Space-qualified Erbium/Ytterbium Fiber Amplifier

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BUY NOW

Agiltron's Space Grade High Reliability Erbium/Ytterbium doped fiber amplifier provides cost-effective solutions for satellite communication amplification. It is specially built using high reliability and vacuum compatible components consisting of semiconductor lasers, WDM, isolator, and tap monitor. The product has the advantages of high reliability, high power output, high gain and low noise. The module is specially made to be operated over wide temperature range and in vacuum environment. It has larger power output margin on the pump lasers. The compact module is suited for system integration with universal control interface. Customer configuration is available. We provide full space qualification tests with a fee.

The EDFA has isolators on both input and output.

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.

Features

- Space Qualification
- High Reliability
- High Stability
- Larger Pump Laser Margin
- Vacuum Operation

Applications

- Satellite Communication

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	1540		1565	nm
Input Power	-10	0	10	dBm
Gain @0 dBm input		30		dB
Saturated Output Power [1]			30	dBm
Power Consumption (DC)	5		14	W
Output Power Control Stability (EOL to BOL)			15	%
Output Power Monitor Linearity (10-30dBm)			5	%
Noise Figure			6	dB
Polarization Mode Dispersion [2]			1	ps
Input/output Isolation	40			dB
Backward ASE			-20	dBm
Adjustable Output Power		Yes		
Fiber Type		SMF-28		
Working Temperature [3]	-30		50	°C
Vacuum Compatibility	7			10^{-5} torr
Storage Temperature	-40		85	°C
Power Supply		DC +5V/GND +/- 5%		
Communication		RS232		

Notes:

[1] Maximum optical output power. For Booster type only

[2] Random polarization version only

[3] The regular range is -5 to 40°C, for extended range requires additional cost

* Preamplifier output power is limited to 25dBm

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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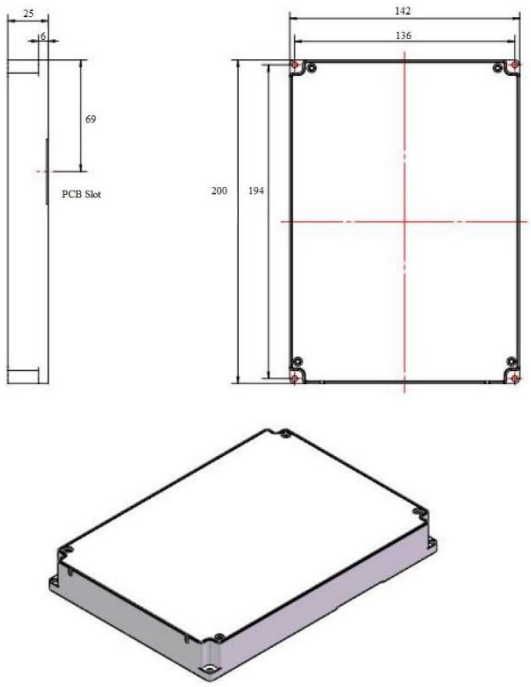
Mechanical Dimension (Component)



Package Choices

Component

Benchtop

Net-Control Rack

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Modes Description

The EDFAs have both ACC mode - automatic current control or constant current control and APC mode - automatic power control settable via GUI. In the ACC mode, the pump laser's current is set by the user and automatically locked by the EDFA to achieve a constant pumping current. The EDFA's output power is proportional to the input power and has output even though the input signal is weak. In the APC mode, the user sets the output power, and the EDFA automatically maintains the output constant in a feedback laser pump control way. When the input optical power fluctuates, the APC mode minimizes the fluctuation of the output power and is suitable for power type and line type EDFA.

Ordering Information

	S	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Type**	**Wavelength Channel**	**Power Gain [1]**	**Pump Laser Power Extra Margin [2]**	**Polarization**	**Package**	**Cable Type**	**Fiber Length [3]**	**Connector [4]**	**Low Temperature**	**High Temperature**
EDFA-		1553.33 nm / 193.00 THz = 1 1540.56 nm / 194.60 THz = 2	30dB = 3	10% = 1 20% = 2 30% = 3	Random = 1 PM = 2	Component = 1 Special = 0	Bare fiber = 1 0.9mm tube = 3 3mm cable = 5 Special = 0	0.25m = 1 0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 LC/APC = A LC/UPC = U Special=0	-5°C = 1 -30°C = 2 Special = 0	40°C = 1 70°C = 2 Special = 0

[1]. For Booster, Power means maximum output power. For Preamp, Power means maximum amplification gain.

