CapSense_CSD_P4 Slider Design example project

1.10

Features

- Sensing elements: 5-segment Linear Slider:
  - CY8CKIT-042 uses linear slider on board;
  - CY8CKIT-040 uses 5-rows of Trackpad on Trackpad Shield;
- Visual indication of Slider touch position with Tri-color LED

General Description

This example project demonstrates the CapSense CSD component configured with Linear Slider. The HUE of the Tri-color LED displays the scanning results of Linear Slider.

Development kit configuration

This project is designed for 1 Linear Slider and Tri-color LED, which are available on the CY8CKIT-042 PSoC 4 Pioneer Kit. The CapSense modulator capacitor Cmod is on the CY8CKIT-042 board at port P4[2].

A full description of the CY8CKIT-042 kit, along with more example programs and ordering information, can be found at http://www.cypress.com/go/cy8ckit-042.

The project requires configuration settings changes in order to run on the CY8CKIT-040 from Cypress Semiconductor. A full description of the kit, along with more example programs and ordering information, can be found at http://www.cypress.com/go/cy8ckit-040.

In order to switch from the CY8CKIT-042 to the CY8CKIT-040 following steps should be performed:

1. Change the project's device from CY8C4245AXI-483 to CY8C4014LQI-422 with a Device Selector called from the project's context menu.
2. On the top design schematic double click on the LED_RED, select Built-in tab, set CY_REMOVE parameter to True.
3. Change assignment of the pin components to physical pins. In the Workspace Explorer window, double-click the project's design-wide resource file and assign the pins for Capsense_CSD and RGB LED accordingly to Table 1.

Table 1. Pin assignment of CapSense_CSD_P4_Design project

Pin Name	Development Kit	
	CY8CKIT-042	CY8CKIT-040
\Capsense_CSD:Cmod\	P4[2]	P0[4]
\Capsense_CSD:Sns[0]\	P1[1]	P1[4]

\Capsense_CSD:Sns[1]\	P1[2]	P1[5]
\Capsense_CSD:Sns[2]\	P1[3]	P1[6]
\Capsense_CSD:Sns[3]\	P1[4]	P1[0]
\Capsense_CSD:Sns[4]\	P1[5]	P1[7]
LED_GREEN	P0[2]	P1[1]
LED_RED	P1[6]	-

Project configuration

The top design schematic is shown in **Figure 1**.

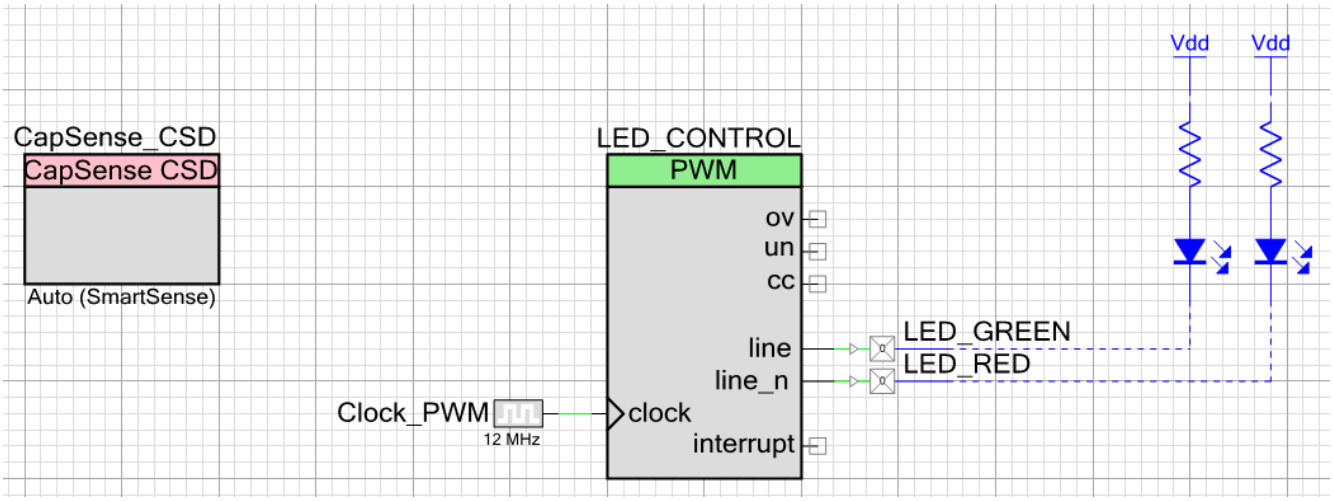

Figure 1. Top design schematic

The PWMs is configured to drive two LEDs from the Tri-color LED.

