SK-FM4-176L-S6E2CC

FM4 Family Quick Start Guide

Doc. No. 002-09737 Rev. *B

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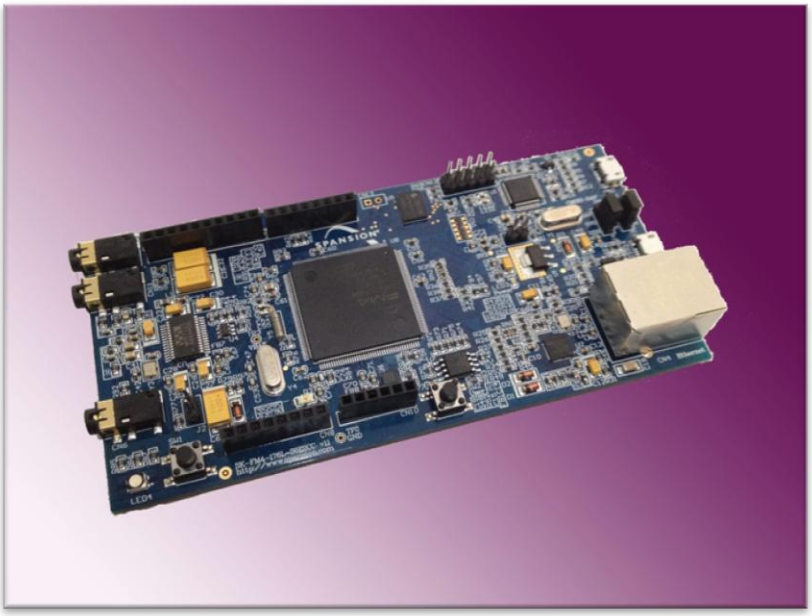
1. Introduction

SK-FM4-176L-S6E2CC Starter Kit provides a low-cost solution to quickly start development on an ARM® Cortex®-M4 microcontroller. The board features peripheral devices to demonstrate the features of the FM4 S6E2CCA microcontroller. It also has an Arduino-compatible interface to connect with shields, making application development options limitless. The FM4 S6E2CCA microcontroller comes pre-programmed with an interactive application to test all of the on-board features 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 in less than 10 minutes.



- Cypress FM4 Family S6E2CCA MCU
- CMSIS-DAP JTAG adapter
- Ethernet RJ45 (IEEE802.3)
- USB device interface
- 32Mbit Quad SPI flash memory
- 16Mbit external PSRAM memory
- Stereo Codec
- Voice Enabled Controller

- RGB LED
- Acceleration Sensor
- Phototransistor
- User Button
- Arduino-compatible interface
- 10-pin JTAG interface
- (*SK-FM4-176L-S6E2CCA-ETH, *SK-FM4-176L-S6E2CCA

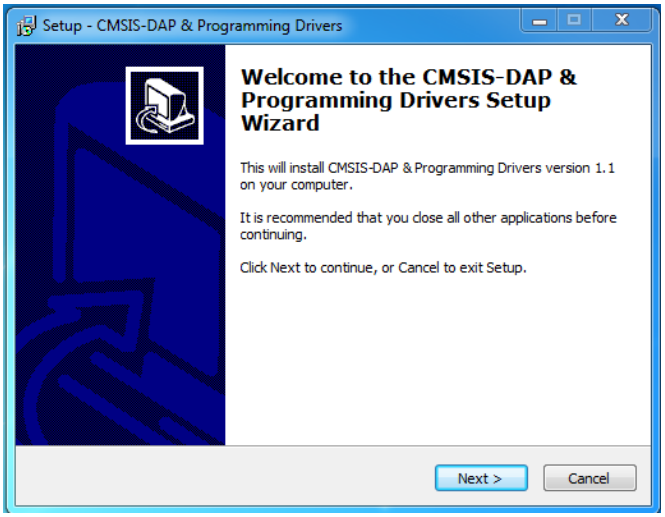
Setup Requirements:

- PC with USB interface, Windows OS 7, or later
- SK-FM4-176L-S6E2CCAstarter kit with USB cable (A/micro-B)
- Download Complete Driver, Documentation, Software, & Tools Package
- SK-FM4-176L-S6E2CCA_CDv1.1

