



**ACT AT5200  
FTTX Multiport  
EDFA**

**Quick Reference  
Guide**

**Revision G**

## ACT AT5200 Multiport Erbium-Doped Fiber Amplifier

### Quick Reference Guide

ACT Document Number: AT5200 MULTIPORTEDFA-QRG

Quick Reference Guide Revision G

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This document is produced to assist professional and properly trained personnel with installation and maintenance issues for the product. The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice.

For more information, contact ACT: [support@ascentcomtec.com](mailto:support@ascentcomtec.com)



#### Revision History

Revision	Date	Reason for Change
A	02/01/2012	Initial release
B	06/01/2012	Update front panel design
C	06/01/2014	Update EMS and GUI
D	04/20/2015	Format control
E	08/15/2016	Minor updates
F	02/14/2017	Updated specifications
G	02/15/2017	Updated GUI section

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## 1 Precautions

### WARNING!

Exposure to class 1M laser radiation is possible. Access should be restricted to trained personnel only. Do not view exposed fiber or connector ends when handling optical equipment.

- Ensure adequate cooling and ventilation as specified.
- The installation and operation manual should be read and understood before units are put into use.
- Always replace protective caps on optical connectors when not in use.
- The typical connectors fitted are SC/APC 8°. **Note:** 8° angle polished connectors must be used.

#### Cleaning

Use only a damp cloth for cleaning the front panel. Use a soft dry cloth to clean the top of the unit.

Do not use spray cleaner of any kind.

#### Overloading

Overloading wall outlets and extension cords can result in a risk of fire or electric shock.

Use approved electrical cords.

#### Damage requiring service

Unplug unit and refer servicing only to Ascent Communication Technology qualified service personnel.

#### Servicing

Do not attempt to service this unit yourself. Refer all servicing only to Ascent Communication Technology qualified service personnel.

## 2 Introduction

### 2.1 Overview

AT5200 2RU Erbium-Doped Fiber Amplifier (EDFA) offers a flexible and scalable optical amplification for high quality video transmission in CATV networks. Together with ACT AT5000 series 1550nm transmitter, the AT5200 EDFA provides an ideal video overlay solution in high density FTTX networks to bring the video services to business and home premises.

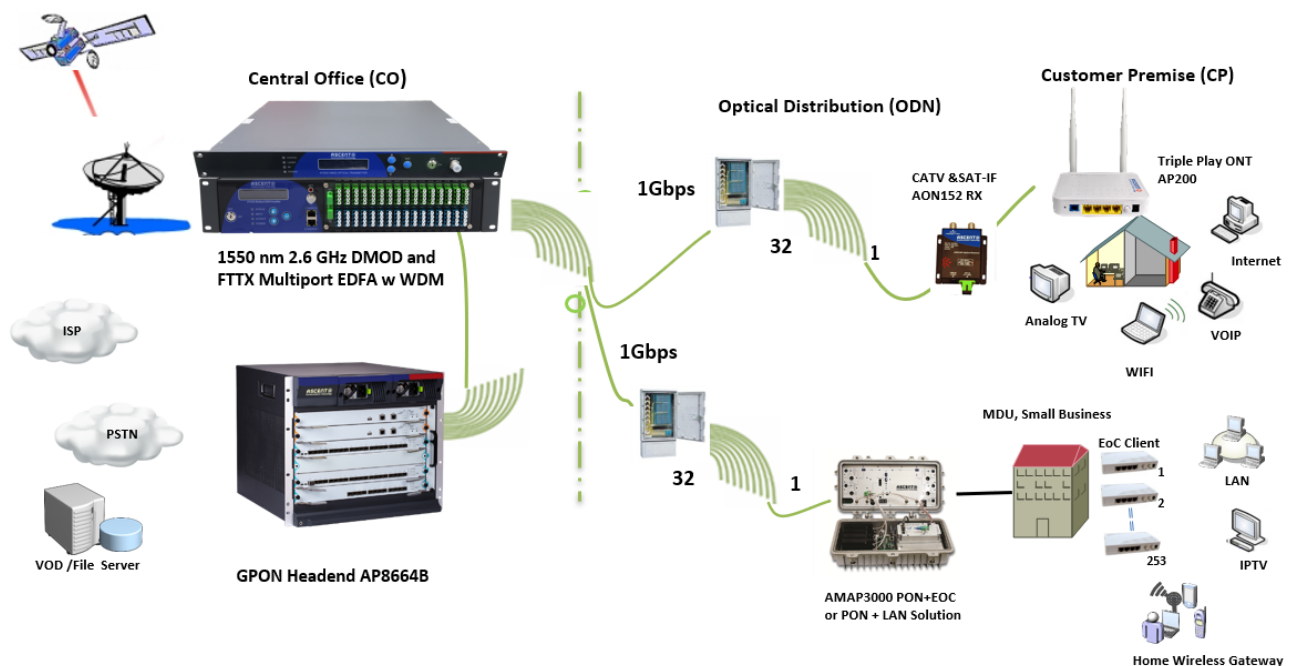
AT5200 EDFA series simplifies the application by offering low noise, high output power, and intuitive front panel LCD display to make operator's life easier. The optical amplifier is packaged in a self-contained 19" sub-rack of 1 or 2 RU with redundant universal mains power supply and SNMP management.

