



MPC6535 Hardware Manual

V 1.3



MPC6535 improves major performance compared to MPC6515 in

- (a). better motion control around the corner; and
- (b). less interfering thanks to the aluminum case.

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Thanks for choosing Leetro's product.

You are required to read through this manual carefully before using MPC6535.

MPC6535 is designed exclusively for the laser equipment. This high-performance controller is based on the hardware solution of DSP+FPGA.

1. Packing List

Please check out the pack with below list. If there is something broken or lost, please contact you supplier instantly.

| No | Part Name | QTY | Description | Standard/Optional |
|----|---------------|-----|---|-------------------|
| 1 | MPC6535 | 1 | Controller board with Aluminum case | S |
| 2 | USB-AB-3M | 1 | Cable connects PC and MPC6535 | S |
| 3 | PAD03-E | 1 | Operation Panel, English | S |
| 4 | C4-PAD03-1.5M | 1 | Cable connects PAD03-E and the MPC6535 | S |
| 5 | Udisk | 1 | USB flash memory disk | S |
| 6 | Dongle-WHITE | 1 | Key for LaserCut Software | S |
| 7 | HMI-TPC7062K | 1 | 7-inch TFT Touch HMI, English, 800x480 Res., 65K Color, CE/FCC | O |
| 8 | HMI-C9-3M | 1 | Cable connects HMI-TPC7062KS and MPC6535 | O |
| 9 | PAD03-TR | 1 | Operation Panel with Turkish interface | O |

