

4 Axis (X, Y, Z,A) Stepping Motor Controller (TA8435)

(Rev 1.0 Jun 2010)

Presents by

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This is a 4 Axis (X,Y,Z,A) CNC stepping motor controller/Driver. It built-in a spindle relay and all input is optical isolated that providing safer (no feedback to your PC) and better response time. Support Mach2, Mach3, KCam. You can apply this card to a CNC machine or upgrade your old CNC machine to take advantage of new technology. It works for CO2 laser machine as well

Features:

- * Optical isolation for data In/Out
- * Relay control for spindle (or laser)
- * Four step speed setting
- * High current Output
- * Big Heat sink support up to 2.5A

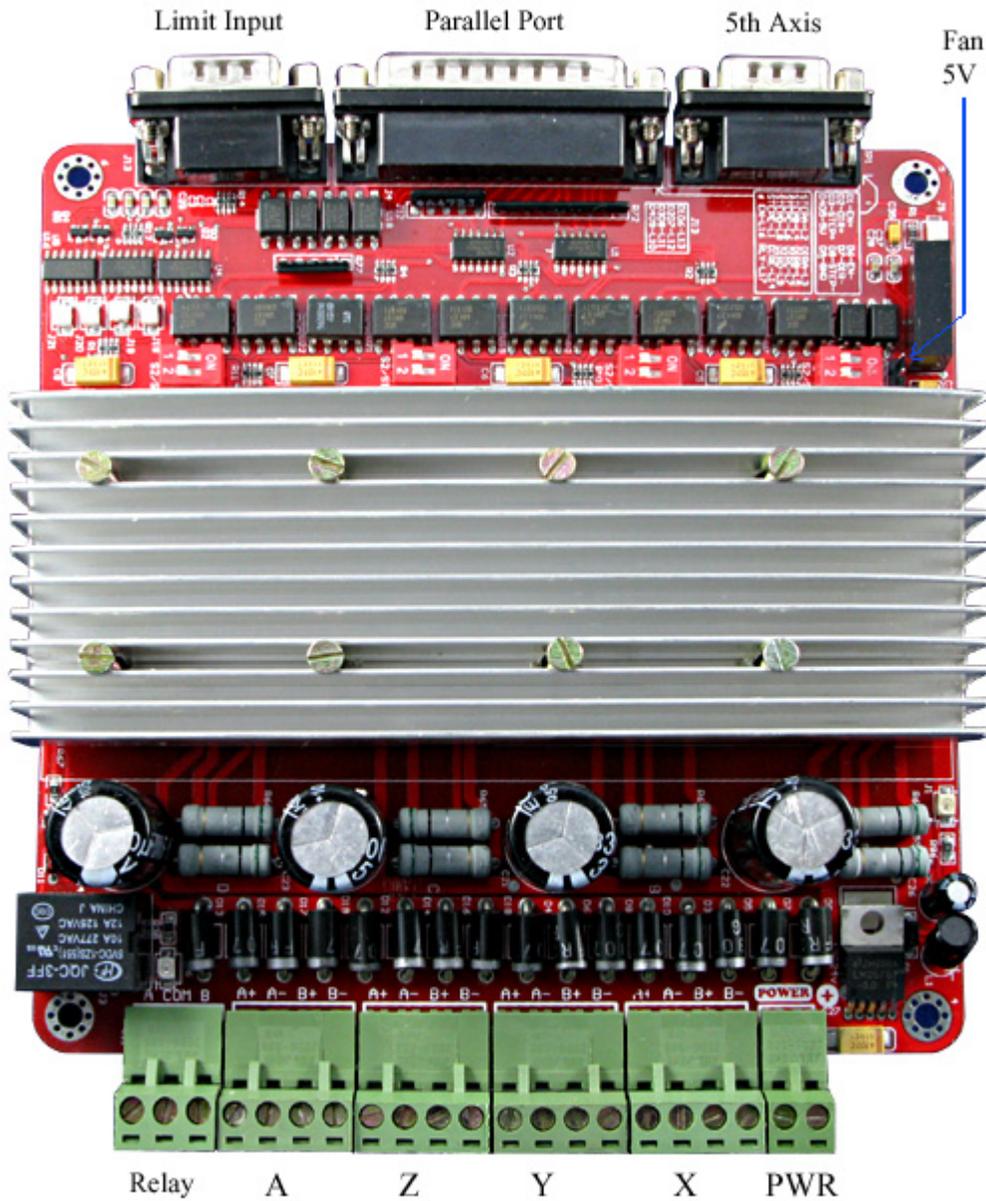
Specification:

- * In/Out Interface port: Parallel
- * Built in Relay control for spindle
- * Support 2/4 phases 4, 6, 8 wires stepping motor
- * High speed optical isolation coupling
- * LED indicators for each Axis & Relay
- * Current: 1.5A default (2.5A max)
- * Resolution: 1/8, 1/4, 1/2, 1
- * Power: Single DC 12 ~ 36V (recommend 24V)
- * Control port: DB manual control interface
- * CAD system support: March2, Mach3, KCam

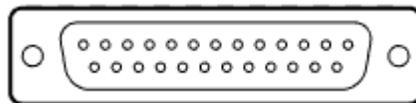


ColdfusionX
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www.lightobject.com

