Summary of FRDM-K64F debug interface

By Jennie Zhang

FRDM-K64F is an ultra-low-cost development platform for Kinetis K64, K63, and K24 MCUs. this board is already widely used among Freescale customers.

http://www.freescale.com/webapp/sps/site/prod_summary.jsp?code=FRDM-K64F

The FRDM-K64F platform features OpenSDAv2, the Freescale open source hardware embedded serial and debug adapter running an open source bootloader. This circuit offers several options for serial communication, flash programming, and run-control debugging. User who works with KDS3.0 can choose J-Link interface, P&E OpenSDA interface, or Mbed interface. For each of the option, user need update debugger firmware first. I will introduce each of them one by one.
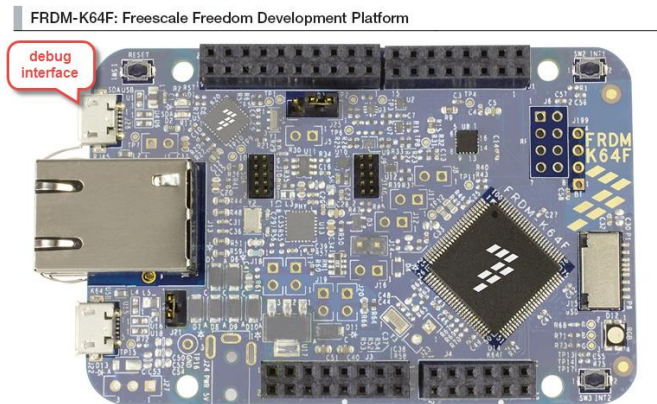

1. Segger J-link interface

- Download JLink_OpenSDA_V2_2015-04-23.zip

https://www.segger.com/admin/uploads/userfiles/file/J-Link/OpenSDA/JLink_OpenSDA_V2_2015-04-23.zip

Segger J-Link Firmware update procedure:
a. Disconnect all power, external circuits and USB cables.
b. Press and hold the button marked RESET (circled in picture)
c. Connect a USB cable with debug interface as shown in above picture
d. The drive should mount named **BOOTLOADER** in windows explore.
e. The reset button can now be released

f. Drag and drop the file JLink_OpenSDA_V2_2015-04-23.bin onto the USB drive named **BOOTLOADER**
g. Repower board normally
h. Then user can download and debug code via KDS3.0 debugger interface Segger J-Link
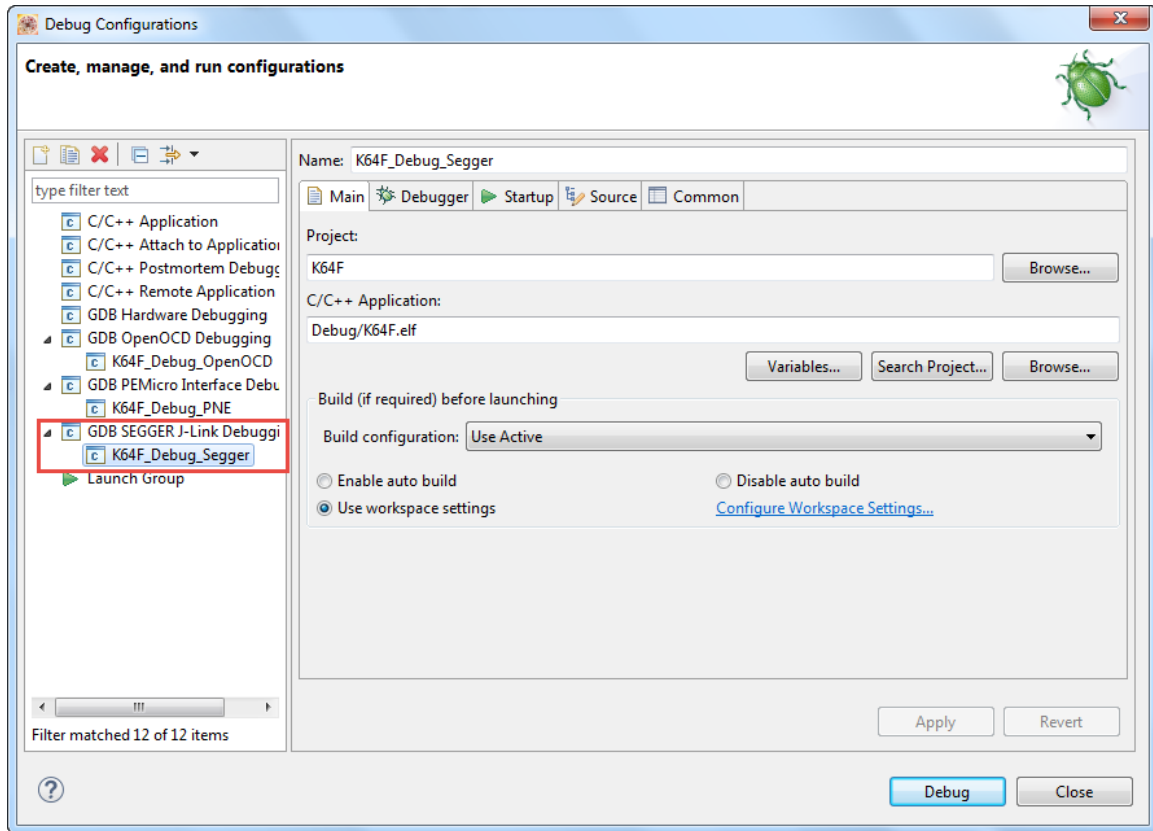
2. OpenSDA interface

