EZI2C Code Example

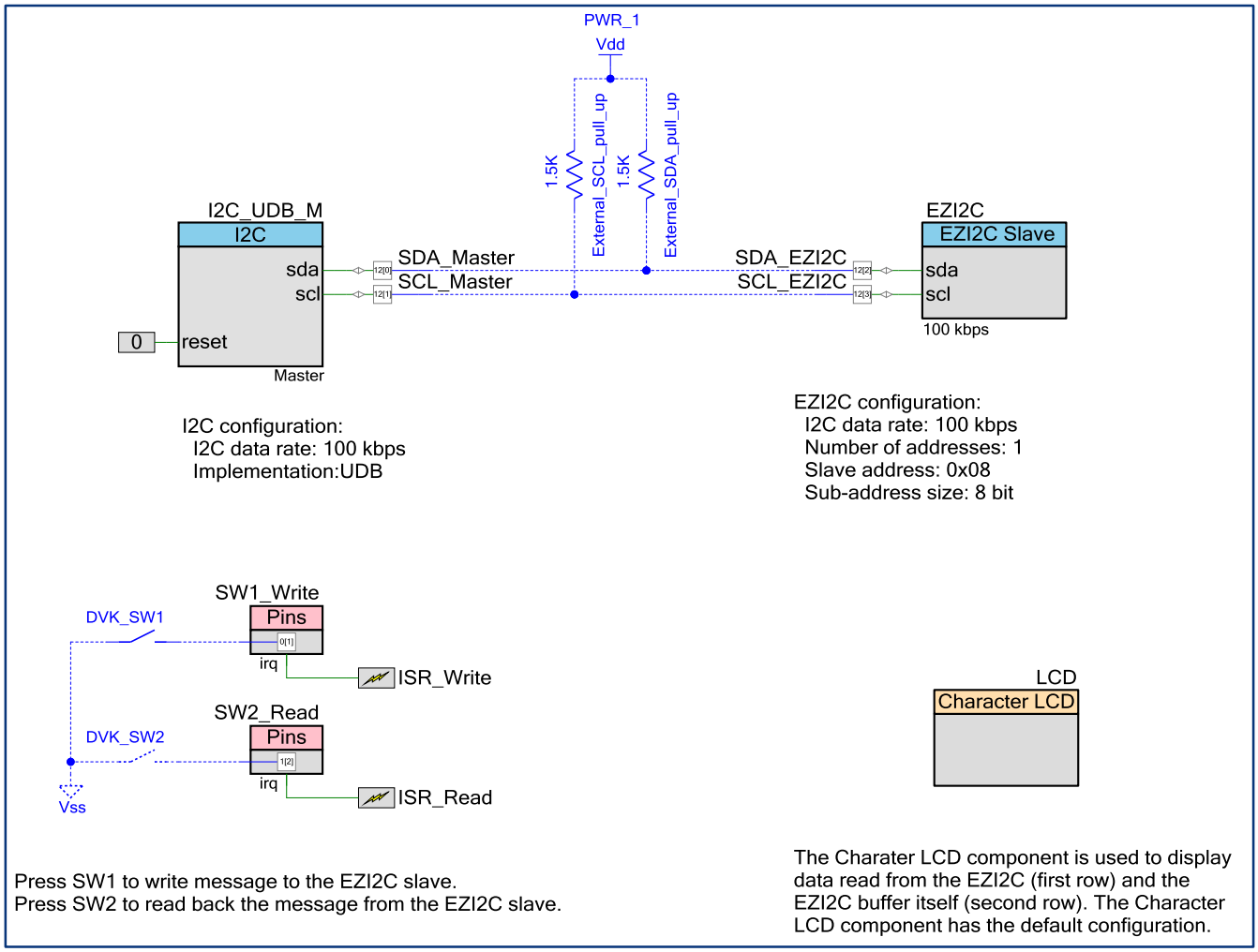
Objective

This example demonstrates operation of the EZI2C (EZ I2C Slave) and I2C (Inter-Integrated Circuit Master/Multi-Master/Slave) component communication. The EZI2C component is configured as one slave device with the 8-bit sub-address size and 100 kbps data

Procedure

1. This project is written for a 2X16 LCD display like the one available in the Cypress CY8CKIT-001 development kit.
2. Build the project and program the PSoC 3/5LP device using the MiniProg3.
3. Connect external pull-up resistors as shown in the schematic.
4. Connect P0[1] to SW1 and P1[2] to SW2.
5. Power cycle the device.
6. Press SW1 to update and write message to the EZI2C slave.
7. Press SW2 to read back and display message from the EZI2C slave.
8. Observe the results on the LCD.

Schematic


PWR_1
Vdd
1.5K
External_SCL_pull_up
1.5K
External_SDA_pull_up
I2C_UDB_M
I2C
sda
scl
reset
0
Master
SDA_Master
SCL_Master
SDA_EZI2C
SCL_EZI2C
EZI2C
EZI2C Slave
sda
scl
100 kbps
I2C configuration:
I2C data rate: 100 kbps
Implementation:UDB
EZI2C configuration:
I2C data rate: 100 kbps
Number of addresses: 1
Slave address: 0x08
Sub-address size: 8 bit
SW1_Write
DVK_SW1
Pins
irq
ISR_Write
SW2_Read
DVK_SW2
Pins
irq
ISR_Read
Vss
LCD
Character LCD
Press SW1 to write message to the EZI2C slave.
Press SW2 to read back the message from the EZI2C slave.
The Charater LCD component is used to display data read from the EZI2C (first row) and the EZI2C buffer itself (second row). The Character LCD component has the default configuration.

PSoC Resources

Cypress provides a wealth of data at www.cypress.com to help you to select the right PSoC device for your design, and quickly and effectively integrate the device into your design. For a comprehensive list of resources, see KBA86521, How to Design with PSoC 3, PSoC 4, and PSoC 5LP. The following is an abbreviated list for PSoC:

- **Overview:** PSoC Portfolio, PSoC Roadmap
- **Product Selectors:** PSoC 1, PSoC 3, PSoC 4, or PSoC 5LP. In addition, PSoC Creator includes a device selection tool.
- **Datasheets:** Describe and provide electrical specifications for the PSoC 3, PSoC 4, and PSoC 5LP device families.
- **CapSense Design Guides:** Learn how to design capacitive touch-sensing applications with the PSoC 3, PSoC 4, and PSoC 5LP families of devices.
- **Application Notes** and **Code Examples:** Cover a broad range of topics, from basic to advanced level. Many of the application notes include code examples.
- **Technical Reference Manuals (TRM):** Provide detailed descriptions of the architecture and registers in each of the PSoC 3, PSoC 4, and PSoC 5LP device families.
- **PSoC Training Videos**: These videos provide step-by-step instructions on getting started building complex designs with PSoC.
- **Development Kits:**
  - CY8CKIT-042 and CY8CKIT-040, PSoC 4 Pioneer kits, are easy-to-use and inexpensive development platforms. These kits include connectors for Arduino™ compatible shields and Digilent® Pmod™ daughter cards.
  - CY8CKIT-049 is a series of very low-cost prototyping platform for sampling PSoC 4 devices.
  - CY8CKIT-030 and CY8CKIT-050 are designed for analog performance. They enable you to evaluate, develop, and prototype high-precision analog, low-power, and low-voltage applications powered by PSoC 3 and PSoC 5LP, respectively.
  - CY8CKIT-001 is a common development platform for all PSoC family devices.
- The MiniProg3 device provides an interface for flash programming and debug.

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