



## Axis CN C Interface Board V 1.4

# Manual

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**Before using this product, please read the manual!And proper preservation  
of the manual, to prevent emergency use!**

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## Chapter Overview:

5 Axis C N C Interface Board V 1.4 Edition (hereafter referred to as the board), you can C N C Machines to achieve the most multi-joint action of five-axis machining of work pieces (requires software support) and the other a rich interface allowing you to use with. You can use this board D I Y C N C Every minute of play to the dripping.

## Chapter II products features:

1. Direct support K C A M 4, M A C H, N I N O S And other support crew on the parallel class of software.
2. And P D Step into the series of drive motors and sold for use.
3. Supports three main axis of the control panel. Respectively are: DC main shaft control board, the exchange of the spindle control board, high-speed brushless (variable frequency) the main axis of the control panel.
4. All the way to configure the relay control outputs can be configured on the crew use. Used for cooling fluid, such as chuck elastic.
5. Four origin / mechanical limit input signal can be received outside the mechanical switch, slot-type ~~cup~~, close to the switch and so on Close to the switch for the voltage 5V Or 12V Conversion
6. Can be connected to the knife (supply voltage is 5V Or 12 V).
- \* An external emergency stop button. The emergency is an accident can stop the machine.
8. All input and output signal by the Schmitt trigger device the whole shape of the signal's falling edge on the rise without limit.
9. Double-sided fabric line PCB, to ensure that all signals of integrity.

10.. C h a r g e p u m p function. When the host computer has no opening or C N C Software did not open, there is the output of the closed (M A C H Support this feature.)This feature can enhance machine safely , not because the place is not normal, and the mechanic for the signal output port status is not fixed and random occurrence of spindle turn, relay and other dangerous conditions

11.Support the five-axis.But when the use of five-axis, and a message number in the foot by a number of restrictions C h a r g e p u m p Function and relay control will not be able to use.

12. Parallel increase in protection, in general, hot plug will not damage the parallel port or parallel port interface board, but still advocates charged plug parallel case

Plug, because there may be damage to the computer parallel port or interface board.

13.Secure the use of screw-type wiring column, enhance the connection reliability.At the same time convenient disconnect.

## The first three chapters should use areas:

For a variety of small-scale automation equipment and instruments, such as: engraving machine, marking machine, cutting machine, laser photo-typesetting, plotters, CNC machine bed,

Automatic assembly equipment and so on.The user expectations of small noise, high precision and high speed application of the device particularly good effect.

## Ordering information the first four chapters:

Model No.	Supply voltage	Axis	Dimensions	Notes
Axis C N C Interface Board V 1.4	DC12V / AC9V	Axis	100mm * 97mm	

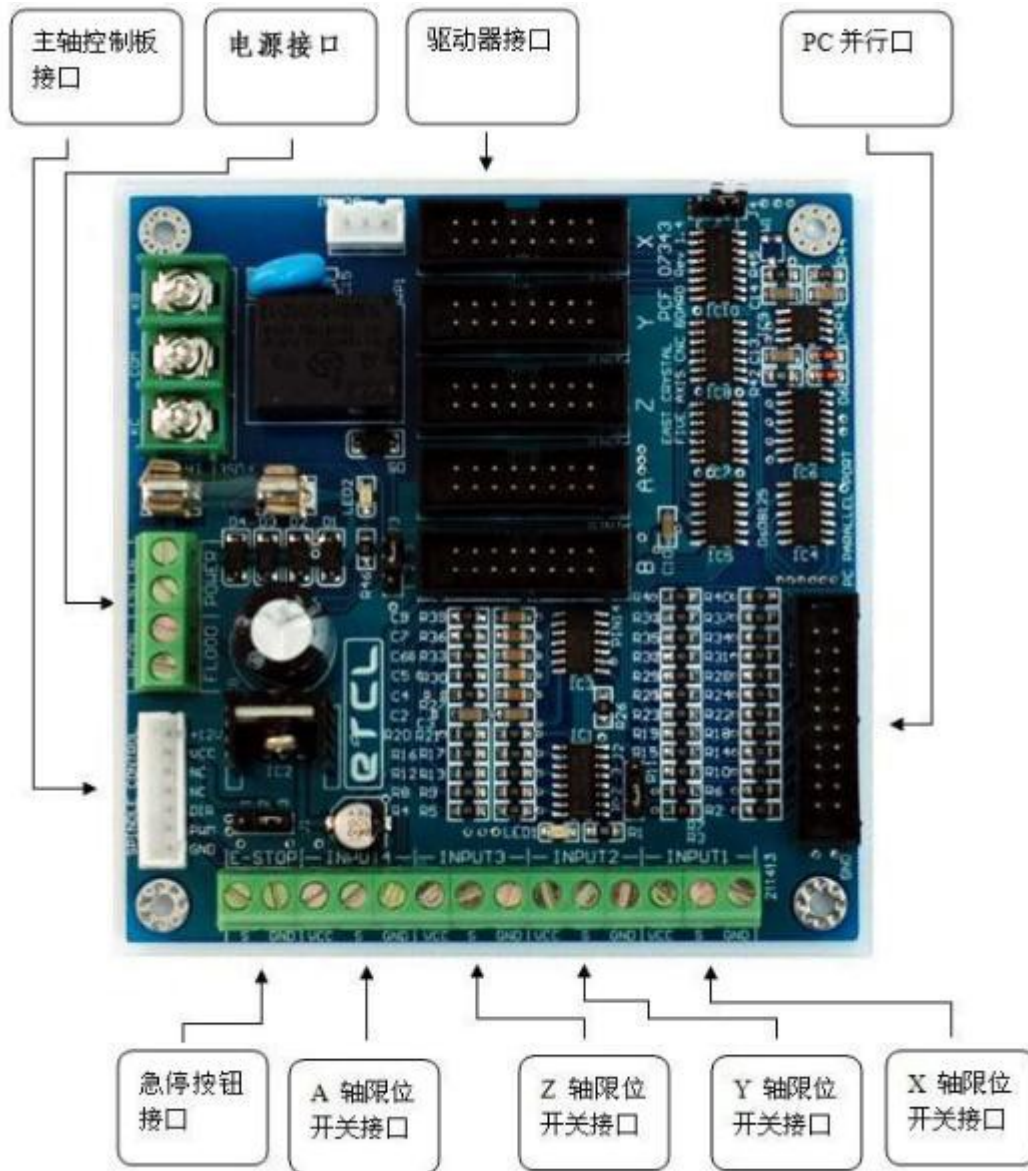
## Technical parameters of the first five chapters

