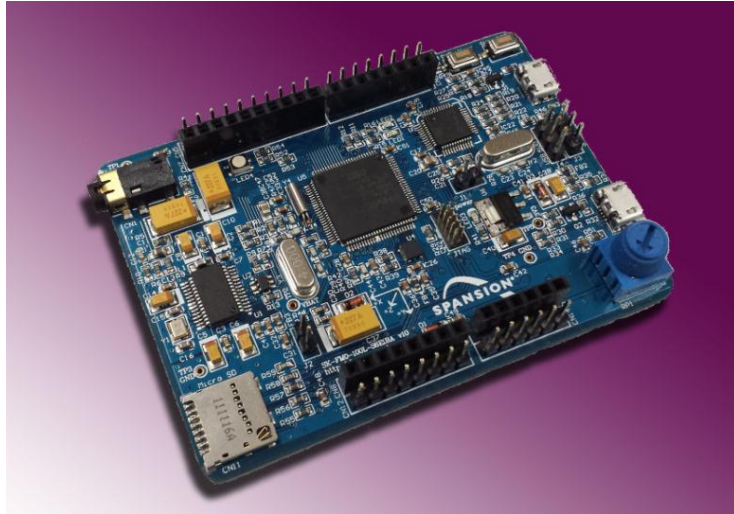# Spansion®
FM0+ Starter Kit

SK-FM0-100L-S6E1B8

QUICK START GUIDE

SK-FM0-100L-S6E1B8 Starter Kit provides a low-cost solution to quickly start development on an ARM® Cortex®-M0+ microcontroller. The board employs peripheral devices to demonstrate the features of the FM0+ S6E1B8 microcontroller. It also has an Arduino-compatible interface to connect with shields, making application development options limitless. The S6E1B8 microcontroller comes pre-programmed with an interactive application to test all of the on-board features by using a virtual communication port to send message prompts, input test parameters, and output test results. This document guides users on how to connect to the board and run the featured demonstration program in less than 10 minutes.

- Spansion FM0 Family S6E1B8 MCU
- On-board ICE (CMSIS-DAP)
- USB device interface
- Micro SD card interface
- Acceleration sensor
- Potentiometer
- RGB LED
- User button
- Arduino-compatible interface
- Free pin headers

Setup Requirements

- PC with USB interface, Windows OS 7, or later
- SK-FM0-100L-S6E1B8 starter kit with USB cable (A/micro-B)
- Download Complete Driver, Documentation, Software, & Tools Package SK-FM0-100L-S6E1B8_v10

1.0 WINDOWS USB DRIVER INSTALLATION

Windows USB drivers that are specific to the SK-FM0-100L-S6E1B8 starter kit need to be installed to run the virtual communication port. Follow instructions below to install the Windows USB drivers.

1) Browse the downloaded SK-FM0-100L-S6E1B8_vnn*(*version number) folder to run /drivers/driverinstaller.exe. Then, click Next.
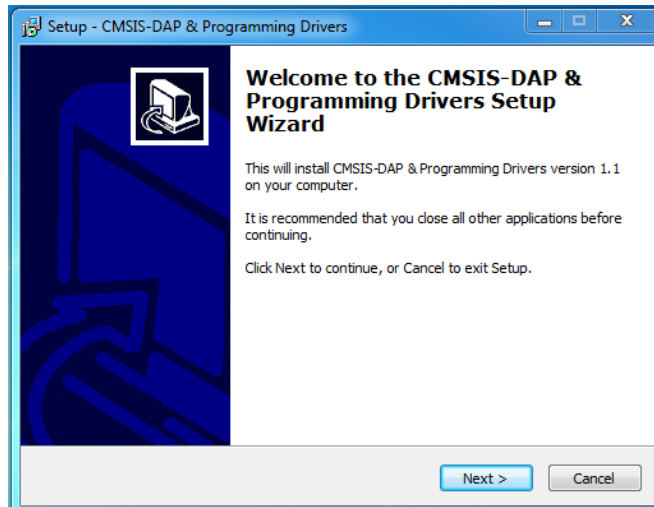
2) During the installation, a warning that the publisher cannot be verified may appear, depending on Windows security settings. Select 'install this driver software anyway.' Two drivers are being installed, cmsis-dap and USBDIRECT.
The Windows security window will appear twice during installing, and 'Install this driver software anyway' will need to be selected each time.
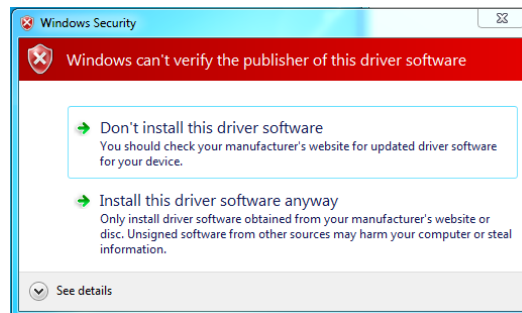

3) When installation is complete, click the Finish button when prompted.

