

Features

Power supply: DC 12V or AC 9V

No load current: 9mA

Output signal:

Drive interface: output drive current 100mA, output voltage 5V

Relay load: AC 240V 10A AC 120V 15A DC 24V 10A

Input signal: there on the pull-up resistor is externally pulled low when the output current of 1mA or so.

Dimension: 100mm * 97mm

Installation size: 90mm * 87mm

Product Name: CNC interface board V1.4

Performance Overview

Direct support KCAM4, MACH, NINOS parallel classes and other support PC software. with the PD series supporting the use of stepper motor driver. supports three axis control board. Are: DC spindle control panel, AC spindle control panel, high-speed brushless (drive) spindle control board.

Can be configured to relay all the way to control the output, by the host computer configuration purposes. For cooling fluid, such as chuck elastic.

Four origin / mechanical limit signal input, external mechanical switch, groove coupler, proximity switch. Proximity switches for 5V or 12V voltage can be converted

Can be connected to the knife (supply voltage of 5V or 12V).

Can be an external emergency stop button. Emergency stop the machine can unexpectedly.

After all the input and output signalsl Schmitt trigger shaping the rise of the signal falling edge unlimited.

With double-sided wiring PCB, to ensure the integrity of all signals.

Charge pump function. When the host computer does not open or CNC software is not open, all outputs turn off (MACH support this feature.) This feature can improve the security of the machine will not work because the PC parallel port output is not normal, uncertain state of the milling spindle occurs, relay and other dangerous situations.

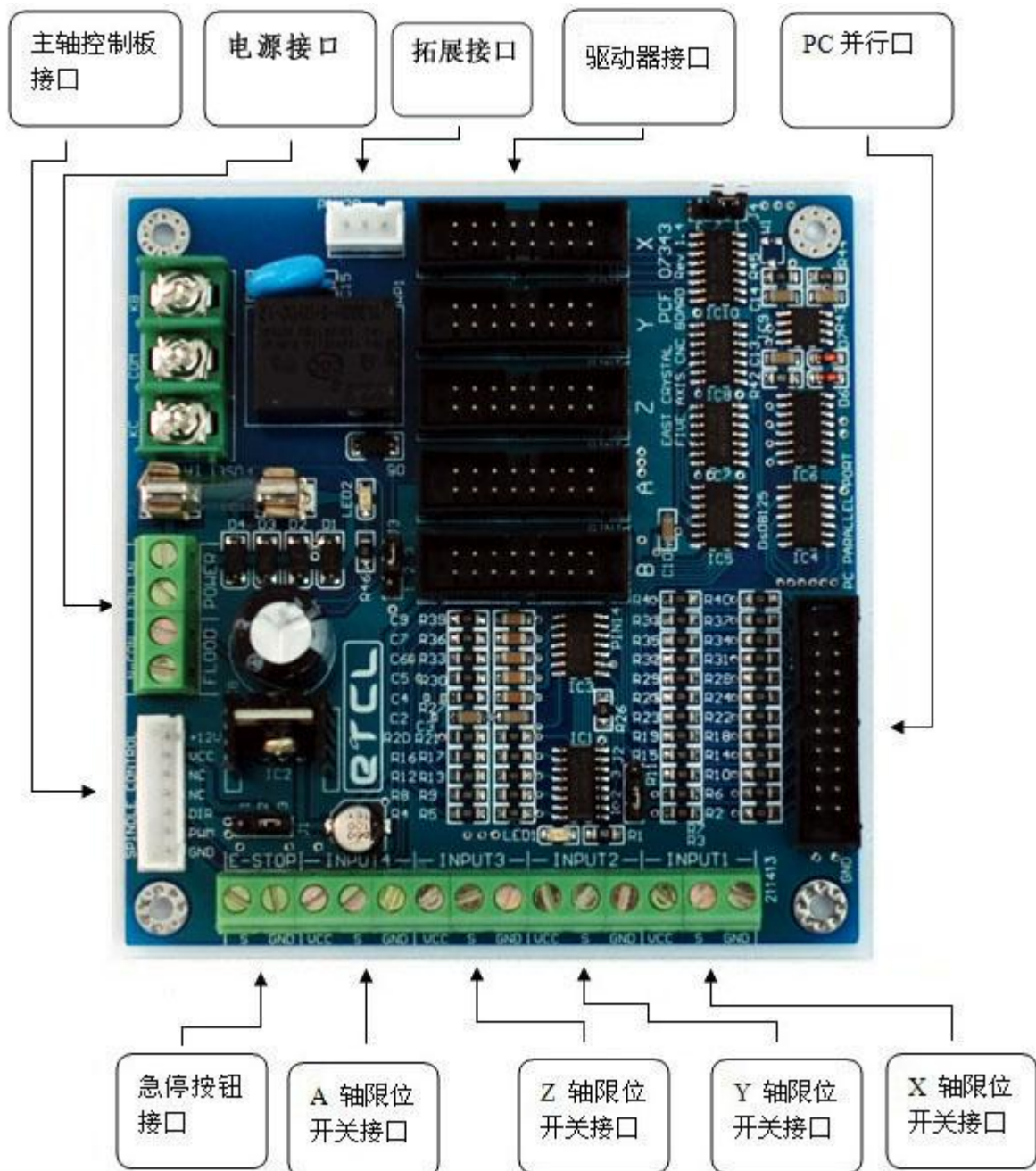
Support axis. However, when using five-axis function, the parallel port signal pin limit Charge pump function and relay control will not be used.

