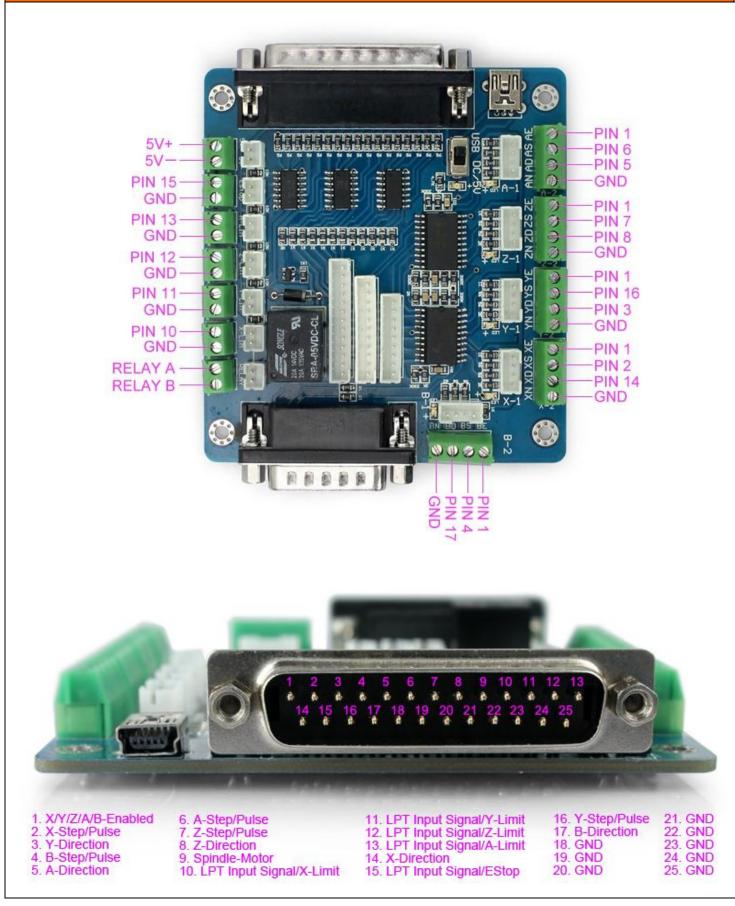
5-axis CNC Breakout board User Manual

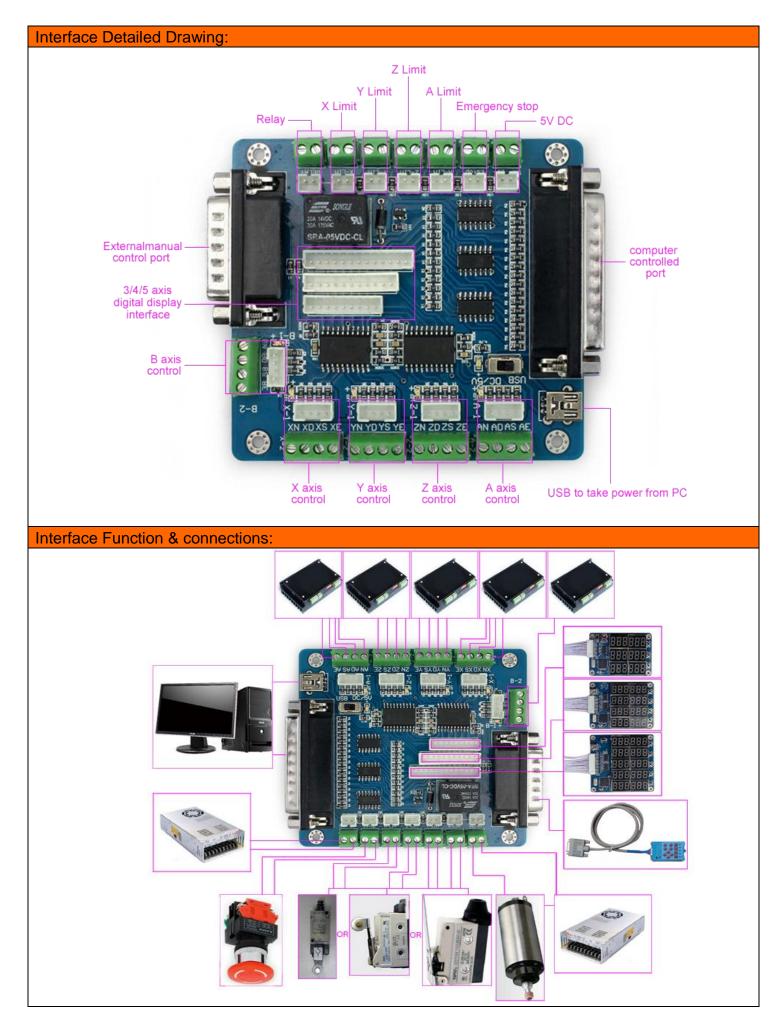
Thank you for choosing our product, please read this manual before use.

