# Quick start configuration for Mach3 software

## **Step 1: Parallel Port information**

Before start to use your 3 or 4 axis driver board, you must know what kind of parallel port and address your PC has, if this is on board or if you are using a PCMCIA card.

The PC parallel port address is important in Mach3 in order to know where is the Parallel Port, if your have a PC Desktop the Parallel Port is integrated in the CPU, probably the address is **378h** (0x378).

For PCMCIA card or another kind of Parallel Port you can follow these steps in order to get the Parallel Port address.



Choose the **Hardware** label of the **System Properties** window, then, click on **Device Manager** Button.



Click on **Ports (COM & LPT)**, here you can see all the ports your PC has. Then, double click on your LPT parallel port for settings.



Choose the **Port Settings** label of the **Properties of Parallel Port** window, here you can assign the port number, **LPT1** in this case.

| General Configuración de puerto Controlador Detalles Recursos   | General Configuración de   |
|---|--|
| Método de filtrado de recursos<br>C Intentar no utilizar una interrupción<br>No utilizar nunca una interrupción<br>Usar cualquier interrupción asignada al puerto<br>Habitar detección de Bica and Play herredado<br>Número de puerto LPT: LPT1 | Configuración de recurso<br>Tipo de recurso<br>Hervalo de E/S<br>Hervalo de E/S<br>Hervalo de E/S<br>Configuración<br>Basada en: |
|   | Lista de dispositivos en co  |
|   | No hay conflictos.   |

Choose the **Resources** label of the **Properties** of **Parallel Port (Windows XP) (LPT1)** window; here you can see which is the address of the Parallel Port.

| •       |
|---------|
| ¥       |
| uración |
|         |
| *       |
|         |
|         |
| Ψ.      |
|         |

NOTE: Keep this number for the configuration in Mach3 software.

#### **Step 2: Parallel Port configuration**

Once you have installed the Mach3 software follow these steps for begin to use your stepper motor 3 or 4 axis drive.

Run Mach3 Software, click on **Mach3Mill** or **Mach3Turn** it depends of your job, click on **OK**.



Click on **Config** menu, then, select **Ports and Pins** and click it, the following window will appear.



In **Port Setup and Axis Selection** label, you can enable/disable the Parallel Port 1 or 2; also you can assign their address respectly.



|         | - |   |     |   | * |   |   |
|---------|---|---|-----|---|---|---|---|
| (Axis   |   | 2 | 3   |   | - | 1 | 1 |
| / Axis  | 4 | 4 | 5   | * | * | 1 | 1 |
| Z Axis  | 4 | 6 | 7 🔺 |   | × | 1 | 1 |
| A Axis  | 4 | 8 | 9   | X | X | 1 | 1 |
| Axis    | X | 0 | 0   | X | × | 0 | 0 |
| C Axis  | * | 0 | 0   | X | × | o | 0 |
| Spindle | X | 0 | o   | × | X | o | 0 |
|         |   |   |     |   |   |   |   |
|         |   |   |     |   |   |   |   |

When you have finished click – on **OK**.

In Motor Outputs label, you can enable how many axes do you want, match Step and Dir pin number and assign them to the port number that you want.

## **Step 3: Motor Tuning**

| 🐇 Mach3 CNC Controller  | Click on <b>Config</b> menu, then, select   |
|---|---|
| File Config Function Cfg's View Wizards Operator PlugIn Control Help  | Motor Tuning and click it the   |
| Pri Select Native Units Alt2 ToolDath Alt4 Officate Alt5 Soft   | following window will oppose  |
| Ports and Pins Anz ToorPath Ant Onservice Ser   | tonowing window will appear.  |
| General Config<br>System Hotkeys<br>Homing/Limits<br>ToolPath<br>Slave Axis<br>Backlash<br>Fixtures<br>ToolTable  |   |
| Config Plugins  |   |
| Spindle Pulleys.  |   |
| Sate_Z Setup  |   |
| save settings   | We strongly suggest the following   |
| Motor Tuning and Setup  | values per axis:  |
| X - AXIS MOTOR MOVEMENT PROFILE         468.75       421.875         94       421.875         93       328.125         94       221.25         92       234.375         91       187.5         46.875       0         0       0.05       0.1       0.15       0.2       0.25       0.3       0.35       0.4         Velocity         Acceleration         Steps per         In's or mm's per min.         90       120       90       1233117 | <ul> <li>Velocity = 120 [units/min]</li> <li>Acceleration = 90 [units/sec<sup>2</sup>]</li> <li>Steps per unit = 400</li> <li>Step Pulse = 1 [µsec]</li> <li>Direction Pulse = 0 [µsec]</li> <li>Select the first axis, type the suggested values, click on SAVE</li> <li>AXIS TUNING button, do the same for the entire enabled axis.</li> <li>Once you have finished, click on</li> </ul> |

### Step 4: How to move your motor (System Hotkeys)

Click on **Config** menu, then, select **System Hotkeys** and click it, the following window will appear.



Click on the ++ or -- buttons for each enabled axis and press the key on your keyboard that you want to do this movement, i.e. click on X++ and press left arrow key , it moves axis X to left side. Click on **OK** when you've finished. /

| log Hotkeus                      |              |      |    |  |
|----------------------------------|--------------|------|----|--|
| ScanCode ScanCode                | Ingger # OEM | Code |    |  |
| 37 39                            | 1 -1         | 8    | -1 |  |
| Y++ 38 Y- 40                     | 2 -1         | 9    | -1 |  |
|                                  | 3 -1         | 10   | -1 |  |
| <u>Z++</u> 33 <u>Z-</u> 34       | 4 -1         | - 11 | -1 |  |
| A/U++ 189 A/U 226                | 5 .1         | 12   | -1 |  |
| P./1/                            | 6 -1         | 13   | -1 |  |
| <u> </u>                         | 7 -1         | - 14 | -1 |  |
| <u>C/W++ </u> 999 <u>C/W</u> 999 |              | 15   | -1 |  |
|                                  | 1            |      |    |  |
| System Hotkeys                   |              |      |    |  |
| ScanCode                         | ScanCode     |      |    |  |
| DRO Select 999 Code List         | 999          |      |    |  |
| MDI Select 999                   |              |      |    |  |
|                                  |              |      |    |  |

In the main screen you will find many features that you can use to run your program, whatever you prefer to use you can type the keyboard keys, configured previously, to move your axes.



## DON'T FORGET TO PLUG YOUR DRIVE BOARD TO YOUR PARALLEL PORT AND PLUG THE POWER SUPPLY TO THE DRIVER BOARD **BEFORE** RUN MACH3 SOFTWARE