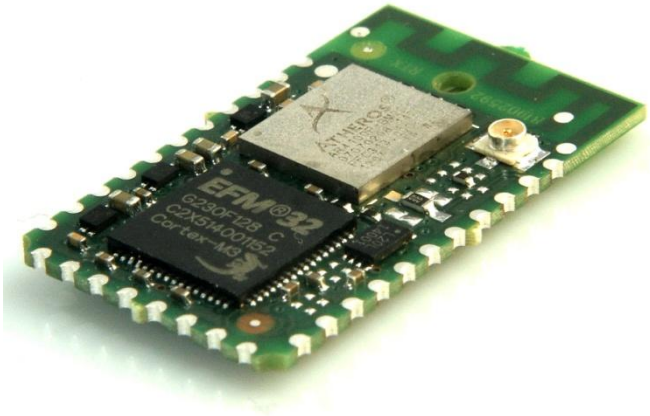
RTX41xx

Wi-Fi Modules

Variants covered in this document:
RTX4100
RTX4140



User Guide UG2

Tools Installation

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1 Introduction

1.1 General Description

The RTX41xx (RTX4100 or RTX4140) Wi-Fi Module is a small form-factor, single stream, 802.11b/g/n Wi-Fi module with on-board low power application processor. It is targeted at applications that send infrequent data packets over the network. Typically, 802.11 applications addressed by a RTX41xx module will place a priority on low power consumption, ease of development, and system integration.

This document serves as a quick start guide for installing the tools necessary for building custom applications for a RTX41xx module.
The information in this document is needed for building custom applications. The reader is expected to have embedded software experience.

The application development process can be divided into three steps:

1. **Installing the necessary tools**
2. Developing, building and downloading the application, see application development guide ([UG3])
3. Debugging the application, see application debugging guide ([UG4])

This document covers step 1 in the process above. For steps 2 and 3, refer to the other User Guides guides.

NOTE: The steps in this guide should be completed before steps 2 and 3.

1.2 Module variants covered by this document

This document covers both the RTX4100 and RTX4140 WiFi modules. When RTX41xx is mentioned, in this document, it will be referring to ***both*** RTX4100 and RTX4140.

1.3 Document History

V1.0 Official release	MAD	2012-07-11
V1.1 Installation Procedures more detailed in Section 2 and 3	MAD	2012-08-15
V1.2 Installation procedure of the tool chain updated for CodeBench	MAD	2012-09-19
V1.3 Removed EVK references and FTDI cable installation instruction	TM	2013-02-19
V1.4 Added RTX4140, changed description of COM port selection for CoLA controller	TM	2013-06-06
V1.5 New toolchain description	PM	2013-10-23

1.4 Document References

[UG3]. RTX4100_User_Guide_Application_Development_UG3.pdf.
[UG4]. RTX4100_User_Guide_Application_Debugging_UG4.pdf.

2 Installing the Tool Chain

PLEASE NOTE: Starting from RTX41xx SDK version 1.6.x.x the tool chain has been changed from Sourcery G++ Lite to GCC ARM Embedded from ARM.

The tool chain includes primarily a pre-processor, a compiler, and a linker. The RTX41xx relies on the GCC ARM Embedded tool chain from ARM.

2.1 Downloading

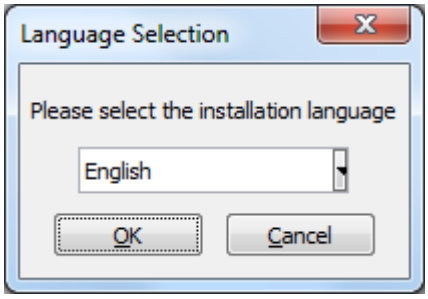
Prior to installation, download the GNU tools for ARM embedded processors installation file from:

https://launchpad.net/gcc-arm-embedded/+milestone/4.7-2013-q3-update

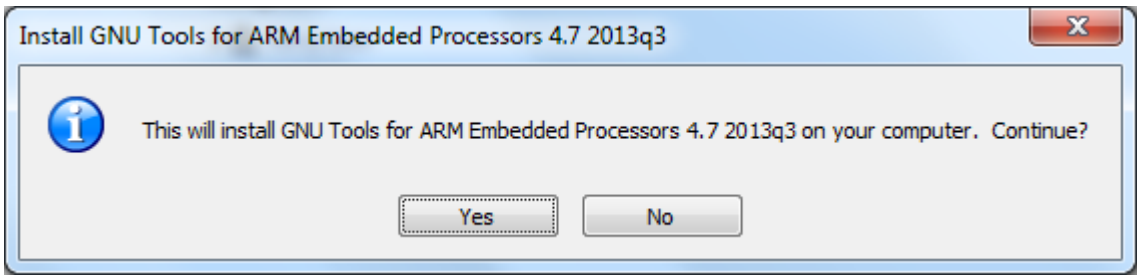
This document describes the installation procedure for Windows™. Download the gcc-arm-none-eabi-4_7-2013q3-20130916-win32.exe file and save to disk.

