



OPTICAL SURGE-FREE FIBER AMPLIFIER

Key Features

- Very small transient gain excursion
- Fully eliminated optical surges at plug-in and power-on
- PDF and EDF types available
- Super-small gain excursion as an option with specific EDF available

Applications

- Passive optical networks
- R&D in optical communications
- Suitable for OPS & OBS techniques

The bench top AGC(Automatic Gain Control) and ALC(Automatic Level Control) fiber amplifiers offer optical surge-free performances and are suitable for optical networking techniques such as optical packet switching or optical burst switching.

The main characteristics are:

- Incredible optical surge-free performances at plug-in and power-on and suitable for burst signals operation
- A very unique and optimized control system combining a feedforward and feedback method
- Digital control method with a FPGA to finely tune the gain setting
- A sophisticated control and alignment algorithm

Technical specifications

- Burst-mode AGC PDFA and EDFA

	AGC-PDFA	AGC-EDFA
Wavelength range	1300 nm ~ 1320 nm	1530 nm ~ 1562 nm
Input power range	- 30 dBm ~ - 10 dBm	- 24 dBm ~ - 4 dBm
Gain	> 18 dB	> 23 dB
Gain error	± 0.5 dB	± 0.5 dB
Noise figure	< 10 dB	< 6 dB

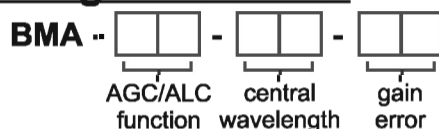
- Burst-mode ALC PDFA and EDFA

	ALC-PDFA	ALC-EDFA
Wavelength range	1300 nm ~ 1320 nm	1530 nm ~ 1562 nm
Input power range	- 30 dBm ~ - 10 dBm	- 30 dBm ~ - 10 dBm
Input burst length	> 500 ns	> 500 ns
Guard time	> 300 ns	> 300 ns
Output burst signal power level	- 18 dBm	- 12 dBm
Output burst signal power stability	± 1.5 dB	± 1.5 dB
Noise figure	< 10 dB	< 6 dB

- General specifications

Power supply voltage	90 V ~ 130 V
Operating ambient temperature	10 °C ~ 40 °C
Dimensions	W 450 x D 376 x H 88 (mm) (2U size of 19 inch rack)

Ordering information



Example:
BMA - 01 - W2 - S1

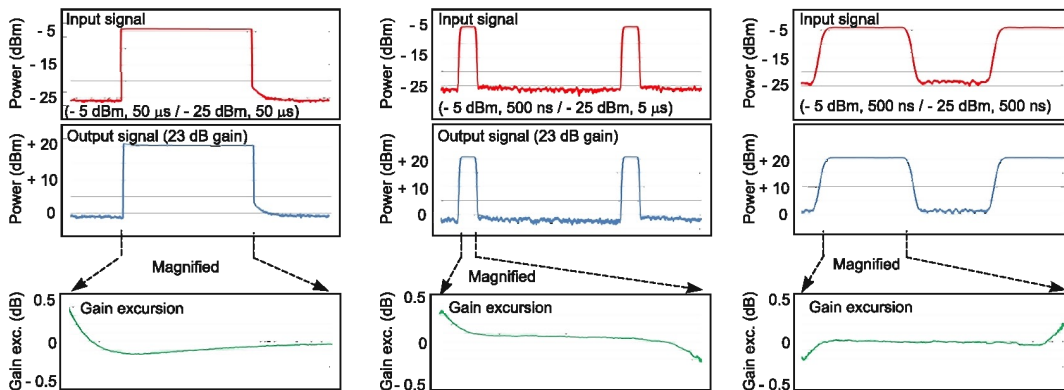
AGC/ALC function	Central wavelength	Gain error
01 - AGC	W1 - 1310 nm	S1 - < 0.5 dB (conventional EDF)
02 - ALC	W2 - 1550 nm	S2 - < 0.2 dB (specific EDF)
03 - AGC + ALC	W3 - 1550 nm WDM	

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Typical characteristics

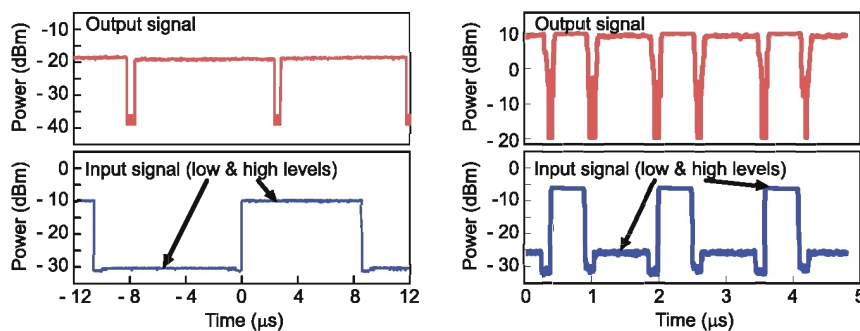
• Transient characteristics of AGC

Trimatiz AGC optical amplifier is designed to handle signals with various burst lengths. Some typical performances are presented here. As it can be seen, the gain excursions are within a 0.5dB range for all conditions and at any time (the spikes at both edges are caused by calculation errors).



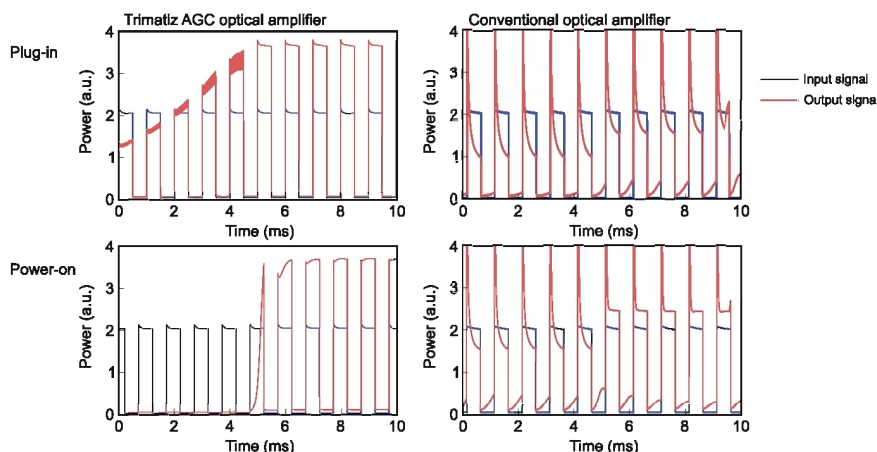
• Transient characteristics of ALC

Based on the feedforward control of a high-speed acousto-optic VOA, automatic level control operation is possible for input signals with rapid changes and wide dynamic range as well as short guard time between burst signals.



• Optical surge characteristics

Burst signals with shorter guard time induce optical surges at the rising edge of the output signal as it can be seen while using conventional optical amplifiers. The AGC optical amplifier is able to minimize the distortions and can offer optical surge-free performances.



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Product specifications and descriptions
in this document subject to change
without notice.

Printed in Japan, March 27, 2012
No. BMAC-010EN

