

Quick Start Guide

Demo Distance2Go

September 2017



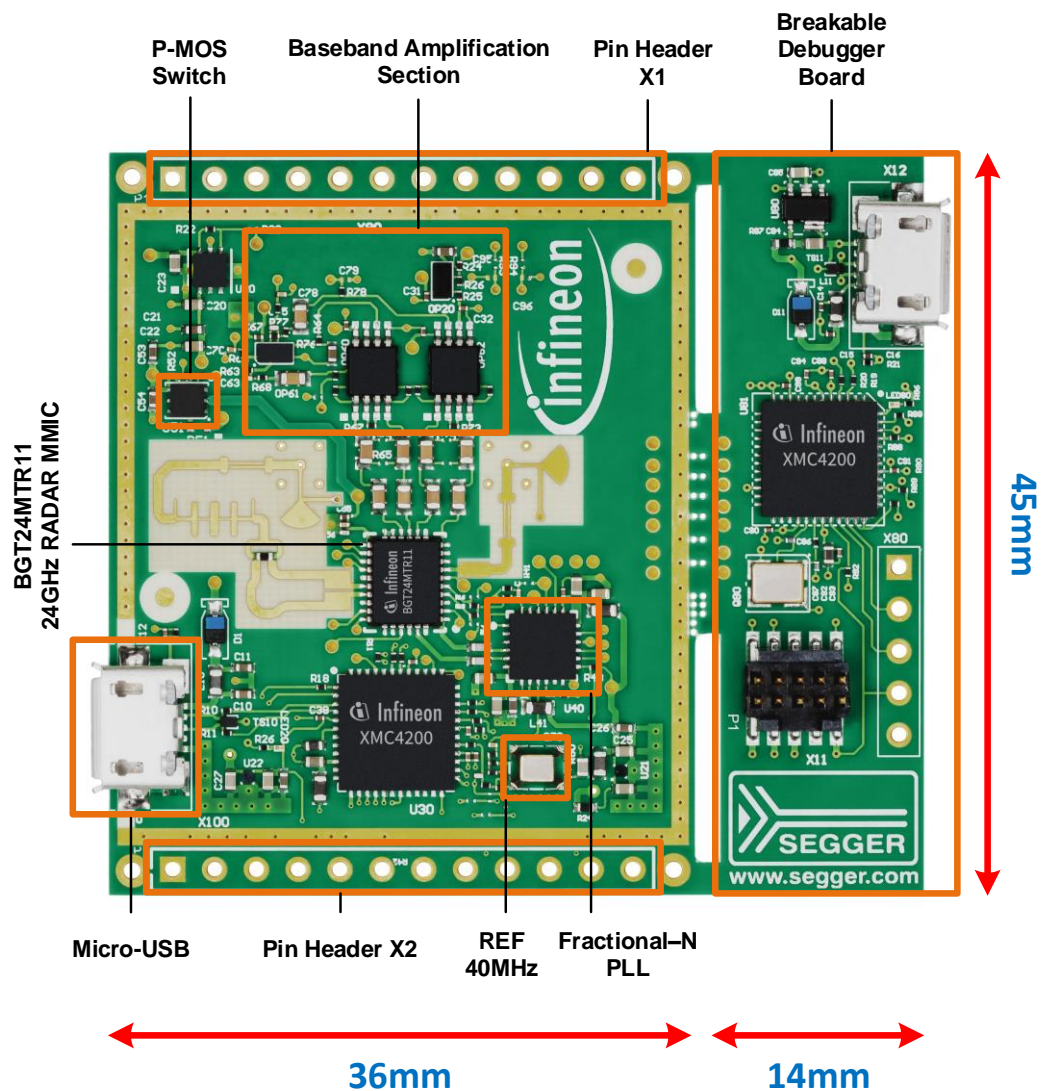
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- 1 Hardware Description
- 2 Tools Installation
- 3 Demo Distance2Go USB Connections
- 4 Building, Flashing and Debugging
- 5 Radar GUI

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Hardware Description



Board Views – Front and Back

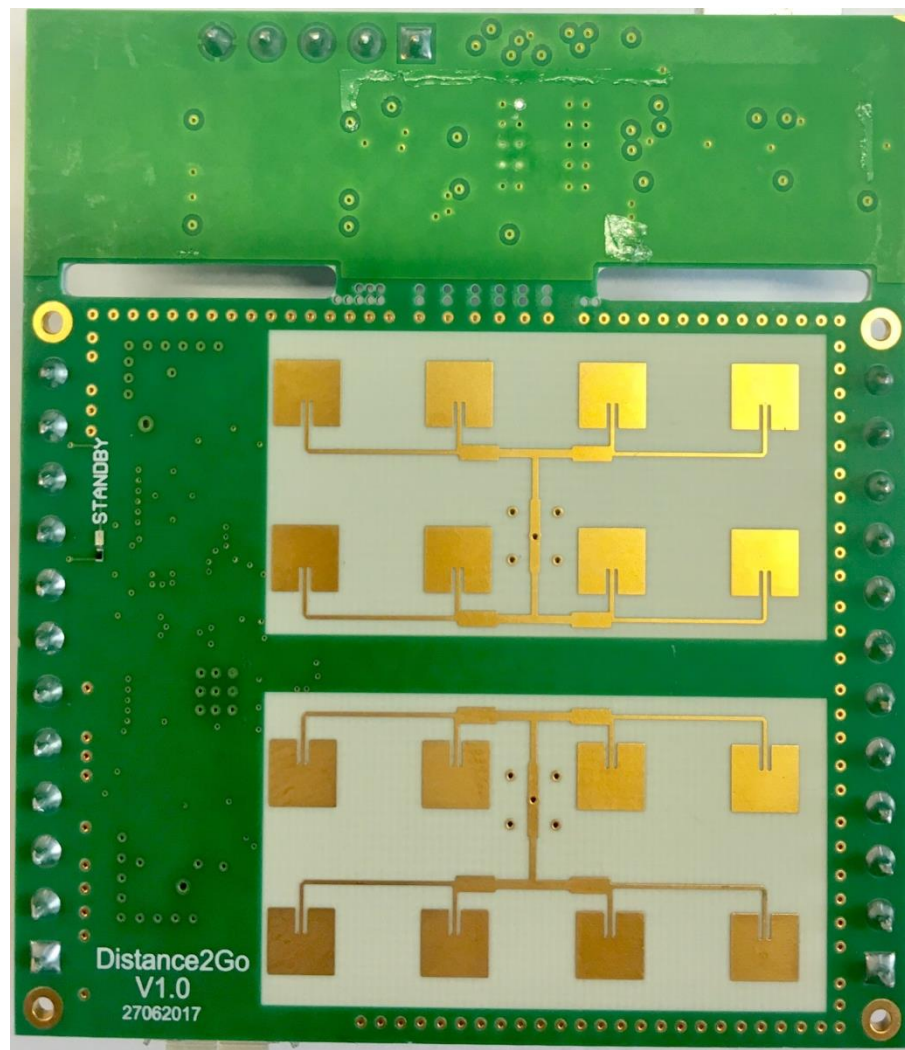
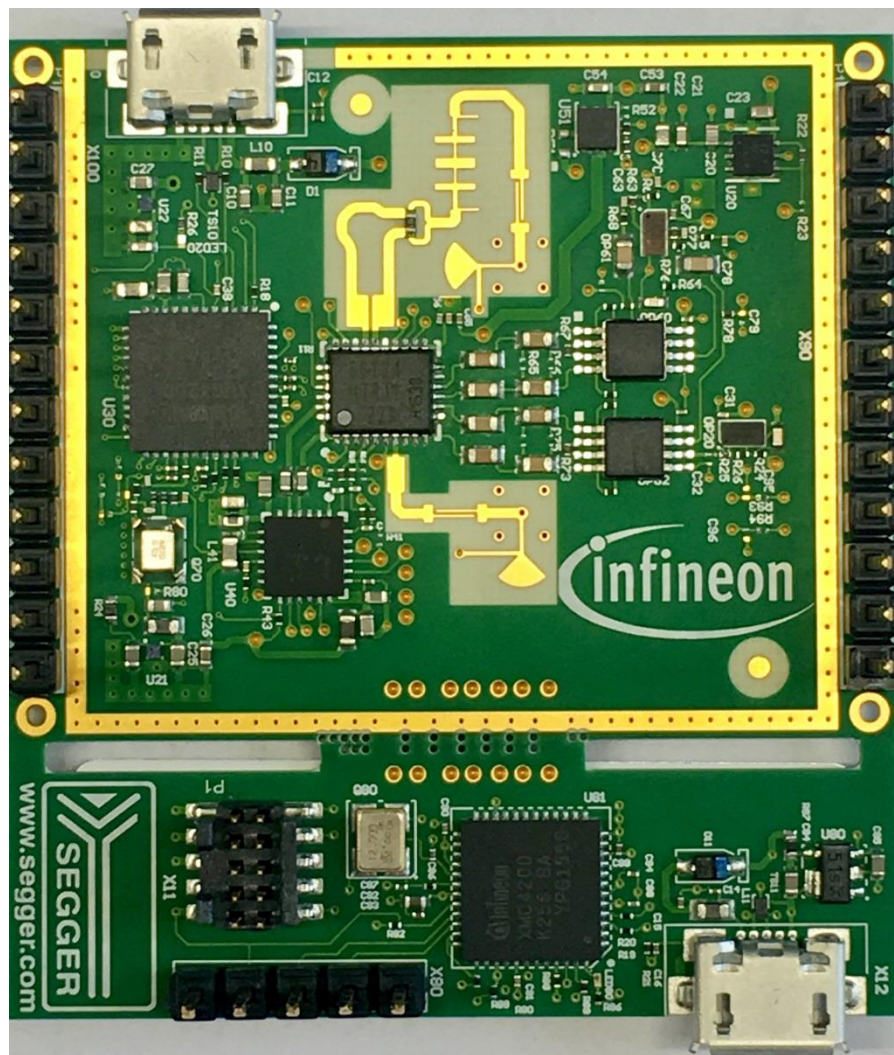


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Tools Installation

Flashing Tools

1. XMC Flasher
2. XMC 4200 Serial Port Drivers

Visualization Tool

1. Radar GUI

Firmware Development Tools

1. DAVE
2. Segger J-Link

Tools Installation

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Flashing Tools

1. XMC Flasher

Installation Steps:

1. Download XMC Flasher **.zip file** from the following link



<http://www.infineon.com/cms/en/product/microcontroller/32-bit-industrial-microcontroller-based-on-arm-registered-cortex-registered-m/xmc-development-tools-software-tools-and-partner/xmc-programming-tools-from-infineon/channel.html?channel=5546d462557e6e890155a0532c605bfe>

XMC™ Flasher

Products

Documents

Forums

Support

A tiny and free of charge tool for XMC™ MCU flash programming

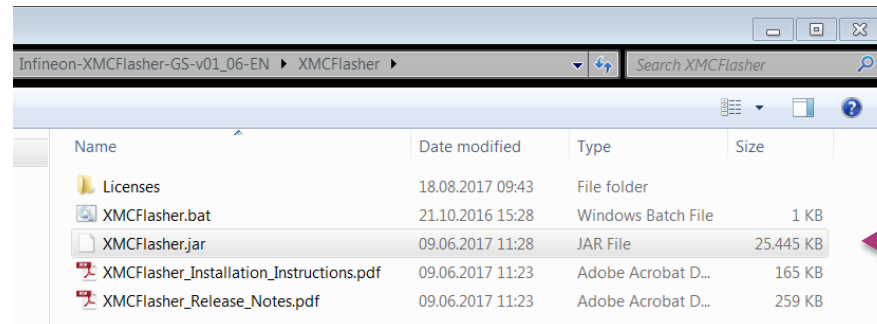
The new XMC™ Flasher is a tiny, free of charge programming tool for on-chip flash programming. It is written in Java and it supports basic functionalities like erasing, programming and verification (.hex and .srec), plus BMI handling. XMC™ Flasher requires a J-Link compatible debug-HW to connect to the target (integrated on most of the XMC™ kits or XMC™ Link).



Download here



2. Extract the downloaded .zip file and run the **XMCFlasher.jar file**



Flashing Tools

1. XMC Flasher

Note: Might need to install **Java** (32-bit or 64-bit) to run the XMCFlasher.jar file.



<https://java.com/en/download/>



The screenshot shows the Java website's download page. At the top, there is a red navigation bar with the Java logo, a search box, and links for 'Download' and 'Help'. Below the navigation bar, the main content area is divided into two columns. The left column contains a sidebar with sections: 'All Java Downloads' (with a link to 'All Java Downloads'), 'Report an issue', and 'Why am I always redirected to this page when visiting a page with a Java app?' (with links to 'Learn more' and 'Report an issue'). The right column features a large red button labeled 'Free Java Download' with a purple arrow pointing to it from the right. Below the button are links for 'What is Java?', 'Do I have Java?', and 'Need Help?'. Further down, there is a section titled 'Why download Java?' with text explaining the benefits of upgrading to the latest version for security and functionality.

