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C-Band Low Latency SM Pre-amp MSA EDFA with 20/30dB Gain

User Manual

P/N: EDFL-2CxM(H)xxxxxxxxx

Version: 2025 - 12

1 Ambient Parameters

Parameter	Min.	Typical	Max.	Unit	Note
Working Temperature	-5		65	℃	
Storage Temperature	-40		85	℃	
Working Relative Humidity	5		85	%	40°C non-condensation
Storage Relative Humidity	5		95	%	

2 Optical Parameters

Parameter	Min	Typical	Max	Unit	Note
Return Loss	45	-	-	dB	
Input & Output Fiber type	SMF-28e, 900um white loose tube			-	
Output Fiber Length	99	100	101	cm	Can be customized.
Input Fiber Length	99	100	101	cm	Can be customized.
Input & Output Fiber Connector Type	FC/APC			-	Can be customized.
Module Dimension	(W*L*H)90*70*15			mm	
Working Mode	**ACC**				
Output power stability	-	-	±0.1	dB	
Input & Output Isolation	-	35	-	dB	
In & Out Pump Leakage	-	-	-30	dBm	
PDG	-	-	0.5	dB	

Operating Wavelength	1528	-	1565	nm	
Input Power Range	-30	-	10	dBm	
Gain	20	20/30	33	dB	
Max Output Power	15			dBm	
Input @ Typical	-10			dBm	
NF	-	5.5		dB	@Gain=20dB

3 Electrical Indicators

3.1 Power Supply:

Parameter	Min	Typical	Max	Unit	Note
Voltage	4.75	5.0	5.25	V	
Current	-	-	3.0	A	
Power Consumption	-	-	15	W	

3.2 Pin definition

3.2.1 Communication Port

Type：34Pin 2.00mm intervals male socket CJT A2005WV-N-2x17P

3.2.2 Pin definition:

Pin No.	Name	Attribute	Level Type
1	NC	F	
2	NC	F	
3	+5V	P	
4	+5V	P	
5	+5V	P	
6	+5V	P	
7	GND	P	
8	GND	P	
9	NC	F	
10	NC	F	
11	GND	P	
12	GND	P	
13	NC	F	
14	NC	F	
15	NC	F	
16	NC	F	
17	NC	F	
18	NC	F	
19	NC	F	
20	NC	F	
21	NC	F	
22	NC	F	
23	GND	P	
24	GND	P	
25	Serial Port Input	I	LVTTL

26	Serial Port Output	O	LVTTL
27	GND	P	
28	GND	P	
29	+5V	P	
30	+5V	P	
31	+5V	P	
32	+5V	P	
33	NC	F	
34	NC	F	

* P: Power, I: Input, O: Output, F: None

4 Serial Port Communication Protocol

Parameter	Value	Unit
Baud rate	9600	Bit/s
Data bit	8	Bit
Stop bit	1	Bit
Parity bit	None	