Board Overview



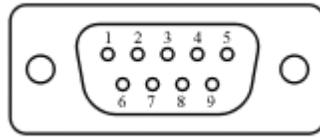
DB 25 Connector Pin layout



PIN1	PIN2	PIN3	PIN3	PIN5	PIN6	PIN7	PIN8	PIN9	PIN10
CKE	CKA	CWA	CKB	CWB	CKC	CWC	CKD	CWD	DIN1
E STEP	A STEP	A DIR	B STEP	B DIR	C STEP	C DIR	D STEP	D DIR	Limit1
PIN11	PIN12	PIN13	PIN14	PIN16	PIN17	PIN18-25			
DIN2	DIN3	DIN4	CWE	EN	RLY	GND			
Limit2	Limit3	Limit4	E DIR	Enable	Relay	Ground			

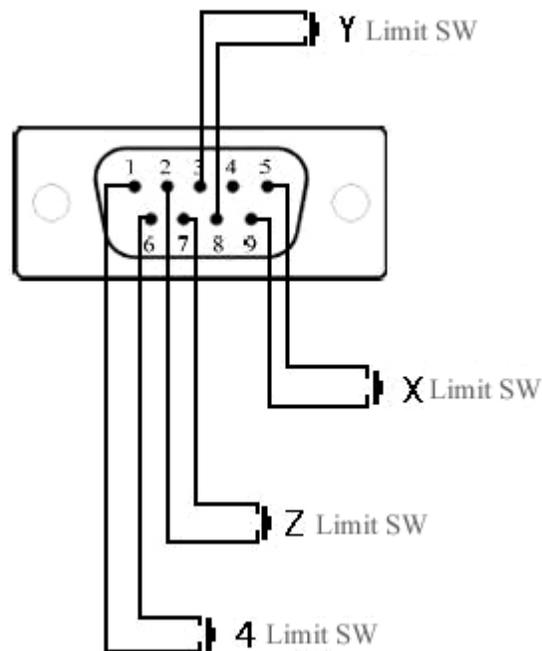
DB 9 Connector

- 5th Axis expansion



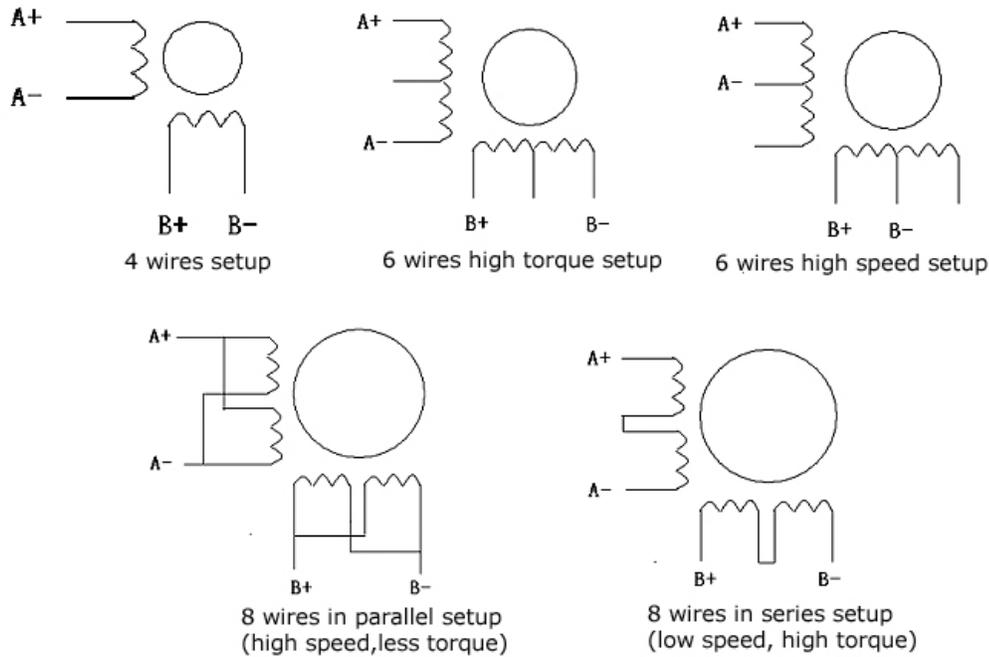
P1	P2	P3	P4	P5	P6	P7	P8	P9
EN +	DIR+	PU+	NA	+5V (out)	EN-	DIR-	PU-	GND
Enable	Direction +	Pulse +	NA	5V Power	Enable -	Direction -	Pulse -	Ground

- Limit Sensor Input



P1	P2	P3	P4	P5	P6	P7	P8	P9
A	Z	Y	NA	X	GND	GND	GND	GND
A input	Z input	Y input	NA	X input	Ground	Ground	Ground	Ground

2 phases, 4 phases stepping motor connection diagram (current 2A max)



Power

The controller can take DC 12~32V power input. The power supply should be able to provide at least 3A current in order to support smooth operation.