2.0 INSTALL THE VIRTUAL COMMUNICATION PORT

The SK-FM0-100L-S6E1B8 _vnn* download includes a serial communication terminal, Spansion Serial Port Viewer and Terminal for the communication interface. Follow instructions below to install.

4) Browse the SK-FM0-100L-S6E1B8 _vnn folder and run /tools/SerialPortViewer/ SerialPortViewerAndTerminalV5.5.exe. Click Next.
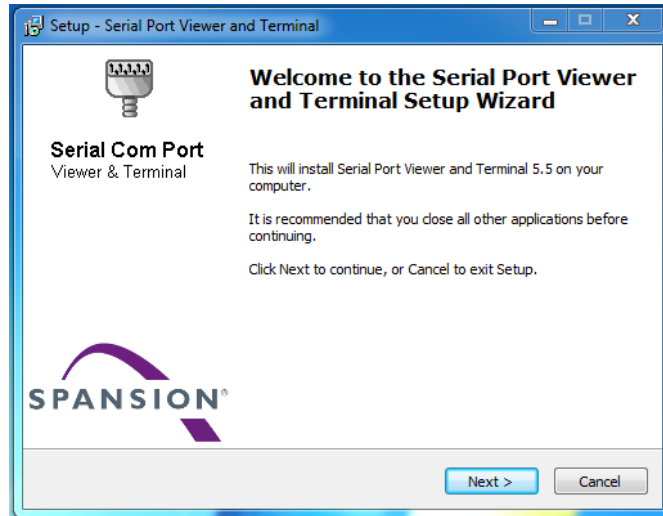
5) Read the license agreement, click I accept the agreement, and click Next to continue.

6) Select a destination for the application or leave the default location, and click Next.

7) Select a destination for the application shortcut or leave it in default location, and click next.

8) Select additional icon options and click Next.

9) Select Install to start the installation.

10) Check the box next to Launch Serial Port Viewer and Terminal and click Finish.
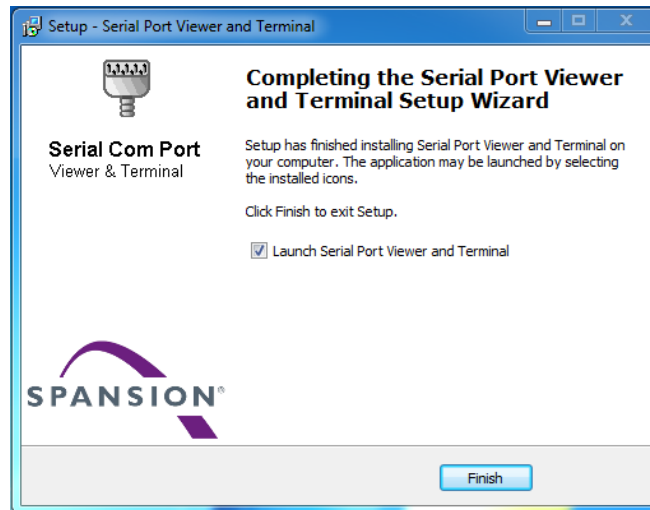
3.0 POWERING SK-FM0-100L-S6E1B8 STARTER KIT

There are two options for powering the SK-FM0-100L-S6E1B8 starter kit. In this document, CN3 will be used for the default USB connection. Connect the USB cable to CN3 to power the board. The green power LED3 will light. If it does not, ensure that jumper J4 is in 1-2 position as shown below.
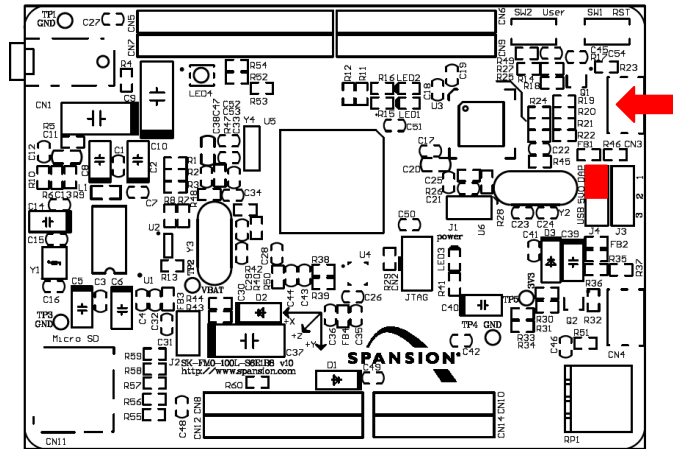
4.0 RUN PCB BOARD TEST DEMONSTRATION

The pre-programmed demonstration tests the on-board features for proper functionality. The application will run in the S6E1B8 microcontroller when the SK-FM0-100L-S6E1B8 starter kit is powered on. Follow these instructions to connect the virtual communication port created by test application to the Spansion Serial Port Viewer and Terminal.

