TCPWM (Unconfigured mode) example project

2.0

Features

- Project uses Unconfigured TCPWM component with Compare Timer/Counter mode configuration
- Indicate Overflow and Compare signal interrupts on different color LEDs

General Description

This example project demonstrates the TCPWM component usage in the unconfigured mode with the Timer / Counter mode configuration by APIs.

Development kit configuration

1. Use the CY8CKIT-042 Kit with the default configuration and the CY8CKIT-040 Kit with changed project configuration settings.
2. Build the project and program the hex file on to the target device.
3. Power cycle the device and observe the results on the LEDs.

In order to configure the project for CY8CKIT-040 the following steps should be performed:

1. Change the project's device from PSoC 4200 to PSoC 4000.

   Use Device Selector from the project's context menu.

2. Change assignment of the pins component to physical pins.

   In the Workspace Explorer window, double-click the project's design-wide resource file and assign the pins LED_GREEN, LED_BLUE accordingly to Table 1.

   Table 1. Pin assignment of TCPWMExample project

Pin Name	Development Kit	
	CY8CKIT-042	CY8CKIT-040
LED_GREEN	P0[2]	P1[1]
LED_BLUE	P0[3]	P0[2]

Project configuration

The example project consists of the following components: TCPWM, Clock, two digital output pins, and Interrupt. The TCPWM is used as the Up Timer with the Compare mode in the

Continuous Run mode. The output pins are used for reflecting the overflow and comparing events when interrupts happen. The top design schematic is shown in Figure 1.

Parameters used:

- Timer/Counter Compare mode
- Period = 65535u
- Compare = 20000u
- Counter mode = Up
- Prescaler = 1x
- Interrupt mode = Compare or Terminal count

The TCPWM (Unconfigured mode) example project

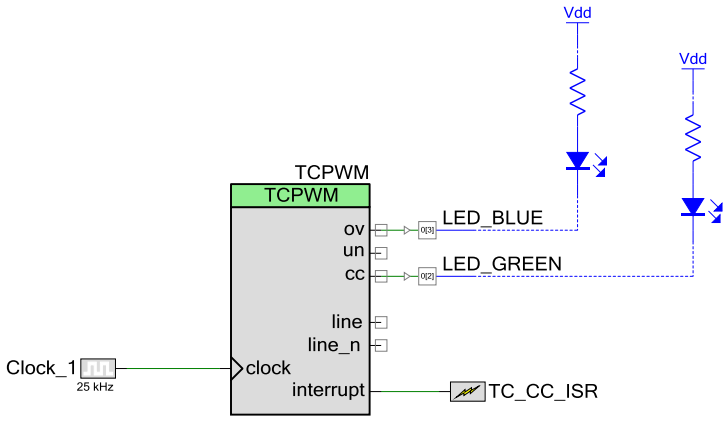

Figure 1. Top design schematic.

The TCPWM component GUI configuration (Figure 2, Figure 3):