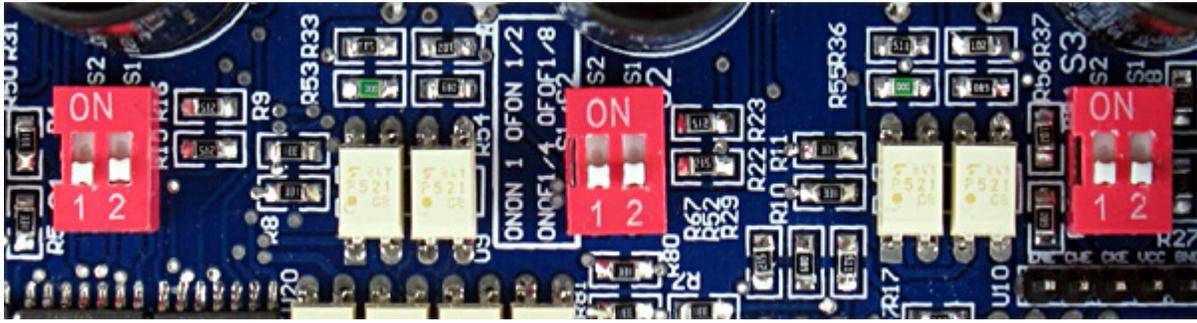
Home Limit and Emergency Stop Input pin

Note: All Limit Input are Active Low *

5th Axis Expansion Output pin

CW = PIN #14. It's used to output PWM signal as well. Or, you can use the output from #14 to trigger a 'Fire' signal for CO2 laser. The output level is +5 pulse so the CO2 power supply must support +5V triggering!

Resolution/ Speed Setting for X,Y,Z Stepping Motor



MACH3 Setup. Note: some parameters is in default setting

Mach3 CNC Controller

File Config Function Cfg's View Wizards Operator PlugIn Control Help

Pr Select Native Units **Ports and Pins** Alt2 ToolPath Alt4 Offsets Alt5 Settings Alt6 Diagnostics Alt-7 Mill->G15 G80 G17 G40 G20 G90 G94 G54 G49 G99 G64 G97

Motor Tuning
General Config...
System Hotkeys
Homing/Limits
ToolPath
Slave Axis
Backlash
Fixtures....
ToolTable.....
Config Plugins
Spindle Pulleys..
Safe_Z Setup..
Save Settings..

REF ALL HOME

Zero X	+0.0000	Scale +1.0000
Zero Y	+0.0000	Scale +1.0000
Zero Z	+0.0000	Scale +1.0000
Zero 4	+0.0000	Radius Correct

OFFLINE GOTO Z To Go Machine Coord's Soft Limits

File: No File Loaded. Load Wizards Last Wizard Regen. Toolpath Display Mode Jog Follow

Cycle Start <Alt-R>
Feed Hold <Spc>
Stop <Alt-S>

Edit G-Code
Recent File
Close G-Code
Load G-Code
Set Next Line
Line 0
Run From Here

Rewind Ctrl-W
Single BLK Alt-N
Reverse Run
Block Delete
M1 Optional Stop
Flood Ctrl-F
Dwell CV Mode

Reset ess Reset Emerg On/Off Z Inhibit +0.000
G-Codes M-Codes

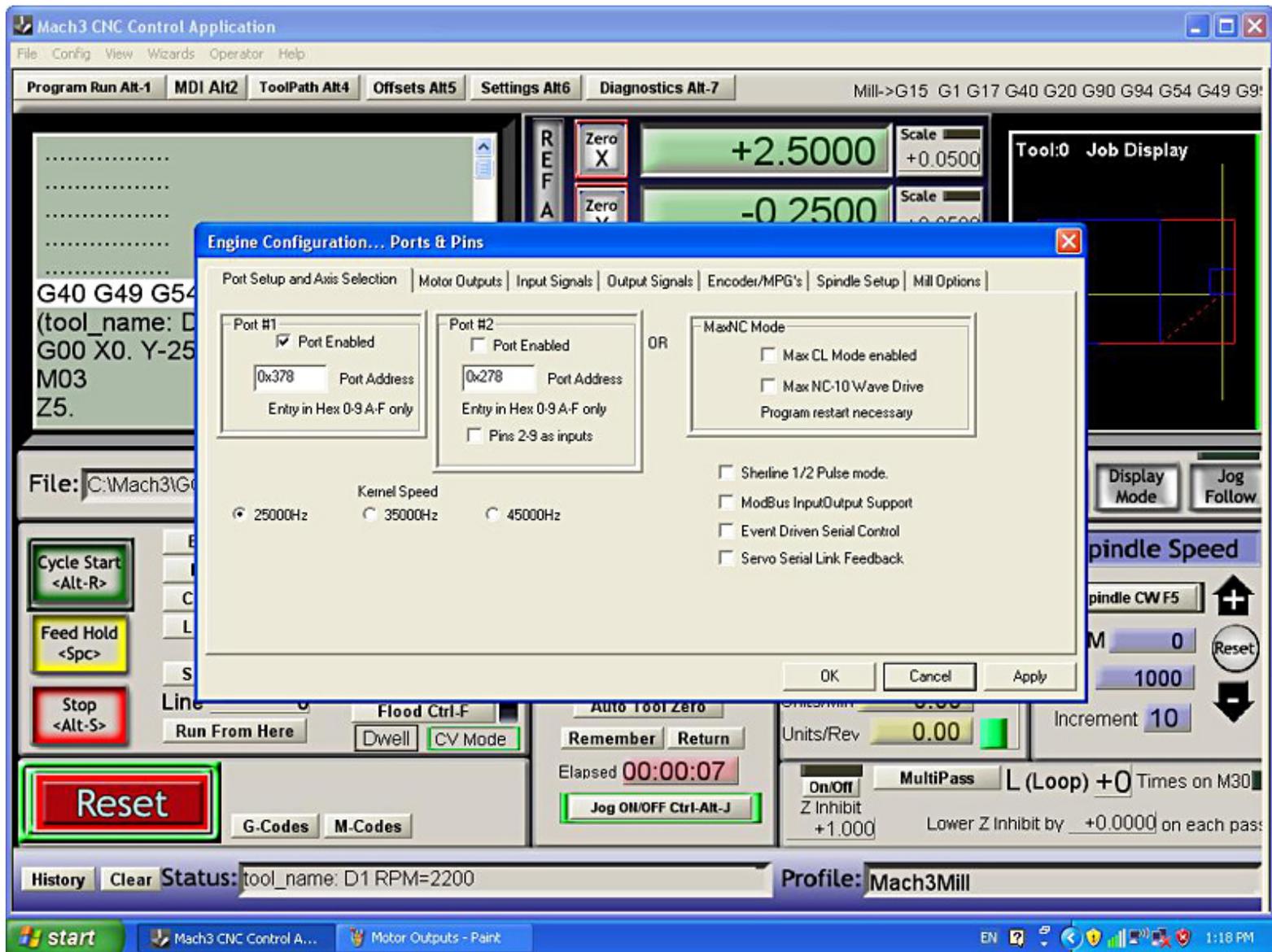
Tool Information
Tool 0 Change Tool
Dia. +0.0000
H +0.0000
Auto Tool Zero
Remember Return
Elapsed 00:00:00
Jog On/OFF Ctrl-Alt-J

