SCB_UartComm Example Project
1.20

Features

- Simple communication with the PSoC 4 from the serial terminal software

General Description

This example project demonstrates the basic operation of the SCB component in the UART mode. The polling method is used to wait for a received character. As soon as the character is received it is transmitted back. The serial terminal can be used on the PC to send characters and get them back. The example will echo every received character.

Development Kit Configuration

This example project is designed to run on the CY8CKIT-042 kit from Cypress Semiconductor. A description of the 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 to run on other kits from Cypress Semiconductor. Table 1 is the list of the supported kits. To switch from CY8CKIT-042 to any other kit, change the project's device with the help of Device Selector called from the project's context menu.

Table 1. Development Kits vs Parts

Development Kit	Device
CY8CKIT-041	CY8C4045AZI-S413 / CY8C4146AZI-S433
CY8CKIT-042	CY8C4245AXI-483
CY8CKIT-042-BLE	CY8C4247LQI-BL483
CY8CKIT-044	CY8C4247AZI-M485
CY8CKIT-046	CY8C4248BZI-L489
CY8CKIT-048	CY8C4A45LQI-483

IMPORTANT: make sure that the **HFCLK** frequency is **24 or 12 MHz** after device is selected for correct code example operation.

The pin assignments for the supported kits are in Table 2.

Table 2. Pin Assignment

Pin Name	Development Kit	
	\UART:rx\	\UART:tx\
CY8CKIT-041	P0[4]	P0[5]

Pin Name	Development Kit	
	\UART:rx\	\UART:tx\
CY8CKIT-042	P0[4]*	P0[5]*
CY8CKIT-042 BLE	P1[4]	P1[5]
CY8CKIT-044	P7[0]	P7[1]
CY8CKIT-046	P3[0]	P3[1]
CY8CKIT-048	P0[4]	P0[5]

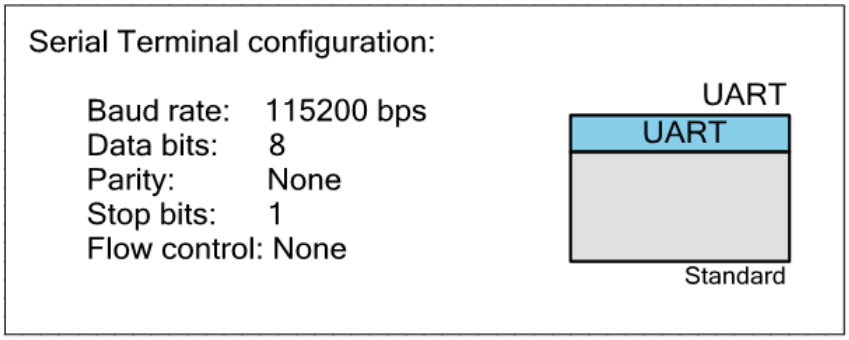
* Connect P0[4] (\UART:rx\) to the header J8.9 (P5LP12_6 – UART_RX) and P0[5] (\UART:tx\) to the header J8.10 (P5LP12_7 – UART_TX).

Note The project control files handle the pins placement automatically according to a selected PSoC.

Project Configuration

The example project consists of the single UART (SCB mode) component. The design schematic is shown in Figure 1. The configuration for serial terminal connection is shown near the component.

Figure 1. Example Project Design Schematic



The component configuration Tabs (Basic and Advanced) are shown below.

