JPT TYPE E LASER GUI SOFTWARE USER GUIDE

GUI Version:20211231

1. JPT GUI Laser Testing Software-Type E

E type is designed for YDFLP-E series laser. It has multiple functions including laser control, setting the default parameters, setting the control mode, alarm monitoring, DB25 interface monitoring, internal parameters monitoring etc. E type also records error events which caused system self-locking.

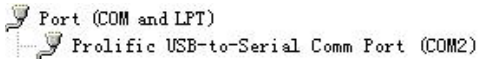
1.1 GUI Operation

1.1.1 Serial COM port

1) Connecting method

Using USB TO RS232 cable to connect PC's USB to the Laser's RS-232 connector.

Check the port number after connecting cable： my computer - > properties - > hardware - > device manager - >



Click the Serial Comm Number as follow:

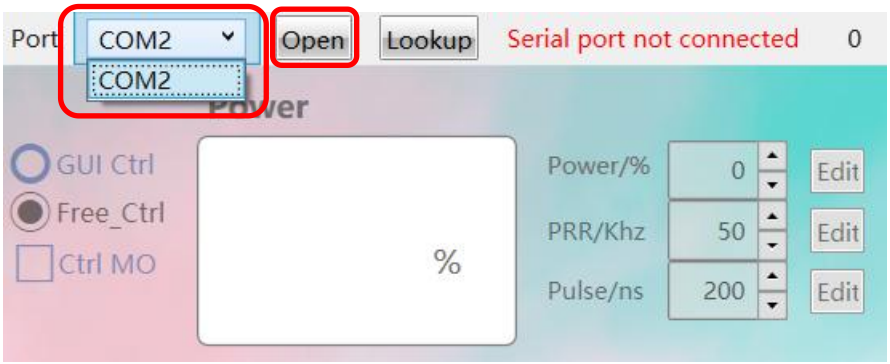


Figure 1 The selection of GUI Serial Port connection

2) Connecting state

Figure 2　GUI disconnected state

Figure 3　GUI connected state

1.1.2 GUI control function

1)　GUI control the emission

① Choose the GUI control Mode

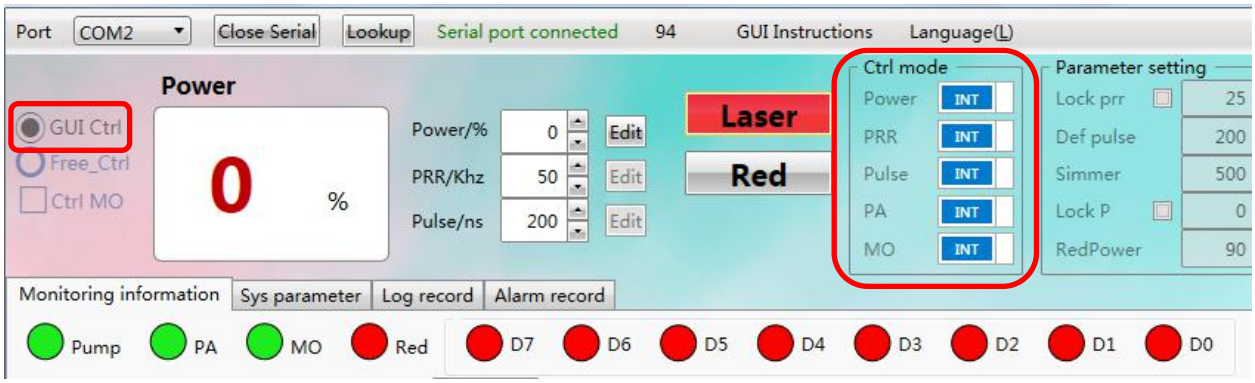


Figure 4 GUI Full Ctrl mode

GUI Full Control mode(GUI Ctrl)：When selecting the GUI full Control mode, all the parameters of Internal/External Control mode (EG. power, frequency, pulse width, PA, MO) will change to Internal Control mode. This mode will not be preserved after power off. It will change to “Free Ctrl” mode after serial port closed, and all the parameters of Internal/External Control mode will be changed to the previous free control mode setting. User can select this mode to test the emission of laser temporarily.