[2]. At full 30dBm out put amplification power

[3]. For >1W modules, the fiber cables extrude out of the front.

[4]. Regular connector only rated to 0.5W and will burn at higher power. We make a special beam expanded connector to handle up to 5W

NOTE:

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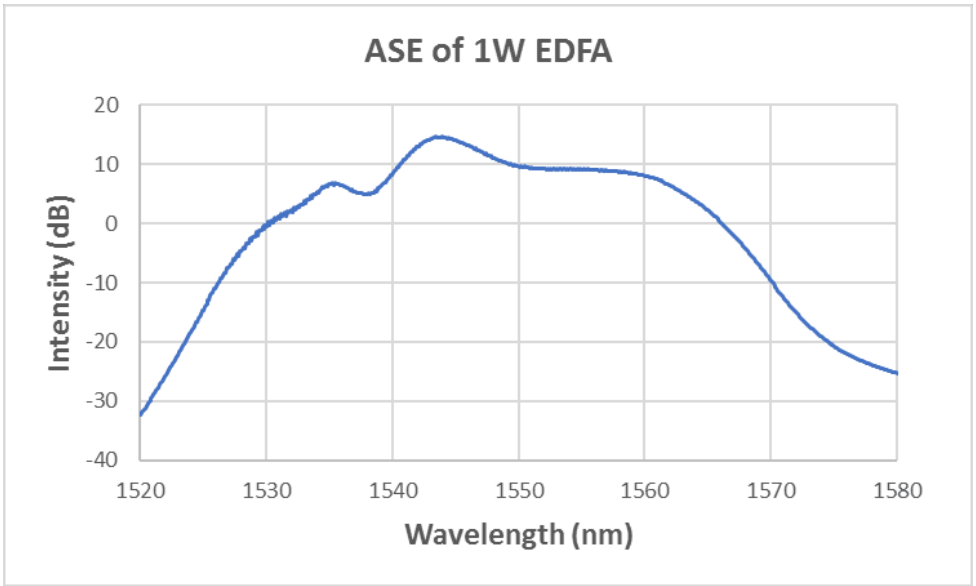
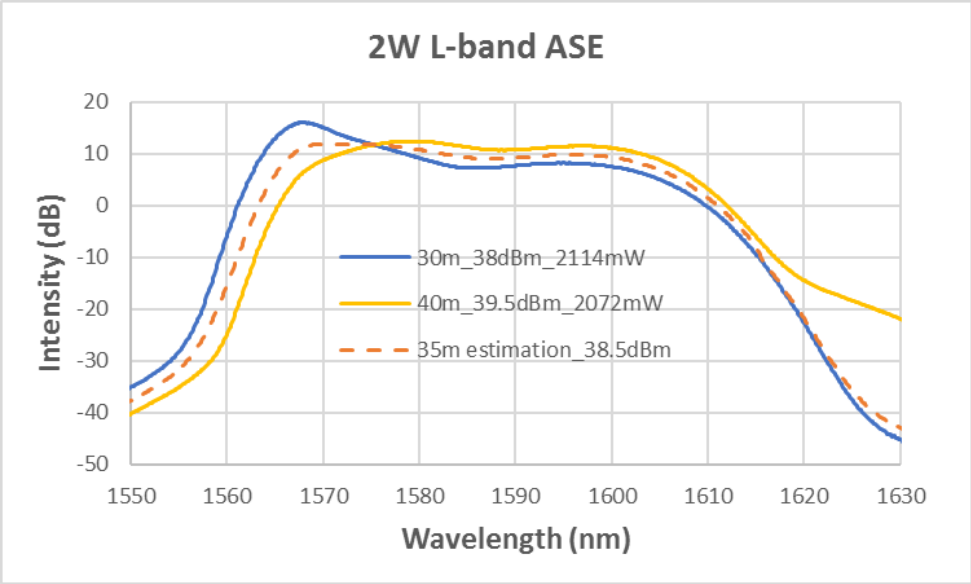
Typical Spectrums