PART 1:

Features:							
1. Upgraded circuit, work more	e peacefully and steady than the version before.						
2. Maximum support 5-axis stepper motor driver controller.							
3. Two types of ways to get po	ower, 5V DC power supply or USB port to directly get						
power from PC.							
4. Two-stage signal processing	4. Two-stage signal processing, smooth signal transmission, powerful anti-jamming.						
	ne emergency stop, limit, points in the knife, etc.						
6. Relay output control interfac	ce, accessed by the spindle motor or the air pump, water						
pump, etc.							
7. 5-axis work LED display, vis	sually display the working condition of the stepper driver						
controller.							
Electrical Performance (Ambient Te	emperature Tj = 25 $^{\circ}$ C):						
Input Power	5V DC power supply or USB port to directly get power from PC						
Compatible Stepper Motor Driver	Max 5 single axis stepper motor driver controller						
Drive type	Pulse + Direction + Enable Signal Control						
Net/Total Weight	About 80g/300g						
Dimensions	90 * 82 * 15mm (L*W*H)						
Waveform And Timing:							
	B Y Vi Vi I "L" "H" ZC Pulse + Direction Mode						

Interface & Pinout Definitions:





When testing, check the following notes before use:

- 1. Check the input voltage of the breakout board (make sure 5V input voltage);
- 2. Understand how the breakout board works with stepper drivers;
- 3. Check all the wiring among all the CNC units.

Part 2: The Definition Of Each Pin

1 Defined as parallel control: PIN9 PIN1 PIN2 PIN14 PIN16 PIN3 PIN4 PIN7 PIN8 PIN6 PIN5 PIN17 Spindle Х Х Y Enable Y Ζ Ζ А Α В В motor Pulse Dir Pulse Dir Pulse Dir Pulse Dir Pulse Dir

2. Hand control is defined as follows 1 ~ PIN15computer-15P interfaces and benchmarks within the Digital ID)

0	/													
P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15
В	В	А	Z	Y	Х	Х	Enable	5V/V	5V/G	А	Ζ	Y	Enable	Enable
Pulse	Dir	Dir	Pulse	Pulse	Pulse	Dir		DD	ND	Pulse	Dir	Dir		

3. The limit is defined as 1 to 5

X -Limit	Y- Limit	Z- Limit	A- Limit	Emergency					
PLT-P10	PLT-P11	PLT-P12	PLT-P13	PLT-P15					

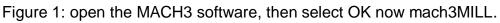
Notes: A. 5V 1A power supply, please take more than switching power supplies, power input received indicated on the map interface.

B. Spindle motor control is controlled via the parallel port PIN1. Spindle motor voltage must comply with the supply voltage range.

Part 3: The Use Of Mach3



Figure 1



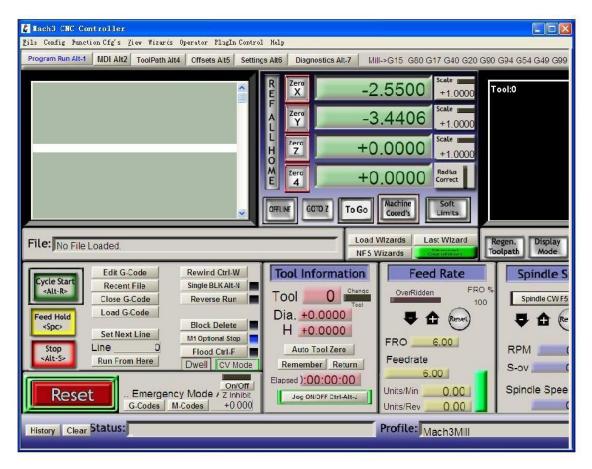


Figure 2

MACH3 open the interface shown in Figure 2, the action of commonly used button above, here we configure the MACH software.