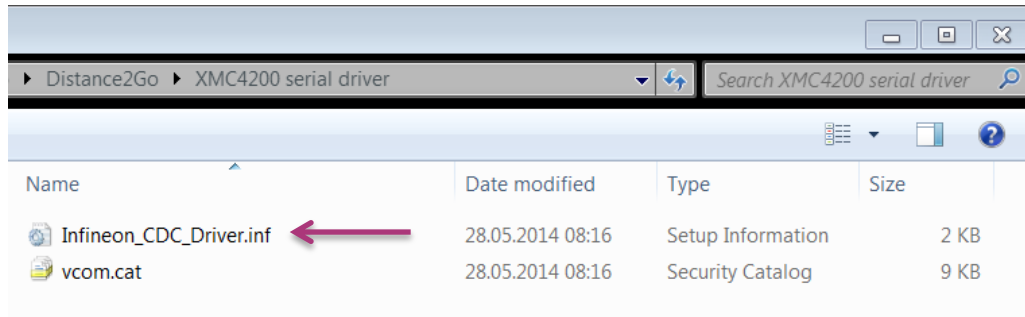
Flashing Tools

2. XMC4200 Serial Port Drivers

- › If you are plugging in the XMC4200 for the first time into your PC/laptop, you will receive an error.



- › XMC4200 serial drivers are part of deliverables, comes under the folder 'Driver'.

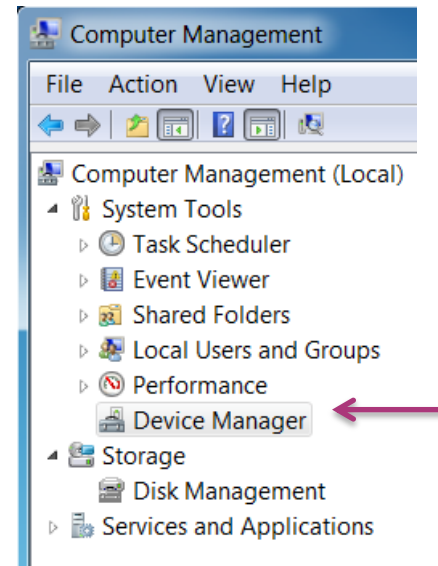
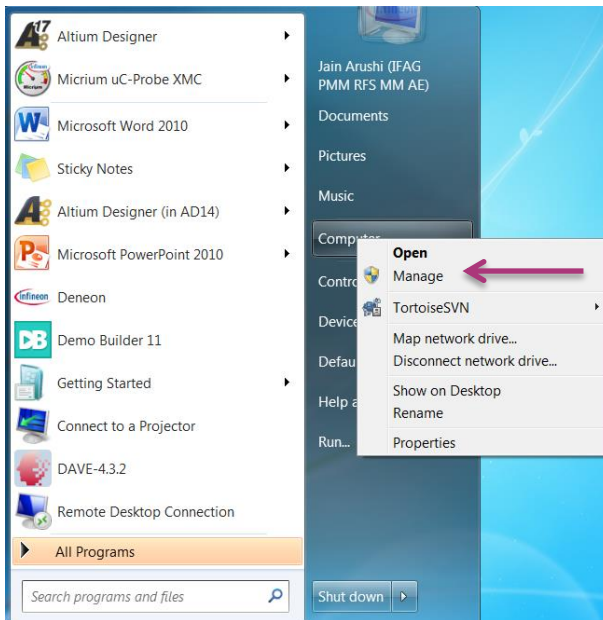


Flashing Tools

2. XMC4200 serial port drivers

Installation Steps:

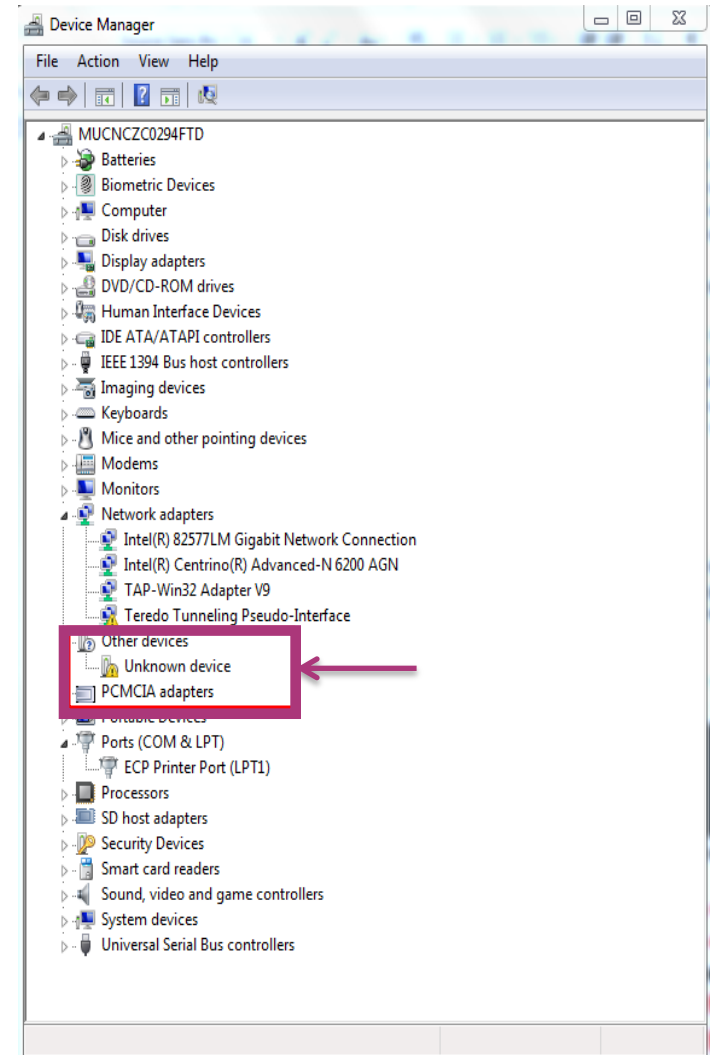
1. Right click on "My Computer"
2. Click "Manage" and a Computer Management window will be opened.
3. Click on "Device Manager"



Flashing Tools

2. XMC4200 Serial Port Drivers

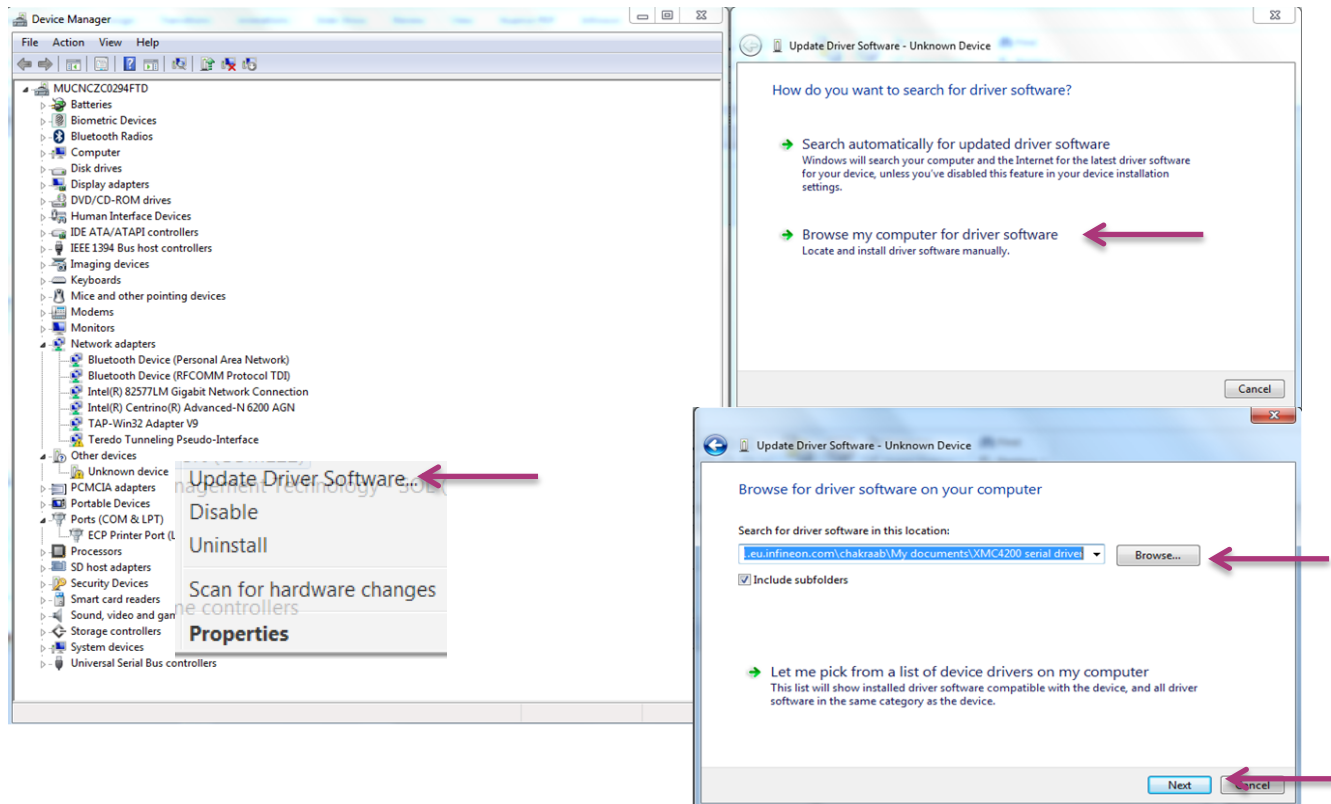
4. Now connect the demo board to the computer via USB and the board will be detected under the "Other devices" category.
5. Right click on "Unknown Device"



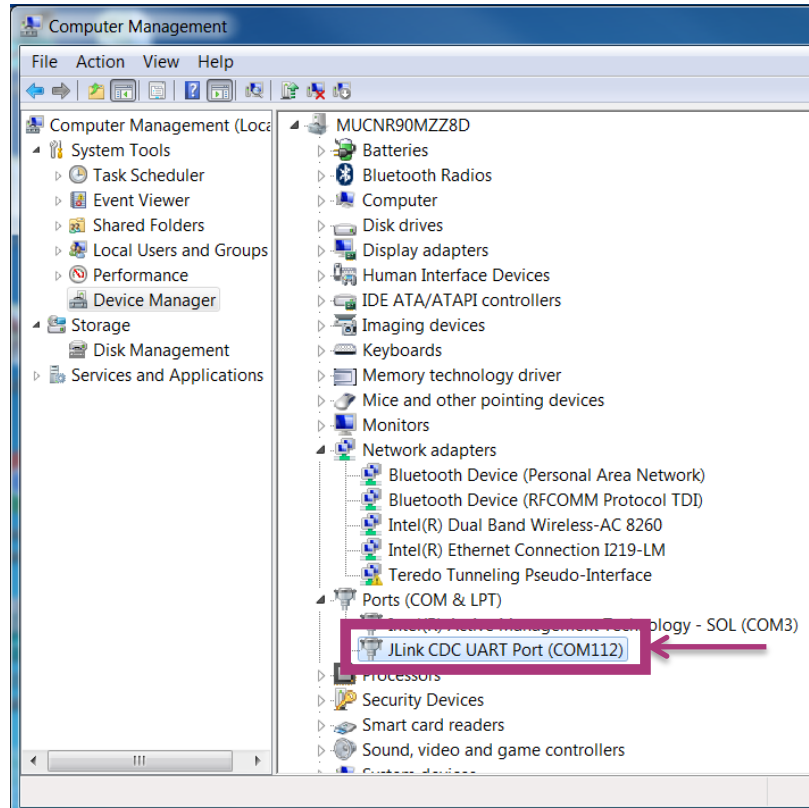
Flashing Tools

2. XMC4200 Serial Port Drivers

6. Click "Update Driver Software"
7. Select "Browse My Computer for Driver Software".
8. Now browse to the directory where the drivers are stored (it's part of deliverable in our case under 'Driver' folder) and click "Next".



9. After successful installation, the board is listed under "Ports" category in "Device Manager" tab of computer management window.
 - › Note down the COM port to which the board is connected. This will be helpful for working with the software later.



Tools Installation

Flashing Tools

1. XMC Flasher
2. XMC 4200 Serial Port Drivers

Visualization Tool

1. Radar GUI

Firmware Development Tools

1. DAVE
2. Segger J-Link

Visualization Tools

1. Radar GUI

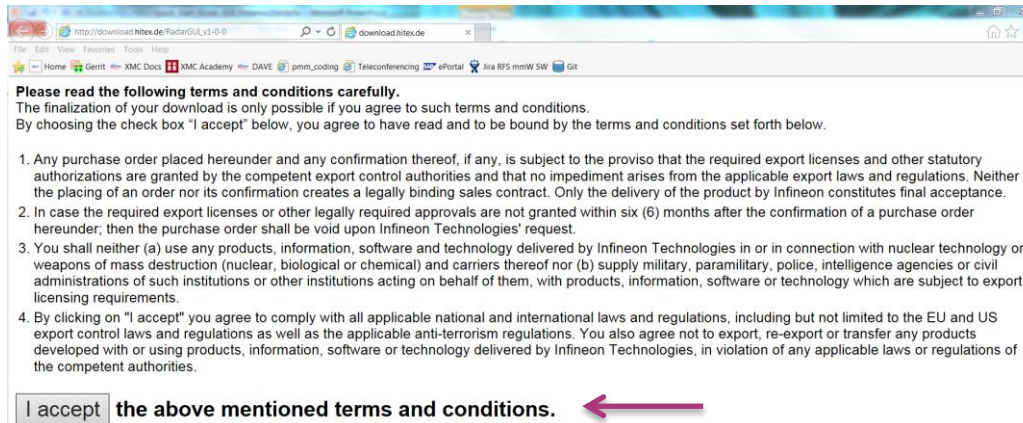
Installation Steps:

1. Download the latest version of Radar GUI.



<http://download.hitex.de/RadarGUI>

2. Click on "I accept".



3. Save and install the Deneon Radar GUI executable file
 - Radar GUI is preinstalled in Deneon after installation

Note: The initial download page will change in the future, as soon as the IFX webserver is available.