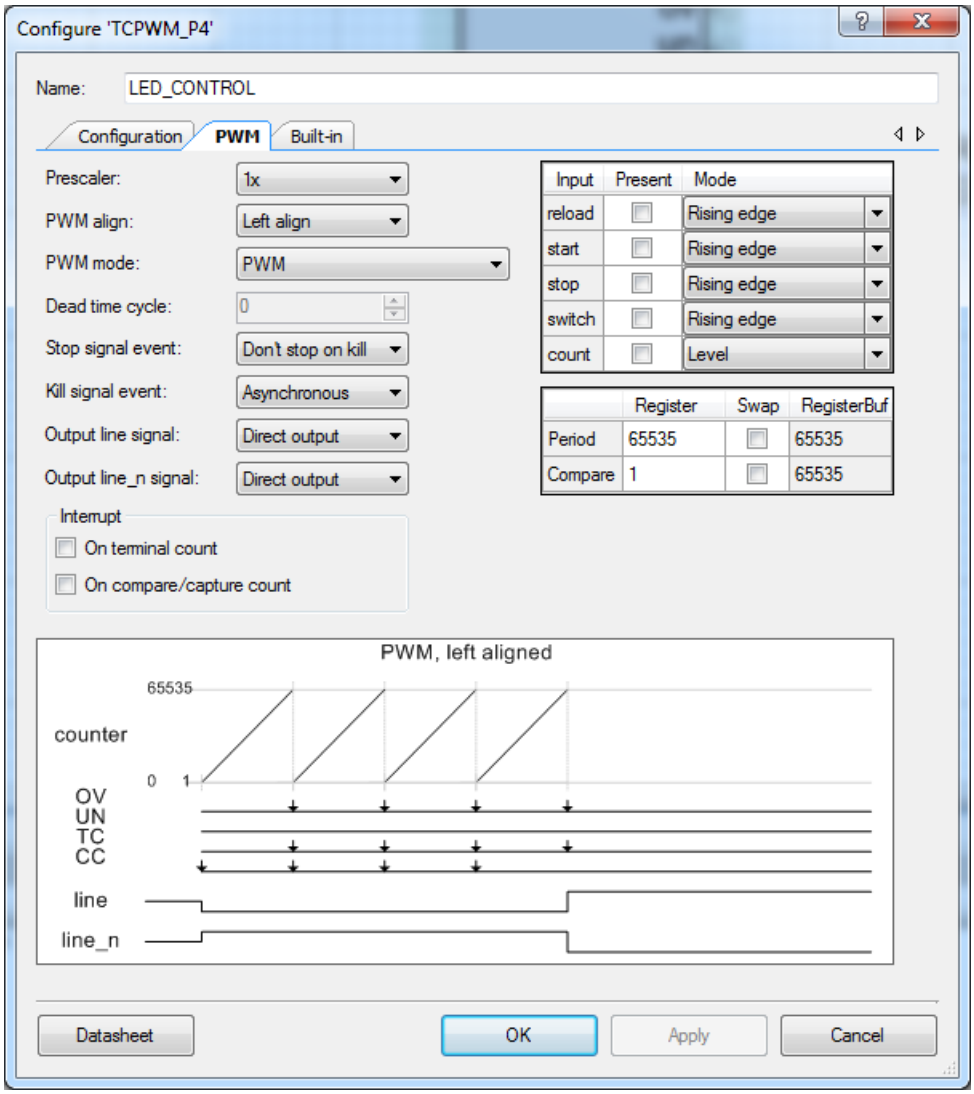

Figure 2. PWMs configuration

The CapSense_CSD component is configured with the Tuning method Auto for 1 Linear Slider.