### 5.1 Technical data

Description	Axis C N C Interface Board V 1.4
Supply voltage	DC 12V Or AC 9V
Drive Connector:	Output drive current: 100mA, output voltage: 5V
Relay Load:	AC 240V 10A DC 24V 10A AC 120V 1 5A
Input signal:	There are pull-up resistor, output by an external low 1mA Left and right of the current.
Size:	100mm * 97mm
Installation size:	90mm * 87mm

## 5.2 Interface

The interface board has a wealth of interfaces available to you. See Below:



5.3 Note the parallel port signal configuration:

Configuration software. Please click the appropriate configuration under the surface of the foot form number. If the configuration error, the system will not be able to work properly.

Signal Name	Signal to	Parallel port pin number	Notes
X C L K	Output (O UT)	2	Signals must be used for controlling X Step into the motor shaft.
X D I R	Output (O UT)	16	Signals must be used for controlling X Step into the motor shaft.
Y C L K	Output (O UT)	14	Signals must be used for controlling Y Step into the motor shaft.
Y D I R	Output (O UT)	5	Signals must be used for controlling Y Step into the motor shaft.
Z C L K	Output (O UT)	17	Signals must be used for controlling Z Step into the motor shaft.
Z D I R	Output (O UT)	6	Signals must be used for controlling Z Step into the motor shaft.
A C L K	Output (O UT)	4	① signal must be used for control A Axis stepper motor.

A D I R	Output (O UT)	3	① signal must be used for control A Axis stepper motor.
Spindle Pulse	Output (O UT)	9	Will use the signal for spindle speed control
Spindle direction	Output (O UT)	8	Signals must be used for controlling the spindle direction

① When used in four-axis C N C Machine tools, the need to configure these signals, three-axis machine tool without configuration.

⊖ signal and non-essential use of the district will not use the signals is: Signal is the machine will work with the necessary conditions, incorrect configuration will cause the machine can not work. No need for configuration errors with the signal often does not lead to machines not working, but losses will reduce the number of functions or the safety of the system.

② The number and letter knife A Axis limit signal is shares a pin, and two features only select a species.

### Spindle control interface (SPINDLE CONTROL):

\* Role: with the control spindle

\* Connection:

Pin 1 (GND) to

Pin 2 (SP EED) speed signal

Pin 3 (DIR) side to the signal

4 ~~pin~~ (SIGNAL S 1) signal 1

5 ~~pin~~ (SIGNAL S 2) signal 2

Pin 6 (VCC) + 5V

7 ~~pin~~ (+ 12 V) + 12V

\* Note: this interface to access to the spindle control board.

### X, Y, Z, A Drive Interface:

\* Role: control of the movement axis stepper motor.

\* Connection: The sets of signals with the corresponding cable to the drive

\* Note: Note inserted plug pulling force appropriate. Whether it is possible to damage the signal line.

### P C Parallel Port:

\* Role: received P C And the mouth, used for generating various control functions.

\* Connection: with sets and with the mouth lines linked to P C Parallel port on.

\* Description: Plug pulled off when parallel lines P C Power. And to P C Power plug from the mains outlet. If you do not follow the requirements of operation, there may be damaged P C Parallel port.

## Power Interface:

\* Role: power interface for the interface board for power.

\* Connection: the corresponding DC power supply or the exchange of the output transformer connected to this interface.

