| ZP5A- | INT-axis interface board manual | | | | | | | |
|---|--|--|--|--|--|--|--|--|
| products, Please read this manual | | | | | | | | |
| Features: Features | | | | | | | | |
| 1: 5-axis ste | pper motor driver outputs | | | | | | | |
| 2: The two-stage signal processing, inputs and outputs buffered | | | | | | | | |
| 3:5 input inte | 3:5 input interface to define the emergency stop, limit, points in the | | | | | | | |
| knife, etc. | | | | | | | | |
| 4: relay outpu | it control interface, can be accessed by the spindle motor | | | | | | | |
| or the air pu | mp, water pump, etc | | | | | | | |
| 5: five-axis | job LED display, visual display of working axis condition | | | | | | | |
| Electrical performan | nce (Tj = 25 $^{\circ}$ C ambient temperature when): | | | | | | | |
| | | | | | | | | |
| Input Power | 5V DC power supply or computer USB. | | | | | | | |
| Drive | Pulse + direction + enable signal. | | | | | | | |
| Weight | About 200 grams. | | | | | | | |
| Interface definition | table: | | | | | | | |







In the test machine, note the following before

- 1, note that using the 5V power supply
- 2, determine the stepper driver works (Model0)
- 3, to determine the drive wiring step

Second, "the definition of the pin

1 "is defined as parallel control:

| PIN9 | PIN1 | PIN2 | PIN14 | PIN16 | PIN3 | PIN7 | PIN8 | PIN6 | PIN5 | PIN4 | PIN17 |
|--------|---------|------|-------|-------|------|------|------|------|------|------|-------|
| Spindl | enabled | Х | Х | Y | Y | Z | Z | А | А | В | В |
| е | | step | dir | step | dir | step | dir | step | dir | step | dir |
| motor | | | | | | | | | | | |
| | | | | | | | | | | | |

2 "hand control is defined as follows 1 ~ 15 PIN computer-15P interfaces and benchmarks

| P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 | P14 | P15 |
|------|-----|-----|------|------|------|-----|-------|------|------|------|-----|-----|-------|-------|
| В | В | А | Z | Y | Х | Х | enabl | 5V/V | 5V/G | А | Ζ | Y | enabl | enabl |
| step | dir | dir | step | step | step | dir | ed | DD | ND | step | dir | dir | ed | ed |
| | | | | | | | | | | | | | | |

3 "The limit is defined as 1 to 5

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

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

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



Figure 1

Figure 1, open the MACH3 software, then select OK now mach3MILL



Figure 2

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



Figure 3

Figure 3, open the config menu PORT & PIN menu

Figure 4

| 🛃 Mach3 CNC Controller |
|---|
| Program Run All-1 MDI All2 Too Path Alt4 Uttsets Alt5 Settings All6 Diagnostics Alt-/ Mill->G15 G80 G17 G40 G20 G90 G94 G54 G49 G99 G64 G97 |
| R Zero -2.5500 Scale +1 0000 F Zero -2.4406 Scale Tool:0 |
| File: No File Loader Edit Cycle start Edit Cycle start Edit Cycle start Clos Loa Start a must be restarted and metors |
| Stop Line 确定 取消 应用(A) O |
| Number Dwell CV Mode Remember Return Control S-ov O Image: Reset |
| Ilistory Clear Status: ReConfiguration Estop. Profile: Mach3Mill |
| |

Figure 4

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

| Encoder/MPG's Port Setup and Axis Selection | | | Spin Motor Ou | dle Setup itputs | Input Signa | Mill Options t Signals Output Signs | | | |
|--|---------|-----------|------------------|---------------------|-------------|--|----------|--|--|
| Signal | Enabled | Step Pin# | Dir Pin# | Dir Low | Step Lo | Step Port | Dir Port | | |
| X Axis | 4 | 2 | 14 | X | × | 1 | 1 | | |
| Y Axis | 4 | 16 | 3 | × | × | 1 | 1 | | |
| Z Axis | 4 | 7 | 8 | X | × | 1 | 1 | | |
| A Axis | 4 | 6 | 5 | X | × | 1 | 1 | | |
| B Axis | 4 | 4 | 17 | X | × | 1 | 1 | | |
| C Axis | × | 0 | 0 | X | × | 0 | a | | |
| Spindle | * | Ö | 0 | X | × | 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

