

SPIM_Example Project

1.10

Features

- Communication between UDB-based SPI master and SPI slave
- Data transfer between peripheral (SPI) and memory locations using DMA

General Description

This example project demonstrates the basic operation of the SPI master component. Also, the example shows how to use DMA to transfer data from a RAM array to the SPI TX buffer, and how to use DMA to transfer data from the SPI RX buffer to a RAM array.

Development Kit Configuration

This example project is designed to run on a CY8CKIT-001 development kit from Cypress Semiconductor. The second kit is required to implement the SPI slave device to communicate with the master. The SPIS_Example project is provided for this purpose. Refer to the SPIS_Example project datasheet for more information.

The following steps should be performed to observe the project operation:

1. Connect an LCD screen to the kit board.
2. The kit board should be configured to the default switch and jumper settings. Verify that J12 (LCD POWER) is set in position ON.
3. Connect the mosi, miso, sclk, and ss lines of the SPI master and SPI slave.
4. Connect GND of both kits together.
5. Build the project and program the hex file into the target device.
6. Power cycle the device and reset the board just after the SPIS_Example project.
7. Observe the results on the LCD.

Projects Description

The SPI master (SPIM) sends an 8-byte transmit buffer to the slave and receives 8 bytes of data returned by the slave (SPIS).

The project uses two DMA channel components configured for the following data transfers:

- DMA_RX – transfers from the SPIM RX buffer to a RAM array

- DMA_TX – transfers from a RAM array to the SPIM TX buffer

In the initialization part of the main firmware routine all DMA channels are initialized and enabled and SPI communication is started.

Expected Results

The LCD should display:

Master Rx data:
090A0B0C0D0E0F



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