

# CapSense\_CSD Tuner Design example project

## 1.10

## Features

- Sensing elements: 2 Buttons and Linear Slider
- Tuner GUI scan results visualization
- Tuning parameters using Tuner GUI

## General Description

This example project demonstrates the CapSense CSD component configured with 2 buttons and a linear slider. The Tuner GUI displays the scanning results.

## Development kit configuration

This project is written for 2 Buttons and a Linear Slider as available on the Cypress kit CY8CKIT-001. The modulator capacitor Cmod is on board at port P2[7] (CY8C38 Family Processor Module CY8CKIT-009).

**Note** To use this project with the CY8C55 Family Processor Module CY8CKIT-010, please re-assign the Cmod to port P15[5].

## Project configuration

The example project consists of the EzI2C and CapSense CSD components. The top design schematic is shown in **Figure 1**. The EzI2C component is used to establish communication between the Tuner GUI and the PSoC.

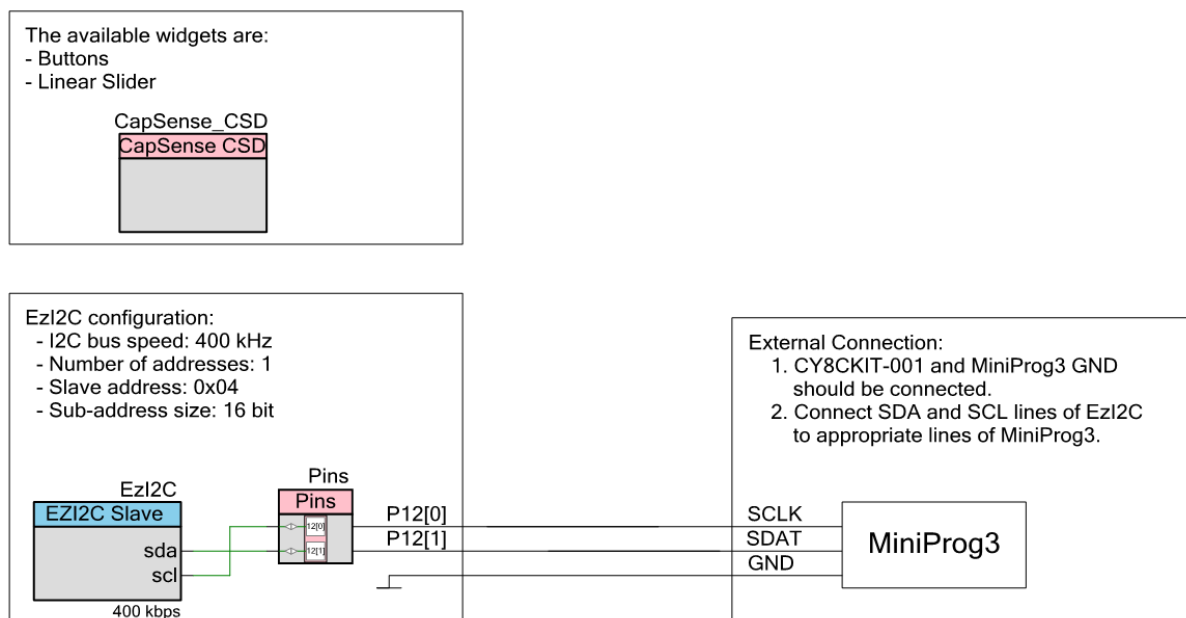


Figure 1 Top design schematic

The EzI2C component is configured: **I2C bus speed:** 400 kHz, **Number of addresses:** 1, **Slave address:** 0x04, **Sub-address size:** 16 bit.

