

Features

- 30 MHz to 2.7 GHz Bandwidth
- Rugged Dust-Tight Housing
- 3 x 5 x 1.25 in. Weight ¾ lb
- -40C to +75C Operating Temperature
- Wide DC Input Range of +9V to +30V Supply
- LD/PD Monitoring and Alarm
- High Spurious Free Dynamic Range
- Automatic Optical Power Control
- 1.3/1.5 µm Low Noise DFB Lasers with isolator
- Laser conforms to Class 1 Laser Safety, EN60825-1:2007.
- Internal Transmitter LNA

Options

- Extended Bandwidth of 10 KHz to 3.3 GHz
- CWDM DFB Laser
- Manual Gain Adjust 30dB
- Multimode Fiber Compatibility
- Low Power Dissipation
- Bias-T, +5V or 12V Max 100mA
- Antenna Load Propagation

Applications

- L band Satcom
- Cellular Backhaul
- MMDS
- 10MHz Low Phase Noise Clock Distributions (Optional)
- Remote Antenna Location
- In-Building DAS Solutions
- GPS Distribution
- Optical Delay Line
- Public Safety

OZ600RP

Description

The OZ600RP is a Broadband Optical Repeater with a wide Dynamic Range designed for RF over Fiber applications, including GPS over Fiber, Radio distribution in tunnels or mines, etc. Each unit consists of a receiver, RF power splitter and a transmitter that propagates the signal to the next "station". The patented Antenna Status propagation enables active load switching at the RF output. The internal LNA keeps the overall Noise Figure low and compatible with the application. These linear RFoF links are an excellent alternative to using a coaxial cable link. Packaged in a rugged dust-tight Cast Metal housing the OZ600RP offers a high Spurious Free Dynamic Range (SFDR) from 30 MHz to 2.7 GHz. Optional extended bandwidth of 10 KHz to 3.3 GHz is also available. The Manual Gain Control feature offers a simple way to adjust the receiver output RF level. The standard optical connector is SC/APC (FC/APC available) and the RF interface is a 50 Ohms SMA connector. Alarm and monitoring functions are available through DB9 connectors and local dual color LED's for Received Optical Power and Laser Bias Current Monitoring.

Patent Number US 10,257,739 B1

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Units
Storage Temperature (Case)	T _s	-40	+85	°C
Operating Temperature (Case) 1310nm DFB Laser, -20C for 1550nm Laser	T _o	-40	+75	°C
DC Supply Voltage	V _{cc}	+8	+32	Volts
Maximum RF Input into TX (no LNA)			+17	dBm
Maximum Optical Input into Rx			12	mW

Characteristics of OZ600RP

Parameter	Symbol	Min	Typical	Max	Units	Notes
Power Supply Voltage	VCC		12		Volts	
Power Supply Current	ICC		320	380	mA	*
Laser Bias Monitor	LBM		1		V/100mA	
Laser Bias Open Collector Trip Point	LBA		110		mA	(or 1.1V)
Optical Rx Monitoring	ORM		0.1		V/1.mw	
Optical Rx Alarm	ORA		-10		dBm	
Laser Optical Output Power			2	6	mW	5
Transmitter Operating Wavelength A/B		1270	1310 or 1550	1610	nm	
Receiver Operating Wavelength B/A		1270		1610	nm	
High Frequency Cutoff	HFC		2700	3000	MHz	1
Low Frequency Cutoff	LFC	20	30		MHz	2
Frequency Response (30 to 2700 MHz)			±1.5	±2.0	dB	
Input/Output Impedance	Z		50		Ohms	
Input/Output VSWR (30 to 2700 MHz)		1.5:1	2:01			
Spur Free Dynamic Range	SFDR		109		(dB/Hz) ³	3
RF Link Gain						
Gain (Tx Unity Gain Link)		-2	0	+2		
Gain (Tx 20)		18	20	22		
Input Noise Floor @ 1Gh		-149	-153			
Input Third Order Intercept @ 1Gh		+8	+10			
Isolation		40	50			
Group Delay Over 4MHz (30 to 2700 MHz)			0.5	1	ns	

¹ Typical High Frequency Cutoff (HFC) is 2700 MHz. For higher HFC contact Factory.

² Typical Low Frequency Cutoff (LFC) is 30 MHz. For lower LFC contact Factory.

³ Measured with 1 meter of Single Mode Fiber.

⁴ Equivalent to IMD 60dB@0 dBm Total Output Power (2 tone measurement).

⁵ 1310nm max optical power can reach 6mW under factory operational setting @25C

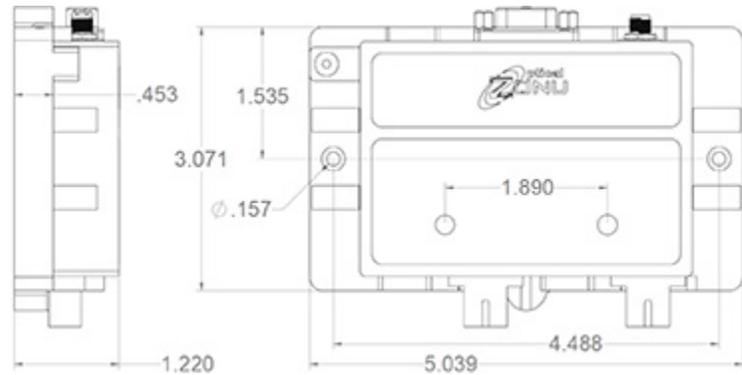
⁶ The Bias-T option of +5V or +12V is to provide power to any active antenna may it be for GPS applications or any other applications with similar needs, where the amplifier is built inside the antenna providing better link sensitivity. The OZ600RP Transmitter monitors the Antenna and reports optically to the OZC GPS optical receiver.

