CRTouch GUI User Guide

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1 Introduction

This GUI application is to be used with the CRTouch device. The GUI configures and demonstrates CRTouch capabilities, such as rotate, pinch, and slide gesture recognition. The GUI uses the serial port to communicate with the CRTouch device. It has three tabs, one for settings, another for gesture demonstration, and the last is a mouse emulation, which shows one of the applications that can be achieved with the CRTouch device.

2 Serial Port Communication

The serial port settings are:

- baud rate — 115200
- data bits — 8
- stop bits — 1
- parity — odd
- flow control — none

This GUI will try to communicate with the CRTouch device, always using the above configuration. The serial port number can be selected from a drop down box on the settings tab. If for any reason the baud rate configured on the CRTouch device does not match the GUI's baud rate, a baud rate auto detection mechanism starts. The GUI asks you to enter the CRTouch device into a baud rate auto detection mode. See the data sheet titled *CR Touch Data Sheet Capacitive and*

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Resistive Touch Sensing Application Specific IC (document number CRTOUCHDS) for more information about the baud rate auto detection mechanism. Click the interrogation icon on the top right corner of the GUI to open the CRTouch datasheet.

3 Settings Tab

This tab allows you to customize the CRTouch for different applications and different hardware. Figure 1 shows, this tab allows readings to know the current CRTouch device configuration, and writings to customize the performance of the device.
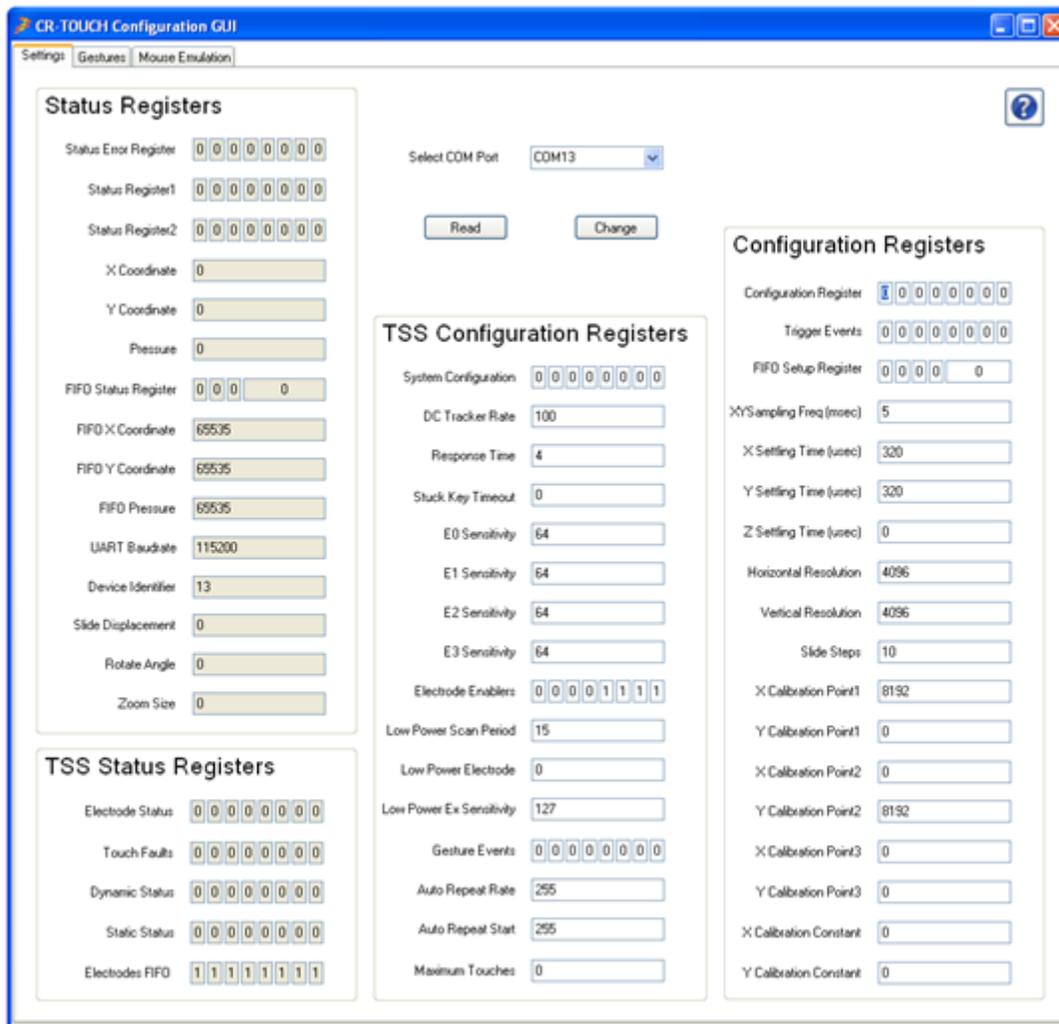