The optical output power level can be ordered from 13 dBm to 26dBm with variable output features available. Multiport EDFAs accommodates up to 16 output ports in 1RU setting and 64 output ports in 2RU setting. Combined with our AT5000 1550nm direct or externally modulated laser transmitter, MSOs can quickly deploy and activate advanced multi-media services in long distance video transmission and high subscriber count FTTH networks.

## 2.2 Features

- Low noise, high performance with JDSU & IPG pump laser
- FTTP high power multi-ports optical amplifier with gain spectrum band within 1540 to 1563nm
- Built-in WDM to connect PON OLT Uplink and Combined PON + CATV output
- Up to 64 uplink optical ports (OLT 1310/1490nm)
- Up to 64 combined output ports (1550nm CATV + 1310/1490nm data stream)
- Suitable for analog and digital CATV systems, DOCSIS, FTTH and more applications
- Suitable for 1550 nm DWDM applications for multiple wavelengths on single fibre
- Nominal output powers from 13dBm to 26dBm per port
- Adjustable output power
- Laser cooling: Thermoelectric Cooler (TEC)
- Extend analog and digital CATV to suit long distance feeders or larger FTTH distribution systems
- Local or remote monitoring and configuration
- SNMP/HTTP monitoring, management and control

## Application Diagram

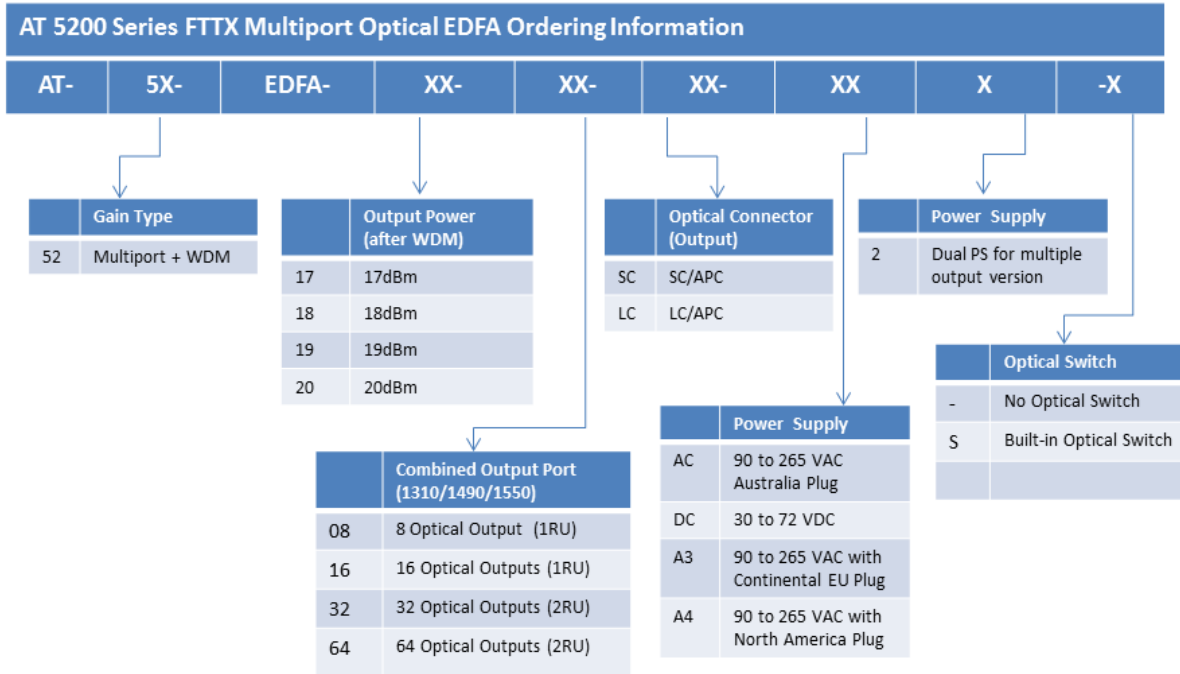


## 2.3 Specifications

AT5200 EDFA Erbium-Doped Fiber Amplifier - 19" 1 or 2RU

<b>Operating CATV Wavelength, nm</b>	1540 to 1563
<b>OLT Pass Wavelength, nm</b>	1310/1490 (signal pass-through) (WDM Optional)
<b>CATV Pass Wavelength Loss, dB</b>	0.8
<b>OLT Pass Wavelength Loss, dB</b>	0.8
<b>Input Power, dBm</b>	-10 to 10, 3dBm typical, -6dBm to 8dBm (constant output)
<b>Maximum Output Power, dBm</b>	19dBm per port (32/64 PON ports)
<b>Maximum Output Ports</b>	8, 32, 64 (SC/APC, LC/APC, LC/UPC)
<b>Output Power Stability, dB</b>	±0.5
<b>Port Isolation (CATV &amp; OLT), dB</b>	40
<b>Noise Figure, dB (PIN=0dBm)</b>	<5
<b>Build-in WDM for PON</b>	PON signal pass-through when EDFA is off
<b>Insertion Loss</b>	Transmission band ≤ 0.8dB, Reflection band ≤ 0.6dB
<b>Polarization Dependence Loss, dB</b>	0.1
<b>Polarization Dependence Gain, dB</b>	0.4
<b>Polarization Mode Dispersion, ps</b>	0.1
<b>Input/Output Isolation, dB</b>	40
<b>Echo Loss, Db</b>	55
<b>Optical Switch (Optional)</b>	2 optical inputs, Switch time ≤ 0.5s, IL ≤ 1dB, User-defined input threshold Automatic switching when input is low and back when recover, if both below threshold, higher input is selected
<b>SNMP</b>	RJ45 (MIB provided), monitoring input port, output port power, power supply, bias current, laser temperature Set alarm threshold
<b>Serial Interface</b>	RS232
<b>Power Supply</b>	90 to 265 VAC or 30 to 72 VDC
<b>Power Consumption, W</b>	150 Max
<b>Operating Temp, °C</b>	-5 to 65
<b>Storage Temp, °C</b>	-40 to 80
<b>Operating Relative Humidity, %</b>	-5 to 95
<b>Dimensions (W x D x H)</b>	1RU: 483x400x44 mm, 19x15.8x1.75 inch 2RU: 483x368x88 mm, 19x14.5x3.5 inch
<b>Weight, kg</b>	10 kg
<b>Ship Weight</b>	10.5 kg

## 2.4 Models and Options



\* The maximum output power per port is 26dBm. Output power is measured after WDM. Contact ACT Sales Representative for more information.