2.2 Installing

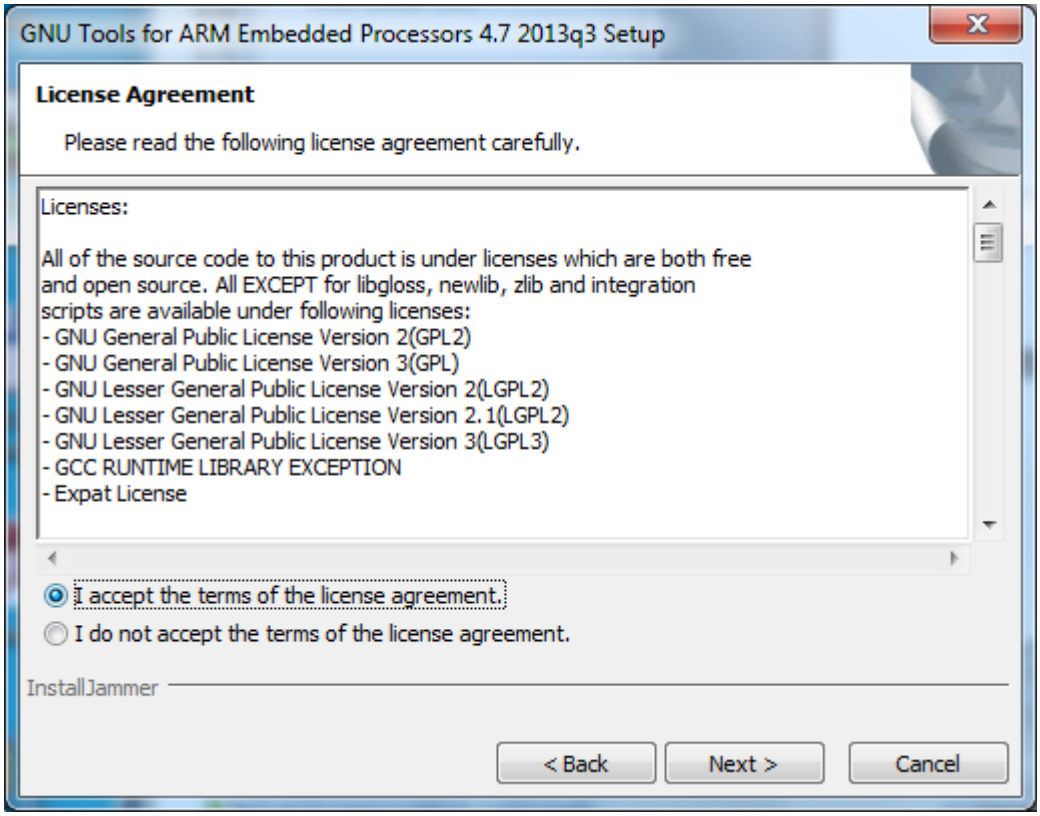
1. Run the .exe file. You should obtain the following screen:



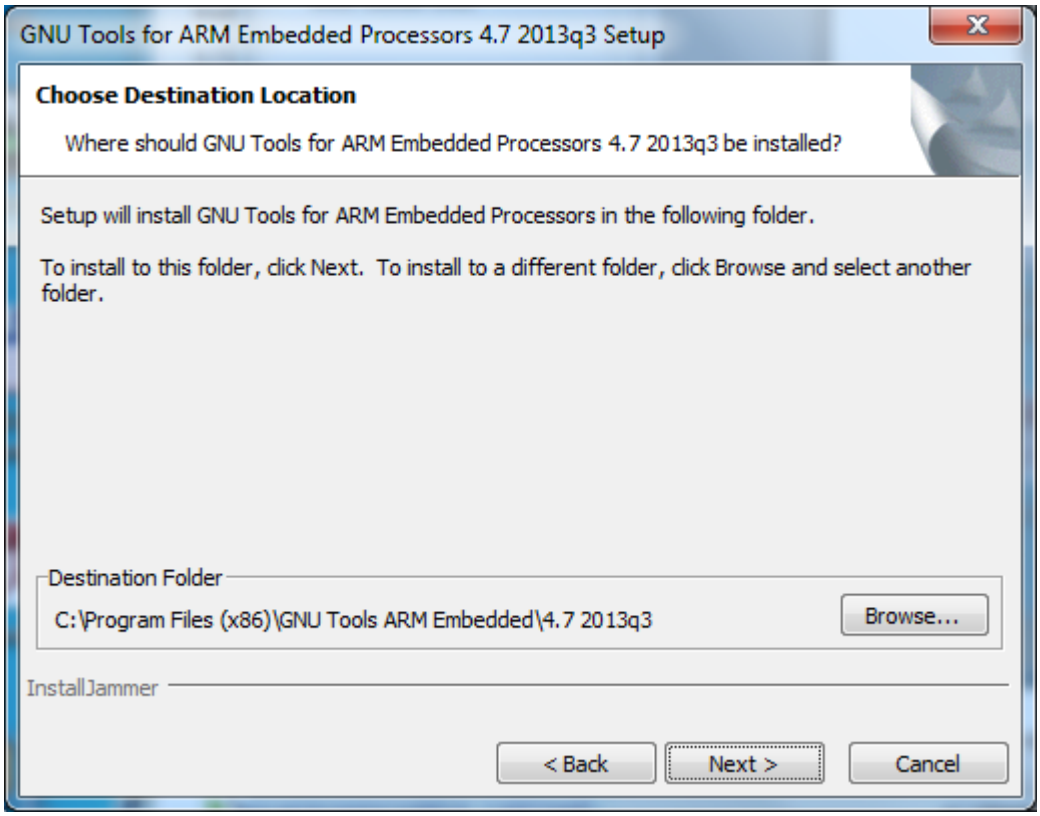
2. Select your language and press <OK>, the following screen will appear:



