OPTICAL
SYSTEMS
DESIGN

OPERATOR MANUAL

OSD383

FIBER OPTIC CCTV

RECEIVER MODULE

OSD383

FIBER OPTIC CCTV

RECEIVER MODULE

Document No. 10103202

INDEX 1

1 TECHNICAL SUMMARY

1.1 BRIEF DESCRIPTION

1.1.1 OVERVIEW

The OSD383 is a small, self-contained, fiber-optic video receiver module. Two basic configurations are available: the OSD383 is designed for use with multimode fiber at 850nm, while the OSD383L is designed for use with singlemode fiber at 1300nm. A one-way fiber-optic video transmission link formed by using the OSD383 with one of the OSD300 series fiber-optic transmitter modules will provide CCTV or better quality video transmission at distances of over 5km using standard low cost multimode optical fiber. Using the OSD383L and singlemode fiber, distances of over 30km can be spanned.

A video output level control is included which allows optimisation of the received video picture quality. Applications include video links where distance, electrical noise or security considerations render conventional coaxial links impractical.

1.1.2 APPLICATIONS

- Very High performance surveillance systems where high resolution or long transmission distances are required
- Medical imaging transmission
- Industrial process monitoring

1.1.3 FEATURES AND BENEFITS

- Bandwidth of 10MHz
- Extends wideband video transmission to over 5km on multimode fiber
- Higher quality video than with coax or twisted pair
- Immune to electrical interference
- Compatible with most other OSD300 series video transmission products
- Complete end to end isolation
- More secure than copper cable
- Small size, low cost, robust and reliable
- Safe transmission in hazardous environments
- Adjustment-free receiver operation

1.2 TYPICAL CONFIGURATION

Figure 1 below indicates a typical set-up for an OSD383

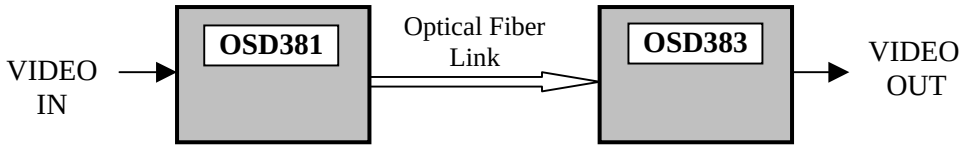


FIGURE 1: TYPICAL CONFIGURATION

1.3 PRODUCTS AND OPTIONS

There are various options available for the OSD383 as identified in Table 1 below:

TABLE 1: PRODUCTS AND OPTIONS

ITEM	DESCRIPTION
OSD383	STANDARD FIBER OPTIC CCTV RECEIVER MODULE
OSD383L	1300nm SINGLEMODE OPERATION CCTV RECEIVER MODULE
OSD902PP	MAINS INPUT PLUG PACK TO SUIT OSD383 PRODUCTS

1.4 TECHNICAL SPECIFICATIONS

Table 2 below provides Technical Specifications for the OSD383.

TABLE 2: TECHNICAL SPECIFICATIONS

NO	SPECIFICATION	PERFORMANCE
1	Output Impedance	75Ω
2	Output Level	1Vp-p nominal, externally adjustable via trimpot
3	Video Connector	BNC Socket
4	Power Connector	2-pin socket
5	Bandwidth	10Hz to 10MHz +1/-3dB
6	Weighted Signal to Noise Ratio	>50dB at –30dBm peak received optical power
7	Receiver Wavelength	800nm to 900nm (multimode, OSD383) 1200nm to 1600nm (singlemode, OSD383L)
8	Receiver Sensitivity	>-30dBm peak for 50dB SNR
9	Optical Link Budget	>17dB at 850nm (>5km of multimode fiber) >14dB at 1300nm (>30km of singlemode fiber)
10	Receiver Saturation	>-17dBm
11	Optical Connectors	ST standard, others optional
12	Power Requirements	$+9V_{DC}$ to $+18V_{DC}$ $6V_{AC}$ to $15V_{AC}$ at 100mA max
13	Enclosure	Strong metal case
14	Indicators	Video Signal Present
15	Controls	Output Fine Adjust
16	Dimensions (mm)	93D x 54W x 28H (excludes flanges and optical connectors)
17	Weight of Module (kg)	0.25
18	Operating Temperature	-20 to 75°C
19	Relative Humidity	0 to 95% non-condensing

2 INSTALLATION AND OPERATION

2.1 INTRODUCTION

This section outlines the methods required to install and operate the OSD383 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 evident, return the unit with the packaging to your supplier immediately.

