transmitter and Receivers for Serial Digital signals up to 3G-SDI running at 3.0 Gbps. This system can be ordered with any standard CWDM optics package, and internal passives are available by request. This is a 4 Channel system based on a standard 40km platform. No configuration or management is needed, as the system automatically adjusts to any input signal type regardless of bit rate or protocol. Easy to read LED indicators for Input Signal Detect and optical link are present for all channels.

1.2 Feature

- High-definition and uncompressed video in real-time, loss-free and high-quality video transmission
- Complies with SMPTE-292M HD-SDI and SMPTE-259M SD-SDI standard, supports 1.485Gb/s and 270Mb/s
- Supports DVB-ASI at 270Mb/s
- Optional loop-out function for SDI signal
- 1080P@30,29.97,25,24,23.98, 1080I@60,59.94,50, 720P@60,59.94,50,30,29.97,25,24, 23.98, and 625i、525
- Integrated SDI re-clocker and cable equalizer
- Embedded ESD and surge protection circuit to prevent damage from static and thunder
- NOP (No optical signal) alarm indications for Optical port, and output status indicator as well as input lock indicator for SDI port
- APC circuit for stable optical power
- Provides dual power redundancy: AC220V/AC110V,DC48V and DC24V can be mixed
- Compact design with 1U height, 19 inch, which can be installed on standard rack

1.3 Application

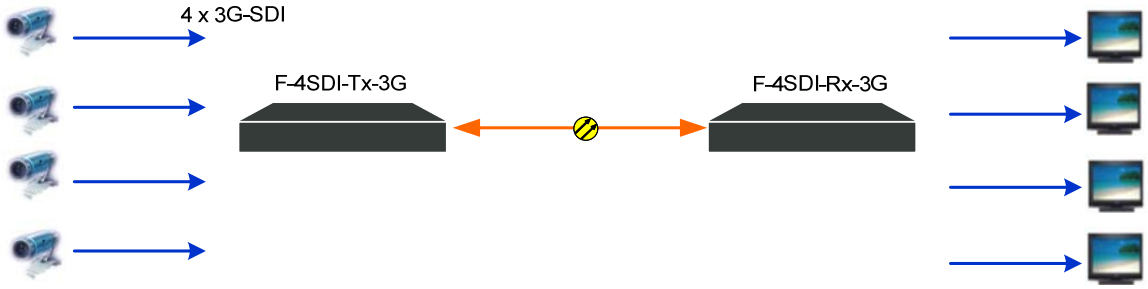

Figure 1-3 Application for F-4SDI-3G

Chapter 2. Equipment view

2.1 Front Panel

Figure 2-1-1 F-4SDI-3G Front Panel

Table 2-1-1 Indicators on Front Panel

Name	Description
LINK	Receiving status at optical port. Red ON: No optical signal. Green ON: Normal.
PWR1,PWR2	Dual power supply indicator: ON: Power works normally. OFF: Power is abnormal or absence.

2.2 Rear Panel

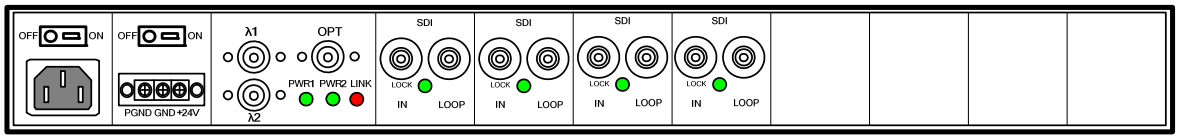

Figure 2-2-2 F-4SDI-TX-3G Rear Panel (220VAC &24VDC)

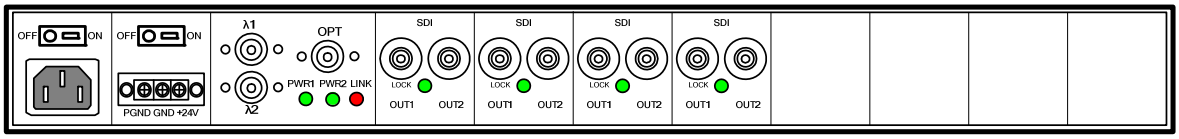

Figure 2-2-2 F-4SDI-RX-3G Rear Panel (220VAC &24VDC)

Note: As the power supply is optional, the panel illustration above may be different from the actual panel.

