The SM3410_TOOL User Guide.

Introductions

The sm3410_tool is a GUI which communicates to a RPC server for the sm3410 Smart Motor. The sm3410 is a serial motor/controller from the <Vendor>.
The Spex littledog computer has two sm3410 motors attached to its serial ports. This program allows you to directly communication to these motors. For Littledog, the following configuration is used:

Sm3410Index 0 is /dev/ttyC0 ->smartMotor ->rotator mechanism.
Sm3410Index 1 is /dev/ttyC1 ->smartMotor ->grating mechanism.

Starting Application

These tools are installed on the IRTF bigdog and guidedog computers. To start the program, just type the command 'sm3410_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% sm3410_tool
```

The following should appear on your screen:

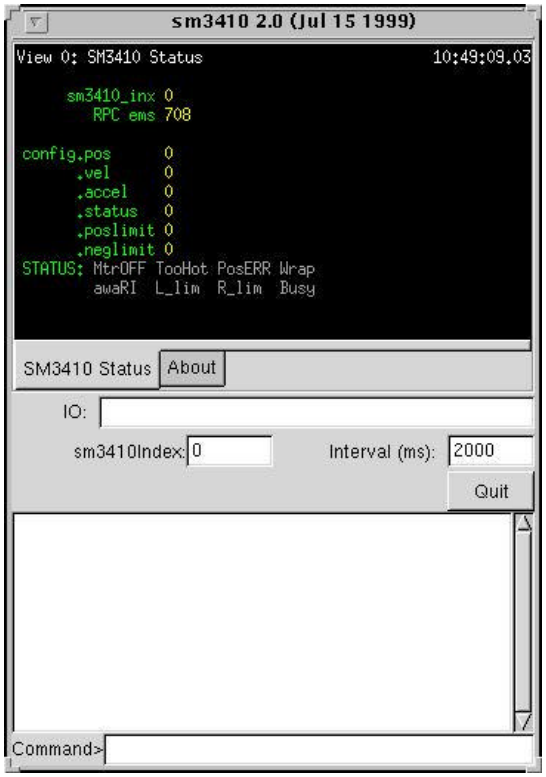

Figure 1 – sm3410_tool

Display formats

There are 2 status display formats: SM3410 Status and Application Variables.

Use the tabs under the status display to select the format.

The **SM3410 Status** format displays status information from both the sm3410 hardware and application variables. Review the sm3410 manual for detailed descriptions. See figure 1 for examples screen.
The **About** give 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

Type text into the **IO** text entry widget to send command directly to the sm3410 motor.
The **sm3410Index** selects the motor to communication to.
The **Interval (ms):** text entry set the sampling rate to the host computer with the sm3410.
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 messages are printed in this area.

Figure 4 – Feedback Area

The **Command** entry widget allows you to type in any valid sm3410_tool command.

Command Syntax

This section describes the command set of the sm3410_tool application.

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

Prompt	IO:
Range	Any valid sm3410 command.
Syntax	`IO` *`string`*

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`*

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 1. 0 – sm3410 status 1 – About
Syntax	`view` *`index`*

Sm3410Index – The index identifies the sm3410 to communication with.

Prompt	sm3410Index:
Range	For Spex's Littledog computer 0 – Spex Rotator's sm3410 1 – Spex Grating's sm3410
Syntax	`sm3410` *`index`*

SM3410 Commands

These are examples of sm3410 commands. Consult the sm3410 manual for details.

MP A## V## D## G – Puts the motor in position mode specifying the acceleration, velocity, and destination.
MV A## V## G – Put the motor in velocity mode specifying acceleration and velocity.
O## – Set the motor position using the origin command.
S – the stop command.
RP – report position query.

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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