
OPTICAL

SYSTEMS

DESIGN

PTY. LTD

A.C.N. 003 020 504

OPERATOR MANUAL

OSD553

TRIPLE VIDEO

FIBRE OPTIC RECEIVER

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1. TECHNICAL SUMMARY

1.1 BRIEF DESCRIPTION

The OSD553 is a triple video receiver compatible with all of OSD's OSD300 series analog video transmitters including

1. OSD361 video only transmitter module
2. OSD365 micro video only transmitter module
3. OSD351 video only transmitter card
4. OSD381 video only transmitter module
5. OSD551 triple video only transmitter card

When used with these units a video bandwidth of at least 10MHz is achieved. It is typically used in control rooms with OSD361 or OSD381 video transmitter modules located at fixed cameras or with OSD551 triple transmitter cards generally located in other control rooms or signal aggregation points.

Each of the OSD553's three receivers has an automatic gain control that utilises the sync tips to ensure stable picture levels under all lighting conditions at the camera.

It is available to operate either at a wavelength of 850nm over multimode fibre (OSD553) or at a wavelength of 1300nm to operate over either multimode or singlemode fibres (OSD553L). Multimode systems based on the OSD553 can typically operate over distances of up to 5km and those based on the OSD553L extend this to at least 20km. Singlemode systems based on the OSD553L can typically operate over at least 40km.

The receiver is in OSD's standard card format designed to plug into the OSD350 or OSD370 chassis.

The OSD553 operates off +12VDC or ± 12 VDC.

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1.2 TECHNICAL SPECIFICATION

ELECTRICAL

Number of channels	3
Output Impedance	75Ω
Output Levels	1Vpp nominal
Receiver AGC Technique	Sync tips
Connector	BNC
Bandwidth	10Hz to 10MHz, ±3dB
Weighted Signal to Noise Ratio (pk luminance/rms noise over 5.5MHz)	>50dB at -30dBm peak received optical power

OPTICAL

Number of fibres	3
Receiver operating wavelength	800 to 900nm (OSD553) 1200 to 1600nm (OSD553L)
Receiver sensitivity	<-30dBm peak for 50dB SNR (OSD553) <-31dBm peak for 50dB SNR (OSD553L)
Receiver saturation	>-14dBm peak (OSD553) >-15dBm peak (OSD553L)
Optical connectors	ST standard Others optional (consult factory)

PHYSICAL

Power Requirements	+12V @ 200mA -12V @ 100mA OR + 12V @ 300mA
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 OSD553 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 its OSD350 or OSD370 chassis and connect the video signal source to the remote transmitter and the monitor or switcher to the OSD553.

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

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

If a video signal is being transmitted through the link the appropriate "Video Signal Present" LEDs will glow green on the front panel of OSD353 receiver. If not this LED will glow red.

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 jack.

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 acetone or isopropyl alcohol and a lint free tissue to remove contamination.

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2.4 OPERATION

2.5 CONTROLS

The OSD553 automatically maintains the output video signal at $1.0 \pm 0.1 V_{pp}$

The OSD553 has the following controls:

- | | |
|----------------|--|
| LK4, LK3, LK2 | Enable the video mute to operate on Channel 1 (Top), 2, 3 (Bottom). If installed the video output is disabled when the associated "video present indicator" changes from green to red. |
| LK 7, LK6, LK5 | Couple channels 1, 2 and 3 to the alarm relay (if fitted). This is useful when the unit's "Alarm" function is required as unused channels can be disabled by removing the associated link. |
| LK1 | Set to 1 if -12V is available (as is the case when used in an OSD350 or OSD370 chassis fitted with an OSD911 or OSD922 power supply unit (PSU)) and to 3 if -12V is not available (as is the case when an OSD921 PSU is used). |

2.6 INDICATORS

The OSD553 has only three indicators, one for each channel.

"Video Signal Present"	Green when a video signals is detected
	Red when no video signal is detected

Note that this will glow red even if an optical signal is present but there is no video signal transmitted by the remote transmitter.

3. MAINTENANCE

3.1 INTRODUCTION

The following section outlines the fault finding procedures for the OSD553 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 Power Supply Unit (+12 to +17VDC and -12 to -17VDC for the OSD911 and +11.5 to +12.5VDC on the OSD921).

Check that video signal is connected to the remote video transmitter and that the OSD553 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-WARRANTY 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.