Visualization Tools

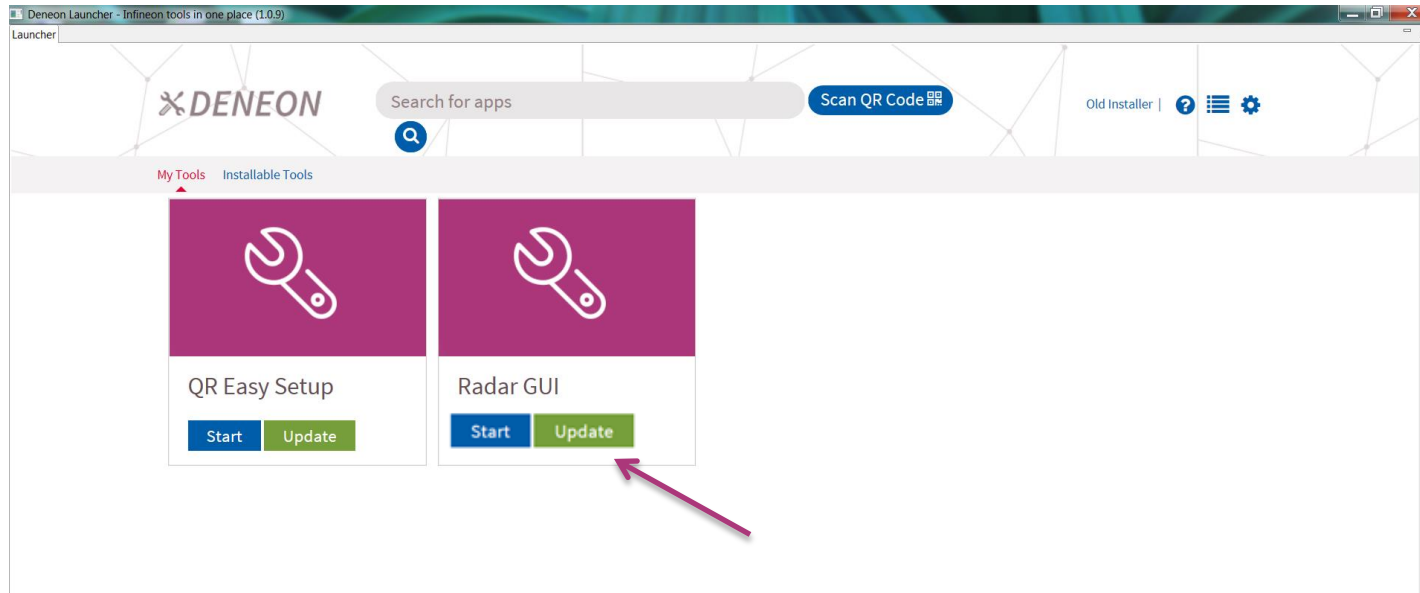
1. Radar GUI



4. Click on the Deneon link after installation on your Desktop.



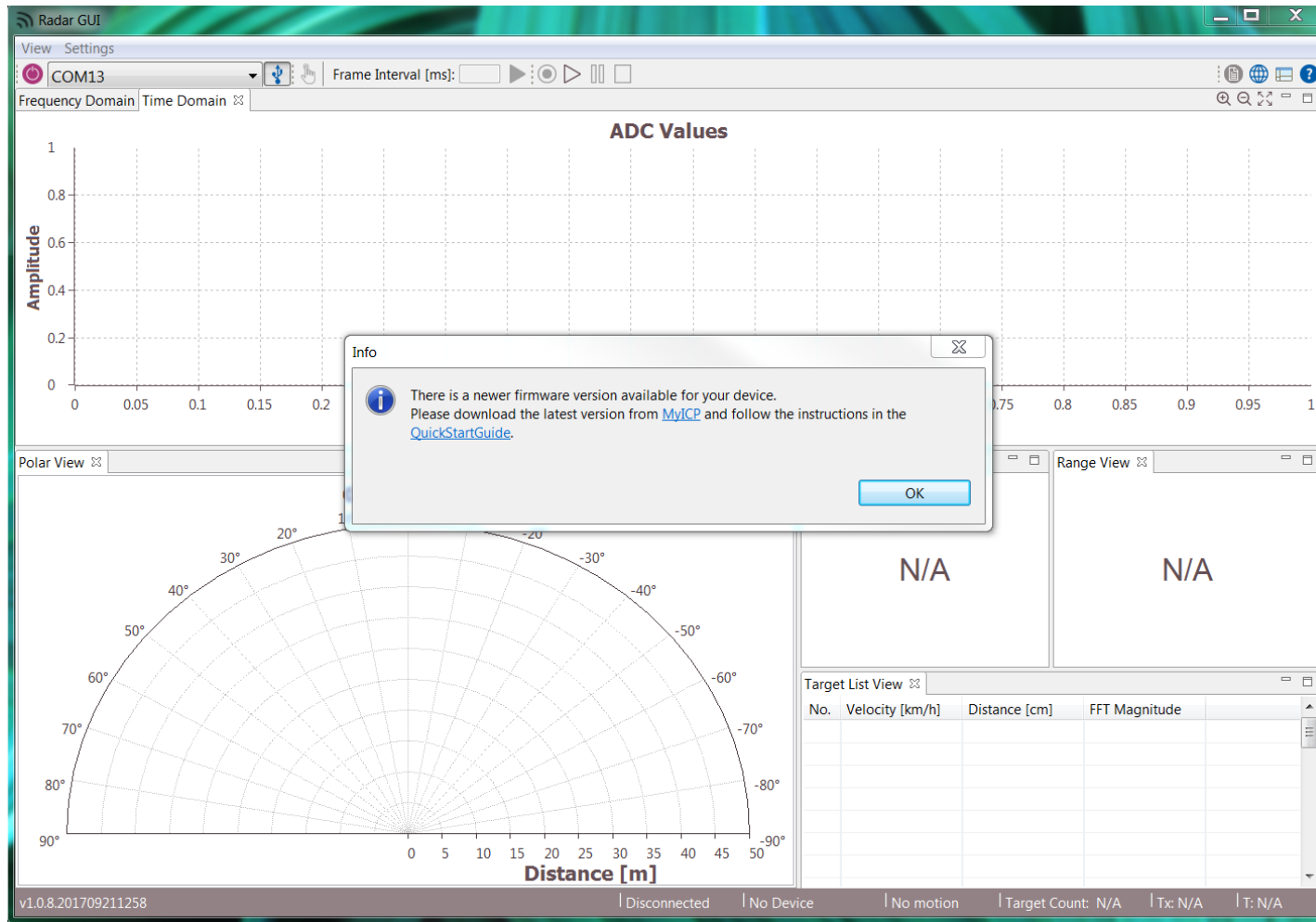
5. If a new update is available for the Radar GUI, then please click on the green button labeled "update" appeared right to the start button in the Radar GUI tab. After update, Deneon will restart and then click "Start" button in the Radar GUI tab to run GUI.



Visualization Tools

1. Radar GUI

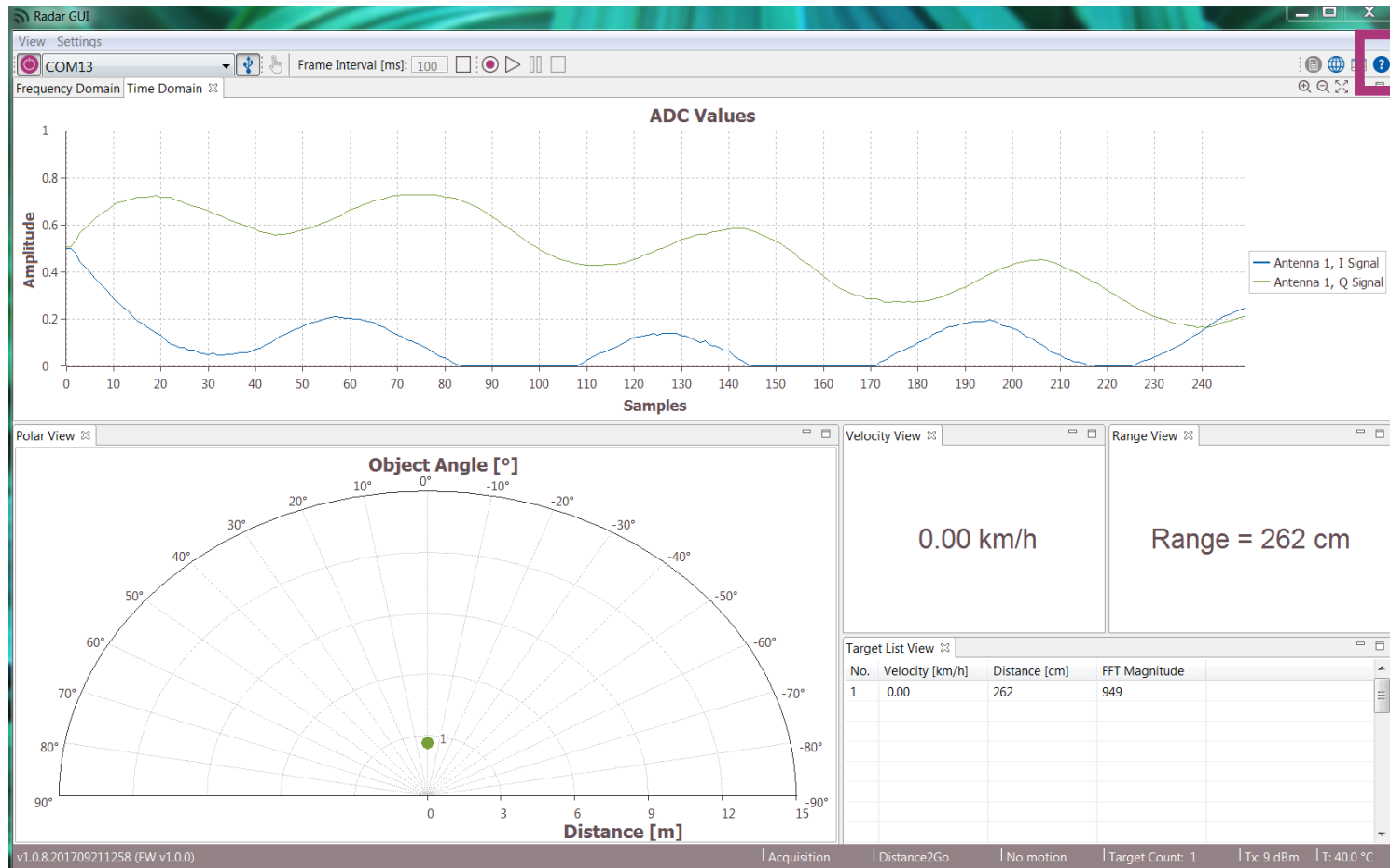
6. Radar GUI at the start checks the compatibility of firmware version running in the connected device and will prompt by a message to follow the links to update the firmware.



Visualization Tools

1. Radar GUI

Default layout of Radar GUI for D2G demo boards is depicted in the following picture. For further help on Radar GUI please click on the help section as shown in the figure below.



Visualization Tools

1. Radar GUI

Go through the different sections of this Radar GUI help.

Radar GUI Application

The Radar GUI software is JAVA based Graphical User Interface (GUI). It represents graphical support for Infineon's radar devices and enables showing raw and processed data from a device, and provides features for enhanced data display and data graphical analyzes.

Main Application Window

After Radar GUI application has been launched, the following window will appear (see Figure 1).

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Firmware Development Tools

1. Installing DAVE

Installation Steps:

1. If you have a previous version of DAVE installed, check your hard drive location:



C:\Users\“your login name”\Infineon\D_LibraryStore_4.1

If this folder exists, rename or delete it.

2. Download the latest version of DAVE from





www.infineon.com/dave

- Scroll down to the “DAVE™ Download” link.



Download can take up to 1 hour!