Figure 2. UART (SCB mode) Basic Tab Configuration

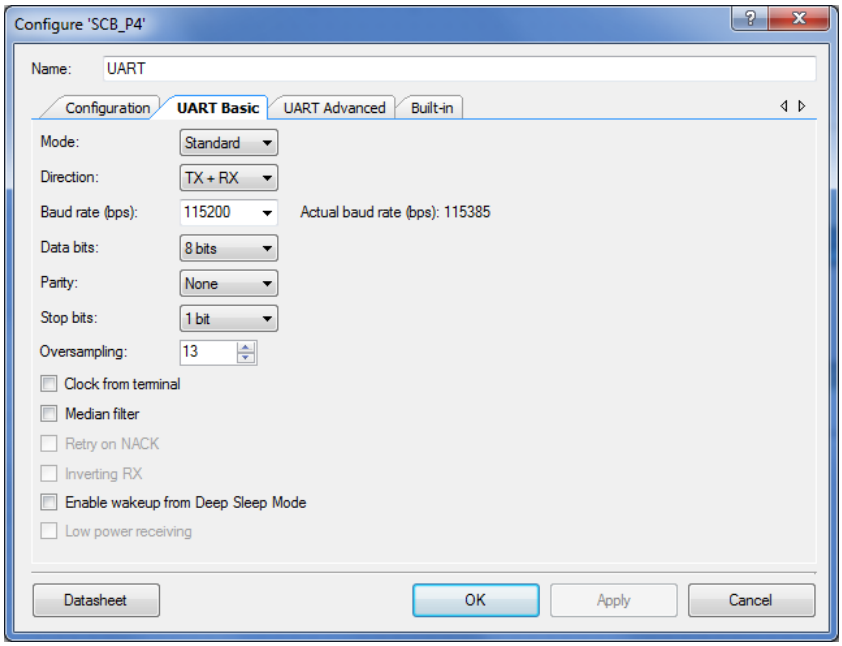
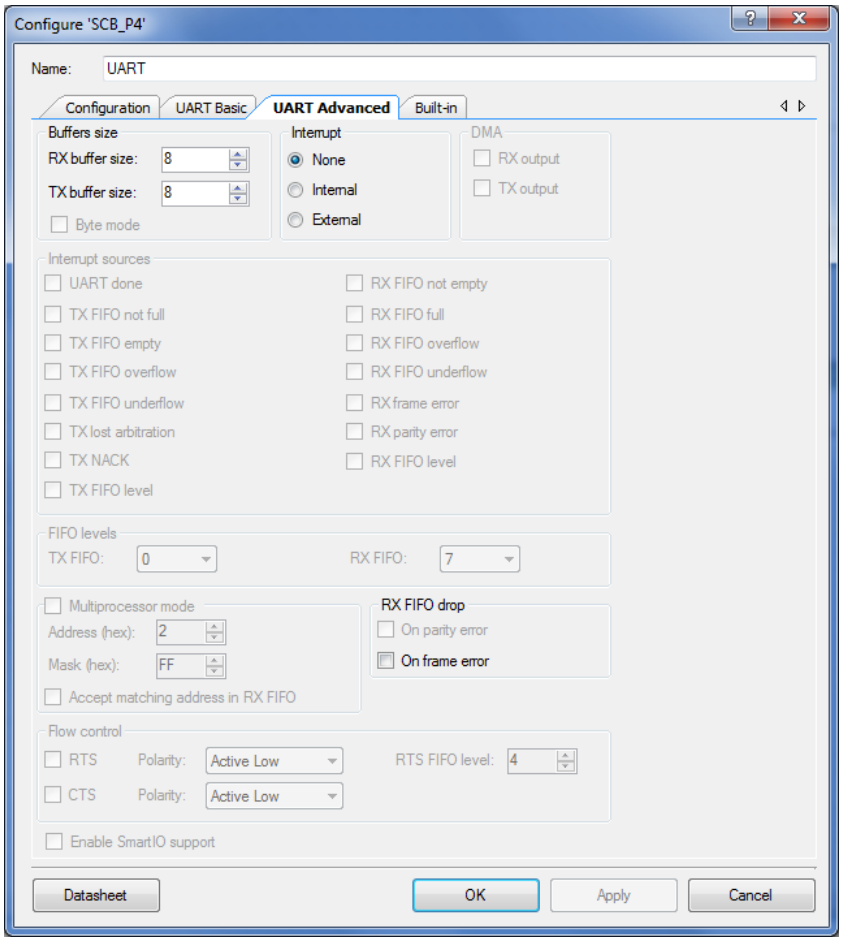


Figure 3. UART (SCB mode) Advanced Tab Configuration



Project Description

In the main firmware routine, the UART component is configured for operation and started. The constant text is transmitted to identify the example project and correct configuration of the serial terminal software. If this text is readable the serial terminal is configured properly and the following communication will return expected results.

After a text has been sent, the code enters the locked loop and polls UART for a received character. As soon as the character is received it is transmitted back. As a result every transmitted character will be re-transmitted back.

Expected Results

To communicate with PSoC 4 from the serial terminal software, follow this procedure:

1. Connect USB Mini B to appropriate header of the kit. The kit enumerates as a **KitProg/KitProg2 USB-UART** and is available under the Device Manager, Ports (COM &

LPT). A communication port is assigned to the **KitProg/KitProg2 USB-UART**. Note the **COMX** port number.

2. Run the available serial terminal software.
3. Select **COMX** (where X – is the specific communication port that is assigned to **KitProg/KitProg2 USB-UART**).
4. Configure serial terminal connection with the parameters values listed in Figure 1: Baud rate – 115200, Data bits – 8, Parity – None, Stop bits – 1, and Flow control – None.
5. Build and program the SCB_UartComm example project into the device.
6. Observe the text displayed in the serial terminal output window.

   ```
   ********************************************************************************
   This is SCB_UartComm datasheet example project.
   If you are able to read this text the terminal connection is configured correctly.
   Start transmitting the characters to see an echo in the terminal.
   ```

7. Start communicating with the device as explained in the Project Description.