



ProxSense® IQS550-TS43

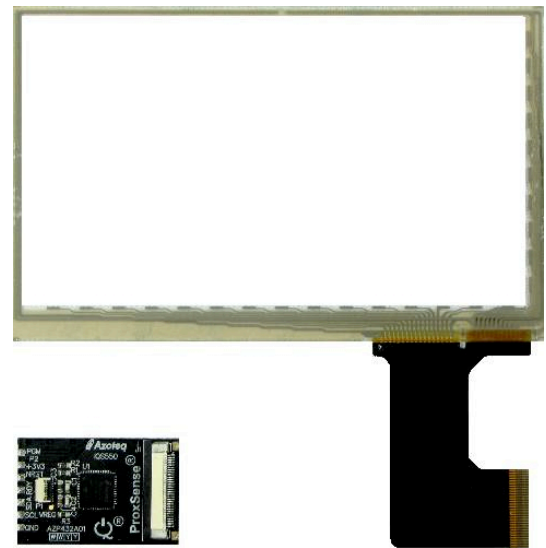
Projected Capacitive Touchscreen

Multi-touch Sensor and Controller for 4.3" LCD displays

The IQS550-TS43 combines a touchscreen sensor and controller to provide a complete touchscreen solution. The IQS550-TS43 allows cost-effective integration of a multi-touch sensor and controller with a 4.3" LCD screen.

Main Features

- 4.3" Touchscreen Panel with controller
- IQS550 Controller
- 3584 x 2304 Resolution
- Minimum report rate of 100Hz (dual-touch)
- Up to 5 simultaneous touch co-ordinates
- I²C Interface
- Event mode and streaming modes
- Excellent panel transparency (>85%)
- Proximity low power operation (<10uA)
- Supply voltage 1.65V to 3.6V



Applications

- Appliances
- Office equipment
- Kiosks
- POS Terminals
- Medical equipment
- Industrial Instrumentation



1 Introduction

The IQS550-TS43 is an integrated projected capacitive touch sensor and controller based on the IQS550. The module is optimized for direct mounting on a 4.3" LCD display with a 16:9 aspect ratio. The module comes with adhesive for quick assembly. The IQS550 is automatically calibrated for optimal performance at power-on. The IQS550-TS43 must be connected to a host controller via I²C.

2 General Specifications

Item	Specification	Unit
Panel diagonal size	4.3	Inch
Panel size	105	mm
	65.5	mm
Tail length	40	mm
Tail width	30.5	mm
Tail offset (from right)	3.5	mm
Transparency	>85 (TBD)	%
PCB size	33	mm
	22	mm
PCB connection	6w ZIF connector (0.5mm pitch)	-
	7w castellated pads for surface mount, +2 stabilization pads (2.54mm pitch)	-
Interface type	I ² C (400kHz)	-
Firmware upgrades	Direct 4w flash programming (requires Azoteq CT210)	-
	Boot loader (I ² C)	-
IQS550	Standard firmware, pre-programmed, boot loader option included	-

