Example for the FS65 driver

General information

The purpose of this demo application is to show how to use the FS65 generic driver with the S32K144 (using S32 SDK). The application uses standard serial port for diagnostics output.

The application starts with MCU peripherals initialization and FS65 initialization. Then the watchdog is activated and periodically refreshed. If Fault Error Counter value is 0, FSxb safety outputs are released.

Status information and MUX_OUT measured values are printed out periodically.

Dependencies

Software

- S32 Design Studio for ARM (version 2018.R1).
- S32K14x EAR SDK for GCC (S32K144) (version 0.8.6) (can be downloaded via S32 Design Studio).
- Serial Terminal Console (e.g. PuTTY, Realterm, ...).

Hardware

- S32K144EVB-Q100 development kit platform.
- FRDM FS65/FS45 shield.

Setup

- S32K144WVB-Q100 board connected via the USB to the PC and serial console connected to appropriate COM port.
- The FRDM shield can be connected via pin-headers (see picture below). In this case just two GPIO pins must be connected by wires – RSTb and FS0b.

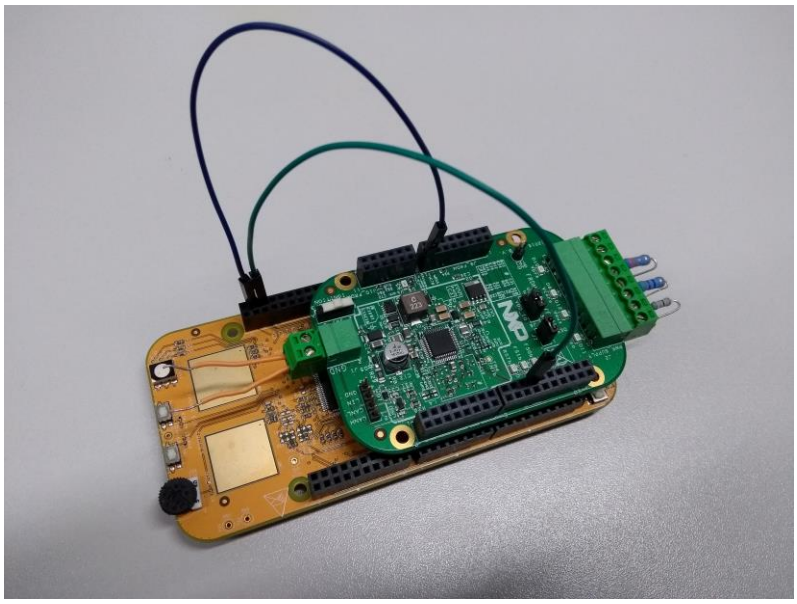

Figure 1 - S32K144EVB and FRDM shield connection

- Complete list of pins connected between the S32K144 Kit and FRDM shield:

FRDM shield		**MCU**	
Pin	Header	Pin	Header
RSTb	J9-15	PTC15	J5-18
FS0b	J2-7	PTD7	J5-16
MOSI	J2-8	PTB4	J2-7
MISO	J2-10	PTB3	J2-9
SCLK	J2-12	PTB2	J2-11
CSB	J2-6	PTB5	J2-5
GND	J2-14	GND	J2-13

- FS65 RESET pin connected to the MCU GPIO pin (can be selected in `main.c` file, see `SBC_RESET_PORT` macro). **Note that the FS65 RESET pin should not be connected to the MCU RESET pin.** Otherwise it will not be possible to debug code.
- Run S32 Design Studio and import example project (File -> Import -> Existing Projects into Workspace).
- Start debugging (Run -> Debug). Select `FS65_S32K144_Example_Debug` configuration if prompted.
- When `Waiting for SBC power-up...` message is reported in serial console, power-up the FS65 board. Start-up sequence is started when the RESET pin is released.