Freescale MQX RTOS Example Guide
SPI master example

This document explains the SPI master driver example, what to expect from the example and a brief introduction to the SPI master driver API.

The Example

The example shows the usage of the SPI master driver as a master, which communicates with a SPI slave example (mqx\examples\spi_slave) on another MCU.

Running the example

The connections needed for running this example are:

- Serial cable connected to the UART used, this may vary between targets. And a terminal set to 115200 baud, no parity, 8 bits.
- Connect corresponding SPI signals of two boards.
  For example, on SABRE-SDB boards we can connect ECSPI4 signals on SD2 socket.

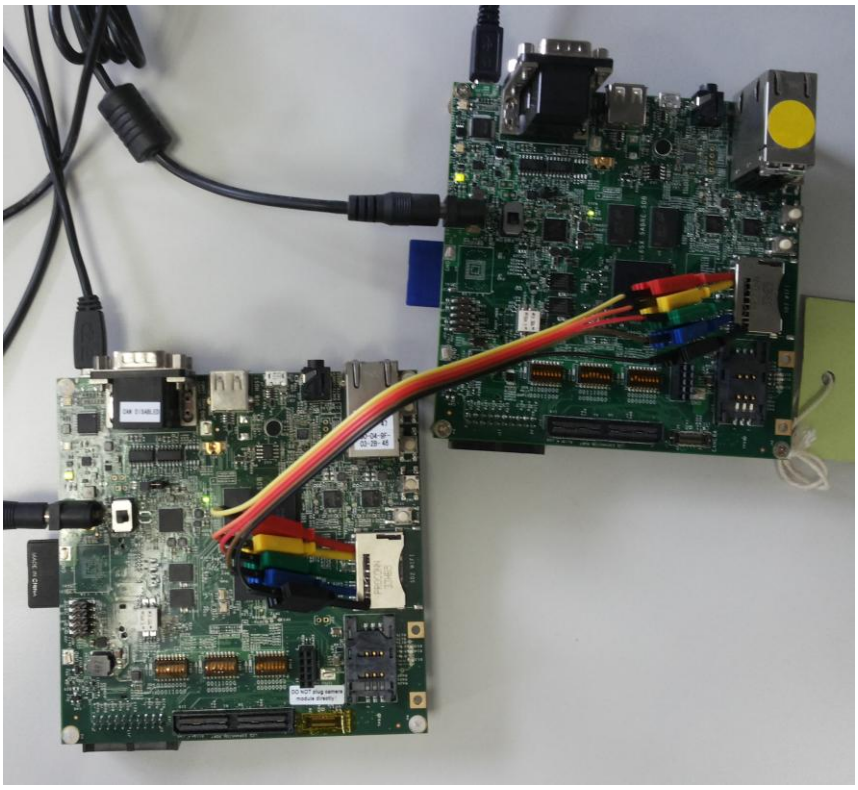

Figure 1

Communications lines

cable	SD socket index	SPI Pin
Black		Ground
Red	2	MISO
Yellow	4	MOSI
Green	8	CLK
Blue	12	SS3

SD index means the sequential SD socket pin position (From 1 to 15) on the board.

After the connections are set, the application can be executed. Make sure that the target BSP has the SPI driver installed, if not, please add the proper macro BSPCFG_ENABLE_SPIn and rebuild the libraries and example.

Explaining the example

The driver example will open the SPI driver and will test the different IOCTL commands that are available on the driver, such as:

- IO_IOCTL_SPI_SET_BAUD
- IO_IOCTL_SPI_SET_MODE
- IO_IOCTL_SPI_SET_TRANSFER_MODE

The master example will communicate with slave MCU with command IO_IOCTL_SPI_READ_WRITE. By default, the example use chip select signal CS3 to connect the SPI master and slave. It simply sending increments from 1 to 20 every transfer and reading data received from slave. All transferred data are printed on console.

The master example must be run before slave example, or the initialization of master SPI would cause slave example data loss. After SPI slave example on another board is executed, press “s” to start the communication.

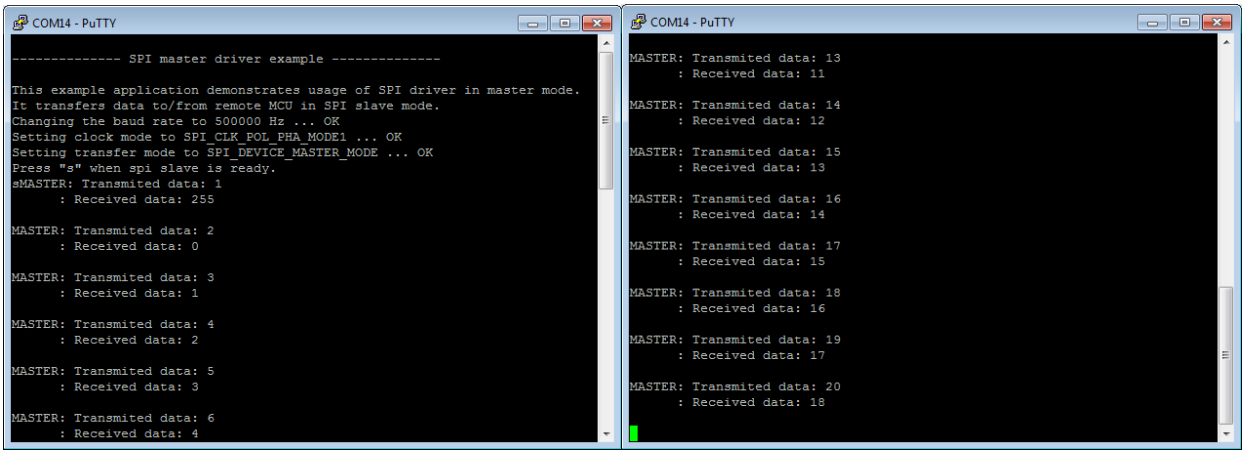

Figure 2
Example output from SPI master example