

## Joy Stick Screen set example project:

The purpose of this project shows users some of the cool customization that can be done with Mach4. This example touches on all parts of Mach4 design: Screens, wxLua, Plugins, and configuration. The specific goal is to have bitmaps that represent the different directions that a “Joy Stick” can be positioned in, to include the center position. Brett “ChaoticOne” is the guy who came up with the idea to do something like this.

For it to work two plugins had to be modified, the “mcKeyboard” and “sim” plugins. Brian was kind enough to allow me to modify his work. NOTE: works with version 2038 as of this writing.

**NOTE:** to cut down on any possibility of plugin name confusion:

- The “mcKeyboard” has been renamed to “M4KeyMapper”.
- The “sim” plugin has been renamed to “VirtualMotion”.

### What was modified?

- On the “**mcKeyboard**” plugin, the only thing I added was the ability to map any key to one of the 64 input signals, plus the name change to “**M4KeyMapper**”.
- On the “**sim**” plugin, only ONE more Input was added and that was Input4, plus renamed to “**VirtualMotion**”.

Input0 belongs to the “Heartbeat” of the sim plugin, and for this example Inputs 1-4 will be mapped to the 4 directions of the “arrow” keys on the keyboard.

### What was NOT modified?

- The “Newfangled” credit is listed for the plugin when you pull up the plugins configurator. This is Brian’s work; I just stood on his shoulders to make a **VERY minor** tweaks.

### Summary of how it works:

The M4KeyMapper in this case, maps one of the arrow keys to an OEM input signal. Left Arrow to Input1, Right Arrow to Input2, Up Arrow to Input3, Down Arrow to Input4. In the “JoyStick” screen set, in the “Operations Tabs” there is a Tab called “JoyStick”. In that tab there is a “LuaPanel” (not the script that writes to it, has set its background color to the same as the tab-panel, so you don’t see that ugly brown color, further, the 3D sunken boarder has also been removed, so basically the “LuaPanel” is invisible in both the screen designer and the runtime. NOTE: The code in the LuaPanel is also for PANEL display ONLY!!! It will not run (as is) in a wxFrame since it was not designed to.

The JoyStick tab panel has three things on it, the: luapanel (upper left), the “DebugTB” which is a static label that shows what input is ON, for the change in the Bitmap picture. There is also a “Clear” button, this will clear any messages that get left in the static label. NOTE: If you port this code to something.... MAKE SURE you make this static label in your screen, or modify the luapanel code to delete it, otherwise you will get an error, since the script is looking to write to it.

### The wxLua code:

The wxLua code that is in the luapanel has a “Timer” in it, that “Polls” at a rate of 1/5<sup>th</sup> of a second (200ms). It watches for inputs 1-4 to go active, and it “Paints” the correct bitmap for that input into the wxLua panel. NOTE: I have NOT used double buffering for the DC, so there is some flicker, if you want it “flicker-less”, I leave that mod to you. If you do make one to it, please post your mod here so others may learn.