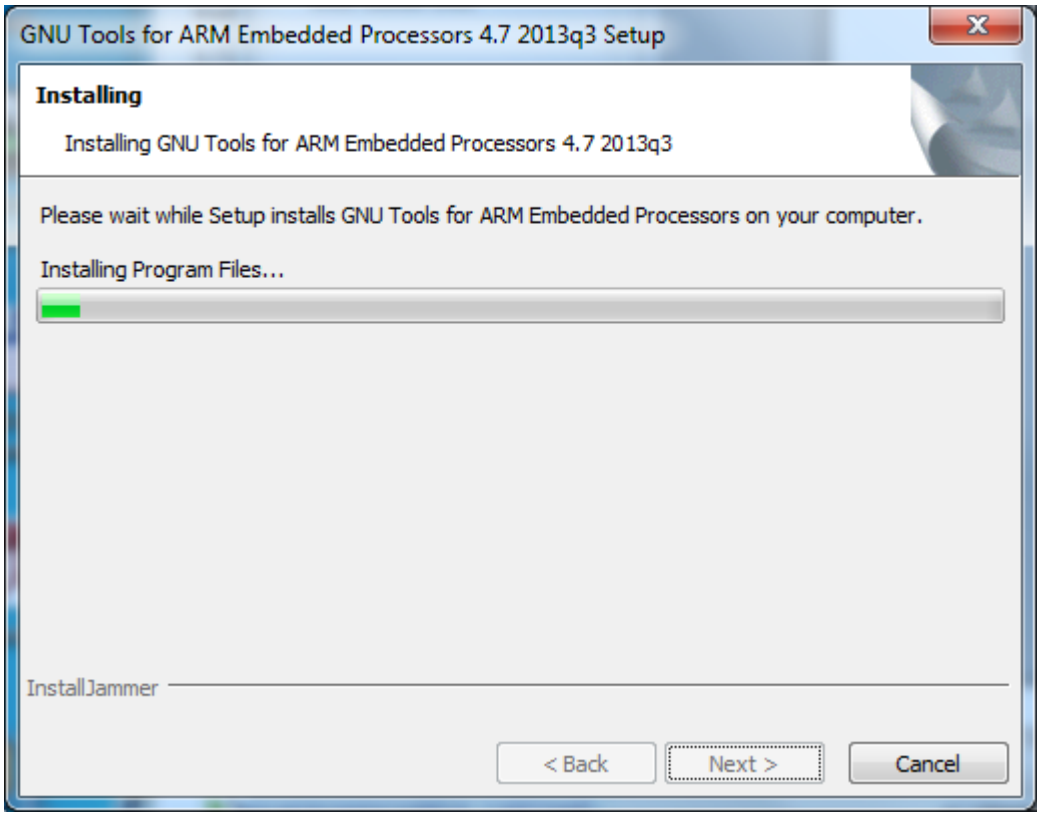
3. Click <Yes> and <Next>. You should obtain a screen like seen below:



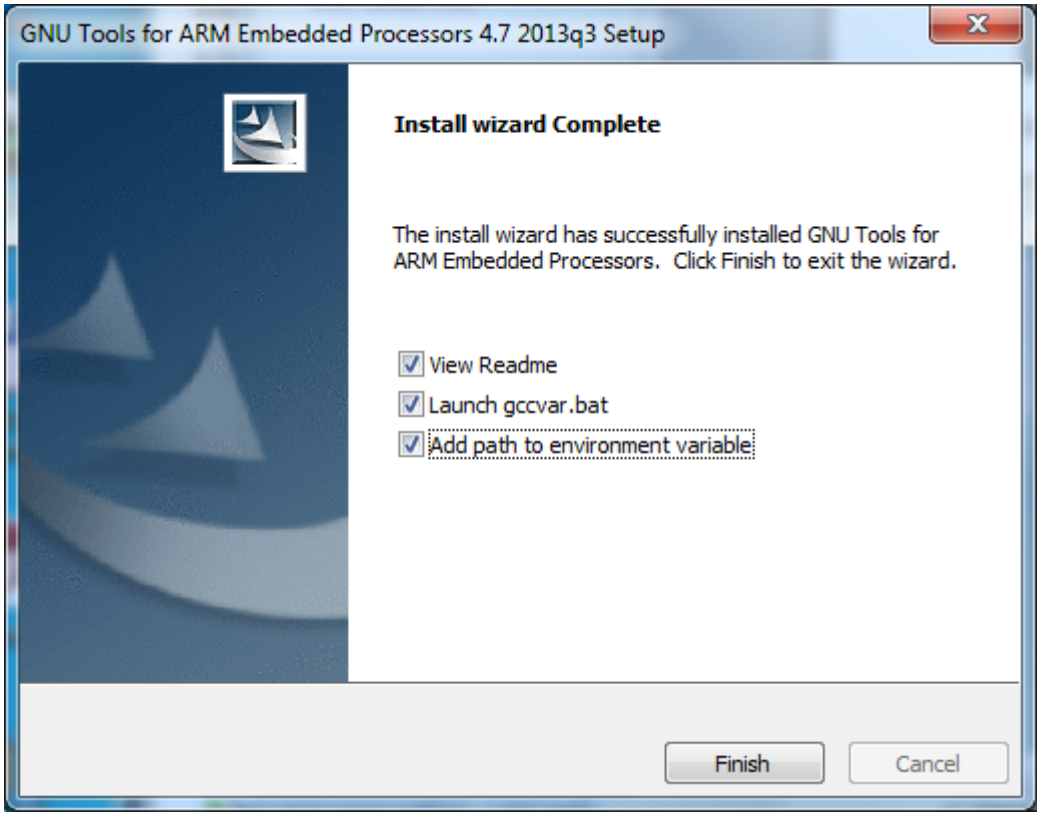
4. Accept the license agreement and click <Next>. The following screen will occur:



5. Use the standard installation folder, preferably on the C drive by clicking <Next>. The tools will start to install and you should obtain the following screen:



6. After the installation wizard has completed, the following screen will show:



6. Complete the installation by clicking "Add path to environment variable" and click <Finish>.

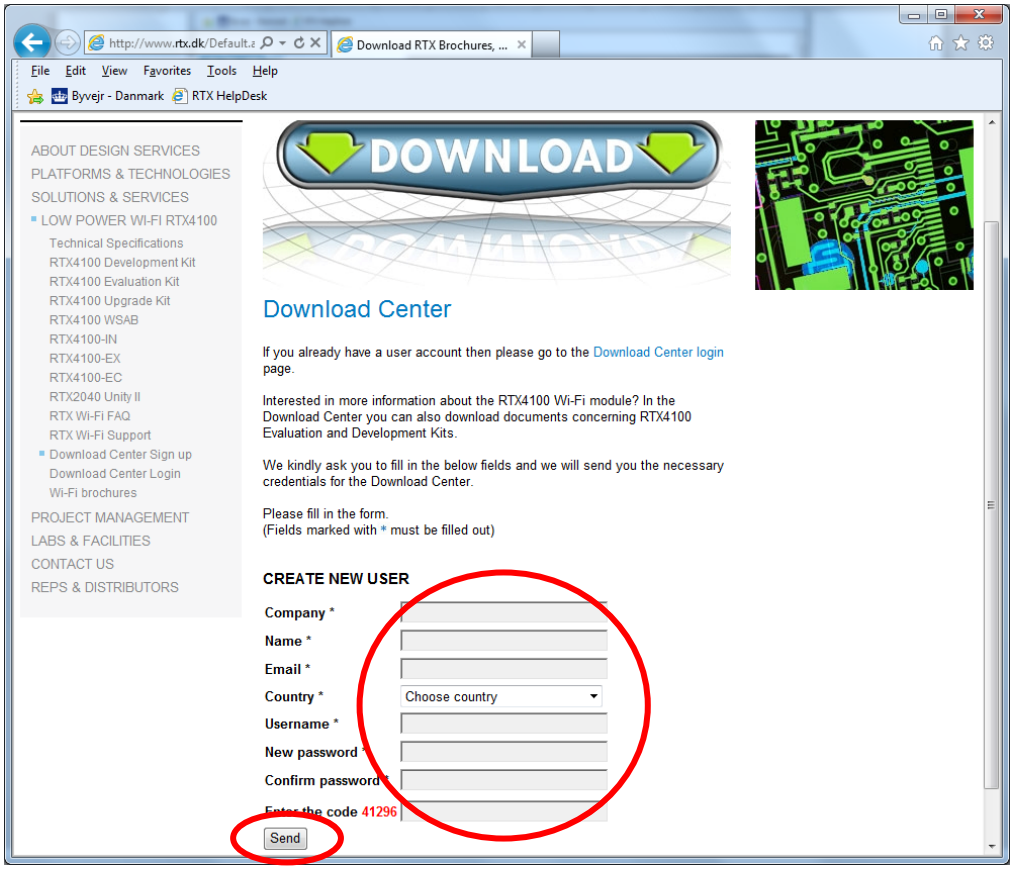
The tools have now been installed and you are ready to proceed to installing the RTX41xx SDK as described below.

