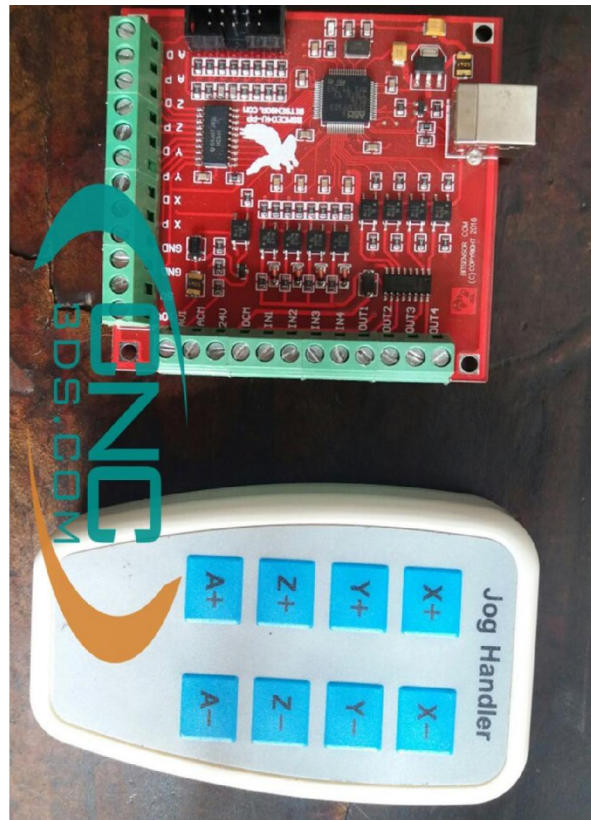


# CNC3DS - Hướng dẫn cài đặt và sử dụng bàn phím mạch mach3 usb

<https://cnc3ds.com/products/bob-mach3-usb>



The following describes each pin:

- ☐ 5V positive, 5V negative: Provides a DC 5V power supply, which can be used to power the handwheel
- ☐ X axis, Y axis, Z axis, A axis: the axis switch connected to the handwheel, used To select the axis to be jogged
- ☐ A and B: encoder outputs A and B connected to the handwheel
- ☐ X10: Enlarge the handwheel speed by 10 times
- ☐ X100: Enlarge the handwheel speed by 100 times

The handwheel interface is compatible with the Weihong system handwheel. Weihong 15-core handwheel is connected to this interface.

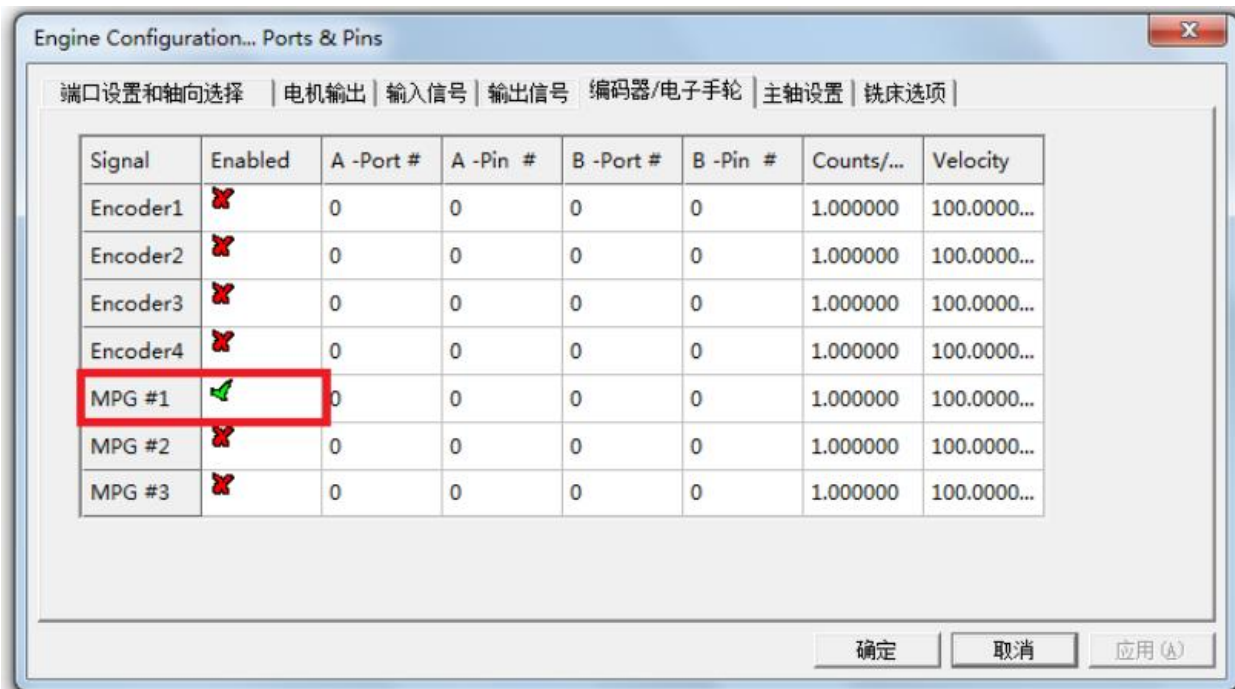
table:



### Mach3's handwheel settings

After connecting the handwheel, it must be set in Mach3 to turn on the handwheel jog function. Set RNR all-round USB motion control card V2.0

Setting method: Select menu [Config], select [Ports/pins (Ports and Pins)], then select [Encoder/MPG"s] page, will [MPG #1]'s [Enable] check. Figure:



Press the [OK] key to save the settings. Press the [Tab] key on the keyboard to call up Mach3. Hand wheel control interface. As shown

# MPG 模式

模式

计算

速度

步/速度

+5 %

单步

多步

刷新

MPG 进给速率

100.00

穿梭模式

步

点动循环模式

1.0000

点动模式

MPG 轴

连续

步

MPG

Alt A

X

A

Y

B

Z

C

Alt B

X

A

Y

B

Z

C

Alt C

X

A

Y

B

Z

C

慢点动速率



100.0 %



按钮点动



Click the [Jog Mode] button to switch the jog mode to [MPG] (Handwheel) Way. Click [Alt A] to switch to the X axis. As shown in FIG. Try gently rotate the handwheel encoder to see if you can control the X-axis movement?

Handwheel interface as an extended signal input

If you do not need to connect the handwheel, you can use the handwheel interface as a signal input. This RNR all-round USB motion control card V2.0

In this case, the signal input has 8 more channels, plus the previous 4 signal inputs IN1..IN4, It has a total of 12 signal inputs. At this time, the pin of the handwheel interface corresponds to the signal input.

The terminals are as follows:

☐ X axis: IN5

☐ Y axis: IN6

☐ Z axis: IN7

☐ A axis: IN8

☐ X10: IN9

☐ X100: IN10

☐ A: IN11

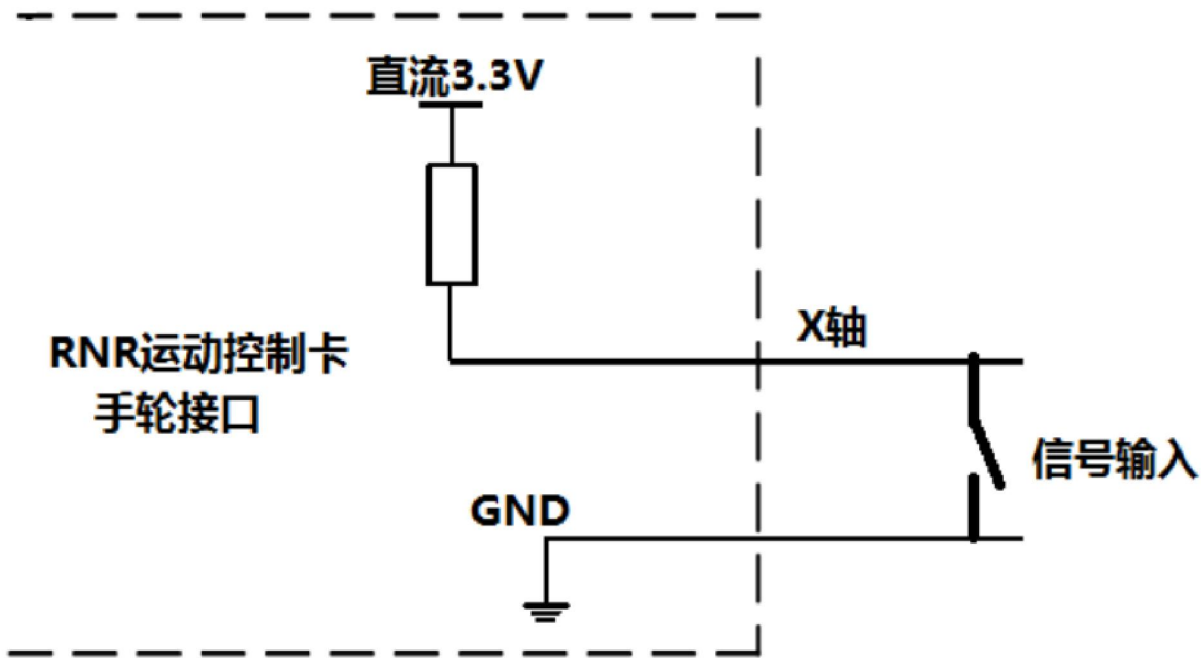
☐ B: IN12

Note: The input terminal corresponding to the handwheel interface IN5..IN12 does not support homing or limit Bit, tool setting and other functions. Can only be used as a general digital input (usually used as a connection)

control panel).

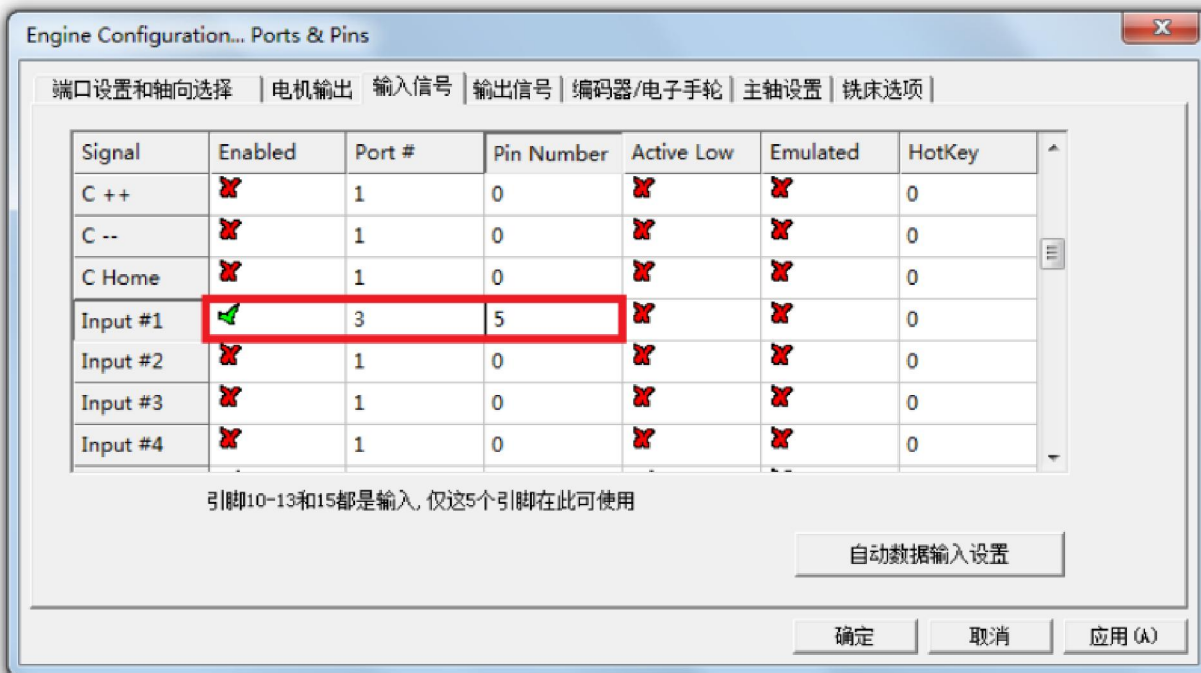
The wiring of the signal input is taken as an example of the X axis. For example, we need to access an input on the X axis.

