RF over Fiber Optic Interfacility Link

OZ9500 Series – Fixed Configuration Subsystem

FEATURES

- 30 MHz to 3.0 GHz Bandwidth
- Houses up to 5 pairs of OZ510 Transmitters or Receivers
- Front Panel Alarm Indicator
- -0°C to +60°C Operating Case Temperature
- Dual Universal AC Power Supply
- Dry Contact Alarm outputs per each Tx and Rx.
- 1U, 19 x 15 in. chassis with optional 19 x12 in.
- MTTF exceeds 10 years at +50°C
- Laser Conforms to Class 1 Emission Level per CDRH and IEC-825 (EN 60825) Standards

OPTIONS

- Extended Bandwidth of 10 KHz to 3.3 GHz
- CWDM Lasers
- Optional DC Power Supply
- Internal WDM or CWDM for Single Fiber functionality
- Multimode fiber compatibility

APPLICATIONS

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

DESCRIPTION

The OZ9500 is an EIA 310-D Standard 19 inch 1U rack mounted unit that can accommodate multiple high performance, broadband, fiber optic transmitters and receivers. The depth of the chassis is available in two types, 15 inches or 12 inches. Both versions accommodate the same number of modules.

The OZ9500 main RFoF module building blocks are based upon the OZ510 or OZ450 products, and may be populated with up to 5 Pairs of these transmitters and/or receivers. Each of these RFoF links is capable of carrying an individual RF signal over single mode (SMF-28) fiber optic cable (multimode fiber cable optional). The OZ9500 may hol up to 9 Transmitter or 9 Receiver individual modules, in addition to an 8-Channel CWDM, or multiple WDM, optical Mux/Dmux for single fiber operation. The OZ9500 as an Interfacility Link (IFL) offers high Spurious Free Dynamic Range (SFDR) with operational frequencies from 30 MHz to 3.0 GHz with ***optional loop-through Gigabit Ethernet Digital Data stream***. Optional extended bandwidth of 10 MHz to 3.3 GHz is also available.

The OZ9500 chassis is powered by AC 110 V to 240 V, built-in universal dual power supplies, or external +12 V DC. Alarm functions are all also available for each transmitter and receiver via the DB-25 connector in the rear panel. The Alarm interface is based upon dry relay contact (“dry contacts”). Front panel indicators provide visual indication of the power supplies’ operation and the cumulative link status.

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Units	Notes
AC Power Supply Voltage		85		264	VAC	1
AC Power Supply Current			TBD		A	2
Chassis dimensions Long			19 x 15 x 1.75		Inches	
Chassis dimensions Short			19 x 12 x 1.75		Inches	
Power Supply Certifications	EN 60950 ITE and EN 60601-1 Medical					
Power Supply EMC Compliance	EN 61000-4-2, 3, 4, 5, 6 & 11 and EN 60601-1-2					
Power Supply Emissions	Class B Per EN 55022, 11					
Storage Temperature (Case)	T_s	-40	+85	°C		
Operating Temperature (Case)	T_o	0	+60	°C		
Maximum Number of TX per Chassis			9			3
Maximum Number of RX per Chassis			9			3
MTTF @ 50°C			10		Years	
Optical connectors	FC/APC or SC/APC					
RF connectors	SMA					

1. For +12 V or higher input DC voltage requirements contact Factory.
2. Configuration dependent.
3. Up to 5 Links can be integrated into one chassis. Link consists of 1 Transmitter and 1 Receiver

For all RF link characterizations, refer to OZ510 or OZ450 Data sheets.

