Inotech

IT-5500 series High-power 1550nm Fiber Amplifier Manual （With PON Port）

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Foreword

This manual applies to WE-1550-YZBCW series fiber amplifier. It mainly describes the performance characteristics, technical parameters, installation and debugging, common troubleshooting, and other related content of the product. In order to ensure that the equipment can be successfully installed and safely operated, please read this manual carefully before installing and debugging the equipment. And the installation and debugging should be strictly according to the specified steps on the manual to avoid unnecessary damage to equipment or accident harm to the operator. Any questions, please contact with us in time.

Special Tips:

- Er Yb Codoped Fiber Amplifier is high end professional equipment, and its installation and debugging must be operated by special technician. Read this manual carefully before operating to avoid damage to equipment caused by fault operation or accident harm to the operator.
- While the fiber amplifier is working, there is an invisible laser beam from the optical output adapter on the front panel. Avoiding permanent harm to the body and eye, the optical output should not aim at the human body and human should not look directly at the optical output with the naked eye!
- Please make sure that the ground terminal of the case and power outlet has been reliably grounding before turning on the power (Grounding resistance should be

＜ 4Ω) to prevent the static damage the pump laser device and harm to human because of case charged.

- To ensure the equipment can work stable over a long time, in voltage unsteady or poor voltage wave region, it´s recommend to the customer that he equips special AC regulated power supply, or even AC uninterrupted power supply (UPS) system for conditional users. In the region with large temperature variation environment (The equipment's ideal work environment temperature is 25°C) or bad room environment, it´s recommend to the customer that he equips special air-condition system to improve the work environment.

1. Application

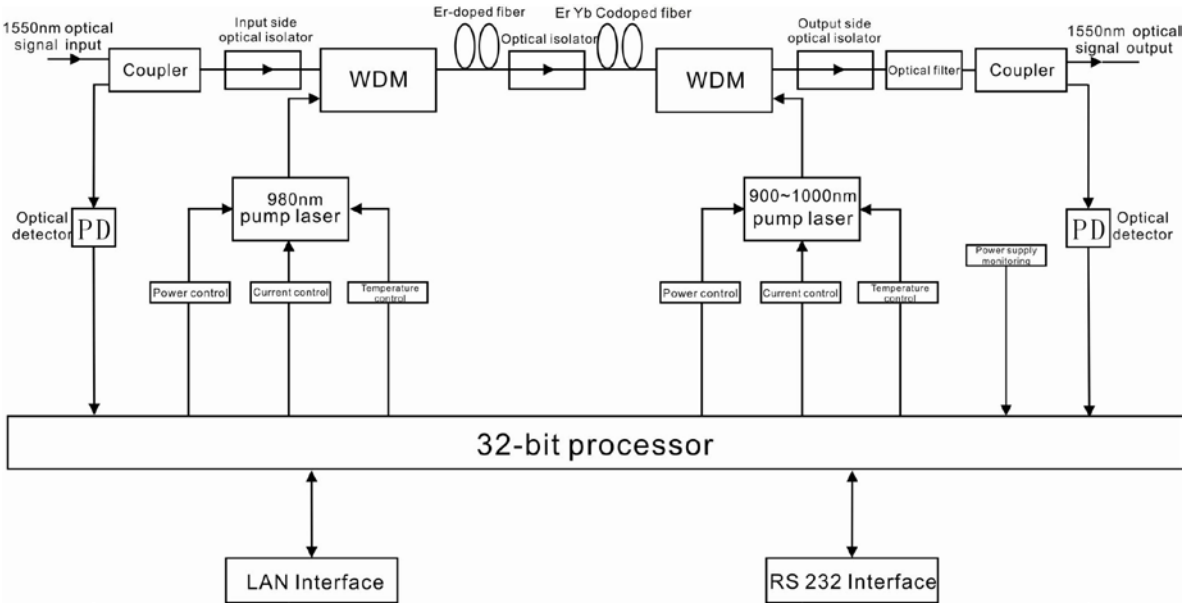
- Single-mode fiber 1550 amplification network
- FTTH network
- CATV network