## 3 Installation

### 3.1 Equipment Inventory

On receiving your new EDFA, you should carefully unpack and examine the contents for loss or damage that may have occurred during shipping. Refer to warranty registration if loss or damage has occurred. The EDFA pack will consist of the following:

Qty	Description
1	EDFA, Erbium Doped Fiber Amplifier
1	Product user manual (includes individual test sheet) (.pdf available)
1	Key for switching laser ON / OFF
1	Power supply cord

### 3.2 Packaging and Transportation

Keep all packing boxes and packaging of the EDFA for future transport.

Use only the original packaging of the EDFA when transporting. This packaging has been specifically designed to protect the equipment.

### 3.3 Power and Cooling Requirements

The EDFA requires an input of 90 to 264 Vac or 30 to 72 VDC. The mains input socket on the unit is IEC configuration which needs to be properly grounded. Over-load and over-voltage protection is included in the unit, which may cause it to shutdown in extreme circumstances. If this occurs, remove the fault condition and the system will recover automatically.

The unit should be located in an environment not exceeding a temperature range from 0 to 50 °C. The internal temperature should never reach 70 °C. If the temperature exceeds the above limits, the unit should be relocated in the equipment rack where the ambient temperature will be less than 50 °C.

Horizontal, fan-forced airflow permits the mounting of multiple laser transmitters without the need for a 2 RU rack space clearance between other devices. However to maximize the useful life of high power multiport EDFA, it is highly recommended to keep space of 4.5cm in between chassis for optimized cooling. Ensure adequate space behind the unit for ventilation as air flow is through the back of the unit.

The unit should have good grounding, grounding resistance <math><4\Omega</math>. According to the international standard, 220V plug in adopts tri-wire rule, the middle wire is the grounding wire. Before connecting circuit, please use proper electric wire (#20AWG or bigger) to connect the grounding screw on the bottom and the grounding frame. When use DC input power supply, the equipment chassis must be grounded. The DC power supply of the equipment must be the SELV supply stipulated as CAN/CSA C22.2 No.950-95 standard.

## 3.4 Module Installation and Adjustment

The following steps explain how the EDFA is to be installed. Please read them carefully:

Unpack the optical amplifier and inspect the unit as stated in **Section 3.1**.

Locate the optical amplifier in a 19" cabinet, ensuring adequate ventilation and space for accessing the rear ports and front-panel keypad.

Prior to connecting any fiber patch leads to optical transmission equipment, always ensure that the ends of the fiber optic connectors are clean and free of contaminants.

### **WARNING!**

**Do not view exposed fiber or connector ends when handling optical equipment. Exposure to invisible laser radiation may cause permanent eye damage.**

Connect the optical output ports to the system.

Always place protective dust caps on all optical ports when not in use.

Connect the optical input signal to the input port of the EDFA.

**Ensure the input optical power is within the range of -10 to +10dBm with the typical value at +3dBm.**

Before connecting AC/DC power to the unit, make sure that the LASER ON/OFF key is switched OFF (front panel).