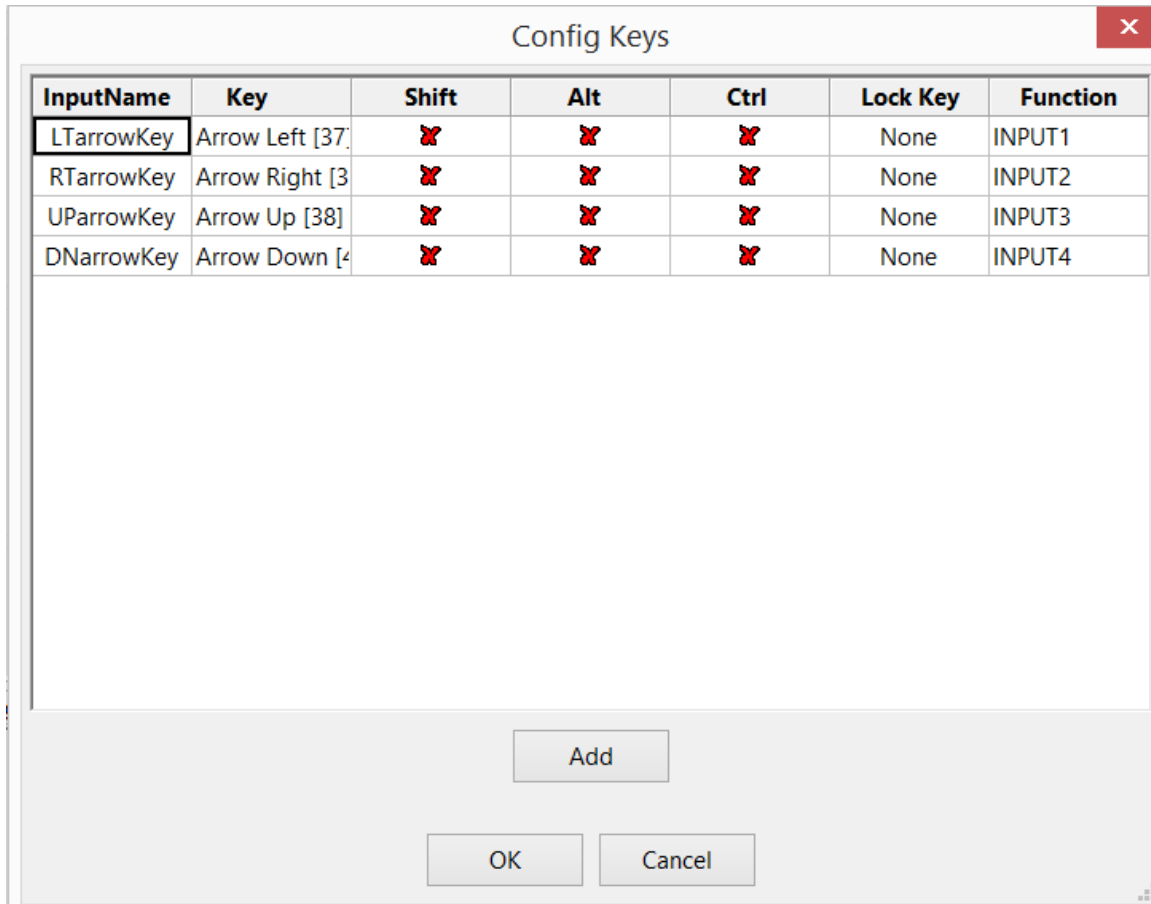
### What comes in the zip and where to put it.

- The Screen set: “wxMachJoyStick.set” and it goes into: C:\Mach4Hobby\Screens\
- The Profile(folder): “JoyStick” and it goes into: C:\Mach4Hobby\Profiles\
- The Resources(folder): “JoyStickResources” and it goes into: C:\Mach4Hobby\Wizards\  
This folder has the “JoyStick” position bitmaps in it, you will need to keep it in the path above! If you move this folder, or rename it, you will need to change its “Path/Name” in the luapanel code!!
- The “M4KeyMapper.m4pw” and “M4KeyMapper.sig” plugin goes into: C:\Mach4Hobby\Plugins\
- The “VirtualMotion.m4pw” and “VirtualMotion.sig” plugin goes into: C:\Mach4Hobby\Plugins\
- This document.

### How to set it up:

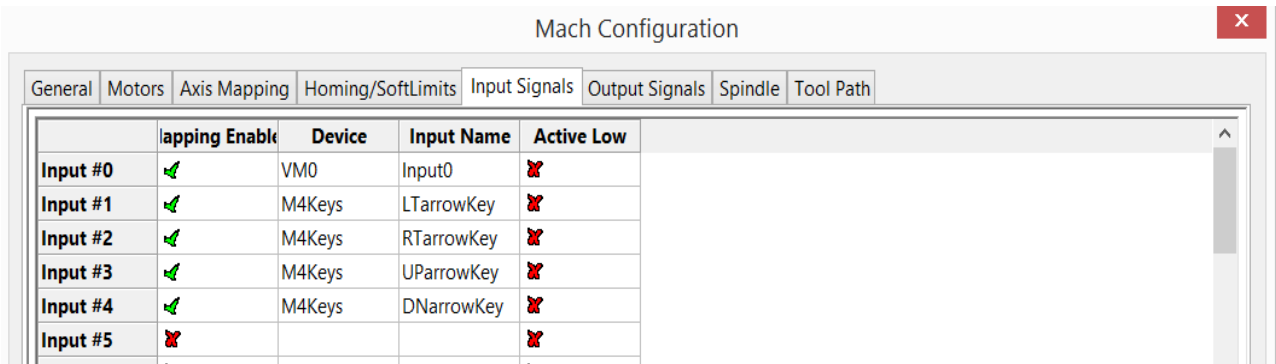
**NOTE!!!: If you are using the “JoyStick” Mach4 profile, then all the following configuration should be done for you, if not, the next few steps are what things should look like to work!!! The “Motion Control” is called “Virtual Motion”. (VM0)**

1. After you copy and paste all of the above to its appropriate place, open up Mach4 (the JoyStick profile).
2. In the config plugins, disable the “sim” and “mcKeyboard” plugins, and enable the “M4KeyMapper” and “VirtualMotion” plugins. Close and reopen Mach4. If the Configure Motion control dialog comes up choose “Virtual Motion” for your motion device.
3. Go back to the config plugins, and press the config plugin button for “M4KeyMapper”.



