



IQS420 Overview

IQ Switch[®] - ProxSense[™] Series

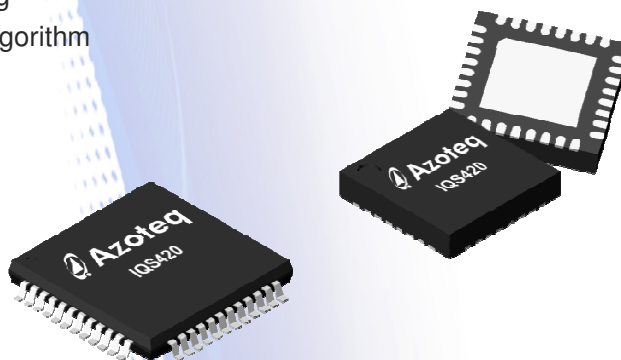
2D Capacitive Sensing Controller with Advanced Signal Processing Functions

IQS420 Specification

- ☐ Surface capacitive touch screen controller
- ☐ Supply voltage: 2.85V - 5.5V
- ☐ Uniformly coated single layer ITO touch screen controller
- ☐ XY report rate of 100Hz

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 QFP48 and QFN32 packages



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. This controller has the advantages associated with capacitive sensing, but at a cost rivalling resistive solutions.

The IQS420 is based on patented capacitive sensing technology that yields stability with high sensitivity and excellent noise immunity. This controller is designed to interface to a single layer uniformly coated ITO touch screen. 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 IQS420 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 uniformly coated 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 have 18 sensor lines which can be connected in various configurations to interface with four wire linearised touch panels and 16 wire multiple contact touch panels. The device provides two additional touch buttons 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.

PRETORIA OFFICE

Physical Address

160 Witch Hazel Avenue

Hazel Court 1, 1st Floor

Highveld Techno Park

Centurion, Gauteng

Republic of South Africa

Tel: +27 12 665 2880

Fax: +27 12 665 2883

PAARL OFFICE

Physical Address

109 Main Street

Paarl

7646

Western Cape

Republic of South Africa

Tel: +27 21 863 0033

Fax: +27 21 863 1512

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

ProxSenseSupport@azoteq.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Azoteq:](#)

[IQS420QNR](#)