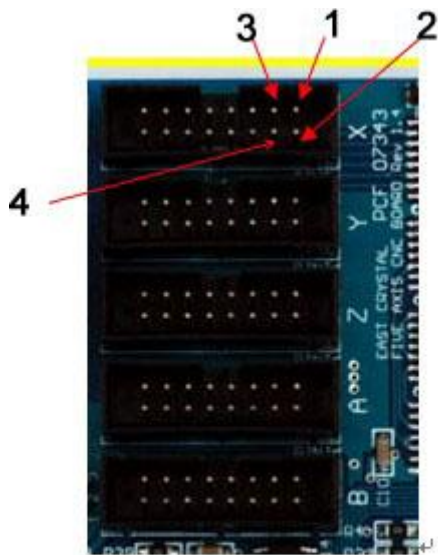
Parallel increase in protection, in general, hot plug is not damaged parallel port or parallel port interface board, but still promote the parallel port connector plug charged case, because there may be damage to the computer parallel port or interface board.

Use of screw fastening type terminals, improve the connection reliability. At the same time easy to disconnect.

Interface

The interface board has a rich interface for your use. See below:





1和2为脉冲信号
3和4为方向信号

Parallel port signal configuration instructions:

Configuration software. Please click below to configure the corresponding pin numbers table. If the configuration error, the system will not work properly

Signal Name	Signal to	Parallel port pin number	Remarks
X CLK	Output (OUT)	2	Will use the signal used to control the X-axis stepper motor.
X DIR	Output (OUT)	16	Will use the signal used to control the X-axis stepper motor.
Y CLK	Output (OUT)	14	Will use the signal used to control the Y-axis stepper motor.
Y DIR	Output (OUT)	5	Will use the signal used to control the Y-axis stepper motor.
Z CLK	Output (OUT)	17	Will use the signal used to control the Z-axis stepper motor.
Z DIR	Output (OUT)	6	Will use the signal used to control the Z-axis stepper motor.
A CLK	Output (OUT)	4	① signals must be used for the A axis stepper motor control.
A DIR	Output (OUT)	3	① signals must be used for the A axis stepper motor control.
Spindle Pulse	Output (OUT)	9	Signals must be used for controlling the speed of the spindle
Spindle direction	Output (OUT)	8	Will use the signal used to control the direction of the spindle

① axis CNC machine tools, when used, the need to configure these signals, three-axis machine tools without configuration.

