



CWDM RFoF Interfacility Link with GbE

4-Ch RFoF Link + Single Fiber Full Duplex GbE Data Channel



FEATURES

- 4 Bidirectional RF over Fiber CWDM Transceivers in 1U
- 1310 nm Express Port: Single Fiber, Full Duplex GbE Channel
- Low Noise Isolated DFB Lasers
- Broadband 30 MHz to 3 GHz
- Integrated low IL CWDM Mux/Dmux
- Redundant (dual) AC Power Supplies with Auto Switching
- Front Panel Cumulative Alarm Indicator
- Alarm Outputs for each Tx and Rx module
- 0°C to +60°C Operating Case Temp
- Populated by OZ510 family of Tx and Rx modules (*See OZ510 Data Sheet.*)
- MTTF > 10 years at 50°C

OPTIONS

- Extended Bandwidth of 10 KHz to 6 GHz
- Built-in Low Noise Amplifier in the Tx module
- Multimode Fiber Compatible

APPLICATIONS

- Wi-Max
- 4G LTE
- Wireless/Cellular Backhaul
- MMDS
- Remote Antenna Location
- Satcom
- In-Building Solutions
- GPS Distribution
- Timing Delay

DESCRIPTION

This EIA 310-D Standard 19 inch 1U rack-mounted unit is a highly integrated RFoF System. It includes 4 Bidirectional RF links (4 Tx and 4 Rx) and one External Gigabit Ethernet Data Channel via Optical Port, Integrated CWDM Multiplexer/De-multiplexer, and Optical Fiber Management. This is a perfect solution for applications where a limited number of fiber strands is available. It may also be configured to transport all signals in one direction for up to eight (8) channels. The RFoF Fiber Optic Transceivers are Very Wide Dynamic Range with low frequency response ripple designed for High Linearity and Low Noise RF over Fiber Optics applications.

Front Panel Indicators provide visual indications of the Power Supplies' operation and the cumulative link status. Individual Unit (each Tx or Rx) status may be monitored via connectors available at the back panel. Alarm Conditions are indicated via relay contacts (dry contact type).

The Receivers feature high performance InGaAs photodiodes and the Transmitters are based upon linear, high performance, Isolated DFB Lasers, operating at CWDM wavelengths from 1471 nm to 1611 nm over 9/125 μm SMF28 Single Mode optical fiber. Average Automatic Power Control (AAPC) is incorporated for optimal optical power stability over the full temperature range.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Max	Units
Storage Temperature (Case)	T _s	-40	+85	°C
Operating Temperature (Case)	T _o	-0	+60	°C
DC Supply Voltage	V _{PD}	11.5	12.5	Volts
Maximum RF input into Tx (no LNA)			+15	dBm
Maximum RF input into Tx with LNA			0	dBm
Maximum Optical Input into Rx			4	mW