Lach3 CNC Controller	<u>V</u> iew Wizards Operator PlugIn Con	trol Help		
Prod Select Mative Units Ports and Pins Motor Tuning	ToolPath Alt4 Offsets Alt5 Se	ttings Alt6 Diagnostics Alt-7 Mi	II->G15 G80 G17 G10 G20 G9	C G94 G54 G49 G99
Motor Tuning General Config System Hotkeys Homing/Limits ToolPath Slave Aris Backlash Fixtures ToolTable Config Flugins Spindle Pulleys Safe_Z Setup Save Settings		F A L H Zero H Zero H Zero H C F L H Z C C To Go	.4406 Scale .4406 \$cale .0000 \$cale .0000 \$care .0000 \$care	Tool:0
File: No File Loaded.				Regen. Display Toolpath Mode
	t File Single BLK Alt.N 6-Code Reverse Run Code Block Delete At Line M1 Optional Stop Flood Ctrl-F	Elapsed):00:00:00	Feed Rate	Spindle CW F5 Spindle CW F5 Sov RPM S-ov (Spindle Spee
History Clear Status:			Profile: Mach3Mill	

Figure 3 Figure 3: Click the "Config" menu "PORT & PIN" menu.

Lach3 CNC Controlle Eile Config Junction 2fg's	r 🖉 View Vieweds Operator FlugIn Control Help
Program Run Alt-1 MDI Al	It2 ID0 Path Alt4 Utfsets Alt5 Settings Alt6 Diagnostics Alt7 Mill->G15 G80 G17 G40 G20 G90 G94 G54 G49 G99 G64 G97
	Engine Configuration Forts & Pins
File: No File Loaded	Encoder/NFF': Spirals Solup Nill Options Port Setup and Axis Selection otor Oxtput Input Signals Output Signals Port # Imput Signals Output Signals Input Signals Port # Imput Signals Output Signals Port # Imput Signal Input Signals Port # Imput Signal Imput Signals Port # Imput Signals Imput Signals Port # Entry in Hex 0-9 Imput Signals Pisse 2-9 as sinp Sectart if changet Imput Signals Support Stacine 1/2 Pise mc Imput Signals Support Imput Signals Support TDP Modus support Sectart Entry Solution Sectart Ede Imput Signal Support Sectart Sectal Link Facedb Indle CWF5 Indle CWF5 Stol Indle
Stop Line	確定 取消 应用(A) 0 rom Here Dwell CV Mode Remember Return Feedrate S-ov 0
Reset	On/Off Elapsed):00:00:00 Onits/Min O.00 Spindle Speed G.Codes M.Codes +0.000 Units/Rev 0.00 0
Ilistory Clear Status	ReConfiguration Estop. Profile: Mach3Mill
▋开始 € エ具・	제왕 • a Accollo 2004 - [같 MackS CRC Control. 전 NY-JED2-M 프레. 방 D2 - 画田

Figure 4

Figure4: Place on lap 1 setting can set the fundamental frequency, the parameters of the motor rotation speed. After 2 laps to set the place selected, the configuration pin definitions, as shown in Figure 5.

Port Setu	np and Axis Se	lection	Motor On	itputs	Input Signa	ls	Output Signals
Signal	Enabled	Step Pin#	Dir Pin#	Dir Low	Step Lo	Step Port	Dir Port
X Axis	4	2	14	X	X	1	1
Y Axis	4	16	3	×	×	1	1
Z Axis	4	7	8	×	×	1	1
A Axis	4	6	5	×	×	1	1
B Axis	4	4	17	X	X	1	1
C Axis	*	0	0	×	×	0	0
Spindle	X	0	0	×	X	0	0
		42	-12	1.	1	-1. ²	
Spindle		0	0			0	0

Figure 5

According to the definition of the board parallel port, follow the map on the circle to indicate the definition of modification of the software settings.

