User Manual

Programming DA16200 with SEGGER J-Link in Eclipse

UM-<X>-<nnn>

Abstract

The abstract must describe the target hardware or software and the purpose of this document. Optionally the measurement method, results and conclusions can be added when applicable.

Do not remove this section break!

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# Terms and Definitions

Optional section. Define acronyms and abbreviations used in this document. Use sentence case for acronym definitions.

<TERM> <Definition>

<TERM> <Definition>

Etc.

# References

List the documents that are relevant for readers of this document. Avoid hyperlinked references.

1. <PART\_NUMBER>, Datasheet, Revision, Dialog Semiconductor.
2. <AN-X-XXX>, <Title>, Application Note, Revision, Dialog Semiconductor.
3. <UM-X-XXX>, <Title>, User Manual, Revision, Dialog Semiconductor.
4. <Author>, <Title>, <Publication>, <Publisher>, Revision <Rev>, <YYYY>.
5. Etc.

# Introduction

The following chapter introduces the way of programming DA16200 firmware with SEGGER J-link.

# Requirements

1. J-Link Lite or higher (https://www.segger.com/products/debug-probes/j-link/models/model-overview/)

2. J-Link software V6.98 or later (<https://www.segger.com/downloads/jlink/>)

3. Eclipse 2021-06 (4.20.0) ([Eclipse Downloads | The Eclipse Foundation](https://www.eclipse.org/downloads/))

4. Python 2.7 or higher (<https://www.python.org/downloads/>)

# Preparation

The J-Link setup procedure required in order to work with J-Flash is described in chapter 2 of the J-Link / J-Trace User Guide (UM08001).

# Setup

## The Flash Loader installation

In order to use the flash loader for DA16200, it should be installed with the following steps.

1. Browse to the installation of the J-Link software package(ex. C:\Program Files (x86)\SEGGER\JLink). You should now see JFlash.exe, JLinkDevices.xml, ...

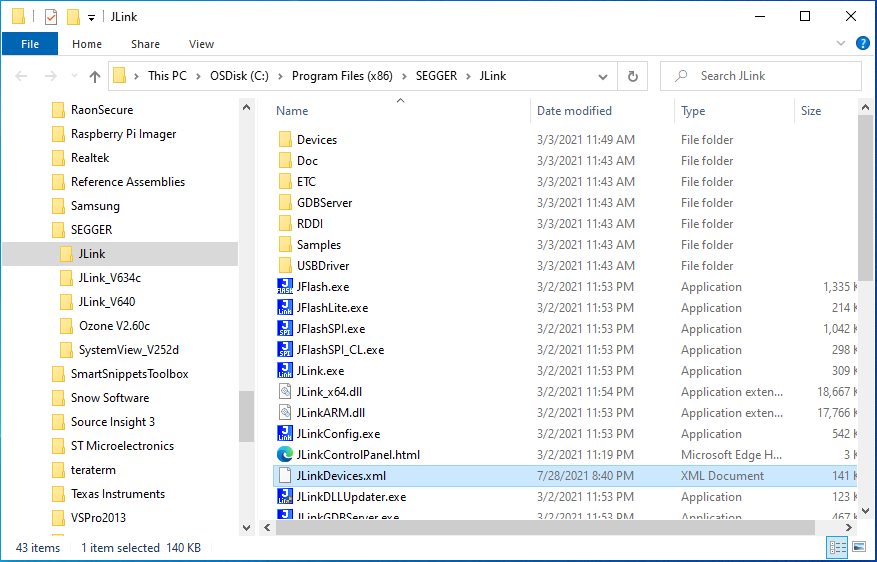


Figure 1: The installation of the J-Link software package

1. Open JLinkDevices.xml in a text editor and add the device entry at the beginning, right after the <Database> opening tag.