Use the supplied power cord to apply mains power to the transmitter.

Switch the power ON (switch located on the front panel).

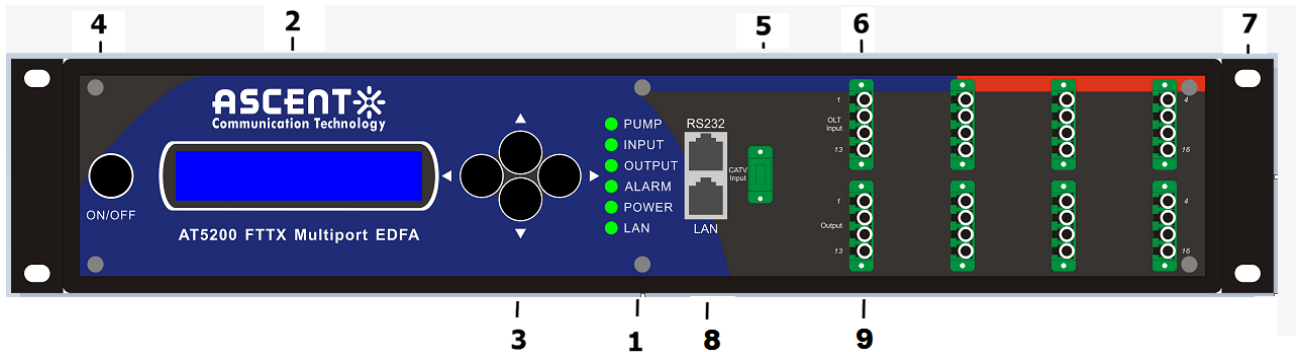
Switch on the laser using the key switch.

Front panel shows "KEY ON...". Laser status lamp turns green from red, and the machine enters self-checking. After checking, it enters working status and display "**Descriptor**".

If the laser is not on, you will have to activate the laser and check that the output power is as specified in the EDFA Certificate of Performance (COP). To activate the laser, see **Section 5.3**.

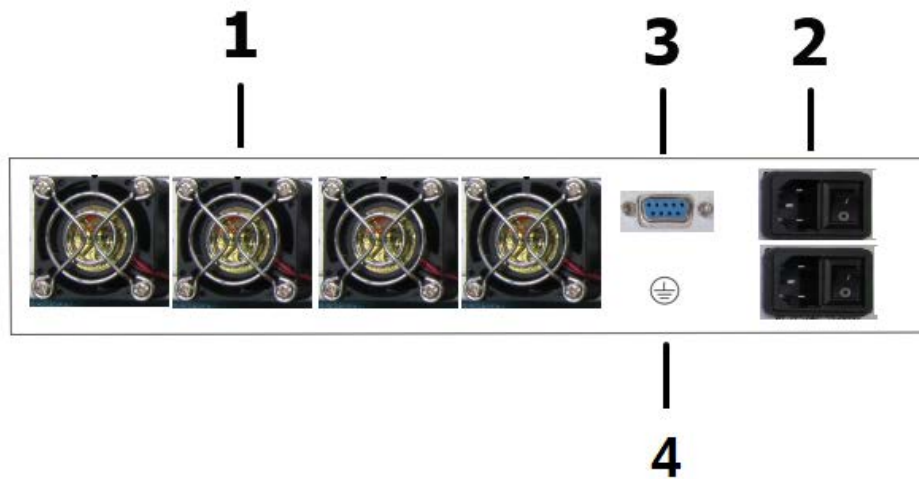
See **Section 5** for instructions on how to view the status information about the EDFA.

## 3.5 Front Panel Layout (Layout May Vary )



Item	Description	
1	Status LED	GREEN – EDFA works normal. RED – No INPUT or EDFA ERROR (refer to LCD screen for more information )
	LASER INPUT LED	
	OPT OUTPUT LED	GREEN – Optical Input Normal; No Light – No Optical Input
	POWER LED	GREEN – Optical Output Normal; No Light – No Optical Output GREEN – Power is ON. RED – Power is OFF.
2	LCD	LCD to display user interface.
3	KEYPAD	Keypad for navigating menus and making selections with the user interface. ENT Button: Start the menu by pushing ENT first. (refer to 5.2)
4	LASER ON/OFF	Key switch for laser activation.
5	OPT. IN (Dual OPT IN optional)	Optical input port, 8° angle polished SC/APC shown. CATV 1 is primary input and CATV 2 is backup secondary input Optical output port, 8° angle polished SC/APC shown.
6	OPT. OUT	Top quadplex LC/APC 64 ports are the combined output port 1:64
7	1 RU MOUNTING	Mounting holes for installation in rack.
8	RJ45 Web GUI RS232 (DB9)	Web GUI interface ( default IP: 192.168.1.50) RS232 Console port (DB9)
9	OLT INPUT PORT	Bottom quadplex LC/APC connectors are OLT input ports 1 to 64
10	RF Port (Optional)	RF sample signal output 70dBuV