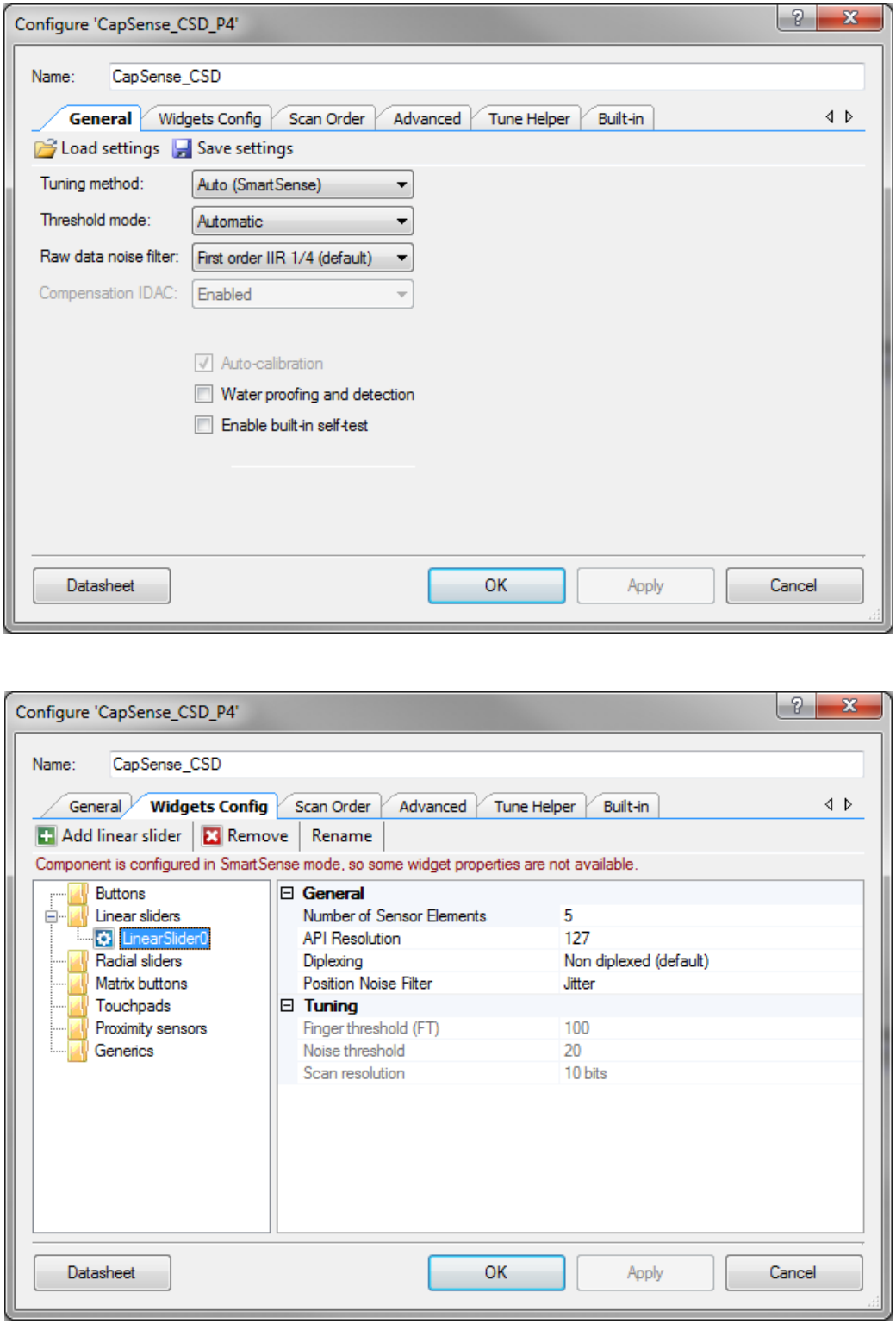

Figure 3. CapSense_CSD Widget Config Tab

The clock system configuration is shown in Figure 5.

PSoC 4100/PSoC 4200 PSoC4000

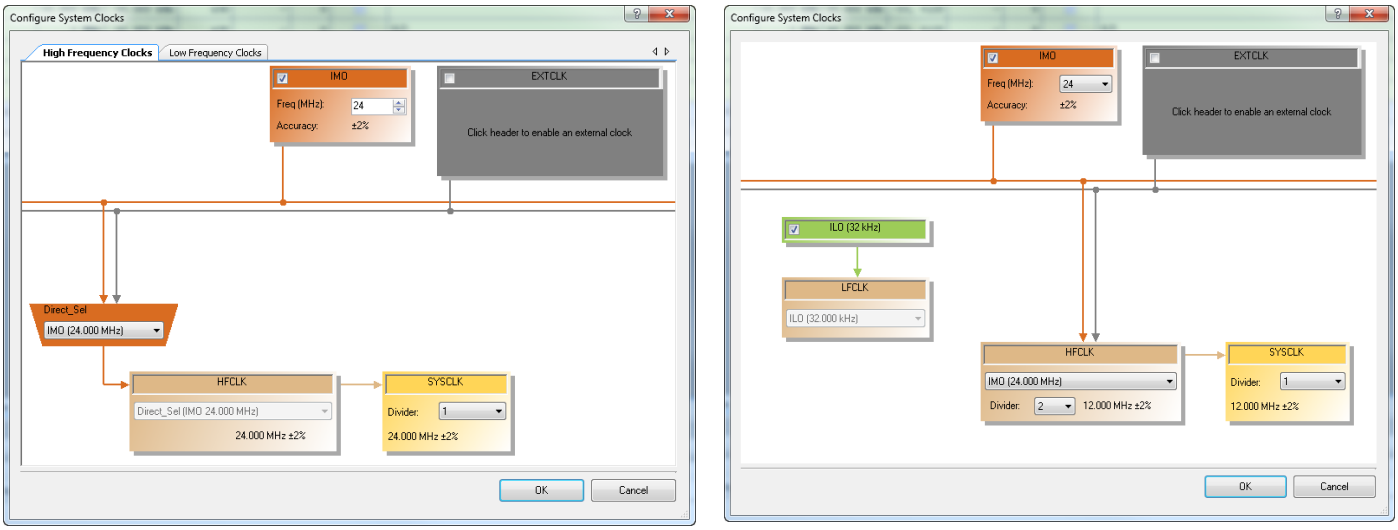

Figure 5. “Configure System Clocks” windows

Project Description

The project demonstrates setting the LED color on CY8CKIT-042 (or LED brightness on CY8CKIT-040) using a Capsense slider touch position. No additional connection is required.

Expected results

On the CY8CKIT-042 Slider a touch position changes the LED color from green to red if moving up and vice versa in the downward direction.
On the CY8CKIT-040 Slider a touch position changes the GREEN LED brightness from low to high if moving up and vice versa in the downward direction.