CapSense_CSD_P4 Slider Design example project

1.30

Features

- Sensing elements: 5-segment Linear Slider:
  - CY8CKIT-042 and CY8CKIT-042-BLE 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

The project requires configuration settings changes in order to run on the KIT, different from CY8CKIT-042.

A full description of the supported development KITs, along with more example programs and ordering information, can be found at the following links:

- CY8CKIT-042 - http://www.cypress.com/go/cy8ckit-042
- CY8CKIT-040 - http://www.cypress.com/go/cy8ckit-040
- CY8CKIT-042-BLE - http://www.cypress.com/go/cy8ckit-042-ble

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

1. Select the appropriate device with a Device Selector called from the project's context menu:
   - CY8C4245AXI-483 for CY8CKIT-042 KIT
   - CY8C4014LQI-422 for CY8CKIT-040 KIT
   - CY8C4247LQI-BL483 for CY8CKIT-042-BLE
2. In the case of migration to the CY8CKIT-040 KIT, the LED_2 pin should be removed from the project schematic. Double click on the LED_2, 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 according to Table 1.

Table 1. Pin assignment for the CapSense_CSD_P4_Design project

Pin Name	Development Kit		
	CY8CKIT-042	CY8CKIT-042-BLE	CY8CKIT-040
\Capsense_CSD:Cmod\	P4[2]	P4[0]	P0[4]
\Capsense_CSD:Sns[0]\	P1[1]	P2[1]	P1[4]
\Capsense_CSD:Sns[1]\	P1[2]	P2[2]	P1[5]
\Capsense_CSD:Sns[2]\	P1[3]	P2[3]	P1[6]
\Capsense_CSD:Sns[3]\	P1[4]	P2[4]	P1[0]
\Capsense_CSD:Sns[4]\	P1[5]	P2[5]	P1[7]
LED_1	P0[2]	P3[6]	P1[1]
LED_2	P0[3]	P3[7]	-