Encoder		· · · · · · · · · · · · · · · · · · ·	indle Setup		11 Options
Fort Setup and	1 Axis Selection	Motor	Outputs Inj	out Signals	Output Signals
Signal	Enabled	Port #	Pin Number	Active Low	~
Digit Trig	X	1	0	X	
Enable1	4	1	1	X	
Enable2	4	1	1	X	
Enable3	4	1	1	X	
Enable4	4	1	1	X	
Enable5	4	1	1	X	
Enable6	X	1	0	X	
Output #1	4	1	9	X	
Output #2	X	1	0	X	
Output #3	X	1	0	X	
Output #4	X	1	0	X	~
Pir	ns 2 - 9 , 1, 14, 1	6, and 17 are ou	tput pins. No other	pin	

Figure 6

Then select the output signals in part, as shown in Figure 6, according to insiders of the settings, set the corresponding entry.



Figure 7

Motor references about the settings in Motor turning and Setup, please set them shown as Figure 7. Please set each Axis with the above "Neutral values" for test: "320 steps, 600mm/min, 200 mm's/sec/sec, 2 Step Pulse and 2 Dir Pulse". Actually, these values can be changed to fit the motors perfectly after being tested again and again.



Figure 8

Profile: Mach3Mill

History Clear Status: ReConfiguration Estop

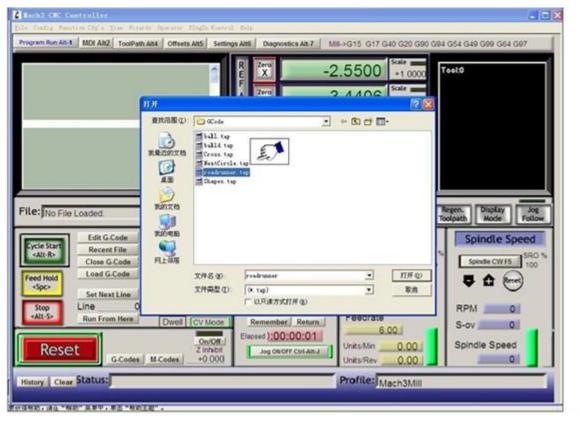


Figure 9

Finish all settings, you can click the "Load G Code" menu and run the G code needed, as shown in Figure 8 and Figure 9.

Ele Config Function Off: View Wizerds Operator PlugIn Control	Help	
Program Run Alt-1 MDI Alt2 ToolPath Alt4 Offsets Alt5 Settings		G54 G49 G99 G64 <mark>G</mark> 97
F60.000000 G0 X0.000000 Y0.000000 Z0.200000 M3 S60.000000 G4XH5 G0 X0.000000 Y0.000000 Z0.200000 G0 X1.179950 Y4.004260 Z0.200000 G1 X1.179950 Y4.004260 Z0.100000 G1 X1.179950 Y4.004260 Z0.100000		
File: D.Mach3iGCodelroadrunne:.lap		egen. Display Jog olpath Mode Follow
Edit G-Code Rewind Ctrl.W Cycle Start Recent File Sindle BLK Alt-N Reverse Run Close G-Code Block Delete Feed Hold Stop Stop Set Next Line Mine Flood Ctrl.F Quite Dwell CV Mode On/Off Concert Emergency Mode / Z innitit	Tool Information Feed Rate Tool Ourrange Dia. +0.0000 Tool H +0.0000 Patternember Auto Tool Zero FRO Remember Return Elapsed):00:00:01 Gold Offer Ctri-Alt-J	Spindle Speed
G.Codes M.Codes +0.000	Units/Rev 0.00	0

Figure 10

Having loaded the G code, "RESET" can be seen flashing red, you can use mouse to click the "RESET" make it stop flashing, then you can press the "CYCLESTART" button to run, detailed shown in Figure 10.

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