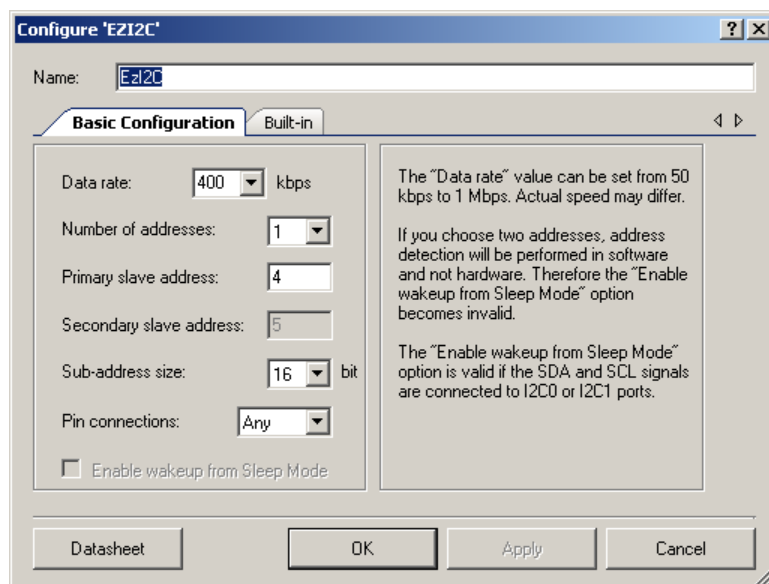


Figure 2 The "EzI2C Basic Configuration Tab"

The CapSense\_CSD component is configured with 2 buttons and linear slider.

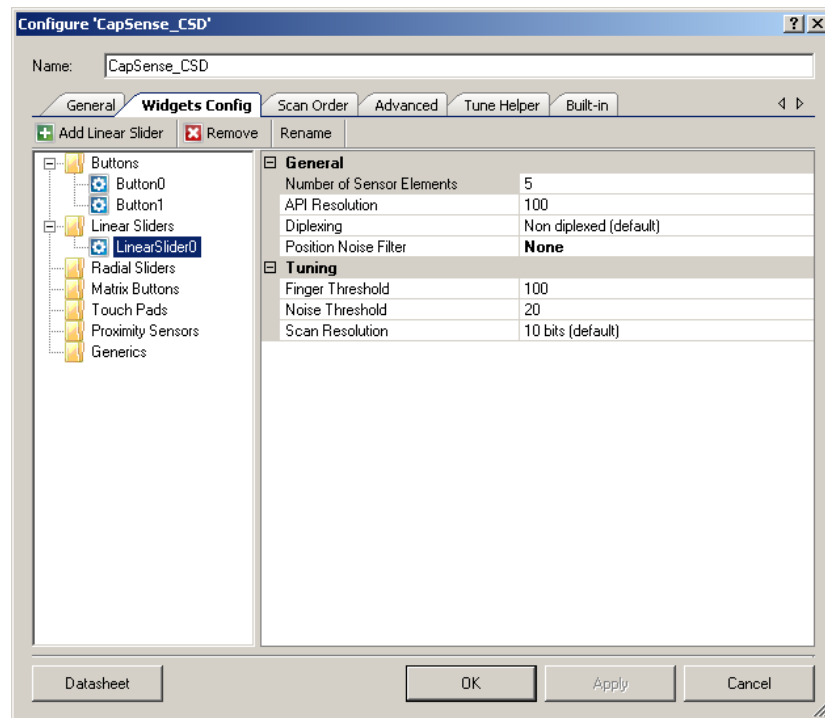


Figure 3 The “CapSense CSD Widget Config Tab”

The clock system configuration is shown in **Figure 4**.