GPS optical receiver has a built in active antennae load which switches to high impedance if there is a fiber fault or remote antennae failure working in conjunction with OZ600RP GPS transmitter.

*For lower power dissipation version contact Factory.

DB-9 Configuration

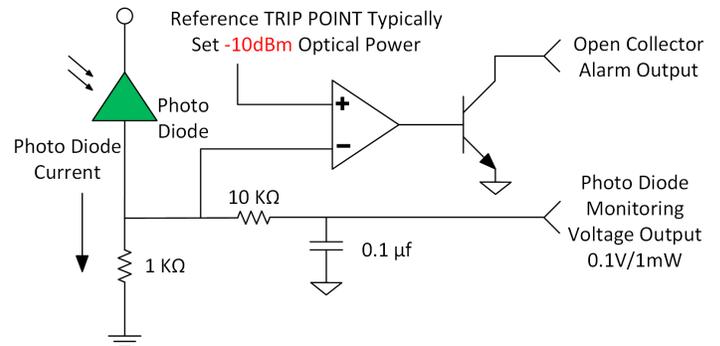
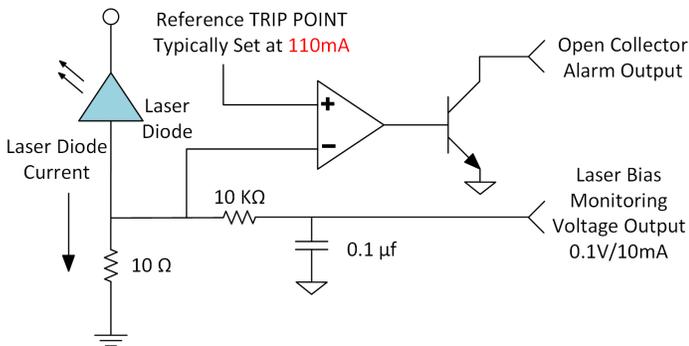
Pin	Function
1	Laser Enable (+12V = Laser ON)
2	Data INPUT (Tx RS232) / OR NC
3	Data OUTPUT (Rx RS232) / OR NC
4	+12 volts (380 mA max)
5	Ground
6	Laser Bias Monitor (0.1V = 10 mA)
7	Laser Bias Alarm (open collector, 25 mA)
8	Received Power Monitor (0.1V = 1mW)
9	Received Power Alarm (open collector, 25 mA)



RF Connector = SMA Female
Optical Connector = SC/APC or FC/APC
DATA + ALARM = DB9

Individual Tx Alarm & Monitoring Circuit Diagram

Individual Rx Alarm & Monitoring Circuit Diagram

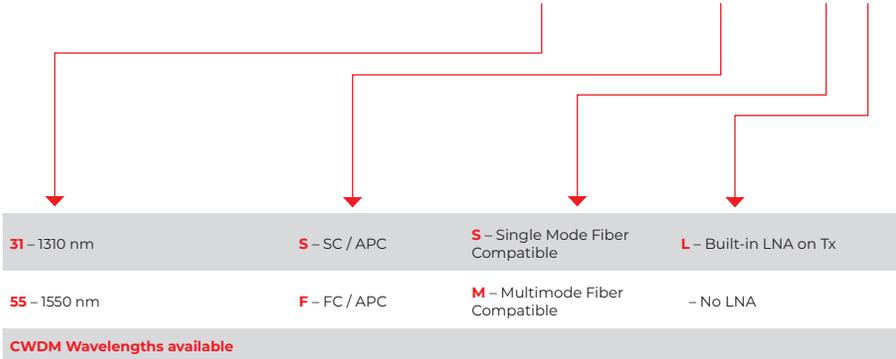


All alarms are open collector topology, with active low for normal operations and during alarm conditions the open collector will pull to high logic levels. Reverse polarity alarm is also available upon request, such as under normal conditions the open collector will be high and vice versa under fault conditions.

Ordering Information

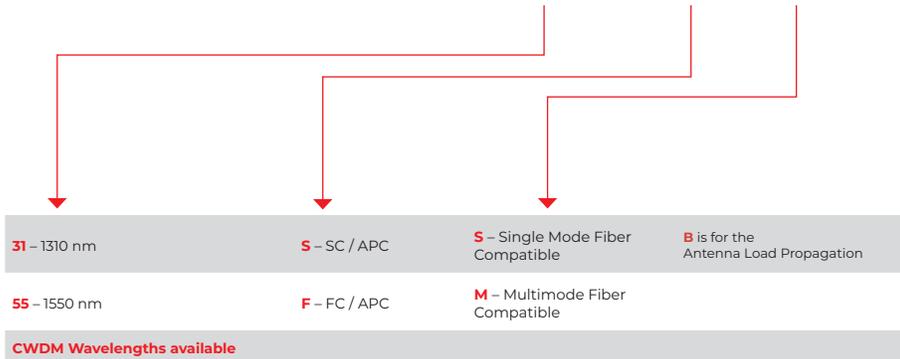
PART NO.

A03- Z600RP – DXX – AX – XX



PART NO.

A03- GPSRP – DXX – AX – XLB



Contacts

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SALES - SATCOM

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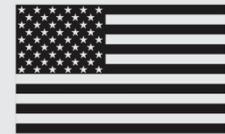
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