

# Shift Register Code Example

## Objective

This example project demonstrates basic 8-bit and 16-bit Shift Register operation. Control Registers are used as component clock sources instead of a system clock. This is done to simplify Load and Store events control.

1. First, an 8-bit Shift Register (ShiftReg\_1) is used. 0xFF is written to the input FIFO, loaded to the shift register, and right shifted. The shifted data is displayed on the LCD.
2. Next, the Shift In value is changed to 1 (instead of 0) and shifted until 0xFF. This value is stored into the output FIFO and displayed on the LCD.

The same operations are provided with the 16-bit Shift Register (ShiftReg\_2)

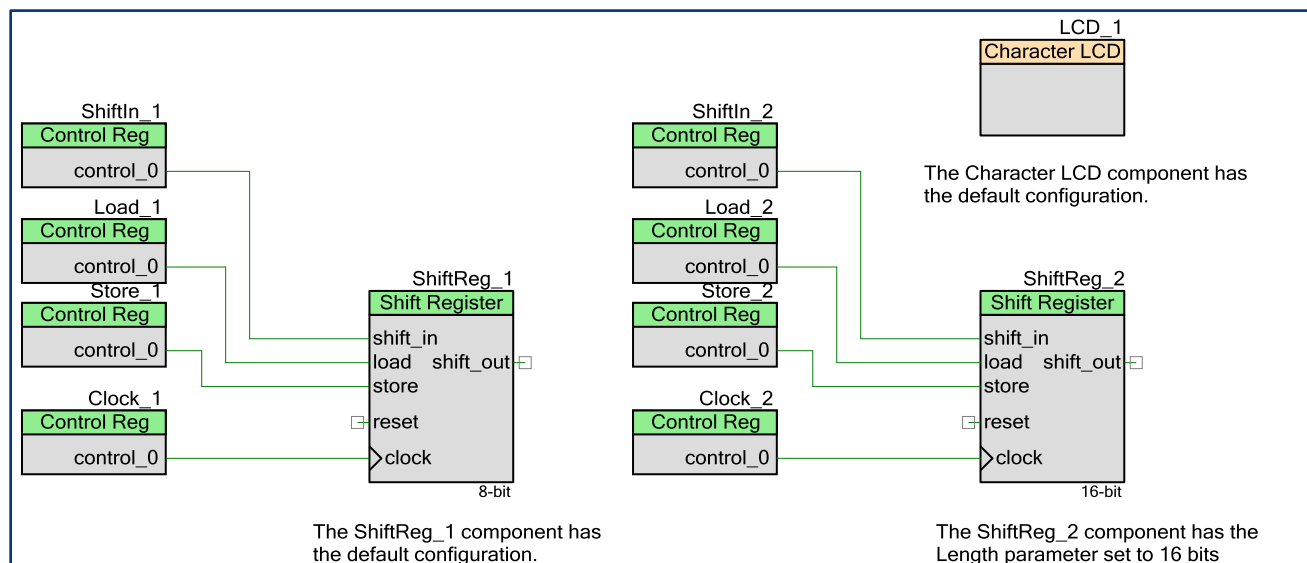
See the project's schematic for more information.

This example was designed to work with the development kit, CY8CKIT-001.

## Procedure

1. This project is written for a 2X16 LCD display such as the one available with the Cypress CY8CKIT-001 kit.
2. The CY8CKIT-001 board should have the LCD power jumper (J12) set.
3. Build the project and program the hex file on to target device using the MiniProg3.
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](http://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.

## Worldwide Sales and Design Support

Cypress maintains a worldwide network of offices, solution centers, manufacturer's representatives, and distributors. To find the office closest to you, visit us at [Cypress Locations](#).