Project configuration

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

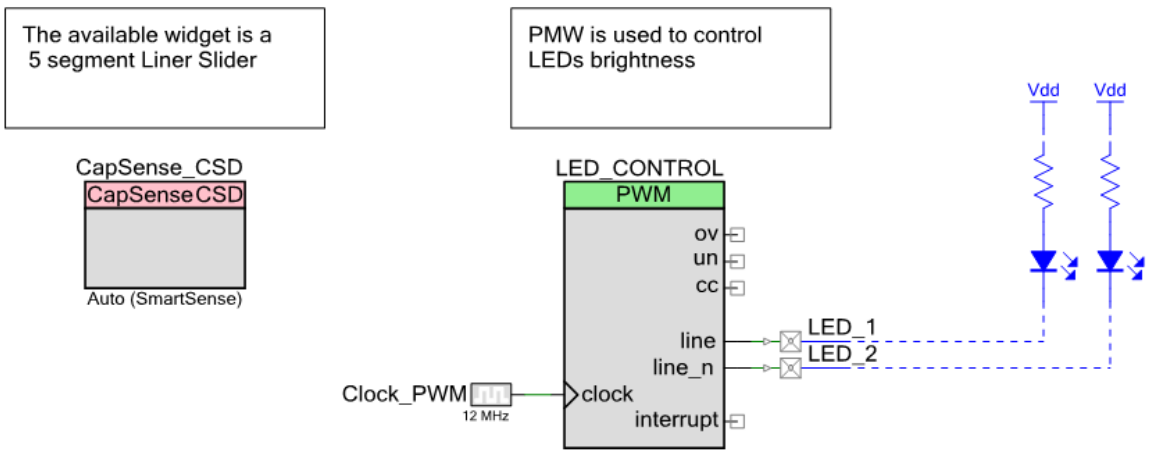


Figure 1. Top design schematic

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