⊖ non-essential use of the signal with the signal and the difference will be as follows: the machine will work with the signal is a necessary condition is not configured correctly will result in

The machine does not work. Non-essential use of the signal is not configured properly will not cause the machine does not work, but will lose some functionality may be reduced

Lower system security.

② A signal on the knife shaft limit signal is shares a pin, two features only choose one.

Spindle Control Interface (SPINDLE CONTROL):

* Function: used to control the spindle

* Connection:

Pin 1: (GND) to

Pin 2: (PWM) speed signal

Pin 3: (DIR) signal the direction of

Pin 4: NC

Pin 5: NC

Pin 6: (VCC) +5 V

Pin 7: (+12 V) +12 V

* Note: this interface board receiving the spindle control.

X, Y, Z, A driver interface:

- * Function: control the movement axis stepper motor.
- * Connection: supporting the signal line with the appropriate drive received
- * Note: Plug plug-in force the appropriate attention. Otherwise, there may be damage to the signal line.

PC parallel port:

- * Role: on the receiving PC parallel port, used to generate various control functions.
- * Connection: Parallel lines associated with supporting the parallel port on the PC.
- * Note: plug the PC parallel port cable, please turn off the power. And the PC power plug out of the total power outlet. If the operation is not required, it may damage the PC parallel port.

Power Interface:

- * Role: power interface for the interface board power supply.
- * Connection: the appropriate DC power supply or AC adapter receives the output of this interface.
- * Note: Access technical parameters required access to power. DC or AC power is available, because the panel circuit, so the wiring can be, regardless of polarity.

Emergency stop button:

- * Role: Foreign press the emergency stop button
- * Connection: terminals and to termination of a mechanical switch, the switch is turned valid

Jumper function:

J1, VCC switch	1 pin 2 pin: 12V	2 Pin 3 Pin: 5V
J2, safety pump	1 pin 2 pin: invalid	2 Pin 3 Pin: valid

J3, pump

1 pin 2 pin: B-axis pulse effective

2 Pin 3 Pin: pump effectively

J4, safety pump

1 pin 2 pin:: pump effective safety

2 Pin 3 Pin: B-axis Reversible effective

Workplace requirements

* Interface board is not installed in a metal powder according to the environment.

* Interface board is not waterproof. Do not install where there is possible flooding. If you have to be dried flooding, power can then determine the dry before the trial, the best is to ask the professionals for assistance.

* Installation sites require a certain amount of ventilation conditions. If installed in the chassis, please ensure that the chassis vents are suitable to ensure that the interface board voltage regulator cooling components.

Other requirements

* Interface board for a voltage not exceeding ratings. Otherwise, there may be a result of excessive power regulator component, the temperature exceeds a safe value, and overheating protection.

* Please interface board's GND terminal on the drive is connected to the shell, which will reduce the possibility of tampering.

* The Access Board is only applicable to the drive with the PD series, please do not use with another drive to use. Such as with the other drivers to use, the losses caused by the manufacturers will not be held responsible.

