OPTICAL SYSTEMS DESIGN PTY. LTD A.C.N. 003 020 504

OPERATOR MANUAL

OSD551

TRIPLE VIDEO

FIBRE OPTIC TRANSMITTER

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Document No: 101038 Revision 01

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1. **TECHNICAL SUMMARY**

1.1 BRIEF DESCRIPTION

The OSD551 fiber optic video transmitter is designed to provide wideband CCTV quality video over up to 5km of any of the commonly available multimode optical fiber types. It also available for operation over at least 20km of singlemode fiber - these units are designated the OSD551L.

The transmitter unit is available in OSD Standard Card form and is designed to be used in an OSD350 or OSD370 chassis.

The OSD551 is completely compatible with most of OSD's other 300 series video receiver modules as well as the OSD553.

The OSD551 provides single video channel/fiber links so one fiber is required for each video signal.

Video bandwidth of at least 10MHz is achieved.

The OSD551 triple transmitter cards are generally located in control rooms or signal aggregation points.

The OSD551 operates off +12VDC.

1.2 TECHNICAL SPECIFICATION

ELECTRICAL

Number of channels	3
Input Impedance	75Ω
Input Levels	1Vpp nominal
Connector	BNC
Bandwidth	10Hz to10MHz, +1dB, -3dB
Weighted Signal to Noise Ratio	>50dB at –30dBm peak received optical power

OPTICAL

Number of fibres	3
Transmitter wavelength	850 ±40nm (1300nm for OSD551L)
Transmitter coupled power	>-19dBm peak power into singlemode fiber (OSD551L) >-13dBm peak power into 62.5/125 multimode fiber
Transmitter power adjustment	5dB nominal, user selectable for each channel
Optical link budget	>17dB at 850nm (>5km of multimode fiber) >11dB at 1310nm (>20km of singlemode fiber)
Optical connectors	ST standard Others optional (consult factory)

PHYSICAL

Power Requirements	+12V @ 200mA
Dimensions (mm)	25W X 100H X 208D
Weight	200g
Indicators	RX Signal Present (3)
Operating Temperature	0 to 60°C
Relative Humidity	0 to 95% non-condensing

2. **INSTALLATION AND OPERATING INSTRUCTIONS**

2.1 INTRODUCTION

This section outlines the methods required to install and operate the OSD551 successfully. It should be studied carefully if damage to the equipment or poor results are to be avoided.

This equipment has been fully tested prior to dispatch and is ready for immediate operation. However, it is advisable to check for external transportation damage before operation. If damage is present, return the unit and packing to the supplier immediately.

2.2 INSTALLATION

Plug the unit into the OSD350 or OSD370 chassis and connect the video signal source to the OSD551 via the BNC connectors at the rear of the unit..

Fix the unit into the chassis using the captivated screws and connect the optical cable.

Ensure that correctly terminated 75Ω BNC patch leads are used.

If a video signal is being transmitted through the link the appropriate "Signal Present" LEDs will illuminate on the front panel of the OSD551.

Note that the card can be plugged in or out of the OSD350 or OSD370 chassis with power on or off.

2.3 OTHER CONNECTIONS

The video signal is connected to external equipment by a BNC socket.

The optical fibre must be terminated by the appropriate optical connector. Before connection, inspect the end of the connectors to ensure that no dust or dirt is present as it could contaminate the modem connector and result in poor performance.

If it is necessary to clean the cable connectors use isopropyl alcohol and a lint free tissue to remove contamination.

2.4 OPERATION

2.4.1 CONTROLS

The OSD551 video transmitter has a control switch for each of the three channels for optical power. When in the switch is in the “High” (up) position the transmitted optical power is at a maximum, when in the “Low” position it is approximately 6dB lower.

Set the optical power switches to either “High” or “Low” depending on the link distance.

The following table is an approximate guide to the settings.

Fiber Type	Distance (km)		Transmitter version
	Low setting	High setting	
10/125 singlemode	0 - 5	2 - 40	OSD551L only
50/125 multimode	0 - 2	1 - 5	OSD551
	0 - 10	5 - 20	OSD551L
62.5/125 multimode	0 - 3	2 - 5	OSD551
	0 –1 0	5 - 20	OSD551L

Note that the OSD551L can be used with multimode fiber, but because of modal bandwidth limitations of multimode fibers, distances are limited to approximately the figures above.

2.4.2 INDICATORS

The OSD551 has only three indicators, one for each channel.

"Signal Present" Amber when a video signals is detected
Off when no video signal is detected

3. **MAINTENANCE**

3.1 INTRODUCTION

The following section outlines the fault finding procedures for the OSD551 modem. Please take note of the following:

Personnel without considerable technical training should not attempt any maintenance except that outlined below.

If further maintenance is attempted you are warned that every care should be taken to ensure that internal measurements made while the equipment is running are taken carefully, as some components are extremely expensive and can be damaged by failure of any portion of their support circuitry.

3.2 EXTERNAL INSPECTION

Visually check the following:

Check that the power supply voltages are correct on the OSD911 or OSD921 power supply of the OSD370 chassis. There should be +12 to +17VDC and -12 to -17VDC for the ODS911 or +12VDC for the OSD921.

Check that video signal is connected to the remote video receiver and that the OSD551 has been correctly connected to properly terminated external equipment.

Inspect optical connectors, and clean using acetone and a lint free tissue to remove contamination.

Check that the transmitter's optical power is at a level appropriate to the link distance.

3.3 ROUTINE MAINTENANCE

No routine maintenance is required for this equipment.

4. **WARRANTY**

Optical Systems Design warrants that at the time of shipment, its products are free from defects in material and workmanship and conforms to specifications. Our warranty conditions are outlined below:

4.1 WARRANTY PERIOD

For warranty period, please call your local OSD distributor.

4.2 ALL REPAIRS

Optical Systems Design reserves the right to repair or replace faulty modules/units. Please obtain an Optical Systems Design "Return Material Authorisation" form and number before returning goods.

Goods must be returned in adequate packaging material to Optical Systems Design, or its nominated authorised representative, for all repairs.

4.3 WARRANTY REPAIRS

Return shipments to Optical Systems Design shall be at customer's expense and freight back to the customer will be at Optical Systems Design's expense.

4.4 OUT-OF-WARRANY REPAIRS

Optical Systems Design reserves the right to repair or replace any faulty goods. Freight costs and insurance for both journeys are met by the user. All equipment repaired by Optical Systems Design will have a 3 month warranty from the date of dispatch.

4.5 SITE REPAIRS

By agreement site repairs may be undertaken for which out of pocket, accommodation and travel expenses will be charged.

4.6 EXCLUSIONS

This warranty does not apply to defects caused by unauthorised modifications, misuse, abuse or transport damage to the equipment.

All modifications to Optical Systems Design standard products will need written authorisation.

All modifications are to be carried out by Optical Systems Design and will be charged at normal repair rates.

Warranty is void if unauthorised removal and/or tampering with serial number and/or repair labels is evident.