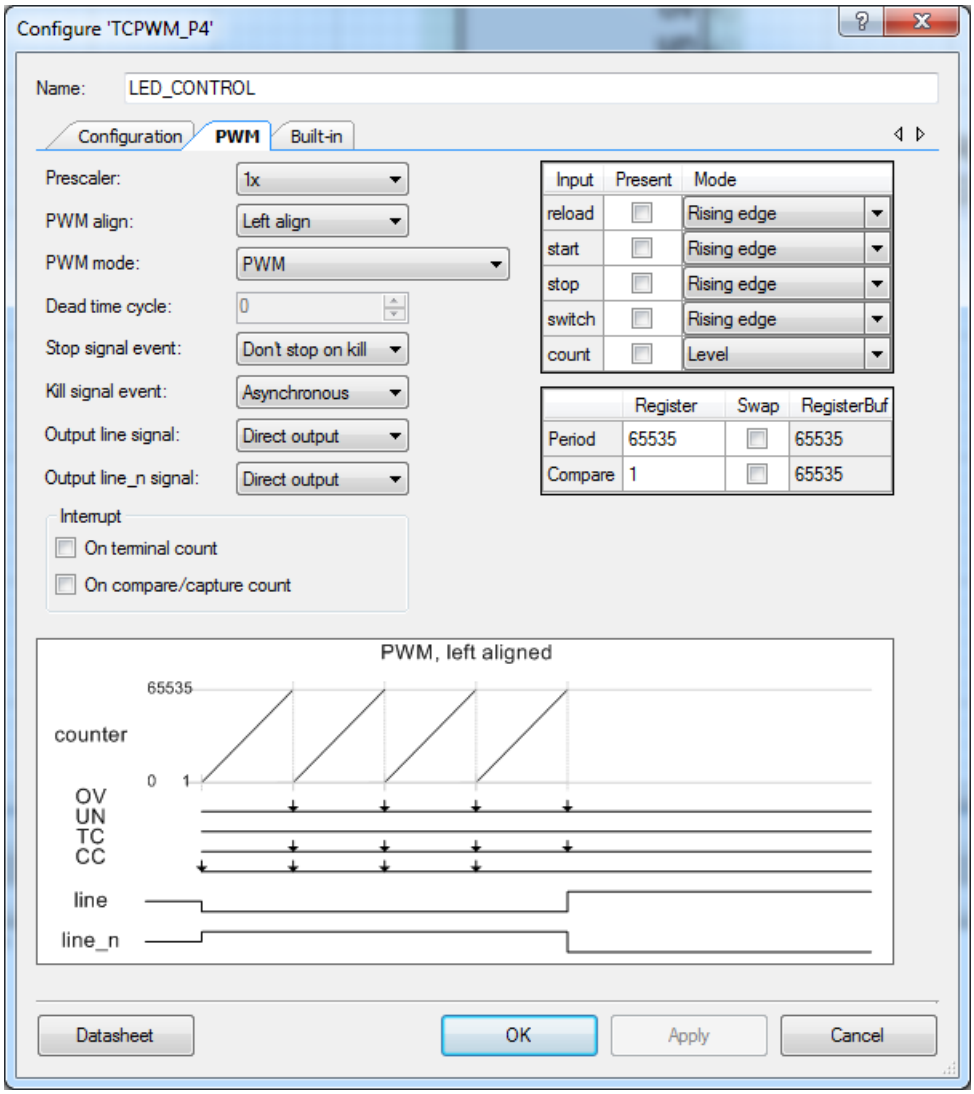


Figure 2. PWMs configuration

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

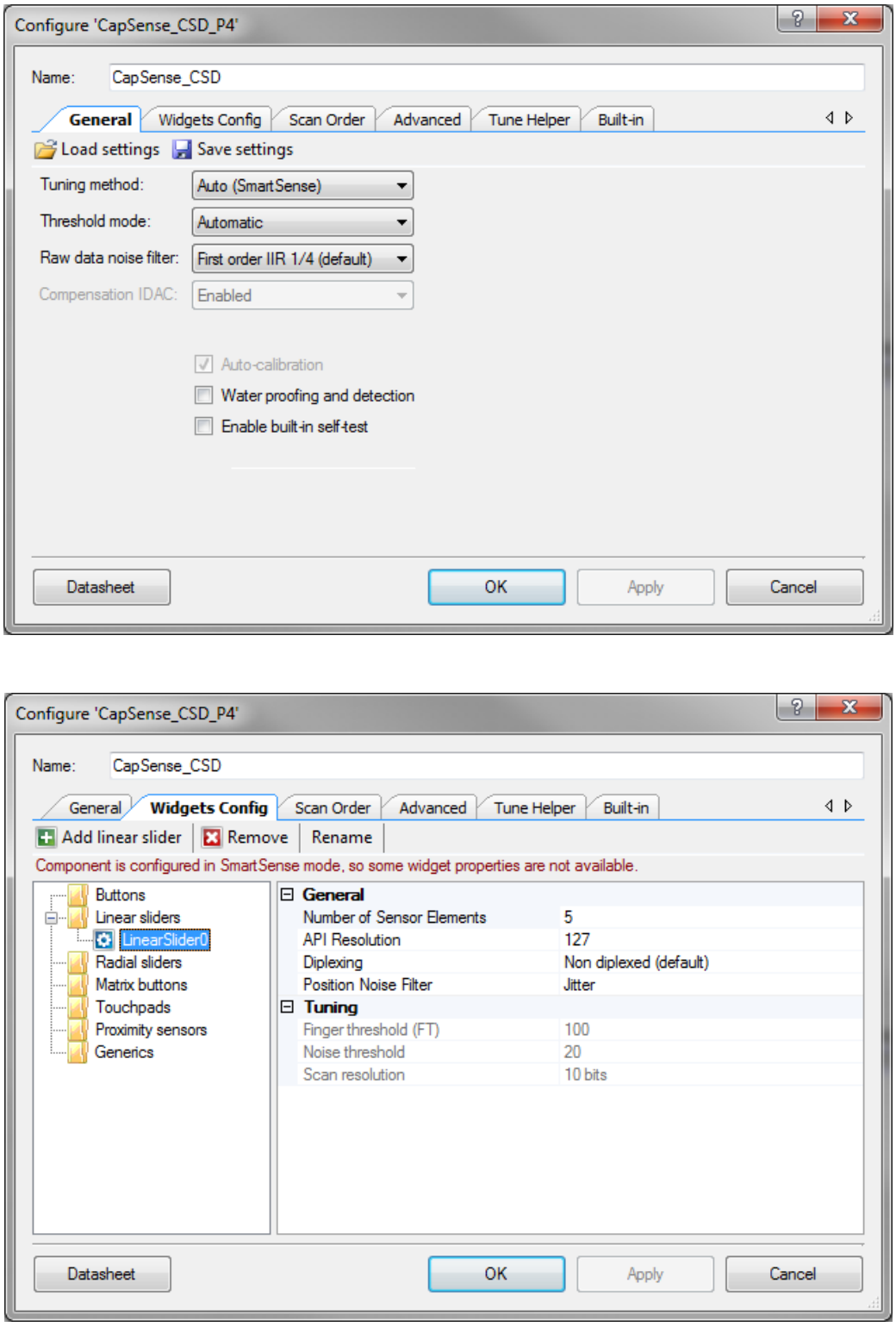
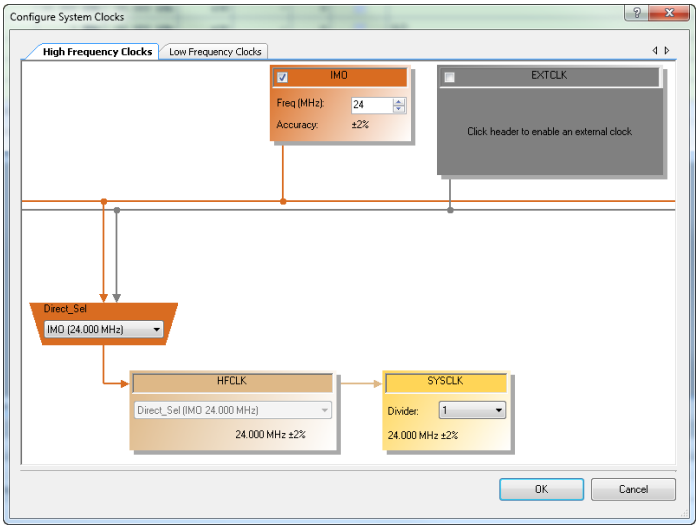