3 Installing the SDK

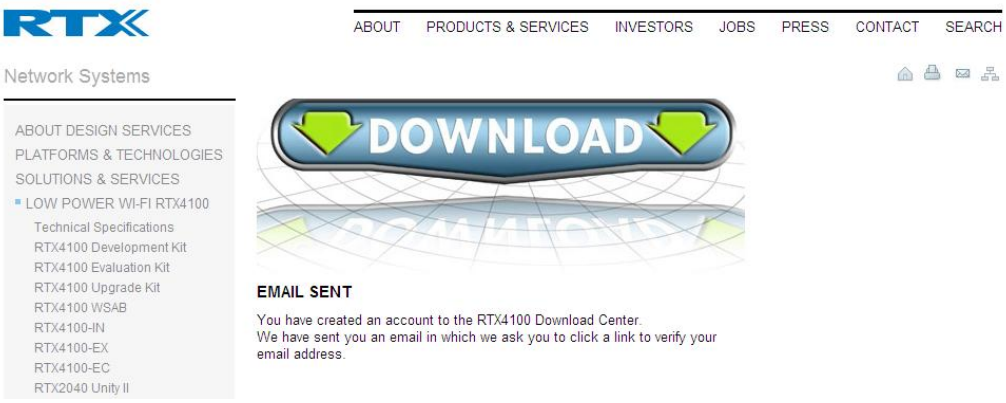
After installing the Tool Chain, it is time to install the RTX41xx Software Development Kit (SDK).

1. Go to the following link: www.rtx.dk/LPW/RTX4100 and click on 

2. Fill in the form, then Click on **Send**.

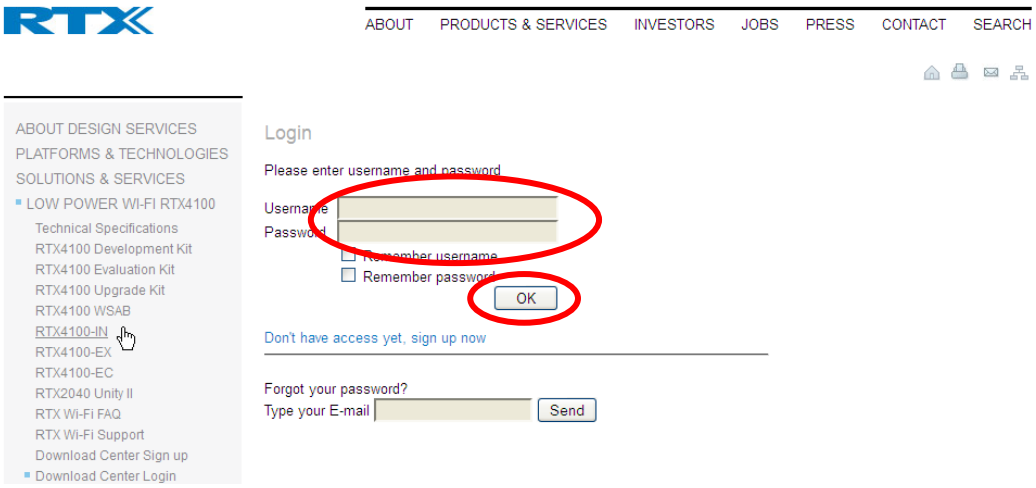


You should see the following confirmation message.



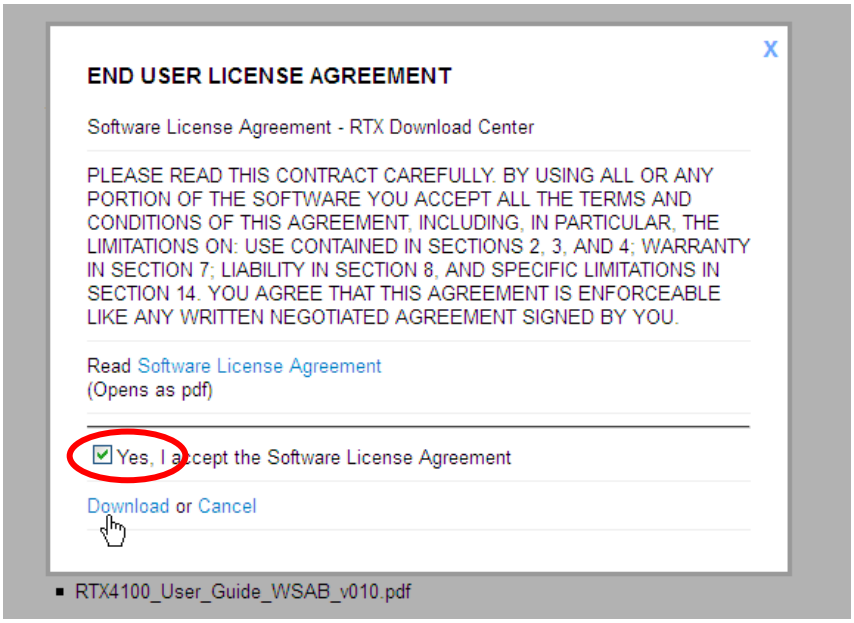
3. Got to your emailbox, and click on the link provided on the email you just received. If you do not receive an email, please check you junk mail. Since the sending email address ends in ".dk" sometimes this unique address gets filtered out.