5 Module Dimensions

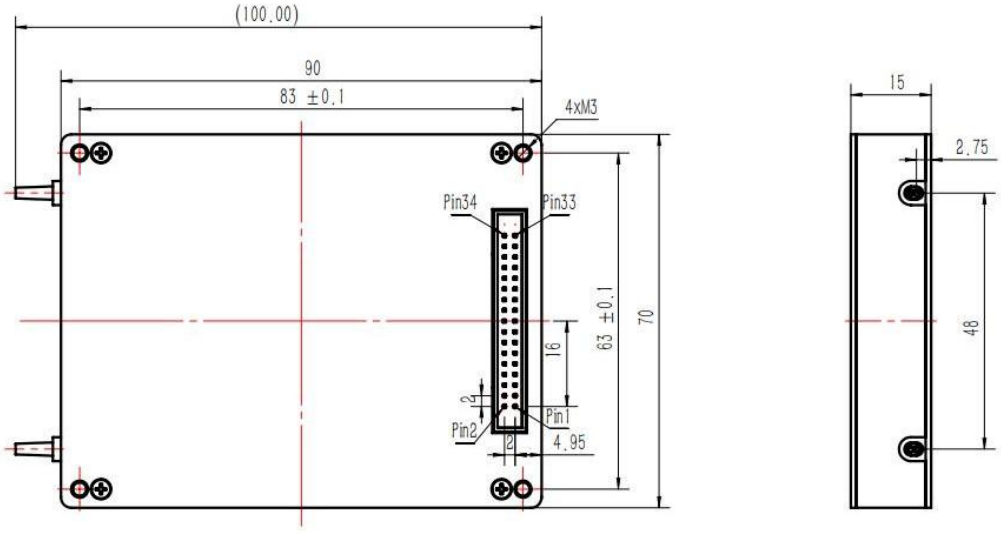

Figure 1 Mechanical drawing

6 Application Notes

- RS232-to-USB converting needs to be done by user. FTDI chip is recommended.

  * Benchtop is available at https://agiltron.com/.

  * RS232-to-USB converting PCB is also available at https://agiltron.com/.

- Upon accomplishment of the above EDFA can be remotely controlled by UART commands or the 'EDFA GUI' program (EDFA-N option) provided.

- Heatsink is needed for this EDFA, as shown below.

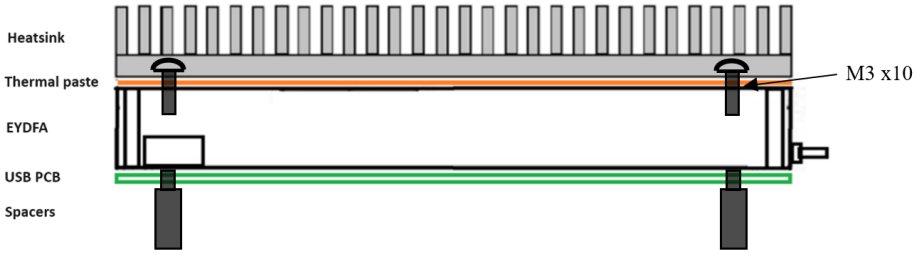

Figure 2 Heatsink installation

7 Software Instruction

Note:

USB to COM driver for FTDI devices needs to be installed on the computer for remote control. The driver can be downloaded from https://ftdichip.com/drivers/vcp-drivers/.

1) Download GUI software 'EDFA GUI V3.0' from the link below, under Step File/GUI.

   https://agiltron.com/product/erbium-doped-fiber-amplifier-module/

   A copy of GUI also comes with EDFA.

Figure 3 Driver download link

2) Run setup.exe to install the GUI on host computer.
3) Power on EDFA.
4) Connect host computer to EDFA by using a USB cable.
5) Run EDFA GUI V3.0.
6) Choose device model EDFA-L.

   - EDFA-H: standard version EDFAs with 23dBm or higher output power.
   - **EDFA-L**: standard version EDFAs with less than 23dBm output power.
   - EDFA-C: high-end or special version EDFAs.