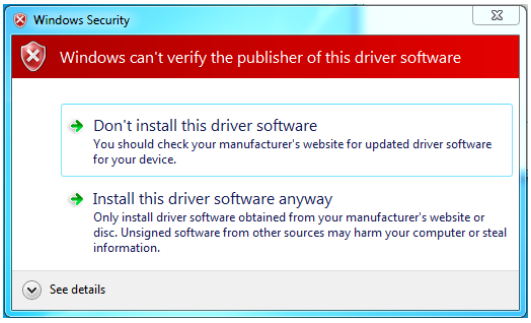
2. Windows USB Driver Installation

Windows USB drivers that are specific to the SK-FM4-176L-S6E2CCA starter kit need to be installed to run the virtual communication port. Follow these instructions to install the Windows USB drivers.

1. In the downloaded SK-FM4-176L-S6E2CCA_CDvnn* (*version number) folder browse to /drivers/driverinstaller.exe and run the application. Click the next prompt.



2. During the installation, a warning may appear that the publisher cannot be verified, 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, and 'Install this driver software anyway' will need to be selected each time.

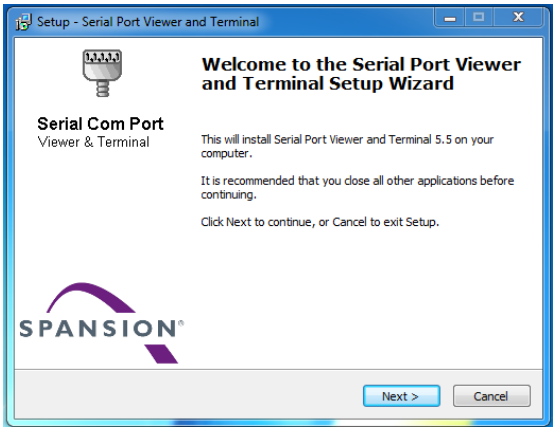


3. When installation is complete, click the finish button when prompted.

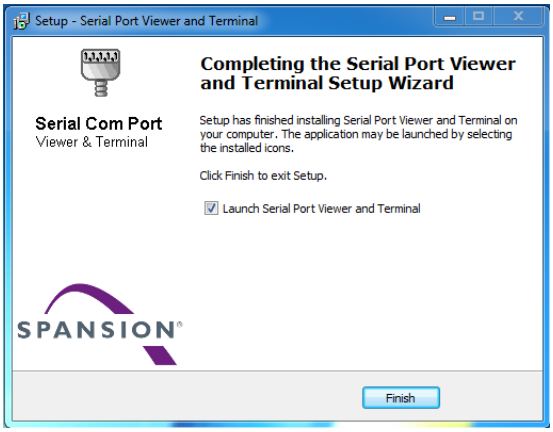
3. Install the Virtual Communication Port

The SK-FM4-176L-S6E2CCA _CDvnn* download includes a serial communication terminal, Cypress Serial Port Viewer and Terminal, for the communication interface. Follow these instructions to install.

1. Open the SK-FM4-176L-S6E2CCA _CDvnn folder and browse to /tools/serial port viewer/setup.exe and run the application. Click the next button.