## 3.6 Rear Panel Layouts

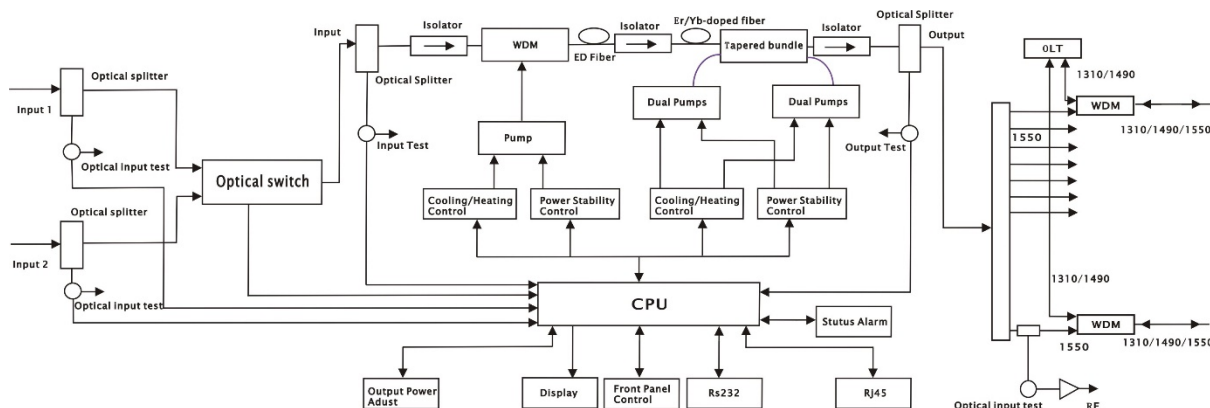


Item	Description	Operation
1	FAN	Fan vent.
2	IEC Main Input Power 1	Mains input power, 90 to 265 Vac, 50 / 60 Hz, fused IEC input, includes spare fuse. Or 30 to 72 VDC input. Inputs 1 to 2 for power redundancy.
	IEC Main Input Power 2 (Optional, Special order)	Mains input power, 90 to 265 Vac, 50 / 60 Hz, fused IEC input, includes spare fuse. Or 30 to 72 VDC input. Inputs 1 to 2 for power redundancy.
3	RS232	RS232 Serial Port
4	5VDC Output (Optional)	Reserved 5VDC output port

## 4 Technical Description

### 4.1 Overview

The EDFA comprises an Optical Gain Block, Control Board, and serial interface.



The Optical Gain Block consists of an Erbium Doped Fiber in conjunction with single or dual 980 nm pump lasers for high optical power efficiency.

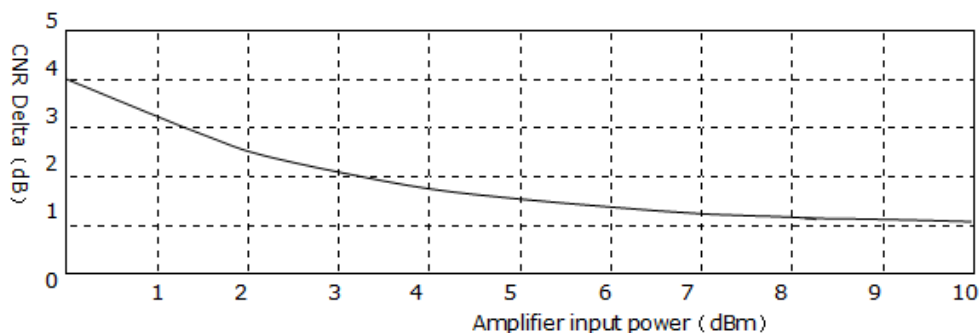
The Control Board monitors and controls the Optical Gain Block and feeds the front-panel LED indicators as shown in **Section 3.5**.

### 4.2 Optical Gain Block

The Optical Gain Block has an input optical signal range of -10 to +10dBm for which the output will be stable at its nominated optical power. Although the pump lasers will operate with input optical signals down to -10dBm, optimum specifications will be met above 0dBm.

The optical gain will be determined by the required optical output power minus the optical input power. The higher the gain the higher the noise figure (typically  $\leq 5.0$  dB).

The Optical Gain Block is driven by the Control Board which also performs the shutdown function of the lasers. The optical connectors available are SC/APC, E2000/APC and FC/APC.



## 4.3 Alarm System

The EDFA alarm system is designed to generate only urgent alarms. This is due to the importance of the EDFA, as this module will usually drive a large portion of the optical distribution network. Working status indication (LED) is next to the power switch in the front panel. When it is green, the device is working properly; when it is red, the laser does not work; when it is red flashing, there is an alarm. The urgent alarm communicates to the control module and makes the LCD flash when displaying STATUS.

