RF OVER FIBER

3/6/10 GHz RF Signal Transport Standalone Modules



OZ16xx

Features

- Upper Bandwidth of 3 GHz, 6 GHz, 10 GHz
- 30 MHz Lower Roll-off Frequency
- RF Gain Stable and Fixed Over Operating Temperature Range
- Rugged Dust-tight Cast Metal housing, 3 x 5 x 1.25 in. @ ¾ lb
- -40°C to +65°C Operating Temperature Range, Fixed RF Performance
- LD Bias, LD Power, and PD Monitoring and Alarms
- Exceptionally High SFDR Up to 115 dB/Hz $^{2/3}$
- Closed Loop Optical Power and Laser Diode Temperature Control
- Cooled DFB Lasers
- Laser Conforms to Class 1 Emission Level and IEC-825 (EN 60825) Standards

Options

- Lower Frequency Roll-off Down to 10 KHz
- DWDM Lasers
- -40°C to +85°C Operating Temperature Range
- Internal Transmitter LNA
- Manual Receiver Gain Control 30dB Range
- Multimode Fiber Compatibility
- +28 Volt Power Supply
- Low Power Dissipation
- Diagnostics and Control Functions Through Digital Serial Interface (I2C)

Applications

- MMDS
- Remote Antenna Location
- GPS Distribution
- Satellite Ground Station
- Optical Delay Lines
- L, C and X Band Links

Description

The OZ16xx is a broadband RF-over-Fiber standalone flange-mount module which may be configured as a transmitter, a receiver, or a transceiver (transmitter + receiver). Fiber links may be configured for unidirectional or bidirectional RF traffic. The OZ16xx has a wide dynamic range and supports RF transport in situations where transport distance or cabling flexibility may prohibit the use of coaxial cable. Packaged in a rugged, dust-tight cast metal housing, the OZ16xx provides high Spurious-Free Dynamic Range (SFDR) transport for RF signals in the frequency range 30 MHz up to 10 GHz. Optional extended bandwidths of 10 kHz (for lower rolloff) are also available. Manual Gain Control is available to adjust end-to-end RF link gain and to optimize the receiver's output RF level.

The OZ16xx features a linear optically isolated cooled DFB laser diode operating at 1310 nm or 1550 nm and/or a high performance InGaAs photodiode. DWDM wavelengths are also available. Integrated WDMs within the module package allow for bidirectional signal traffic over a single fiber. The cooled laser diode is designed with a built-in Thermoelectric Cooler (TEC) which maintains the laser device at a constant temperature, over the ambient operating temperature range. By maintaining a constant laser diode temperature, laser noise is minimized and RF performance is preserved over the operating temperature range. The transmitter optical output power is also maintained at a constant level by means of closed loop control.

The OZ16xx module RF interface is 50Ω SMA. The standard optical interface is SC/APC bulkhead receptacle (FC/APC is also an option). The OZ16xx is designed for transport over 9/125 µm single mode fiber, however options exist for transport over multimode fiber. Alarm and monitoring functions are available via a DB9 connector on the enclosure. LEDs provide status of laser bias current (transmitter) and received optical power (receiver). An optional I2C serial data interface is also available, contact Optical Zonu for details. The OZ16xx module is powered from +12 VDC.

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