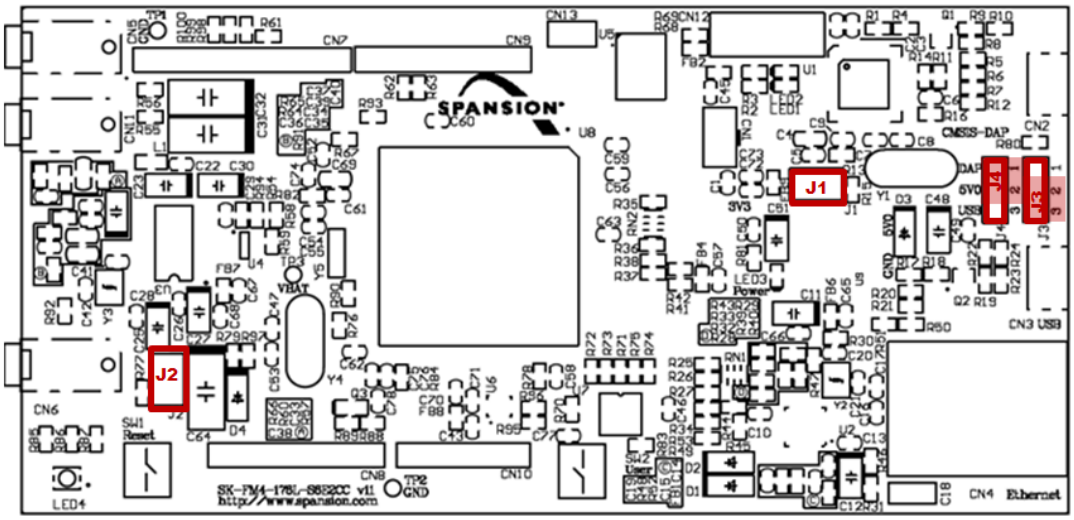


2. Review the license agreement, click I accept the agreement, and the next button.
3. Select a destination for the application or leave the default location, and click next.
4. Select a destination for the application shortcut or leave it in default location, and click next.
5. Select additional icon options and click next.
6. Select install to start the installation.
7. Check the box next to Launch Serial Port Viewer and Terminal and click finish.



4. Powering SK-FM4-176l-S6E2CC Starter Kit

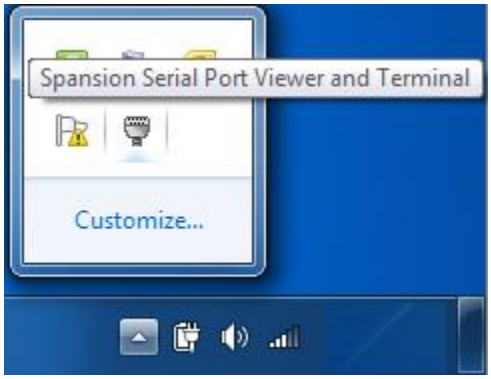
There are two options for powering the SK-FM4-176L-S6E2CCA starter kit. This document will use the USB connection at either CN2. Connect the USB cable to CN2 to power the board. The green power LED3 will illuminate. If it does not, ensure that jumper J4 is in 1-2 position as shown below.



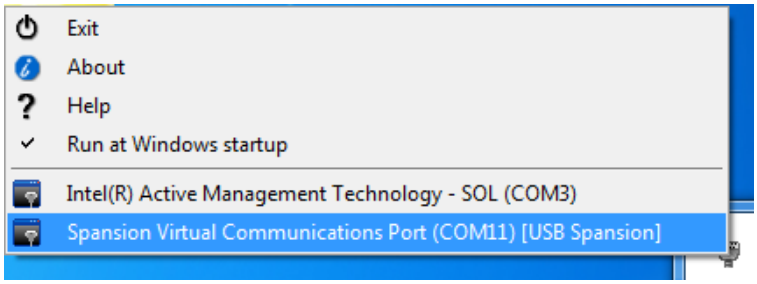
5. Run PCB Board Test Demonstration

The pre-programmed demonstration tests the on-board features for proper functionality. The application will already be running in the S6E2CCA microcontroller when the SK-FM4-176L-S6E2CCA starter kit is powered on. Follow these instructions to connect the virtual communication port created by test application to the Cypress Serial Port Viewer and Terminal.

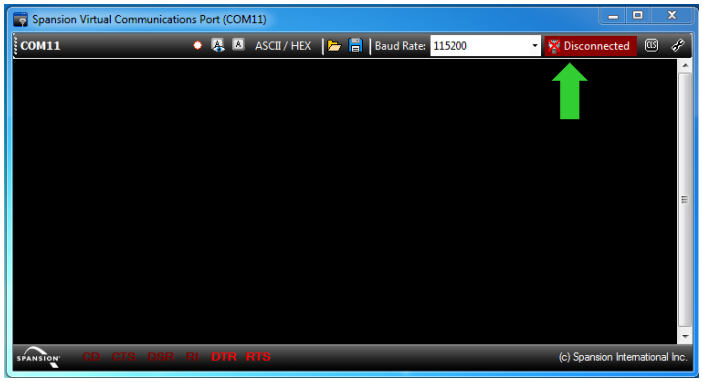
1. Open the C Cypress Serial Port Viewer and Terminal by selecting the icon in the task menu or desktop short cut.