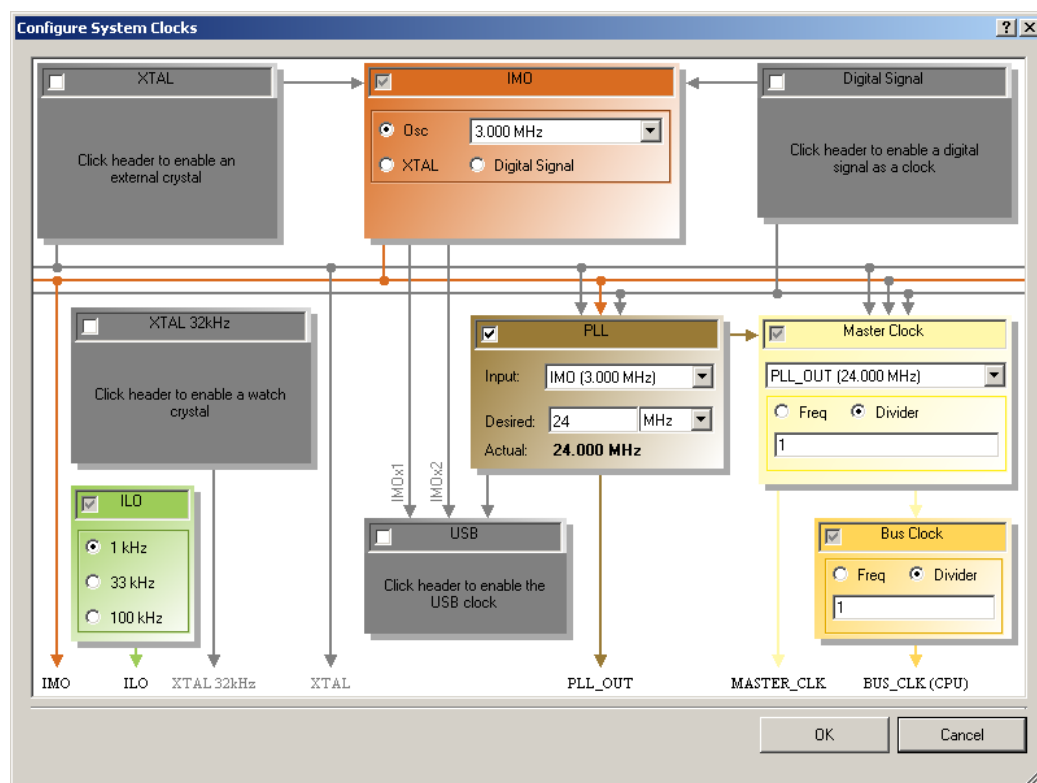


Figure 4 The “Configure System Clocks” window

## Start project step-by-step

### Build the design and program the PSoC device

Refer to PSoC Creator Help as needed.

### Launch Tuner GUI

Right-click and select **Launch Tuner** from the CapSense\_CSD instance context menu.

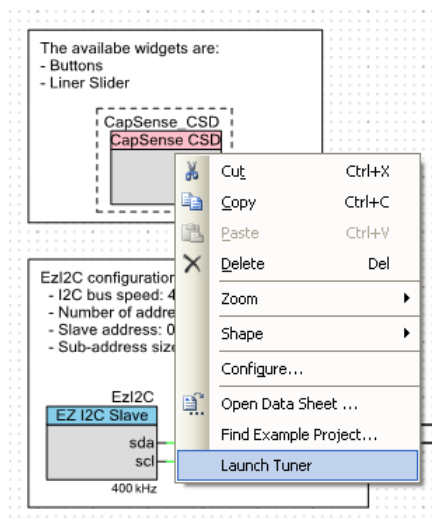


Figure 5 The CapSense CSD instance context menu

The Tuner GUI application opens. The 2 buttons and linear slider widgets are shown.