1. With 220V power supply, if the unit is good, the digital panel will display “READY: KEY OFF” and there is Red light.
2. Turn on with the switch key, the digital panel will display “KEY ON”. After a few seconds, the laser is turned on automatically and the indication light turns into Green from Red.
3. Pressing ENT, ▲\▼ bottom to display parameters.
4. If any fault listed above occurred, there will be an alarm (Red flashing), Microprocessor will shut off the laser pump automatically, and digital panel will show the fault message.
5. In order to protect the laser, the power supply of the laser has time-delay function. After turning on with the key, the laser will start to work after 10 seconds.

When pump laser is on warning status, the status LED will turn red and the brief note of status will be displayed on the screen. The warning will not stop the EDFA from running, it only shows the relative parameter exceeding to normal scope slightly. If the warning is stopped, it shows that the relative parameter is returned into permitted scope. The screen & LBD will return to their normal status and there is no need for user to interfere.

Work Status	Status Display	LED	Explanation
Present Laser Deflection is Low	Key Off	Red	The EDFA isn't working. It's shut down.
Present Case Temp	-	Red	Warning when the temp $\geq 60$ °C.
Input	Input Low	Red	Optical input power is low.
Output	Output Low	Red	Optical output power is low.

## 5 Management – Operation

### 5.1 EDFA Program Structure

The EDFA's software is fully automatic and constantly monitors key parameters. These parameters are stored in the unit's EEPROM and/or microcontroller. Some may be changed via external communications.

The unit is designed for local and remote monitoring and control.

#### Factory Defaults / EEPROM Settings

The software uses EEPROM for memory back up of the lower and upper alarm limits for analogue parameters and for control variables as set by the user.

These settings will be saved into EEPROM so that the user will not need to reset these in case of a power failure.

The factory default setting of the unit is to have an IP address of **192.168.1.50**.

The factory default setting is to have the laser switched **off** for all models.

### 5.2 LCD menu Sequence and operation

#### LCD menu Sequence

Press ◀▶ button, the following menu will be displayed in sequence.

- A. Model**  
Read-only menu, tells the type of this equipment
- B. S/N**  
Read-only menu, tells the serial number of this equipment
- C. InputA**  
Read-only menu, tells the input optical power A of optical switch
- D. InputB**  
Read-only menu, tells the input optical power B of optical switch
- E. Input**  
Read-only menu, tells the input optical power of EDFA
- F. OP Route Select**  
Adjustable list, display the optical route selecting
- G. Op Switch Point**  
Adjustable list, display the optical switch point setting
- H. Total Output**  
Read-only menu, tells the output optical power of EDFA in dBm.

- I. Each Output**  
Read-only menu, tells the each output of EDFA in dBm.
- J. PA Current**  
Read-only menu, tells the pre pump current of EDFA
- K. PA Temp**  
Read-only menu, tells the pre pump temperature of EDFA
- L. BA Current**  
Read-only menu, display the multi-mode amplify current of EDFA
- M. Unit Temp**  
Read-only menu, tells the case temperature
- N. Power1**  
Read-only menu, tells the status of power1
- O. Power2**  
Read-only menu, tells the status of power2
- P. IP**  
Adjustable list, display the IP address
- Q. SUB**  
Adjustable list, display the address of net mask
- R. GW**  
Adjustable list, display the gateway address
- S. TR1**  
Adjustable list, display the TRAP1 address
- T. TR2**  
Adjustable list, display the TRAP2 address
- U. LCD Contrast Level**  
Adjustable list, display the LCD contrast level adjustment

## Assistant manual

1. OP Route Select (Set the optical route)

Select the menu that need modification, press▶ button enter into sub menu, then press▶ button enter into menu modify status, press◀\▶ button to select the optical route mode, and at last press▶ button to save, and◀press button back to main menu.

2. Op Switch Point (Set the switching point of optical switch)

Select the menu that need modification, press ▶ button enter into sub menu, then press ▶ button enter into menu modify status, press▲/▼ button to increase and decrease the value, at last press ▶ button to save, and press◀ button back to main menu.



### 3. Set the IP address

Select the menu that need modification, press ► button enter into sub menu, then press ► button enter into menu modify status, press ▲/▼ button to increase/decrease the value, press ► button to shift the value, at last bit press ► button to save, and press ◀ button back to main menu.

### 4. LCD Contrast Level (Set the LCD contrast level)

Select the menu that need modification, press ► button enter into sub menu, then press ► button enter into menu modify status, press ▲/▼ button to set LCD contrast level, press ► button to save, and press ◀ button back to main menu.

## 5.3 Port and Cable Assignments

AT-52-EDFA series provide the following management ports:

RS232 port: be suitable for examining AT-52-EDFA parameters and some system configuration by PC machine RS232 port.

SNMP: Simple network management protocol

Before connection AT-52-EDFA series of the port, please read the following instructions and port connectivity requirements.

### 5.3.1 LAN Port (RJ-45)

The AT-52-EDFA series management port connector type is RJ-45.