\* Description: Technical parameters then seek access to power. The available DC or AC power source, as a rectifier circuit board, so regardless of the wiring can be very time

## Other Emergency Stop Button

\* Role: Foreign press the emergency stop button

\* Connection: terminal and signal terminal connected to a mechanical switch, the switch is turned on effective

“Explanation :

## 5.4 PRECAUTIONS in use

### 1. Field work required

1) The interface board can not be installed in a metal by dust environment.

2) The interface board is not waterproof. Do not install in places likely to be flooded. If you have to be dried flooding, to determine dry before

Can be re-energized the trial, the best is to ask the professionals to assist processing.

3) installation site requires a certain degree of ventilation conditions. If installed in the chassis, please ensure that the chassis vents are suitable to ensure that the interface board

Regulator cooling components

### 2. Other requirements



1) interface board for not exceeding the rated voltage value. Otherwise, there may be a result of excessive power consumption items regulator element, the temperature exceeds a safe value, and the occurrence of overheating protection.

2) Please Interface Board G N D End of the shell phase in the drive connection, this will reduce the likelihood of interference to be.

3) The joint board is only applicable to meet P D Series drive allows use, please do not use it in line with its drive to use. If combined with other drives to use,

Losses caused by the manufacturers will not accept any responsibility.

4) Please do not modify their own circuits, switching to different specifications of the components.

5) Plug Socket pieces, please use the appropriate force to avoid using excessive force and damage the plug-in.

6) When the product is changed, it will not notice.

7) The warning to avoid possible personal injury.

8) power icons alert you to avoid the risk of possible electric shock.

9) High temperature surface icons warn you not to touch hot equipment parts.

10) You must pay attention to detail required to understand the steps to follow or avoid to prevent only the equipment or other materials may cause the loss

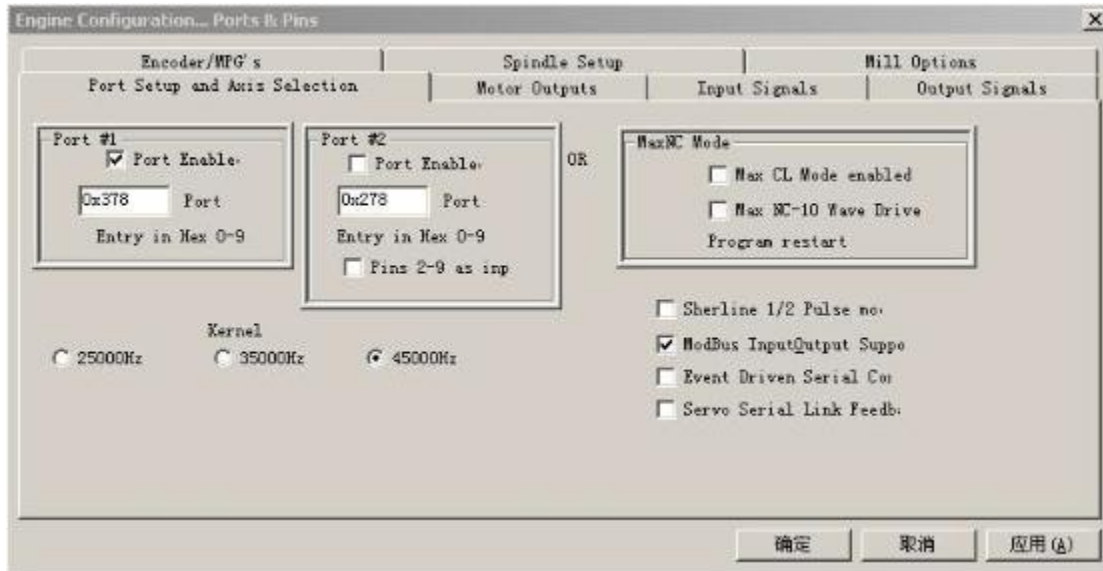
11) bad.

12) is not the correct icon to remind you to install the equipment is not compatible with the equipment and operation.

13) Notes will be told how you should handle the situation may arise, or when the previous operations to provide any other functions, such as working together

14) for the tips.

Parallel port settings:



Setting Description:

Parallel Set Picture

Port #1 As 1 No parallel port, Port Enable And check that the effective population, the following 0x 3 78 As 1 parallel port's address, Kernel The highest maximum step pulse frequency of the output set, a total of three options to choose, namely: 2500 0 H Z, 3500 H Z, 4500 H Z. According to PC Hardware configuration settings, when PC Configuration is better, they can choose 4 500 H Z To achieve faster execution speed. Other options for high-level option with the application, the proposed adoption of the default setting.

In the lower right Modbus input Output support Department should check to open MODBUS Support input and output functions, the controller and PC Host communication through this function to achieve.