4. Enter Username and Password, then Click OK.



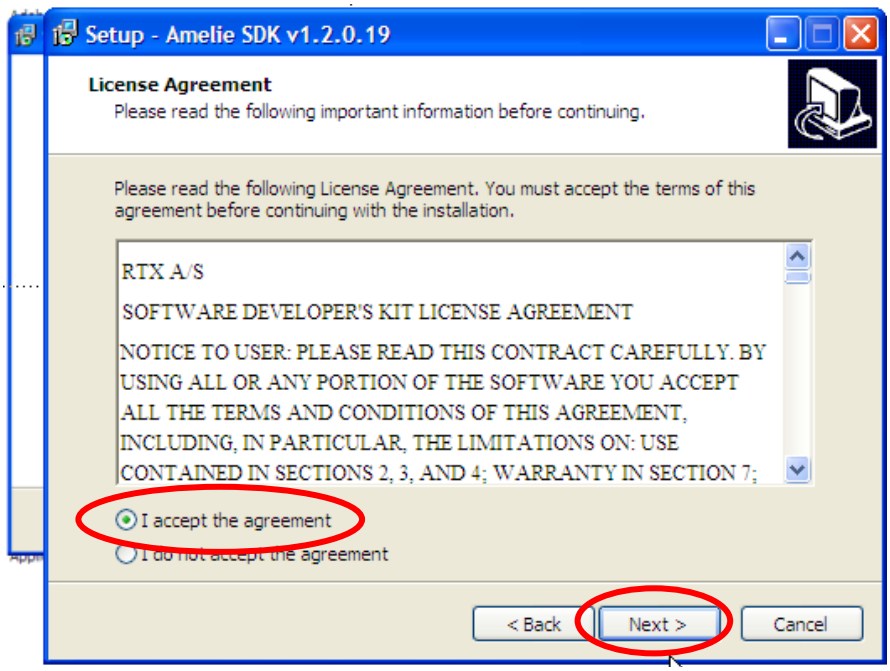
5. Scroll down the page, then click on the link for the latest SDK download.

