A Photonwares Company

Full C-Band Mini Booster EDFA

User Manual

P/N: MEDF-1Cx1xxxxx

Version: 2025 - 8
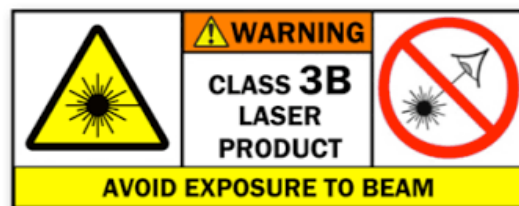
1   Ambient Parameters

Parameter	Min.	Typical	Max.	Unit	Note
Working Temperature	-25		55	°C	
Storage Temperature	-55		85	°C	
Working Relative Humidity	5		85	%	40°C non-condensation
Storage Relative Humidity	5		95	%	

2   Optical Parameters

Parameter	Min	Typical	Max	Unit	Note
Module Dimension	(W x L x H) 34 x 22 x 11			mm	
Working Mode	APC/ACC				
Output power stability	-	-	±0.1	dB	
Accuracy of power reporting	-	-	±0.5	dB	
Gain control accuracy	-	-	±0.5	dB	
Output Power control accuracy	-	-	±0.5	dB	
Input & Output Isolation	-	35	-	dB	
In & Out Pump Leakage	-	-	-30	dBm	
Return Loss	45	-	-	dB	
PDG	-	-	0.3	dB	
Operating Wavelength	1528	-	1565	nm	
Input Power Range	-15	-12	5	dBm	
Max Output Power	18	dBm			
NF	-		5.5	dB	
Input & Output Fiber	SMF-28e, 900um white loose tube				
Output Fiber Length	99	100	101	cm	100 ± 1cm, without connector
Input Fiber Length	99	100	101	cm	100 ± 1cm, without connector
Input & Output Fiber Connector Type	FC/APC				

3 Electrical Parameters

3.1 Power Supply:

Parameter	Min	Typical	Max	Unit	Note
Voltage	3.15	3.3	3.45	V	
Current	-	-	1.0	A	
Power Consumption	-	-	3.45	W	

3.2 Wiring

Wire Color	Function	Description
Red	Power +	3.3 DCV
Black	Power -	GND
White	En (enable)	TTL low: enable pump
Yellow	LVTTL-Tx	Transmit
Blue	LVTTL-Rx	Receive

Figure 1 Ports of EDFA

3.3 Heatsink

Heatsink must be attached to the EDFA for good performance and to avoid damage to EDFA.
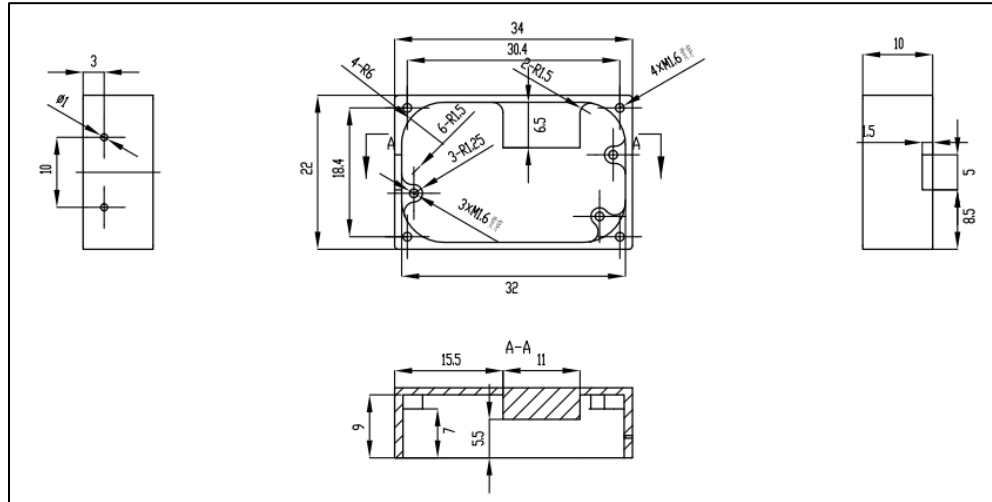
4 Mini EDFA Dimensions

Figure 2 Drawing of mini EDFA

5 Connection and Operation

1) Add heatsink to EDFA

2) Connect EDFA to a host computer.

   Note:

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

3) Install GUI on host computer.

4) Connect 3.3VDC power supply to EDFA.

5) Power on EDFA.

6) Run EDFA GUI on host computer, and adjust output power or driving current of EDFA to desired value.

   See Part 0 for GUI details.

7) When need to turn off EDFA, disconnect GUI from EDFA first, then power off EDFA by unplugging its DC power supply.