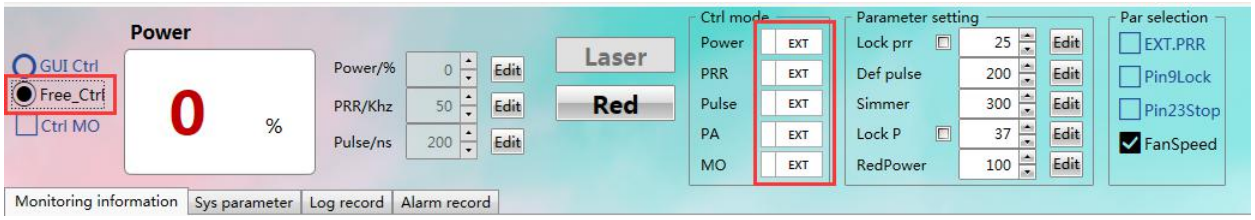


Figure 5 Free Ctrl mode

Free Control Mode (Free Ctrl): When selecting free Control mode, user can choose parameter control mode individually. In this mode, all the settings will be preserved after power off. EG. User can select this mode to lock a specific frequency or output power individually when don't want to control it by external signal.

② Set parameters and emitting

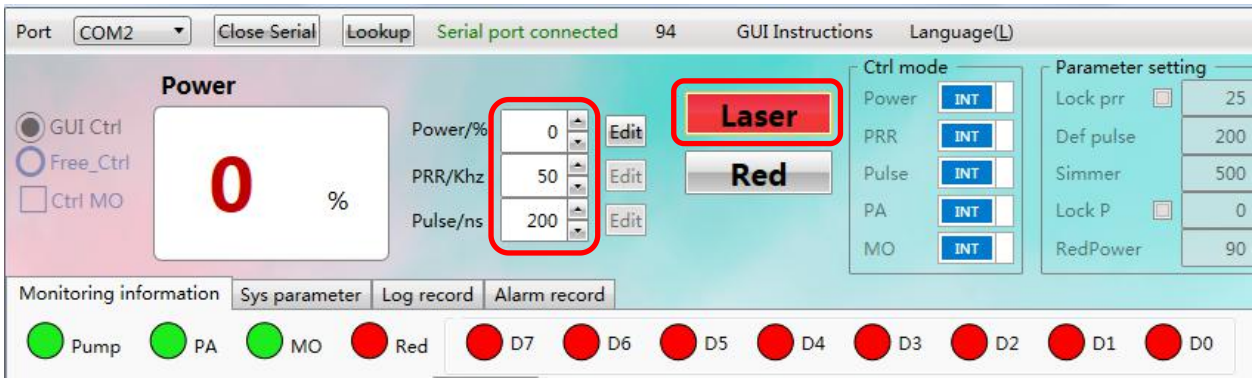


Figure 6 Setting parameters and emitting

After selecting full control mode, user can set power, frequency, pulse width and then press “edit” button to confirm. User can switch on/off emission when clicking “Laser” button.

Note: All the parameters except power can’t be modified during emission.

③ Control MO signal

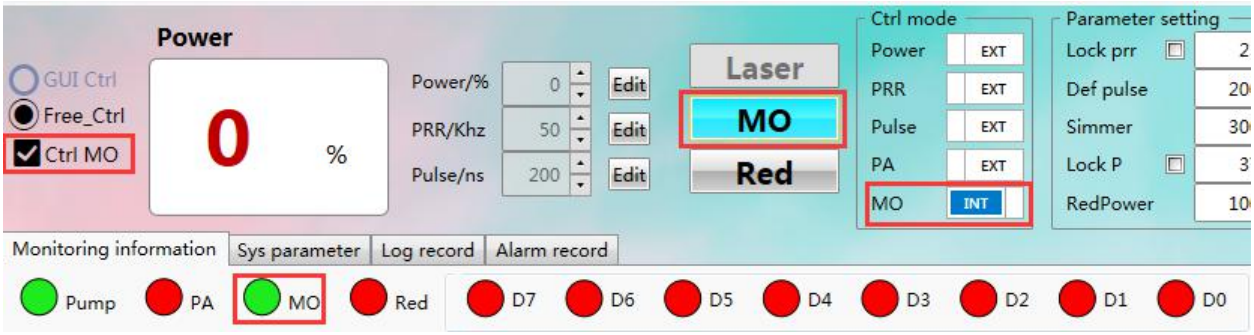


Figure 7 GUI control MO state

Ctrl MO: The “MO” button will be appeared on the interface after selecting Ctrl MO. User can control the switching of MO signal while clicking this button. This setting will not be preserved after power off.