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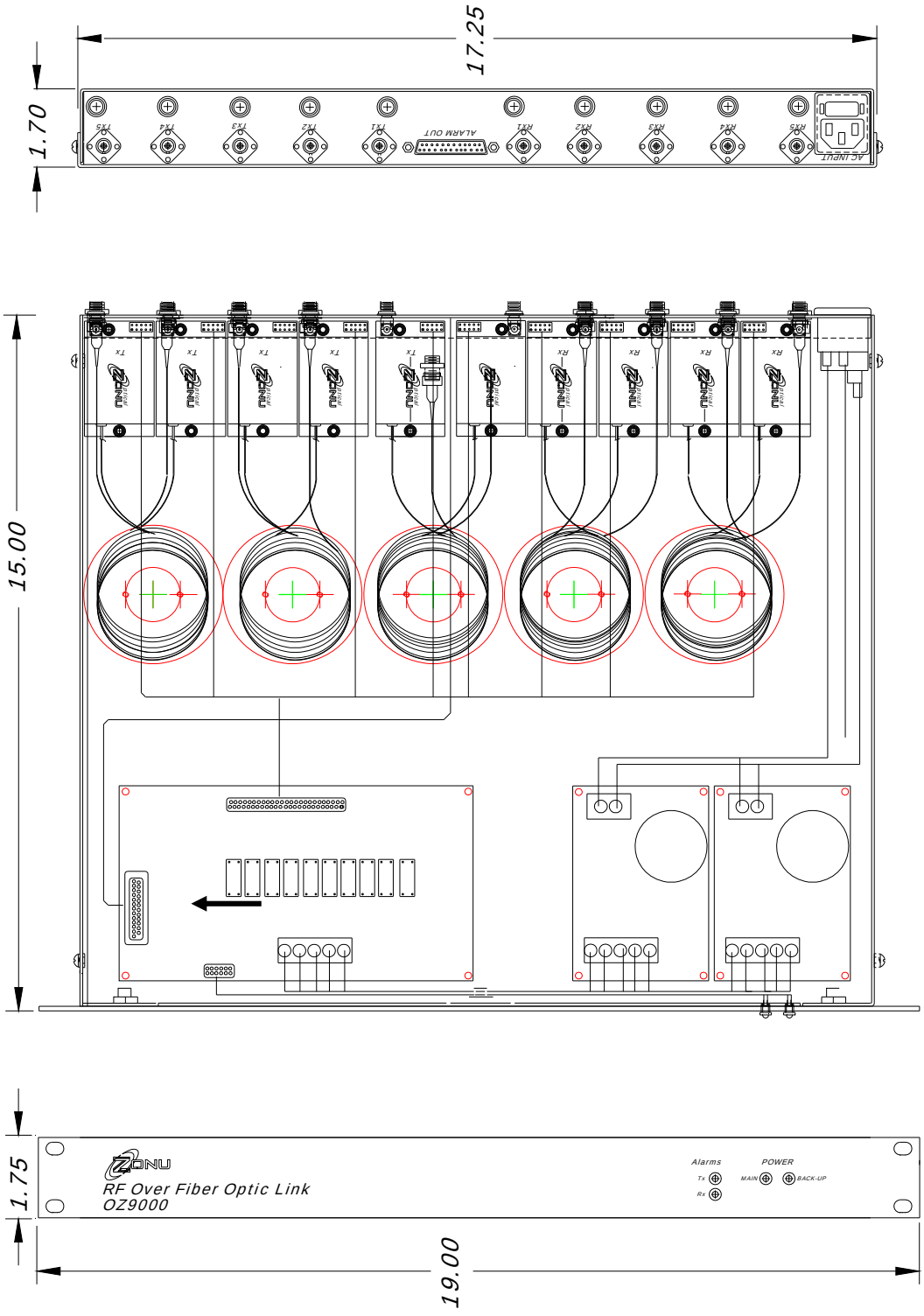
MECHANICAL DRAWING & INTERNAL LAYOUT (outline reference only)



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 the 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 Laser draws excessive current; otherwise it will stay **GREEN**, even if the laser is disabled.

INDICATOR	Option A	Option A
Tx	**GREEN** = All transmitters are OK.	**RED** = At least one transmitter failed.
Rx	**GREEN** = All receivers input optical power OK.	**RED** = At least one receiver has no optical input.
Power MAIN	**GREEN** = BOTH power supplies are functional.	
Power BACKUP	**RED** = One power supply failed; unit operates on one supply (**CAUTION**).	

DSUB-25, Connector Pin Configuration

1x1

External DB25 PINOUT for a 1x1 OZ9000

DB25	Ribbon	
1	Rx 1	Alarm dry contacts (7 mA)
14		
2	NC	
15		
3	NC	
16		
4	NC	
17		
5	NC	
18		
6	Tx 1	
19		
7	NC	
20		
8	NC	
21		
9	NC	
22		
10	NC	
23		
11	GND	
24	IIC	Optional
12	IIC	
25	IIC	
13	12 V	

2x2

External DB25 PINOUT for a 2x2 OZ9000

DB25	Ribbon	
1	Rx 1	Alarm dry contacts (7 mA)
14		
2	RX2	
15		
3	NC	
16		
4	NC	
17		
5	NC	
18		
6	Tx 1	
19		
7	Tx 2	
20		
8	NC	
21		
9	NC	
22		
10	NC	
23		
11	GND	
24	IIC	Optional
12	IIC	
25	IIC	
13	12 V	