Forum	Ecosystem
Email Support	Development Kits
XMC™ MCUs	Rapid Prototyping Tools <ul style="list-style-type: none">• XMC™ Flasher Tool• XMC™ Link, Fun• XMC™ Pinout Tool• Others
DAVE™	 Download Free Eclipse based integrated development code repository, hardware resource m A complete download package is prov DAVE™ Release Note
DAVE™ SDK	Devel . . . nt environment to modify ; DAVE™ SDK is available as separate tc All DAVE™ APPs can be downloaded a
XMC™ Lib	 Ready to use APIs for peripherals whic Altium, ARM/KEIL, Atollic, IAR Systems

Firmware Development Tools

1. Installing DAVE (cont'd)



3. Select either the **32-bit** or **64-bit** version depending on your system (leave DAVE™ SDK unchecked as it is not needed)
4. Fill out the form and you will get a personal download link

Please register here

Select the DAVE™ package(s) you would like to download

DAVE™ Packages* DAVE™ for Windows 32-bit DAVE™ for Windows 64-bit DAVE™ SDK for Windows 32-bit DAVE™ SDK for Windows 64-bit

Please fill-in your personal data

Email Address*

First Name*

Last Name*

Company*

Business Phone*

Country*

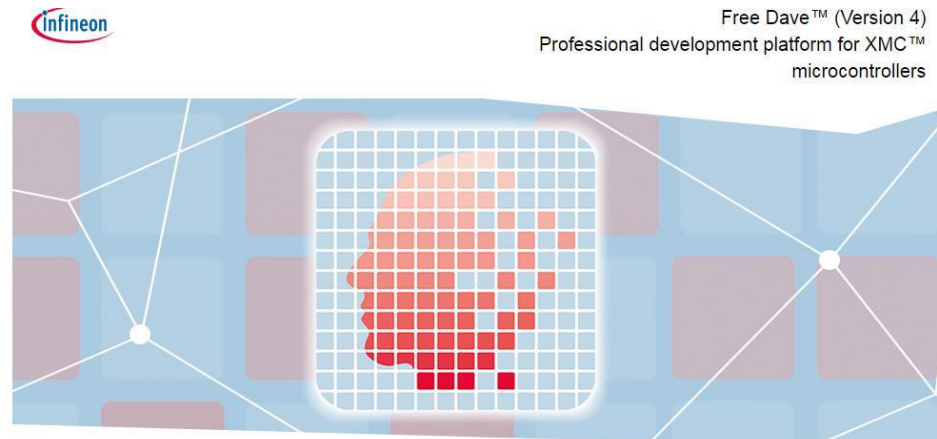
City*

Target Application*

Yes, I like to be part of the Infineon Community*

I agree that my personal data maintained above can be gathered, processed and used for sales promotion and market research by Infineon Technologies AG and its licensed distribution partners.

Privacy Policy* I have read the privacy policy and agree with it.



Thank you for your registration!

Please download your software here:

[Download DAVE™ Windows 32-bit](#)

Sincerely,

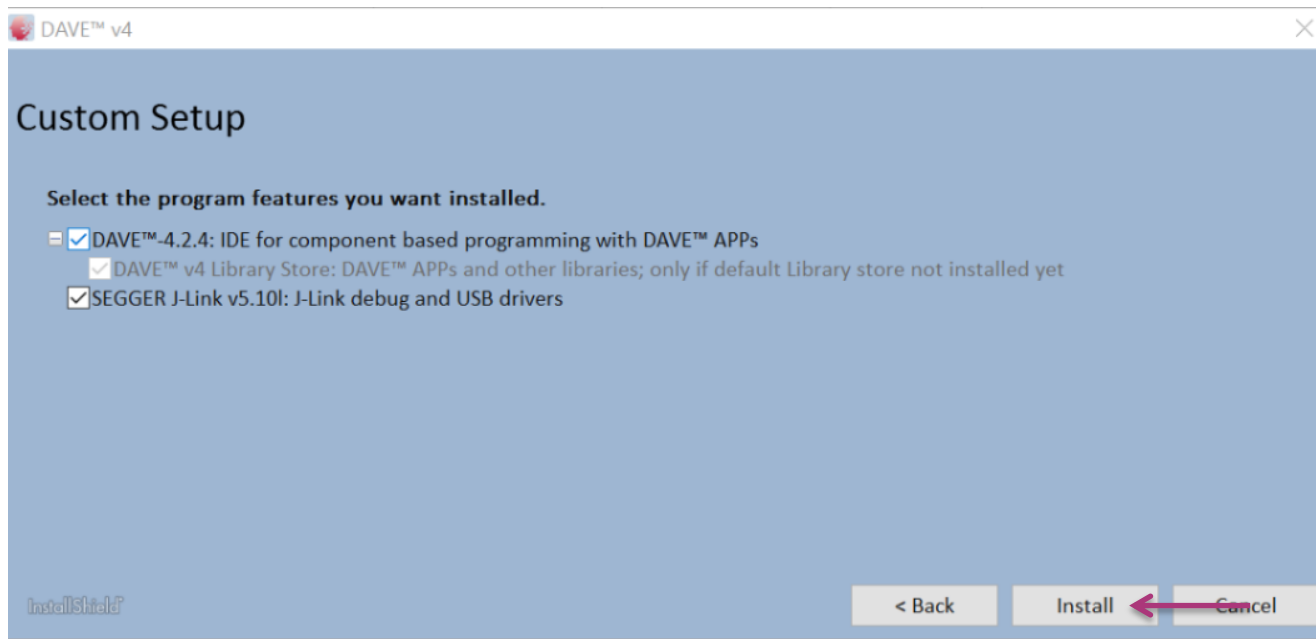
Your Infineon Community Team

Firmware Development Tools

1. Installing DAVE (cont 'd)



5. Unzip the downloaded zip file on your hard drive
6. Depending on your PC, you may need to have administrator access to install the software.
7. Start the executable and make sure to install DAVE, the Library Store and SEGGER drivers (all boxes checked)



Firmware Development Tools

2. Installing J-Link

8. Accept license agreement and keep clicking "Next" then click "Finish".
9. When the Segger JLINK installation starts, click "Next".



Firmware Development Tools

2. Installing J-Link (cont'd)

10. Keep clicking "Next".

11. If something like the screen below appears, click "Select All" (if it is not greyed out) and then "OK".

12. Click "Finish".

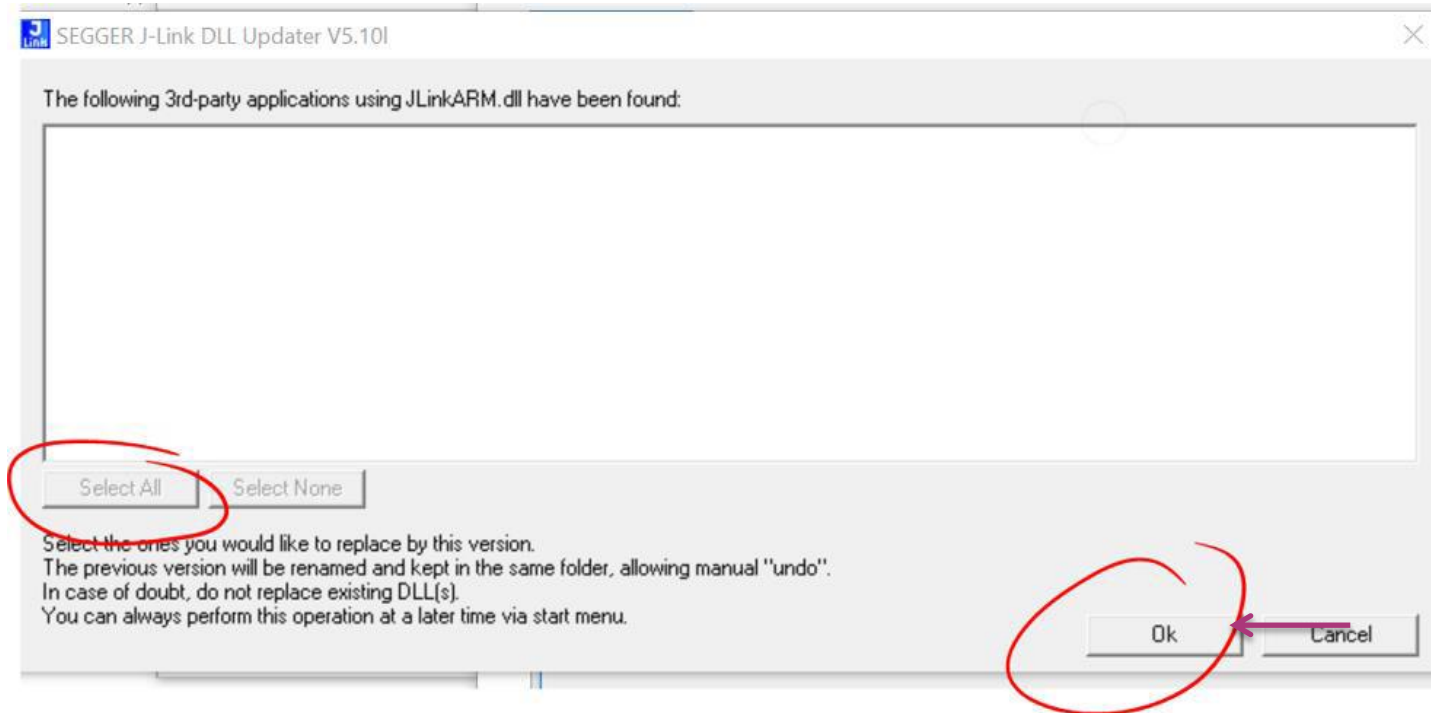


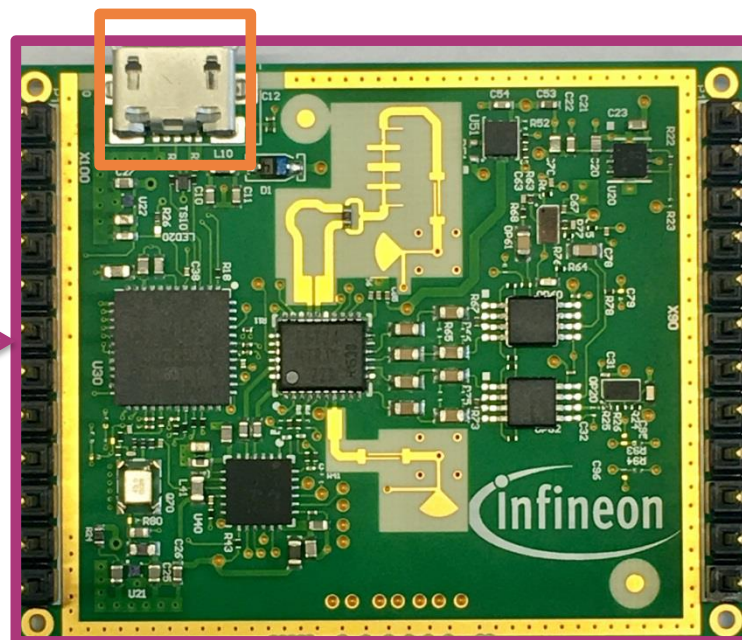
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Demo Distance2Go USB Connections

Main D2G Module

USB No. 2



Breakable Debugger Module



USB No. 1

Demo Distance2Go USB Connections

Firmware flash

1. Only connect USB to **Debugger** module
 - **To flash the Firmware**



Demo Distance2Go USB Connections

Radar GUI



2. Only connect USB to **Main D2G** module
 - **To use Radar GUI**

Note: Firmware must be flashed beforehand otherwise flash it using first connection scheme



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Building, Flashing and Debugging Overview



Two ways to proceed from this step to flash the firmware:

1. XMC Flasher
2. Dave Project

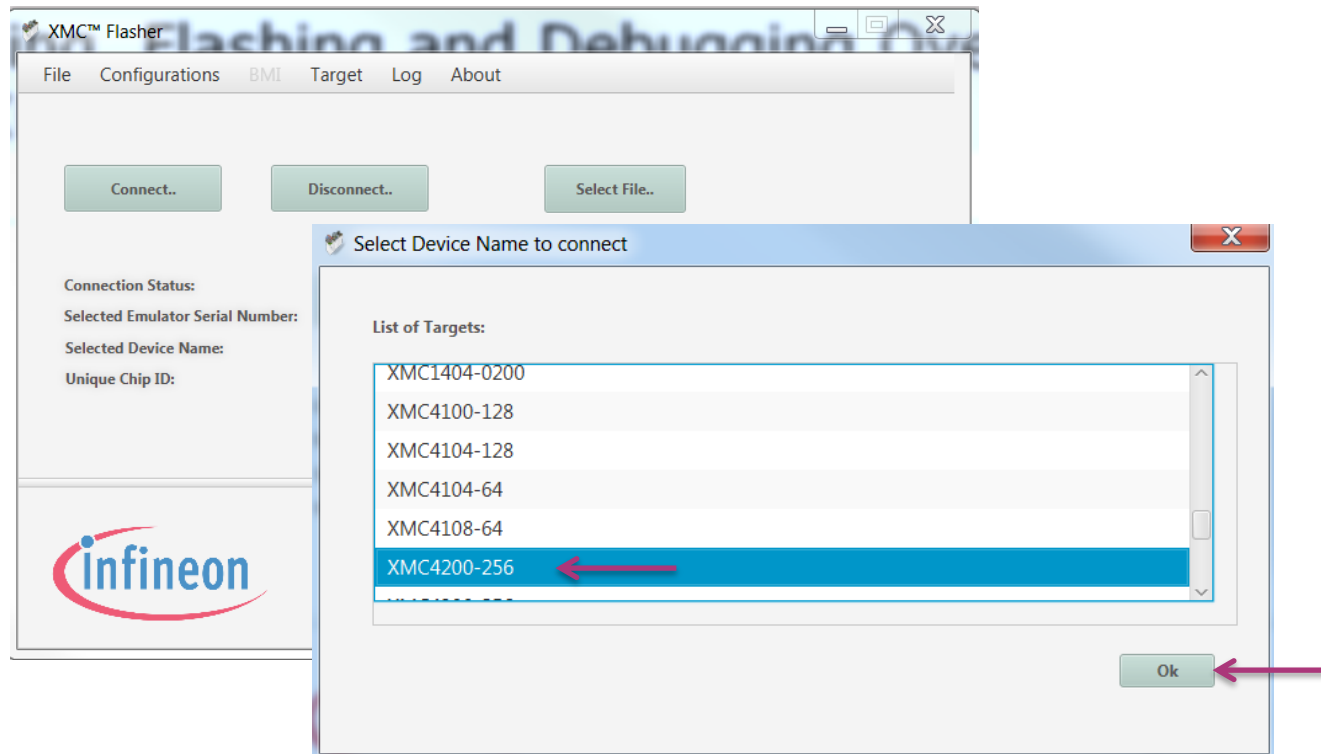
Building, Flashing and Debugging Overview Via XMC Flasher cont'd