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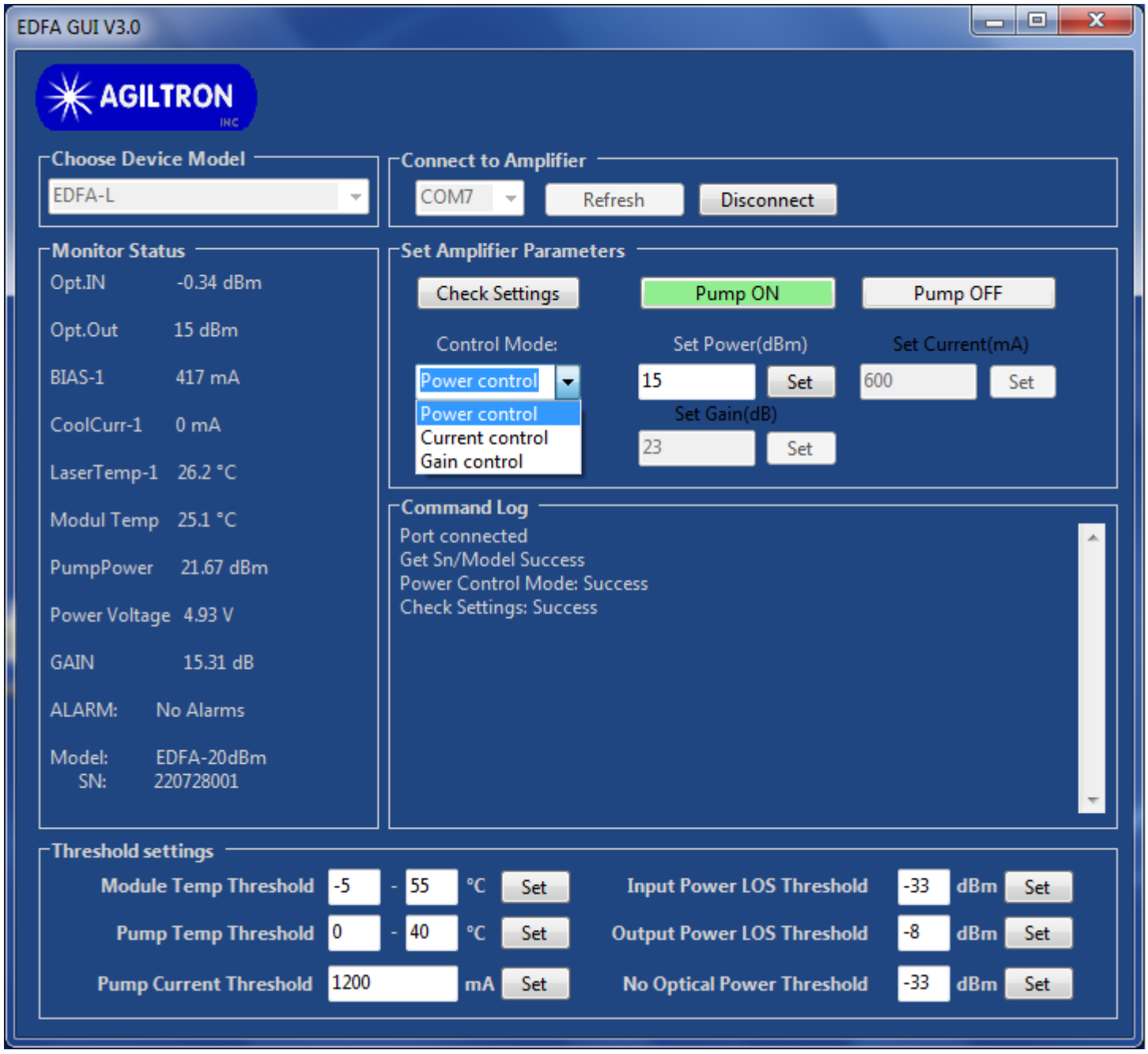
Control GUI



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