EEPROM example project
1.20

Features

- Erase and write row of data to on-chip EEPROM

General Description

This example project demonstrates the usage of the EEPROM component. It includes blocking and non-blocking APIs for reading, writing, and erasing the EEPROM memory.

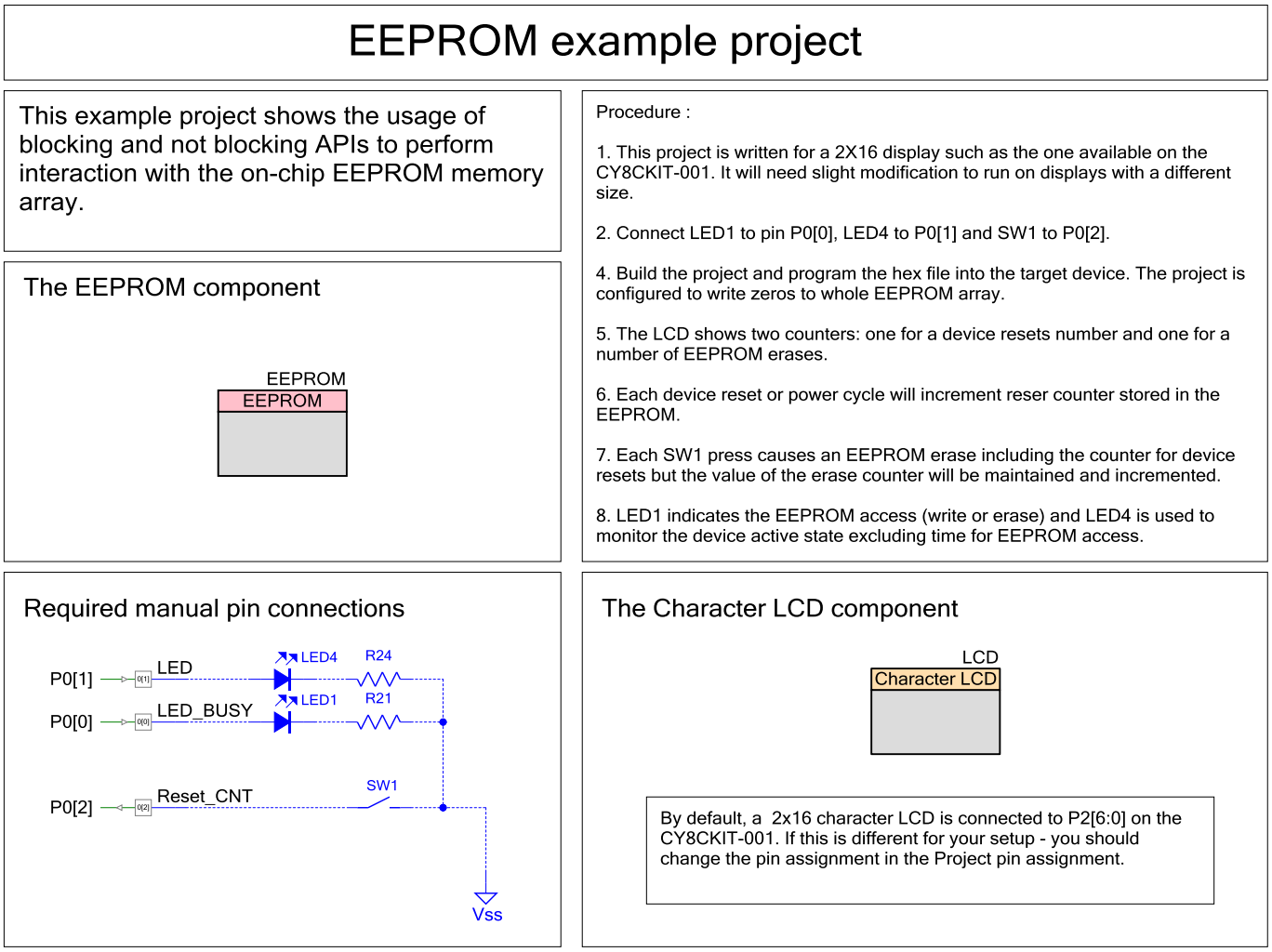
Development kit configuration

1. This project is written for a 2X16 display such as the one available on the CY8CKIT-001. It will need slight modification to run on displays with a different size.
2. Connect LED1 to pin P0[0], LED4 to P0[1], and SW1 to P0[2].
3. Build the project and program the hex file into the target device. The project is configured to write zeros to the whole EEPROM array.
4. The LCD shows two counters: one for a device resets number and one for a number of EEPROM erases.
5. Each device reset or power cycle increments the reset counter stored in the EEPROM.
6. Each SW1 press causes an EEPROM erase including the counter for device resets but the value of the erase counter will be maintained and incremented.
7. LED1 indicates the EEPROM access (write or erase) and LED4 is used to monitor the device active state excluding time for EEPROM access.

Project configuration

The example project consists of the EEPROM, pins, and Character LCD components. The EEPROM has no configurable parameters. The EEPROM component can be configured only using API. The top design schematic is shown in Figure 1.
The Character LCD component has its default configuration. It is used to display the data that was written to the EEPROM memory.

Figure 1. Top Design Schematic

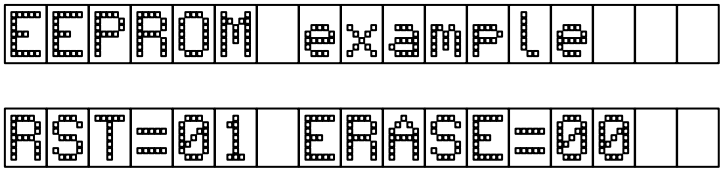


Project description

This is an example of how to use the EEPROM component with designs in PSoC Creator. The EEPROM component provides an API to erase and write to the EEPROM memory. Erase a sector (64 rows) of the EEPROM memory using the EEPROM_EraseSector() function. Write a row (16 bytes) of data to the EEPROM using the EEPROM_Write() function. To read the EEPROM memory, you can either use an API or perform direct reads. For more information, refer to the component datasheet.

Expected results

The first row of the character LCD should display the project name and the second will display two counters: one for the reset counter and one for the counter of erases of the EEPROM sector:



The RST value is the reset counter and ERASE is the number of the sector erases performed. Both counters are stored in the EEPROM memory, but number of erases is saved to RAM and incremented on EEPROM erase, and after erasing is completed, it is written to the EEPROM. On each device startup, the value of the reset counter is read from the EEPROM, incremented, saved to the EEPROM and displayed on the LCD.