Figure 2: JLinkDevices.xml

|  |
| --- |
| <!-- -->  <!-- Dialog Semiconductor -->  <!-- -->  <Device>  <ChipInfo Vendor="Dialog Semiconductor" Name="DA16200.SeggerES.4MB" Core="JLINK\_CORE\_CORTEX\_M4" WorkRAMAddr="0x83000" WorkRAMSize="0x00020000" />  <FlashBankInfo Name="QSPI Flash" BaseAddr="0x10000000" MaxSize="0x400000" Loader="Devices/Dialog/ES\_DA16200\_4MB.elf" LoaderType="FLASH\_ALGO\_TYPE\_OPEN" />  </Device>  <Device>  <ChipInfo Vendor="Dialog Semiconductor" Name="DA16200.SeggerES.2MB" Core="JLINK\_CORE\_CORTEX\_M4" WorkRAMAddr="0x83000" WorkRAMSize="0x00020000" />  <FlashBankInfo Name="QSPI Flash" BaseAddr="0x10000000" MaxSize="0x200000" Loader="Devices/Dialog/ES\_DA16200\_2MB.elf" LoaderType="FLASH\_ALGO\_TYPE\_OPEN" />  </Device>  <Device>  <ChipInfo Vendor="Dialog Semiconductor" Name="DA16200.eclipse.4MB" Core="JLINK\_CORE\_CORTEX\_M4" WorkRAMAddr="0x83000" WorkRAMSize="0x00020000" />  <FlashBankInfo Name="QSPI Flash" BaseAddr="0x10000000" MaxSize="0x400000" Loader="Devices/Dialog/DA16200\_4MB.elf" LoaderType="FLASH\_ALGO\_TYPE\_OPEN" />  </Device>  <Device>  <ChipInfo Vendor="Dialog Semiconductor" Name="DA16200.eclipse.2MB" Core="JLINK\_CORE\_CORTEX\_M4" WorkRAMAddr="0x83000" WorkRAMSize="0x00020000" />  <FlashBankInfo Name="QSPI Flash" BaseAddr="0x10000000" MaxSize="0x200000" Loader="Devices/Dialog/DA16200\_2MB.elf" LoaderType="FLASH\_ALGO\_TYPE\_OPEN" />  </Device> |

1. Copy the flash loader files (sdk\_root\utility\j-link\scripts\flashloader\Devices\Dialog), referenced in the JLinkDevices.xml entry, into the same directory where also the JLinkDevices.xml is located.

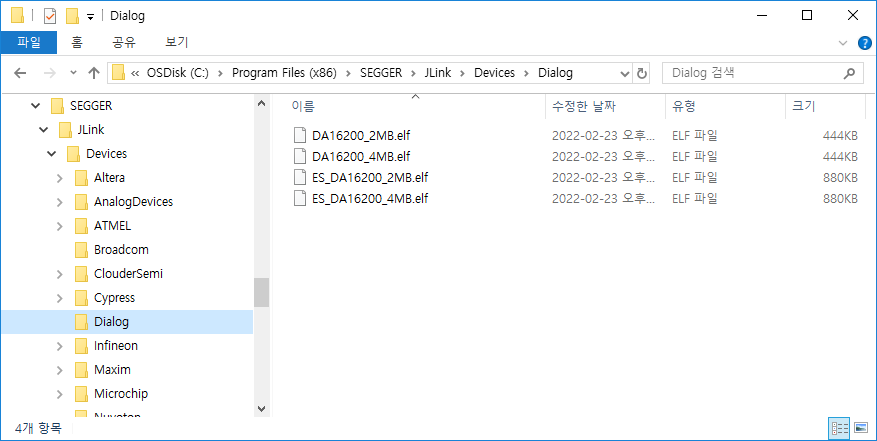


Figure 3: The flash loader files

## The path of J-Link installation in Eclipse

1. Go to Menu > Window > Preferences > Run/Debug > String Substitution
2. Select 'New...'
3. Input the name as 'jlink\_path' and the variable as the path of installation of the J-Link software (ex. C:\Program Files (x86)\SEGGER\JLink).

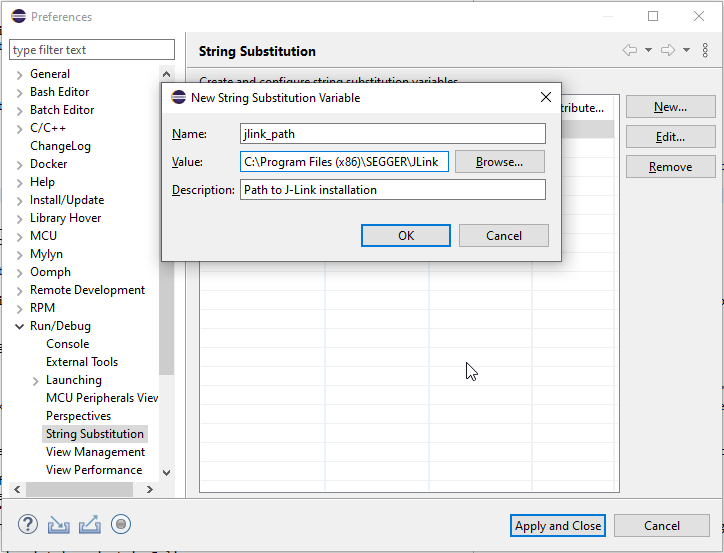


Figure 4: The path of J-Link installation in Eclipse

## Import the 'scripts' project in Eclipse

In order to use the scripts, the scripts project sould be imported in the workspace. The location of the project is sdk\_root/utility/j-link/project/SDKJFlash.