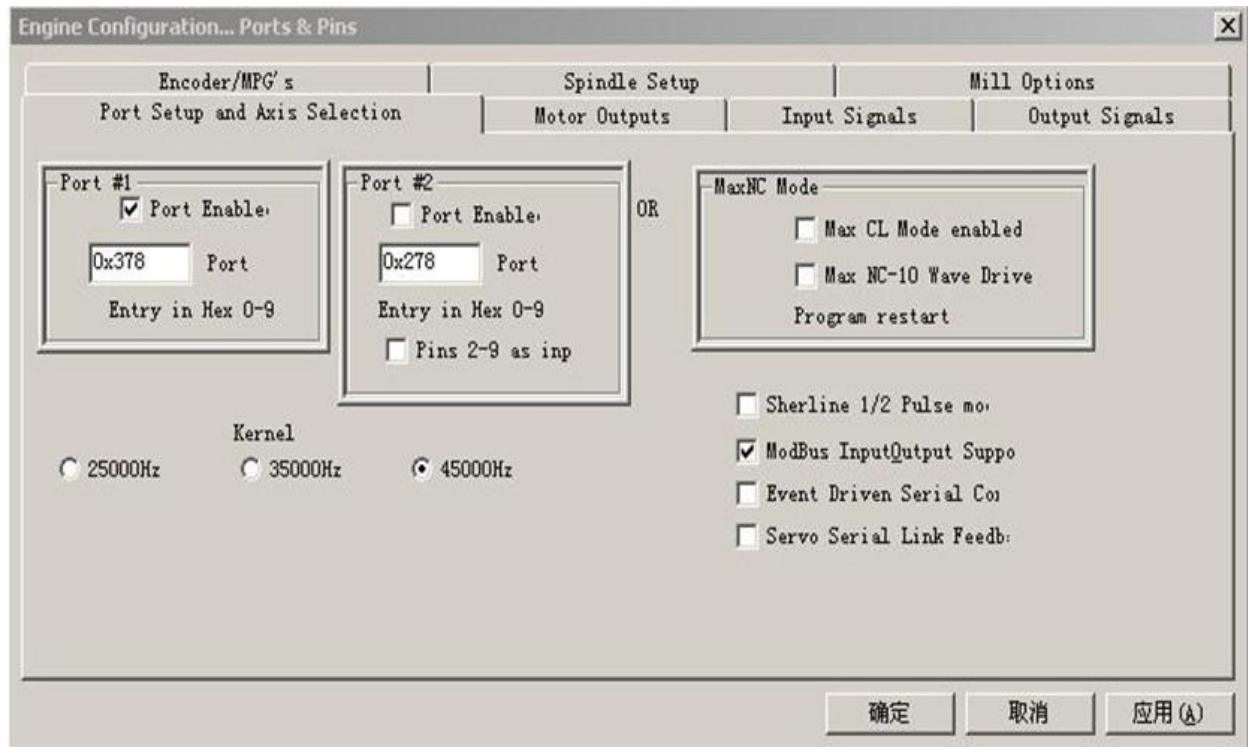
* Please do not modify their own circuit, for different specifications of the components.

* Plug connector when the appropriate force to prevent damage due to excessive force plug-in.

* When the product is correct, it will not notice.

MACH3 software settings reference

[Parallel settings:](#)



Parallel Set Pictures

Setting Description:

- ☹• Port # 1 is a number of parallel port, Port Enable tick indicates that the parallel is valid, the following 0x378 to a number of parallel address, Kernel is the highest step pulse maximum output frequency setting, there are three options to choose from, respectively,
: 25000hz , 3500HZ , 4500Hz . According to PC hardware configuration to set, when PC when configuring better, you can choose 4500HZ to achieve faster speed. Other options for advanced use application options, we recommend using the default settings.
- In the bottom right of the Modbus inputOutput support Department should tick, open MODBUSinput and output support functions, the controller and the PC host communications achieved through this feature .

Motor output settings:

Engine Configuration... Ports & Pins

Encoder/MPG's			Spindle Setup			Mill Options	
Port Setup and Axis Selection			Motor Outputs		Input Signals	Output Signals	
Signal	Enabled	Step Pin#	Dir Pin#	Dir LowActive	Step Low Ac...	Step Port	Dir Port
X Axis		7	17			1	1
Y Axis		6	8			1	1
Z Axis		5	16			1	1
A Axis		4	14			1	1
B Axis		3	9			1	1
C Axis		0	0			0	0
Spindle		2	1			1	1

确定 取消 应用 (A)

Motor output set pictures

Setting Description:

- ☹• **Enable** tick instructions to enable the shaft
- ☹• **Setp Pin #** indicates that the axis of the pulse signal corresponding to the pin number, the corresponding pin instructions set
- ☹• **Dir Pin #** indicates that the axis corresponding to the signal pin number , please set the corresponding pin description
- ☹• **Dir Lowactive** tick active low signal indicates the direction of the board should be set to the active low state (tick)
- ☹• **Setp Lowactive** tick indicates active low pulse signal, the board should be set to the active low state (tick)
- ☹• **Setp Port** set to pulse signals and the slogan, in parallel setup, if you use **on**number and parallel interface board is coupled to a 1 on the parallel port number should be set to 1 if the **two** numbers should be set parallel 2
- ☹• **Dir Port** to set the direction of the signal and the slogan, set above.