2. Performance Characteristics

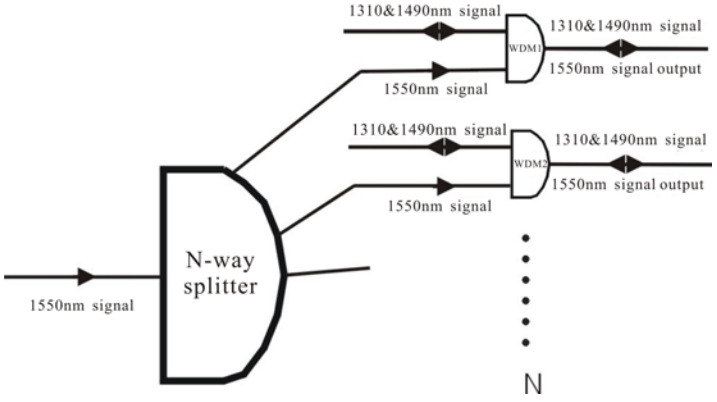
WE-1550-YZBCW is a low noise high-performance Er Yb codoped fiber amplifier. Each output built-in CWDM (1310/1490/1550) wavelength division multiplexer. Conveniently multiplex the data stream of OLT and ONU to the fiber amplifier output by 1310nm and 1490nm optical connector. Thus reduced the equipment quantity, improved the system indexes and reliability. It is the ideal equipment for FTTx network, provides a flexible and low cost solution for the integration of three networks and the FTTH.

- Adopts Er Yb Codoped double-clad fiber technology;
- Output ports: 4-64optional;
- Optical output power: total output up to 8W;
- Low noise figure: <6dB when input is 0dBm;
- Perfect network management interface, in line with standard SNMP network management;
- Intelligent temperature control system make the power consumption lower;

3. Block diagram



B uilt-in WDM schematic diagram



4. Technique Parameter

4.1 Technique Parameter

Item		Unit	Technique parameters
CATV pass through wavelength		nm	1545 - 1565
PON pass through wavelength		nm	1260 – 1360 & 1480 - 1500
PON insertion loss		dB	<0.8
Isolation		db	>15
CATV optical input power range		dBm	-5 - +10
Maximum optical output power		dBm	38.5
Output power stability		dBm	±0.5
Noise figure		dB	≤ 6.0 (Optical input power 0dBm, λ=1550nm)
Return loss	Input	dB	≥ 45
	Output	dB	≥ 45

Optical Connector Type		PON port：SC/UPC or LC/UPC	
		COM port：SC/APC or LC/APC	
C/N	dB	≥ 50	Test condition according to GT/T 184-2002.
C/CTB	dB	≥ 63	
C/CSO	dB	≥ 63	
Power supply voltage	V	A: AC160V - 250V(50 Hz); B: DC48V	
Consumption	W	≤ 70	
Operating temperature range	°C	-10 - +42	
Maximum operating relative humidity	%	Max 95% no condensation	
Storage temperature range	°C	-30 - +70	
Maximum storage relative humidity	%	Max 95% no condensation	
Dimension	mm	483(L)× 440(W)× 88(H)	

4.2 Model and Power Comparison Table

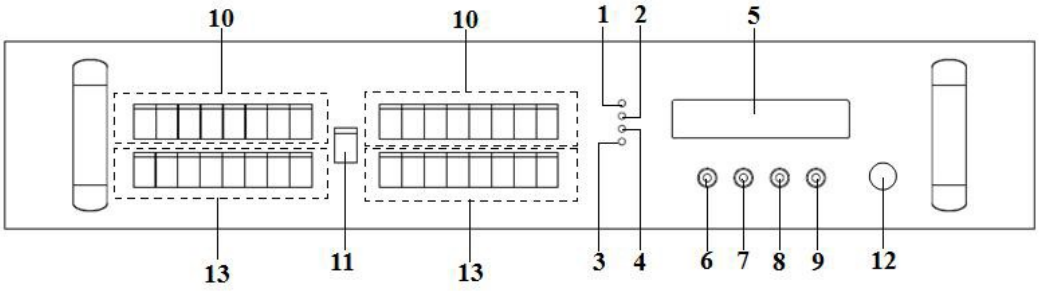
Model	Total output power dBm	Output ports number	Output power per port dBm
WE-1550-YZBCW-4 -18	25.5	4	18
WE-1550-YZBCW-4 -19	26.5	4	19
WE-1550-YZBCW-4 -20	27.5	4	20
WE-1550-YZBCW-4 -21	28.5	4	21
WE-1550-YZBCW-4 -22	29.5	4	22
WE-1550-YZBCW-4 -23	30.5	4	23
WE-1550-YZBCW-4 -24	31.5	4	24
WE-1550-YZBCW-8 -15	26.5	8	15
WE-1550-YZBCW-8 -16	27.5	8	16
WE-1550-YZBCW-8 -17	28.5	8	17
WE-1550-YZBCW-8 -18	29.5	8	18
WE-1550-YZBCW-8 -19	30.5	8	19
WE-1550-YZBCW-8 -20	31.5	8	20
WE-1550-YZBCW-8 -21	32.5	8	21
WE-1550-YZBCW-8 -22	33.5	8	22
WE-1550-YZBCW-8 -23	34.5	8	23
* WE-1550-YZBCW-8 -24	35.5	8	24
WE-1550-YZBCW-16 -15	29.5	16	15
WE-1550-YZBCW-16 -16	30.5	16	16
WE-1550-YZBCW-16 -17	31.5	16	17
WE-1550-YZBCW-16 -18	32.5	16	18
WE-1550-YZBCW-16 -19	33.5	16	19
WE-1550-YZBCW-16 -20	34.5	16	20
* WE-1550-YZBCW-16 -21	35.5	16	21
WE-1550-YZBCW-32 -15	32.5	32	15