2.2 INSTALLATION

2.2.1 WARNING AND PRECAUTIONS

WARNING: This is a **Class A** product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

OPTICAL OUTPUT OPERATION

Class 1	Class 3A
The multimode version of the OSD383 is a **Class 1 LED product**. Wavelength of 850nm and <-8dBm power input.	The singlemode version of the OSD383 is a **Class 3A laser product.** Wavelength of 1310nm and <+5dBm power input or wavelength of 1550nm and <+7dBm power input.
	

PRECAUTIONS

- ▲ All service personnel should be provided training as to the hazards of direct viewing of laser radiation and of the precautionary measures during servicing of equipment
- ▲ Areas where laser products are installed should be restricted in access to trained service personnel only and appropriate warning signs posted in the work area.
- ▲ All laser apertures should be covered by protective covers when not connected to optical fibers. Never leave outputs uncovered.
- ▲ Laser equipment should be positioned above or below eye level where possible. Apertures should be positioned away from personnel.
- ▲ Protective eyewear should be worn in the vicinity of laser equipment.

2.2.2 OSD383 DRAWINGS AND DIMENSIONS

The OSD383 should be mounted on an even surface and secured by means of M4 or smaller screws. Figure 2 is an outer case drawing showing the required mounting dimensions.

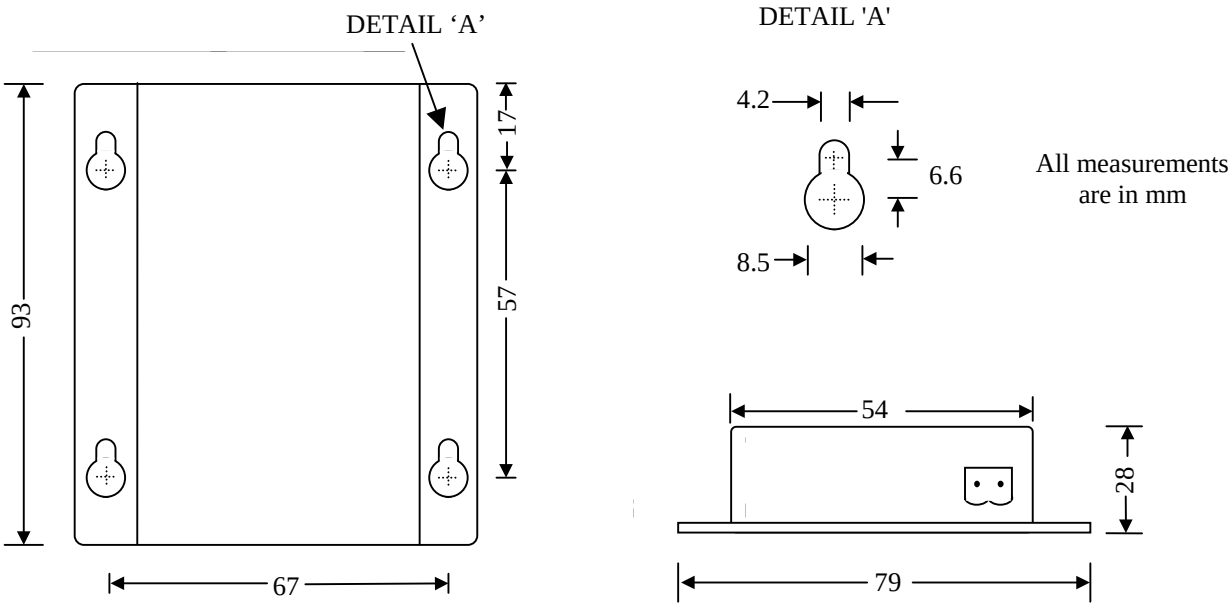
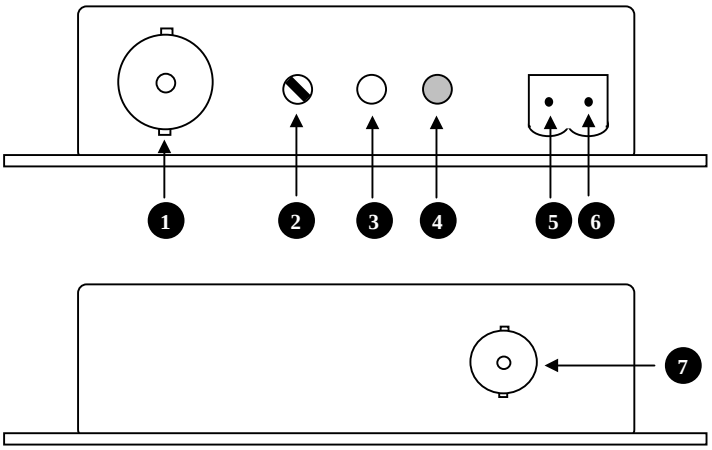