1) Open the Spansion Serial Port Viewer and Terminal by selecting the icon in the task menu or desktop short cut.
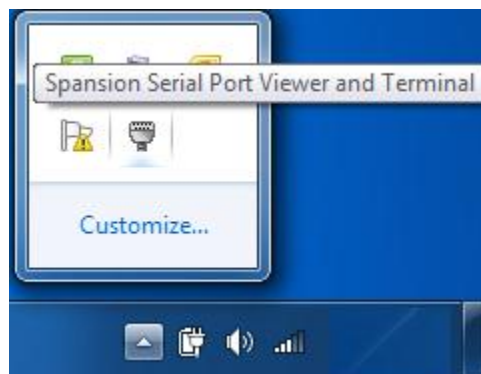
2) Choose the Spansion Virtual Communications Port.
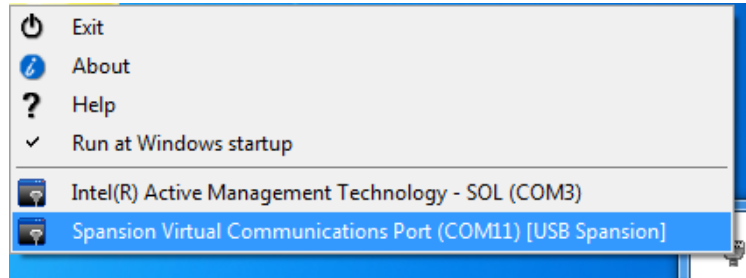
3) Set the baud rate to 115200 in the drop down menu and click Disconnected above the green arrow to connect.
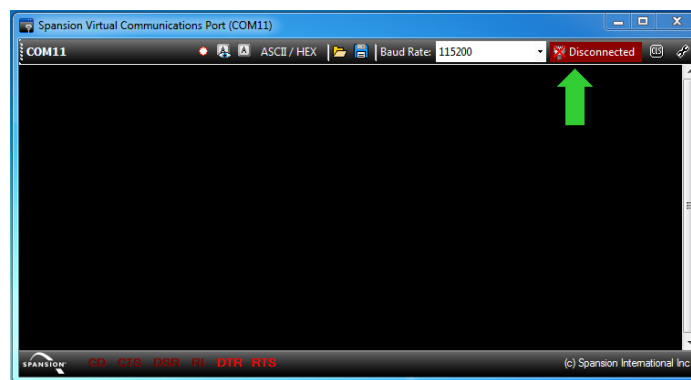
4) Once the terminal is connected, press Enter on PC keyboard and the welcome message will display.
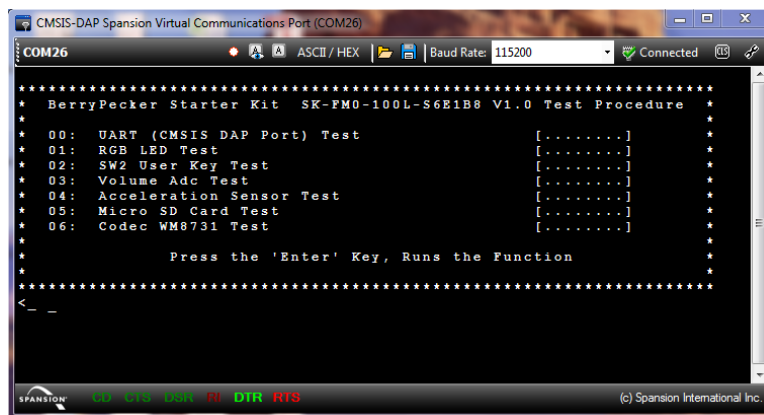
5) To run each of the tests, enter the number next to the test description and follow the prompts. For example: Input 4 and press Enter will run the Acceleration Sensor Test. The application will output the value of the sensor and loop until the Enter key on the PC keyboard is pressed.

```
CMSIS-DAP Spansion Virtual Communications Port (COM26)                    [□][□][ ≊ ]
COM26                    ● A A  ASCII / HEX  | 🖿 🖫 | Baud Rate: 115200        ▾ | ✅ Connected  🔟 ⌇
<_   6
*   Codec WM8731 ............ Started       *
*   Connect CN1 to the headphone           *
         Press 'Enter' Key Return to MainMenu
6
****************************************************************
*   BerryPecker Starter Kit  SK-FM0-100L-S6E1B8 V1.0 Test Procedure  *
*                                                              *
*   00:   UART (CMSIS DAP Port) Test                [   OK   ] *
*   01:   RGB LED Test                              [ Tested ] *
*   02:   SW2 User Key Test                         [   OK   ] *
*   03:   Volume Adc Test                           [ Tested ] *
*   04:   Acceleration Sensor Test                  [ Tested ] *
*   05:   Micro SD Card Test                        [ Tested ] *
*   06:   Codec WM8731 Test                         [ Tested ] *
*                                                              *
*            Press the 'Enter' Key, Runs the Function          *
*                                                              *
****************************************************************
<_

SPANSION   CD  CTS  DSR  RI  DTR  RTS                     (c) Spansion International Inc.
```