1. Open the XMC flasher .jar file and click on the connect button to select the device name



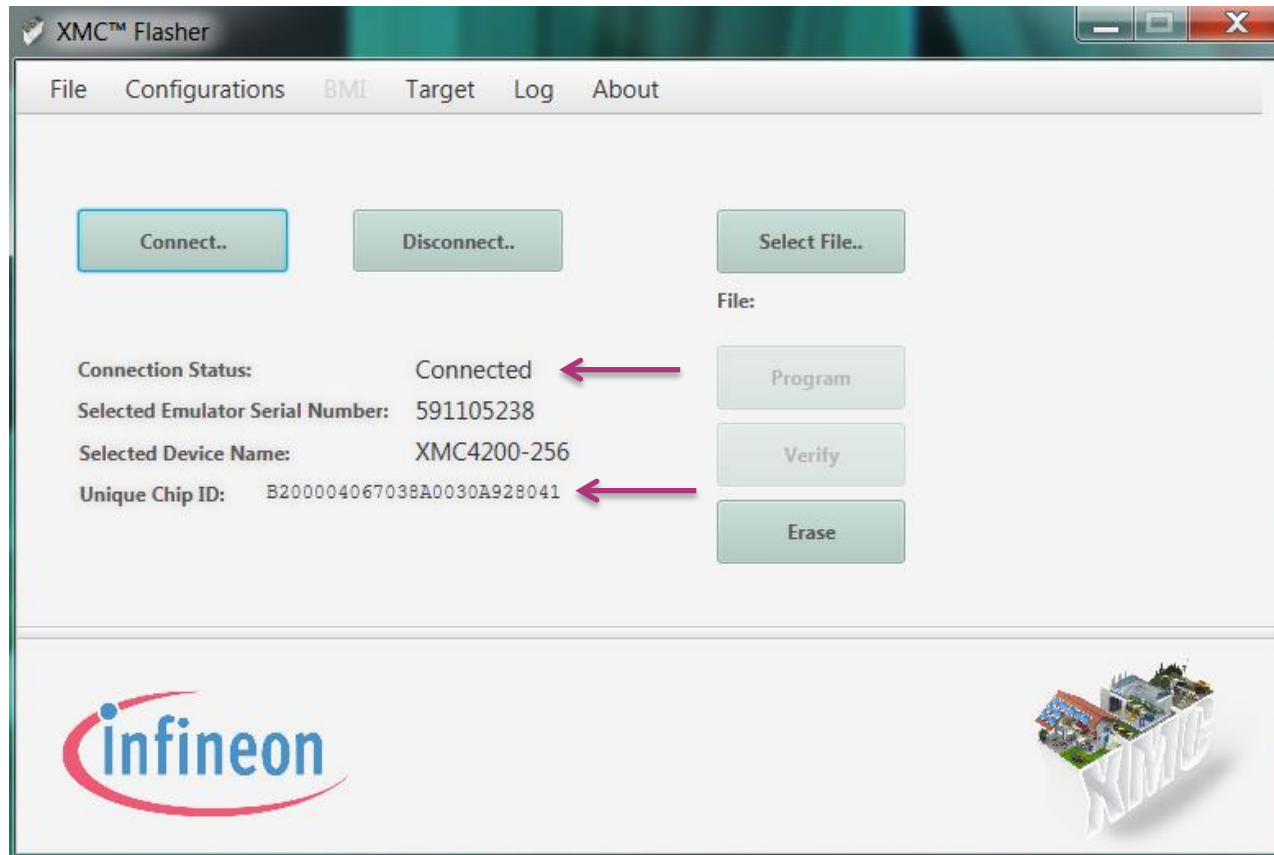
Building, Flashing and Debugging Overview Via XMC Flasher cont'd

2. Select the Device name from new window opened (XMC4200-256), then click 'OK'.



Building, Flashing and Debugging Overview Via XMC Flasher cont'd

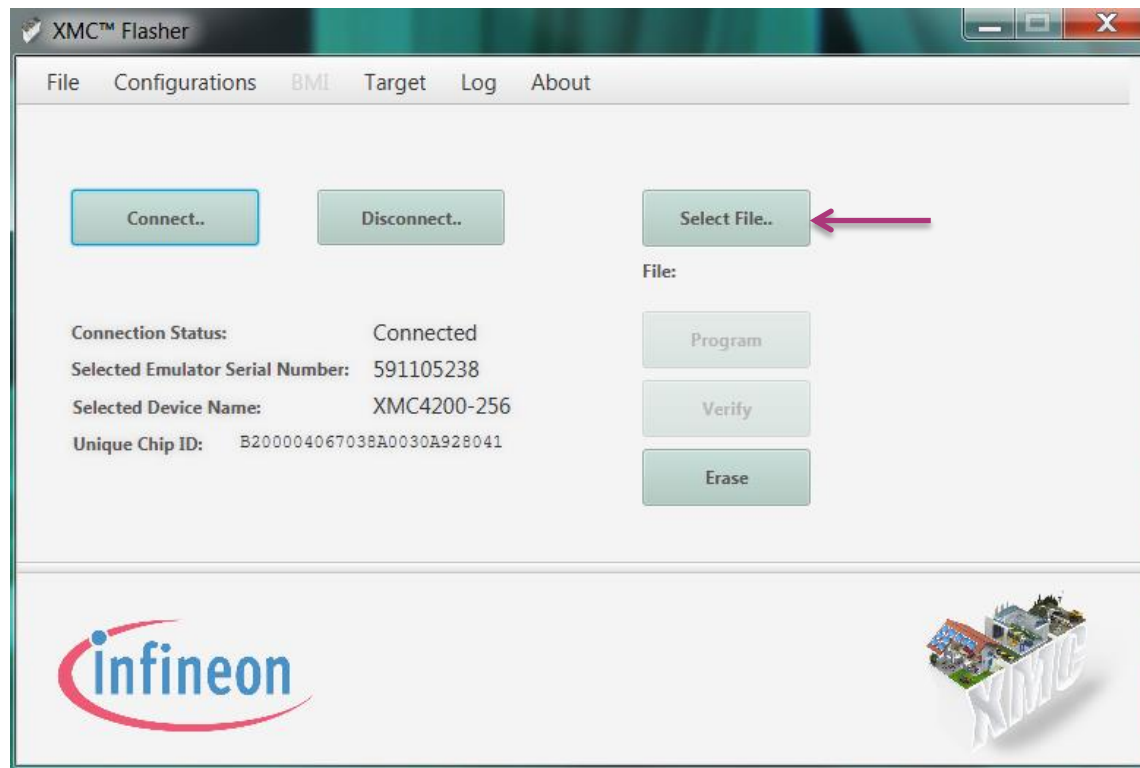
3. If connection is successful, then 'Connection Status' would be connected. You can then see the 'Unique Chip ID' as well.



Building, Flashing and Debugging Overview Via XMC Flasher cont'd

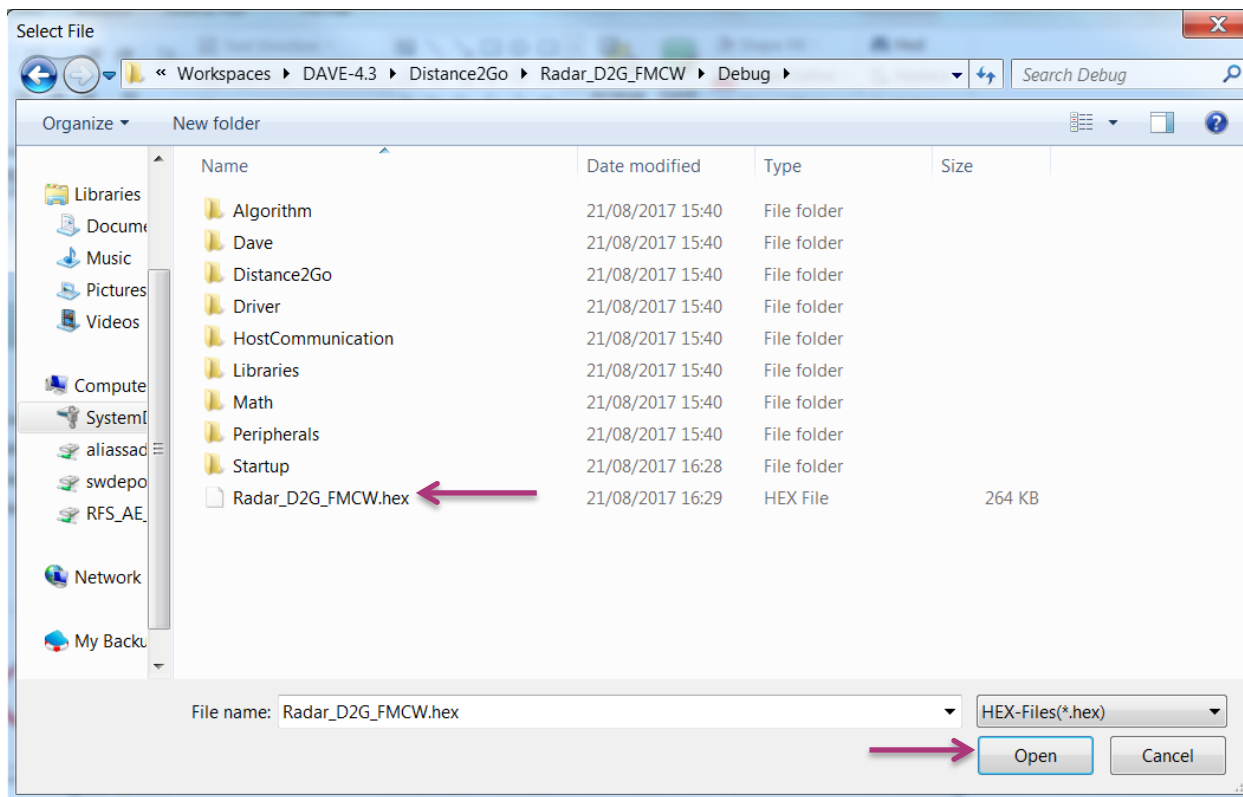


4. After connection is done, select the **.hex file** (firmware is flashed through .hex file) by clicking on Select File button.



Building, Flashing and Debugging Overview Via XMC Flasher cont'd

5. Navigate to the binary folder containing Radar_D2G_FMCW.hex file and select it.
6. Click on 'Open' in the dialogue box.



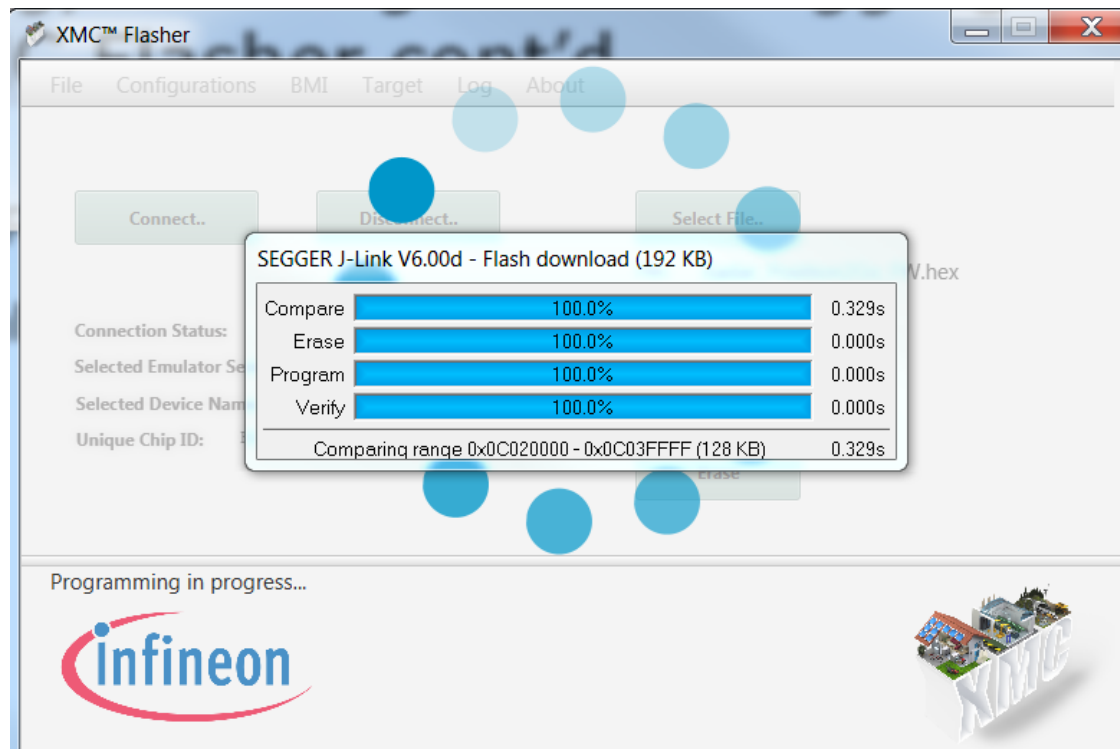
Building, Flashing and Debugging Overview Via XMC Flasher cont'd

7. Successful selection of hex file will list the name of .hex file under 'Select File' button.
8. Now click 'Program' button.