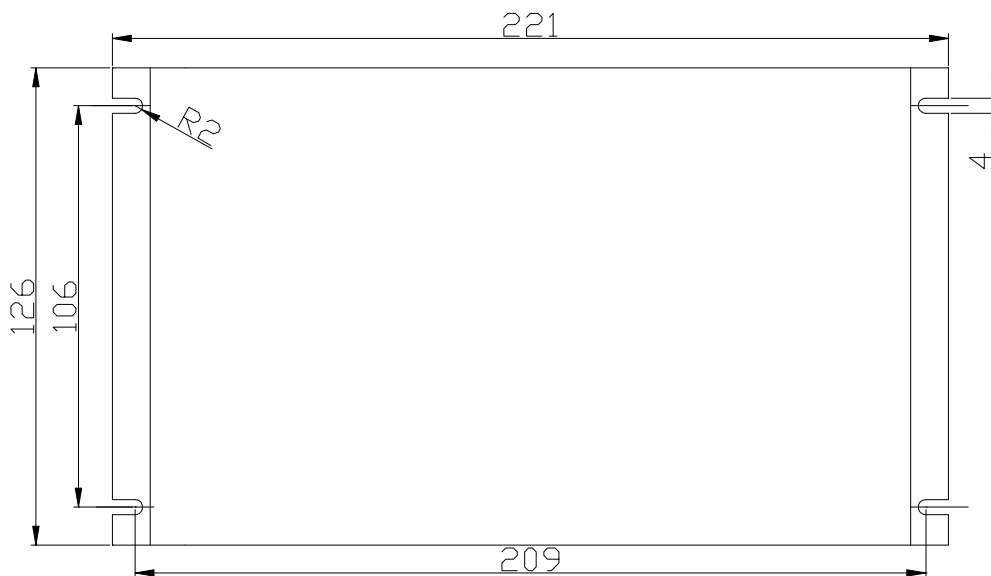
2. Quick Start

2.1 Run the setup.exe and follow the "next step" instruction to install LaserCut program into your computer.

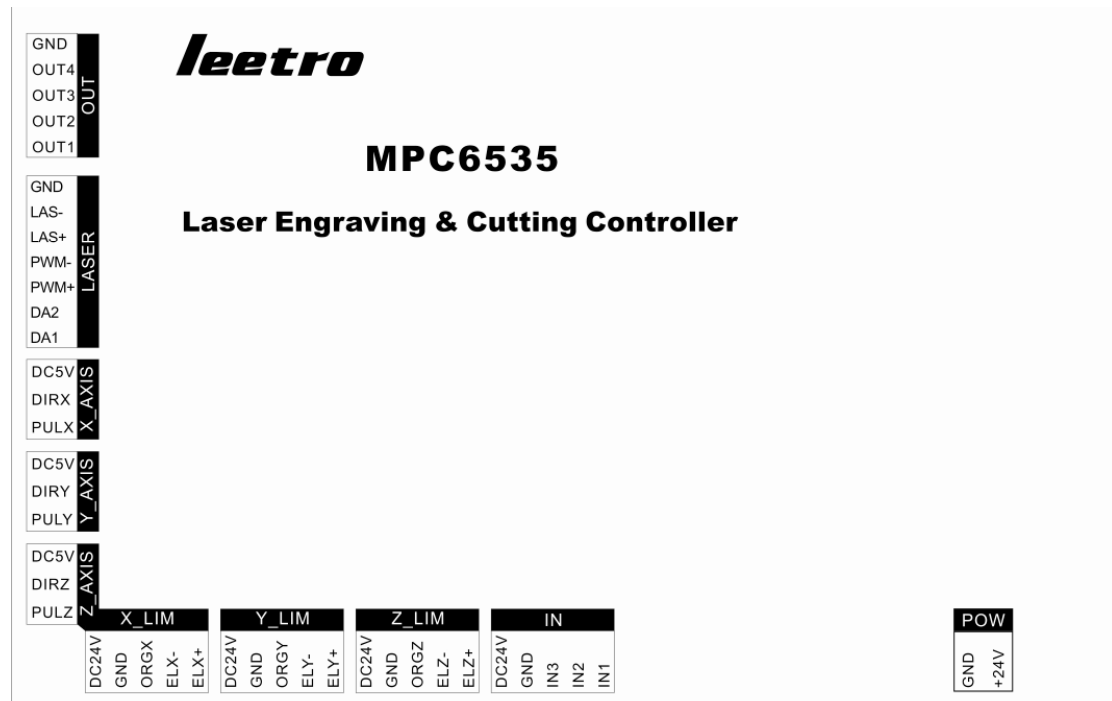
2.2 Install MPC6535 controller board: mounting the board in the machine firmly. Must make the machine house wires with GROUND!