3x3

External DB25 PINOUT for a 3x3 OZ9000

DB25	Ribbon	
1	Rx 1	Alarm dry contacts (7 mA)
14		
2	Rx 2	
15		
3	Rx 3	
16		
4	NC	
17		
5	NC	
18		
6	Tx 1	
19		
7	Tx 2	
20		
8	Tx 3	
21		
9	NC	
22		
10	NC	
23		
11	GND	
24	IIC	Optional
12	IIC	
25	IIC	
13	12 V	

4x4

External DB25 PINOUT for a 4x4 OZ9000

DB25	Ribbon	
1	Rx 1	Alarm dry contacts (7 mA)
14		
2	Rx 2	
15		
3	Rx 3	
16		
4	Rx 4	
17		
5	NC	
18		
6	Tx 1	
19		
7	Tx 2	
20		
8	Tx 3	
21		
9	Tx 4	
22		
10	NC	
23		
11	GND	
24	IIC	Optional
12	IIC	
25	IIC	
13	12 V	

5x5

External DB25 PINOUT for a 5x5 OZ9000

DB25	Ribbon	
1	Rx 1	Alarm dry contacts (7 mA)
14		
2	Rx 2	
15		
3	Rx 3	
16		
4	Rx 4	
17		
5	Rx 5	
18		
6	Tx 1	
19		
7	Tx 2	
20		
8	Tx 3	
21		
9	Tx 4	
22		
10	Tx 5	
23		
11	GND	
24	IIC	Optional
12	IIC	
25	IIC	
13	12 V	

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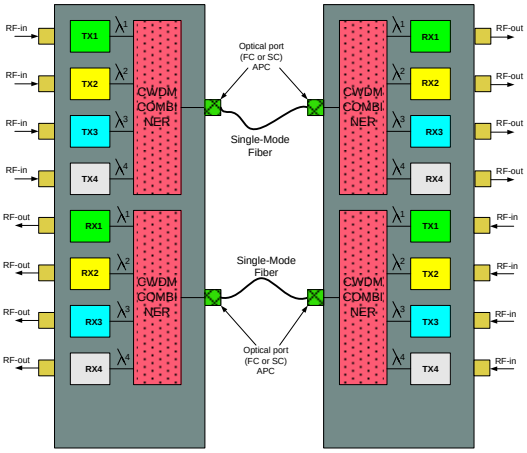
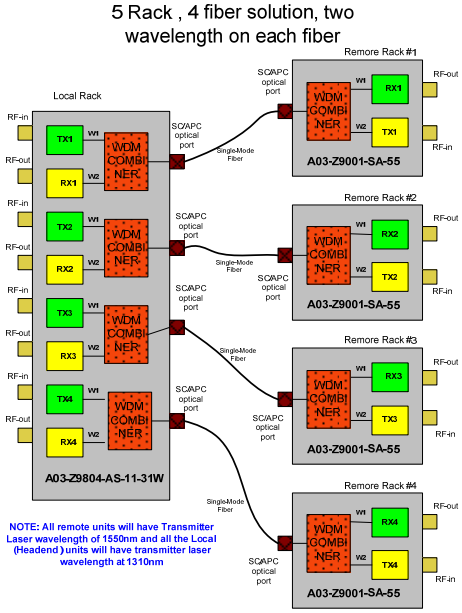
TYPICAL CONFIGURATION EXAMPLES

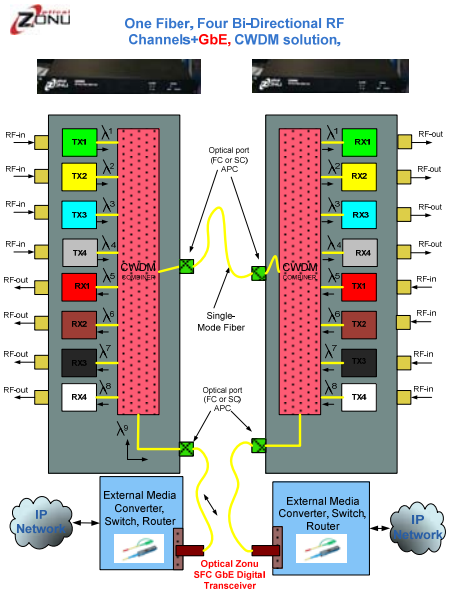
OZ9800 Two Fiber, Four Bi-Directional RF Channels CWDM solution,



5 Rack , 4 fiber solution, two wavelength on each fiber



One Fiber, Four Bi-Directional RF Channels+GbE, CWDM solution,



ORDERING INFORMATION

Please contact factory for part numbers and availability.

MADE IN U. S. A.

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