Building, Flashing and Debugging Overview Via XMC Flasher cont'd

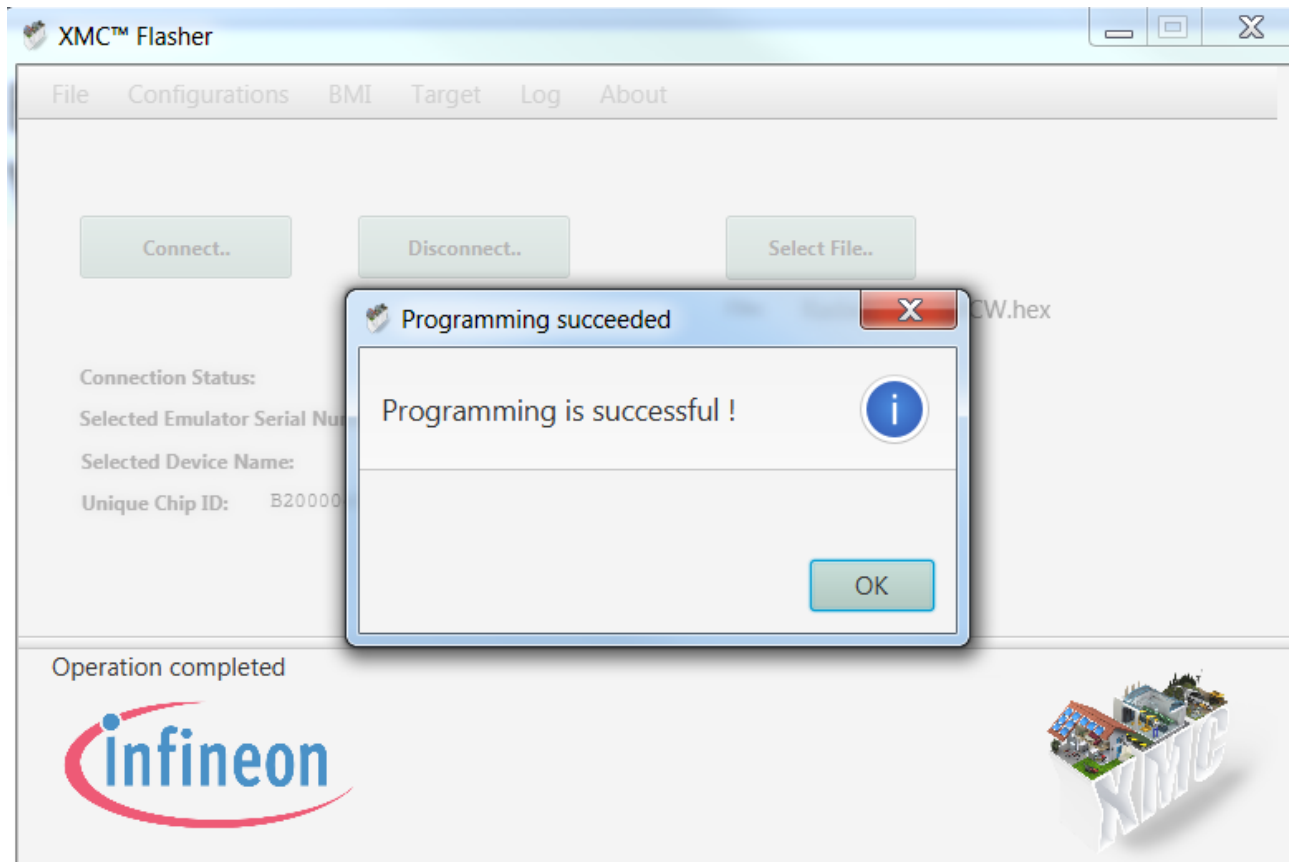
9. SEGGER progress window will open. It will also verify if the .hex file is flashed or not.



Building, Flashing and Debugging Overview Via XMC Flasher cont'd



Congrats! You have successfully flashed the firmware using XMC Flasher.



Building, Flashing and Debugging Overview



Two ways to proceed from this step to flash the firmware;

1. XMC Flasher
2. Dave Project

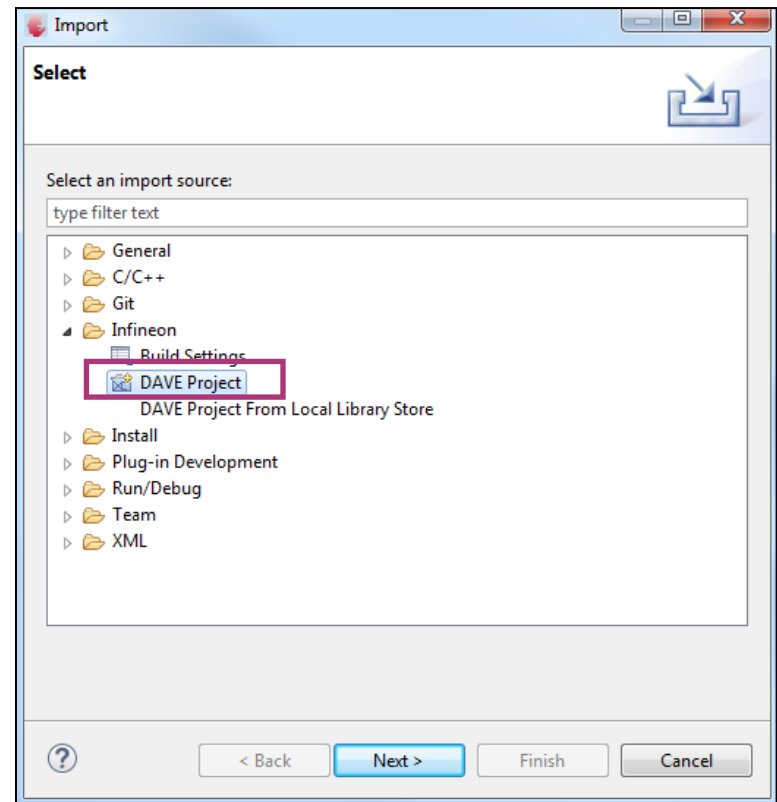
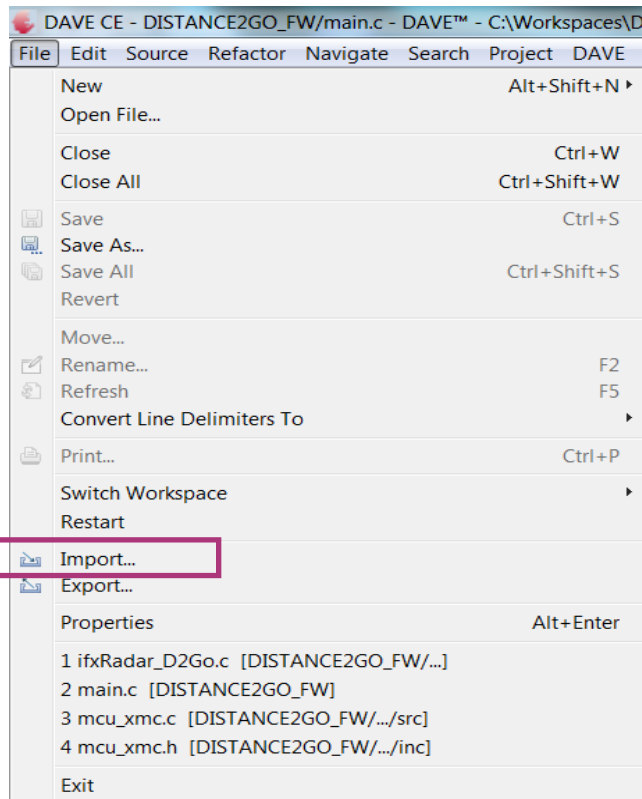
Building, Flashing and Debugging DAVE Project



1. Import/Open FW project in DAVE
2. Connect Distance2Go kit
3. Create Debug Configurations
 - To start flashing and debugging within the DAVE project

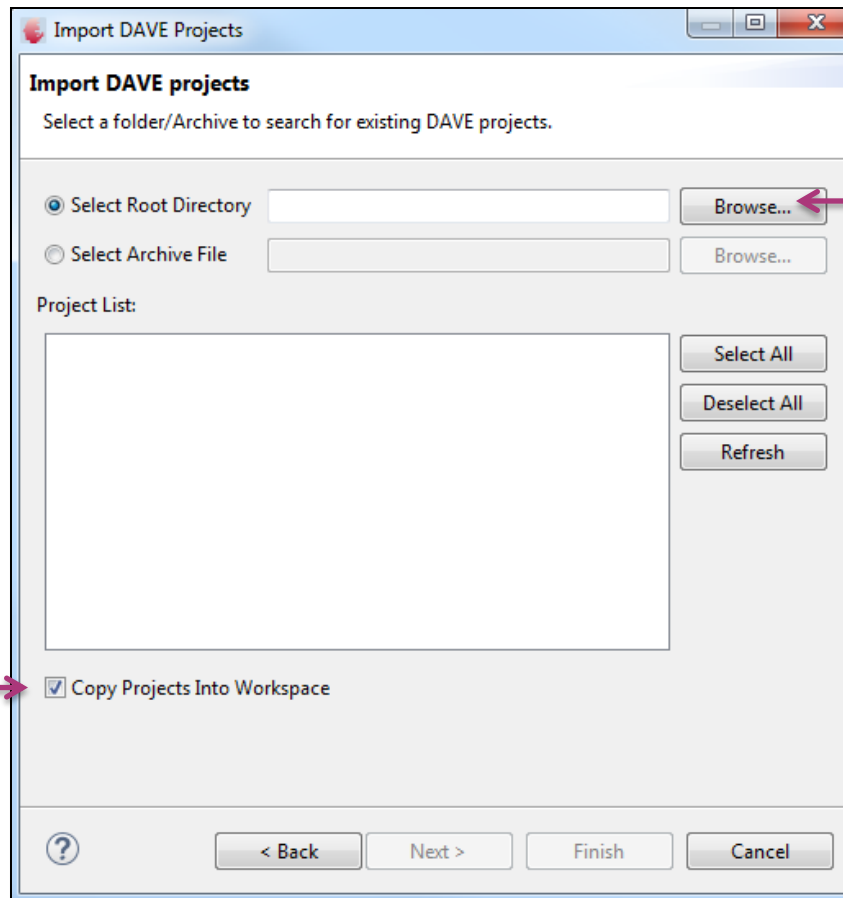
Building, Flashing and Debugging DAVE Project cont'd

1. Import/Open Distance2Go firmware project in DAVE
 - a. Navigate to File > Import
 - b. Infineon > DAVE Project



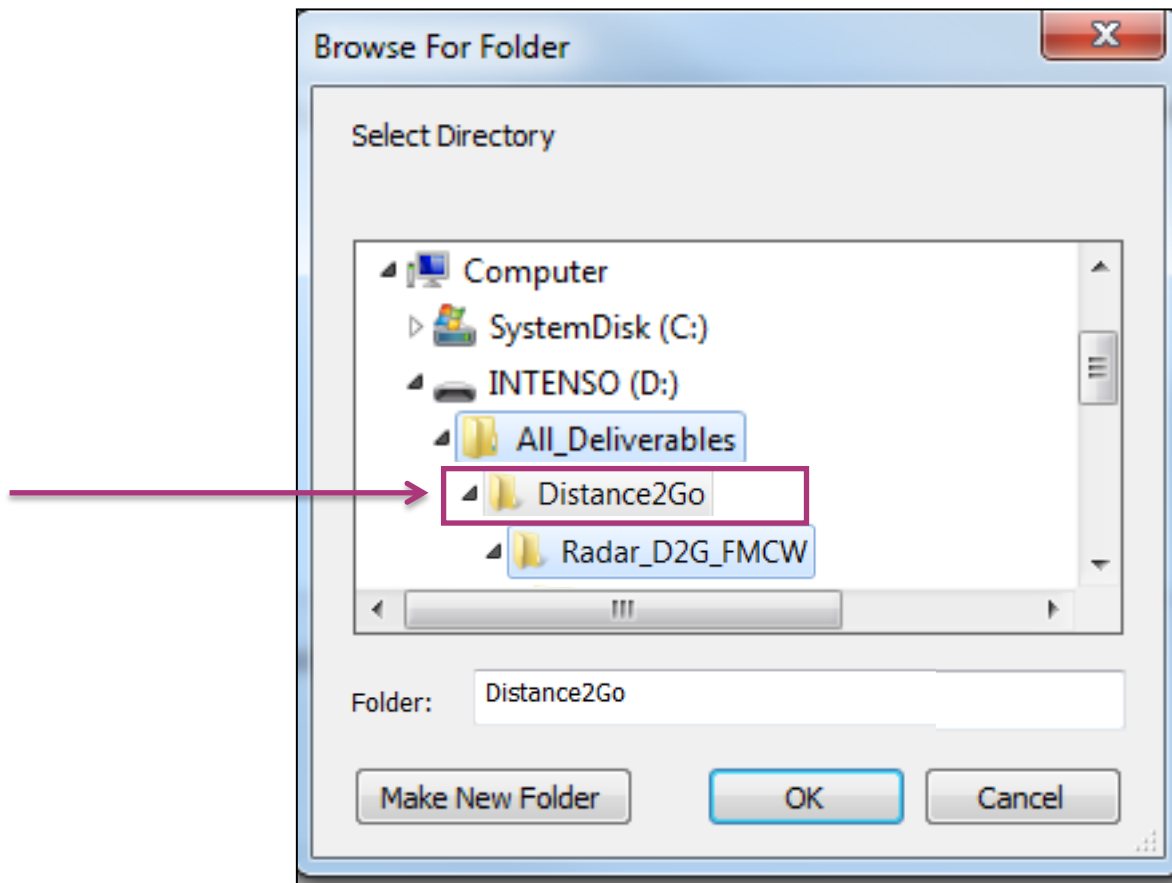
Building, Flashing and Debugging DAVE Project

