I2C_LCD_Example_PSoC4 Example Project

1.0

Features

- Communicate on 2-wire I2C bus
- Support of NXP PCF2119x command format

General Description

This example project demonstrates functionality on the I2C LCD component. In this example project the I2C LCD component is used to display a custom character set of the NXP PCF2119x compatible LCD module. It also demonstrates the example of usage of address macros and custom commands.

Development Kit Configuration

This example project is designed to run on PSoC 4 processor module CY8CKIT-038 with CY8CKIT-001 kit 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-001 and http://www.cypress.com/go/cy8ckit-038.

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-001 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-038 + CY8CKIT-001	CY8C4245AXI-483
CY8CKIT-042	CY8C4245AXI-483
CY8CKIT-042-BLE	CY8C4247LQI-BL483
CY8CKIT-044	CY8C4247AZI-M485

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

Table 2. Pin Assignment

Pin Name	Development Kit			
	CY8CKIT-038 + CY8CKIT-001	CY8CKIT-042	CY8CKIT-042-BLE	CY8CKIT-044
I2C_M:scl	P4[0]	P4[0]	P3[5]	P4[0]
I2C_M:sda	P4[1]	P4[1]	P3[4]	P4[1]
Button	P0[7]*	P0[7]	P2[7]	P0[7]
LCD_RST	P3[5]	P3[5]	P2[4]	P2[6]

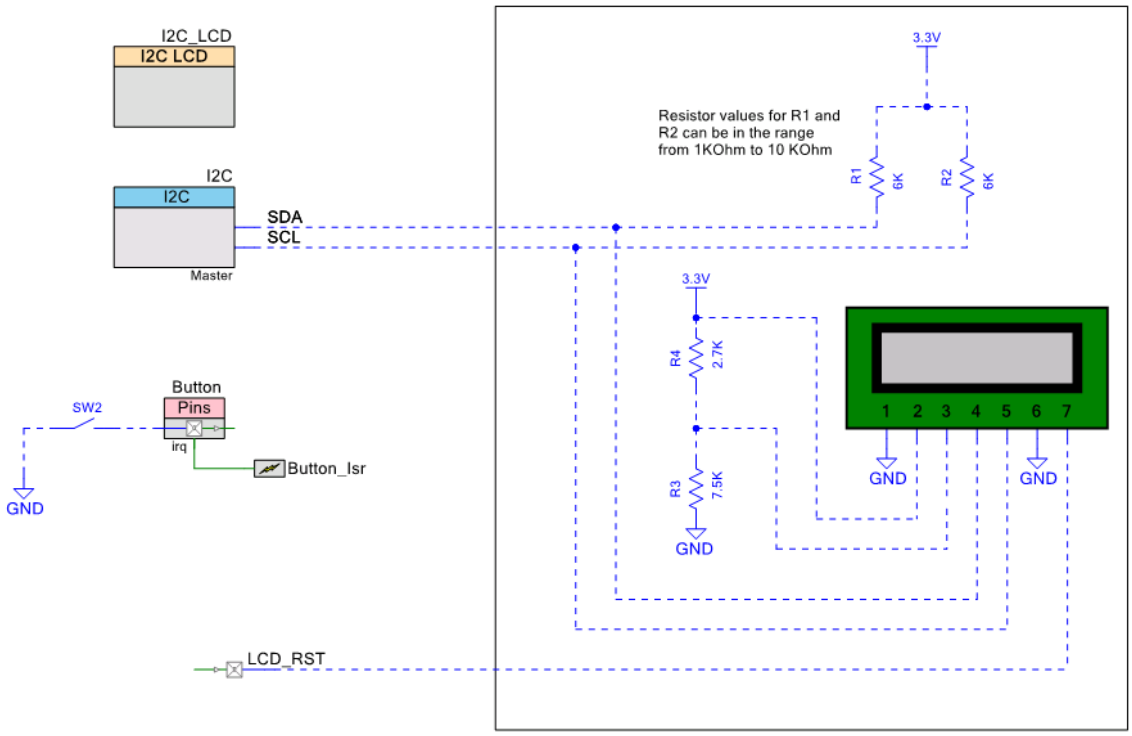
* Connect P0[7] (Button) to P14 (SW2).

Project Description

The project requires the following configuration settings changes in order to run on the supported kit (Table 1) from Cypress Semiconductor:

1. Make sure kit is in its default configuration.
2. Mount the CY8CKIT-038 processor module kit on the CY8CKIT-001 and go to the step 4.
3. For the rest supported kits do next steps:
    a. Connect R1-R4 resistors as it is shown on Figure 1.
    b. Connect SDA pin and SCL pin to pin 4 and 5 of the LCD module.
    c. Connect pins 1-3, 6 and 7 of LCD module as it is shown on Figure 1.
4. Build the project and program the hex file into the target device.
5. Wait and observe the two lines output of the custom character set.
6. Press the SW2 button and observe the LCD output flip.
7. Press the button again and observe LCD output get back to its normal state.

Figure 1 Example Project Design Schematic



Expected Results

The expected result is printed strings on the LCD module, "CYPRESS!" in the first row and "Cypress!" in the second row. The displayed output is flipped top to bottom on the button press.

	Original strings	Flipped strings
First row	CYPRESS!	Cʎpɹǝssi
Second row	Cypress!	CʎPRESSi

Cypress Semiconductor
198 Champion Court
San Jose, CA 95134-1709

Phone : 408-943-2600
Fax : 408-943-4730
Website : www.cypress.com