Motor output setting:



Setting Description:

Enable Note that the axis tick Enable

Motor output set picture

Step Pin # indicates that the axis pulse signal corresponding to the pin number, pin description of the conduct should be set

Dir Pin # signal that corresponds to the axis of the pin number, Please correspond to the instructions set pin

Dir Lowactive check that the direction of the signal active low, the board should be set as active-low status (tick)

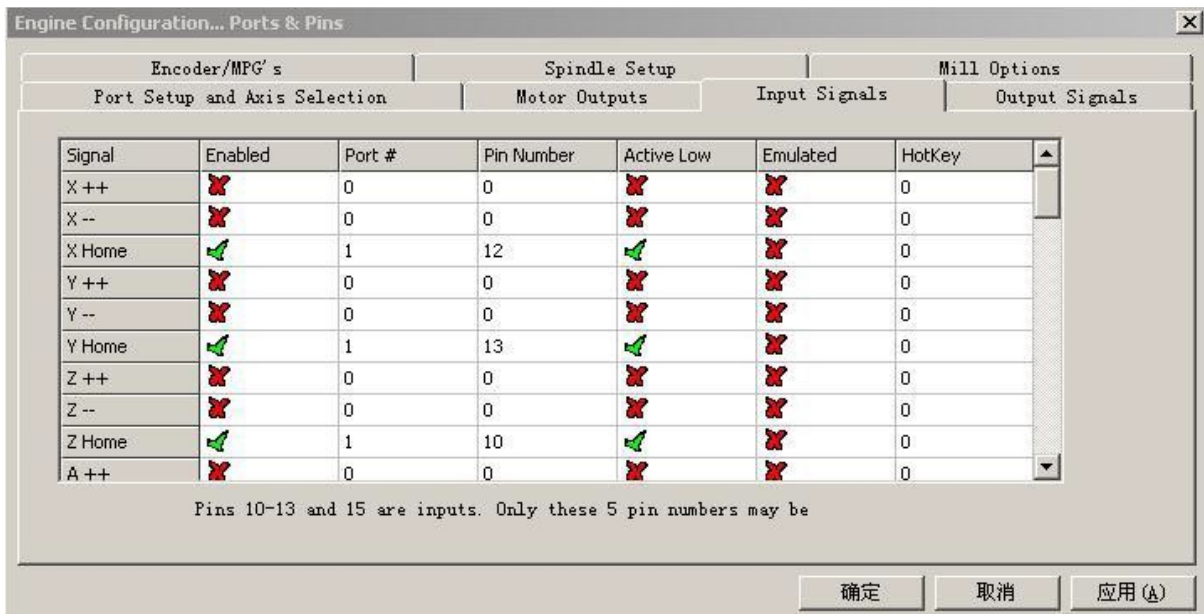
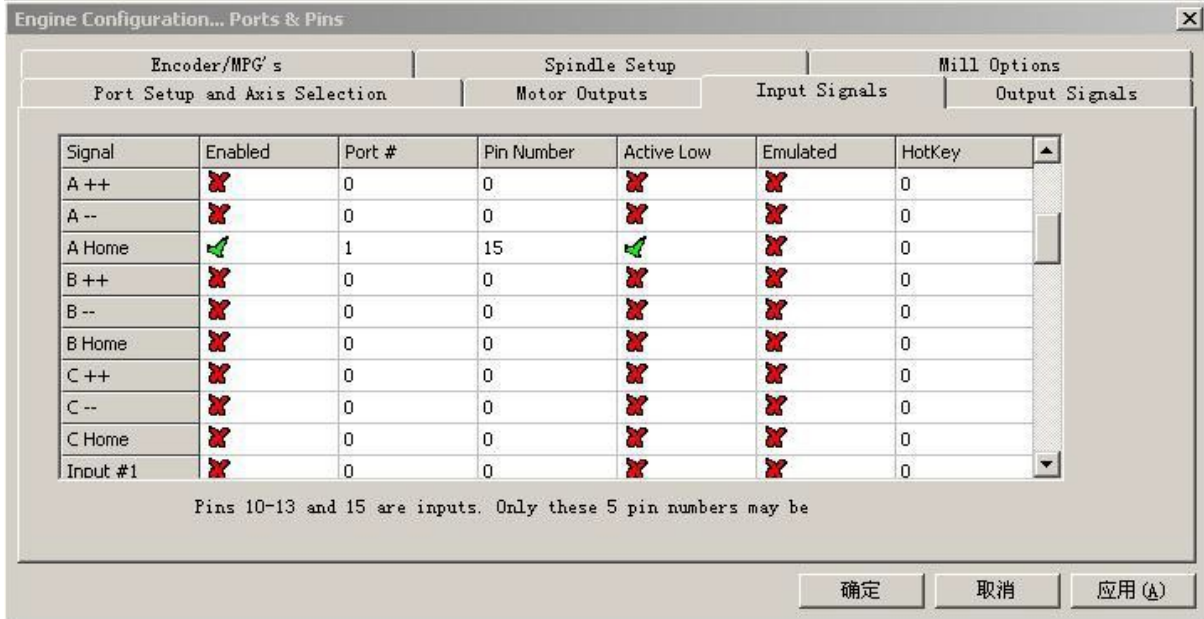
Step Lowactive active low pulse check that the board should be set as active-low status (tick)