- download Firmware Apps **(.zip file)**

  http://www.pemicro.com/opensda/

- **Download PEDrivers_install.exe for manual install from above link.**

OpenSDA Firmware update procedure:
a. Disconnect all power, external circuits and USB cables.
b. Press and hold the button marked RESET (circled in picture)
c. Connect a USB cable with debug interface as shown in above picture
d. The drive should mount named **BOOTLOADER** in windows explore.
e. The reset button can now be released

f. Drag and drop the file DEBUG-FRDM-K64F_Pemicro_v108a_for_OpenSDA_v2.0.bin(enclosed in Firmware Apps) onto the USB drive named **BOOTLOADER**
g. **Remove power**
h. Run driver **PEDrivers_install.exe**.
i. Repower board normally.
j. Then user can download and debug code via KDS3.0 debugger interface OpenSDA
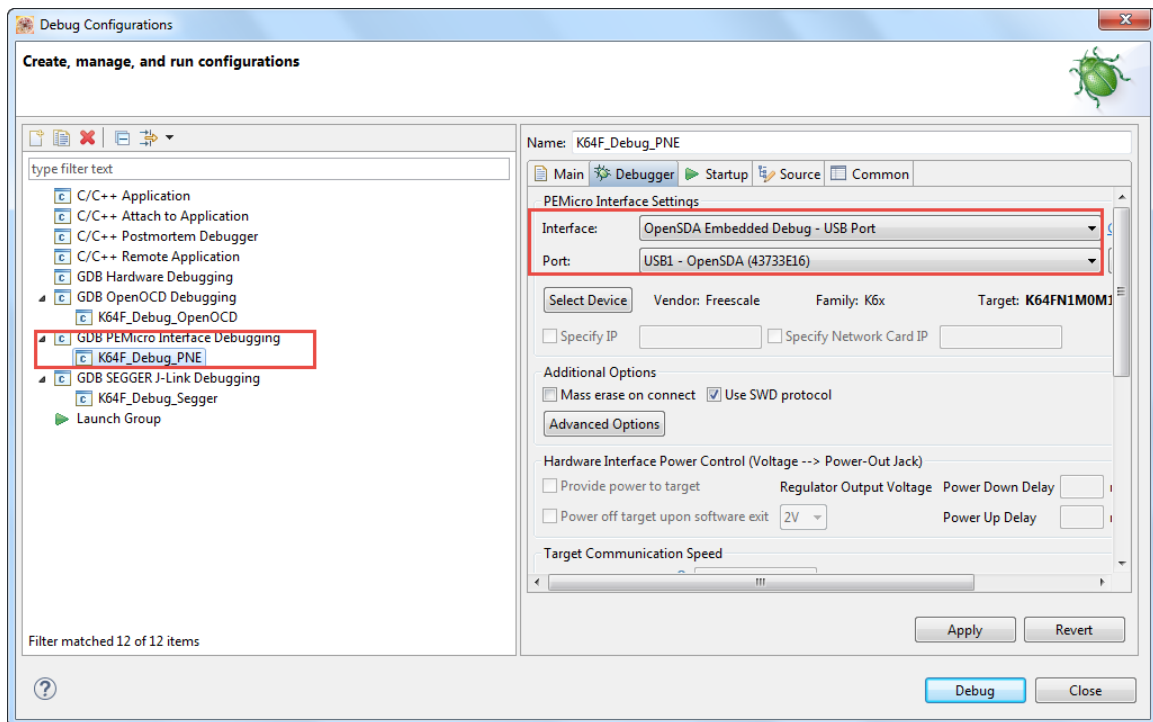
3. Mbed interface.