0

| Encoder/MPG's | | Sp: | indle Setup | Mi | 11 Options |
|----------------|----------------------|------------------|---------------------|-------------|----------------|
| Fort Setup and | 1 Axis Selection | Motor | Uutputs Inj | out Signals | Output Signals |
| Signal | Enabled | Port # | Pin Number | Active Low | ~ |
| Digit Trig | X | 1 | 0 | X | |
| Enablei | 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, 16 | 5, 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



Motor reference set parameters, MACH3 software manual calculation in detail and description

| Lach3 CHC Controller Eile Conf:g Function (fg's Yiew Wizards Operator PlugIn Control Load C Colle MDI Ali? ToolPath Alid Offsets At5 | દિ □ Kelp Alt6 Dagnostics Alt.7 Mil->G15 G80 G17 G10 G20 G90 G91 G51 G19 G99 G61 G97 |
|--|--|
| Cloce File(s) Ecit | R Zero -2.5500 \$cale 1.0000 Y -3.4406 1.0000 \$cale 1.0000 Y -3.4406 1.0000 \$cale 1.0000 Y +0.0000 \$cale 1.0000 \$cale Y +0.0000 \$care \$correct \$correct DFFLIKE GOTO Z To Go Machine \$sort DFFLIKE GOTO Z To Go Machine \$sort |
| File: No File Loaded. | Load Wizards Last Wizard Regen. Display Jog NFS Wizards Cherostation Toolpath Mode Follow |
| Edit G-Code Rewind Ctr1-W Single BLK Alt.N Single BLK Alt.N Feed Hold Close G-Code Spc- Set Next Line Stop Set Next Line Alt-S> Plocd Ctr1-F Run From Here Dwell CV Mode Reset Press Reset Scodes Holds | Tool Information Feed Rate Spindle Speed Tool O change 100 Spindle CW F5 Spindle CW F5 100 Dia. +0.0000 I +0.0000 I +0.0000 FRO 6.00 FRO Spindle CW F5 Spindle CW F5 |
| History Clear Status: ReConfiguration Estop. | Profile: Mach3Mill |

Figure 7

Ok all set, you can open the need to run the G code, as shown in Figure 7 $\,$



Figure 8

| Els Config Function Cfg's View Wizards Operator PlugIn Control | Kelf | |
|---|---|---|
| F60.000000 G0 X0.000000 Y0.000000 Z0 2000000 M3 S60.0000000 G43H5 C0 X0.000000 Y0.0000000 Z0 2000000 G0 X1.179950 Y4.004260 Z0 200000 G1 X1.179950 Y4.004260 Z-0.100000 G1 X1.179950 Y4.004260 Z-0.100000 G1 X1.179950 Y4.004260 Z-0.100000 G1 X1.179950 Y4.004260 Z-0.100000 | Ref Zero -2.5500 scale H Zero -3.4406 +1.0000 H Zero +0.0000 scale H Zero +0.0000 scale H Zero +0.0000 scale H Zero +0.0000 scale Correct H Scale Scale H Zero +0.0000 Scale Correct H Scoft Limits | |
| File: D.Mach3(GCode)roadrunne:.tap | Load Wizards Last Wizard NFS Wizards Correlation | Regen. Display Jog Toolpath Mode Follow |
| Edit G.Code Rewind Ctrl.W Recent File Sindle BLK Alt.N Close G.Cod Reverse Run Load G.Code Block Delete Stop Set Next Line M1 Optiona Stop Flood Ctrl.F Quell CV Mode Reset Set Next Line M1 Optiona Stop Flood Ctrl.F Dwell CV Mode Con/Off Z inplicit | Tool Information Tool 0 Dia. +0.0000 H +0.0000 Auto Tool Zero Remember Return Elapsed);00:00:01 Jeg DNOFF Ctrl-Alt-J | RO % Spincle CW +5 Spincle CW +5 100 Spincle CW +5 100 RPM S-ov Spincle Speed |
| History Clear Status: | Profile: Mach3Mill | |

Figure 9

Open the G code, RESET can be seen flashing red, you can use mouse click the RESET make it stop flashing, then you can press the ring 2 position CYCLESTART run.