6) To run the Codec test, you need to connect a headphone and a microphone to CN1.

7) If any issue or failure is encountered, ensure all jumpers are in default position as listed:

- J1 open

- J2 open

- J3 1-2 position

- J4 1-2 position

5.0 FLASH PROGRAMMING

User can programming the flash of MCU by USB DIRECT (free of charge). Before doing that , please install the USB DIRECT first.

1)   Open the SK-FM0-100L-S6E1B8_vnn folder and browse to /tools/ USBDIRECT/setup.exe and run the application, and install it.

2) Set the jumpers and connect the starter kit with PC via CN3.

- Close J4 : 1~2 to power from USB Device connector (CN3)

- Close J3 : 2~3 to enable USB device detection

- Close J2 (MD0) to enable programming

3) Launch the USB DIRECT from STARTUP of WINDOWS.

4) Set the table as below :
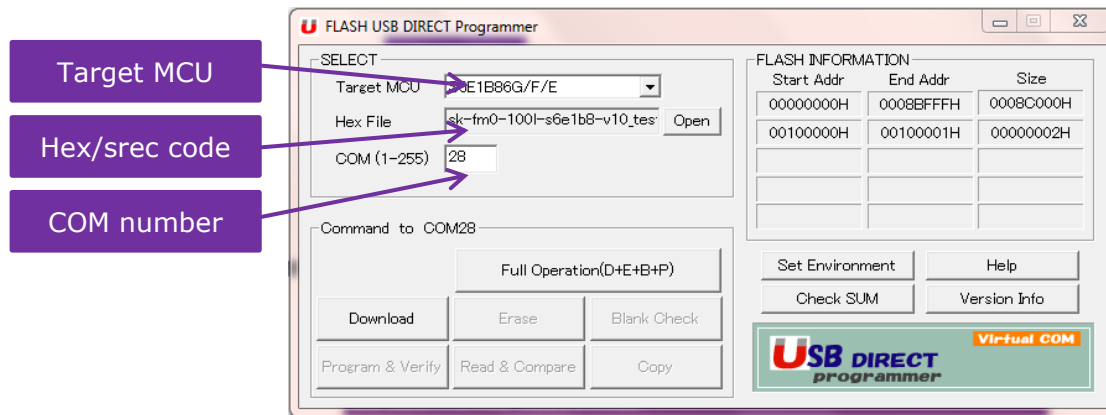
5) Click "Full Operation(D+E+B+P)" to start programming.

6.0 ADDITIONAL RESOURCES

The S6E1B8 MCU with ARM® Cortex®-M0+ core is part of Spansion's FM0+ Family of microcontrollers. The SK-FM0-100L-S6E1B8_vnn download folder includes additional resources for users to easily and quickly develop their own applications on Spansion's FM0+ Family of microcontrollers:

- Subfolder .\documentation
    - UserGuide of this starter kit
    - Schematic
- Subfolder .\drivers
    - Windows USB drivers to connect to Spansion starter kit
- Subfolder .\sw-examples
    - Template project
- Subfolder .\tools
    - cmsisdap_fw_update
      Latest firmware of the on-board JTAG debugger
    - PCWFM3
      Flash MCU Programmer – Graphical interface to program flash through on-chip ROM UART boot loader.
    - SerialPortViewer
      Spansion Serial Port Viewer and Terminal – Serial communication terminal to be used for the UART communication interface
    - USBDIRECT
      Flash USB Direct Programmer – Graphical interface to program flash through on-chip ROM USB boot loader.

- sk-fm0-100l-s6e1b8-v10_testcode.srec

  Copy of original production test software if the starter kit needs to be restored to original production state.

6.0 TECHNICAL SUPPORT

- Please check the following web for any available updates:

  www.spansion.com/starterkit

- Please contact local support team for technical support:

America	:	Spansion.Solutions@spansion.com
China	:	mcu-ticket-cn@spansion.com
Europe	:	mcu-ticket-de@spansion.com
Japan	:	mcu-ticket-jp@spansion.com
Other	:	http://www.spansion.com/Support/SES/Pages/Ask-Spansion.aspx