



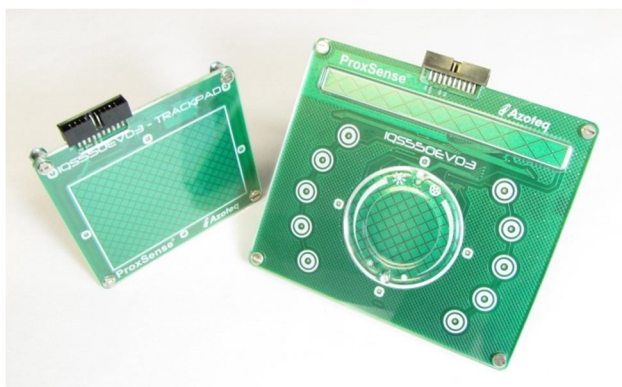
IQS550EV03 Evaluation Kit User Guide

1 Introduction

This user guide describes the operation of the IQS550EV03 Evaluation Kit. The EV-Kit is manufactured in two parts, consisting of a touchpad module, and a module demonstrating a wheel and slider configuration. Each board is interfaced to any personal computer with the Azoteq Configuration Tool (CT120/210/220) or DS100 Data Streamer, and the IQS550EV03 Graphical User Interface (GUI). The purpose of the IQS550EV03 EV-Kit is to facilitate application and development engineers in evaluating the IQS550 proximity and touch sensor, in multichannel applications.

A digital copy of this user guide is available for download at: <http://www.azoteq.com> under:

Design-> Evaluation Kits-> IQS550EV03



2 IQS550 EV-Kit Controller Board

The IQS550 Controller Module is located on the bottom layer of each EV-Kit board. The controller module measures 20 mm x 14 mm and demonstrates the minimal external components required to operate the IQS550 IC.

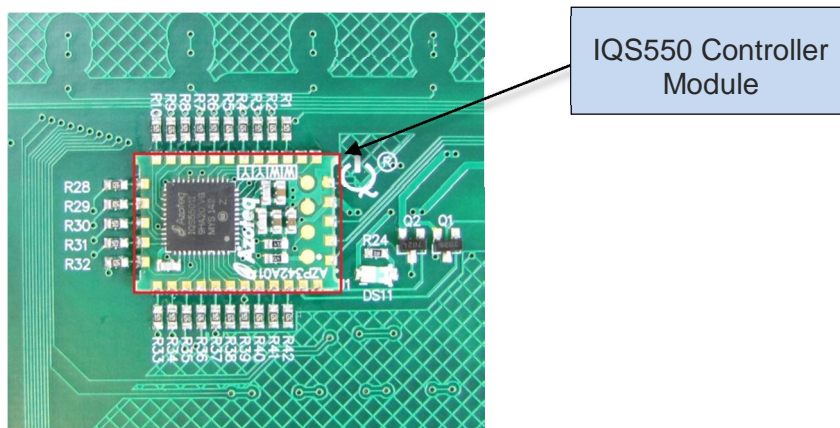


Figure 2.1 Bottom view of the IQS550 Wheel & Slider EV-Kit board

3 Touchpad Board

This demo board incorporates a 15 x 10 diamond grid with 150 touch channels as well as an extra self-capacitive proximity channel interface with the IQS550, to provide high resolution multi-touch tracking and proximity detection. The touchpad is simply interfaced to a personal computer

running the IQS550 Demo GUI software, by means of a CT2xx or DS100. The touchpad is illustrated in Figure 3.1.

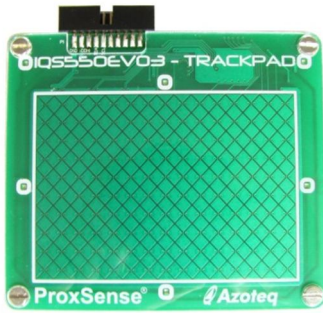


Figure 3.1 Touchpad

Proximity detection is indicated by the blue LED backlighting illumination, and Touch detection by the Red LED lighting around the touch wheel.