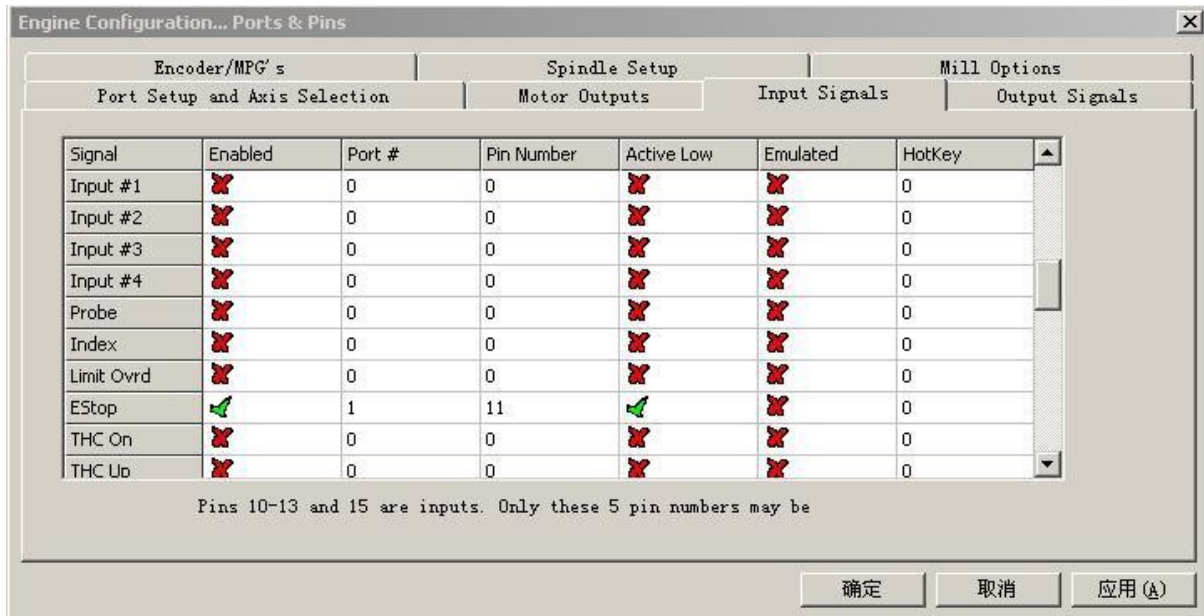
Step Port settings for the pulse signal and the slogan, in the parallel setting, and if you use 1 parallel port interface board is connected to the parallel port on No. 1,

Should be set to 1, if the parallel port should be set to 2, 2

Dir Port to set the direction of the signal and the slogan, set above.

Input signal setting:





### Input signal setting map

Setting Description:

I Enable the signal that enables

I Port # indicates that the signals are connected and slogan

I Pin # indicates the port number of signals connected

I Active Low-level choice for the signal is valid, check for the active-low, the board should select active low (tick)

I X Home signal for the X-axis origin

I Y Home Y-axis origin for the signal

I Z Home signal for the Z-axis origin

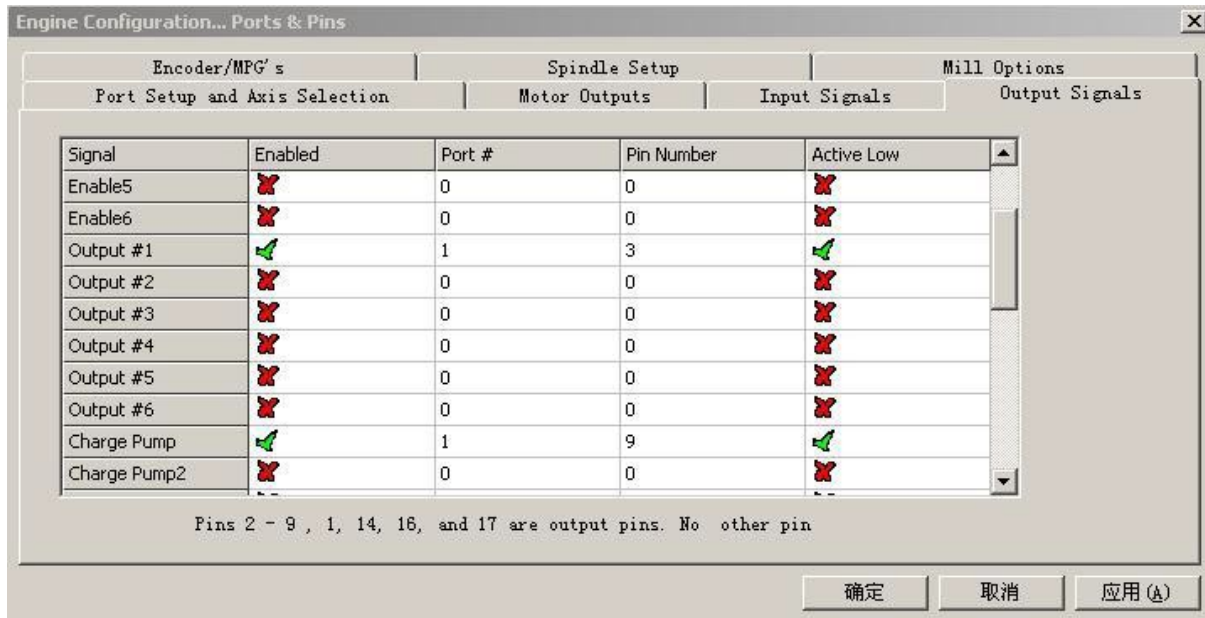
I A Home for the A-axis origin of the signal