6. Select Yes, then click Download.

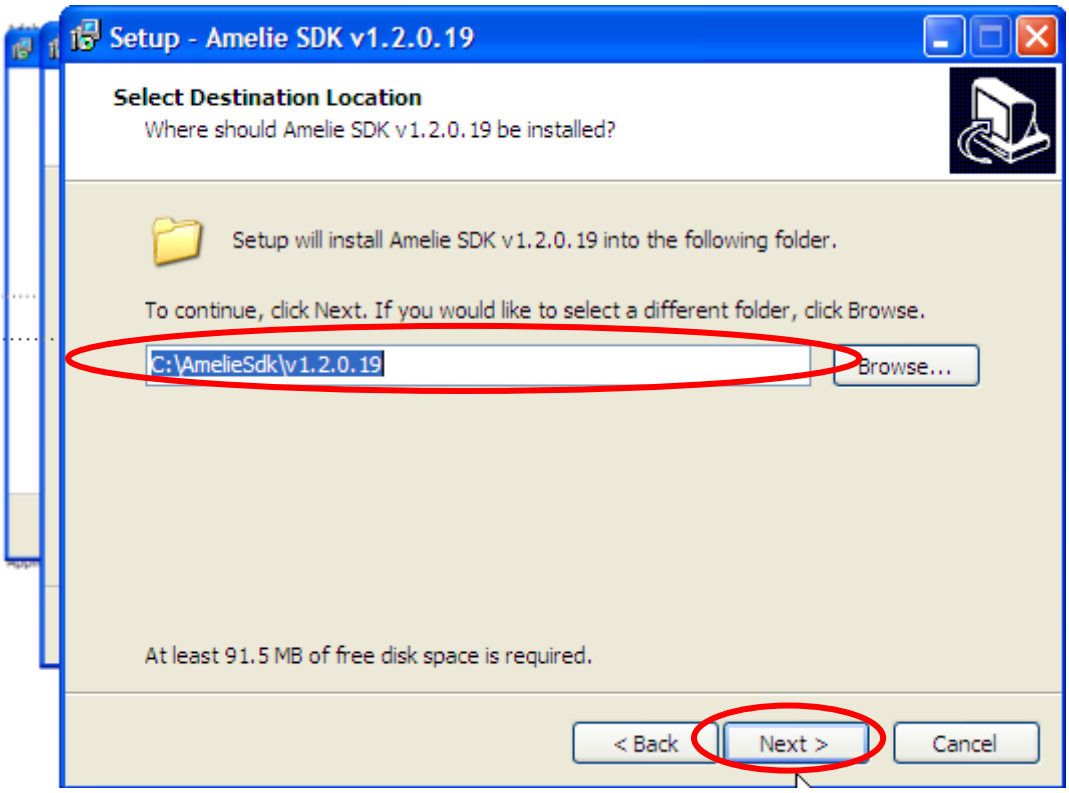


7. Open the .exe file to start the installer:

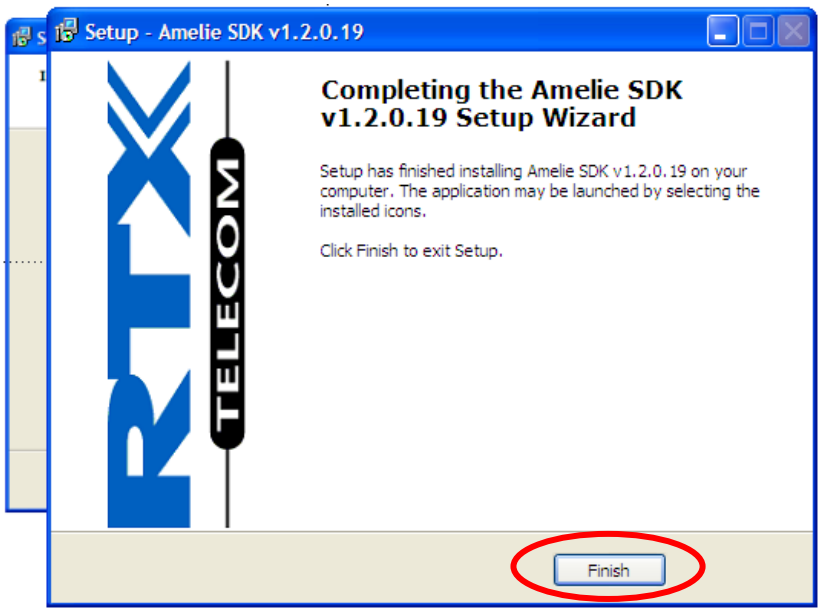
8. Accept the Licence Agreement, then Click Next.



9. Choose the default installation path. This should be the same physical drive (e.g. C drive) as the one chosen in the previous Tool Chain installation. Click "Next", the SDK will install.

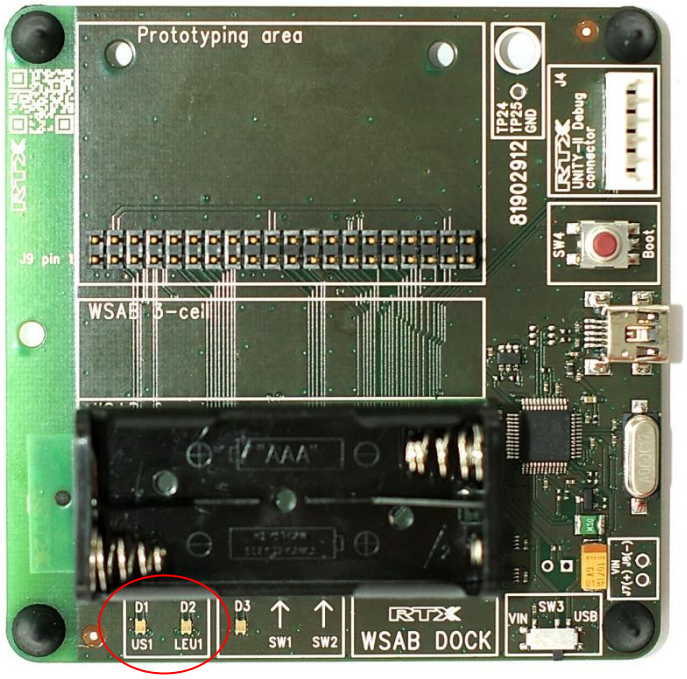


10. Click “Finish” to complete the SDK installation.



4 Installing the WSAB Docking Station

The WSAB Docking Station is provided in the Development Kit (DVK) and facilitates all the operations performed on the Wireless Sensor Application Board or WSAB (Platform update, Colocated Application or CoLA loading, etc.). It is powered with a single USB cable, and allows the user to switch between USB power, battery power and external power.



