Optiva OTS-2O Series EDFA

Erbium Doped Fiber Amplifier

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Applications

- CATV Systems
- Long Distance RF/Microwave Fiber Optic Communication Links
- Sensing and Control Systems
- High-Performance Supertrunking Links
- High Power Distribution Networks
- Redundant Ring Architectures
- FTTx Networks

Features

- Full Function Fiber Optic Amplifier
- Low Noise Figure (Typ < 5 dB)
- Pin: -10dBm to +12 dBm
- Pout: +14 dBm to +23 dBm
- Low Electrical Power Consumption
- Input/Output Isolation > 35/35 dB
- Polarization Dependent Gain < 0.5 dB
- Polarization Mode Dispersion < 0.5 ps
- Input & Output Return Losses < -40 dB
- Output Residual Pump Power < -30 dBm
- Back Reflection Monitoring
- RS-232 and SNMP Monitor and Control
- Fits in Optiva Enclosures (16, 6, and 2 slot)
- RoHS Compliant

The Optiva OTS-2O Series uses Emcore's Micro Erbium Doped Fiber Amplifier (μEDFA) Gain Block Modules which is an ideal building block for system integrators to extend the fiber link for long-haul signal transport. The OTS-2OP Series is designed to meet the most demanding noise performance requirements of fiber optic communications and control systems and performs all the functions required of an optical pre-amplifier for system integration.

The OTS-2O Series EDFA modules provide input and output optical isolation for stable, low-noise operation. The input and output optical signal power levels are detected for monitoring and control. The input optical signal is amplified with active gain control for a constant output power level, or with active output power control for constant gain mode operation.

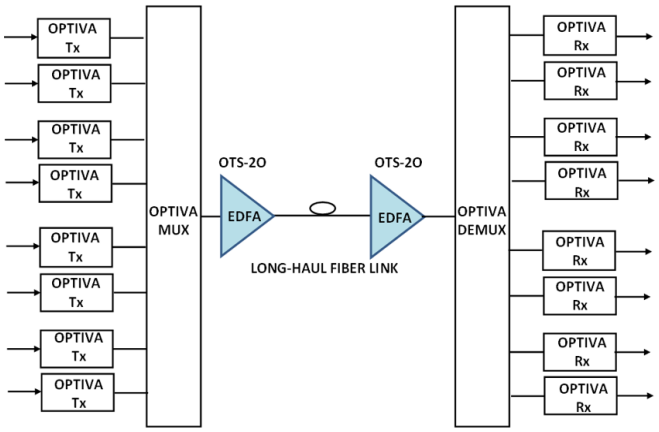
The OTS-2O Series also provides local and remote monitors and alarms for all critical operating parameters via SNMP and the EMCORE View Graphical Users Ineterface (GUI). The optical output can be split into multiple ports by optional external splitter. An optional back reflection monitoring feature enables safe output optical power managment.

System Applications

The OTS-2O Series modules fit in the EMCORE Optiva family of enclosures including the 3 RU 19" rack-mount, fan-cooled enclosure (Model OT-CC-16F) supporting up to 16 Optiva modules and the 1 RU 19" rack-mount, fan-cooled enclosure (Model OT-CC-6) supporting up to 6 Optiva modules. In addition, the OTS-2O Series modules fit the compact tabletop or wall-mountable enclosure Model OT-DTCR-2.

The EMCORE Optiva family of platforms consists of a wide range of RF, microwave, video, data and audio signal transport solutions. The integration of the OTS-2O Series amplifiers and the Optiva family of 1550 nm optical MUX-DEMUX solutions into the platform can extend the fiber links of long-haul signal transport for a wide range of applications.

Block Diagram



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Optical/Electrical Characteristics

Parameter	Unit	Limit	Model				Comments (Note 1)
			5014	5017	5020	5023	
Operating Input Power	Pin (dBm)	Max	12	12	12	12	Typical (may vary for some models)
Operating Input Power	Pin (dBm)	Min	-10	-10	-10	-10	Typical (may vary for some models)
Output Power	Po (dBm)	Nominal	14 +/- .25	17 +/- .25	20 +/- .25	23 +/- .25	
Noise Figure	NF (dB)	Typical	≤ 5.0 dB	≤ 5.0 dB	≤ 5.0 dB	≤ 5.0 dB	Notes 2
Dynamic Gain Flatness	ΔGd (dB)	Max	+/- 2.0	+/- 2.0	+/- 2.5	+/- 2.5	Note 3
Output Power Stability	(dB)	Max	+/- 0.2	+/- 0.2	+/- 0.2	+/- 0.2	Note 4
Power Consumption (Steady State)	Psys (W)	Max	4	5	9	14	Note 5

NOTES:

1) Unless stated otherwise, all specifications apply over the full operating temperature and humidity ranges
2) Measured @ 25°C, Pin ≈ 0 dBm. ≈ 1555 nm
3) Measured by combining a small-probe signal (Pin – 20 dB) with the signal (Pin) that sets the EDFA to defined saturation level of Pout. 0 dBm ≤ Pin ≤ 6 dBm (Please contact EMCORE for details, also See "Fiber Optic Test and Measurement" HP, Dennis Derickson, Editor, ISBN 0-13-534330-5, 1998, page 54)
4) Over polarization and temperature
5) Max - power consumption @ -20ºC to +70ºC case temperatures

General and Mechanical Specifications

Parameter	Min	Typ	Max	Units	Comments
Operating Wavelength	1530	-	1562	nm	Standard
Operating Case Temperature	0	-	50	°C	Standard
Storage Temperature	-40	-	85	°C	Standard
Operating Humidity	20	-	85	%	Non-Condensing
Optical Connectors	-	SC; FC; E2000	-	-	APC Only
Dimensions		23.03x 12.85 x 4.04 9.07x 5.06 x 1.59	- -	mm in	All Versions