2) Default parameter setting and selection

E type software can modify laser default parameter setting and selection in the option of "Parameter setting" and “Parameter selection”. The parameter settings take effect immediately and save automatically after power down.

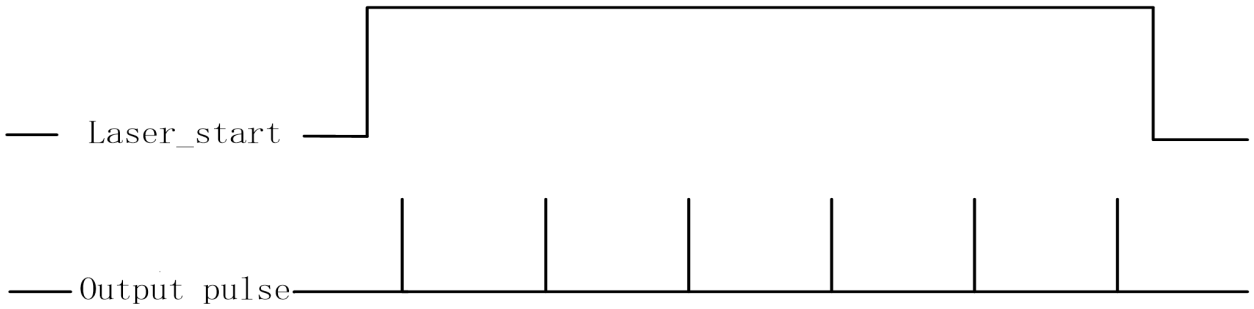
Figure8 Default parameter settings and selection

Lock PRR: Laser will lock to GUI setting frequency.

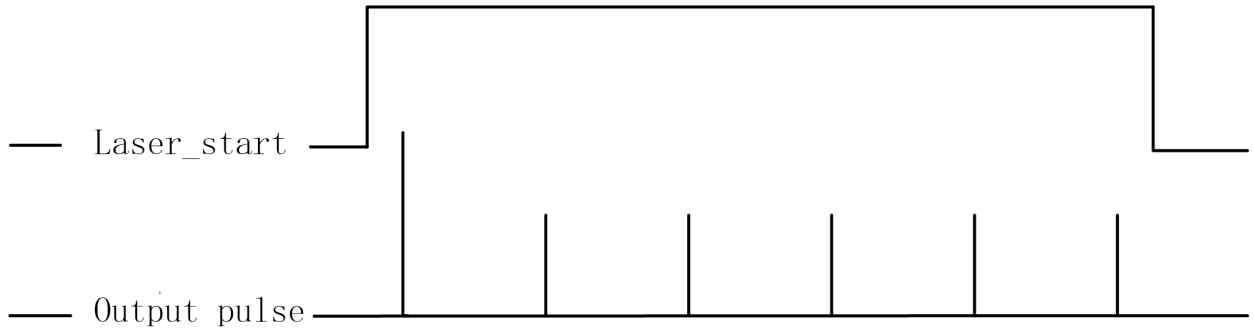
Default pulse: The laser will use GUI default pulse when no pulse width control command received.

Simmer： Can be used for controlling the height of the first pulse, the higher the value, the larger the first pulse. Setting range: 0-1000

