

## Objective

This example demonstrates how to use the PSoC® 6 MCU Watchdog Timer (WDT) in interrupt mode. It blinks an LED using the WDT interrupt.

## Overview

This example demonstrates how to use the PSoC 6 MCU Watchdog Timer (WDT) in interrupt mode. It blinks an LED using the WDT interrupt.

## Requirements

**Tool:** PSoC Creator™ 4.2

**Programming Language:** C (Arm® GCC 5.4-2016-q2-update, Arm MDK 5.22)

**Associated Parts:** All PSoC 6 MCU parts

**Related Hardware:** CY8CKIT-062-BLE PSoC 6 BLE Pioneer Kit

## Design

The design shown in Figure 1 has a PSoC Creator Global Signal Reference Component and a System Interrupt Component (WDTIsr). GlobalSignal\_1 is configured to connect a WDT interrupt signal to WDTIsr. WDTIsr toggles GREEN\_LED for every WDT interrupt.

Figure 1. WDT Interrupt Example Schematic

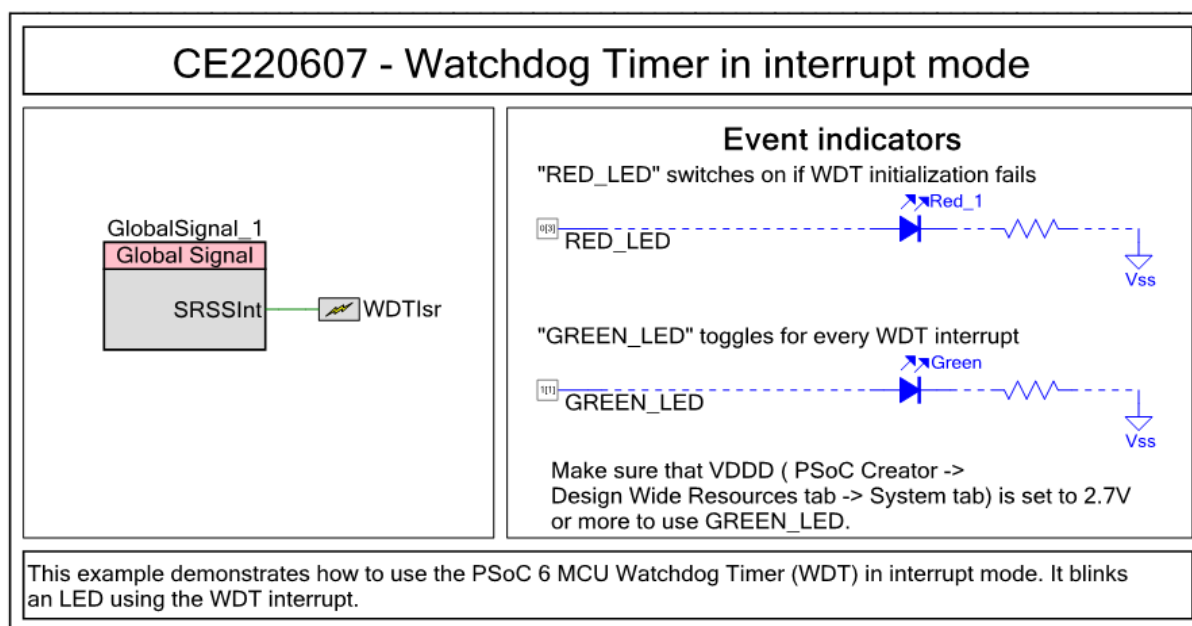
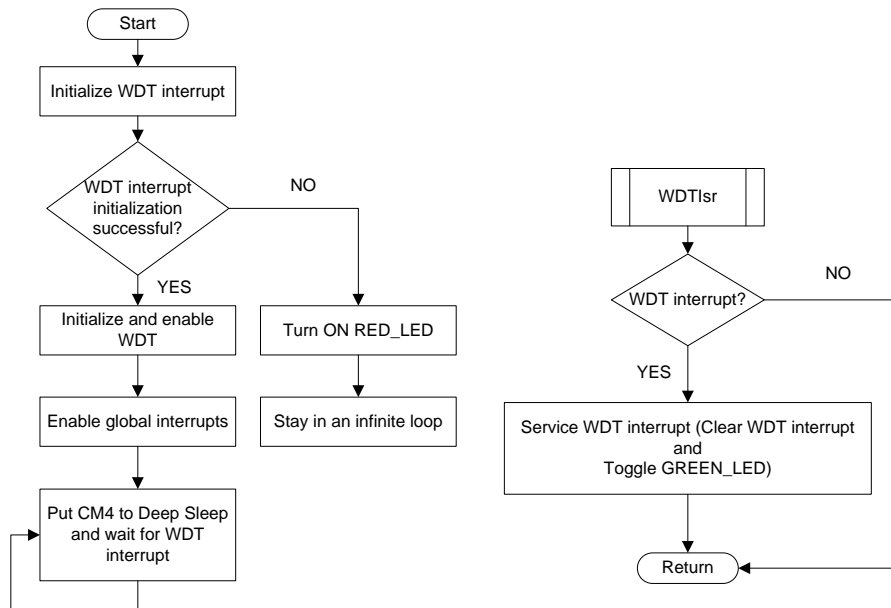


Figure 2 shows the firmware flowchart.