Note: Electrical power must be applied to the unit (with no Pin monitoring) only after launching input optical signal

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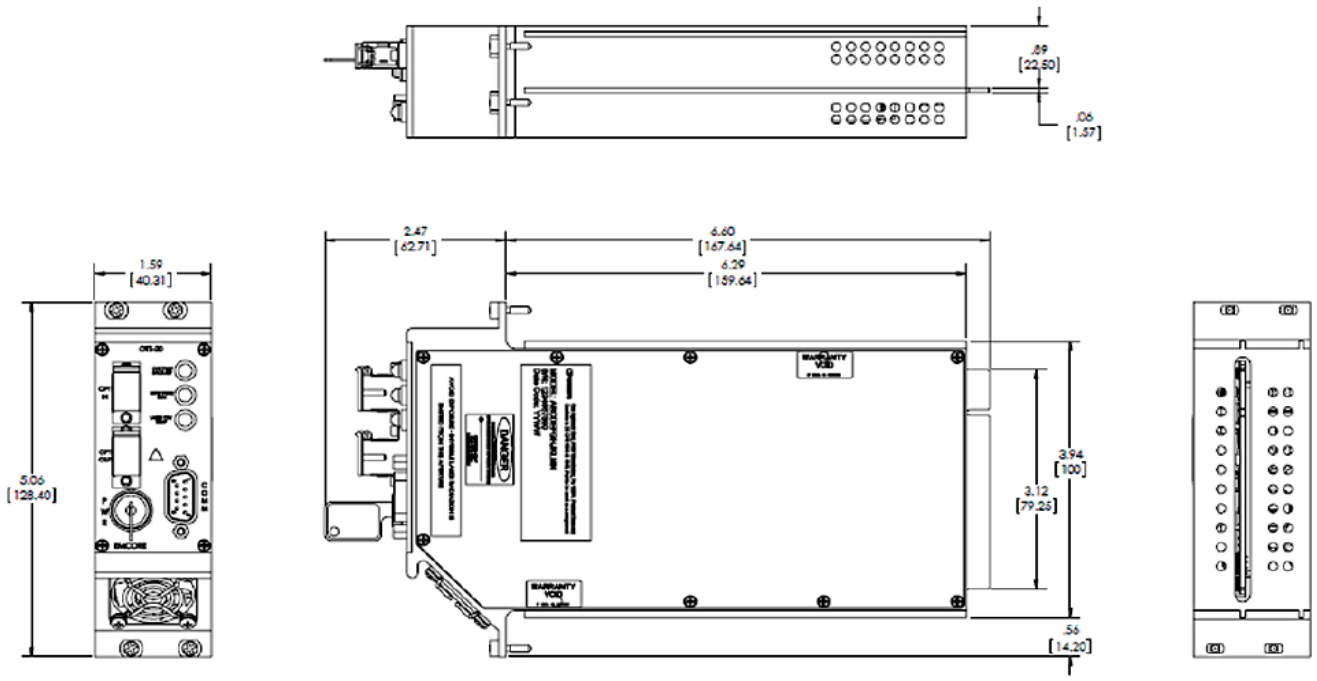
Outline Drawing (dimensions are in inches & mm)



Compliance and Reliability Information

FCC: Subpart B. Part 15 Class "A": Unintentional Radiators

EN 55013: Sound and Television Broadcast receivers and associated equipment - Radio disturbance characteristics - limits and methods of measurements - Electric Field Radiation Emissions (2001)

Fit Rate: 90% level of confidence - 290 @ 25°C

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Ordering Information

OTS - 2O - X X X X - Y Y - Z Z

Power Level (XXXX)
5014 - 14 dBm
5017 - 17 dBm
5020 - 20 dBm
5023 - 23 dBm

Connector Option (YY)
SA - SC/APC
FA - FC/APC
EA - E2000/APC

GF/NF Options (ZZ)
00 - Standard
01 - Gain Flattened

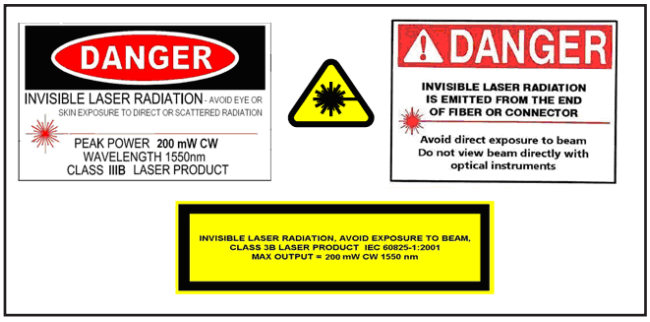
Example:
OTS-2O-5014-SA-00: 14 dBm gain block with SC/APC optical connectors, standard GF/NF
Note: Only some models can be ordered with Gain Flattened options (-01 suffixes).
Please contact your Sales Representative for details.

Laser Safety

This product meets the applicable requirements of 21 CFR 1010 & 1040 and is classified as a Class IIIb laser product based on the maximum optical output power shown below. During use as intended, the laser energy is fully contained within the fiber network such that there is no accessible laser radiation and would meet the requirments for a Class 1 laser product.

Wavelength = 1530 ~ 1562 nm (dependent on input source)

Maximum Output Power = 0.2 W (single output, 23 dBm model)



RoHS COMPLIANT MADE IN USA

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