

OS803R\_U2.DOC  
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# **PRODUCT - OS803R**

3 Channel Video On Fibre Receiver  
With AGC

User Manual  
Version 2.0

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**USER MANUAL**

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## 1. PRODUCT DESCRIPTION

### 1.1 General

The OS803R is a three channel Fibre to Video Receiving unit with Automatic Gain Control (AGC). This unit converts an optical signal received from the fibre into a composite video signal, which is transmitted out onto a BNC connector. When the optic signal is present, an led indicator will light up. Each card uses 3 Optic Receiver devices.

This unit is designed to fit into an OS800 19" sub-rack system. The card is standard Eurocard size.

This unit operates autonomously.

### 1.2 Basic System Description

The unit consists of 3 fibre to video receivers, and one voltage regulating circuit.

The unit is powered via an edge connector that is situated at the back of the card. This edge connector plugs into an OS800 card frame that is fitted with the correct back plane edge connectors.

All three receiver circuits operate identically, and are independent of each other. The basic operation is outlined below.

The optic receiver on the front of the card receives the optical signal from the fibre cable. This signal is then fed into the video signal-conditioning amplifier. The amplifier checks the sync-pulse amplitude of the video signal, and employs AGC to set the correct gain to obtain a sync-pulse level of 300mVp-p (sync to blank level), as per composite video signal standard. The sync to picture ratio will now be 3:7 with a standard colour bar test signal. This means that the remainder of the signal amplitude will be 700mVp-p (blank to white level). A jumper can be removed to override the AGC mode, and the gain can then be set manually via a variable resistor on the card. Finally, the video signal is fed out on a BNC connector on the back of the card, with an output impedance of 75 Ohm.

#### Features

- Compatible with standard composite video signals.
- Compact design allows large concentration of video signals.
- Up to 3 channels per card.
- Multiple cards fit into OS800 - 19" rack system (up to 12 per rack).
- Interface directly to the OS801 Single channel video transmitter on fibre.

#### Uses

- Security systems.
- Long distance noise free video transmission.

### 1.3 Indications

Power - Indicates unit is powered

Video signal - Indicates video signal presence

## 2. PRODUCT STOCK CODES

**OS803RAB** 3 Channel Video Receiver, 850nm Optics, ST Connectors, 3.5km Distance.

**OS803RBB** 3 Channel Video Receiver, 1300nm Optics, ST Connectors, 12km Distance.

## 3. PREPARATION FOR USE

### 3.1 Unpacking

Check for any physical damage to the units, which may have been caused during transportation. Return any damaged equipment to the supplier.

### 3.2 Configuration of the links.

Each channel has its own associated link for the AGC.

To set the circuit to AGC mode, links LK1, LK2 & LK3 must be inserted.

For Manual Gain mode, these links must be removed, and the variable resistors adjusted as required.

Links 4,5,6,7,8,9 selects Normal or Inverted video signal. This link is factory set, and depends on the optic type used. Usually when 1300nm optics are used then the link must be in the top position, and when 850nm optics are used the link must be in the bottom position.

### 3.3 Installation.

It is not necessary to remove the cards from the sub rack.

Connect the fibre cables to the front of the card, taking care not to bend the fibres too much.

Connect the BNC cables to the connectors at the back of the card, as well as the power cable.

If the links are removed for manual gain adjustment, then the following procedure is followed. Each channel has its own adjustment for gain. However, this gain adjustment is not reachable from the front or back of the unit. The gain is normally adjusted using a standard reference signal from a pattern generator at the Optic transmitter. The received Video signal is then monitored on the oscilloscope, with a 75 Ohm termination. The gain is now adjusted to get a 300mVp-p sync-pulse signal. The oscilloscope should be set to video-line sync for proper viewing.

If the links are inserted for AGC, the unit can be used as it is. Note if you have changed the manual setting, it is necessary to readjust the AGC setting by following the above procedure in AGC mode.

## 4. OPERATOR'S INSTRUCTIONS

The unit needs no operator intervention to function. If a fault arises, it is necessary to observe the led indications, and to perform such procedures as described in the first line maintenance chapter.

## 5. MAINTENANCE INSTRUCTIONS

No routine maintenance is required on this equipment.

### 5.1 First line maintenance.

#### 5.1.1 Instruments and tools required

- Optic power meter
- Multi-meter.
- Oscilloscope.

#### 5.1.2 Maintenance procedure

When arriving at a suspect unit it is necessary to check that all copper connections are correctly made. Check that all fibre connectors are plugged in correctly and that the fibre is undamaged.

The first thing to check after that is the OS800 power supply. Check that the power to the OS800 is switched on. Then check the OS800 Power Supply for the voltage indicators(+V and -V) on the front panel. If none of the voltage indicators are working, check the fuse on the back at the power connector. If blown, replace with the same type and rating of fuse. If replaced and the unit still has no power, the OS800 is faulty and must be replaced.

Use the optic power meter and measure the optic level coming out of the fibre cable at the suspect channel. Do this by disconnecting the ST connector and connect the fibre to an Optic power meter, and check the optic receive level. If this level is too low, or not present, then the fibre cable or the transmitter unit could be damaged.

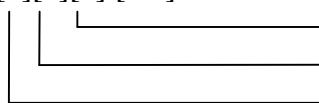
The next thing to check is the video signal coming out of the unit. Do this by connecting the video output from the BNC connector to the oscilloscope with a 75 Ohm termination as load. The sync-pulse should be 300mVp-p, and peak white information at ~1Vp-p. If the signal is too small or too big, check if the unit is set for Manual or AGC. Try adjusting the pots to obtain the correct video signal levels.

If all these tests have been done and the system is still not operational, the unit must be returned to the supplier for repair.

## 6. Ordering Information:

Stock Code selection:

OS803 R [x][x][x]/[ver]



Version (Not specifically required for ordering)

Power supply option (Optional)

Optic Connector Option

Optic option

OPTIC OPTION	WAVELENGTH	RANGE	BUDGET DISTANCE	OPTIC CONNECTOR OPTION		POWER SUPPLY OPTION	
A	850nm	Short Range Multi Mode	3.5km	-	-	A	220VAC
B	1300nm	Medium Range Multi Mode	12km	B	ST	B	110VAC
C	1300nm	Medium Range Single Mode	30km	-	-	D	24V DC

## 7. SPECIFICATIONS

### 7.1 Electrical Characteristics

#### Power Supply

Power Connector -	20-Pin Double Sided Edge Connector
Supply Voltages -	+12Vdc @ 100mA (nominal) -12Vdc @ -50mA (nominal)
Power Dissipation -	2 Watt (max)

#### Video Output

Video Output Connector -	BNC Female
Output Impedance -	75 Ohms
System Bandwidth -	100 Hz to 10 MHz
Signal/Noise Ratio -	52 dB minimum
Differential Gain -	2 % typical
Differential Phase -	2° typical

### 7.2 Optical Characteristics

Connector -	ST
Reception Wavelength -	850nm or 1300nm
Responsivity -	7 mV/μW Typical or 13mV/μW
Fibre Compatibility -	50/125 μm Multimode; 9/125μm Singlemode
Maximum Input Level -	-15dBm
Minimum Receive Level-	-30dBm

### 7.3 Physical Characteristics

19" Rack Dimensions-	3U Rack Height x 25mm Width	
Overall Unit Dimensions - (Including Front Panel)	Length -	183mm (front handle to back edge connector)
	Width -	25mm (front panel width)
	Height -	128mm (front panel height)
Weight -	233g	