I EStop external emergency stop switch pin numbers for the

Other advanced applications, the input signal is the input signal set, should be all set to invalid.

### Output signal setting:

Output



### Output signal setting map

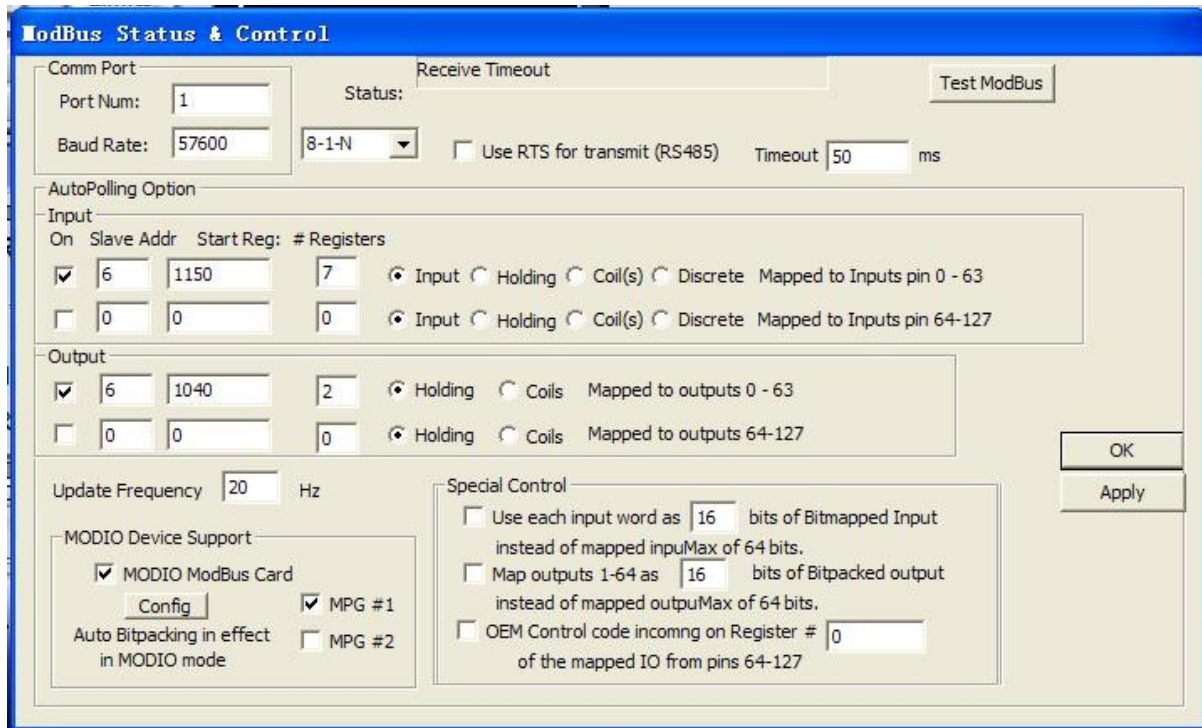
Setting Description:

I Output # 1 is 1 output port. Set the port, you can set in other places using the port as output.

I Charge Pump Charge Pump signal to the output port, when the port is not correctly setting. If the on-board jumper to use Charge pump function, then the interface board of the LED1 will not light. While all the outputs are turned off.

Other advanced applications, the output signal output signal setting, should be all set to invalid.