Figure 1. Customization tab

One or several registers can be modified at the same time. To modify a register, change the value shown on the register field and click on the change button. A pop up window appears if an error arises while a reading or writing is in progress. This window indicates the register name that causes the error and also the cause of the error. See Figure 2.
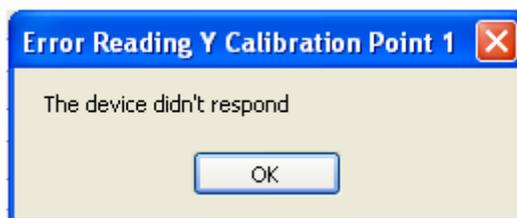
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Figure 2. Error reporting

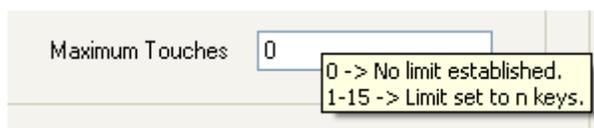A help description of each field is shown by placing the cursor over the field. See Figure 3.

Figure 3. Help description

Many registers are bit fields and each bit can be modified by clicking on it. Each click toggles the bit from 0 to 1 and from 1 to 0. See Figure 4.

Figure 4. Bit fields

The remaining registers that are not bit fields must be written with the desired value by typing a decimal value. If the fields are empty, the value is out of range, or it is not in decimal format, an error icon next to the text box appears indicating the cause of the error. See Figure 5.

Figure 5. Error description icon

There are read only registers and they are colored in brown. Also there are bit fields marked as N/A, these bit fields can not be modified and they are read always as 0. See the CRTouch datasheet for more information about the registers memory map. Click the interrogation icon on the top right corner of the GUI to open the CRTouch datasheet.

4 CRTouch Calibration

The CRTouch device can be calibrated by setting the bit6 on the Trigger Events register. If this bit is set and the change button is pressed, the GUI will then show a pop up window showing the point of the touch screen that must be touched. After the point is touched and released the GUI shows the next point where the user must touch. The pop up window disappears after the calibration process ends.
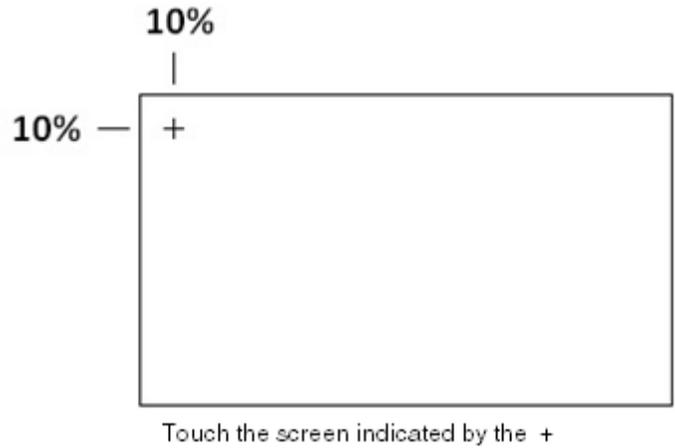
Figure 6. Calibration points

5 Gestures Tab

This tab demonstrates clock wise, counter clock wise rotation, zoom in, zoom out, vertical, and horizontal slide gestures if they are configured on the settings tab. Press the start button to begin the gesture demonstration. The GUI will send reading requests over the UART port as fast as possible until the stop button is pressed. Press the stop button to end the demonstration and to stop the communication with the CRTouch device. It is important to mention, the slide gesture takes effect only when the image size is bigger than the original size. See the CRTouch datasheet for more information on how to do a gesture over the touch screen. Click the interrogation icon on the top right corner of the GUI to open the CRTouch datasheet.
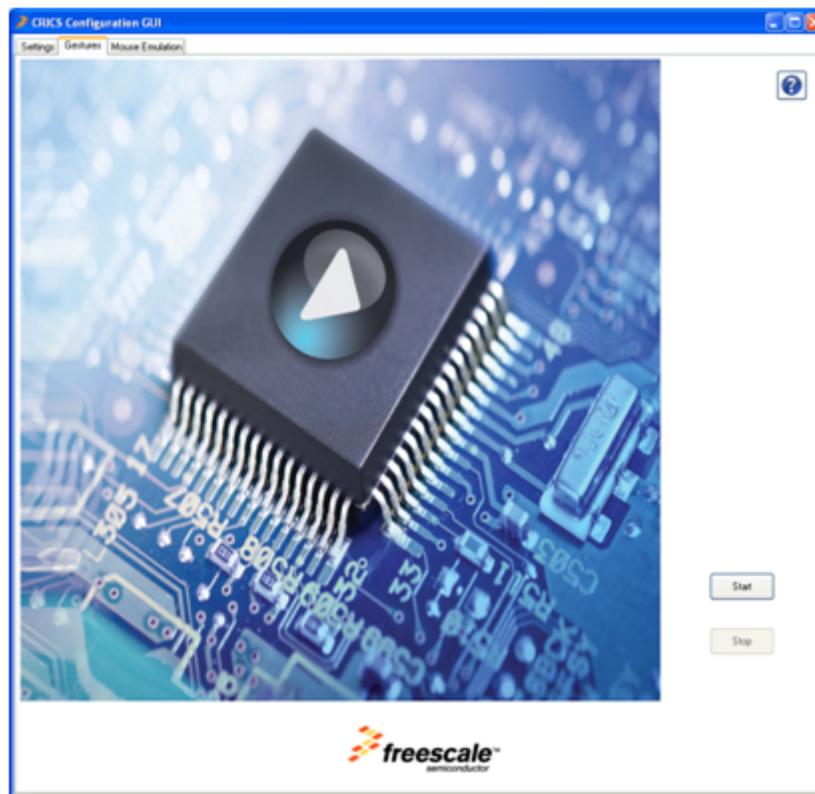
Figure 7. Gesture demonstration tab