Into the signal. The internal schematic diagram of the handwheel interface is as follows:



When the signal input switch is closed and shorted to ground, the logic signal "1" is input to the X axis.

We select the Mach3 menu [Config] and select [Port/Pin (Ports) And Pins]], then select the [Input Signals] page, as shown below:



Drag the scroll bar to find the line whose [Signal] is [Input #1]. Will [Enable] Check to change [Port#] to "3" and [Pin Number] to "5".

Mach3's input signal [Input #1] corresponds to the input of the handwheel X-axis. Select to check RNR versatile USB motion control card V2.0

See Mach3's Diagnostics page. When closing the switch connected to the X axis, You will see the [Input 1] display turns green:

The screenshot displays the Mach3 diagnostic interface. At the top, a tab labeled '诊断' (Diagnostics) is active, showing the coordinate system 'Mill->G15 G1 G17 G40 G20 G90 G94 G54 G49 G99 G61 G97'. Below this, a table lists offset values for workpiece, general, and tool offsets, all showing '+0.0000'. The main section, titled '输入信号现状' (Input Signal Status), contains a grid of indicators for various machine signals. The '输入 1' (Input 1) indicator is highlighted with a red box and is currently green, indicating it is active. Other indicators include '点动 X+', '点动 Y+', '点动 Z+', '点动 A+', 'M1++极限', 'M1--极限', 'M1返回', etc. To the left of the input status, there are numerical displays for 'u-J' (showing a green bar), '+5', and '+1.0000'. At the bottom, the '输出信号现状' (Output Signal Status) section is partially visible.

工件偏移量	偏移量	刀具偏移量
+0.0000	+0.0000	+0.0000
+0.0000	+0.0000	
+0.0000	+0.0000	+0.0000
+0.0000	+0.0000	

### 输入信号现状

<input type="checkbox"/> 点动 X+	<input type="checkbox"/> 点动 Y+	<input type="checkbox"/> 点动 Z+	<input type="checkbox"/> 点动 A+
<input type="checkbox"/> 点动 X-	<input type="checkbox"/> 点动 Y-	<input type="checkbox"/> 点动 Z-	<input type="checkbox"/> 点动 A-
<input checked="" type="checkbox"/> 输入 1	<input type="checkbox"/> M1++极限	<input type="checkbox"/> M1--极限	<input type="checkbox"/> M1返回
<input type="checkbox"/> 输入 2	<input type="checkbox"/> M2++极限	<input type="checkbox"/> M2--极限	<input type="checkbox"/> M2返回
<input type="checkbox"/> 输入 3	<input type="checkbox"/> M3++极限	<input type="checkbox"/> M3--极限	<input type="checkbox"/> M3返回
<input type="checkbox"/> 输入 4	<input type="checkbox"/> M4++极限	<input type="checkbox"/> M4--极限	<input type="checkbox"/> M4返回
<input type="checkbox"/> 数字化	<input type="checkbox"/> M5++极限	<input type="checkbox"/> M5--极限	<input type="checkbox"/> M5返回
<input type="checkbox"/> 索引	<input type="checkbox"/> M6++极限	<input type="checkbox"/> M6--极限	<input type="checkbox"/> M6返回
<input type="checkbox"/> 解除限位	<input type="checkbox"/> 火焰切割开	<input type="checkbox"/> 火焰切割上升	<input type="checkbox"/> 火焰切割降
<input type="checkbox"/> 紧急状态			

### 输出信号现状