- Download the latest mbed interface upgrade file for the FRDM-K64F
0221_k20dx128_k64f_0x5000.bin
https://developer.mbed.org/handbook/Firmware-FRDM-K64F#interface-firmware-changelog

- Download the mbed Windows serial port driver mbedWinSerial_16466.exe
https://developer.mbed.org/handbook/Windows-serial-configuration

Mbed Firmware update procedure:
a. Disconnect all power, external circuits and USB cables.
b. Press and hold the button marked RESET (circled in picture)
c. Connect a USB cable with debug interface as shown in above picture
d. The drive should mount named **BOOTLOADER** in windows explore.

e. The reset button can now be released
f. Drag and drop the file [0221_k20dx128_k64f_0x5000.bin](0221_k20dx128_k64f_0x5000.bin) onto the USB drive named **BOOTLOADER**
g. Remove power
h. Run driver mbedWinSerial_16466.exe.
i. Repower board normally.
j. Then user can download and debug code via KDS3.0 debugger interface OpenOCD
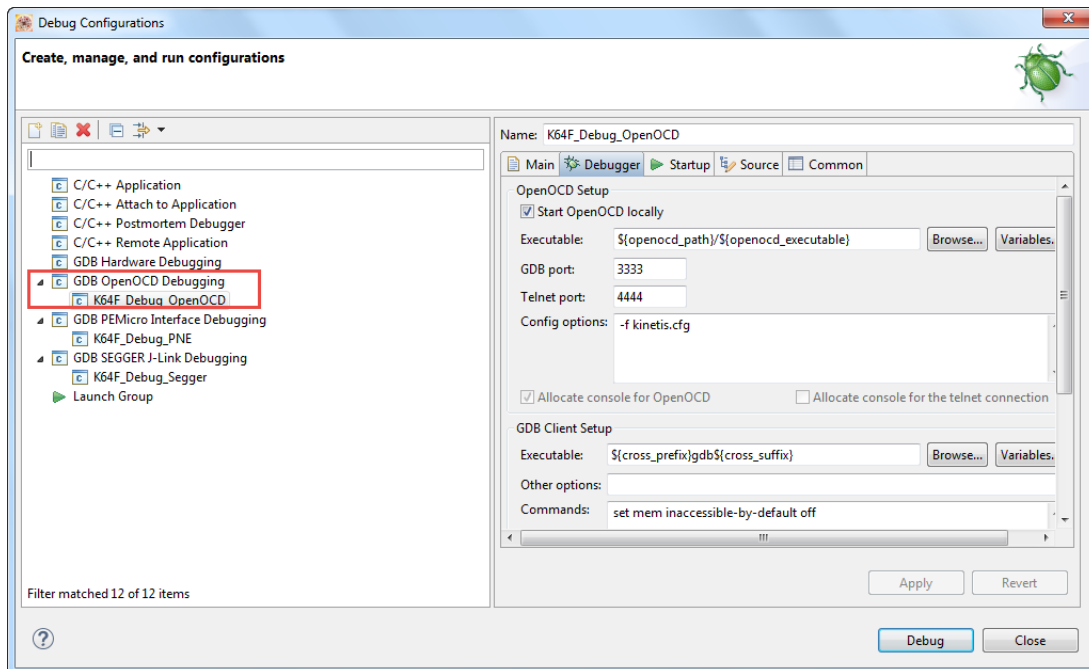
All the related driver and firmware will be enclosed in this article as attachment.