Figure 4.1 Wheel & Slider

4 Wheel & Slider Board

The Wheel and Slider board demonstrates the versatility and flexibility of the IQS550 by combining a slider, a touchpad wheel and 10 touch keys, all interfaced to the same IQS550 Controller.

The wheel & slider board is simply interfaced to a personal computer running the IQS550 Demo GUI software, by means of a CT2xx or DS100. The board is illustrated in Figure 4.1.

5 Using the Software GUI

- ☐ Download and install the IQS550 software GUI available for download on the Azoteq website at <http://www.azoteq.com>
- ☐ Plug in the ribbon cable provided into the CT(120/200/210/220) Configuration Tool or DS100 Data Streamer, and into the desired IQS550EV03 board.
- ☐ Run the IQS550 GUI Software

The GUI display is illustrated in Figure 5.1. The “Hints and Tips” Pop-up window in the centre of the screen contains important information relevant to the software GUI and IC, please take the time to read though all of the information. The scroll buttons can be used to flip through

the hints and tips and are marked in Figure 5.1.

After closing the Hints & Tips window in the centre of the screen, data streaming can be started by clicking on the “Start” button, as also depicted in Figure 5.1.

- ☐ Click on “Start” as illustrated in Figure 5.1.

After data streaming has commenced, the display will appear as illustrated in Figure 5.2. The channel statuses are indicated by the bar grid in the centre of the GUI:

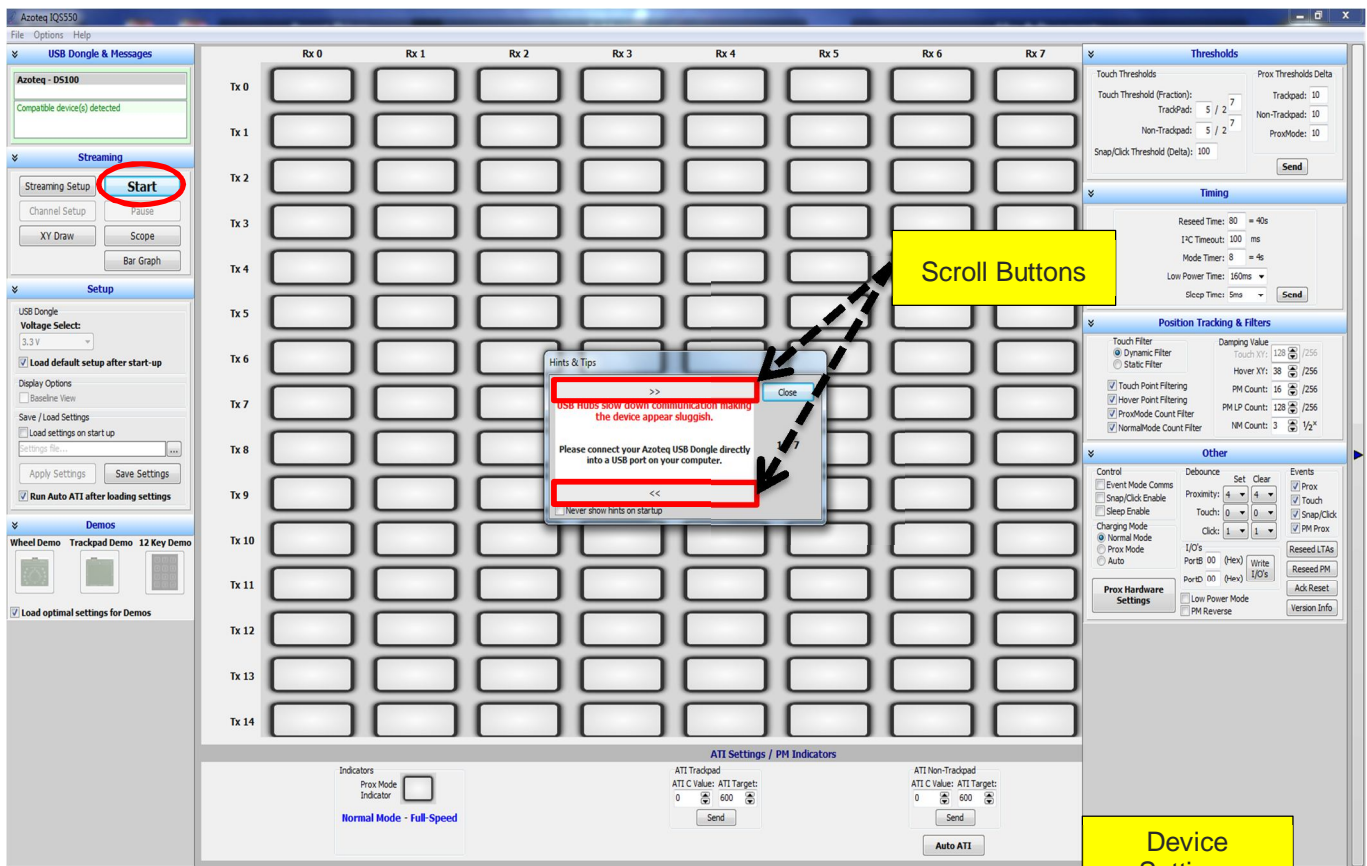


Figure 5.1 Start-up Screen for the IQS550 GUI



Figure 5.2 Data streaming Started



5.1 Wheel Demo

- Ensure that the correct EV-Kit board is connected
- Click on the “Wheel Demo” icon as displayed in Figure 5.2