3. Wiring Diagram

3.1 Size (mm)

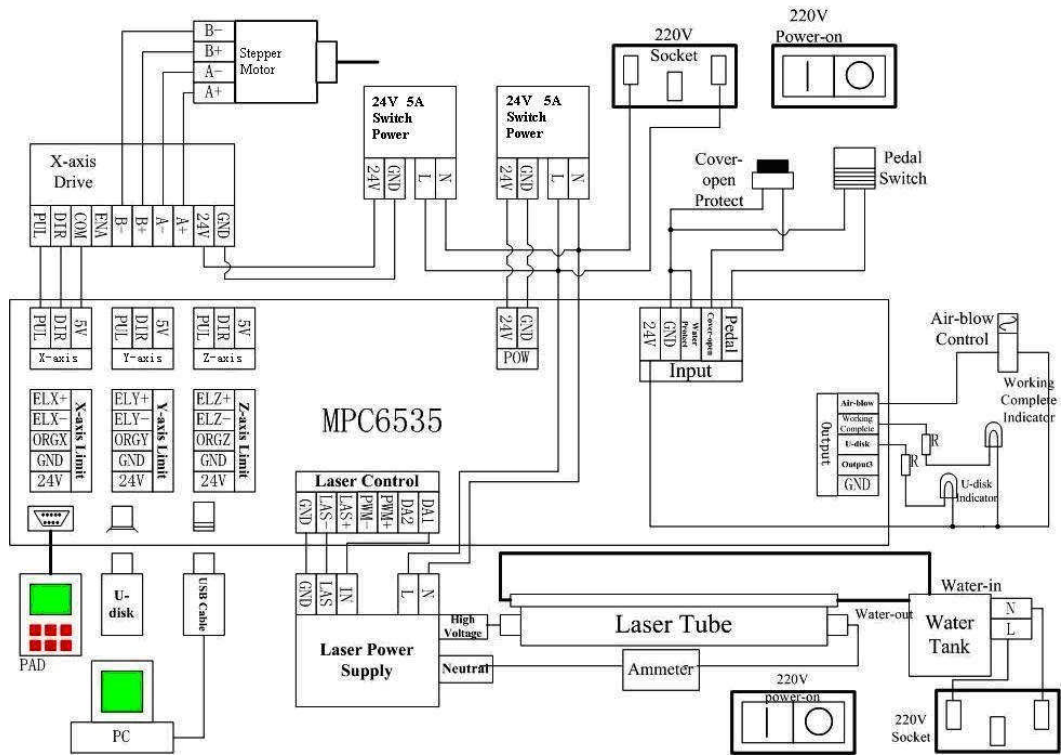


3.2 Pins



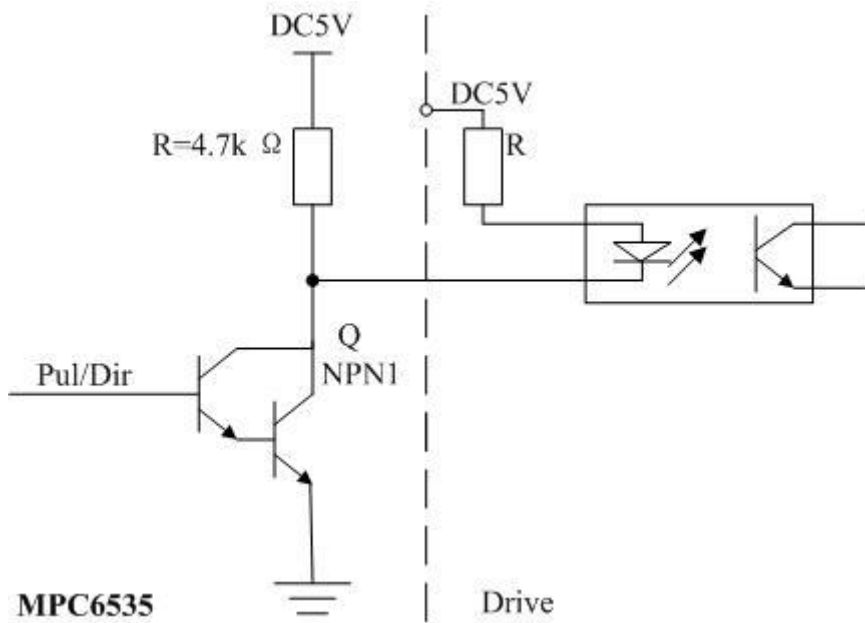
| Group | Pins | | | | | | |
|---------------|---------------|----------------------|------------------|----------|-------------|-------------|------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Pow | +24V | 24V GND | - | - | - | - | - |
| IN | Pedal Switch | Uncapping Protection | Water Protect | 24V GND | +24V | - | - |
| Z_LIM | Z-axis +Limit | Z-axis -Limit | Z-axis Home | 24V GND | +24V | - | - |
| Y_LIM | Y-axis +Limit | Y-axis -Limit | Y-axis Home | 24V GND | +24V | - | - |
| X_LIM | X-axis +Limit | X-axis -Limit | X-axis Home | 24V GND | +24V | - | - |
| Z_AXIS | Z-axis Pulse | Z-axis Direction | +5V | - | - | - | - |
| Y_AXIS | Y-axis Pulse | Y-axis Direction | +5V | - | - | - | - |
| X_AXIS | X-axis Pulse | X-axis Direction | +5V | - | - | - | - |
| LASER | Analog1 | Analog2 | PWM+ | PWM- | +Fire Laser | -Fire Laser | Laser Power Supply GND |
| OUT | Air-blow | Complete Work | U-disk Indicator | Reserved | 24V GND | - | - |