OZ9514 LINK CHARACTERISTICS

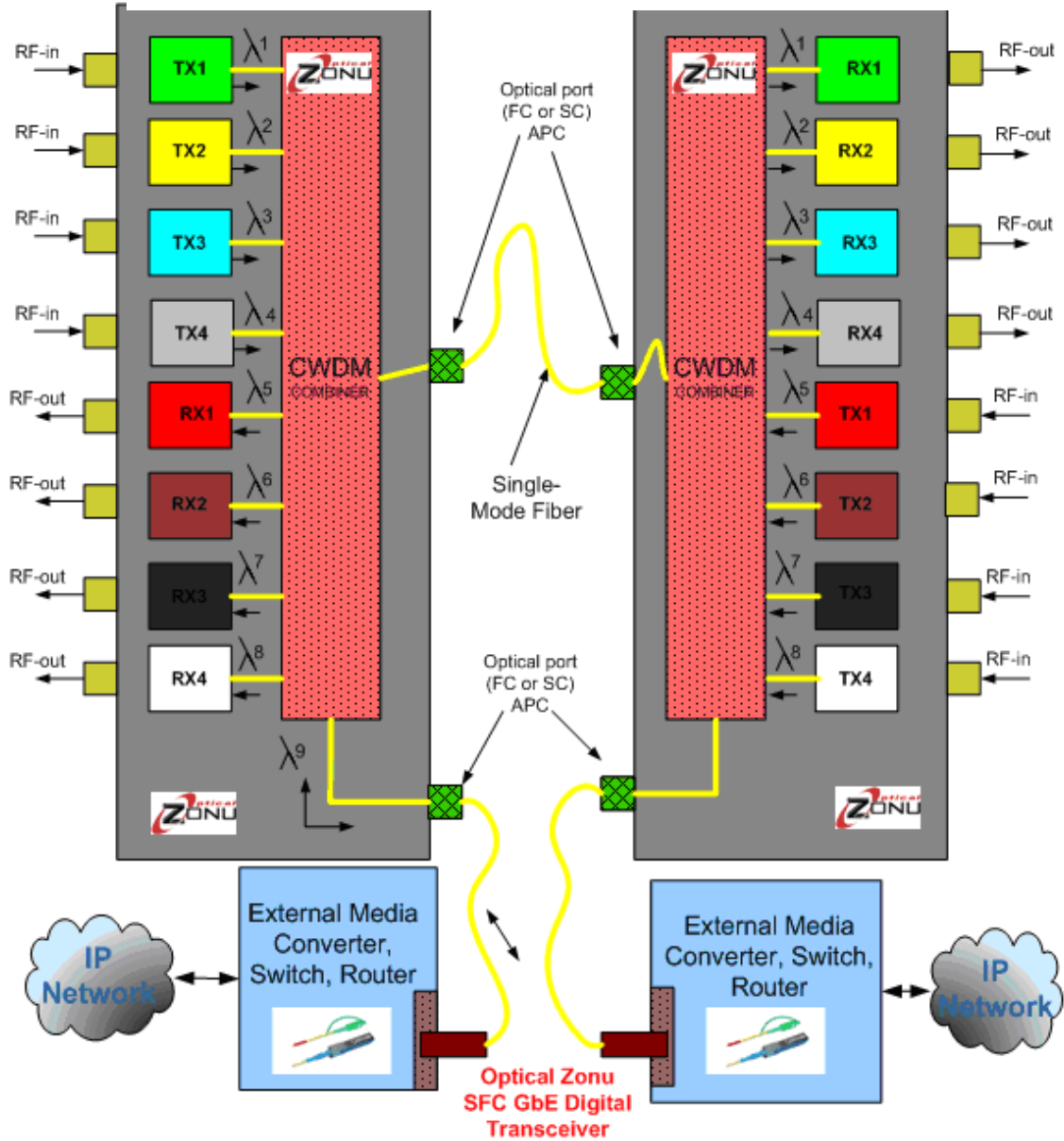
Parameter	Symbol	Min	Typical	Max	Units	Notes
Power Supply Voltage	VCC		12		Volts	
Power Supply Current (Tx + Rx per channel)	ICC		200	250	mA	1
Laser Optical Output Power			2		mW	
Transmitter Operating Wavelength A/B	λ	1471	CWDM	1611	nm	
Receiver Operating Wavelength B/A	λ	1471	CWDM	1611	nm	
High Frequency Cutoff	HFC		3000	3300	MHz	2
Low Frequency Cutoff	LFC		30		MHz	3
Frequency Response (48 – 2700 MHz)			+/- 1.5		dB	
Input/Output Impedance	Z		50		Ohms	
Input/Output VSWR (48-2700 MHz)			1.5:1	1:8:1		
Spur Free Dynamic Range	SFDR		108		(dB/Hz) ^{2/3}	4
RF Link Gain end to end all channels		-8	-6	-4	dB	4
Input Noise Floor	EIN	-130	-133		dBm-Hz	4
Input Third Order Intercept	IIP3	27	31		dBm	4

1. Total power consumption for both Tx and Rx
 2. Typical high frequency cutoff (HFC) is 3000 MHz. For higher HFC contact Factory.
 3. Typical low frequency cutoff (LFC) is 30MHz. For lower LFC contact Factory.
 4. Measured with 1 meter of SMF28 optical fiber.
- All measurements are taken at @ 25°C

LINK CONFIGURATION DRAWING

OZ9514 4-Ch CWDM RFoF with GbE

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ACTUAL PRODUCT PHOTO ILLUSTRATION

