

## High power erbium-doped fiber amplifiers

**PN: RZ-C EYDFA-M-1550-3W-SM09-FC /APC-1m-X**

### 1. Working environment indicators:

NO.	Parameter	Min	Symbol	Max	Unit	Comment
1.	Operating temperature	-5		55	°C	
2.	Storage temperature	-40		85	°C	
3.	Operating relative humidity	5		85	%	No condensation at 40 °C
4.	Storage relative humidity	5		95	%	

### 2. Optical indicators

Parameter	Min	Symbol	Max	Unit	Comment
Center wavelength	1540	1550	1560	nm	
Input optical power range	-5	-	10	dBm	
Output optical power range	15	33	35	dBm	
Noise figure	-	5	5.5	dB	@Output=34.7dBm
Output fiber type	SMF-28e (YOFC)			-	SMF28e, 900um
Output fiber length	95	100	105	cm	(With connector)
Output fiber optic connector type	FC/APC			-	
Working mode	APC (default) /ACC				
Return Loss	45	-	-	dB	
Output power stability			±0.1	dB	
Power reporting accuracy			±0.5	dB	
Input and output isolation		30		dB	
Polarization-dependent gain	-	-	0.5	ps	
Input optical power alarm threshold		-13		dBm	It can be set, the range is -13~9dBm, the upward hysteresis is 1dB, and less than -16dBm is reported without light
Output optical power alarm threshold		10		dBm	The range can be set 10~34dBm, the upward hysteresis is

					1dB, and less than 7dBm is reported without light
Close the pump threshold		-14		dBm	Configurable, range -14~9dBm, upward hysteresis 1dB
Default temperature alarm threshold	-5	70	70	°C	Settable, range -5~+70 °C, upward hysteresis 1 °C
Optical port	-	-	-	-	2 (1 Input 1 output)
The APC output power can be ranged	15	-	35	dBm	
ACC current control accuracy	-	-	5	%	

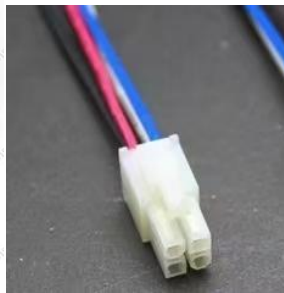
### 3. Electrical indicators:

#### 3.1 Power supply voltage and current parameters:

Parameter	Min	Symbol	Max	Unit	Comment
Supply voltage	12	12	14	V	
Supply current	-	-	6	A	
power consumption	-	60	-	W	

#### 3.2 Electrical connector type

Type	PN	Length	Comment
RS232	JX-DE09SFH	50±5cm	DB9 solid pin female (rear riveted nut with hex screw)
Electrical connectors	5557-4PIN	50±5cm	Throwing wire (positive on the side near the buckle, power connector (red +, black - two wires))



## 4. Software requirements

### 4.1 Software Metrics:

#### Upper computer software

### 4.2 Serial port communication protocol

Item	Value	Unit
baud rate	115200	Bit/s
Data bits	8	bit
Stop bit	1	bit
Check bits	-	Bit/s

The 1538nm laser supports remote control during use. The PC and the laser communicate via the RS-232 communication protocol.

#### 4.2.1 Functional Requirements

- (1) Laser switch: it has the switch function of controlling the laser (controlling the luminescence of the laser or not, it needs to respond to the frame);
- (2) Power setting: with the luminous power of the set laser (pay attention to self-protection, the power can refuse to be set, and you need to respond to the frame);
- (3) Telemetry data: It has the ability to send telemetry data to the PC through the serial port, including power value, current value, temperature, etc. (timing feedback telemetry data).
- (4) Exception handling: When receiving an instruction error, the error instruction frame is returned.