3.3 Control System

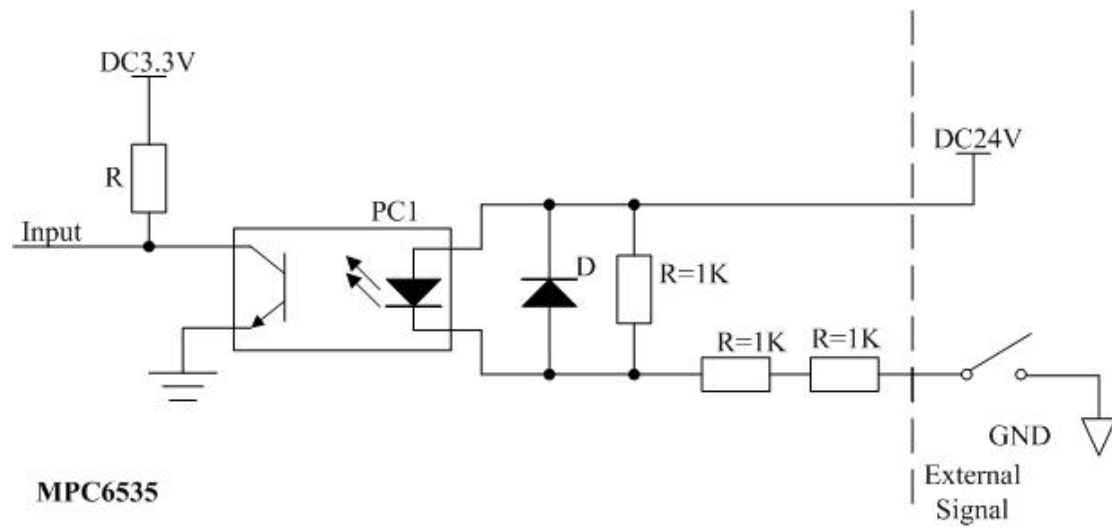


3.4 Interface Circuit

3.4.1 Pulse+Dir Output-port

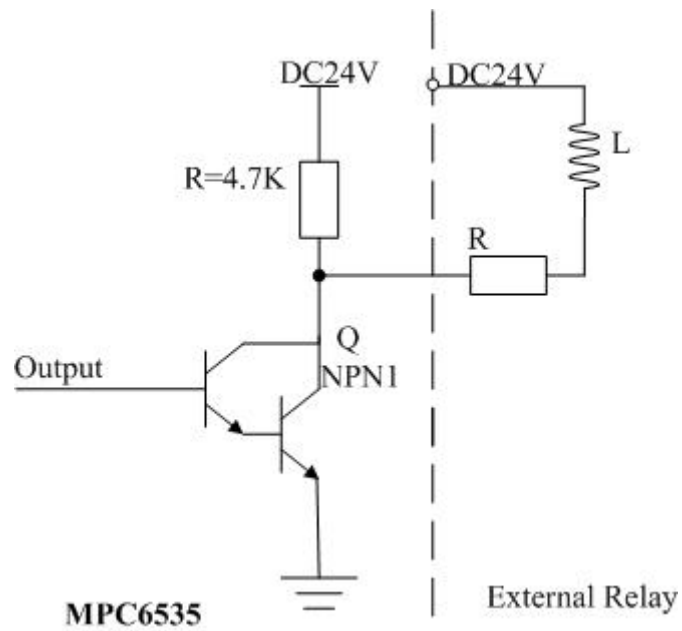


3.4.2 IO Input-port Circuit



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3.4.3 IO Output-port Circuit



