



IQS440 Overview

IQ Switch[®] - ProxSense[™] Series

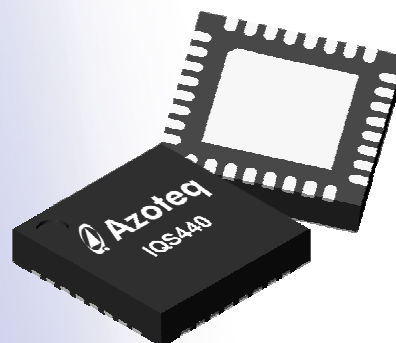
2D Capacitive Sensing Controller with Advanced Signal Processing Functions

IQS440 Specification

- ☐ Surface capacitive touch screen controller
- ☐ Supply voltage: 2.85V - 5.5V
- ☐ Linearised single layer ITO touch screen controller
- ☐ XY report rate of 120Hz

Main Features

- ☐ Internal Capacitor Implementation (ICI). No external reference capacitors required
- ☐ User selectable gain through Antenna Tuning Implementation (ATI)
- ☐ Advanced on-chip signal processing
- ☐ Dynamic Touch Threshold (DTT) algorithm
- ☐ Internal position adjustment
- ☐ I²C and SPI communication
- ☐ High sensitivity
- ☐ Internal voltage regulator
- ☐ 3 Low power modes
- ☐ Active shield options
- ☐ RF detection
- ☐ Class leading proximity sensitivity
- ☐ Available in QFN32 package



Applications

- | | |
|--|--|
| <input type="checkbox"/> e-Readers | <input type="checkbox"/> Keypad replacement |
| <input type="checkbox"/> Personal Navigation Devices | <input type="checkbox"/> High-end kitchen appliances |
| <input type="checkbox"/> Mobile phones | <input type="checkbox"/> Personal Media Players |
| <input type="checkbox"/> Office machines | <input type="checkbox"/> Consumer Electronics |
| <input type="checkbox"/> Digital cameras | <input type="checkbox"/> Kiosk and POS Terminals |
| <input type="checkbox"/> PDA's | <input type="checkbox"/> Launch a menu on user approaching |

Touch sensing is increasing in popularity amongst consumers as the preferred human-machine interfacing technology. The IQS440 is designed to interface with industry standard 4-wire linearised glass with a single layer of uniformly coated ITO. This controller has the advantages associated with capacitive sensing, but at a cost rivalling resistive solutions.

The IQS440 is based on patented capacitive sensing technology that yields stability with high sensitivity and excellent noise immunity. A small number of external components and the low cost uniformly coated single layer ITO provide a low cost high performance solution for single touch applications.



Overview

The IQS440 is a touch panel controller with advanced on-chip signal processing features including Antenna Tuning Implementation (ATI) and Dynamic Touch Threshold (DTT).

A cost effective total solution is provided by using a linearised single layer ITO touch panel. Value is added by providing proximity detection which can be used to switch on backlighting, launch a user menu or wake the system from standby.

The controller has 4 sensor lines to interface with the linearised touch panel. The device has an additional sensor line to provide an additional touch button with proximity and touch features.

The device has an internal voltage regulator and Internal Capacitor Implementation (ICI) to reduce BOM count. Multiple filters are implemented to suppress and detect noise and track slow varying environmental conditions and avoid effects of possible drift.

The device provides active driven shields to protect the integrity of sensor line signals. The device offers a high degree of RF immunity, but for a severe environment the RF detection pin allows for RF noise detection when connected to a suitable RF antenna.

The Antenna Tuning Implementation (ATI) allows for the adaption to a wide range of touch screens without using external components. The Dynamic Touch Threshold (DTT) algorithm allows the designer to specify parameters to accurately determine a TOUCH condition on a device.

Various aspects of the technology is covered by patents and others pending.

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Please visit www.azoteq.com for a full portfolio of the ProxSense™ Capacitive Sensors, Datasheets, Application Notes and Evaluation Kits available.

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