Feed Rate
OverRidden FRO % 100
FRO 6.00
Feedrate 6.00
Units/Min 0.00
Units/Rev 0.00

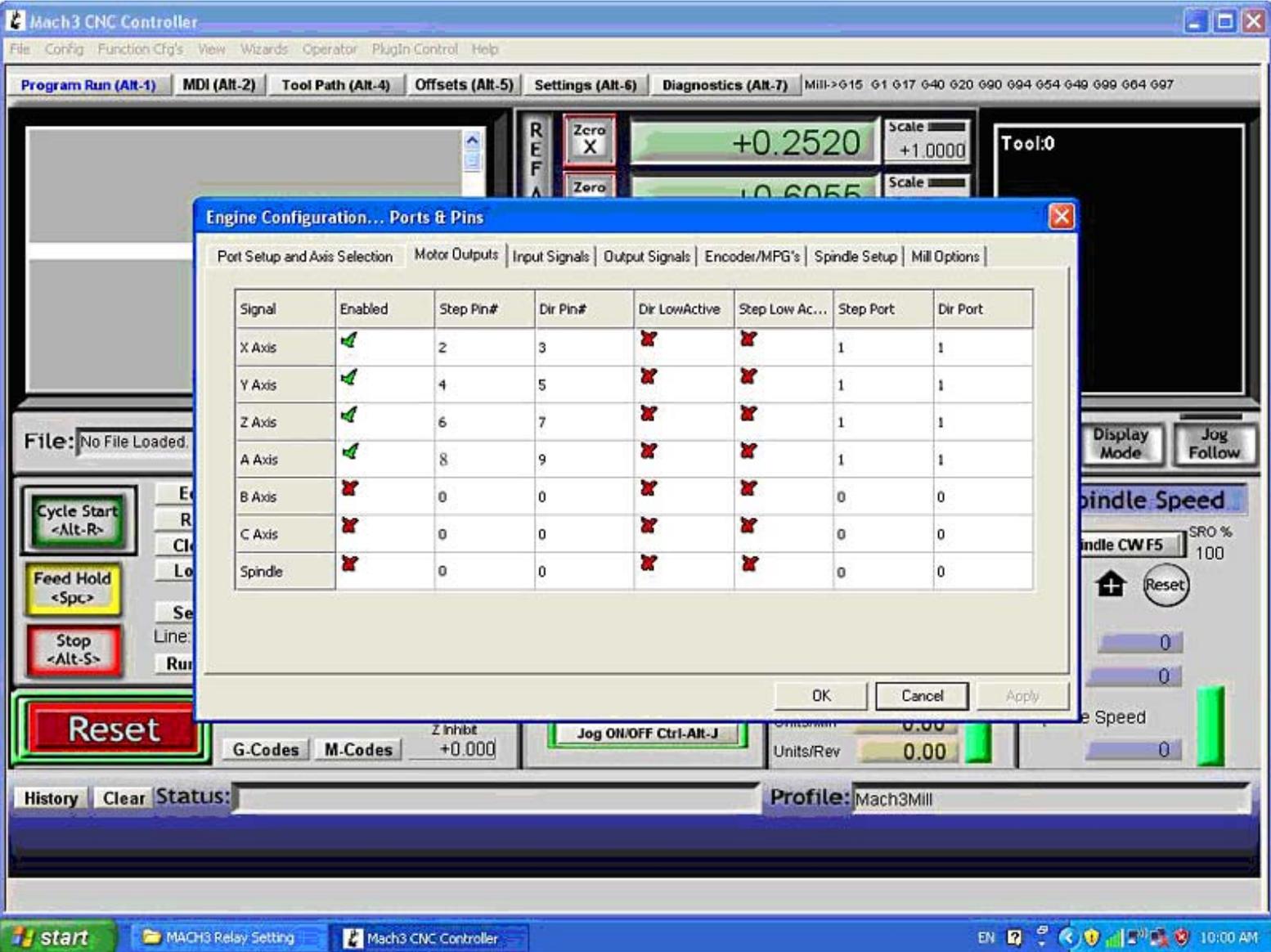
Spindle Speed
Spindle CW F5 SRO % 100
RPM 0
S-ov 0
Spindle Speed 0