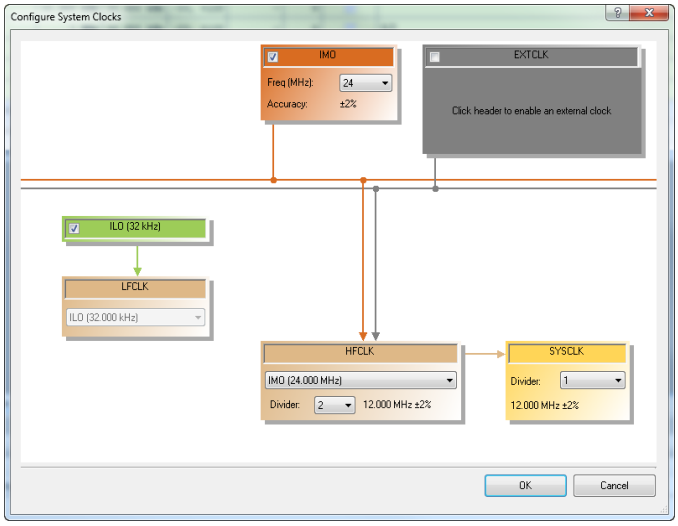
Figure 3. CapSense_CSD Widget Config Tab

The clock system configuration is shown in Figure 5.

PSoC 4100/4200



PSoC4000



PSoC 4100/P4200-BL

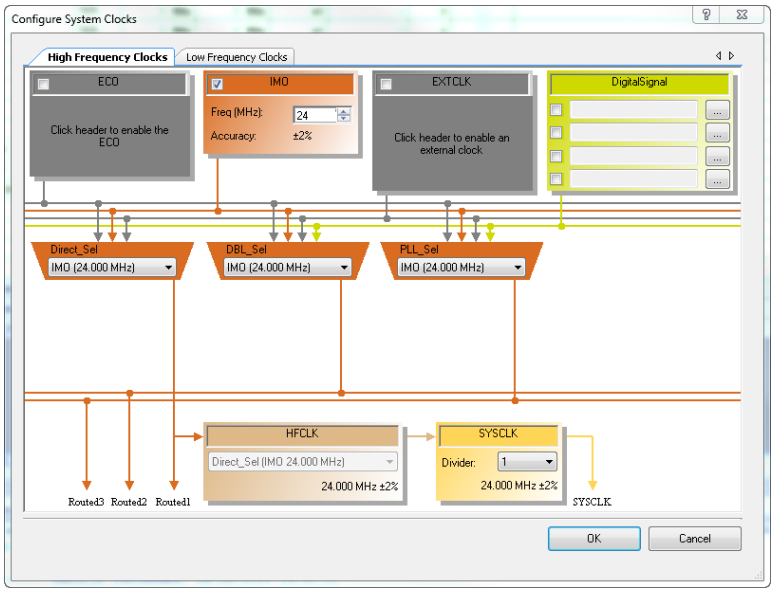


Figure 5. “Configure System Clocks” windows

Project Description

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

Expected results

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

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