EDFA Amplifier C-Band

26dB Gain, 17dBm, 20dBm, 26dBm Output

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Features

- Flat Gain
- Stable Output
- Low Noise
- High Reliability

Applications

- DWDM Network
- Optical Network

EDFA is an erbium-doped fiber amplifier. It is used to amplify the optical power up to 48 channels (channel interval of 100 GHz) or 96 channels (channel interval of 50 GHz) at the C band at the same time in the transmission link. It has characteristics of flat gain, stable output, low noise figure, etc. It is mostly used in DWDM high-speed and long-haul transmission.

These Erbium-Doped Fiber Amplifiers (EDFAs) are engineered for a long operational lifespan, typically designed to function reliably for over 10 years. This durability is achieved through high-quality components and robust manufacturing processes. The design considerations include thermal management, component selection, and rigorous testing to maximize the amplifier's longevity and efficiency.

Specifications

Parameter	Min	Typical	Max	Unit
Working Mode		AGC		
Operating Wavelength	1528	1550	1564	nm
Output Power	17		26	dBm
Input Power	-30		12	dBm
Gain	17	20	30	dB
Noise Figure		4.5		dB
Flatness		1	1.5	dB
Power / Gain Stability		±0.05	±0.1	dB
Input Isolation	30			dB
Output Isolation	30			dB
Return Loss	45			dB
PDG		0.3	0.5	dB
PMD		0.3	0.5	dB
Power Consumption			10	W

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

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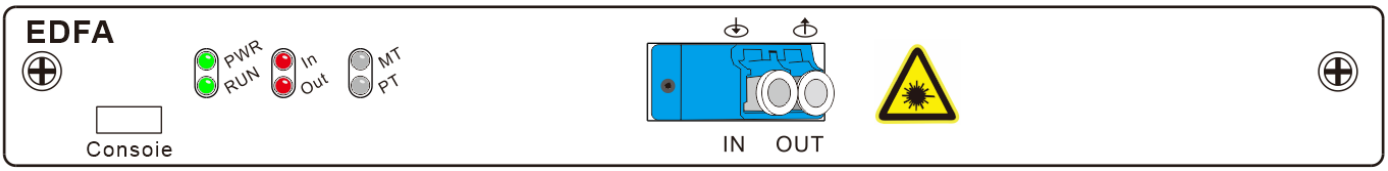
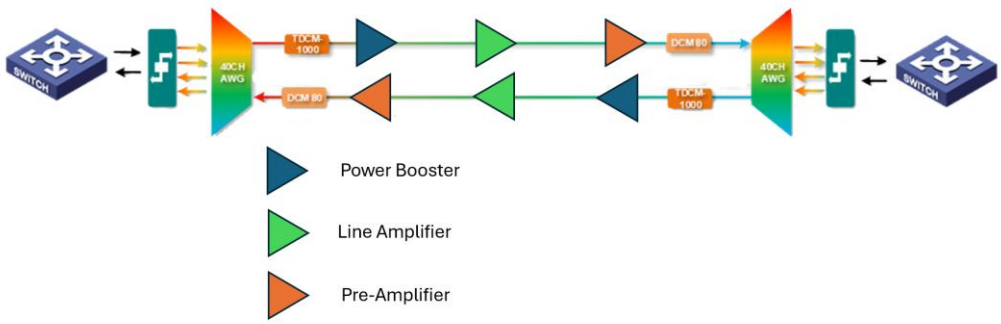
Layout



EDFA Type and position in DWDM Network



1. Pre-Amplifier is designed to install at the receiver end of the DWDM network to amplify the optical signal to the required level to ensure that it can be detected by the receiver. PA usually has a high gain and requires low input power.
2. Booster Amplifier is designed to install in the transmitting end of the fiber optic network, which can amplifier amplify the optical signal launched into the fiber link. BA usually has a low gain but high output.
3. In-line amplifier is installed in the fiber optic link every 80-100km as shown in the picture above. LA has moderate gain and has similar output power to the booster amplifier.

Ordering Information (Part Number)

	1	☐	☐☐	☐☐	1	1	☐	☐
Prefix	**Configure**	**Type**	**Gain**	**Output Power**			**Connector**[1]	**Rack**
RMEA-	Pluggable = 1	Booster = 1 Pre-Amplifier = 2 Line Amplifier = 3 Special = 0	17dB = 17 20dB = 20 26dB = 26	17dBm = 17 20dBm = 20 26dBm = 26			LC/PC = 1 LC/APC = 2 FC/PC = 3 FC/APC = 4 Special = 0	Non = 1 1U Ethernet = 2 1U RS232 = 3 2U Ethernet = 4

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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Q&A About Fiber Optical Amplifier

Q: What is the polarization state of the output?
A: The erbium-doped fiber core is effectively isotropic, so any input polarization becomes scrambled through propagation and gain interactions. The output's degree of polarization is typically low because the EDFA generates significant ASE, which further washes out any residual polarization.

Q: Why EDFA is limited to amplification above 1530nm?
A: The EDFA gain spectrum is set by the Er^{3+} energy levels in silica glass, and the emission cross-section falls off rapidly as you move toward shorter wavelengths.

Q: Can this amplifier pulsed signals?
A: It has been tested to amplify up to 100GHz digital data. But high power pulse will induce non-linear effects that broaden it.

Q: Can this amplifier WDM signals?
A: It has been tested to amplify signals with DWDM wavelength spacing.

Q: Can this amplifier has a flat wavelength response?
A: Yes, by put flattering gain filters, that is an extra cost.

Q: If one puts a small signal into it, can it be amplified to the maximum output power indicated on the spec?
A: The amplifier is set as an analog mode whose output signal strength is approximately proportional to the input strength. It has a certain gain of about 40dB. There are two types: one is a preamplifier and a booster. One can use a preamplifier before the booster for weak signals, as done in electronic amplifiers.

Q: We have an existing amplifier. Can you duplicate it?
A: Yes, we can produce it with a seamless software interface.

Q: The control mode is selectable in the GUI, does this mean it can be operated in either APC, ACC, or CC mode? (i.e. can you support all 3 control modes in a single system)
A: MSA EDFA: APC, ACC & CC (AGC).
EYDFA (MSA & standard) : APC & ACC

Q: Do the MSA packages work with the Agiltron GUI?
A: Yes

Q: Do you have preamplifier with –35 and –40dBm input power?
A: Yes, available in different package.

Q: Does the Preamplifer come with APC or ACC control mode and which control mode achieves better receive sensitivity?
A: Under ACC mode, EDFA will amplify any input if you choose the always-on pump option.

Q: If we want to control the EDFA without the GUI, do you have a list of the RS232 commands?
A: It comes with each EDFAs.