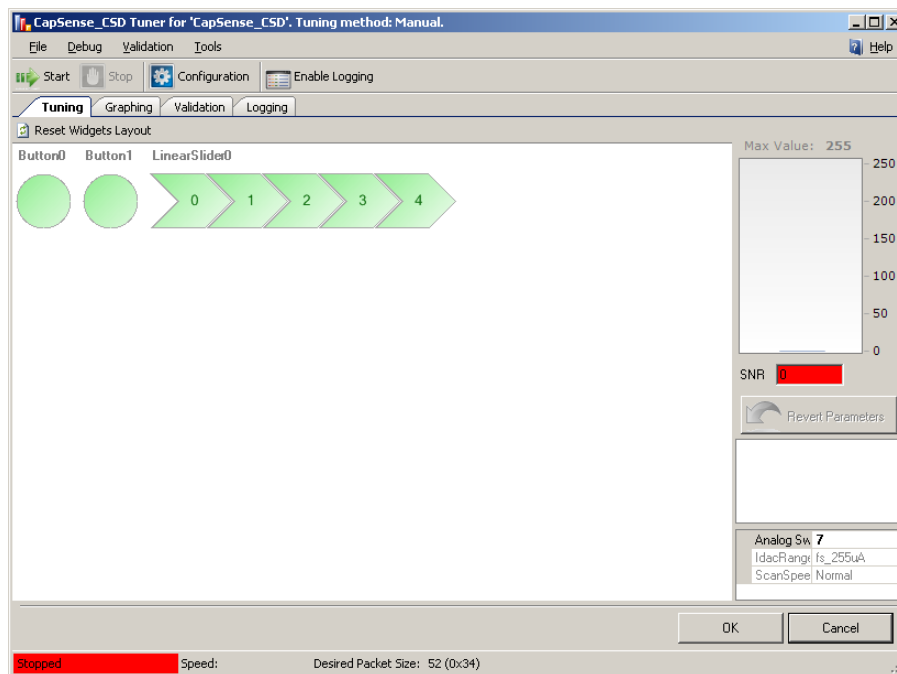


Figure 6 Tuner main window

## Power cycle the device

External Connection:

1. CY8CKIT-001 and MiniProg3 GND should be connected.
2. Connect SDA and SCL lines of EzI2C to appropriate lines of MiniProg3. In current design SCL is assign to P12[0] pin and SDA to P12[1] pin.

## Configure communication parameters

1. Click Configuration to open the Tuner Communication dialog.

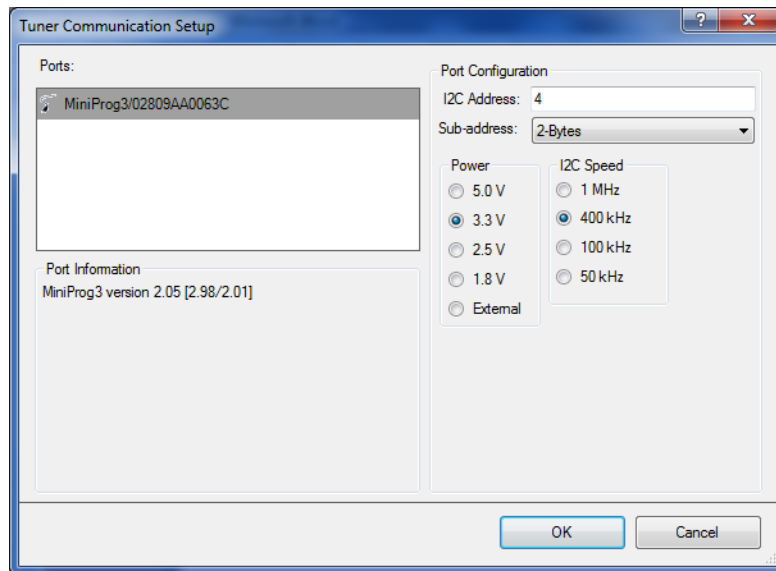


Figure 7 Tuner communication setup dialog

2. Set the communication parameters.

**Important:** These properties must be identical to EzI2C component: **I2C Bus Speed**, **I2C Address**, **Sub-address**.

### Start tuning

Click **Start** on the Tuning GUI. The scanning results will be shown for all sensing elements.

## Expected results

The scanning results are showing for all sensing elements.