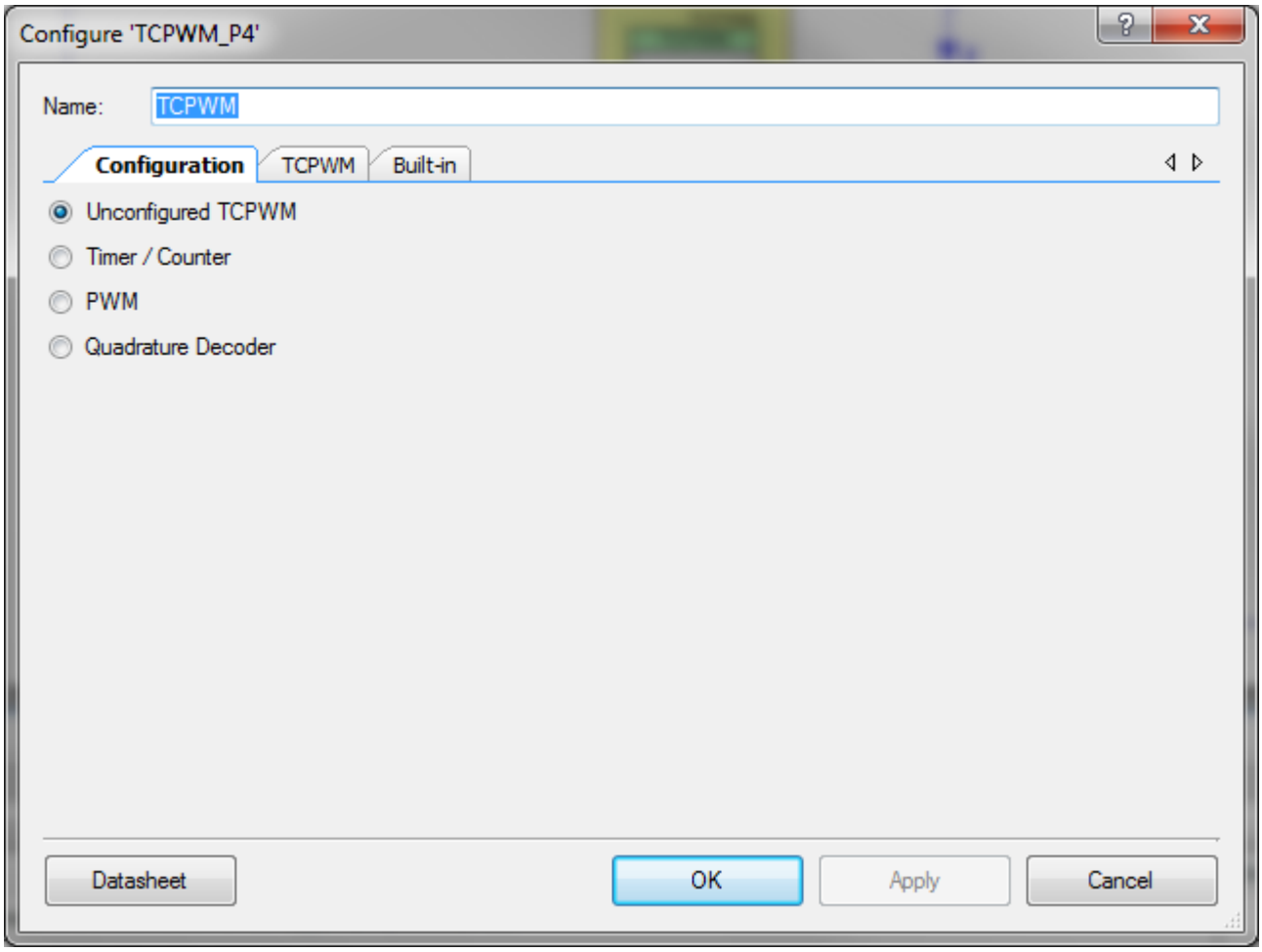

Figure 2. TCPWM Component Configuration Tab

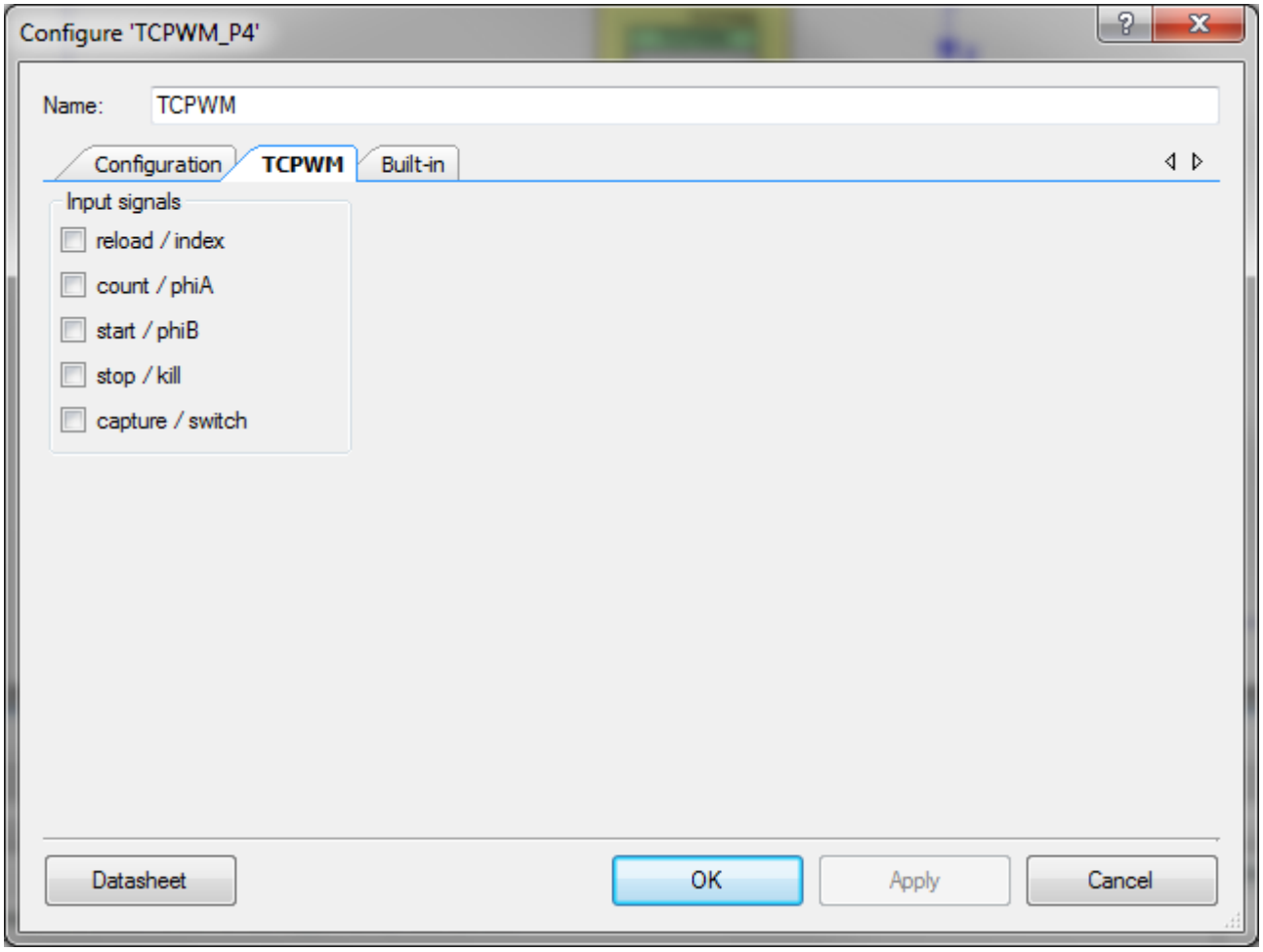

Figure 3. TCPWM Component TCPWM Tab

Project description

In the project, the TCPWM counts the value from 0u to 65535u. If the counter reaches 20000u, an interrupt happens and the green color LED flashes on for 200ms. If the counter reaches 0u, an interrupt happens and the blue color LED flashes on for 200ms.

Expected results

The blue color LED is flashing on when the overflow is caught by the TC interrupt. The green color LED is flashing on when the Counter and Compare values are equal during the CC interrupt.