AIMA-EDFA

Erbium Doped Fiber Amplifier

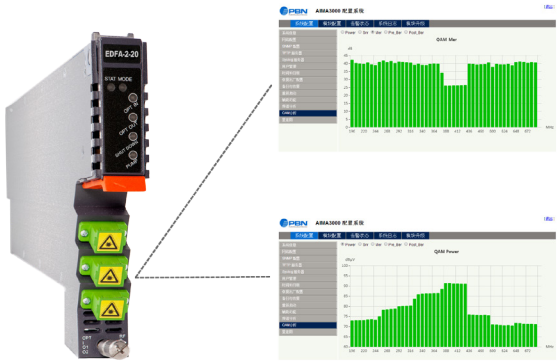
The Erbium Doped Fiber Amplifier (EDFA) is designed to plug into PBN's latest generation Advanced Intelligent Multi-services Access platform - the AIMA3000.

PBN's AIMA3000 EDFA module works in conjunction with 1550 nm optical transmitter modules to meet client requirements for different environments and transmission distances.

The EDFA employs a highly reliable pump laser with an advanced design to ensure that the unit can achieve a very low noise profile and high pump efficiency. The unit uses single or dual-pump lasers designed with inter-stage isolators. Its output power ranges from 13 dBm (19.95 mW) to 24 dBm (251.18 mW). The EDFA supports a fixed gain setting for dense wave division multiplexing (DWDM) applications as well as a number of user-selectable output ports.

With the optional embedded Full Band Capture (FBC) module, it enables the operator to capture and monitor the spectrum and QAM demodulation data, including level of each channel, SNR, MER, BER, constellation and so on. Operators can get the metric of each QAM channel remotely.

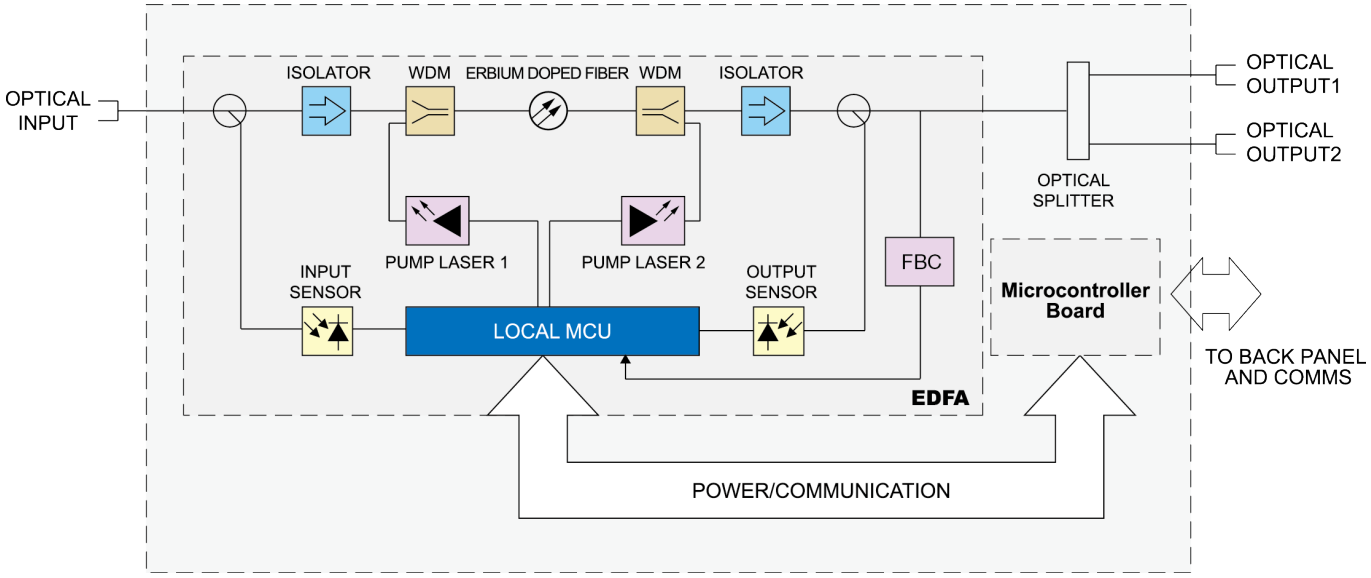
The EDFA can also be conveniently monitored and controlled through a computer connected to one of the Ethernet ports via the ASMM module.