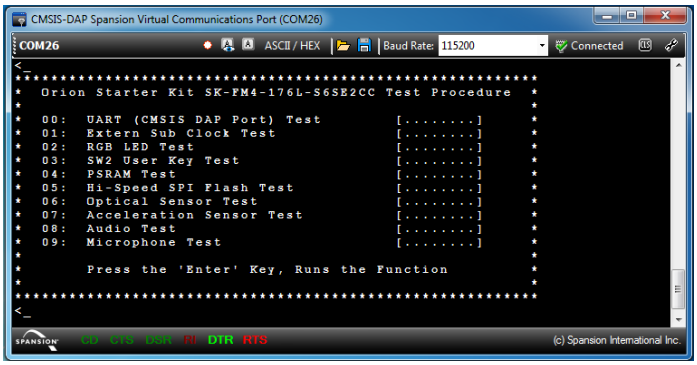
2. Choose the Cypress Virtual Communications Port.



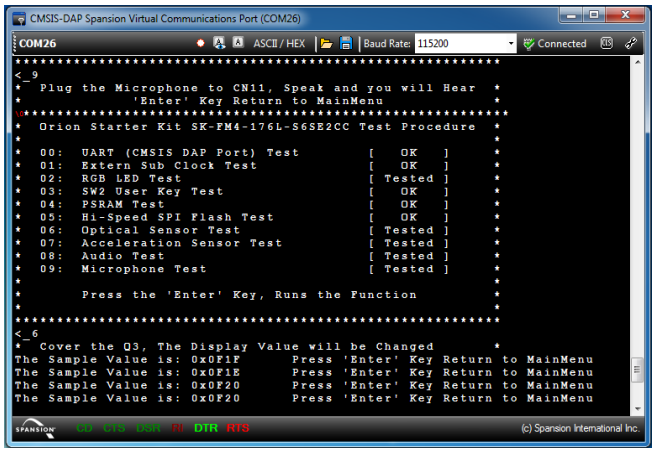
3. Set the baud rate to 115200 in the drop down menu and click disconnected above the green arrow to connect.



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: 6<enter> will run the Optical Sensor Test.The application will output the value of the sensor and loop until the enter key on the PC keyboard is pressed.



6. To run the Audio test, CN5 needs to have a headphone set connected.
7. To run the microphone test, leave the headphones connected to CN5 and connect a microphone at CN11. Any noise into the microphone will be repeated in the headphones.
8. If any issue or failureis encountered, ensure all jumpers are in default position as listed:

- J1 open
- J2 open
- J3 2-3 position
- J4 1-2 position

6. Additional Resources

The S6E2CCAMCU with ARM® Cortex®-M4 core is part of Cypress's FM4 Family of microcontrollers. The SK-FM4-176L-S6E2CCA_CDvnndownload folder includes additional resources for users to easily and quickly develop their own applications on Cypress's FM4 Family of microcontrollers:

- User Guide SK-FM4-176L-S6E2CCA with flash programming and IDE details
- Subfolder .\documentation
  - ☐ Data Sheet and Peripheral Manuals for the S6E2CC series
- Subfolder .\drivers
  - ☐ Windows USB drivers to connect to Cypress starter kit
- Subfolder .\PDFXChange
  - ☐ Free PDF viewer that allows opening external links like the ones that are embedded in the Quick Start Guide and the User Guide
- Subfolder .\sw-examples
  - ☐ Template project and some software project examples with header files
- Subfolder .\tools
  - ☐ cmsisdap_fw_update
    Latest firmware of the on-board JTAG debugger
  - ☐ PCWFM3
    Flash MCU Programmer – Graphical interface to program flash through UART through on-chip ROM UART boot loader.
  - ☐ Serial port viewer
    Cypress 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 USB through on-chip ROM USB boot loader.
  - ☐ SK-176-s6e2ccTestCode-V11.srec
  - ☐ Copy of original production test software if the starter kit needs to be restored to original production state.

For further information on FM4-176L-S6E2CC-ETH - ARM® Cortex®-M4 MCU Starter Kit, visit our website:

FM4-176L-S6E2CC-ETH - ARM® Cortex®-M4 MCU Starter Kit with Ethernet and USB Host

Revision History

Document Revision History

Document Title: SK-FM4-176L-S6E2CC FM4 Family Quick Start Guide Document Number: 002-09737			
Revision	**Issue Date**	**Origin of Change**	**Description of Change**
**	07/14/2015	JHHO	Initial release
*A	06/14/2016	JHHO	Migrated Spansion Guide from MCU-176L-S6E2CC to Cypress format
*B	06/02/2017	AESATMP9	Updated logo and copyright.