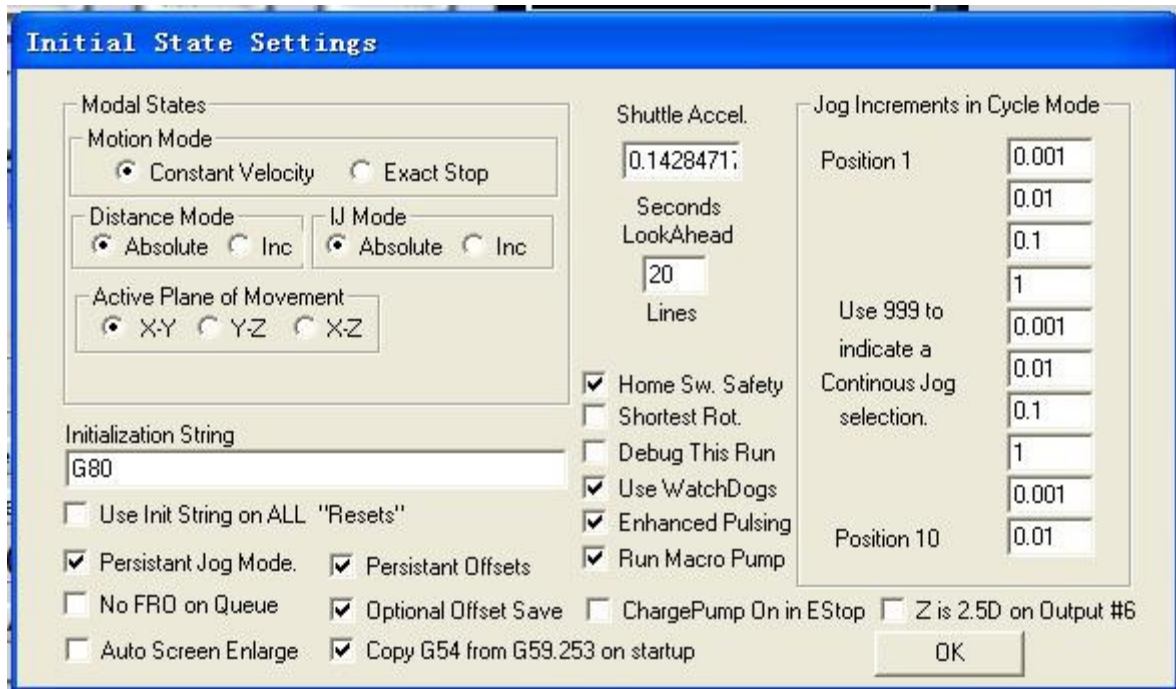
MODBUS set



#### Setting Description:

- port prot Num your actual serial port connected with the controller settings, because different computer used, this port number may be 2, 3
- And so on.
- is set to 57600 baud rate, communication format to 8-1-N, timeout is set to 50ms.
- Please click below to set several

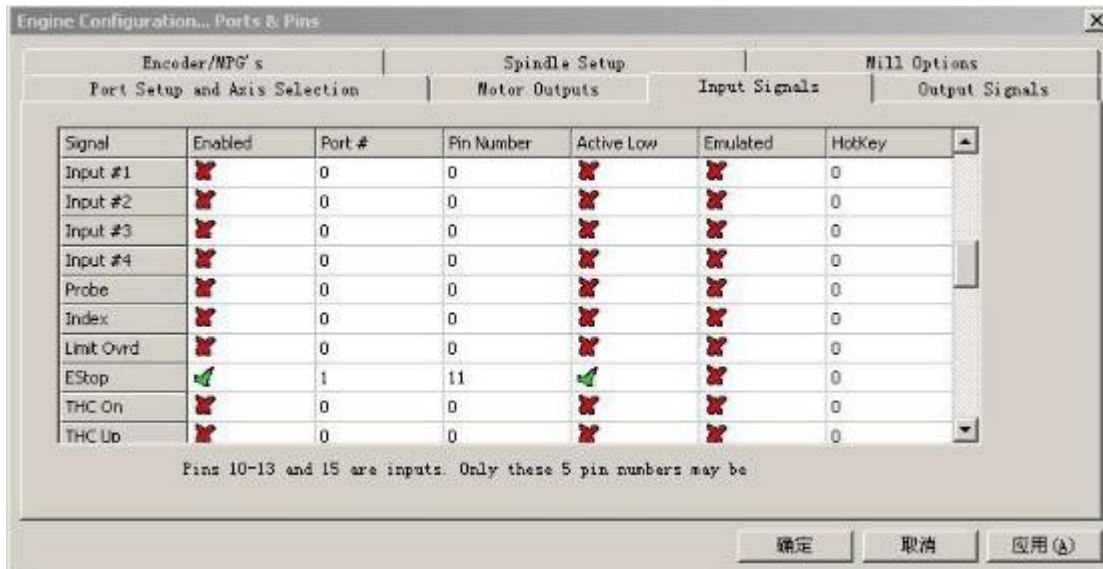
Macro pump set



#### Setting Description:

In the Run Macro Pump Department should check, so the software will run prior written Macro Pump macro file, you can achieve control panel MACH software function panel control, and if there are not set correctly, then the control box CNC mode will not work.





