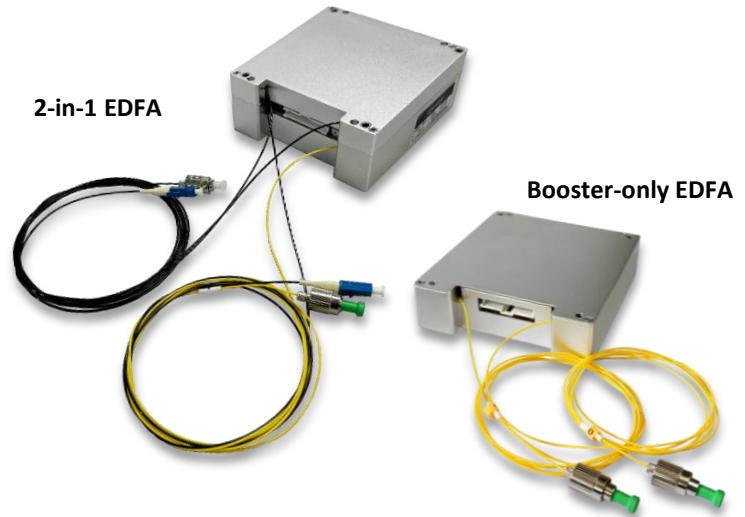


Key Features

- 2-in-1 (Rx and Tx) EDFA module
- Booster (Tx) EDFA module
- Space-qualified
- Smallest size & Compatible with CubeSat
- High output power with
Lowest power consumption
- Cost-effective



1550nm - CW

Description

In 2026, a leading aerospace company and a renowned research institute successfully demonstrated free-space optical communication between a LEO satellite and ground station using our space-qualified EDFA for CubeSat.

Available in both 2-in-1 (Pre-amplifier + Booster) and Booster-only versions, these space-qualified modules are miniaturized to meet CubeSat size and weight constraints. Design qualified through rigorous testing, they deliver high output power with optimal efficiency, low noise, and proven reliability—empowering next-generation optical communication payloads in compact satellite platforms. Optional full space acceptance testing service is available at extra cost.

Application

- Satellite-to-Ground optical communication
- Inter-satellite optical links
- Free-space optical communication



ISO 9001 : 2015
Certificate No.: CC 5346

Our product is manufactured under a HKQAA
ISO 9001 certified quality management system.
The ISO 9001:2015 certification applies to the
Hong Kong production site only.

Specifications

2-in-1 EDFA / Booster-only EDFA	Pre-Amplifier	Booster Amplifier
Input Signal Level	-50 to -10 dBm	-6 to +10 dBm
Small Signal Gain	Min. 40 dB @-50 dBm input power	-
Optical Output Power (under APC mode)	0.1 mW to 1 mW	-
Saturated Output Power (at 0 dBm input power, under ACC mode)	-	Min. 1.6 W, Typ. 2.0 W @ operation case temp. -20 to +55 °C
		Min. 1.8 W* under thermal vacuum condition, without thermal heat dissipation control
Operating Wavelength	C band ITU channel (with bandpass filter)	1540 nm to 1565 nm
Noise Figure	Max. 4.5 dB @-20 dBm input power	Typ. 5.0 dB , Max. 5.5 dB @0 dBm input power
Input & Output Isolation	Min. 30 dB	Min. 30 dB
Return Loss	Min. 45 dB	Min. 45 dB
Polarization Dependent Gain	Typ. 0.3 dB, Max. 0.5 dB	Typ. 0.3 dB, Max. 0.5 dB
Control Mode	APC	ACC

* Measured within 8 mins after power on

General Parameters

	Value
Thermal Vacuum Operation Temperature	-20 to +55 °C (Case Temp.) (Vacuum pressure between 10 ⁻⁵ and 10 ⁻⁶ mBar)
Storage Temperature	-40 to +85 °C
Power Consumption (2-in-1 EDFA)	Max. 38.4 W @12 ± 0.25 VDC
Power Consumption (Booster-only EDFA)	Max. 20.98 W @5 ± 0.1 VDC / 3.3 ± 0.1 VDC
Dimensions	2-in-1 EDFA: 90(W) x 95(D) x 36(H) mm Booster-only EDFA: 90(W) x 95(D) x 25(H) mm
Protection	Loss of Input Signal with auto recovery for Booster Amplifier
Optical Connector	FC/APC
Optical Fiber	SMF-28
Remote Control Port	UART
Qualification Test	Sinusoidal vibration test, Random vibration test, Thermal vacuum test, and Total Ionization Dose (TID) Test

Ordering Information

Product Code	2-in-1 EDFA: AEDFA-PA-BO-aa-SP Booster-only EDFA: AEDFA-aa-SP-bb	aa : Saturated output power in dBm bb : FA for FC/APC
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Amonics undertakes continuous and intensive product development to ensure its product performance at the highest technical standards. As a result, the specifications in this document are subject to change without notice.

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