FIGURE 2: OSD383 CASE DIMENSIONS

2.2.3 POWER SUPPLY CONNECTIONS

The OSD383 requires external DC or AC power. The acceptable DC voltage range is +9 to +18V DC, and the allowed AC voltage range is 6 to 15V AC, with maximum current draw of 100mA. Power should be connected to the 2 way socket located at the back of the case. Take care to connect DC power with the correct polarity: pin 2 is ground and pin 1 is positive power. For AC supplies the polarity is not applicable.



1 BNC Output
2 Output Video Level Adjust
3 Not Used
4 LED – Video Present
5 Power Ground (pin 2)
6 Power +ve (pin 1)
7 Optical Input

FIGURE 3: OSD383 SIDE VIEWS

2.2.4 SIGNAL CONNECTIONS

The video output signal from the female BNC connector on the OSD383 should be connected to external equipment using 75Ω cable terminated to a male BNC connector.

The optical fiber cable must be terminated with the appropriate optical connector. Before connection, inspect the ends 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 lint free tissue to remove contamination.

2.2.5 INDICATOR FUNCTION

The OSD383 has one LED indicator. The function of which is described in Table 3.

TABLE 3: INDICATOR FUNCTION

INDICATOR	COLOUR	STATUS
Video	Green	Video output signal present
	Red	Video output signal not present

2.2.6 CONTROLS

The OSD383 has one control for adjusting the video output signal level. It is located on the side of the unit adjacent to the video output BNC connector (see Figure 3), and is accessible using a small flat-blade screwdriver. The output signal level of the OSD383 is nominally set to 1Vp-p when shipped, however this can be adjusted should the need arise such that the received picture quality can be optimised.

3 MAINTENANCE

3.1 INTRODUCTION

The following section outlines the fault-finding procedure for the OSD383 modems. Please take note of the following:

- ▲ Personnel without appropriate 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 operational are taken carefully as some components within the unit are expensive and may be damaged by failure of any portion of their support circuitry.
- ▲ Some components within the unit are ES sensitive and ESD precautions should be taken when performing maintenance upon the unit.

3.2 EXTERNAL INSPECTION

Visually check for the following:

- ▲ Check that the correct power source is connected to the power socket.
- ▲ Check that the video signals are connected to the modem correctly and that the distant modem has been terminated correctly to any external equipment.
- ▲ Inspect the optical connectors for any contamination and clean using isopropyl alcohol and a lint free tissue if any contamination is detected.
- ▲ Check that any external termination resistors are connected if the system configuration requires them.

3.3 ROUTINE MAINTENANCE

- ▲ There is no routine maintenance required with the OSD383.

4 WARRANTY

Thank you for purchasing equipment designed, manufactured and serviced by Optical Systems Design (OSD). OSD 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 REPAIRS

Optical Systems Design reserves the right to repair or replace faulty modules/units. Please obtain a "Return Material Authorisation" (RMA) form and number before returning goods.
Goods must be returned in adequate packing material to Optical Systems Design, Warriewood or its nominated authorised representative, for all repairs.

4.2.1 WARRANTY REPAIRS

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

4.2.2 OUT-OF-WARRANTY REPAIRS

OSD 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 OSD will have a 3-Month warranty from the date of dispatch.

4.2.3 SITE REPAIRS

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

4.2.4 EXCLUSIONS

This warranty does not apply to defects caused by unauthorized modifications, misuse, abuse or transport damage to the equipment. All modifications to OSD's standard product will need written authorization and will be charged at normal repair rates. All modifications are to be carried out by OSD technicians. Warranty is void if unauthorized removal and/or tampering with serial number and/or repair labels is evident.

Optical Systems Design Pty. Ltd.
7/1 Vuko Pl. Warriewood 2102
P.O. Box 891 Mona Vale
N.S.W. Australia 2103
Telephone: +61 2 9913 8540
Facsimile: +61 2 9913 8735
Email: osdsales@osd.com.au
Web Site: www.osd.com.au

OPTICAL
SYSTEMS
DESIGN
PTY LTD A.B.N. 83 003 020 504

Printed in Australia