



Proximity Capacitive Touch Sensor Controllers

MPR084

8-pad touch sensor controller

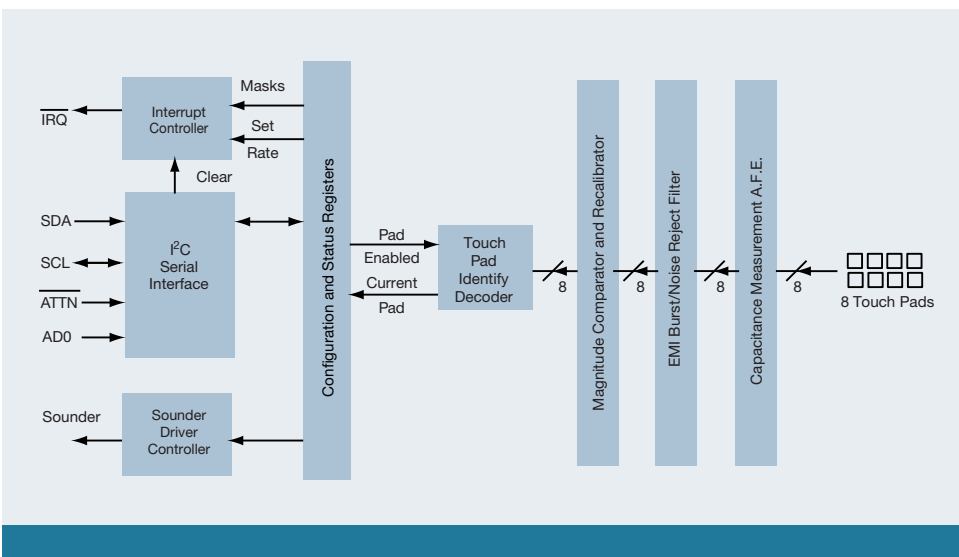
Overview

Freescale Semiconductor's MPR084 proximity capacitive touch sensor controller is one of a family of products designed to detect the state of capacitive touch pads. The MPR084 offers designers a cost-efficient alternative to mechanical push switches for control panel applications.

The MPR084 uses an I²C interface to communicate with the host which configures the operation and an interrupt to advise the host of status changes. The MPR084 includes a piezo sounder drive which provides audible feedback to simulate mechanical key clicks.

The MPR08X family has several implementations to use in your design including control panels and switch replacements. The MPR084 controls up to eight touch pads. Other members of the MPR08X family are well suited for other application interface situations such as individual touch pads or rotary/touch pad combinations.

MPR084 Block Diagram



Freescale offers a broad portfolio of proximity sensors for products ranging from appliance control panels to portable electronics. Target markets include consumer, appliance, industrial, medical and computer peripherals.

Implementations

- Control panels
- Switch replacements
- Eight touch pads

Typical Applications

- Appliances
- PC peripherals
- Access controls
- MP3 players
- Remote controls
- Mobile phones

Development Tools

| Part Number | Description | Pricing |
|--------------|---|---------|
| KITMPR084EVM | Evaluation board to demonstrate key proximity sensor features | \$99 |

Selector Guide

| Part Number | Bus | Sounder | Rotary Slider | Touch Pad Array | Main Attribute |
|-------------|---|---------|---------------|-----------------|------------------------------|
| MPR083 | I ² C with $\overline{\text{IRQ}}$ | Yes | 8 positions | — | Highest resolution rotary |
| MPR084 | I ² C with $\overline{\text{IRQ}}$ | Yes | — | 8 pads | Eight independent touch pads |

Documentation

| Part Number | Document Title | Summary |
|-------------|-------------------|---|
| MPR084 | MPR084 Data Sheet | This data sheet presents the specifications for this product. |

Features

- 1.8–3.6V operation
- 150 μA average supply current (all touch pads being monitored)
- 10 μA standby current
- Controls eight touch pads
- Proprietary false touch rejection technology
- Ongoing pad analysis and detection not reset by EMI events
- IRQ output advises when FIFO has data
- System can set interrupt behavior as immediate after event or program a minimum time between successive interrupts
- Sounder drive provides audible feedback to simulate mechanical key clicks
- Digital output (I²C with custom addressing)
- 16-pin QFN and TSSOP packages
- -40°C to +85°C operating temperature range



Evaluation Board



8 Touch Pads

Learn More:

For current information about Freescale products and documentation, please visit www.freescale.com/proximity.