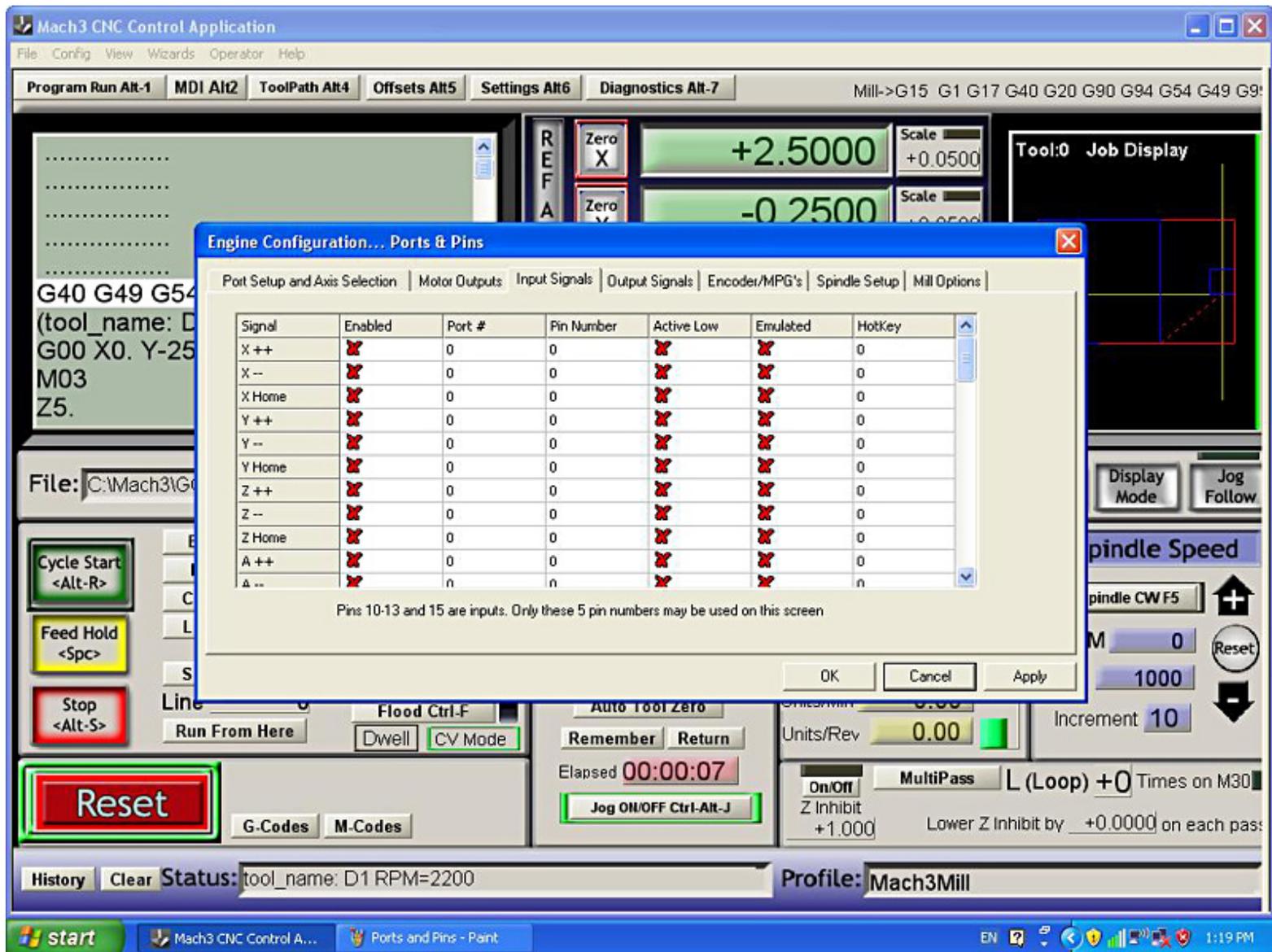
History Clear Status: Profile: Mach3Mill

