Quadrature Decoder Code Example

Objective

This example shows the use of the Quadrature Decoder component. It shows how to generate quadrature inputs, an Index Input usage example, and shows sample processing Quadrature Decoder count.

The Quadrature Decoder Component is driven by two PWMs. Each 500 counts from the Quadrature Decoder Component are displayed on an LCD by adding one line to a vertical bar graph. When 4000 counts are reached, the Control Register generates the index signal and the Quadrature Decoder is reset. The number of counts resets to zero, and the procedure repeats.

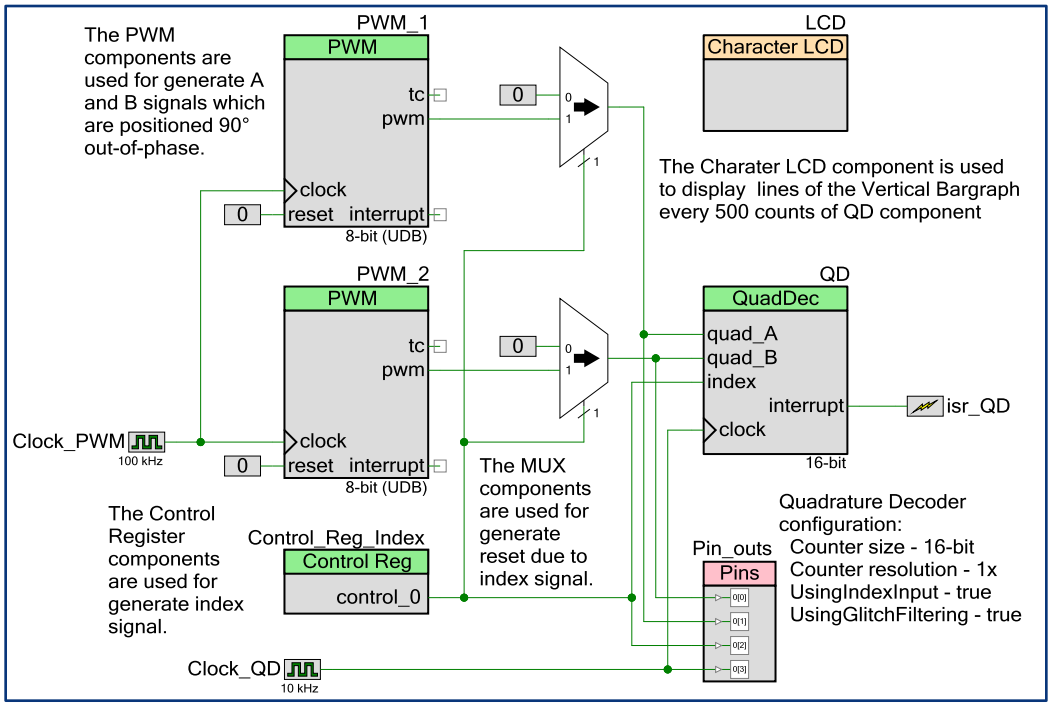
This example is written for the CY8CKIT-001 development kit, and the 2x16 LCD display that comes with it.

See the schematic for more information.

Procedure

1. This project is written for a 2X16 LCD display as the one available in the Cypress kit CY8CKIT-001.
2. The CY8CKIT-001 DVK besides default configuration should have LCD power jumper (J12).
3. Build the project and program the hex file on to the target device.
4. Power cycle the device and observe the results on the LCD.

Schematic



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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