Table 2-2-1 Interfaces on F-4SDI-TX-3G/F-4SDI-RX-3G Rear Panel

Table 2-2-2 Interfaces on Rear Panel

Name	Description
OPT	Common optical interface, bi-directional, FC/SC/ST-PC can be selected.
λ1-λ2	Optional cascade optical interfaces, λ1-λ2 are wavelength division multiplexed into the common optical interface. The wavelength should be descript in the order item. The λ1 will be the shorter wavelength and the λ2 will be the longer wavelength.
SDI IN	3G/HD/SD-SDI input.
SDI LOOP	Optional 3G/HD/SD-SDI loop out.
SDI OUT1	3G/HD/SD-SDI output1.
SDI OUT2	Optional 3G/HD/SD-SDI output2.
Power	Support 220VAC/110VAC,48VDC or 24V DC power supply. Any two of them can be

	selected and installed.		
	~220V AC	~220V	AC power input. 100VAC~240VAC
	-48V DC	PGND	Earth ground (connects to the chassis).
		GND	Ground
		-48V	48VDC. 36VDC ~72VDC.
	+24V DC	PGND	Earth ground (connects to the chassis).
		GND	Ground
		+24V	24VDC power. 18VDC~36VDC.

Table 2-2-2 Indicators on F-4SDI-TX-3G/F-4SDI-RX-3G rear panel

Name	Description
LINK	Optical port status indicator. RED/GREEN. RED ON: Optical signal loss is detected at the port. GREEN ON: Normal.
PWR1,PWR2	Power1/Power2 indicators, GREEN ON: the power works normally OFF: the power is abnormal or absent.
LOCK	SDI input/output lock indicator, GREEN. ON: SDI input/output normal. OFF: SDI input/output abnormal.

Chapter 3. Technical Specification

Table 3-1 Technical Specification

Item	Typical Value
SDI Interface	
Connector	BNC
Bit rate	2970Mb/s, 1485Mb/s and 270Mb/s auto adaptive
Standard	Comply with SMPTE-424M 3G-SDI,SMPTE-292M HD-SDI and SMPTE-259M SD-SDI
Impedance	75Ω
Return loss	>15dB
Output level	800mVp-p±10%
Rise and fall time (3G-SDI)	≤135ps
Rise and fall time（HD-SDI）	≤270ps
Rise and fall time（SD-SDI）	≤1.50ns
SD-SDI alignment jitter (1KHz)	≤0.2UI
SD-SDI timing jitter (10Hz)	≤0.2UI
HD-SDI alignment jitter (100KHz)	≤0.2UI
HD-SDI timing jitter (10Hz)	<1.0UI
3G-SDI alignment jitter(100KHz)	≤0.3UI
3G-SDI timing jitter(10Hz)	≤2.0UI
Optical Interface	
Connector	Optional SC/FC/ST-PC connector
Distance	40Km
Receive sensitivity	-21dBm
Overload optical power	0dbm
Sending optical power	-3~+3dBm
Connector of cascaded ports	Optional SC/FC/ST-PC connector
Power Supply	
Power supply	AC220 /DC48 /DC24V
220VAC input voltage range	100~240V AC
48VDC input voltage range	36～72V DC
24VDC input voltage range	18~36V DC
Environment Requirements	
Working temperature	-30～60℃
Relative Humidity	≤95%, no condensation

Storage temperature	-40～85℃
Mechanical Dimension	
Dimension	434mm(L)×44mm(H)×250mm(W)

Note:

1. The default transmission distance is 20Km. Please declare when ordering if longer distance is required.

2. In order to prevent damage to the optical modules, an attenuator(10dB in general) must be inserted into the short fiber tail that sometimes used to connect the two devices for testing purposes.

For Further Tech Support

1-800-521-Thor(8467)

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