#### 4.2.2 RS-232 communication protocol

Information format:

Send format

Byte	2	1	1	1	n
content	Instruction Header	Channel	Command Word	Data Length	Data Segment

#### Receive Format

Byte	2	1	1	1	n
Content	Instruction Header	Channel	Command Word	Data Length	Data Segment

Instruction Header: 0x5A 0x5A

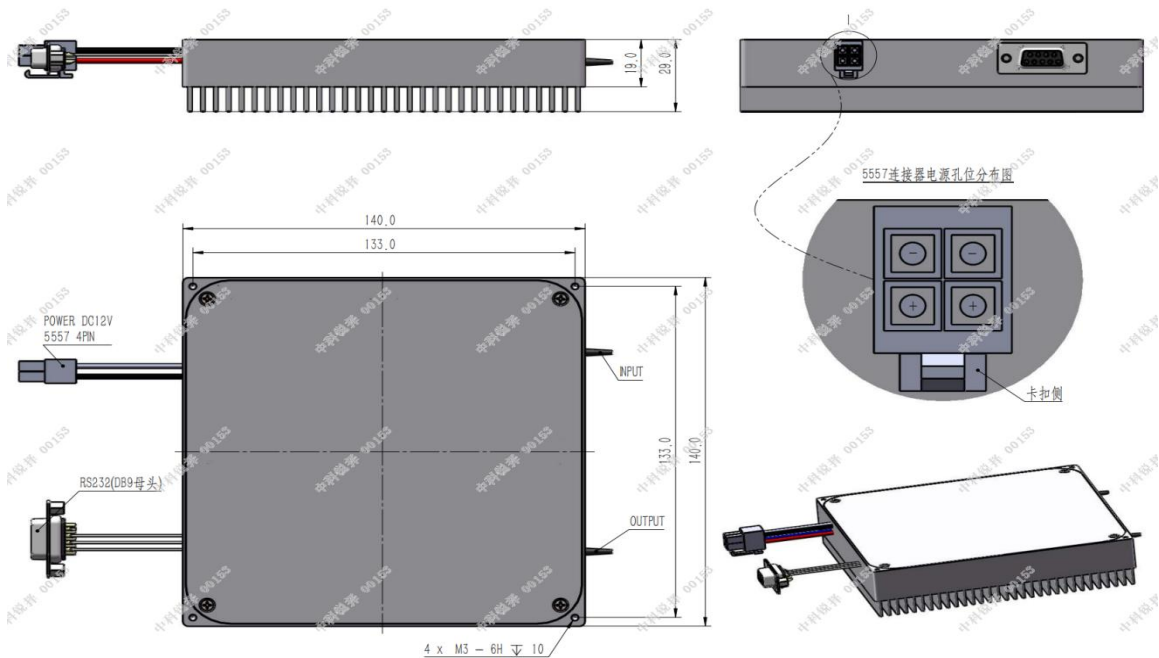
Table 1 describes the detailed communication protocols

Communication protocols in the table:

NO.	Function	Send frames	Receive frames
1	Laser switch	5A 5A 01 01 01 YY	5A 5A 01 01 01 YY
		YY: 01 on , 00 off, 1 byte	
2	Power	5A 5A 01 02 02 YY	5A 5A 01 02 02 YY

	setting	YY: Power value unit 0.1dBm, 2 byte	
3	Telemetry data		5A 5A 01 5B 06 Y1 Y2 Y3
		Y1: Power value, 0.1dBm, 2byte Y2: Current value, 1mA, 2 byte Y3: Temperature value, 0.1°C, 2 byte	
4	Error frame		5A 5A 01 5C 04 EE EE EE EE

**5. Structural appearance:** (unannotated position tolerance according to GB/T1184-K; Unmarked dimensional tolerance  $X \pm 0.15$ ,  $.X \pm 0.1$ ,  $.XX \pm 0.05$ , special tolerances are shown in figure)



**6. Other:**

Project	Content	Comment
Packaging requirements:	Neutral packaging	
Product text	Chinese	
Product accessories	Test report, host computer software, certificate, serial port line, power cord, instruction manual	