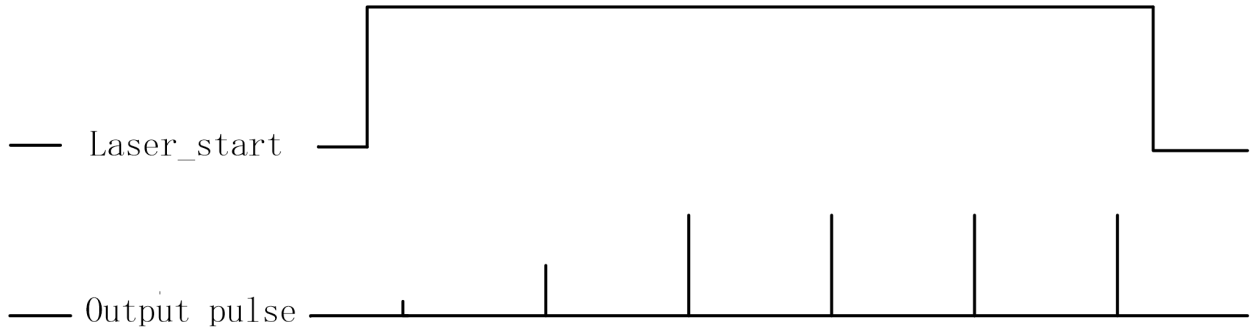
Simmer setting examples：



[Appropriate Simmer]



[High Simmer]



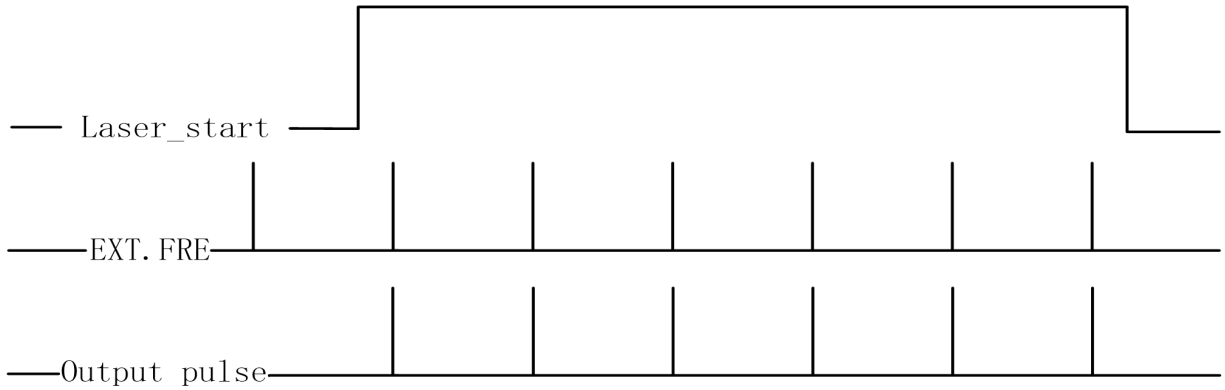
[Low Simmer]

Lock power: Laser will lock to GUI setting power.

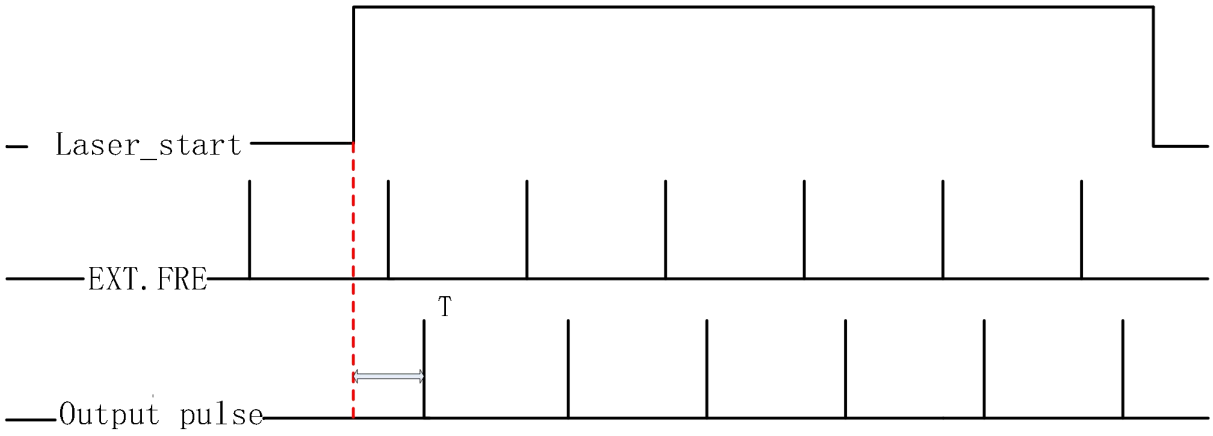
Red Power: Brightness of built-in red pilot(optional) can be adjusted, value range is 0-100.