6 Mouse Emulation tab

This tab shows how the CRTouch device can be configured as a mouse pad.

Check the refresh registers check box to refresh the status register fields periodically. This option can be disabled to improve the mouse pointer detection.

Figure 8. Refresh registers check box

This tab also allows configuring the touch pad with relative or absolute coordinates. Check the relative position check box if the touch pad is not mounted over a display. X mouse coordinate and Y mouse coordinate fields shown in Figure 8 are the current mouse pointer position.

Figure 9. Mouse pointer coordinates
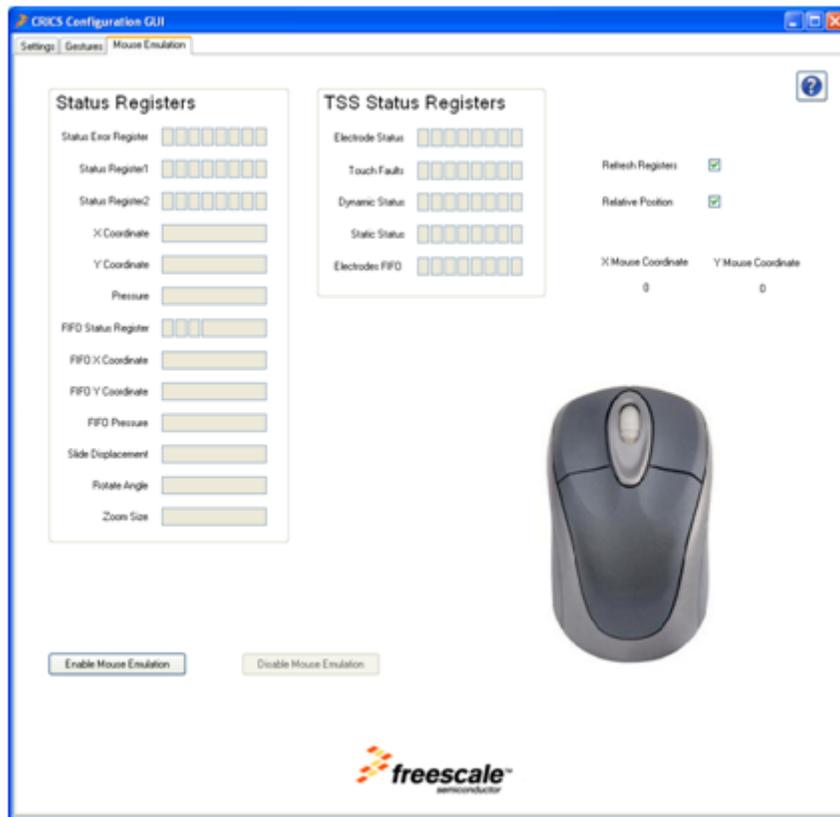
Figure 10. Mouse emulation tab

The slide gesture can be configured to scroll up or scroll down. The capacitive electrode 0 and electrode 1 can also be configured as keypad to perform a left click and right click, respectively. After the enable mouse emulation button is pressed the computer mouse is inhibited and the mouse pointer must be moved through the touch pad. Move the mouse pointer over the disable mouse emulation button and press left click to end the mouse emulation mode. Another way to do this is pressing and holding the reset button on the CRTouch evaluation board and using the computer mouse to left click on the disable mouse emulation button.

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7 Reference

http://www.freescale.com/CRTOUCH

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