Key Features and Functions

- Plug-and-play AIMA platform optical signal amplifier
- Suits 1550 nm DWDM applications
- Adjustable optical outputs for dynamic link configurations
- Low noise profile and gain flattening
- Suitable for large scale FTTx deployment
- Automatic power control (APC) for a consistent optical output power (A-EDFA-x-x-P-x only)
- Automatic Gain Control (AGC) for maintaining a consistent amount of power amplification for each wavelength (A-EDFA-x-x-G-x only)
- Automatic thermo-cooler control (ATC) for a consistent laser temperature
- Remote firmware upgrade and auto upload/download of configuration files through ASMM web interface or using PBN's NMSE
- Bulk firmware updates through PBN's NMSE
- Fully FCC, CE, and RCM compliant

Block Diagram



AIMA-EDFA
Erbium Doped Fiber Amplifier

Specifications

Optical Performance

Parameters	Min	Typ	Max	Unit
Optical Wavelength	1530	1550	1565	nm
Input Power (for A-EDFA-x-x-P-x)	-6	0	10	dBm
Input Power (for A-EDFA-x-x-G-x)	0	11	14	dBm
Number of Outputs	1	----	8	pcs
Saturated Output Power (total power)	13	----	29	dBm
Adjustable Range of Output Power (for A-EDFA-x-x-P-x only)	-3	----	0	dBm
Output Power Stability (input variable)	-0.5	----	+0.5	dBm
Output Consistency (within ports)	-0.5	----	+0.5	dBm
Gain	----	20	----	dB
NF @ 0dBm Input	----	----	5 (1) 6 (2)	dB
Input Isolation	30	----	----	dB
Output Isolation	30	----	----	dB
Input Pump Leakage	----	----	-35	dBm
Output Pump Leakage	----	----	-45	dBm
Residual Pump Power (970 ~ 980 nm)	----	----	-30	dBm
Return Loss	50	----	----	dB
Polarization Dependent Gain	----	----	0.3	dB
Polarization Mode Dispersion	----	----	0.5	ps
Multi-wavelength Gain Flatness (for A-EDFA-x-x-G-x only)	± 0.5 dB (1548 ~ 1562 nm) (3) ± 0.75 dB (1536 ~ 1562 nm) (3)			
Optical Connector	SC/APC, LC/APC, FC/APC, E2000/APC			

RF Performance

RF Test Point Output Power	15 dBmV ± 1 dB

General

Power Consumption	Total power less than 20 dBm < 15.0 W Total power less than 24 dBm < 20.0 W Total power less than 29 dBm < 25 W
Power Consumption of FBC Module	< 8 W
Operating Temperature	-5 °C to +55 °C
Storage Temperature	-25 °C to +70 °C
Operating Humidity	90% (non-condensing)
Storage Humidity	90% (non-condensing)
Dimensions (WxDxH)	24.6 x 410 x 152.5 mm
Weight	0.95 kg
Supported Network Management Options	PBN's NMSE or through ASMM's Web Interface

With the FBC Module

Frequency Capture Range	45 to 1000 MHz
Demodulation Mode	QAM 64, QAM 256
Metrics and Functions Available	Level, SNR, MER, BER and live spectrum

Note:

(1) Total output power < 25 dBm.

(2) Total output power ⩾ 25 dBm.

(3) The recommended input power for an A-EDFA-1-17-G-S with 11 dBm optical input with a 6 dB gain typically has an output of 17 dB.

Order Details

A-EDFA-[V]-[W]-[X]-[Y]-[Z] ..... Erbium Doped Fiber Amplifier

Options:

V FBC Function (1)
- **M** With FBC Management

W Output Ports Number
- **1** 1 port
- **2** 2 ports
- **4** 4 ports
- **6** 6 ports
- **8** 8 ports

X Power Per Port (2)
- **13** 13 dBm
- **14** 14 dBm
- **15** 15 dBm
- ⋮ ⋮
- **24** 24 dBm

Y Working Mode
- **P** Constant Power
- **G** Constant Gain

Z Connector Type of Output Ports (3)
- **S** SC/APC
- **E** E2000/APC
- **F** FC/APC
- **L** LC/APC

Notes:

(1) Option for FBC management configurations only. please omit [X] when select a model without FBC function. Not available for constant gain models.

(2) Maximum output power per port for different outputs at constant power, constant power with FBC or constant gain situations:

Output number	*Constant Power*	*Constant Power with FBC*	*Constant Gain*
1	*24*	*23*	*24*
2	*21*	*20*	*20*
4	*21*	*17*	*17*
6	*21*	*15*	*15*
8	*20*	*14*	*14*

(3) Available connector type for different outputs:

Output number	*Avalible Connector Type*
1	*SC/APC, LC/APC, FC/APC, E2000/APC*
2	*SC/APC, LC/APC, FC/APC, E2000/APC*
4	*SC/APC, LC/APC, E2000/APC*
6	*LC/APC*
8	*LC/APC*

Examples

A-EDFA-1-20-P-S ..... AIMA3000 1-Slot EDFA Module, 1 output port, 20 dBm each, Constant Power, SC/APC connector

A-EDFA-2-21-G-E ..... AIMA3000 1-Slot EDFA Module, 2 output ports, 21 dBm each, Constant Gain, E2000/APC connector

A-EDFA-M-4-16-P-L ..... AIMA3000 1-Slot EDFA Module, FBC, 4 output ports, 16 dBm each, Constant Power, LC/APC connector

A-EDFA-6-13-P-L ..... AIMA3000 1-Slot EDFA Module, 6 output ports, 13 dBm each, Constant Power, LC/APC connector

Pacific Broadband Networks
Offices: Australia, Melbourne: +61-3-8561-1400 China, Beijing: +86-10-5791-0655 EMEA, Netherlands: +31-36-536-8011
www.pbnglobal.com
info@pbnglobal.com