3 Mechanical Specifications

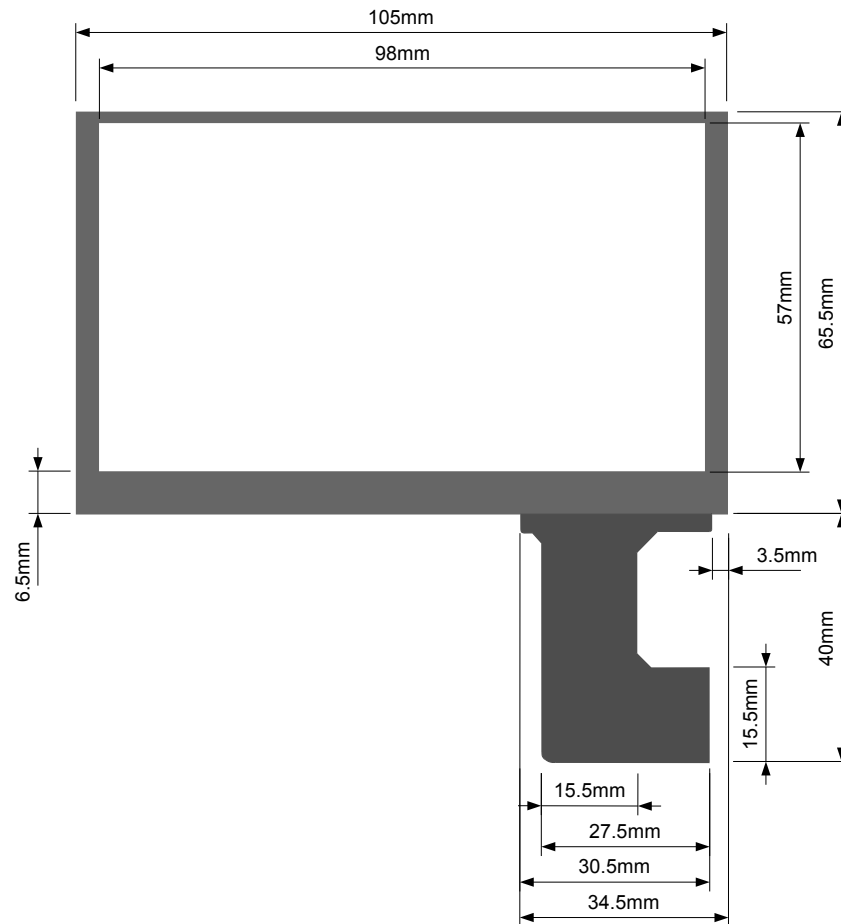


Figure 3.1 Touch Panel Dimensions

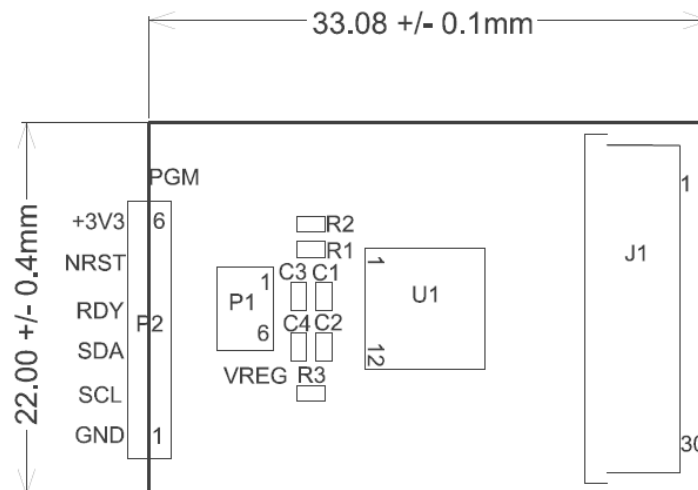


Figure 3.2 PCB Mechanical details



4 Interface description

Connector - pin number	Pin name	Pin Description
P1-1 / P2-6	VDDHI	Input voltage (1.65V to 3.6V)
P1-2 / P2-5	NRST	Hard reset input
P1-3 / P2-4	RDY	Ready line (interrupt request line)
P1-4 / P2-3	SDA	I2C bus data line
P1-5 / P2-2	SCL	I2C bus clock line
P1-6 / P2-1	GND	Signal ground
Above P2-6	PGM	Data line for flash programming
J1-1	GND	Signal ground
J1-2 → J1-16	Tx14 → Tx0	Transmit signals
J1-17 → J1-19	GND	Signal ground
J1-20 → J1-29	Rx0 → Rx9	Receiver lines
J1-30	GND	Signal ground



5 Electrical Specifications

The [IQS5xx-A000](#) datasheet specifies the electrical characteristics for the IQS550 controller. All components on the PCB are chosen for optimal performance.

