

The PC58_TOOL User Guide.

Introductions

The pc58_tool is a GUI to the Oregon Micro Systems, Inc PC58 Intelligent Motor Controller. This is ISA based peripheral with the following features:

- Up to eight axes of servo or stepper control. (Spex is configured for 8 stepper axes).
- Compatible command set with the pc38 and other OMS products.

This application displays the status of the PC58 board and provides widgets to allow communication to the controller.

Starting Application

These tools are installed on the IRTF bigdog and guidedog computers. To start the program, just type the command 'pc58_tool'. To export the display to another X server, don't forget xhost (for displaying remote clients) and setting you DISPLAY environment.

Here is an example for remotely displaying to myhost:

```
myhost% xhost +
myhost% rlogin bigdog
bigdog% setenv DISPLAY myhost:0.0
bigdog% pc58_tool
```

The following should appear on your



Figure 1 – pc58_tool

Display formats

There are 4 status display formats: Configuration, Axis Information, Help Screen, About
Use the tabs under the status display to select the format.

The **Configuration** format displays status information from both the pc58 hardware register and application variables. Review the pc58 manual for detailed descriptions. See figure 1 for examples screen.

The **Axis Information** format detailed parameter setting for a particular axis.

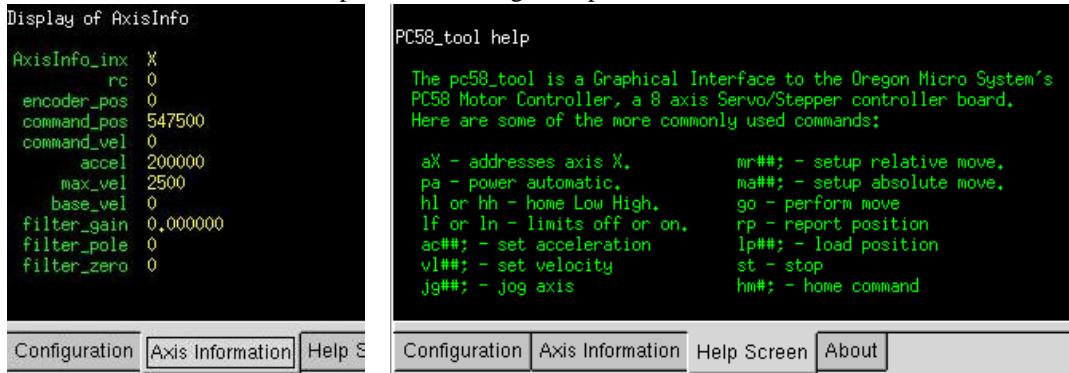


Figure 2 – Axis Information and Help Screen

The **Help Screen** list the syntax of some commonly used pc58 commands.

The **About** gives links to the IRTF home page where you can obtain more information.

Parameters Window

The parameters window provides widgets board and application control



Figure 3 – Parameters Window

Text typed into the **Puts** text entry widget as set to the board as PC58 commands.

The **AxisInfo** menu selects the axis detailed in the Axis Information status display.

The **Interval (ms)**: text entry set the sampling rate to the host computer with the PC58.

The **ClrSlip**, **ClrDone**, **ClrLim**, and **ClrHome** buttons issue the command to clear various status bits in the PC58 hardware. The text entry widget next to these buttons provides the hex mask to identify the bits to be cleared.

The **Quit** button exits the application.

Feedback Area

The feedback widget is a text window used to display the commands and return codes processed by the program. Also any user message are printed in this area.

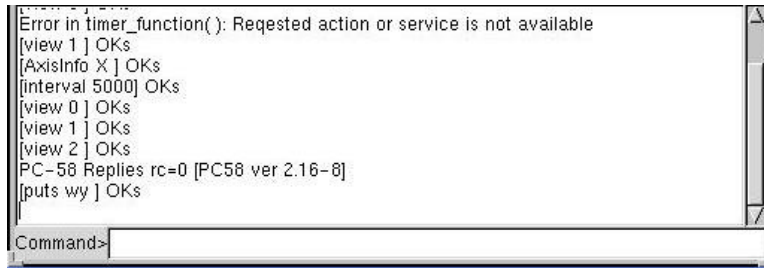
A screenshot of a feedback area window. The window contains a list of command execution results: 'Error in timer_function(): Requested action or service is not available', '[view 1] OKs', '[AxisInfo X] OKs', '[interval 5000] OKs', '[view 0] OKs', '[view 1] OKs', '[view 2] OKs', 'PC-58 Replies rc=0 [PC58 ver 2.16-8]', and '[puts wy] OKs'. At the bottom of the window, there is a 'Command>' prompt with a cursor.

Figure 4 – Feedback Area

The **Command** entry widget allows you to type in any valid ad16 command.

Command Syntax

This section describes the command set of the pc58_tool application.

AxisInfo – Identifies the axis for the Axis Information status display.

Prompt Axis Info option menu
Range N/A
Initial N/A
Syntax `AxisInfo {X|Y|Z|T|U|V|R|S|off}`

ClearSlip – Clears the bits in the slip status register.

Prompt ClrSlip button & text entry.
Range bits is a hex mask identifying the bits to be cleared, i.e.: 0x01 specifies the X axis.
Syntax `ClearSlip bits`

ClearDone – Clears the bits in the done status register.

Prompt ClrDone button & text entry.
Range bits is a hex mask identifying the bits to be cleared, i.e.: 0x01 specifies the X axis.
Syntax `ClearDone bits`

ClearLimit – Clears the bits in the limit over-travel status register.

Prompt ClrLim button & text entry.
Range bits is a hex mask identifying the bits to be cleared, i.e.: 0x01 specifies the X axis.
Syntax `ClearLimit bits`

ClearHome – Clears the bits in the home status register.

Prompt ClrHome button & text entry.

Range bits is a hex mask identifying the bits to be cleared, i.e.: 0x01 specifies the X axis.

Syntax ClearHome *bits*

Interval – Set the sampling interval in msec the GUI uses to query status.

Prompt Interval (ms):

Range 200 to 10000 msec (or 0.2 to 10 seconds).

Syntax Interval *msec*

Puts – Sends a command string to the PC58. Any replies are printed in the feedback text widget.

Prompt Puts:

Range Any valid PC58 command.

Syntax Puts *string*

Quit – Exits the application.

Prompt Quit button

Syntax Quit

View – Sets the format for the status display

Prompt Tab widget under status window.

Range The index can be 0 to 3.

0 – Configuration

1 – Axis information

2 – Help Screen

3 - About

Syntax View *index*

Development

This application was developed for the NASA IRTF (<http://irtf.ifa.hawaii.edu>) for the Spex project (<http://irtf.ifa.hawaii.edu/spex>).

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