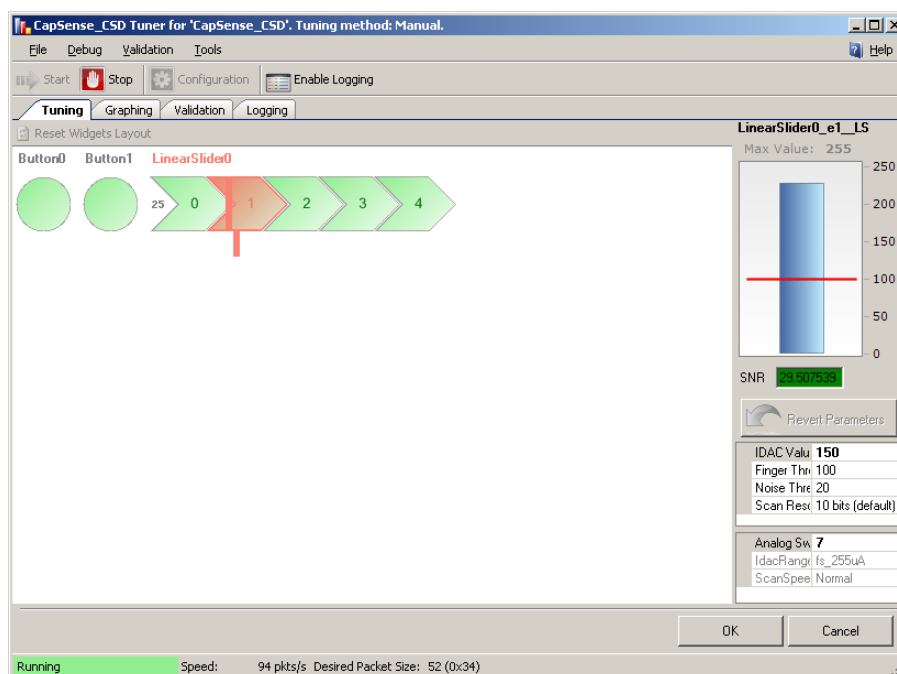


Figure 8 Scanning results

Use Graphing Tab to display detail information for scanning results of selected sensors.

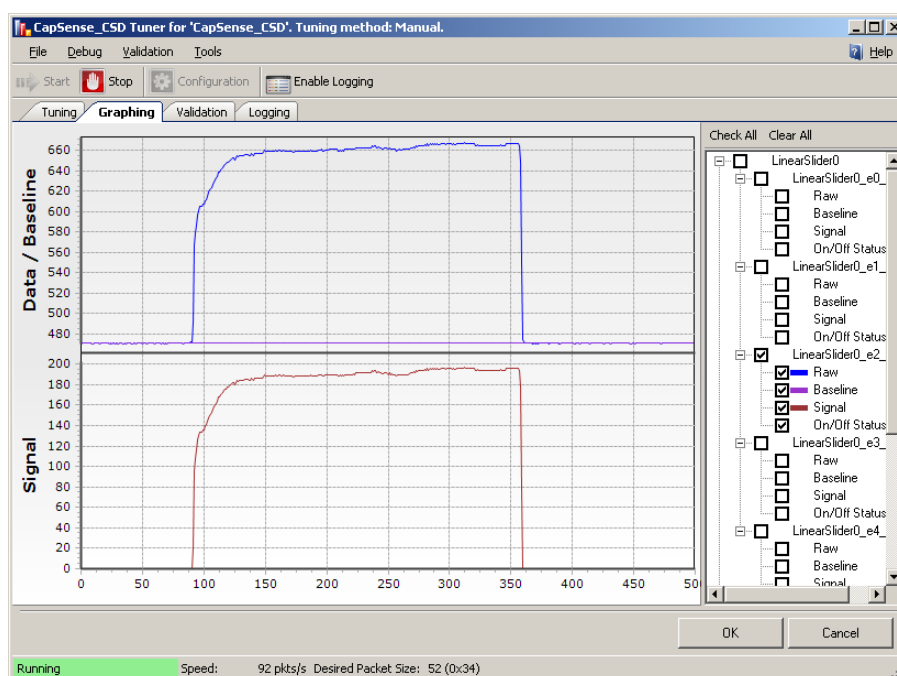


Figure 9 Graphing

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