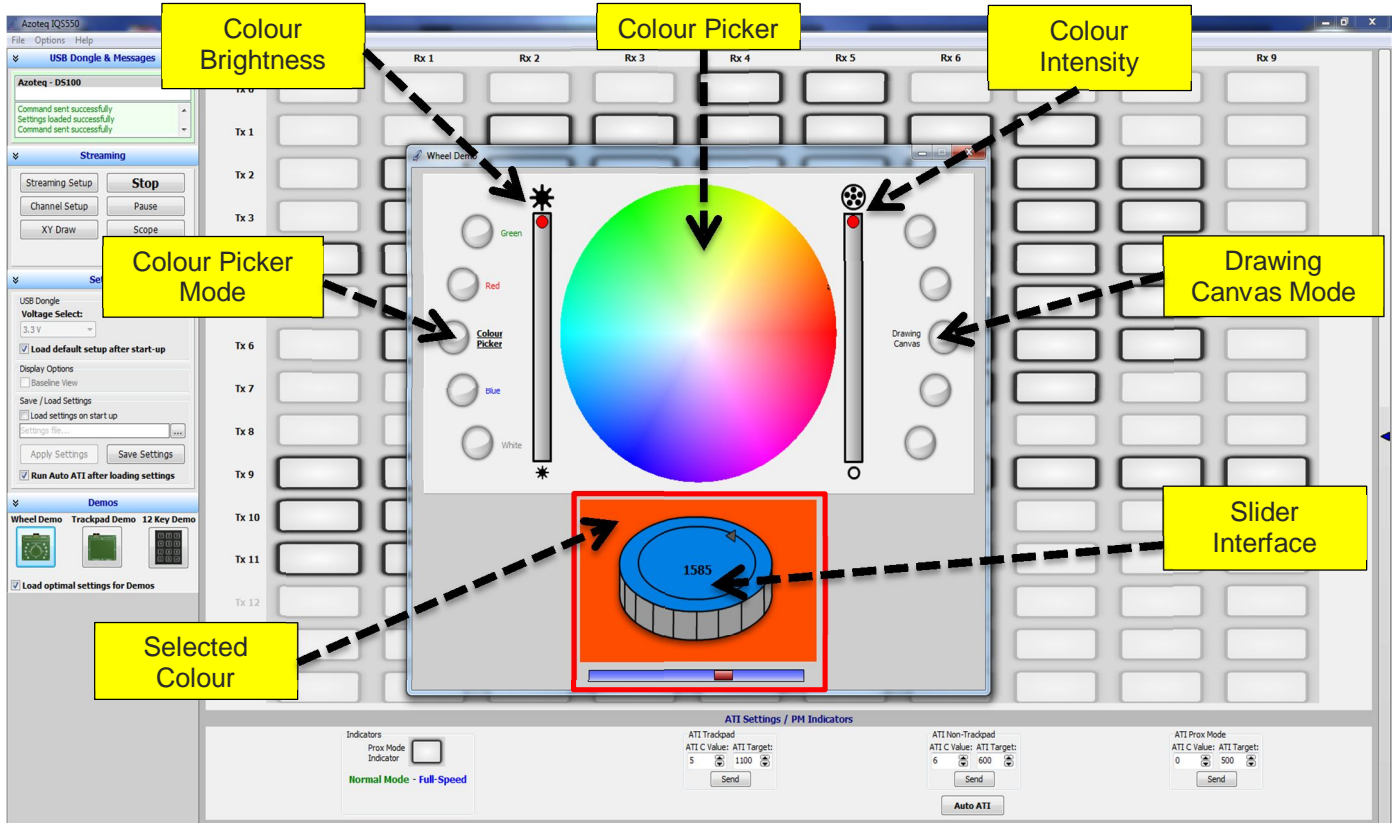


Figure 5.3 Wheel Demo Interface

The wheel demo interface is displayed in Figure 5.3 in the default colour picker mode. The side buttons or centre wheel touchpad can be used to select preset colours, of which the brightness and intensity can be varied using the wheel sliders (outer rim).

After a colour and its properties are selected, the drawing canvas option may be chosen. In this mode the selected colour is used as the user draws on the canvas by using the centre touchpad inside the wheel. This mode is illustrated in Figure 5.4.

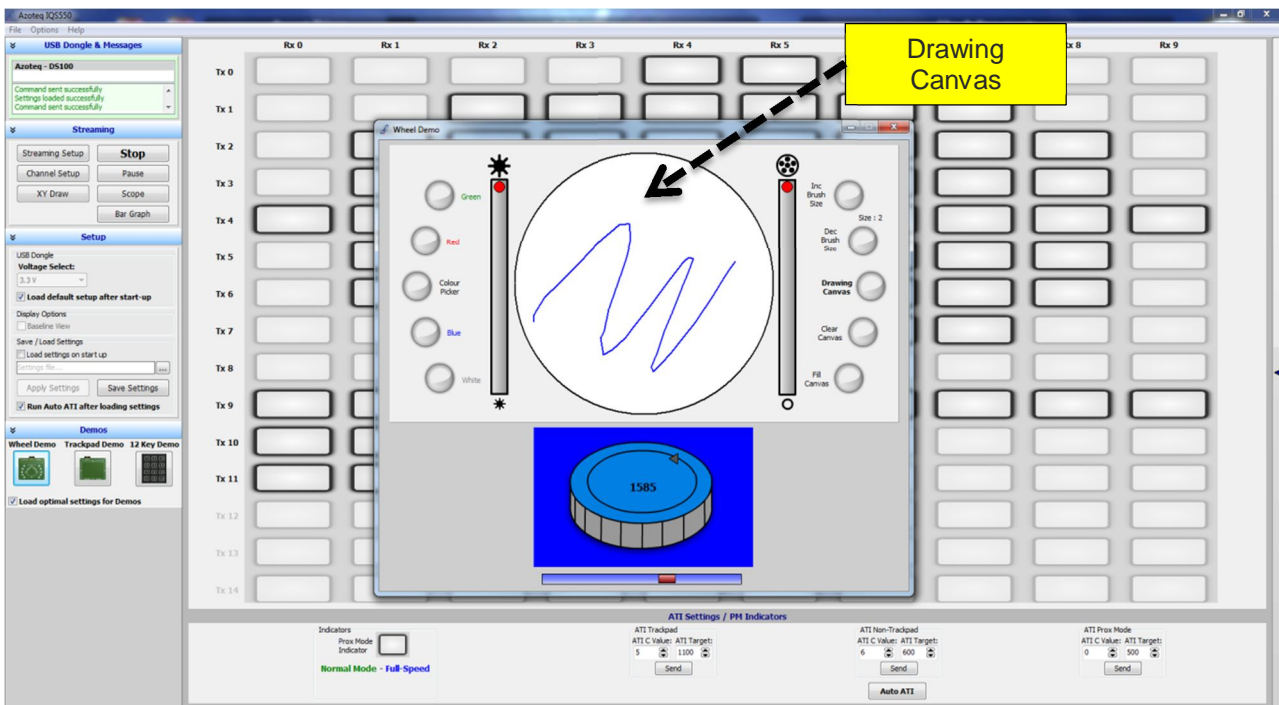


Figure 5.4 Drawing canvas mode

5.2 Touchpad Demo

- Ensure that the correct EV-Kit board is connected
- Click on the “Touchpad Demo” icon as displayed in Figure 5.2