External frequency: When selecting external frequency mode, the laser output pulse will be synchronized with external frequency signal. When not selecting this option, the laser will use with internal frequency mode. And the laser will calculate external frequency signal in MO and PA delay time. Default setting is internal frequency mode.

External frequency and internal frequency setting examples:



[External Frequency]



[Internal Frequency]

*T=Duration of pulse period, maximum duration ≤ cut off frequency period

Pin9Lock： Power latch function is enabled if selected, rising edge is effective. Default setting is not selected.

Pin23Stop： Emergency stop function is enabled if selected, low level is effective. Default setting is not selected

Fan Speed Control： The laser fan speed will be control according to the value of the built-in temperature sensor. If not selected, the fans will run at full speed. Default setting is selected.

Note：The parameter setting of E type software takes effect immediately, no need to restart laser.

StrengMc: Checking "Enhanced Mode" will increase the average power of the laser by 20% while keeping the cut-off frequency unchanged. At this time, it is recommended that the operating environment temperature range is 5~35℃. The laser may trigger a sensor alarm. Please refer to Table 1 for the recommended operating temperature range of the laser in different modes. This mode is not checked by default.

Table 1 Recommended operating temperature range

Operating mode	Recommended operating temperature range
Normal mode	0~40℃
Enhanced mode	5~35℃

1.2 Laser monitoring function

The laser running status and alarm record can be read by E type software.

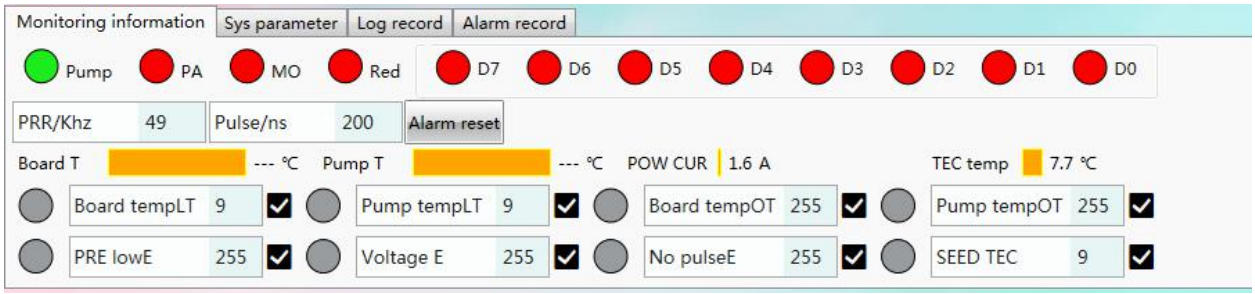


Figure 9 laser running status and alarm record

1) Status monitoring

Pump indicator light: Monitor whether the pump of the laser is currently in normal working state, which is green under normal conditions, and red light if abnormal alarm occurs.

PA、MO、Red indicator light: Monitor the control signal. Green light means signal is effective (high level), and red light means signal is not effective (low level).

D0-D7 indicator light： Monitor the current power signal of the laser, corresponding the 8-bit binary mode, D0 is the lowest and D7 is the highest. Green light means this pin signal is effective (high level), and red light means this pin signal is not effective (low level).

PRR/kHz and PULSE/ns: Monitor the actual laser working frequency and pulse width.

Pump temperature: Monitor the temperature of optical module.

Power current: Monitor the post amplifier driving current value of the laser.

System parameter: Internal system parameter setting interface (For JPT internal use only).

Log record: To record the laser setting and alarm.

Alarm record: To record the sequence of the latest 10 laser alarms.

2) Alarm description

Board tempLT: Board temperature is lower than the set temperature.

Board tempOT: Board temperature is higher than the set temperature.

Pump tempLT: Pump temperature is lower than the set temperature.

Pump tempOT: Pump temperature is higher than the set temperature.

PRE lowE: Pre amplifier low current alarm.

Voltage error: Supplying voltage is too low or too high.

No pulseE: No seed source backlight signal detected or backlight signal frequency less than 1kHz.

Seed TEC: Seed source temperature is abnormal.

Warranty and service terms in User's Manual are for reference only. Official service and warranty are subject to official contract.

For more support, pls contact JPT sales team or service team for more support.