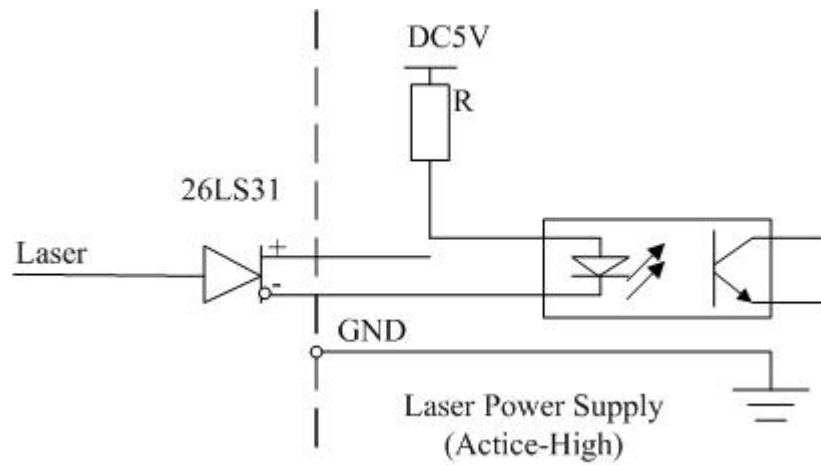
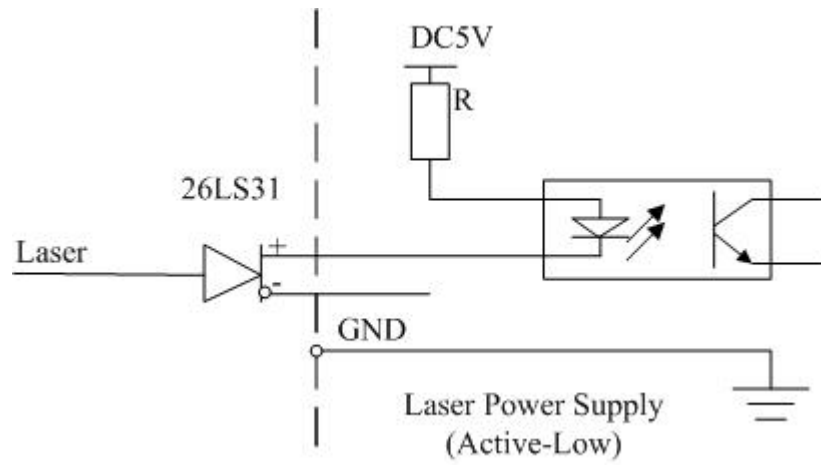
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External Relay

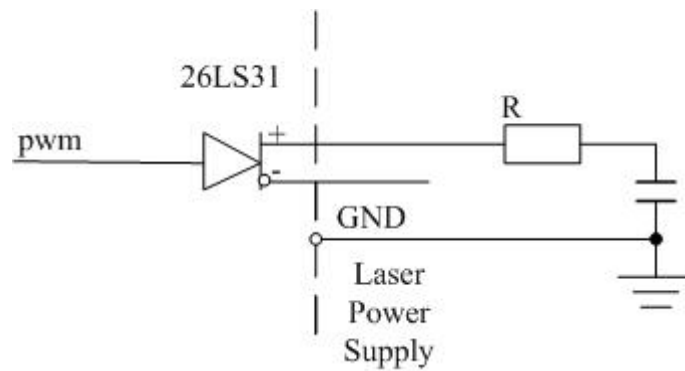
Caution:

The rated current of general-purpose output is 100mA.
The loaded device should be approved and reliable.