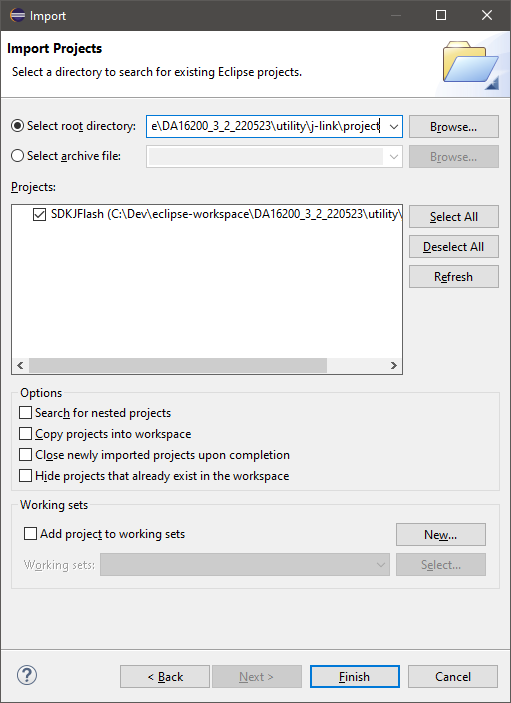


Figure 5: Import the scripts project

# Programming

In order to program binaries into the target device, run 'jlink\_program\_all\_win' script in the External Tools.