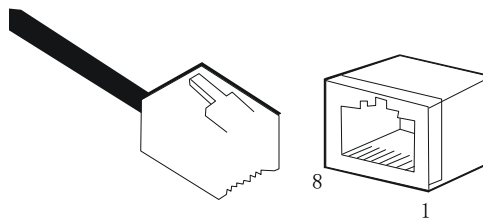
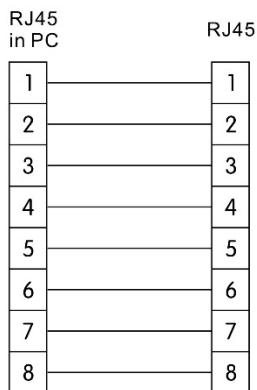


Figure. RJ-45 Connector Plug and Socket

The Management port (RJ-45) can be connected to any device that uses a standard network interface (e.g., a workstation, server, bridge or router). RJ-45 MDI can be connected with similar network equipment (such as other AT-52-EDFA or network Hub). Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100-ohm Category 3, 4 or 5 cable for 10 Mbps connections or 100-ohm Category 5 cable for 100 Mbps connections. Beside, please ensure that the cable length does not exceed 100 meters.

## 5.3.1.1 Pin Assignment

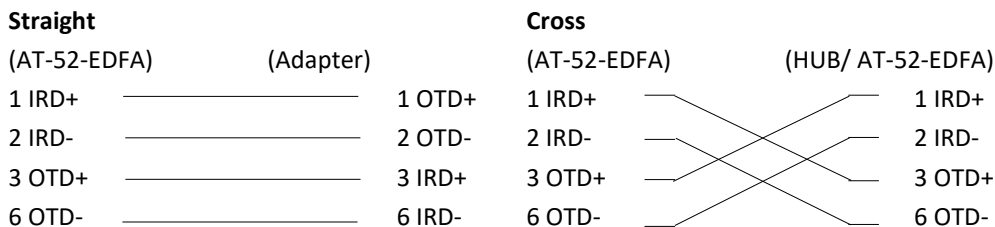
When network management reticle (RJ-45 connector in each side) connects NMS PC and AT-52-EDFA series directly, it should use straight reticle. See Figure below:



RJ-45 connector straight through connecting

PIN	Workstation port	MDI
1	Input receive data+	Output transmit data+
2	Input receive data-	Output transmit data-
3	Output transmit data+	Input receive data+
6	Output transmit data-	Input receive data-
4, 5, 7, 8	Nonuse	Nonuse

RJ-45 Pin assignment



Straight and cross cable connecting

## 5.3.1.2 Port Connection

AT-52-EDFA series can auto detects the Ethernet cable type (Straight-though or Crossover), so either type can be used. An Ethernet twisted pair cable should be connected between the RJ-45 connector (MDI-X) of the AT-52-EDFA series and any device with a standard network interface (such as a work station or server), or to a network interconnection device (such as a bridge or router).

- 1) Ensure that the device to be connected has a 10BASE-T or 100BASE-TX network interface card (NIC).

2) Prepare a twisted pair Ethernet cable with RJ-45 plugs on each end. Use Cat 3, 4 or 5 cable for standard 10Mbps Ethernet connections, or Cat 5 cable for 100Mbps Fast Ethernet connections.

3) Plug one end of the cable into the PC's NIC and plug the other end into any RJ-45 port of the AT-52-EDFA series. All the AT-52-EDFA RJ-45 port supports both 10Mbps and 100Mbps Ethernet connections. Ensure that the plug's locking tab clicks into proper position to make good access.

Caution: Do not plug a phone jack connector into the RJ-45 port. This may damage the EDFA. Instead, use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

Note:

- 1) Connect other compatible AT-52-EDFA series or network hub, adopt direct or across cable to connect MDI port in other device.
- 2) Ensure that the twisted pair cable length does not exceed 100 meters.
- 3) Cat 5 cable is recommended for all network connections to avoid confusion or inconvenience, when upgrading to Fast Ethernet devices in the future.
- 4) Cascade length provision: IEEE 802.3 standard prescribes that through twisted pair at most 4 hub (such as repeaters) can be cascade, and IEEE 802.3u standard has more strict order for high-speed Ethernet. So, when cascade device except for this AT-52-EDFA series, please following the above connection regulation. But please pay attention because AT-52-EDFA series divide the connected path into unattached port, don't reckon in the AT-52-EDFA series or connected cable related device in cascade length.

### 5.3.1.3 Connection Management (Out-Band)

Remote management can be performed through the dedicated LAN port (10/100BASE-TX port) on the front of the AT-52-EDFA or any 10/100BASE port of AT-52-EDFA.

Before the Management port be accessed through LAN port, please configure the IP address and subnet mask by serial port according to network configuration requirement.