Input signal setting:

Engine Configuration... Ports & Pins

Encoder/MPG's		Spindle Setup		Mill Options		
Port Setup and Axis Selection		Motor Outputs		Input Signals	Output Signals	
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
X ++		0	0			0
X --		0	0			0
X Home		1	12			0
Y ++		0	0			0
Y --		0	0			0
Y Home		1	13			0
Z ++		0	0			0
Z --		0	0			0
Z Home		1	10			0
A ++		0	0			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用(A)

Engine Configuration... Ports & Pins

Encoder/MPG's		Spindle Setup		Mill Options		
Port Setup and Axis Selection		Motor Outputs		Input Signals	Output Signals	
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
A ++		0	0			0
A --		0	0			0
A Home		1	15			0
B ++		0	0			0
B --		0	0			0
B Home		0	0			0
C ++		0	0			0
C --		0	0			0
C Home		0	0			0
Inout #1		0	0			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用(A)

Engine Configuration... Ports & Pins

Encoder/MPG's		Spindle Setup		Mill Options		
Port Setup and Axis Selection		Motor Outputs		Input Signals		Output Signals
Signal	Enabled	Port #	Pin Number	Active Low	Emulated	HotKey
Input #1		0	0			0
Input #2		0	0			0
Input #3		0	0			0
Input #4		0	0			0
Probe		0	0			0
Index		0	0			0
Limit Ovrd		0	0			0
EStop		1	11			0
THC On		0	0			0
THC Up		0	0			0

Pins 10-13 and 15 are inputs. Only these 5 pin numbers may be

确定 取消 应用 (A)

