Controlling Software for JPT Fiber Laser

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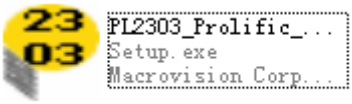
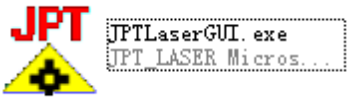
1. Software Installation

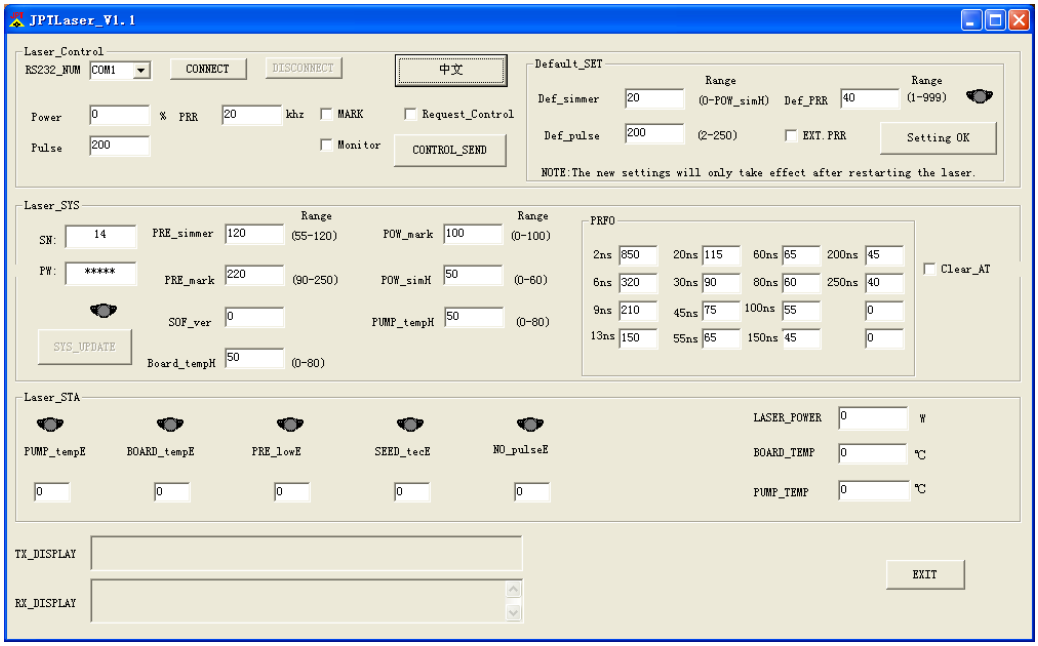
Unzip the installation package

Install the software



Start the software

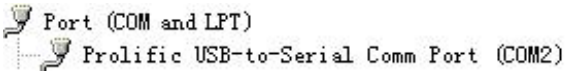




2. Functions

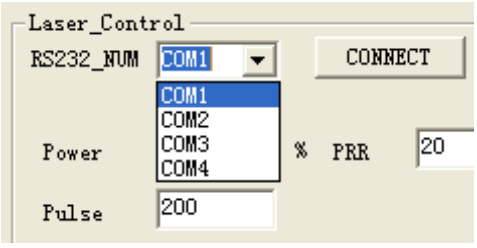
2.1 COM port connection

Check COM number after connecting the USB cable：Computer—>Properties—>Hardware—>Device Manager—>



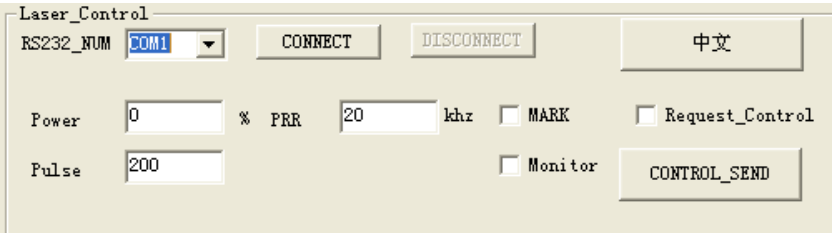
If the COM number is larger than 4, change it to an integer not exceeding 4.

Change the COM port number on the GUI to be the same as set in the computer，then click “connect”.



2.2. Use GUI to control the fiber laser

2.2.1 Use GUI to switch on/off the fiber laser



The fiber laser output can be controlled by adjusting the settings of power, pulse repetition rate and pulse-width parameters on the GUI.

On: Enter the correct marking parameters, tick “MARK” and “Request_Control”, and then click “CONTROL_SEND” button.

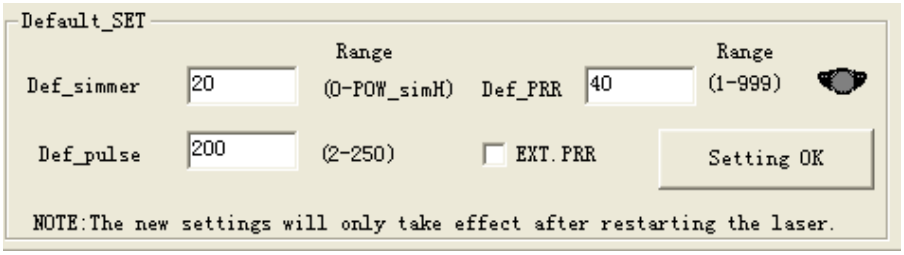
Off: Un-tick “MARK” and click “CONTROL_SEND” button.