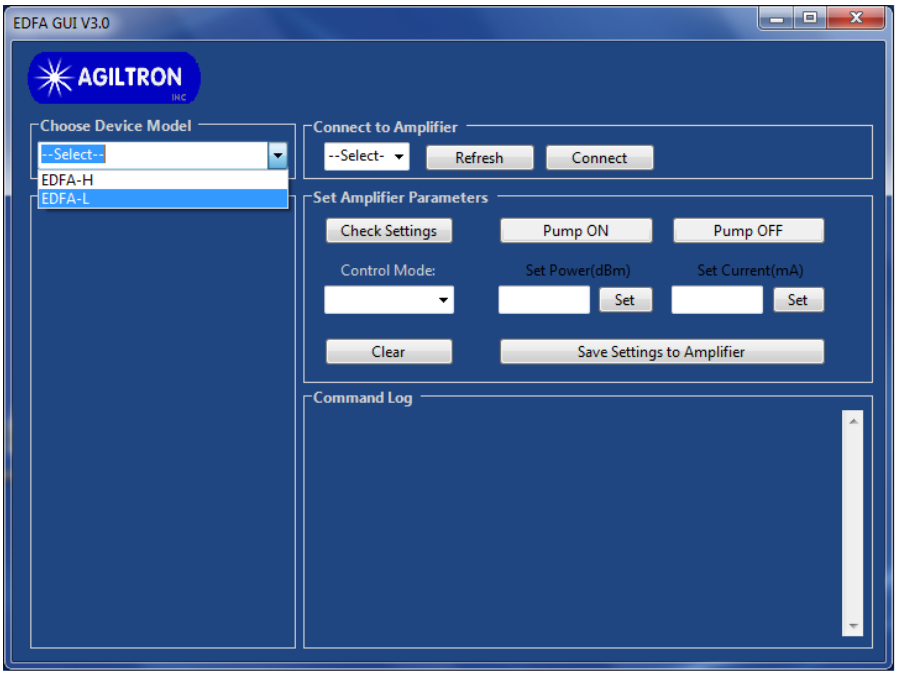

Figure 4 Remote control software: Model selection

7) Port Selection:

Select the serial port, to which the EDFA is connected, from the 'Port List', and click 'Connect'. If the desired port doesn't show up click 'Refresh' button and try again.