WE-1550-YZBCW-32 -16	33.5	32	16
WE-1550-YZBCW-32 -17	34.5	32	17
* WE-1550-YZBCW-32 -18	35.5	32	18
* WE-1550-YZBCW-32 -19	36.5	32	19
* WE-1550-YZBCW-32 -20	37.5	32	20
* WE-1550-YZBCW-32 -21	38.5	32	21
* WE-1550-YZBCW-64 -16	36.5	64	16
* WE-1550-YZBCW-64 -17	37.5	64	17
* WE-1550-YZBCW-64 -18	38.5	64	18

The models with "*" are ultra high power output EDFA.

5. External Function Description

5.1 Front Panel Description



Schematic diagram of the front panel

1) Power indicator: One switching power supply is working – yellow; two switching power supplies are working – green.

2) Optical input power indicator：This light turns on when the optical input power is > -10dBm.

3) Pump working status indicator: Red light means the pump is not working, but the machine parameters are normal; flashing red light means the machine has broken down, related fault reason see the alarm menu of the display menu; green light means the pump is working normal.

4) Optical output power indicator: This light turns on when the optical output power is > +10dBm.

5) 160×32 dot-matrix LCD screen: used to display all the parameters of the machine.

6) Display the exit or cancel key of the setup menu.

7) Display the up or increase key of the setup menu.

8) Display the down or decrease key of the setup menu.

9) Display the enter key of the setup menu.

10) 1310&1490nm signal in/out (PON port).

11) Optical signal input: The default connector type is SC/APC. Other specification requirements are specified by the customer.

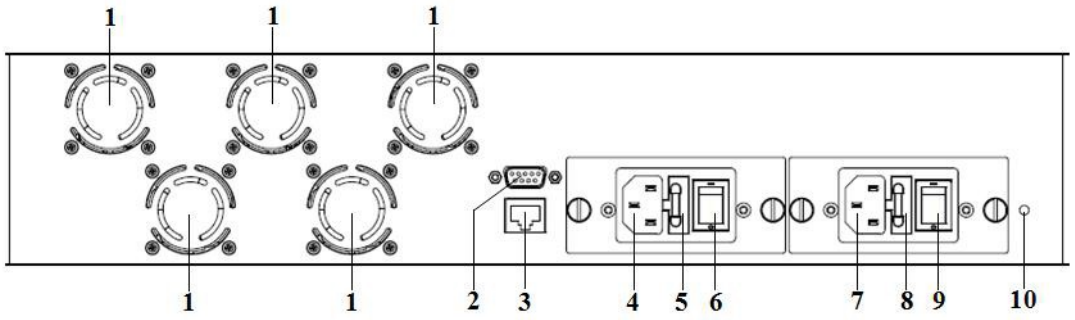
12) Pump laser switching key: used to control the working status of pump laser.

"ON" means the pump laser is open and "OFF" means the pump laser is closed. Ensure the key is on "OFF" position before power on. After passing self-test, rotate the key to "ON" position according to the displayed message.

13) Public port (COM port): This interface is the 1550nm signal output port of the device, also is the 1310&1490nm signal in/out port. Ports number: 4-64 optional.

Warning!!! There is an invisible laser beam from this port while working normal. So the port should not be aligned to the human body or the naked eye to avoid accidental injury.

5.2 Rear Panel Description



1) Fan outlet.

Schematic diagram of the rear panel

2) RS232 interface: Used for configuring the network management parameters.

3) LAN interface: correspond to IEEE802.3 10Base-T, used for network management.

4) The AC 220V input port of power supply 1.

5) The fuse of power supply 1.

6) The switch of power supply 1.

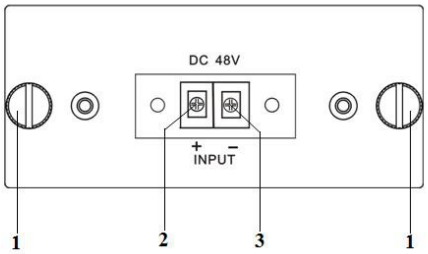
7) The AC 220V input port of power supply 2.

8) The fuse of power supply 2.

9) The switch of power supply 2.

10) Ground stud of the chassis: used for the connection of device and ground wire.

5.2.1 DC Power Module Introduction



1	Mounting screws
2	+ Positive terminal block
3	- Negative terminal block