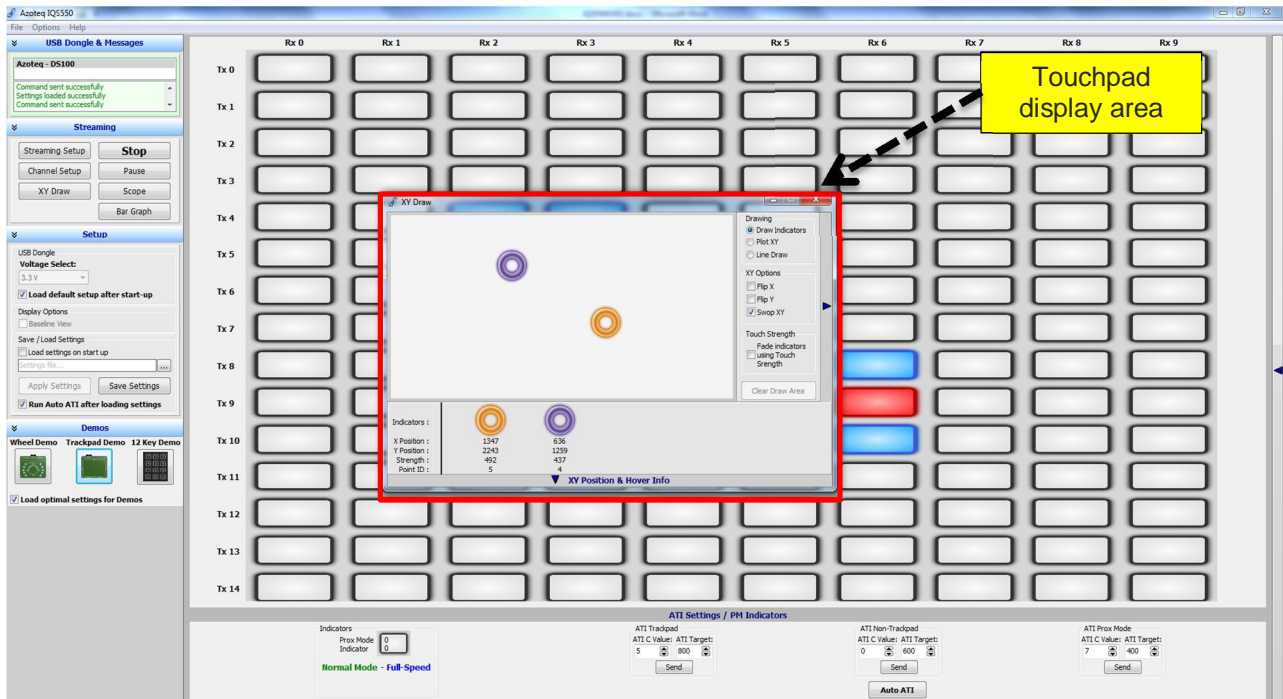


Figure 5.5 Touchpad Demo Interface



The touchpad display area indicates where a touch or multi touch is made on the touchpad, and indicates this with a coloured circle. It also features a line draw mode, where the touchpad can be used as a drawing canvas.

