

## 1. Overview

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

The SFP+ EDFA device has the following general characteristics:

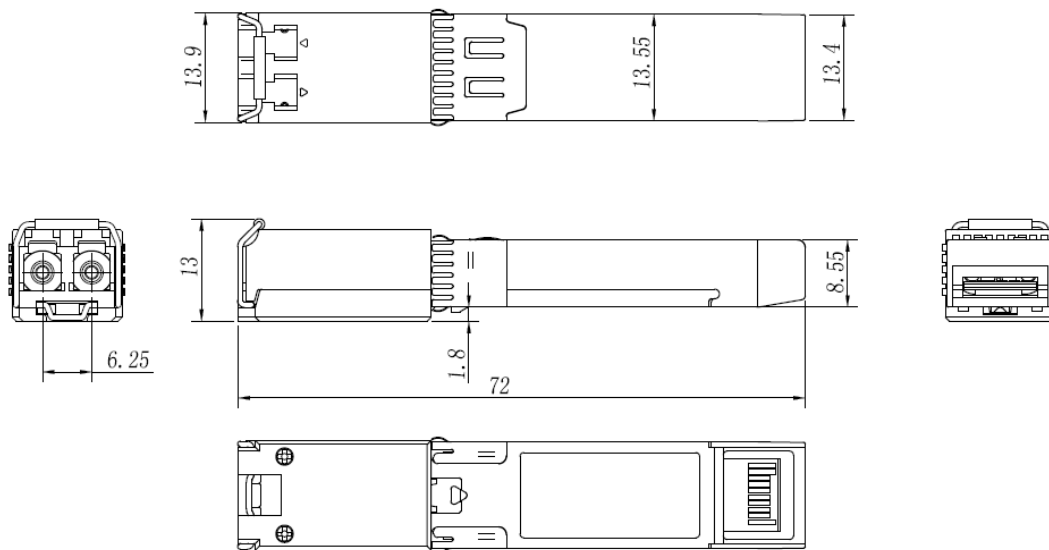
- Optimized for Single Channel ZR 1550nm applications
- I2C control interface
- Pluggable
- APC Operation
- LOS function
- Power limiting function to prevent receiver overload
- Two power monitoring points (input/output)
- 1M Laser Safety Specification compliance

### 1.1. Ordering Information

Part Number	Description
AC-P-SFPPED-P-2	SFP+ EDFA -2DBM OUTPUT PRE-AMP 1550NM ZR APPLICATION
AC-P-SFPPED-P-10	SFP+ EDFA 10DBM OUTPUT BOOSTER 1550NM ZR APPLICATION

## 2. General Description

### 2.1 Dimensions



ALL DIMENSIONS ARE  $\pm 0.2$ mm UNLESS OTHERWISE SPECIFIED

UNIT: mm

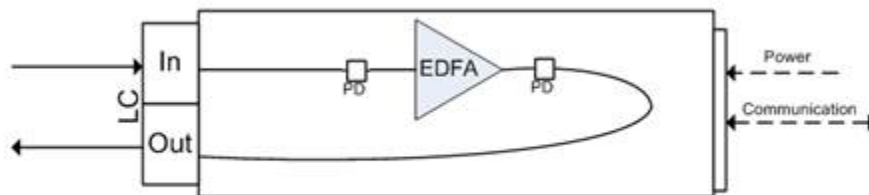
## 2.2. Environmental Specifications

- 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. APC Control

#### 3.1.1. Optical Block Diagram



Connector: LC/UPC

#### 3.1.2. Optical Performance

Parameter	Min	Typ	Max	Units	Comments
Wavelength Range	1530		1563	nm	Input/Output, Single-Channel
Operation Mode	APC				
Input Power (Booster)	-10		3	dBm	
Input Power (Pre-Amp)	-28		-10	dBm	
Input Power Monitor Accuracy	-0.5		0.5	dB	
Output Signal Power Level (Booster)	0		10	dBm	
Output Signal Power Level (Pre-Amp)	-5		-2	dBm	
Output Power Setting Resolution	0.1			dB	
Output Power Setting Accuracy	-0.5		0.5	dB	
Noise Figure (Booster)			10.0	dB	Input=3dBm; Out=10dBm
			7.0	dB	Input=-10dBm; Out=10dBm
Noise Figure (Pre-Amp)			8.0	dB	Input=-30dBm; Out=-2dBm
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			3.0	dB	Turn on output power
Convergence Time			1.0	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