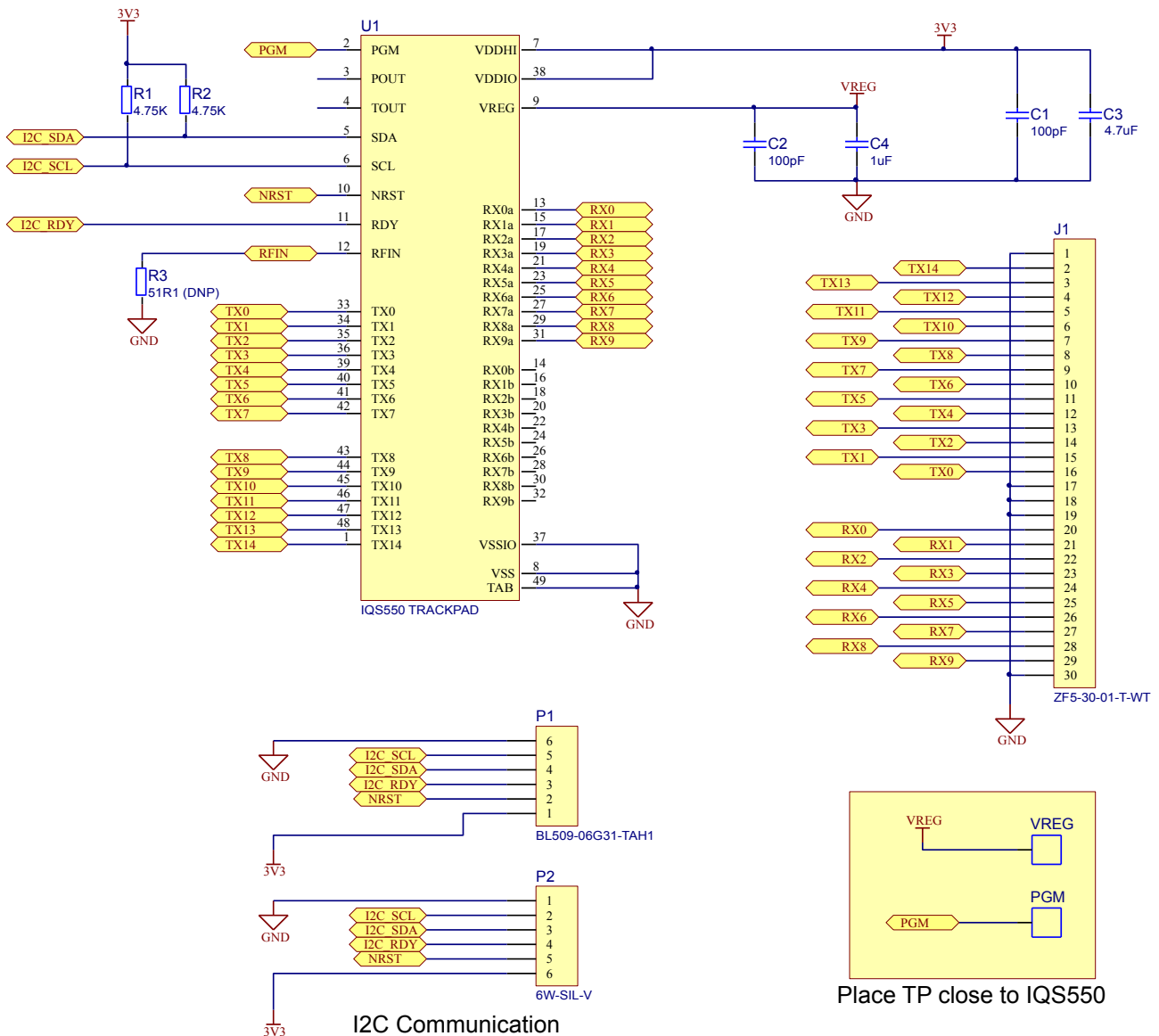


Figure 5.1 AZP432 Schematic



6 Communications Interface

The [IQS5xx-A000](#) datasheet describes the I²C communication interface. The default values are optimized or typical LCD screens but can be modified through the I²C interface for specific displays. If the default values are used, no setup is required and only read commands are required.

The X-Y data is available for the 5 of the strongest touches.

Application note [AZD067](#) (IQS5xx Communication Interface) describes the implementation of an I²C master interface.

Azoteq provides an easy to use debugging environment via an USB streaming tool (see application note AZD070 for more information)

6.1 Interface instructions

- Optional: Test the panel through the IQS5xx GUI.
- Obtain the example code pack from www.azoteq.com
- Implement the master code according to AZD067 and the example code pack mentioned above
- The example code is explained and referred to in AZD067
- The general IQS5xx code is applicable to this touch panel
- The touch panel should be configured using the included “IQS550-TS43_init.h” file
- The “IQS550-TS43_init.h” file is generated by the “IQS5xx GUI” and the custom GUI settings are stored in “IQS550-TS43.ini” file.
- Take note: the “snap status bytes” are not relevant to the IQS550-TS43 and are therefore disabled. All “snap” references may be ignored.
- “XY data” is the main output of the IQS550-TS43
- All strongest touch points may be read in each communication window.
- Each XY point is accompanied with an ID for tracking and touch strength indication for organizing data



Appendix A. Contact Information

	USA	Asia	South Africa
Physical Address	6507 Jester Blvd Bldg 5, suite 510G Austin TX 78750 USA	Rm1725, Glittery City Shennan Rd Futian District Shenzhen, 518033 China	109 Main Street Paarl 7646 South Africa
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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 7,265,494 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, US 7,994,726 B2, US 8,035,623 B2, US 8,288,952 B2, EP 1 120 018 B1, EP 1 206 168 B1, EP 1 308 913 B1, EP 1 530 178 B1, ZL 200880005683.2, ZL 99 8 14357.X, AUS 761094, HK 104 14100A

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