1. Select a project in the Project Explorer to be programmed.

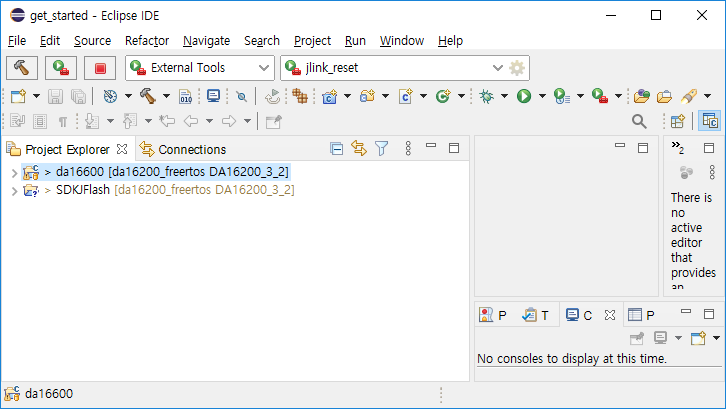


Figure 6: Project Explorer

1. Go to Menu > Run > External Tools.
2. Select 'jlink\_program\_all\_win'.

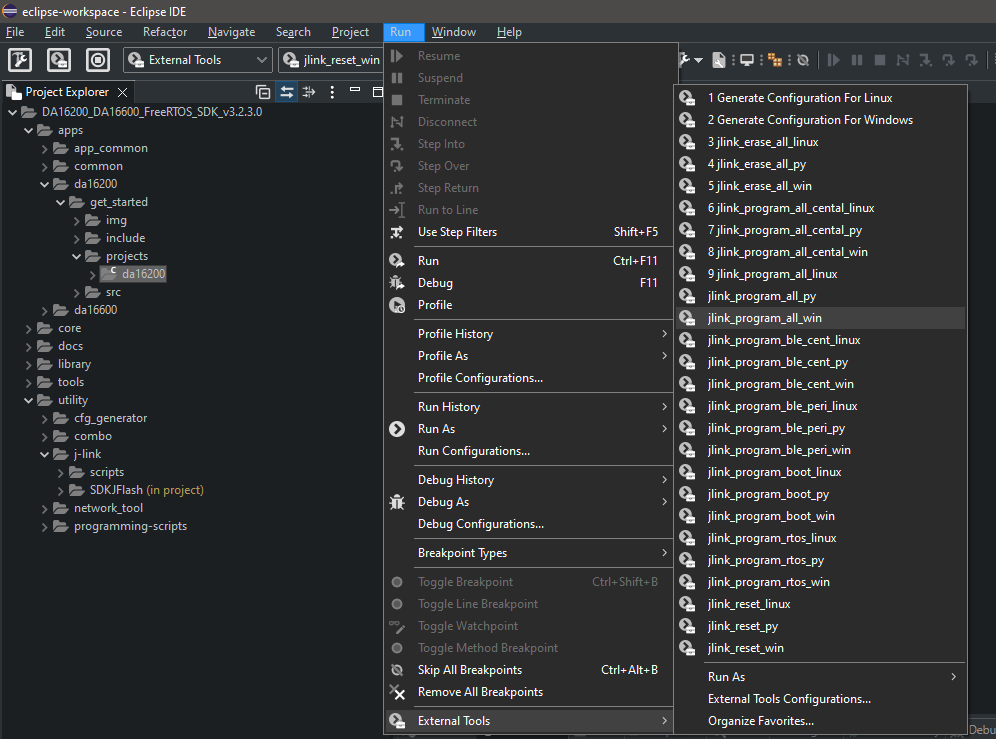


Figure 7: Run jlink\_program\_all script

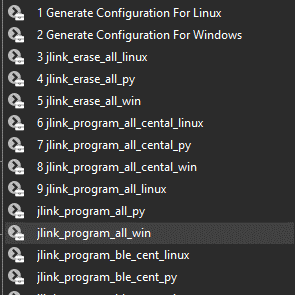


Figure 8: Quick run jlink\_program\_all script

The included scripts in the SDK are the following :

- jlink\_erase\_all : Erase all contents of the flash memory.

- jlink\_program\_all : Program all images into the flash memory.

- jlink\_program\_boot : Program BOOT image into the flash memory.

- jlink\_program\_rtos : Program RTOS image into the flash memory.

- jlink\_program\_all\_central : Program all images for BLE central role into the flash memory. (For DA16600)

- jlink\_program\_ble\_peri : Program BLE image for a peripheral role into the flash memory. (For DA16600)

- jlink\_program\_ble\_cent : Program BLE image for a central role into the flash memory. (For DA16600)

- jlink\_reset : Reset the target system

1. If no bootable image exists (or if there are multiple bootable images), a popup window may appear to select the target SFLASH.

- jlink\_erase\_all, jlink\_reset\_all, jlink\_program\_rtos, …

- erase/reset scripts will select and run the correct SFLASH again from the flash loader  
 regardless of the manually selected SFLASH.

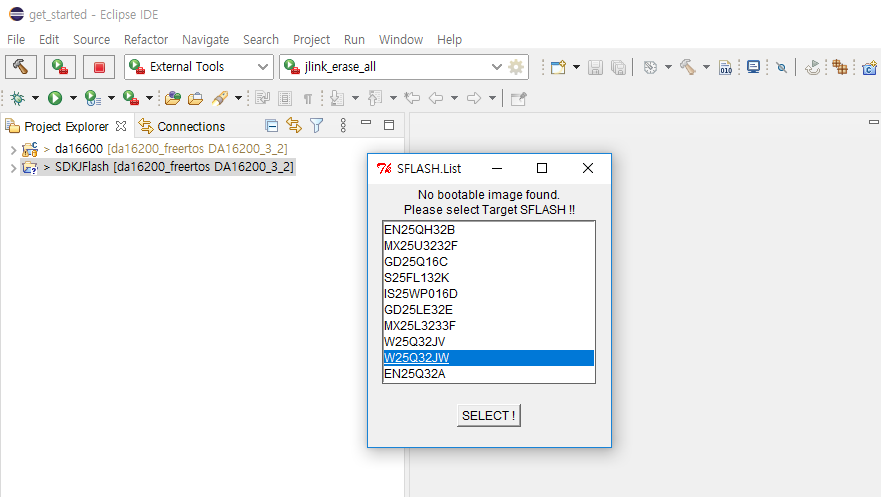


Figure 9. Popup window for selecting the target SFLASH.

5. SFLASHTable.cfg in 'JLINK' folder shoud not be modified. This file shows the list of SFLASHs supported by the flash loader, DA16200\_xMB.elf or ES\_DA16200\_xMB.elf.

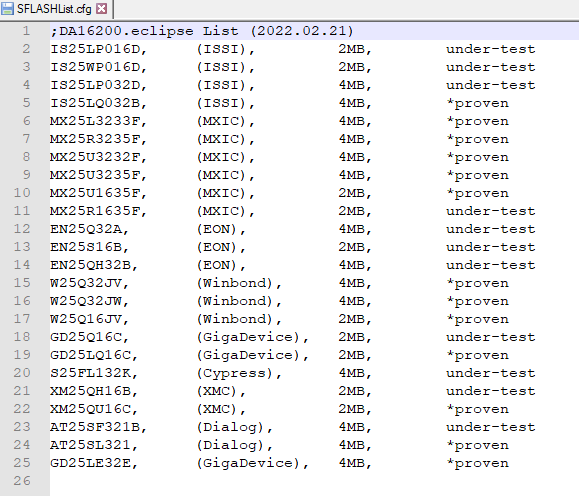


Figure 10. List of supported SFLASHs

1. <Appendix Title>

Optional section, remove if not required. Add subsections as required (Appendix Heading 2 to 5).

<Insert text here>

* 1. <Appendix Subsection>

<Insert text here>

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