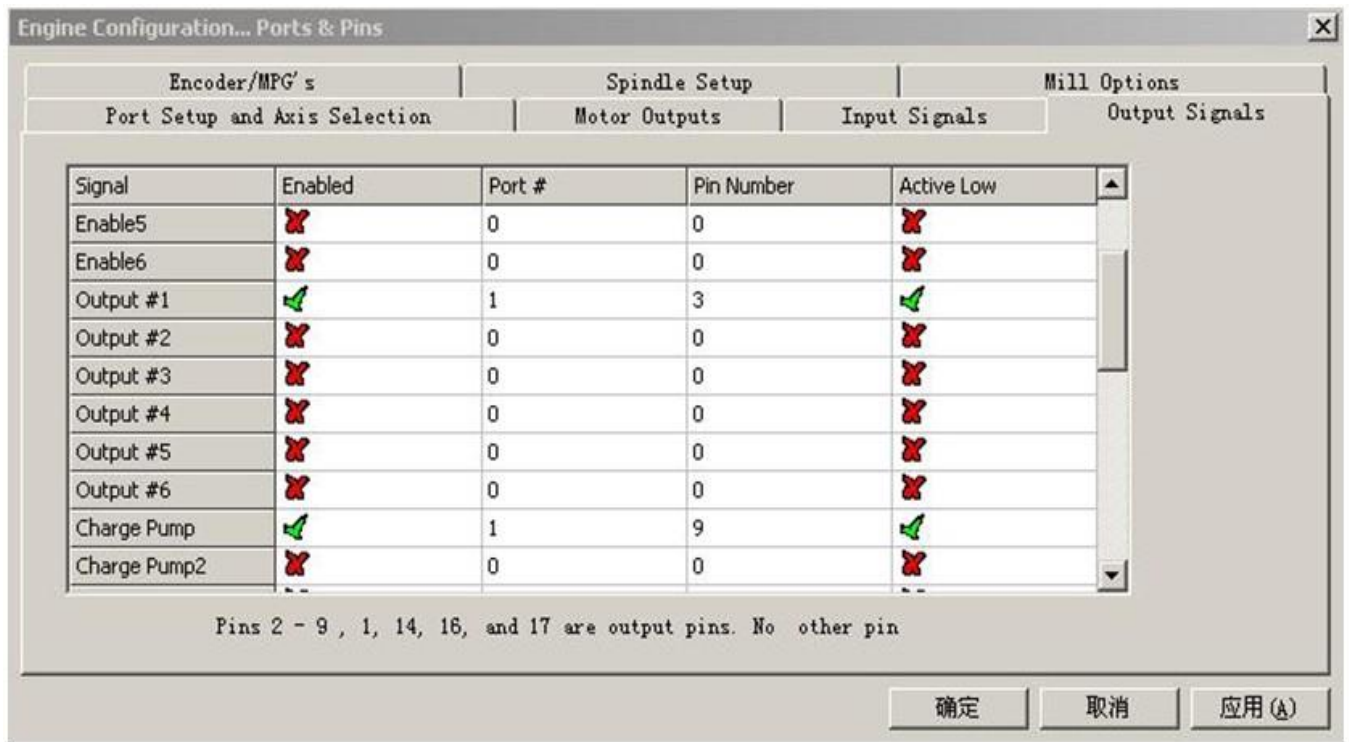
Input signal settings Figure

Setting Description:

- ☹• Enable indicates that the signal is enabled
- ☹• Port# indicates that the signal coupling and slogan
- ☹• Pin # indicates that the signal connection port number
- ☹• Active Low signal level selection is valid, tick is active low, the board should select low active (ticked)
- ☹• X Home for the X -axis origin signal
- ☹• Y Home for the Y -axis origin signal
- ☹• Z Home for the Z -axis origin signal
- ☹• A Home for the A -axis origin signal
- ☹• Estop pin number for the external emergency stop switch

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

The output signal is set :



The output signal is set Figure

Setting Description:

- ⊗• Output #1 is an output port number. After setting the port, the port can be set as an output used elsewhere.
- ⊗• Charge Pump for the Charge Pump signal output port, the port is not configured correctly when. If the jumper board using Charge pump function, the interface board LED1 will not light. And all outputs are turned off.

Other output signal is the output signal set of advanced applications should be all set to be invalid.

[MODBUS settings](#)

ModBus Status & Control

Comm Port
 Port Num:
 Baud Rate: ☐ Use RTS for transmit (RS485) Timeout ms

Status:

AutoPolling Option

Input

On	Slave Addr	Start Reg	# Registers	Input	Holding	Coil(s)	Discrete	Mapped to Inputs pin 0 - 63
☒	6	1150	7	☒	☐	☐	☐	Mapped to Inputs pin 0 - 63
☐	0	0	0	☒	☐	☐	☐	Mapped to Inputs pin 64-127

Output

On	Slave Addr	Start Reg	# Registers	Holding	Coils	Mapped to outputs 0 - 63
☒	6	1040	2	☒	☐	Mapped to outputs 0 - 63
☐	0	0	0	☒	☐	Mapped to outputs 64-127

Update Frequency Hz

MODIO Device Support

☒ MODIO ModBus Card ☒ MPG #1 ☐ MPG #2

Auto Bitpacking in effect in MODIO mode

Special Control

☐ Use each input word as bits of Bitmapped Input instead of mapped inputMax of 64 bits.