- c. Check "Copy Projects Into Workspace"
- d. Select "Browse" beside "Select Root Directory"



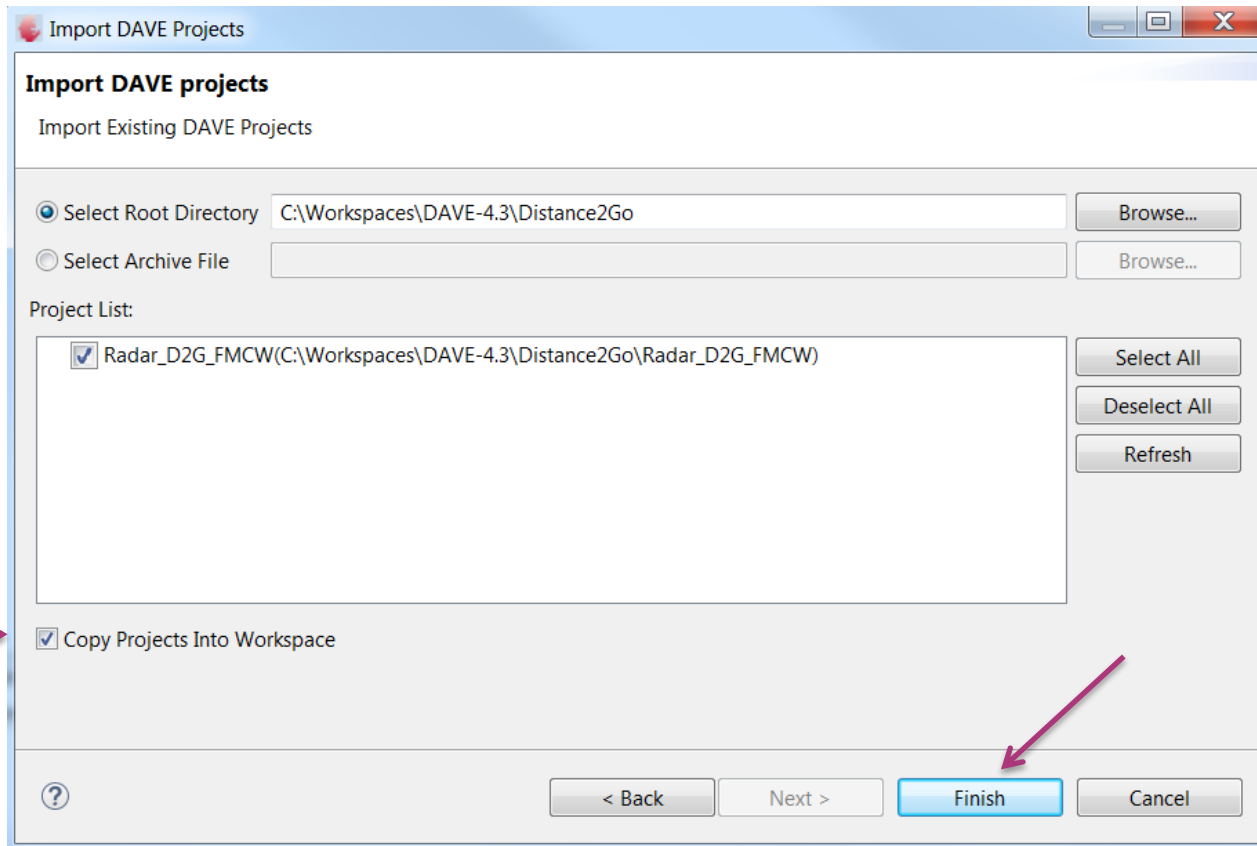
Building, Flashing and Debugging DAVE Project

- d. Select 'Distance2Go' Folder from location where you have extracted the .zip file of DAVE project. For example, here we have in the USB drive INTENSO/All_Deliverables/Distance2Go



Building, Flashing and Debugging DAVE Project cont'd

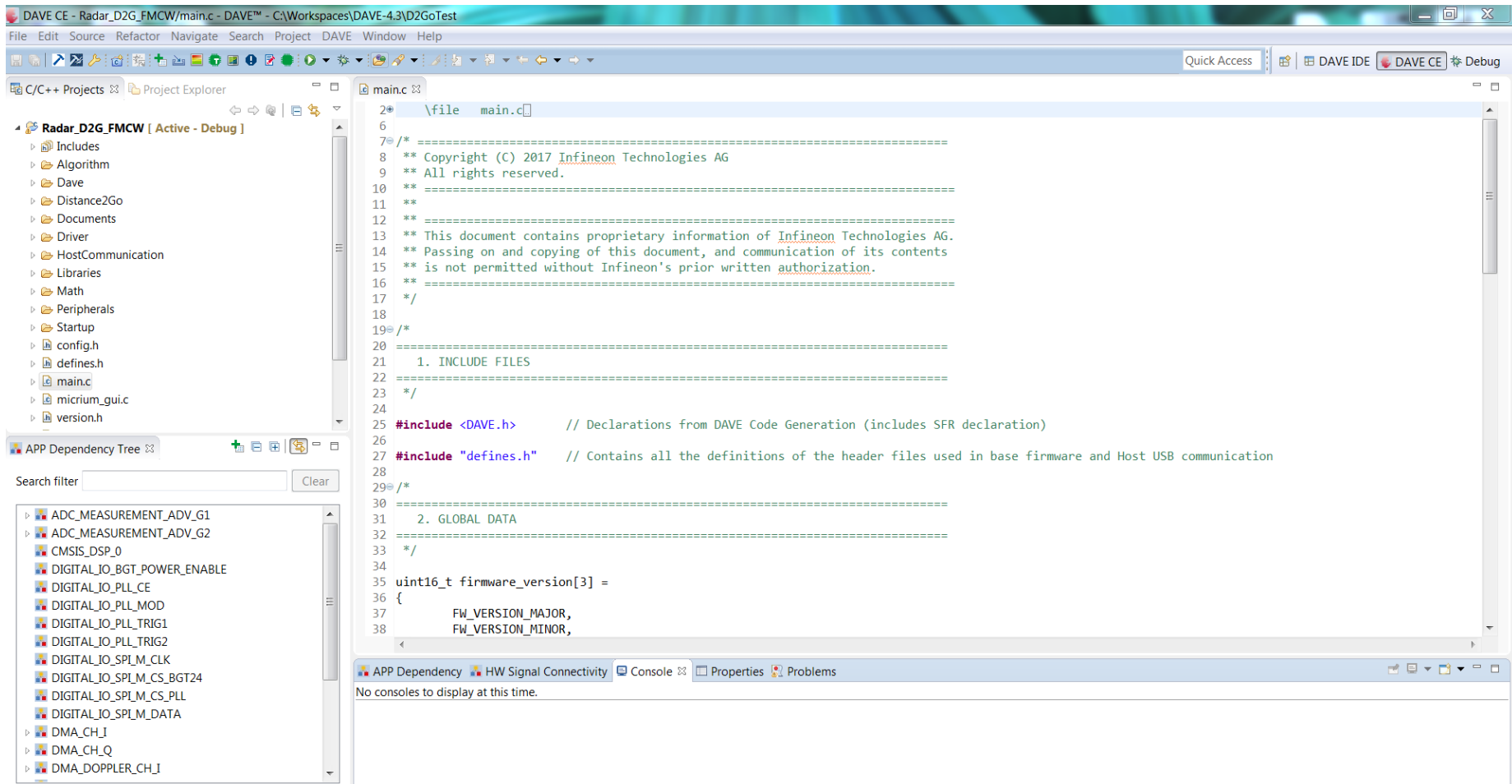
- e. The Project File should appear under Project List. Press 'Finish'.
- f. Check 'Copy Projects Into Workspace'



Building, Flashing and Debugging DAVE Project cont'd



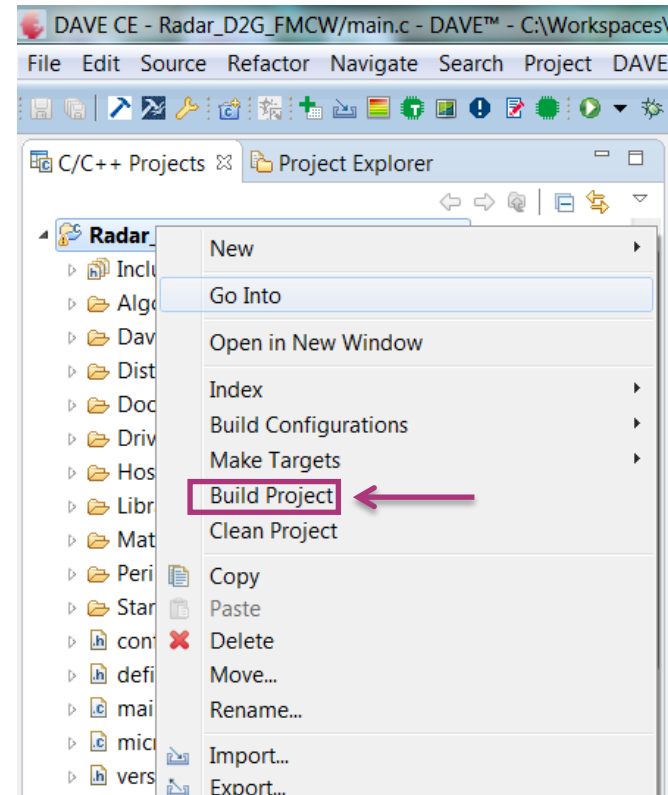
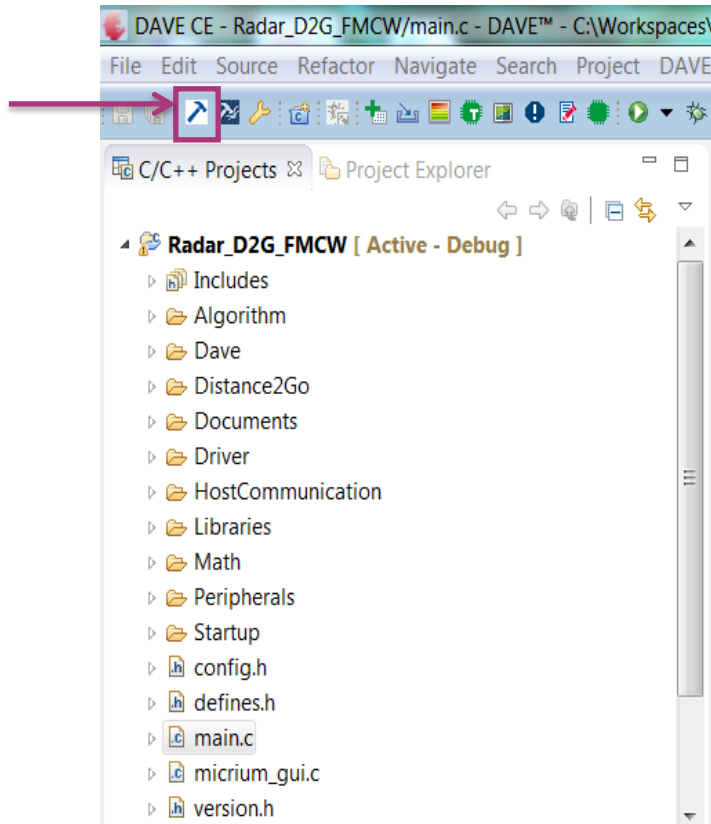
- › The following should appear. Expand the 'C/C++ Projects' dropdown



Building, Flashing and Debugging DAVE Project cont'd

There are two ways to build a project:

1. Build Active Project via toolbar button
2. Right-click on 'Active Project' → 'Build Project'



Building, Flashing and Debugging DAVE Project cont'd



Confirm successfully built by looking in the console

```
CDT Build Console [Radar_D2G_FMCW]
'Invoking: ARM-GCC Print Size'
"C:/DAVEv4/DAVE-4.3.2/eclipse/ARM-GCC-49/bin/arm-none-eabi-size" --format=berkeley "Radar_D2G_FMCW.elf"
  text  data  bss  dec  hex filename
 93938  1916  36200 132054  203d6 Radar_D2G_FMCW.elf
'Finished building: Radar_D2G_FMCW.siz'

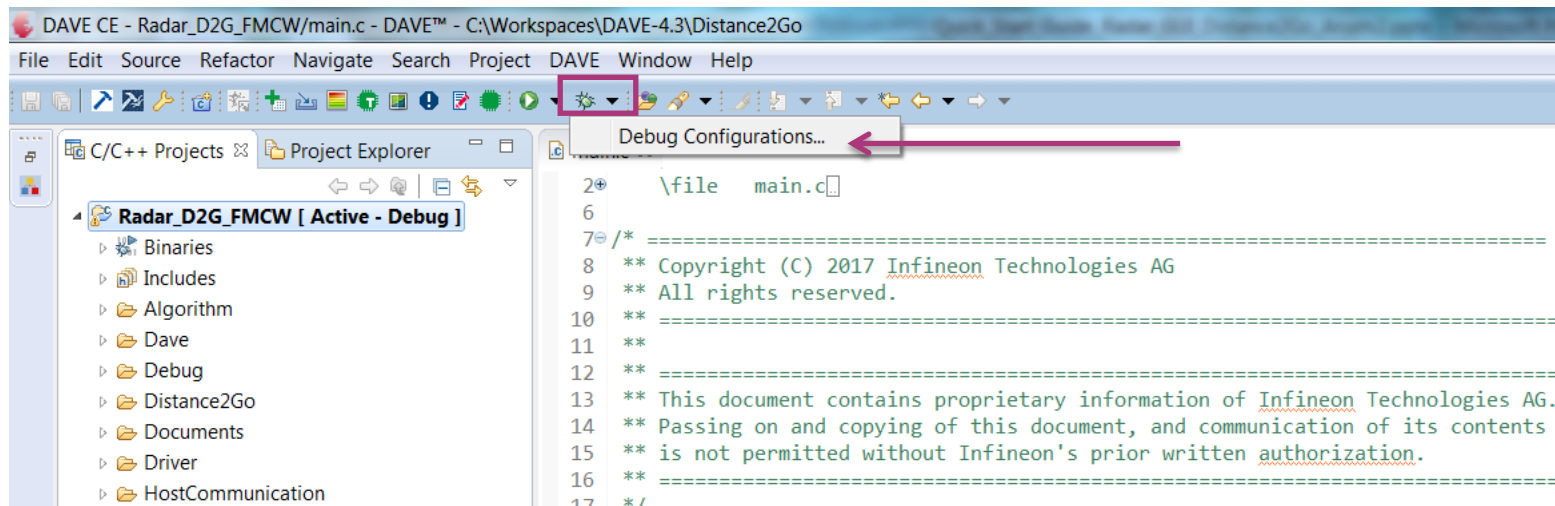
'Invoking: ARM-GCC Create Listing'
"C:/DAVEv4/DAVE-4.3.2/eclipse/ARM-GCC-49/bin/arm-none-eabi-objdump" -h -S "Radar_D2G_FMCW.elf" > "Radar_D2G_FMCW.lst"
'Finished building: Radar_D2G_FMCW.lst'

|
17:53:39 Build Finished (took 40s.244ms)
```

Building, Flashing and Debugging DAVE Project cont'd

In order to flash and debug the firmware in DAVE, need to follow these step.

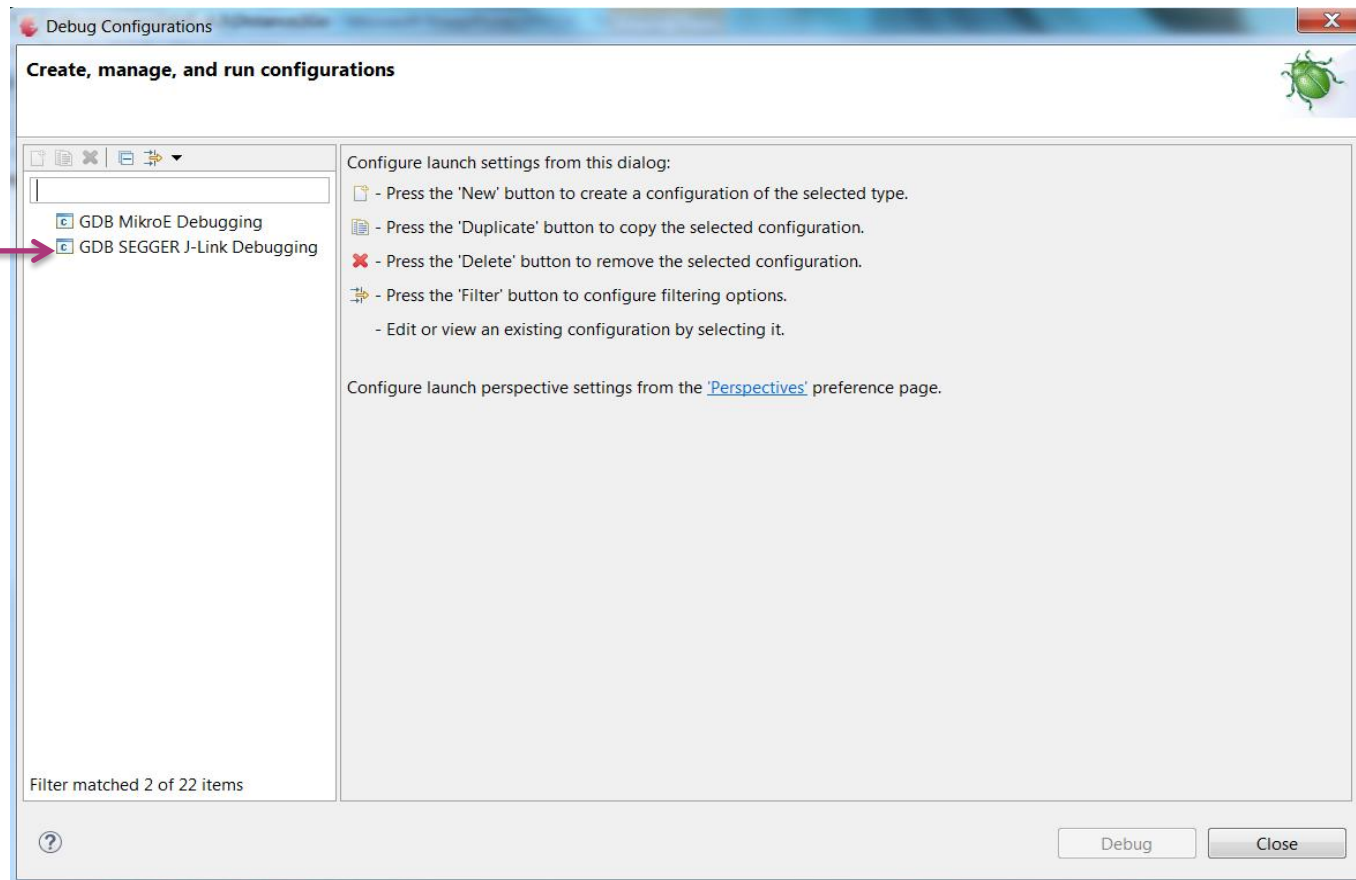
1. Select the debug configurations by clicking on the drop down menu of Debug button as shown in Figure below, i.e. 'Debug' → 'Debug Configurations'



Building, Flashing and Debugging DAVE Project cont'd

Following debug configurations are opened.

2. Double click on the 'GDB SEGGER J-Link Debugging' to create debug configurations.



Building, Flashing and Debugging DAVE Project cont'd

Click on the 'Debug' button to flash and debug the DAVE project.

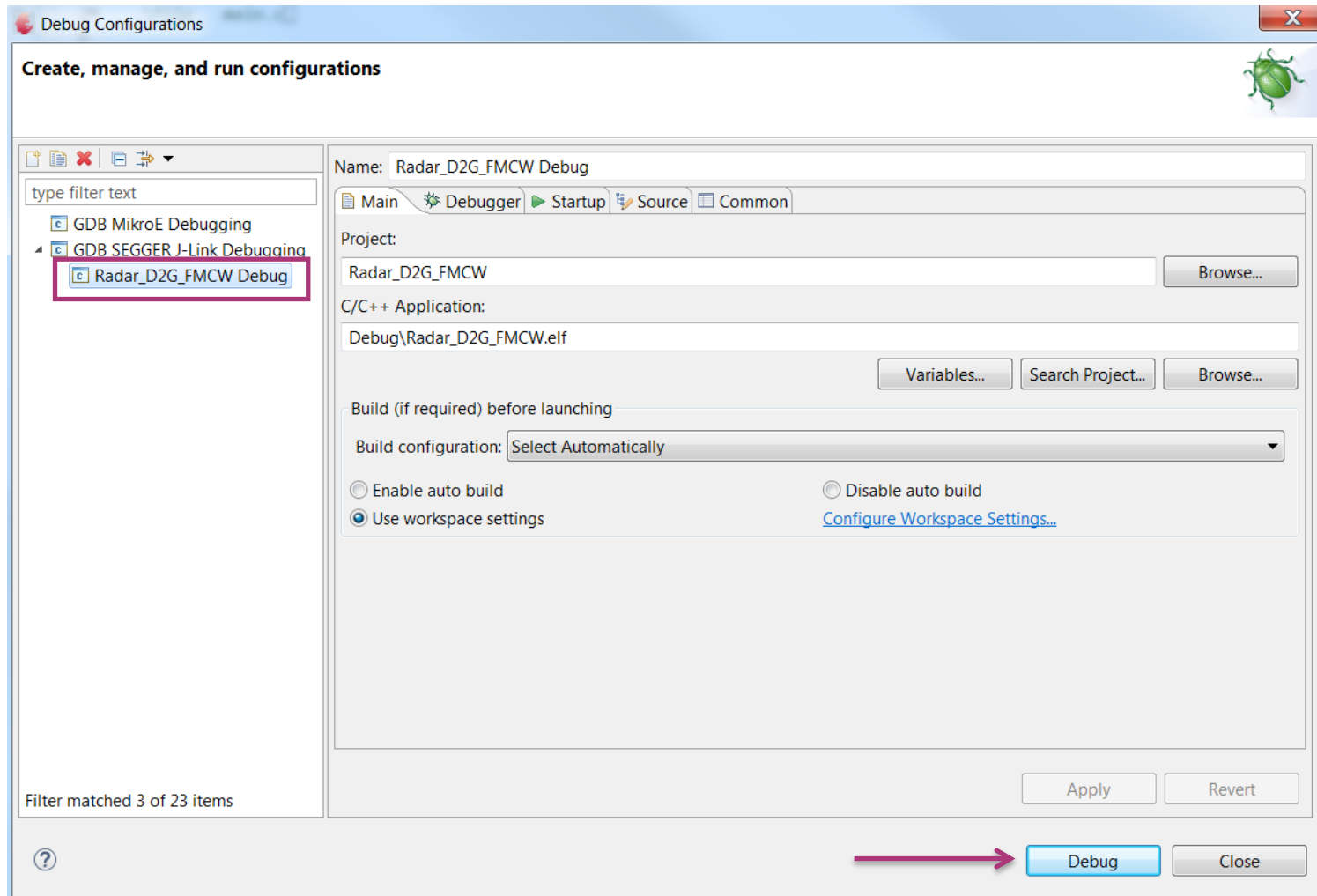
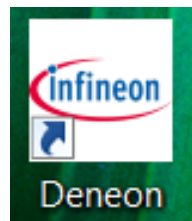


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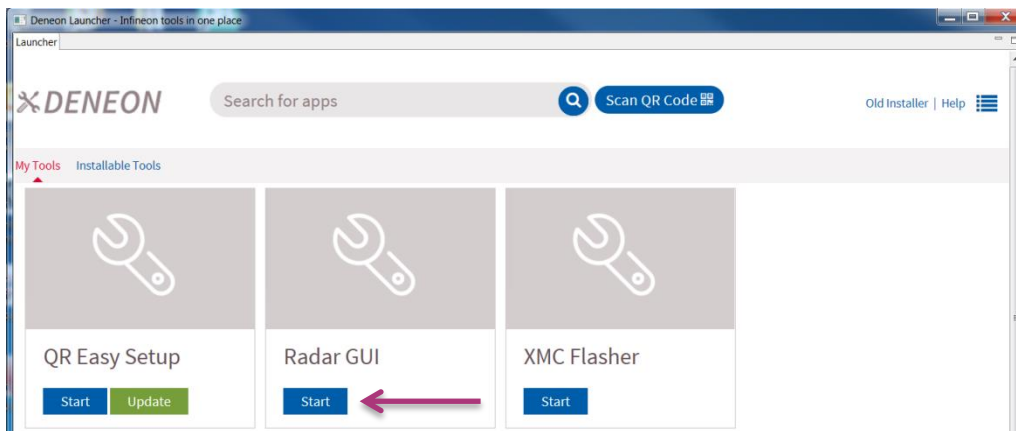
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Radar GUI

1. Click on the Deneon link on your Desktop.




2. Click start button in radar GUI tab



References

› **Infineon BGT24MTR11 – 24Ghz radar IC – Datasheet**

 https://www.infineon.com/dgdl/Infineon-BGT24MTR11-DS-v03_01-EN.pdf?fileId=5546d46256fb43b301576b97728c07f5

› **Infineon XMC4200 32-bit ARM Cortex™-M4 Microcontroller - Datasheet**

 https://www.infineon.com/dgdl/Infineon-XMC4100_XMC4200-DS-v01_03-EN.pdf?fileId=db3a30433afc7e3e013b3cf9b2816573



Part of your life. Part of tomorrow.