## 5.3.2 RS232 Console port (DB9)

### 5.3.2.1 Port Description

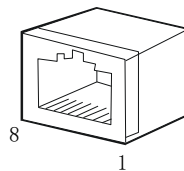
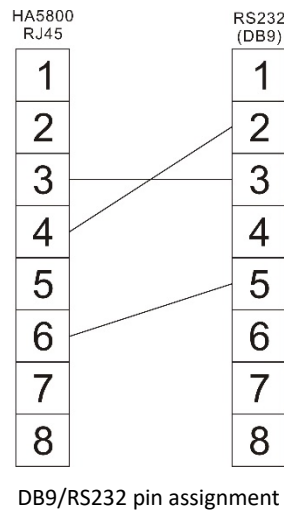


Figure DB9 interface

DB9 interface is a standard connector used in RS232 in series communication connects. OLT adopt 9 pin standard connector which is the same as the connector of PC Com interface.

## 5.3.2.2 Pin Assignment



Pin	Distribution
2	RXD: accepting of data
3	TXD: transmitter data
5	SG: signal

Pin information

## 5.3.2.3 Port connection

AT-52-EDFA series is equipped with a cable to connect AT-52-EDFA series serial port. This cable has a DB9 connector in AT-52-EDFA series and PC side.

According to the following steps to connect cables:

1) Through RS232 (DB9) cable, connect a super terminal program PC to RS232 port in AT-52-EDFA series back panel. For example, connect one COM port in PC (com 1 to 4) and one RS232 port of AT-52-EDFA series.

2) Setup terminal analogue type VT100, distribute a COM (com 1 to 4) to connect with AT-52-EDFA series RS232, then setup communication mode as follows:

1. Data bit: 8
2. Stop bit: 1
3. Parity check: No
4. Baud: 9600 bps (applies to initial configuration)
5. Flow control: No

## 5.4 The WEB Management Interface (Web GUI)

Direct connect EDFA and computer by ETH cable, set the computer IP address in same sub domain with EDFA. Turn on EDFA, and open browser. Type the EDFA's IP address (factory default IP address is: **192.168.1.50**) into the browser, and then the login page will pop up for "username" and "password". Both the default "username" is **"admin"** and "password" is **"ascent"**. Click "OK" you will enter WEB management interface. The password will default to **"123456"** after a factory reset.

1. Click the item in the left menu, it will display the corresponding parameters as the followings:

The screenshot displays the AT5000 EDFA WEB Manager interface. On the left, there is a navigation menu with the following items:

- [Device Information](#)
- [Device Configuration](#)
- [Network Configuration](#)
- [Change Password](#)

The main content area is titled "Device Information" and contains the following parameters:

Input Power	6.5	[dBm]
Output Power	17.1	[dBm]
Switch Position	Primary A	
DC Power -5V	-5.7	[V]
DC Power +3.3V	3.2	[V]
DC Power +12V	12.0	[V]
DC Power -5V Left	5.4	[V]
DC Power +5V Right	none	[V]
Unit Temperature	32	[°C]

Below these parameters are two tables:

Index	Input Power(dBm)	Threshold(dBm)	Description
1	6.8	52.8	Primary A
2	2.9	52.8	Secondary B

Pump	BIAS(mA)	TEMP(°C)	TEC(A)
1	606	22.0	0.43
2	4870	0.0	0.00
3	4630	0.0	0.00

## ASCENT Communication Technology AT5000 EDFA WEB Manager

- [Device Information](#)
- [Device Configuration](#)
- [Network Configuration](#)
- [Change Password](#)

**Device Configuration**

Primary A:  dBm

Secondary B:  dBm

Port Output:  dBm

Set New Output:  dBm

## ASCENT Communication Technology AT5000 EDFA WEB Manager

- [Device Information](#)
- [Device Configuration](#)
- [Network Configuration](#)
- [Change Password](#)

**Network Configuration**

Static IP Address:

Subnet Mask:

Default Gateway:

Trap Address 1:

Trap Address 2:

Trap Address 3:

Trap Address 4:

## ASCENT Communication Technology AT5000 EDFA WEB Manager

- [Device Information](#)
- [Device Configuration](#)
- [Network Configuration](#)
- [Change Password](#)

**Change Password**

Username:

Password:

New Username:

New Password:

Confirm Password:

## 6 Troubleshooting

### 6.1 Fiber Optic Maintenance

Any time the fiber leads to the amplifier are disconnected, there is the potential for contamination of the ends of the fiber connectors. Dirt or other contaminants on these components can reduce the amplifier's performance and can result in permanent damage to the device. It is recommended that the fiber connectors be cleaned prior to connection, or reconnection, to the system.

### 6.2 Troubleshooting Conditions

<b>No lights ON</b>	Is the power on? Is the fuse OK?
<b>Pin fail ON</b>	Is the optical input power too low? Is the input connector dirty?
<b>Pout fail ON</b>	Check the optical output power and pump parameters on the LCD. Contact ACT Technical Support.
<b>Pump alarm ON</b>	Check the pump parameters on the LCD. Contact ACT Technical Support.



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