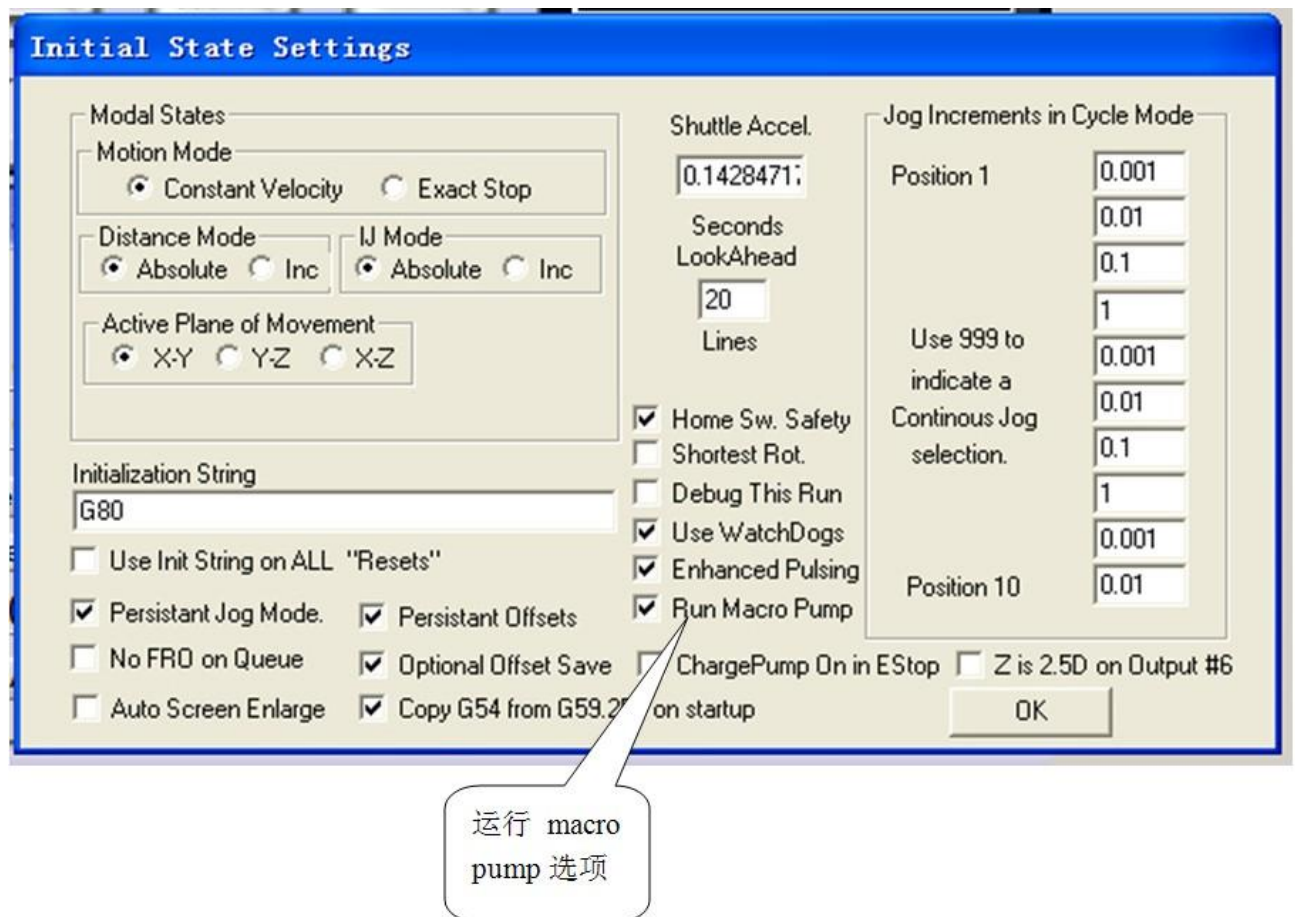
☐ Map outputs 1-64 as bits of Bitpacked output instead of mapped outputMax of 64 bits.

☐ OEM Control code incoming on Register # of the mapped IO from pins 64-127

Setting Description:

- port number **port Num** press the actual controller coupled to the serial port settings, due to different computer used, this port number may be 2 , 3 and so on.
- communication rate is set to 57600 , the communication format is set to 8-1-N , the timeout is set to 50ms .
- Several Please click the following settings

Macro pump set



Setting Description:

- In the Run Macro Pump Department should tick, so that the software will run prior written Macro Pump macro file, you can achieve control panel control panel MACHsoftware functionality, if there is no set correctly, then the control box CNC mode will not be working.