Figure 2. Firmware Flowchart



## Design Considerations

This code example is designed to run on CY8CKIT-062-BLE with the PSoC 6 MCU. To port the design to other PSoC 6 MCU and kits, change the target device in Device Selector, and change the pin assignments in the **cydwr** settings. For single-core PSoC 6 MCU devices, port the code from *main\_cm4.c* to *main.c* file because CM0+ CPU is not used in this code example.

## Hardware Setup

The code example works with the default settings on the CY8CKIT-062-BLE PSoC 6 BLE Pioneer Kit. If the settings are different from the default values, see the “Selection Switches” table in the [kit guide](#) to reset to the default settings.

Make sure that the switch "SW5" is set to select "3.3V" as VDD on the CY8CKIT-062-BLE PSoC 6 BLE Pioneer Kit.

## Operation

1. Connect CY8CKIT-062 BLE to a USB port on your PC.
2. Build and program the application into CY8CKIT-062 BLE. For more information on building a project or programming a device, see PSoC Creator Help.
3. Observe the GREEN\_LED to determine the status of the WDT interrupt.

## Components

Table 1 lists the PSoC Creator Components used in this example and the hardware resources used by each Component.

Table 1. PSoC Creator Components

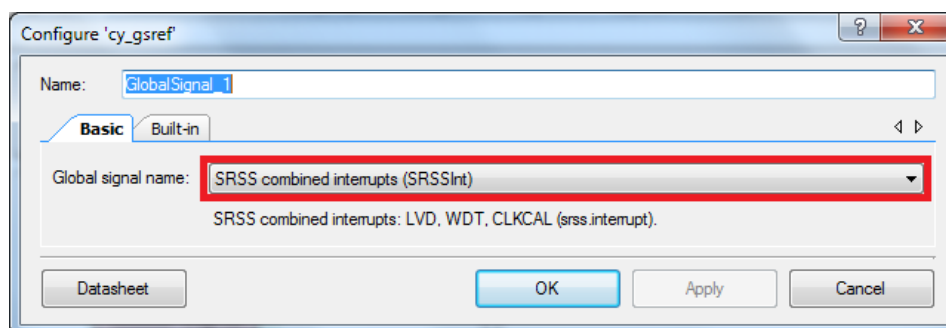
Component	Instance Name	Hardware Resources
Global Signal Reference (GSRef)	GlobalSignal_1	None
System Interrupt (SysInt)	WDTISR	One entry in the device interrupt vector table
General Purpose Input / Output (GPIO)	RED_LED, GREEN_LED	Two physical pins

## Parameter Settings

Non-default settings for each Component are outlined in red in the following figures.

Figure 3 shows the GlobalSignal\_1 Component parameter settings.

Figure 3. GlobalSignal\_1 Component Parameter Settings



## Design-Wide Resources

Make sure that  $V_{DD}$  (PSoC Creator > Design Wide Resources tab > System tab) is set to 2.7 V or more to use GREEN\_LED.

Table 2 shows the pin assignment for the code example.

Table 2. Pin Names and Location

Pin Name	Location
GREEN_LED	P1[1]
RED_LED	P0[3]

## Related Documents

Application Notes	
<a href="#">AN210781 – Getting Started with PSoC 6 MCU with Bluetooth Low Energy (BLE) Connectivity</a>	Describes PSoC 63 with Bluetooth Low Energy (BLE) Connectivity and how to build your first PSoC Creator project
PSoC Creator Component Datasheets	
<a href="#">Global Signal Reference</a>	Connections to device global signals
<a href="#">System Interrupt</a>	Interrupt vectoring and control
<a href="#">General Purpose Input / Output</a>	Supports Analog, Digital I/O and Bidirectional signal types
Device Documentation	
<a href="#">PSoC 6 MCU: PSoC 63 with BLE Datasheet</a>	<a href="#">PSoC 6 MCU: PSoC 63 with BLE Architecture Technical Reference Manual</a>
Development Kit (DVK) Documentation	
<a href="#">CY8CKIT-062-BLE PSoC 6 BLE Pioneer Kit</a>	

## Document History

Document Title: CE220607 – PSoC 6 MCU Watchdog Timer in Interrupt Mode

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Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	5858252	VJYA	08/24/2017	New code example
*A	5918165	VJYA	11/03/2017	Updated project name

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