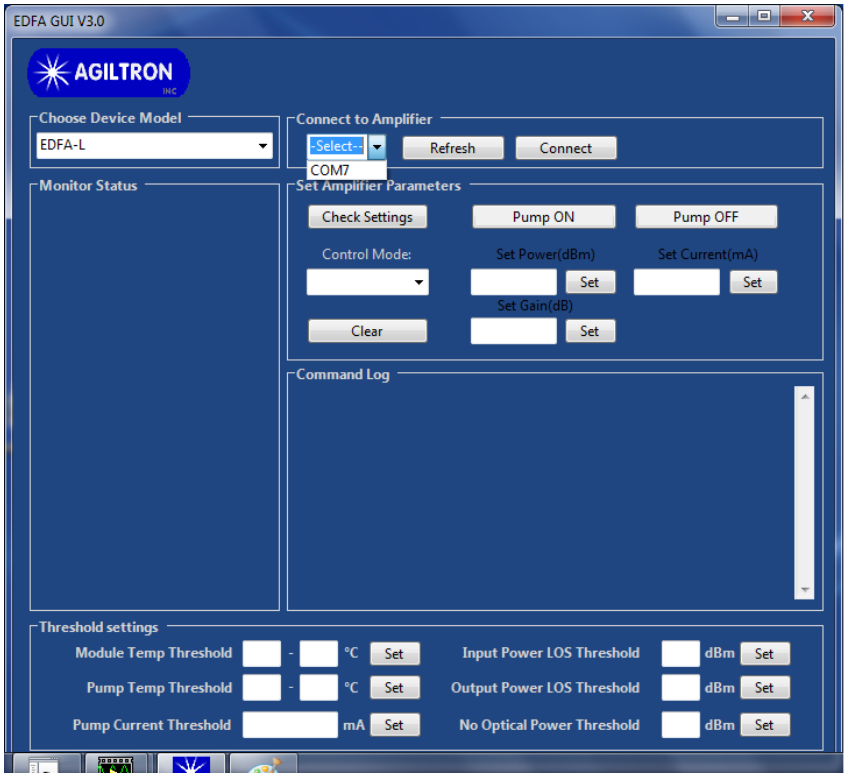

Figure 5 Remote control software: Port selection

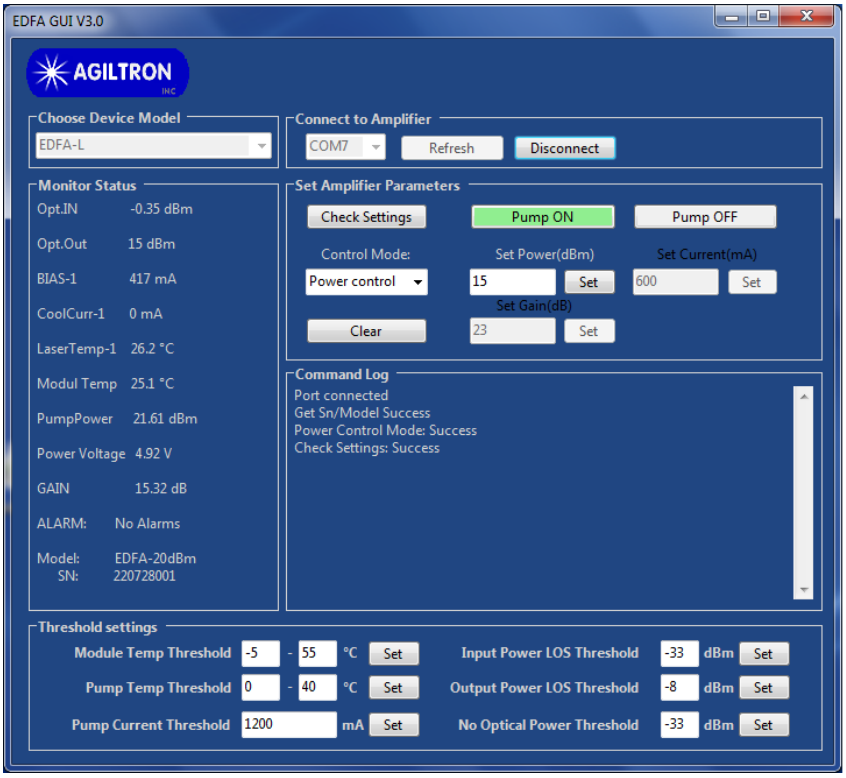

Figure 6 Remote control software: connected successfully.

8) Once EDFA has been connected successfully the status of the EDFA will be displayed in Monitor Status window. The status keeps updating at an interval of 1 second.

9) Check Setting

   Click to get the settings from the EDFA.

10) Pump ON/OFF

    Click to turn on/off the EDFA pump laser, thus to turn on/off its output.

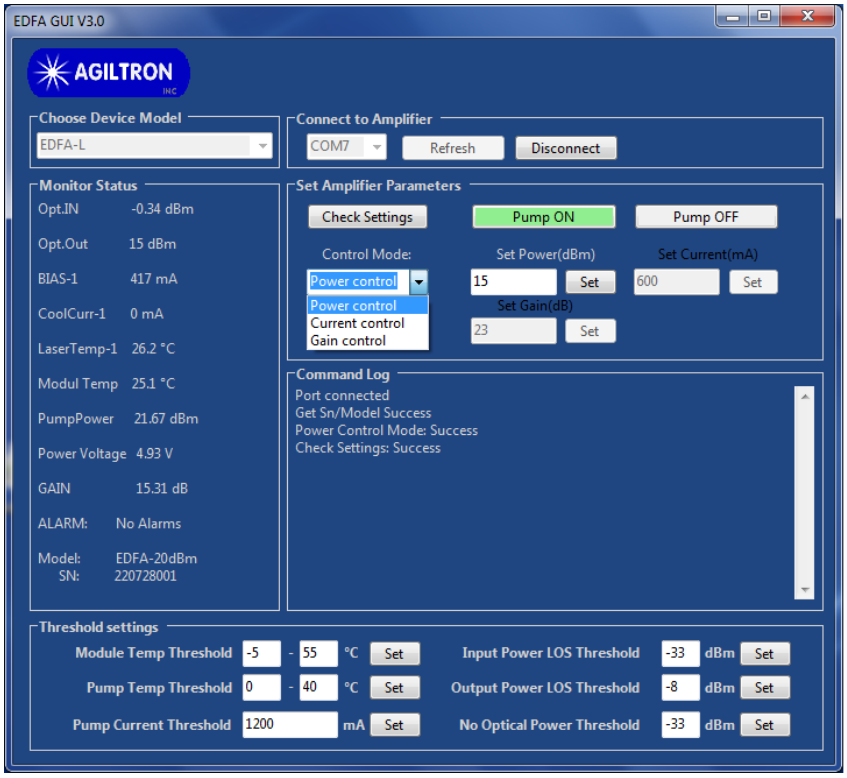

Figure 7 Remote control software: control mode selection

11) Control Mode Selection

- Click ‘Control Mode’ button to get the current mode setting of EDFA.
- Set control mode as Current Control’.
- Input setting value into the corresponding ‘Set Current(mA)’ box, then click ‘Set’ button.

12) Save Settings

When ‘Set’ button is clicked, current settings will be saved to EDFA.

13) Emission ON/OFF

Click ‘Pump ON’ or ‘Pump OFF’ button to turn on/off the output of EDFA.