

Optical Fiber Amplifier Equipment EDFA

Variants

DT6600-EDFA

Details

DWDM • C-BAND • EDFA

Power Amplifier (BA) • Line Amplifier (LA) • Pre-Amplifier (PA)

Product Overview

The **DWDM EDFA Card** is an Erbium-Doped Fiber Amplifier designed to improve optical signal power in DWDM transmission systems. It supports applications as a **Booster Amplifier (BA)**, **Line Amplifier (LA)** and **Pre-Amplifier (PA)**.

The amplifier uses a stable pump laser together with **ATC (Automatic Temperature Control)** and **APC (Automatic Power Control)** circuits to provide stable and reliable optical output.

A professional **Gain Flattening Filter (GFF)** and optimized optical path design provide improved gain flatness and low noise performance across the C-Band. The design supports approximately **40 to 80 DWDM channels**.

OPERATING BAND

C-Band

WAVELENGTH

1527.8–1565.6nm

CHANNEL CAPACITY

40–80 CH

AMPLIFIER TYPES

BA / LA / PA

EDFA Amplifier Types

BA

Booster Amplifier

Used at the transmitter side to increase optical launch power.

LA

Line Amplifier

Used in the transmission line to compensate optical link loss.

PA

Pre-Amplifier

Used before the receiver to improve weak optical signal levels.

Key Features

? Low noise figure – typical 5.0 dB

? High gain flatness

? Full C-Band optical amplification

? Supports 40 / 80 DWDM channels

? ATC automatic temperature control

? APC automatic power control

? Professional gain flattening filter (GFF)

? High saturation output power

? Dual-power mixed and hot-swap design

? 110/220VAC and 48VDC power options

? Module / 1U Rack / Gain Block options

? Telcordia GR-1312-CORE compatible

Common Optical & Environmental Specifications

Parameter	Specification
Operating Wavelength	1527.8 – 1565.6 nm (Typical center: 1550 nm)

Parameter	Specification
Gain Flatness	Typical 0.6 dB / Maximum 1.5 dB
Noise Figure	Typical 5.0 dB
Input / Output Isolation	? 30 dB
Output Pump Leakage	? -30 dBm
Input / Output Return Loss	? 45 dB
Polarization Dependent Loss	? 0.5 dB
Polarization Mode Dispersion	? 0.5 ps
Operating Temperature	-5°C to +55°C
Humidity	5% – 95%
Storage Temperature	-40°C to +85°C
Power Consumption	? 30 W
Module Size	177 (W) × 20 (H) × 225 (D) mm

Power Amplifier – BA

Booster Amplifier: Designed to increase optical output power at the transmitting side of a DWDM optical system.

Parameter	Min.	Typical	Max.	Unit
Operating Wavelength	1527.8	1550	1565.6	nm

Parameter	Min.	Typical	Max.	Unit
Input Power	-15	—	+5	dBm
Gain	—	15	—	dB
Output Power	-5	—	20	dBm
Gain Flatness	—	0.6	1.5	dB
Noise Figure	—	5.0	—	dB

Line Amplifier – LA

Line Amplifier: Designed to compensate optical attenuation along long-distance DWDM transmission links.

Parameter	Min.	Typical	Max.	Unit
Operating Wavelength	1527.8	1550	1565.6	nm
Input Power	-30	—	-5	dBm
Gain	—	25	—	dB
Output Power	—	—	20	dBm
Gain Flatness	—	0.6	1.5	dB
Noise Figure	—	5.0	—	dB

Pre-Amplifier – PA

Pre-Amplifier: Designed for amplification of low-power optical signals before the receiver.

Parameter	Min.	Typical	Max.	Unit	
Operating Wavelength	1527.8	1550	1565.6	nm	
Input Power	-30	—	-5	dBm	
Gain	—	25	—	dB	
Output Power	—	—	20	dBm	
Input Optical Power Threshold	-30	—	-40	dBm	
Noise Figure	—	5.0	—	dB	
Gain Flatness	—	0.6	1.5	dB	

Intelligent Cooling & Reliability

Automatic Fan Control: The fan automatically starts when module temperature exceeds approximately **45°C** and stops when temperature drops below approximately **40°C**.

This intelligent temperature control system helps maintain thermal stability and extends fan operating life.

Applications

DWDM Optical Systems

Long-Haul Transmission

Metro DWDM Networks

Booster Amplification

Line Amplification

Pre-Amplification

ISP Backbone

Optical Transport Networks

EDFA Selection

Select the correct **BA, LA or PA amplifier type** based on the required input power, gain, output power and position in the DWDM transmission link. Optical power budget should be calculated before deployment.