start 阿里旺旺 - sol... 开发工具 2 - 画图 Mach3 CNC Co... 1 07:39

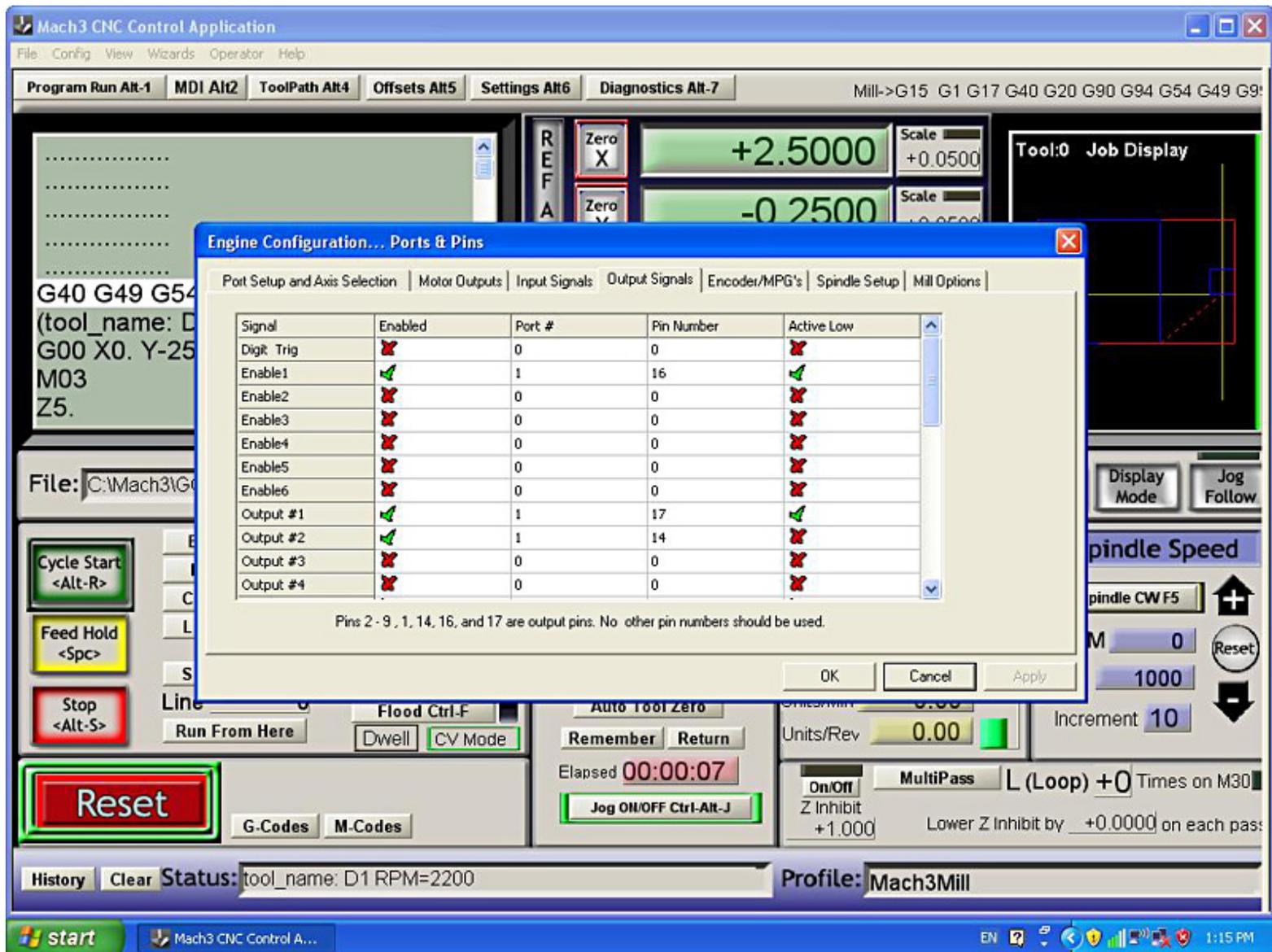


You may set the Kernel speed to 35000Hz

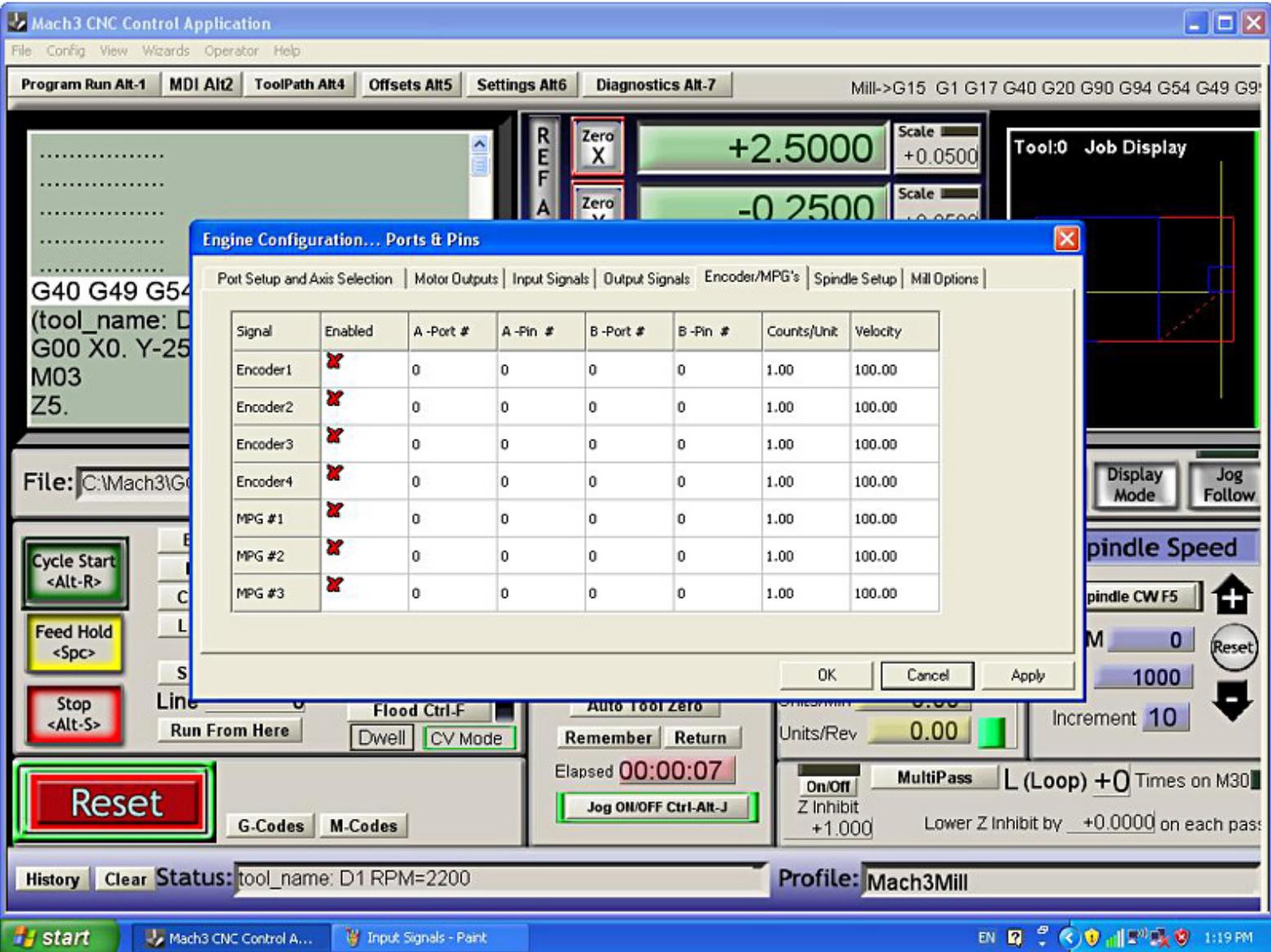


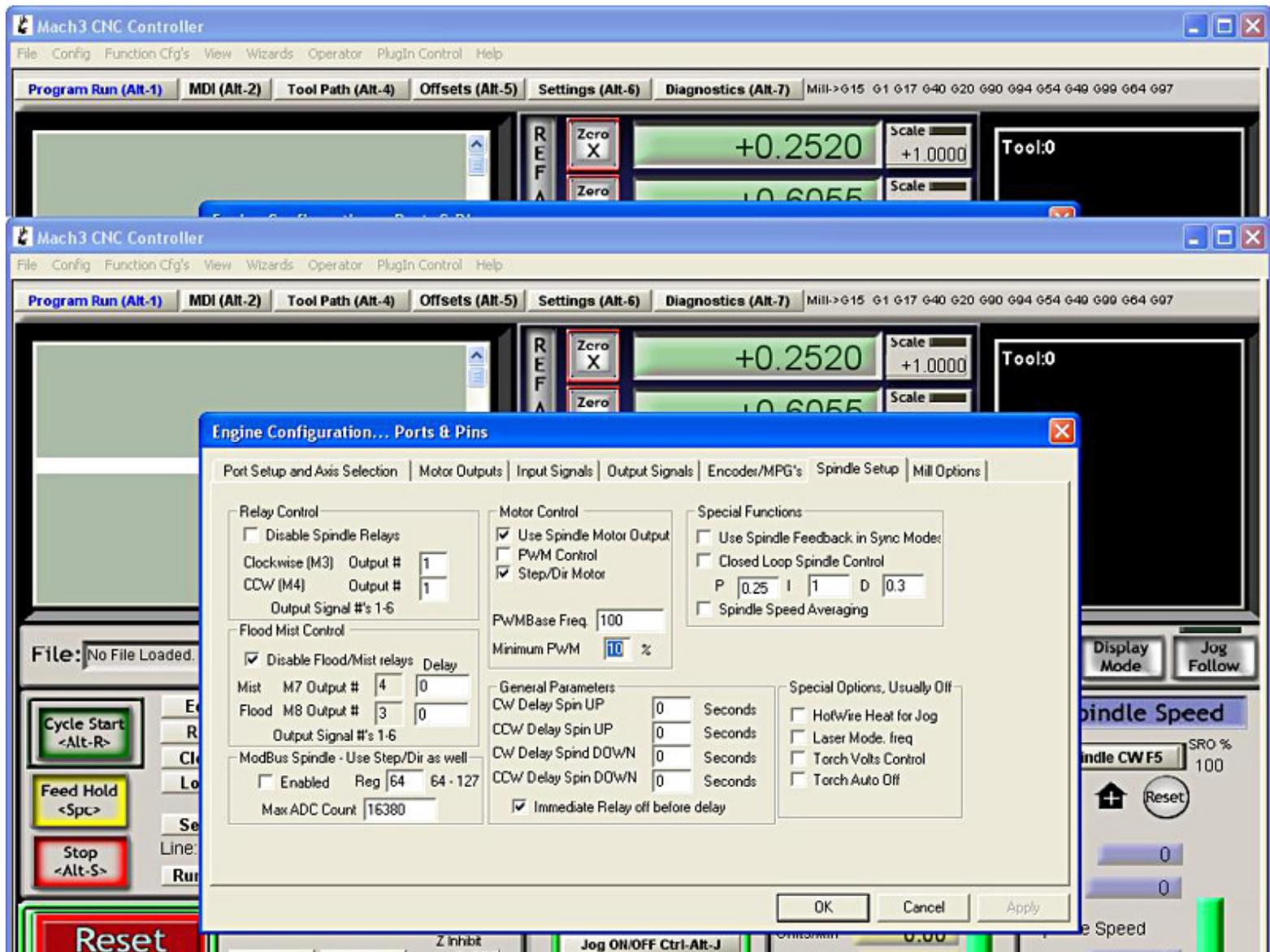