6 Remote Control

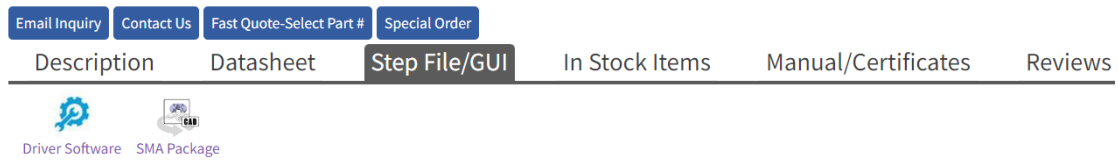## 6.1 Serial Port Communication Protocol

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

6.2 GUI Instruction

1) A copy of GUI can be found in the USB flash drive coming with EDFA.

   It can also be downloaded from the link below, under Step File/GUI.

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

2) Run setup.exe to install the GUI on host computer.

3) Run EDFA GUI V3.0 on host computer.
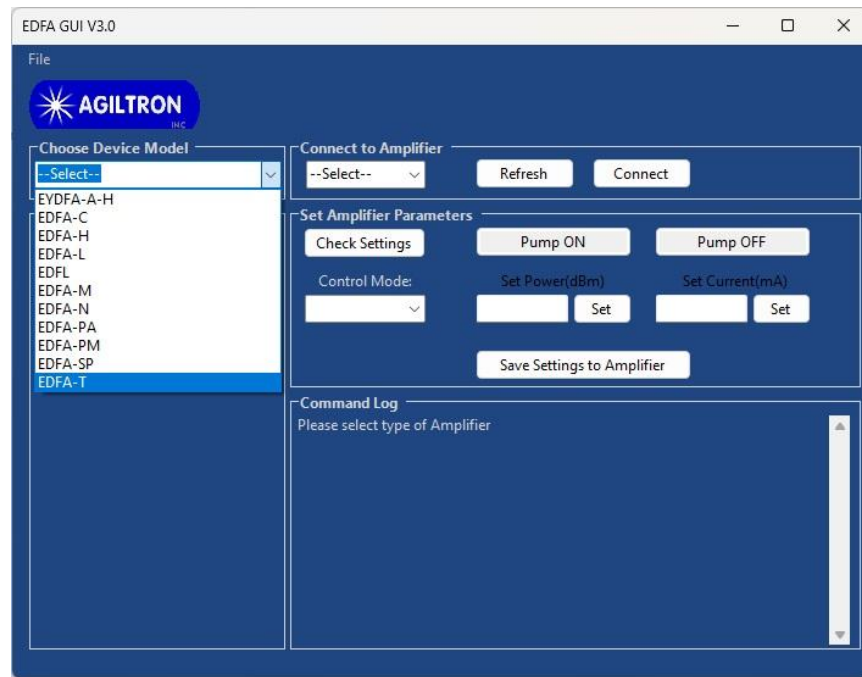
4) Choose device model **EDFA-T**.
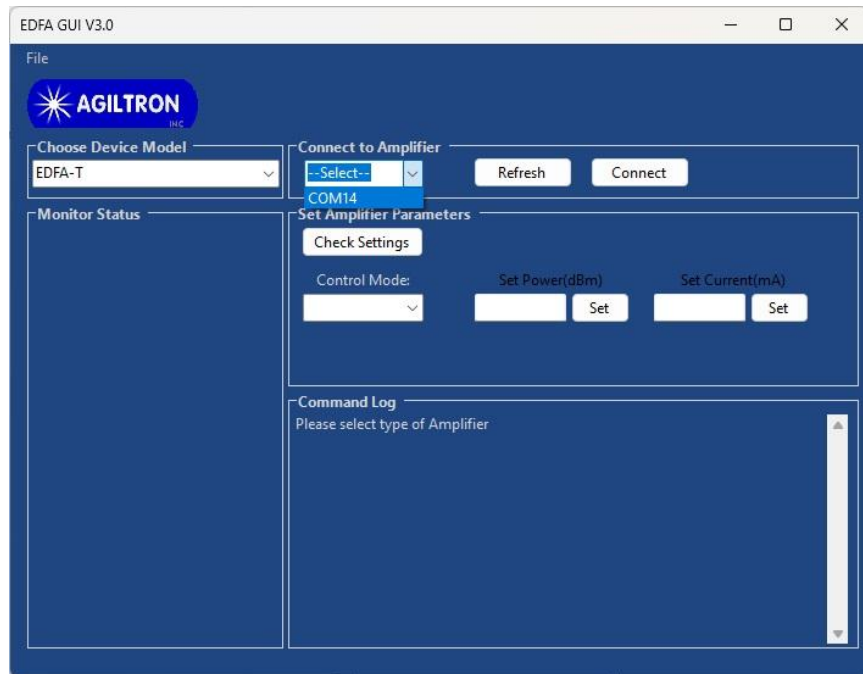

Figure 3 GUI – Model selection: EDFA-T

Figure 4 GUI – COM Port selection

5) 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.