Language：Switching between English and Chinese GUIs can be achieved by clicking the corresponding language buttons.

Note: After ticking “Request_Control” and clicking “CONTROL_SEND” button, the fiber laser will no longer be controlled by the DB25 signal. To terminate this effect, un-tick

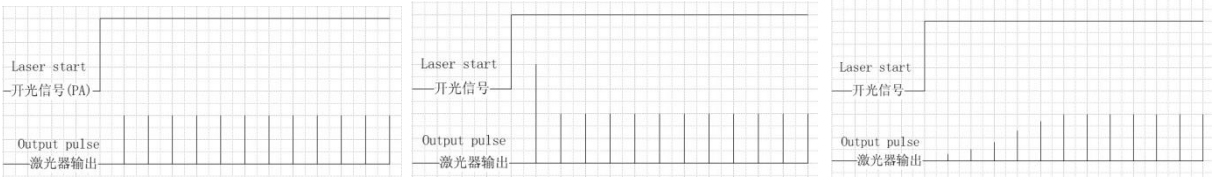
“Request_Control” and click “CONTROL_SEND” buttonagain.

2.2.2 Use GUI to control the parameter optimizations



Settings in Default_SET can be modified to change the default SIMMER, the default pulse-width and the default pulse repetition rate (PRR) of the laser, etc. After clicking “Setting OK” button, the LED will flash in red to indicate the successful update. Otherwise the laser will need to reboot before the above procedures can be repeated. Upon the completion of updating, the modified parameters will only take effect after restarting the laser. These parameters will not be missing even if you power off the laser system.

Def_SIMMER： To control the amplitude of the first pulse. The larger the value is, the higher the first pulse will be.



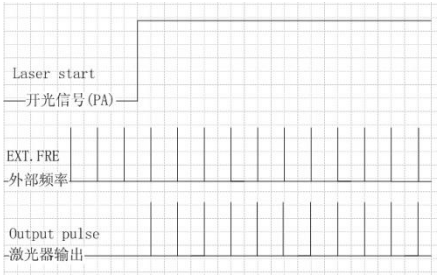
[Suitable SIMMER] [SIMMER too high] [SIMMER too low]

Def_PRR: Under internal PRR mode, the system will output based on the default PRR if no external frequency signal is detected.

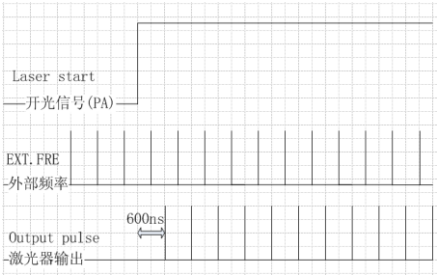
Def_pulse: The system will output laser pulses with default pulse-width if it cannot be controlled externally.

EXT.PRR: Tick this choice to use the external frequency mode (The final output laser pulses will be synchronized with external frequency signal. This mode can be used when the control card has optimized the external signal). If un-ticked, internal frequency mode will be selected (System will firstly calculate the external frequency signaland then generate the pulse signal internally. This mode can be used to define the default PRR of the laser when there is no external frequency signal detected by the control card.

The default mode is external frequency mode.

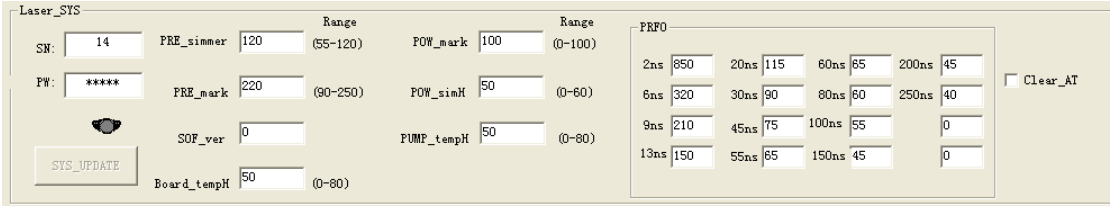


[External frequency]



[Internal frequency]

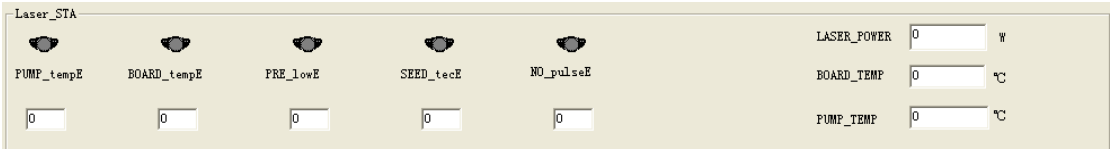
2.3 Laser system settings



The laser system parameter settings should only be modified by authorized engineers from JPT Electronics. Every time when laser is switched on, the system parameters will be sent to GUI automatically.

After setting the system parameters, a password is needed for the identity checking. “Wrong password” dialogue box will pop up if password is entered wrongly. The LED will flash in red is the settings have been updated is successfully (Otherwise, please keep clicking “STS_UPDATE” button). All changes will only take effect after machine is restarted.

2.4 Status monitoring



From Laser_STA, parameters and alarms can be monitored. Every time when laser is switched on, the number of alarms saved in the system will be sent to GUI automatically.

The working status of the laser is not monitored in real time automatically. Real time monitoring is only enabled when “Monitor” is ticked in “Laser_Control” panel.