### Setting Description:

**E n a b l e** Indicates that the signal enable **P o r t #** indicates that the signal received by the Union's and the slogan of **P i n #** indicates that the signal the end of the connection slogan

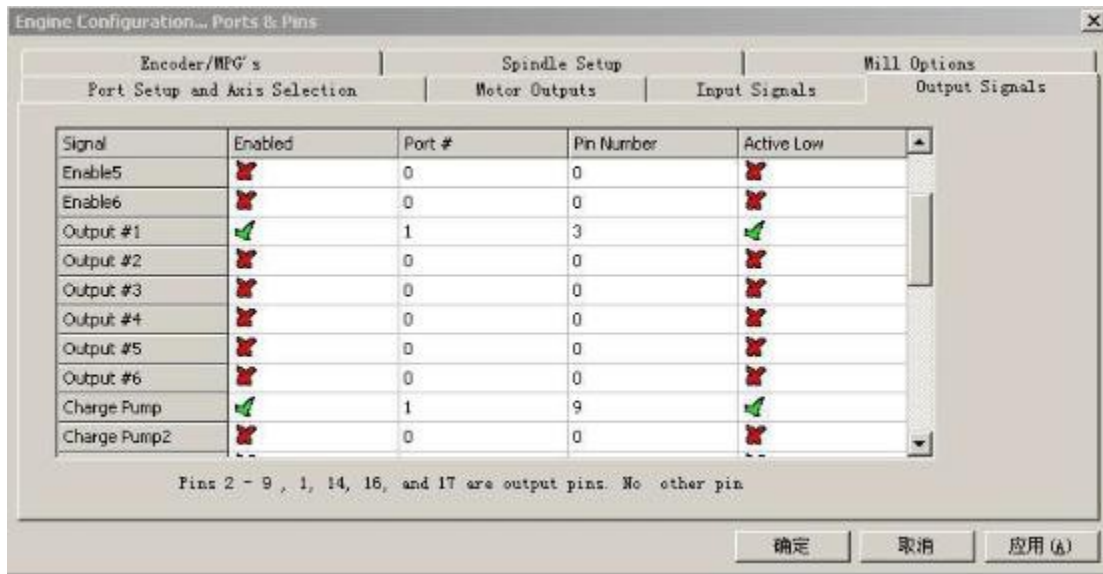
Map the input signal set

**A c t i v e L o w** The signal level for the effective selection, hit a low hook level and effective, the board should choose the low-level active (playing hook)

**X H o m e A s X Y-axis** origin of the signal **H o m e A s Y Z-axis** origin of the signal  
**H o m e A s Z A** signal axis origin **H o m e A s A** Axis origin signal

**E S t o p** Pin number for the external emergency stop  
input signal of other applications for high-level input  
signal setting should be set as invalid in whole.

## Output signal set:



Setting Description:

Figure set the output signal

Output #1 1 output port. Set the port, you can place in their set it using the port as output.

Charge Pump As Charge Pump signal output port, when the port is not the correct settings. If you use the jumper on the board Charge

pump Function, then the interface board LED 1 will not be made light. At the same time all of the output are in a closed state.

Output signals to other applications for high-level output signal setting should be set as invalid in whole.

Symbol table 1:

Signal Name	Parallel pin	Input / Output	Effective level	Notes
X Axis pulse signal	7	Output	Low	
X Axis direction signal	17	Output	Low	
Y Axis pulse signal	6	Output	Low	
Y Axis direction signal	8	Output	Low	
Z Axis pulse	5	Output	Low	
Z Signal axis	16	Output	Low	
A Axis pulse	4	Output	Low	
A Axis signals	14	Output	Low	
Spindle pulse signal	2	Output	Low	
Signal the direction of the spindle	1	Output	Low	
Cooling control	3	Output	Low	
C H A R G E P U M P	9	Output	Low	
Input signal 1	12	Input	Low	
Input signal 2	13	Input	Low	
Input signal 3	10	Input	Low	
Input signal 4	15	Input	Low	
Emergency stop signal	11	Input	Low	

## The first six chapters of electrical products, Tung Mau warranty

### 6.1 Year warranty

Tung Mau Electric Co., Ltd. for their products provide raw materials and workmanship one year from the delivery date of the warranty. Tung Mau during the warranty period for the defective Electric Co., Ltd. to provide free product repair services. A few years later to receive the amount of repair parts costs, and do not bear the return postage.

### 6.2 The list is not a warranty

- (1) Improper wiring, such as the power source positive and negative terminal of the counter and with a power plug.
- (2) Unauthorized any unauthorized changes to the internal device.
- (3) Beyond the use of electrical and environmental requirements.

(4) Environmental heat is too bad.

(5) The process due to shipping damage.

### 6.3 Maintenance process

For maintenance products, will be handled according to the following Process:

(1) IDENTIFYING THE PROBLEM: The replacement parts and other methods related to the drive failure is recognized, rather than its cause he caused.

(2) Written instructions enclosed with the goods, indicating the drive back to repair the fault phenomena, contact person name, phone number and mailing address and other information.

(3) Mail to: Linhai City, Zhejiang Province, West Park Leaves No. 345, the Pro mirage Tung Mau Electrical Limited, Post Code: 317000

### 6.4 Limitations of Warranty

(1) Tung Mau electrical products limit the scope of the warranty of the device in the product and craftsmanship (ie ~~consistency~~)

(2) Tung Mau Electric Company Limited does not guarantee the suitability of its products to customer's specific use, because it is also suitable for this purpose with the technical requirements of indicator

And use conditions and environment related. The Company does not recommend this product used for clinical purposes.