

Operations Manual



PDT-SFC-03-2000-RS-SM-TX/RX Kit

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2. Abbreviations

Abbreviation	Description
BER	Bit Error Rate
DC	Direct Current
EDID	Extended Display Identification Data
HD	High Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
OM	Optical Multimode
Rx	Receiver
SDI	Serial Digital Interface
SFP	Small Form-factor Pluggable
Tx	Transmitter

3. Safety Information

3.1 General Safety Information

WARNING

Only trained and authorised personnel should be permitted to work on this equipment. It is assumed that those using this guide are competent to work on equipment of this nature and will take appropriate precautions when working with the fault analysis guide.

Parallax Digital Technologies accepts no responsibility for any injury or loss caused by unsafe or inadequate working practices, or for work carried out by an unauthorised third party.

To prevent possible danger, damage, and bodily harm when handling the equipment, please observe all warnings, cautions notices contained in this section.

Failure to heed the following danger, warnings, and cautionary statements could lead to serious injury or death.

3.2 DC Mains Adapter

WARNING

The Transmitter and Receiver Units should only be used with the supplied DC Mains Adapter. In the event that the supplied mains adapter needs to be replaced with an alternative model, then one with a 5V output and a DC current rating of 1A and a DC ripple voltage of 100mV or less, will be required.

4. Packing List

The following items are included in the shipping carton:

- 1 x PDT-SFC-03-2000-RS-SM-TX – SDI Transmitter Unit
- 1 x PDT-SFC-03-2000-RS-SM-RX – SDI Receiver Unit
- 2 x SFP Module
- 2 x Mains DC Power Adapters (UK)
- Operation & Maintenance Manual (May be supplied electronically)
- Declaration of Conformity (May be supplied electronically)

5. Product Overview

The PDT-SFC-03-2000-RS-SM-TX/RX Kit is a Small Form Factor kit comprising of a Transmitter Unit and a Receiver Unit, which allows for the transmission, over Fibre Optic, of single channel 3G/HD-SDI Video Signals (audio is embedded) and Reverse RS485 signal.

The Transmitter Unit is equipped with a Loop Output to enable local monitoring of the signal. The Receiver Unit provides 2 x SDI Video Output Connectors for 1080p 3G/HD-SDI connections.

The Kit is ideal for Live Events Broadcasting and Security Operations, that utilize the high-quality afforded by SDI Video Signals.

Both units are supplied with +5VDC via a DC Mains Adapter.

These devices are perfect for AV transmission for HD Conferencing, Education, Hospitality, and Digital Signage applications.

Key features are as follows:

- Includes 8 Channels of embedded audio per SDI Channel
- Automatic Cable Equalization – for all rates below 3.2Gb/s (Belden 1694A)
- Automatic re-clocking 270mbps – 1.48Gbps – 3Gbps
- Directly Compatible with HD-SDI camera systems
- Long transmission Distance – 20km (up to 80km with other models)
- Hot-Swappable – Hot-Pluggable
- Operating Temperature Range -20°C~+70°C

6. Connectors and Indicators

Transmitter Unit

Receiver Unit



The reverse RS-485 connections are configured as shown in the following table:

	TA	TB	TC
Signal	Data +	Data -	NC

7. Operation Overview

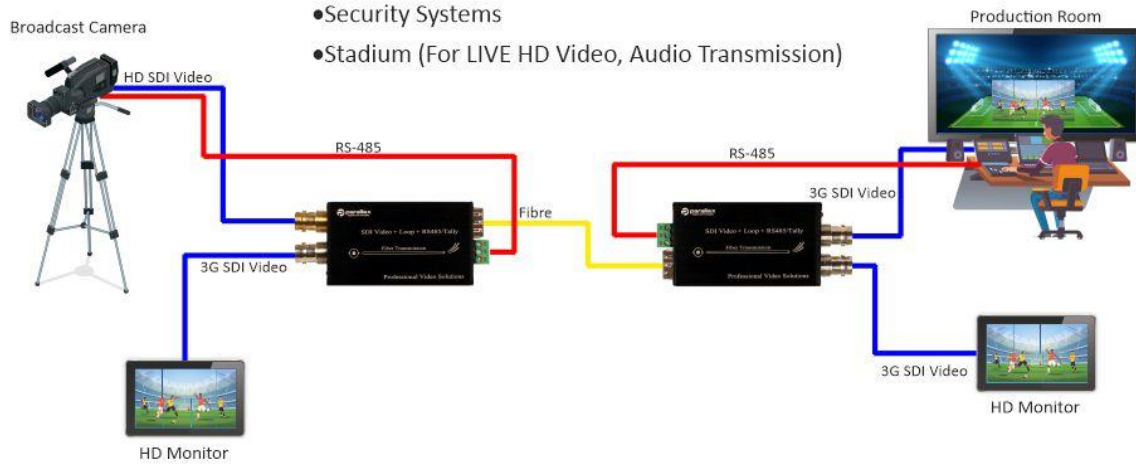
Please connect the devices in the following order for optimum performance:

- Connect the source device (eg camera) to the transmitter (connect pass through device if required)
- Insert the Transmitter SFP and connect the fiber cable
- Connect the DC mains adapter and the unit will power up
- Connect the video display(s) or receiving device(s) to the receiver
- Insert the Receiver SFP into the Receiver Unit and connect the other end of the Fibre Optic Cable
- Connect the DC Mains Adapter to the Receiver Unit and the unit will power up

8. Application Setup

8.1 Standard Multimedia Transmission

- Live Events Broadcasting over Fibre
- High Performance(Error-Free) Surveillance
- Large Video Wall Systems
- Security Systems
- Stadium (For LIVE HD Video, Audio Transmission)



9. Hardware Specification

VIDEO

Connector	BNC
Impedance	75 Ω
Video Input/ Output Voltage	Typical 1Vpp, Min 0.5Vpp, Max 1.5Vpp
Video Bit Rate	Max 3.2Gbps
Differential Gain (10%~90% APL)	<1%
SDI Format Support	625@25 PAL 525@29.97Hz NTSC, 525@23.98Hz NTSC 720p@50Hz, 720p@59.94Hz 1080i@23/24/30/50/59.4Hz 1080p@23.98/24/30/50/60Hz
SDI Video Standard	270Mbps (SD-SDI), 1.485Gbps (HD-SDI) SMPTE 425M 3Gbps Mapping (3G-SDI) SMPTE 425M 3Gbps Serial Interface (3G-SDI)

FIBRE TRANSMISSION

Interface	SFP
Fibre Type	Simplex LC
Transmission Distance	20km
Wavelength	1310nm/ 1550nm

DATA

Physical Interface	Screw Terminal
Data Type	Reverse RS-485
Frequency/ Rate	Max 57600 for RS-485
BER	<10 ⁻⁹

ELECTRICAL

Operating Voltage	+5~24VDC
Power Consumption	5W

INDICATORS

SDI	SDI Video Tx/Rx
P/T	Power Supply

MECHANICAL

Dimensions	80mm x 40mm x 20mm
Weight	105g per unit inc SFP
Casing	Aluminium
Mounting	Desktop

ENVIRONMENTAL

Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +80°C
Relative Humidity	0% - 90% non-condensing
MTBF	>100,000 hours

CERTIFICATION

Electrical Safety	EN 62368-1:2020+A11:2020
Emissions	EN 55032:2015+A1:2020
Radiated Immunity	EN 55035:2017+A11:2020
Harmonic Emissions	EN 61000-3-2:2019
Fluctuations and Flicker	EN 61000-3-3:2013+A1:2019
RoHS	IEC 63000:2018

For all technical enquiries regarding this product, please contact our technical support team using the following email address: support@parallaxdigital.co.uk