### Products

ARM® Cortex® Microcontrollers	<a href="http://cypress.com/arm">cypress.com/arm</a>
Automotive	<a href="http://cypress.com/automotive">cypress.com/automotive</a>
Clocks & Buffers	<a href="http://cypress.com/clocks">cypress.com/clocks</a>
Interface	<a href="http://cypress.com/interface">cypress.com/interface</a>
Lighting & Power Control	<a href="http://cypress.com/powerpsoc">cypress.com/powerpsoc</a>
Memory	<a href="http://cypress.com/memory">cypress.com/memory</a>
PSoC	<a href="http://cypress.com/psoc">cypress.com/psoc</a>
Touch Sensing	<a href="http://cypress.com/touch">cypress.com/touch</a>
USB Controllers	<a href="http://cypress.com/usb">cypress.com/usb</a>
Wireless/RF	<a href="http://cypress.com/wireless">cypress.com/wireless</a>

### PSoC® Solutions

[cypress.com/psoc](http://cypress.com/psoc)

[PSoC 1](#) | [PSoC 3](#) | [PSoC 4](#) | [PSoC 5LP](#)

### Cypress Developer Community

[Community](#) | [Forums](#) | [Blogs](#) | [Video](#) | [Training](#)

### Technical Support

[cypress.com/support](http://cypress.com/support)



	Cypress Semiconductor 198 Champion Court San Jose, CA 95134-1709	Phone : 408-943-2600 Fax : 408-943-4730 Website : <a href="http://www.cypress.com">www.cypress.com</a>
--	--	--

© Cypress Semiconductor Corporation, 2016. This document is the property of Cypress Semiconductor Corporation and its subsidiaries, including Spansion LLC (“Cypress”). This document, including any software or firmware included or referenced in this document (“Software”), is owned by Cypress under the intellectual property laws and treaties of the United States and other countries worldwide. Cypress reserves all rights under such laws and treaties and does not, except as specifically stated in this paragraph, grant any license under its patents, copyrights, trademarks, or other intellectual property rights. If the Software is not accompanied by a license agreement and you do not otherwise have a written agreement with Cypress governing the use of the Software, then Cypress hereby grants you a personal, non-exclusive, nontransferable license (without the right to sublicense) (1) under its copyright rights in the Software (a) for Software provided in source code form, to modify and reproduce the Software solely for use with Cypress hardware products, only internally within your organization, and (b) to distribute the Software in binary code form externally to end users (either directly or indirectly through resellers and distributors), solely for use on Cypress hardware product units, and (2) under those claims of Cypress’s patents that are infringed by the Software (as provided by Cypress, unmodified) to make, use, distribute, and import the Software solely for use with Cypress hardware products. Any other use, reproduction, modification, translation, or compilation of the Software is prohibited.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS DOCUMENT OR ANY SOFTWARE OR ACCOMPANYING HARDWARE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. To the extent permitted by applicable law, Cypress reserves the right to make changes to this document without further notice. Cypress does not assume any liability arising out of the application or use of any product or circuit described in this document. Any information provided in this document, including any sample design information or programming code, is provided only for reference purposes. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. Cypress products are not designed, intended, or authorized for use as critical components in systems designed or intended for the operation of weapons, weapons systems, nuclear installations, life-support devices or systems, other medical devices or systems (including resuscitation equipment and surgical implants), pollution control or hazardous substances management, or other uses where the failure of the device or system could cause personal injury, death, or property damage (“Unintended Uses”). A critical component is any component of a device or system whose failure to perform can be reasonably expected to cause the failure of the device or system, or to affect its safety or effectiveness. Cypress is not liable, in whole or in part, and you shall and hereby do release Cypress from any claim, damage, or other liability arising from or related to all Unintended Uses of Cypress products. You shall indemnify and hold Cypress harmless from and against all claims, costs, damages, and other liabilities, including claims for personal injury or death, arising from or related to any Unintended Uses of Cypress products.

Cypress, the Cypress logo, Spansion, the Spansion logo, and combinations thereof, PSoC, CapSense, EZ-USB, F-RAM, and Traveo are trademarks or registered trademarks of Cypress in the United States and other countries. For a more complete list of Cypress trademarks, visit [cypress.com](http://cypress.com). Other names and brands may be claimed as property of their respective owners.