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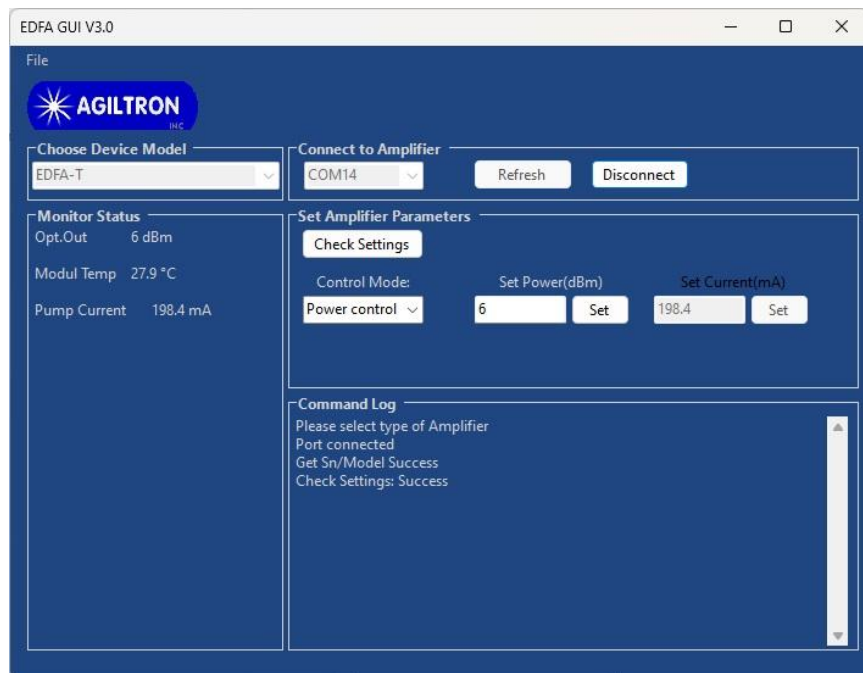

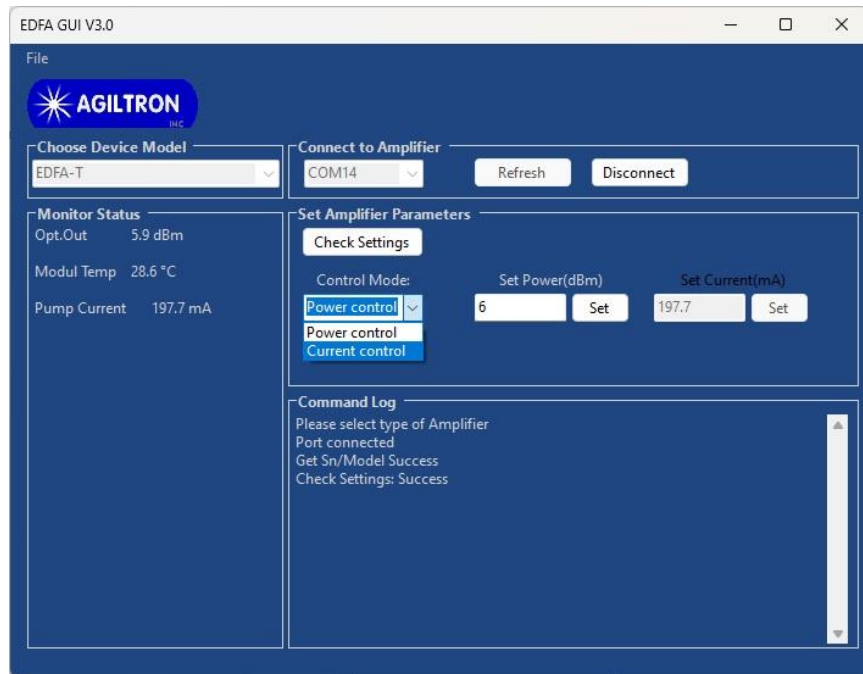*Figure 5 Remote control software: connected successfully.*

Figure 6 Remote control software: control mode selection

7) Check Setting

   Click to get the settings from the EDFA.

8) Control Mode Selection

   Click 'Control Mode' button to get the current mode setting of EDFA.

   - Power Control: constant power control mode

   - Current mode: constant current control mode

   Select the desired mode and input setting value into the corresponding 'Set Power(dBm)', 'Set Current(mA)', or 'Set Gain (dB)' box, then click 'Set' button.

9) Save Settings

   When power or current setting is changed by user the setting will be saved to EDFA automatically.
   When power on EDFA next time it will run at saved settings even without GUI control.

10) Disconnection

   Click 'Disconnect' button to disconnect host computer from EDFA.