6 Reference Design

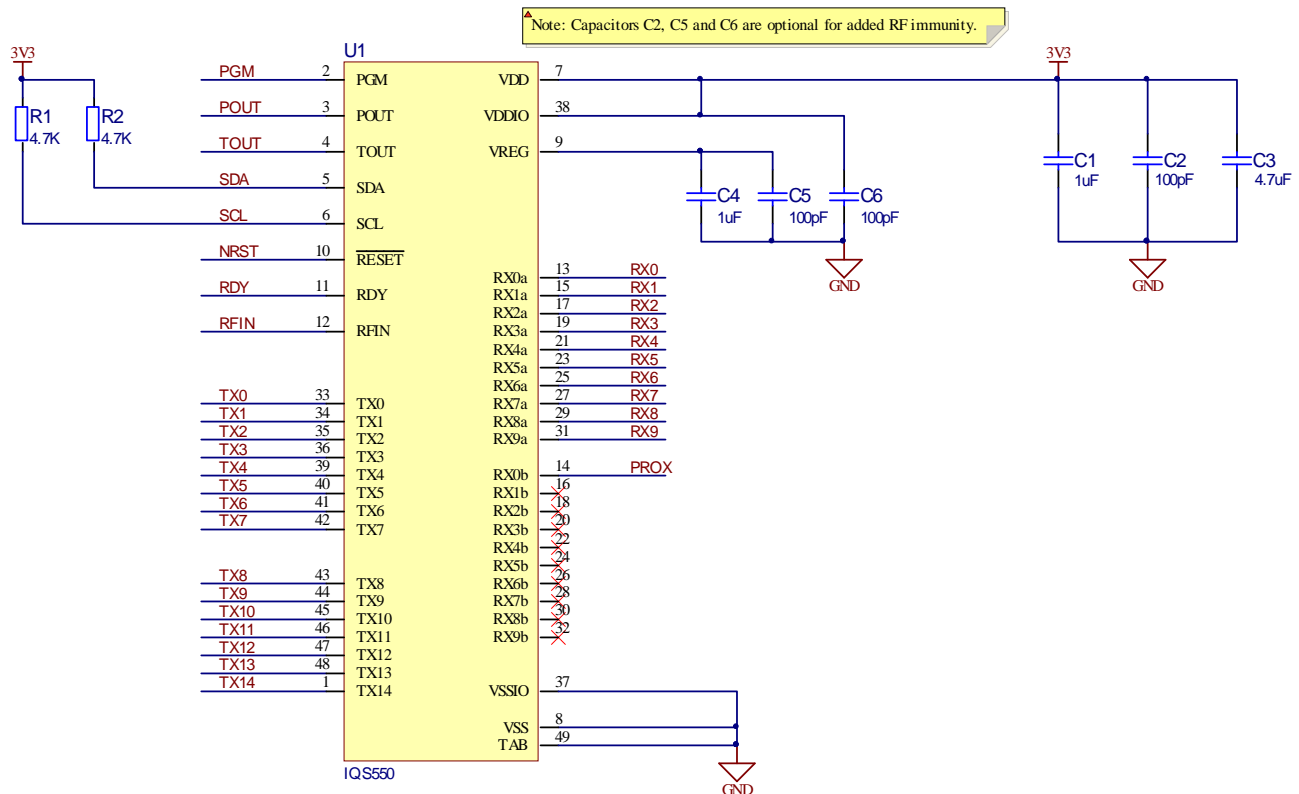



Figure 6.1 IQS550 Reference Design

- For a general Touchpad design guide, please refer to application note: *AZD068 – General Touchpad Design Guidelines*, available for download at www.azoteq.com
- The Altium Project files for this evaluation kit are available for download on the Azoteq website at www.azoteq.com



The following patents relate to the device or usage of the device: US 6,249,089 B1, US 6,621,225 B2, US 6,650,066 B2, US 6,952,084 B2, US 6,984,900 B1, US 7,084,526 B2, US 7,084,531 B2, US 7,119,459 B2, US 7,265,494 B2, US 7,291,940 B2, US 7,329,970 B2, US 7,336,037 B2, US 7,443,101 B2, US 7,466,040 B2, US 7,498,749 B2, US 7,528,508 B2, US 7,755,219 B2, US 7,772,781, US 7,781,980 B2, US 7,915,765 B2, EP 1 120 018 B1, EP 1 206 168 B1, EP 1 308 913 B1, EP 1 530 178 B1, ZL 99 8 14357.X, AUS 761094

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