SmartFusion2 MSS SPI Driver Release Notes

Version 2.2

Changes since previous version

- Updated the existing SmartFusion2 MSS SPI example project with latest CMSIS and hal v2.3.103
- Added new SmartFusion2 MSS SPI example project for SoftConsole v4 tool chain.

Version 2.1

Changes since previous version

- The management of interrupts in slave mode is now more robust and ensures that when switching between frame mode and block mode the correct interrupts are enabled.
- The driver now uses an explicit slave mode state variable to manage block versus frame mode operation in the ISR to avoid complicated buffer pointer checking.
- Command handlers can now be disabled by passing a null pointer to MSS_SPI_set_cmd_handler().
- Block handling in slave mode now allows more than 32 bytes of data to be transmitted.
- The driver will attempt to pad block transfers with 0s to ensure a consistent data stream if the master tries to read more data than the slave has available to send.
- The ISR now handles receive overflow and transmit underruns via the appropriate interrupts. The driver also reads the RX FIFO under all circumstances if the receive interrupt is enabled and discards data if it is not required to stop unnecessary receive overflow situations.
- The SPS bit is now set in master mode so that it is not necessary to keep the TX FIFO filled to ensure a continuous slave select for block transfers.
- Interrupts are disabled in any user mode code accessing structures shared with the ISR to avoid race conditions.
- When switching to frame mode in master and slave modes, the driver sets the TXRXDFCOUNT to 1 so that interrupts and slave select logic work correctly.
- The PROTOCOL_MODE_MASK macro previously had an incorrect value which could cause issues if switching a channel between different SPI protocols on the same channel, this has been rectified.

Resolved issues in version 2.1

Driver issues are tracked as software action requests (SAR).

SAR #	SAR Resolution
53595	The ISR now properly manages the TX FIFO to allow slaves send more than 32 frames of data in block mode. This ensures all slave data requiring transmission is fed to the TX FIFO.
53596	When the receive interrupt is enabled, the RX FIFO is now always read even if the data is being discarded. This stops the receiver going into overflow unnecessarily.
53597	Interrupts are now explicitly enabled AND disabled depending on the select slave mode of operation. This ensures that only the required interrupts are enabled if the slave is switched between different modes of operation.
55878	The PROTOCOL_MODE_MASK macro has been corrected to ensure the proper bits are modified when switching modes.

Version 2.0

First production release.

SmartFusion2 MSS SPI source code SVN revision numbers

The table below lists the SVN revision number of the files making up the SmartFusion2 MSS SPI driver. These revision numbers can be seen at the top of each source file. They can be used to identify the version of driver used in an existing project.

File	**SVN revision**		
	Version 2.0	Version 2.1	Version 2.2
drivers/ mss_spi /mss_spi.h	5516	6226	7709
drivers/ mss_spi /mss_spi.c	5577	6227	7709