Mach3 provide a function for 'Input' signal auto detection. It's good for home switch testing.

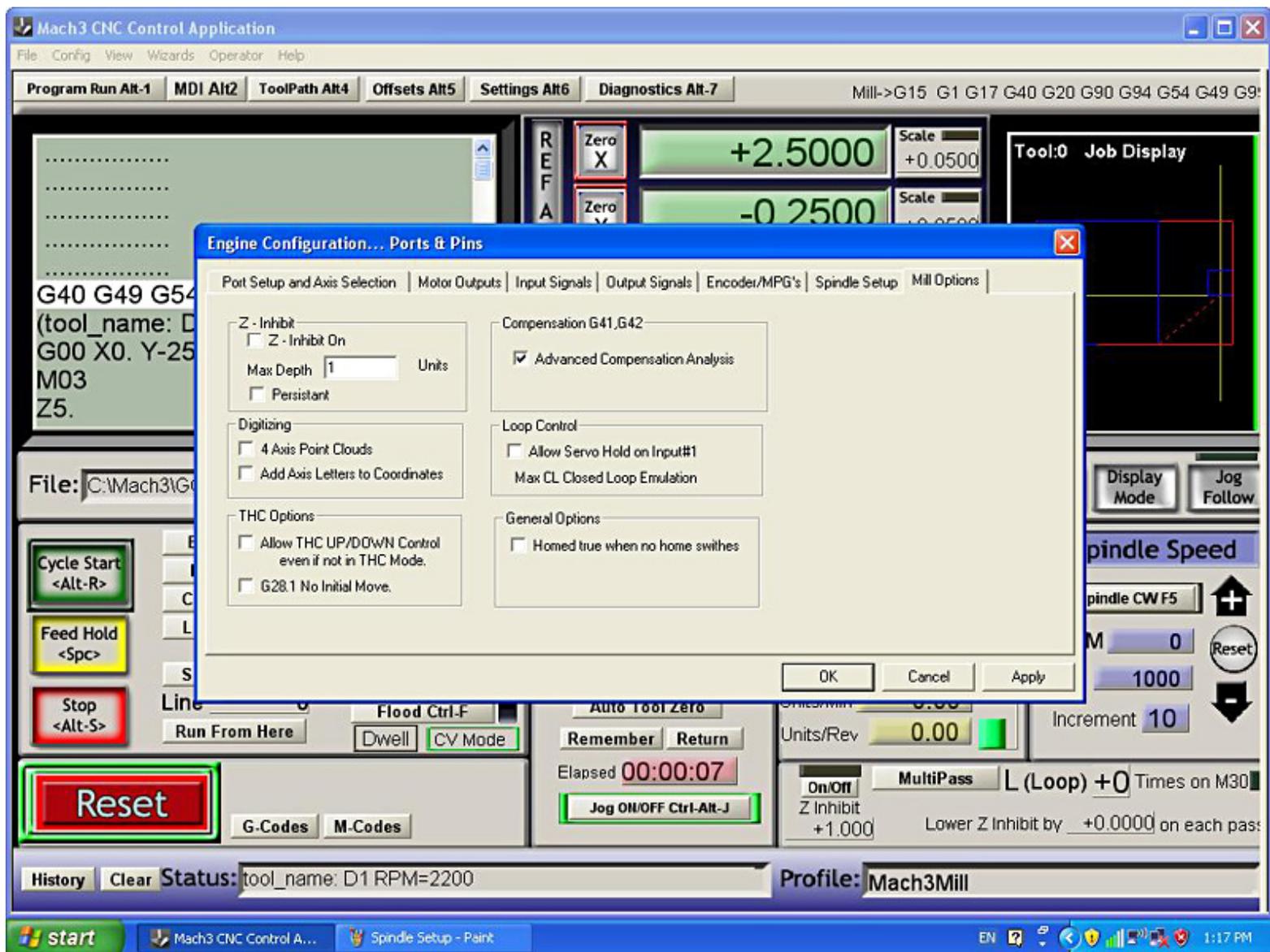


Output #1 and Output #2 is optional.





March3 default setting. Output # by default is set to "1"



March3 default setting.

Please go to Mach3 website <http://www.machsupport.com/> to get more update information. We don't support Mach3 or other 3rd software.

www.LightObject.com