MPLAB® Harmony 3 I2C Bootloader for SAMD20E15BU and SAMD20E16BU

This application is a bootloader application which resides in the starting location of the device flash memory. The bootloader application uses SERCOM I2C in slave mode with interrupts disabled.

Building the Application

Application Path	bootloader/apps/i2c_bootloader/bootloader_wlcsp/firmware

To build the application, refer the following table and open the appropriate project file in the MPLAB X IDE v5.30.

Project Name	Description
samd20e15bu_wlcsp.X	Bootloader application for SAMD20E15BU
samd20e16bu_wlcsp.X	Bootloader application for SAMD20E16BU

Hardware Setup

1. Project samd20e15bu_wlcsp.X
    - Hardware setup:
        - Connect the I2C SDA line (SERCOM2 PAD[0]/PA08) of SAMD20E15BU running the bootloader application to the I2C SDA line of the bootloader host application
        - Connect the I2C SCL line (SERCOM2 PAD[1]/PA09) of SAMD20E15BU running the bootloader application to the I2C SCL line of the bootloader host application
        - Connect a ground wire between the bootloader host and SAMD20E15BU
2. Project samd20e16bu_wlcsp.X
    - Hardware setup:
        - Connect the I2C SDA line (SERCOM2 PAD[0]/PA08) of SAMD20E16BU running the bootloader application to the I2C SDA line of the bootloader host application
        - Connect the I2C SCL line (SERCOM2 PAD[1]/PA09) of SAMD20E16BU running the bootloader application to the I2C SCL line of the bootloader host application
        - Connect a ground wire between the bootloader host and SAMD20E16BU

Running the Application

1. The bootloader can be triggered in one of the following ways:
    - By driving both I2C SCL and SDA lines of SAMD20E15BU/SAMD20E16BU to logic low upon power up
    - By writing the 16 bytes of bootloader trigger pattern - 0x5048434D from the start of the RAM location - 0x20000000
    - Bootloader will automatically be entered if an application is not programmed. An application is considered as not being programmed, if the first word (32-bits) of the application (ie. Main Stack Pointer) contains 0xFFFFFFFF
2. To program the user application, one of the host application examples can be used or a custom host application can be developed by implementing the bootloader protocol.
    - MPLAB® Harmony 3 Bootloader Host NVM Application Help
    - MPLAB® Harmony 3 Bootloader Host SD Card Application Help

For more information, please refer the following bootloader help document.

- MPLAB® Harmony 3 Bootloader Help