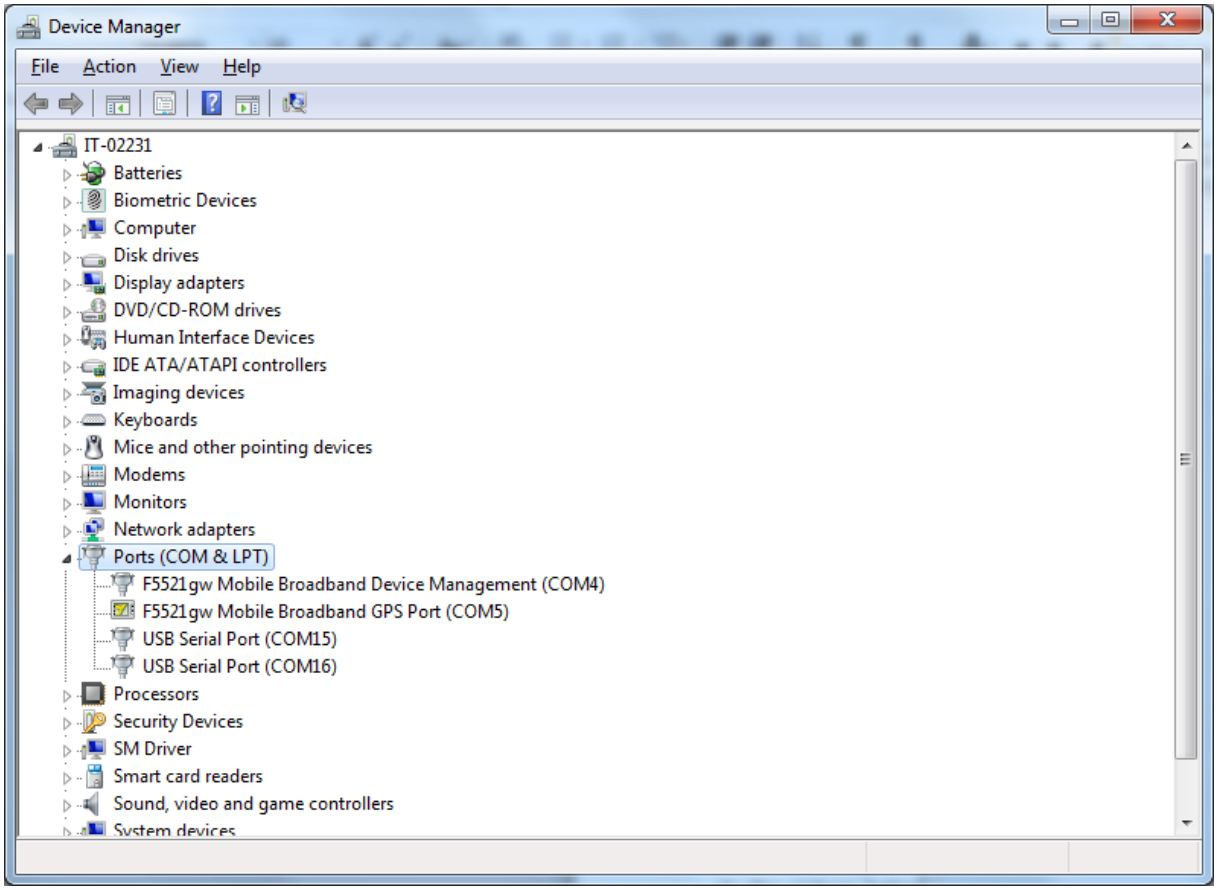
In order to Install the docking station, you need to download the driver from the following link: http://www.ftdichip.com/Drivers/VCP.htm

Download the appropriate driver for your OS, execute the .exe file to launch the installer, then install it using default parameters.

Under Windows 7, **do not** rely on Windows automatically finding the driver – this does not work. After successfully installing the drivers, open the Device Manager and locate the ports.

Important Note: *Even though there is a single USB Cable, it holds 2 virtual COM Ports, the higher COM # (US1 for USART) is used for CoLA loading, SW debugging and Platform updates (using the CoLA Controller), the other COM Port with the lower COM # (LEU1 for LEUART) is used for the Terminal application (such at Putty), for example.*

In the picture below, COM15 and COM16 are used for the Virtual Com Ports.



Note:
The Lower COM # (US1) is assigned to COM15 in the example above (ie. for Putty)
The Higher COM # (LEU1) is assigned to COM16 in the example above (ie. for CoLA Controller)

At this stage, all necessary tools are installed, and you are ready to proceed to step 2, which is described in the User Guide for Application development ([UG3]).

Having problems installing the drivers for the COM ports for the Dock Station? Please read the FTDI inatallation guide on the website.
http://www.ftdichip.com/Drivers/VCP.htm

5 Abbreviations

The following abbreviations are used in this document:

API	**Application Programming Interface**
BSP	**Board Support Package**
CoLA	**Co-Located Application**
DVK	**Development Kit**
SDK	**Software Development Kit**
UART	**Universal Asynchronous Receiver/Transmitter**
Wi-Fi	**Wireless Fidelity**
WSAB	**Wireless Sensor Application Board**

6 Liability Disclaimer

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