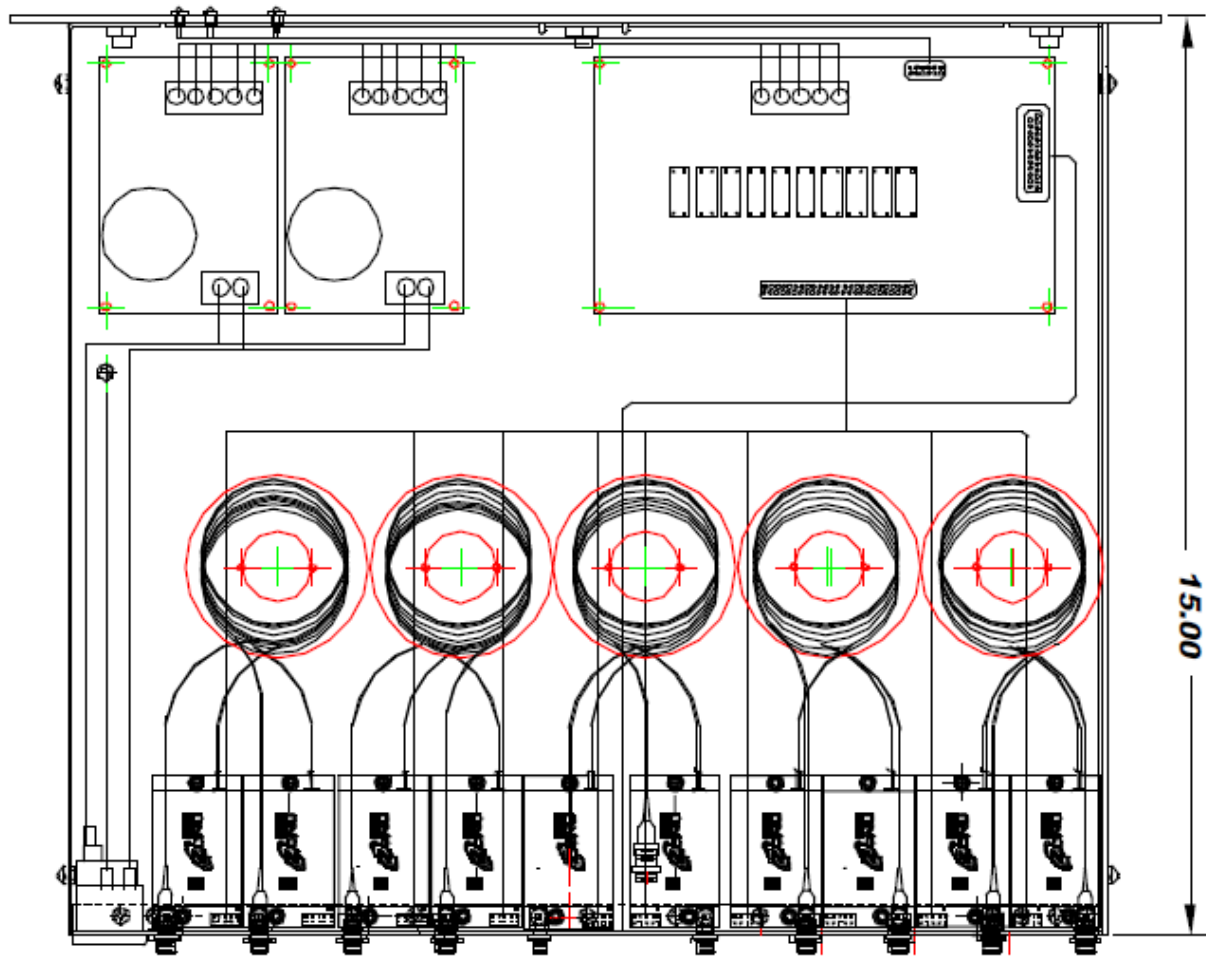


Figure 1 – Internal Setup



Figure 2 – Front Panel

FULLY LOADED OZ9000 INTERNAL ARCHITECTURE DRAWING w/out CWDM MUX/DEMUX



FRONT PANEL ALARM CONFIGURATION



There are 4 LED lights located on the front panel of the OZ9000. Two of them indicate the working status of the RF modules and other two show the status of the internal AC-DC power supplies.

Two LEDs under ALARMS show the combination status of all transmitter and receiver alarms. For example: If all the transmitter bias currents are lower than 110 mA (typically 35 mA), then all transmitters are considered to be working normally and the TX LED will be **ON**, with the color **GREEN**. If any of the transmitters draws excess current beyond 110 mA, then the TX LED will be **OFF** indicating one or more transmitters are faulty. To check each transmitter's status, a skilled technician needs to remove the chassis cover and look at each individual transmitter's LED. Any transmitter module that has its LED turned **ON** to **RED** indicates a fault condition. In the case of the RX LED, if all receivers inside the chassis receive optical power greater than -10 dBm, then it means that all the receivers are working properly and the RX LED will be **ON** with the color **GREEN**. If any of the receivers detects optical power lower than -10 dBm, then the RX LED will be **OFF** signaling one or more receivers are faulty. To find out which receiver is faulty, a skilled technician needs to remove the chassis cover and look at each individual receiver's LED. Any receiver module that has its LED turned **ON** to **RED** signals a fault condition.

The two LEDs under POWER are both dual color. They monitor the status of the main and backup power supplies. Under normal condition both LEDs should be **ON** and remain **GREEN**.

Note: The individual transmitters and receivers inside the chassis will also have the same LED alarm configuration as is shown in Figure-3. The Laser Bias LED will only turn **RED** when the condition is faulty.

PLEASE CONTACT FACTORY AT 818.780.9701 EXT. 23 FOR ORDERING INFORMATION.

