jmStepperAxis GUI Module

This is a graphical user interface for jmCLIG firmware module jmStepperAxis.c

The firmware module must be compiled and loaded into the chip before using the graphical user interface.

The firmware can be used with a standard communication application, like HyperTerminal, but jmStepperAxis is more user friendly and limit access only to pins on MBED prototyping board (DIP5 to DIP30).

This module can start up to 4 different processes for controlling stepper axis.

A Stepper Axis module is a stepper module with two limit switch modules and associated logic to stop the stepper at the end of its course.
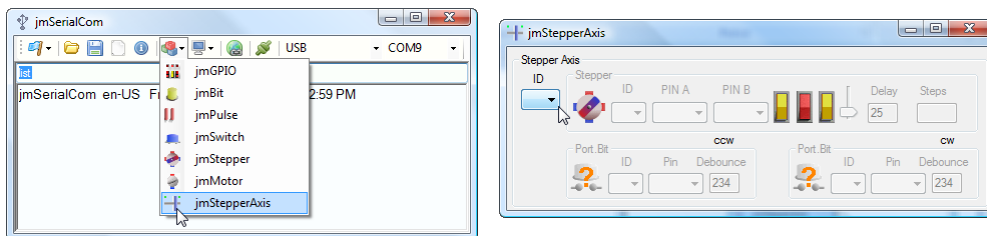
This module is a good example on how to use available modules to build other modules.

This module links three modules together and adds logic to make a another module.

Refer to jmStepper and jmSwitch modules to get more information on security precautions before using this module.

Start jmStepperAxis GUI Module from jmSerialCom

How to

Select ID, once ID is selected, a message is sent to the chip to get a report on that jmStepperAxis ID.

If the process is not initialized, a green button will appear, you have to make your choices on the stepper ID and pins and switches IDs and pins. Refer to jmStepper and jmSwitch documentation on how to set those parameters. If the process is already initialized, a red button

will appear and messages will be send to the chip to get reports on stepper and switches, the graphical interface will be updated with values contained in those reports. You can watch those reports in the text zone of jmSerialCom. By hitting the red button, you can modify the existing process. The red color is used to indicate that you will override previous settings.

Initialized Process

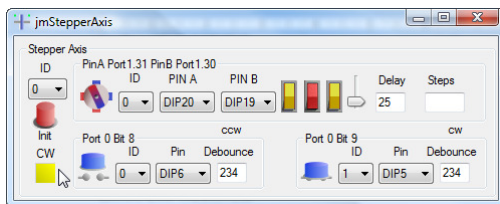After initializing a process, a LED will appear under Init button.

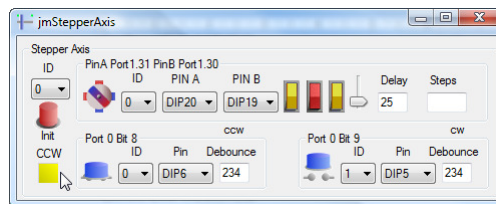A green LED means the stepper can step in both directions.
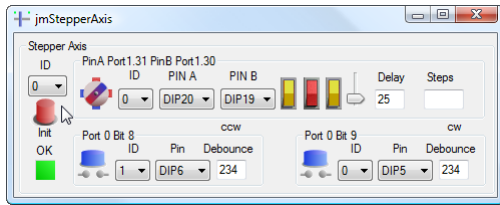
A flashing yellow LED indicates that the stepper or something has bumped into a limit switch.

The concerned switch name is written above the LED. You can also see the closed switch in the switch graphical control.

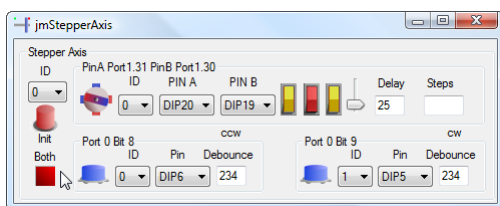Limit CW Reached   Limit CCW Reached

Both Limits Reached, should not happen, but it is detected.

A flashing red LED indicates a problem with one or both switches.

Normally the stepper can't bump into both switches. Something is wrong, check the wiring, the switches and for any objects that could have activated the switches.

🎜 Using two jmStepperAxis modules and one jmPulse module, I was able to build a 2D scanner for an laser/ultrasonic test bench. The two stepper axis provided a way to scan programmable areas of a surface and the pulse module was used to trigger the power laser. So only another logic module was necessary to link these modules.

High power laser pulses generate ultrasound waves in materials, by analysing emitted sound waves, we can detect defects in materials. As I have a non disclosure agreement on this, so, I can't write more, but check the code for jmStepperAxis firmware, the pattern is similar.