

1. Overview

This document provides the hardware features of the Pluggable SFP+ DWDM EDFA (AGC with GFF) available from Axiom in both Pre-Amp and Booster applications.

The SFP+ EDFA device has the following general characteristics:

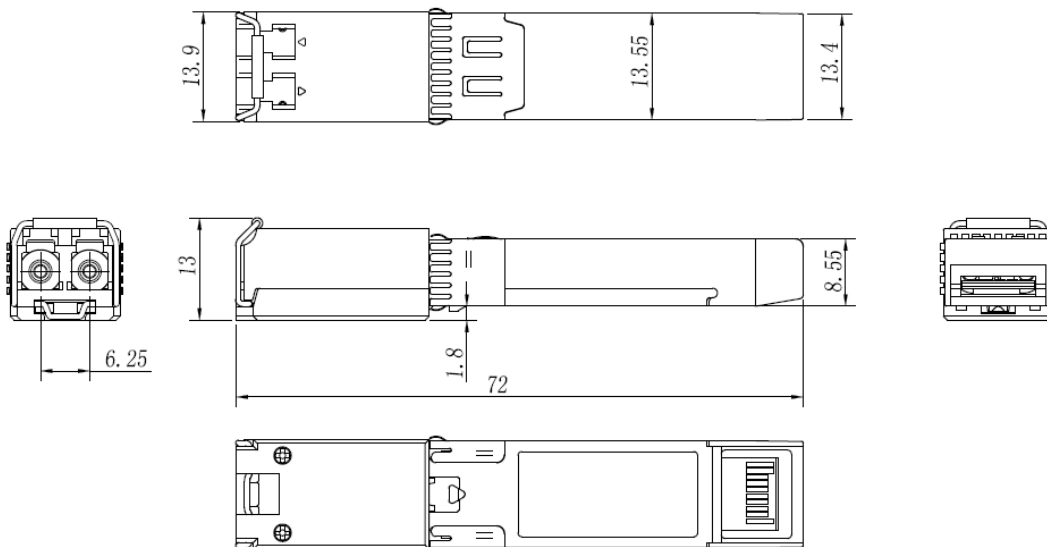
- Optimized for DWDM 40 Channel C-Band Operation
- I2C control interface
- Pluggable
- AGC operation
- Power limiting function to prevent receiver overload
- Input/Output power monitoring
- 1M Laser Safety Specification compliance

1.1 Ordering Information

Part Number	Description
AC-P-SFPPED-GG-5	DWDM SFP+ EDFA 5DBM OUTPUT PRE-AMP AGC CONTROL W/GFF
AC-P-SFPPED-GG-10	DWDM SFP+ EDFA 10DBM OUTPUT BOOSTER AGC CONTROL W/GFF

2. General Description

2.1 Dimensions



ALL DIMENSIONS ARE ± 0.2 mm UNLESS OTHERWISE SPECIFIED
UNIT: mm

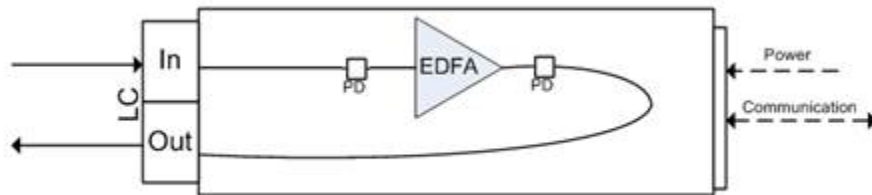
2.2. Environmental Specifications

- Operating Case Temperature: -5° C to 70°C
- Operating Relative Humidity: 5% to 85% non-condensing
- Storage Temperature: -40° C to +85°C
- Maximum absolute rating of input power: 17 dBm
- RoHS-6 Compliant

3. Optical Requirement

3.1. AGC Control

3.1.1. Optical Block Diagram



Connector: LC/UPC

3.1.2. Optical Performance

Parameter	Min	Typ	Max	Units	Comments
Wavelength Range	1529		1563	nm	
Operation Mode	AGC				
Input Power (Booster)	-14		-4	dBm	
Input Power (Pre-Amp)	-30		-20	dBm	
Gain (Booster)		14		dB	Fixed Gain
Gain (Pre-Amp)		25		dB	Fixed Gain
Monitor Accuracy	-0.5		0.5	dB	
Output Signal Power Level (Booster)	0		10	dBm	
Output Signal Power Level (Pre-Amp)	-5		5	dBm	
Gain Flatness (Booster)			1.5	dB	Room Temperature
Gain Flatness (Pre-Amp)			2.0	dB	Room Temperature
Noise Figure (Booster)			8.0	dB	
Noise Figure (Pre-Amp)			8.0	dB	
Polarization Dependent Gain			0.5	dB	

4. Electrical Requirement

4.1. Pin Functionality

1	GND	20	GND
2	N.C.	19	N.C.
3	AMP_DIS. When High, Turns off PUMP	18	N.C.
4	SDA	17	GND
5	SCL	16	3.3v
6	MOD_ABS Connected to GND	15	3.3v
7	TXD (REV)	14	GND
8	COMM_ALARM (active High)	13	N.C.
9	RXD (REV)	12	N.C.
10	GND	11	GND

Notes:

1. Module ground pins GND are isolated from the module case and chassis ground within the module.
2. All logic levels are LVTTTL.
3. Pin3: They should be pulled up with a 4.7k-10k resistor on the host board.

4.2. Power Supply Characteristics and Operating Rating

Parameter	Min	Typ	Max	Units
3.3v Digital Supply Voltage	3.14		3.47	v
3.3v Total Supply Current			750	mA
Power Dissipation			2.5	W

4.3. Turn On/Off Output Power

Parameter	Min	Typ	Max	Units	Comments
Overshoot			3	dB	Turn on output power
Convergence Time			1	s	Output power to stabilize after output power on
Response Time			100	ms	Turn off output power

5. Firmware Requirement

5.1. Upgradeability

Can be updated

5.2. I2C Communication

Standard two wire communication interface

6. Optical Functional Diagram