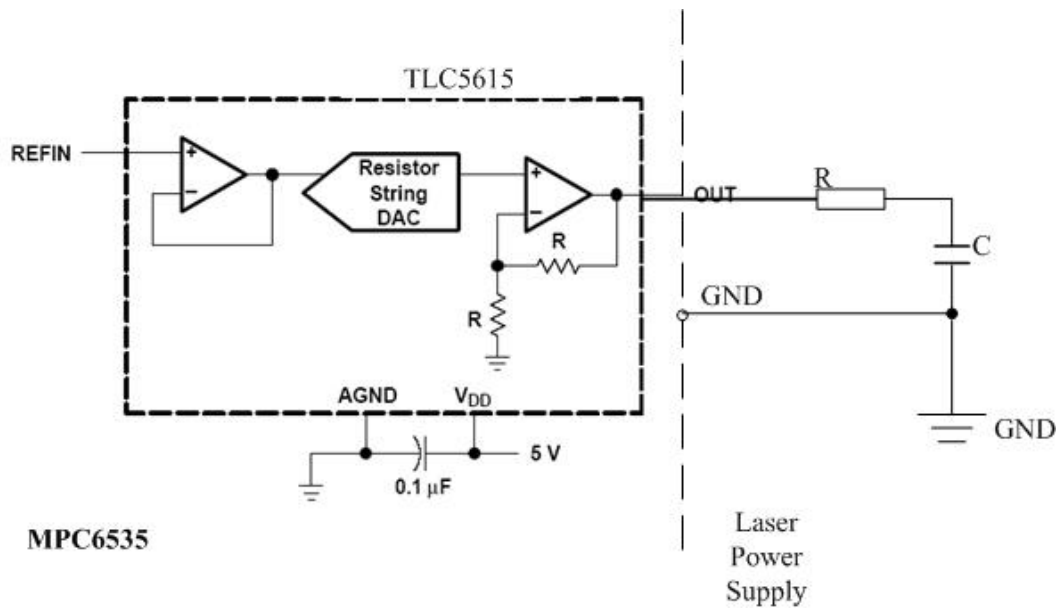
3.4.4 Laser Firing Circuit



3.4.5 Laser PWM



3.4.6 Laser Power DAC Interface

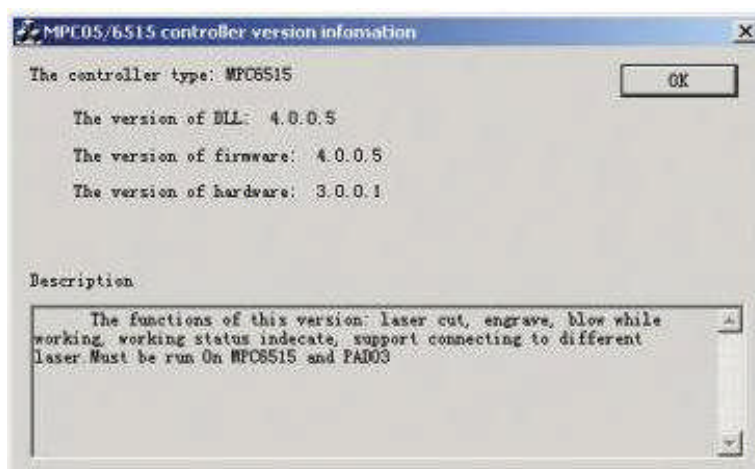


3.5 Wiring Instruction

1. Must be careful with the positive and the negative end of 24VDC
2. Connecting controller and drive
3. Connecting Datum Switch
4. Connecting Limit Switch
5. Connecting laser power supply
6. Connecting other control ports

4. Tune and Test

4.1 run the program, name *Mpc05Ver+M05.exe* to check the version as below



The firmware version should be as same as DLL version. If not, please update. For details, refer to LaseCut manual.

4.2 Run *Lasercut53.exe* for Settings:

- A. Controller Type
- B. Laser Power
- C. Limit Datum Active Level
- D. Pulse Equivalency
- E. Working Table Size
- F. Homing Direction
- G. The Jerk is set as TEN times of the Acceleration
- H. The turn acceleration is set as TWO times of acceleration
- I. Tune for better performance

(for details, go to see LaserCut manual)

4.3 Download configure files and reset the control system

4.4 Input working files, edit the diagram, make the settings, download the file into controller

4.5 Start working.

5. Others

1. Must be careful with the positive and negative ends of MPC6535's power supply
2. Must turn the power off when disconnect the cable between control PAD and the board.
3. Make sure the metal case of MPC6535 wires to **GROUND** firmly
4. Setting pulse mode in the parameter for controller signal receiving
5. We recommend user take "LAS-" port for firing laser
6. Make sure the Dongle Serial Number (SN) matches the board SN