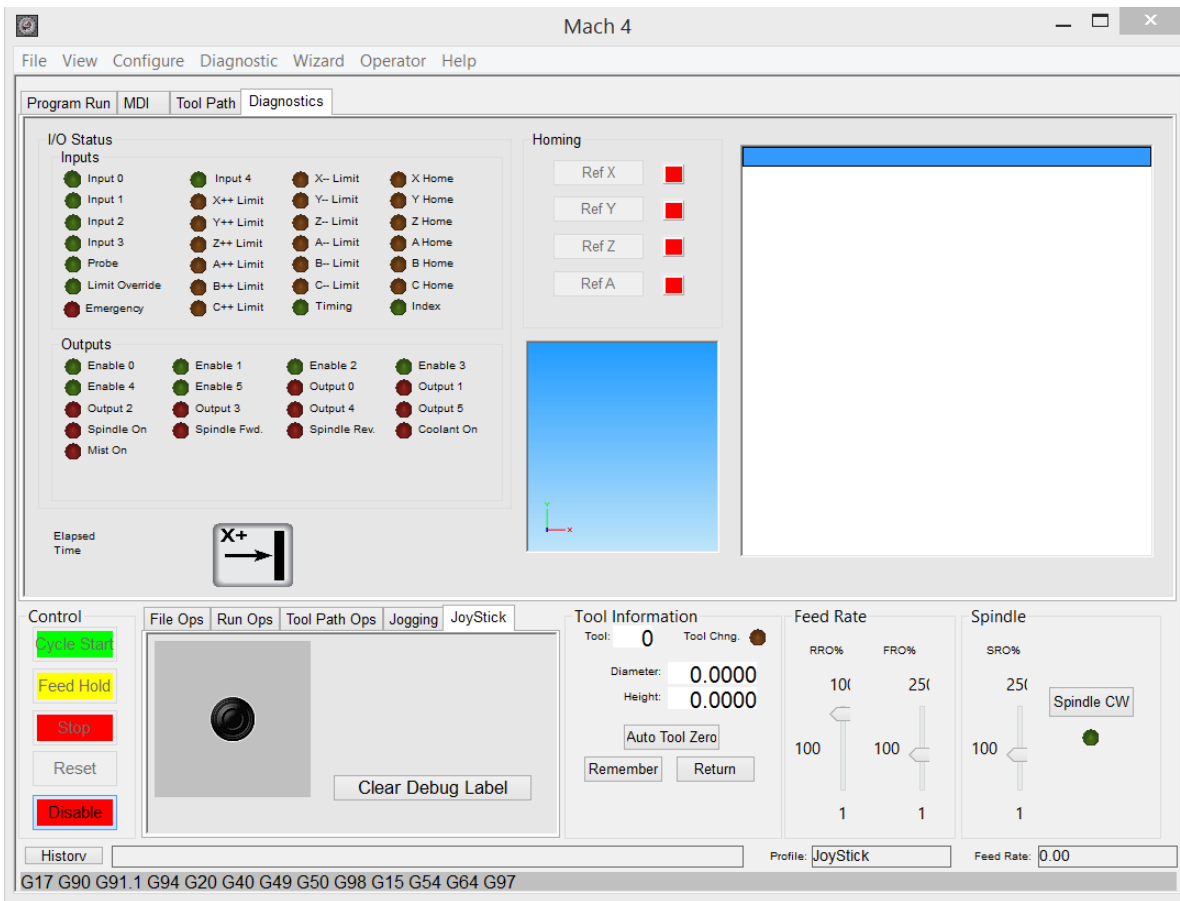
4. Ok all the way back out, then CLOSE and RE-OPEN the JoyStick Profile!!!

5. Now you will need to map your Keys(M4Keys) to the Signals in Mach4.



6. Apply your choices, and close and reopen Mach4.

7. When it comes back up go to the diagnostics page.



8. Here the Input0 LED should be blinking in the heartbeat that represents your Motion control is alive.

9. Now, if you push the an arrow key, you will see the INPUT that was mapped to it turn ON, also the JoyStick Bitmap will change from center position to which ever direction of the Arrow you pushed. You will also see BELOW the joystick bitmap, the status label will tell you which INPUT is ON.

Other notes: Please put your comments on the forum for this thread. I cannot release the plugin(s) source, if you want to mod or make plugins you will need to get with “Todd” at ArtSoft and get on the developers list.

Enjoy, Scott “Poppa Bear” Shafer