Texas Instruments CAPTIVATE-PHONE Demonstration Board
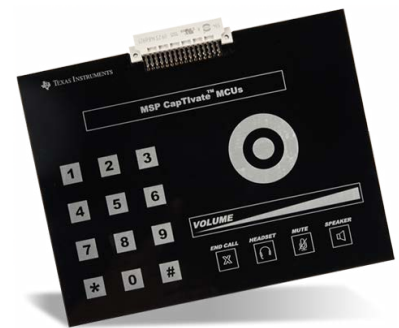
Product Overview

07-06-2021

For the most up-to-date information, visit www.mouser.com or the supplier's website.
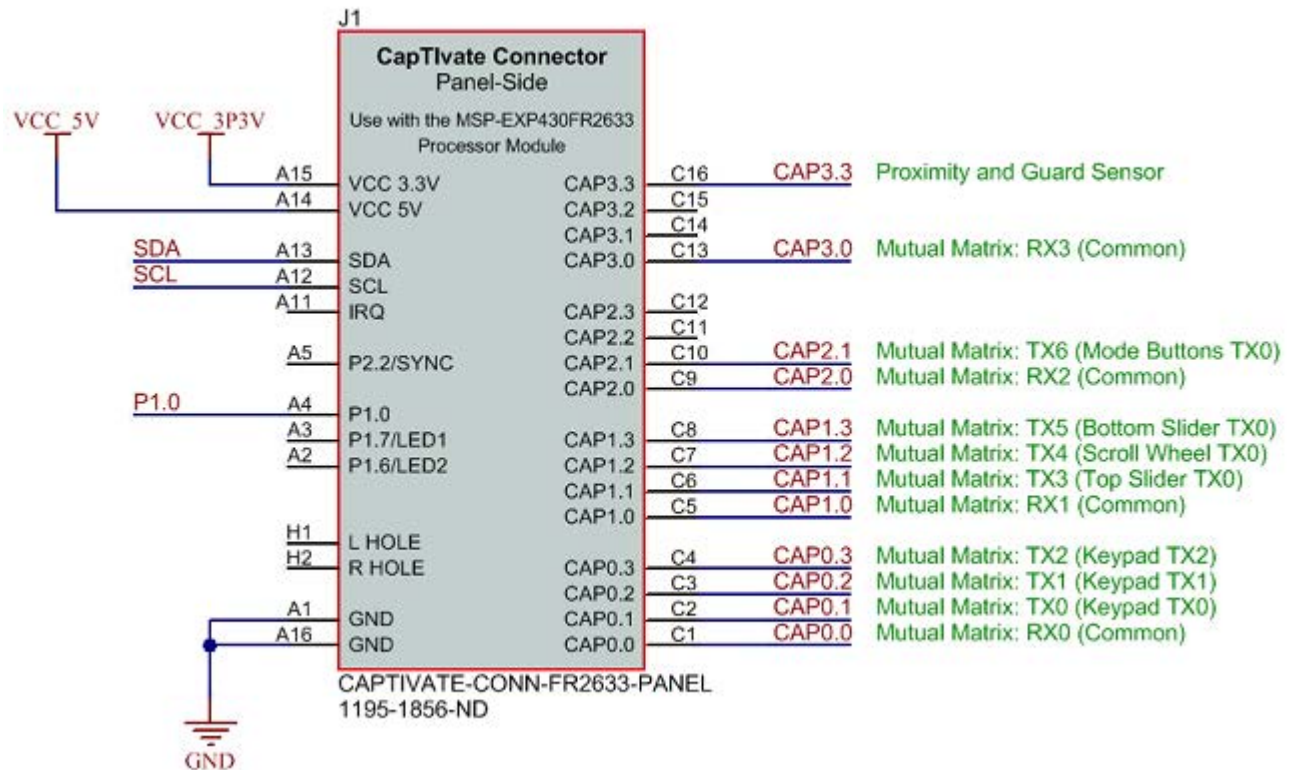
Description

Texas Instruments CAPTIVATE-PHONE Demonstration Board is a simple evaluation platform for mutual capacitance capacitive touch sensors using a variety of configurations. The sensor panel demonstrates how to matrix mutual capacitance touch sensors for high-density and low pin count. This showcases the recommended layout for mutual capacitance slider and wheel sensors. The CAPTIVATE-PHONE panel also demonstrates how to implement guard channel to prevent false touch detections due to palm or cleaning cloth. The haptic driver and actuator are included to provide vibrational feedback to the user when touches are detected. The CAPTIVATE-PHONE is a demonstration sensing panel with 17 buttons, 2 sliders, a wheel, and a proximity/guard sensor.

Features

- Interfaces to CapTIvate ecosystem MCU boards
- Implements 29 capacitive touch elements using just 12 CapTIvate IOs
- Contains 17 buttons, two 4-element sliders, one 3-element wheel, and one guard channel
- Implements a guard channel for palm rejection
- Provides haptic feedback using the TI DRV2605L haptic driver with integrated effects libraries

Block Diagram


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J1
CapTIvate Connector
Panel-Side
Use with the MSP-EXP430FR2633
Processor Module
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VCC_5V   VCC_3P3V

A15	VCC 3.3V	CAP3.3	C16	CAP3.3	Proximity and Guard Sensor
A14	VCC 5V	CAP3.2	C15		
		CAP3.1	C14		
A13	SDA	CAP3.0	C13	CAP3.0	Mutual Matrix: RX3 (Common)
A12	SCL				
A11	IRQ	CAP2.3	C12		
		CAP2.2	C11		
A5	P2.2/SYNC	CAP2.1	C10	CAP2.1	Mutual Matrix: TX6 (Mode Buttons TX0)
		CAP2.0	C9	CAP2.0	Mutual Matrix: RX2 (Common)
A4	P1.0				
A3	P1.7/LED1	CAP1.3	C8	CAP1.3	Mutual Matrix: TX5 (Bottom Slider TX0)
A2	P1.6/LED2	CAP1.2	C7	CAP1.2	Mutual Matrix: TX4 (Scroll Wheel TX0)
		CAP1.1	C6	CAP1.1	Mutual Matrix: TX3 (Top Slider TX0)
		CAP1.0	C5	CAP1.0	Mutual Matrix: RX1 (Common)
H1	L HOLE				
H2	R HOLE	CAP0.3	C4	CAP0.3	Mutual Matrix: TX2 (Keypad TX2)
		CAP0.2	C3	CAP0.2	Mutual Matrix: TX1 (Keypad TX1)
A1	GND	CAP0.1	C2	CAP0.1	Mutual Matrix: TX0 (Keypad TX0)
A16	GND	CAP0.0	C1	CAP0.0	Mutual Matrix: RX0 (Common)

SDA, SCL, P1.0

```
CAPTIVATE-CONN-FR2633-PANEL
1195-1856-ND
GND
```

Associated Product

- MSP430FR263x / MSP430FR253x Ultra-Low-Power MCUs

Mouser Part Number(s)

595-CAPTIVATE-PHONE

To learn more, visit https://www.mouser.com/new/texas-instruments/ti-captivate-phone-demo-board/