



Freescle - KITMPR03XEVm - KITMPR03XEVm Demo Kit

Product Overview:

Mechanical buttons and switches for touch user interfaces are becoming a thing of the past. Proximity capacitive touch sensors in simple linear or rotational sliders offer significant advantages for numerous applications. They are more convenient to use with no moving parts to wear out, more energy efficient and are more easily integrated to create an intelligent system.

The KITMPR03XEVm evaluation kit allows a user to observe the basic functionality of the device through a couple of demo's including a pinball game and a presentation device. In addition, a more detailed evaluation mode teaches a user to configure the part and can allow for quick changes to settings.



Kit Contents:

The KITMPR03XEVm Evaluation Kit contains the hardware essentials you will need to use the Kit. The items in the Evaluation Kit and their use are as follows.

- KITMPR03x motherboard
- MPR031 DIP board
- 2+IRQ electrode daughter card
- 3 electrode daughter card
- 4 MPR031 cut tape samples
- Quick Start Guide

Key Features:

- 1.71V to 2.75V operation
- 8 μ A supply current with two electrodes being monitored with 64 ms response time and IRQ enabled
- 4 μ A maximum shutdown current
- Two electrodes plus IRQ

- Three electrodes and no IRQ
- Continuous independent auto-calibration for each electrode input
- Separate touch and release trip thresholds for each electrode, providing hysteresis and electrode independence
- I2C interface, with optional IRQ output to advise electrode status changes
- 2 x 2 x 0.65 mm 8-lead uDFN package
- -40°C to +85°C operating temperature range

Ordering Information:

Products:

| Part Number | Manufacturer | Farnell P/N | Newark P/N |
|--------------|--------------|-------------|------------|
| KITMPR03XEVM | Freescale | 1692726 | 26R2784 |

Associated Products:

| Part Number | Manufacturer | Description | Farnell P/N | Newark P/N |
|----------------|--------------|--|-------------|------------|
| KITSTARTER1EVM | Freescale | Sensor Toolbox Starter Kit | NA | 26R2788 |
| MPR03EP | Freescale | Proximity Capacitive Touch Sensor Controller | NA | NA |
| MC9S08QG8CDTER | Freescale | HCS08 Microcontrollers | 1535914 | 14M6124 |
| BSS138LT1G | Onsemi | Power MOSFET 200 mA, 50 V N-Channel SOT-23 | 1431319RL | 83H6430 |
| FT232BL | FTDI | FT232BL USB UART (USB - Serial) I.C. | 9519769 | 38K1551 |
| LM317LD | ST | 3-TERMINAL ADJUSTABLE REGULATOR | 1087202 | 26M0373 |
| AD5161BRMZ10 | ADI | 256-Position Selectable Potentiometer | 1438420 | 59K3554 |

Similar Products:

| Part Number | Manufacturer | Description | Support Device | Farnell P/N | Newark P/N |
|----------------|--------------|--------------------------------------|----------------------|-------------|------------|
| CY3218-CAPEXP3 | Cypress | Cap Sense Express Evaluation Kit | CY8C20142 | 1601049 | 11N4462 |
| DM164125 | Microchip | PICDEM Touch Sense 1 Development Kit | PIC16F677, PIC16F887 | 1547488 | 78M5155 |

| | | | | | |
|-----------------|-----------------|---|-----------|---------|---------|
| STEVAL-IFP004V1 | ST | STEVAL-IFP004V1 Digital input termination PCLT2 | PCLT2 | 1694057 | 45P5437 |
| CAPTOUCHSENSESK | Silicon Labs | Capacitive Touch Sense Starter Kit | C8051F931 | 1558938 | 94M6556 |
| DEMOMPR031 | Freescale | Demo board for MPR031 | MPR03X | 1692725 | 26R2641 |

Document List:

Datasheets:

| Part Number | Description | Size |
|-------------|---|--------|
| MPR03X | Proximity Capacitive Touch Sensor Controller | 303KB |
| MC9S08QG8 | HCS08 Microcontrollers | 3.04MB |
| BSS138LT1 | Power MOSFET 200 mA, 50 V N-Channel SOT-23 | 128KB |
| FT232BL | FT232BL USB UART (USB - Serial) I.C. | 539kB |
| LM317L | 3-TERMINAL ADJUSTABLE REGULATOR | 488KB |
| AD5161 | 256-Position SPI/I2C Selectable Digital Potentiometer | 534KB |

Application Notes:

| File Name | Size |
|---|-------|
| AN3516 E-field Keyboard Designs | 213KB |
| AN3579 Enabling an MCU for Touch Sensing with Proximity Sensor software | 670KB |
| AN3863 Designing Touch Sensing Electrodes Electrical Considerations and Recommended Layout Patterns | 818KB |

Hardware & Software:

| File Name | Size |
|--|-------|
| KITMPR03XEVM Schematic | 122KB |

Others Resources:

| File Name | Size |
|---|-------|
| White Paper - New Possibilities for Freescale Proximity Touch Sensors | 207KB |
| White Paper - Proximity Capacitive Sensor Technology for Touch Sensing Applications | 493KB |

