



1. Software packages overview

- ST-LINK USB Driver •
- SW4STM32 IDE •
- STM32Cubemx ٠
- InnoSenT SMR Evaluation Kit GUI .

2. Software Download

2.1. ST-LINK USB Driver

The driver for STM32F401RE board can be downloaded here: http://www.st.com/en/embedded-software/stsw-link009.html

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Note: ST-LINK USB Driver is also integrated in the GUI installer!

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2.2. SW4STM32 IDE

• To download the software, go to

http://www.openstm32.org/HomePage and then go to "download area"

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S IMJ2 Contact Us		Welcome to the STM32 Community	Since your last visit 2016-07-15
My Open STM32 Wiki	*	Welcome to the STM32 Community site. The goal of this site is to create a knowledge hub for everyone who is interested in building STM32 based embedded systems to participate and collaborate together.	Multiple new comments, including Multiple new posts, including
Blogs Forums File Galleries	* *	This is also the place to find "System Workbench for STM32 - Bare Metal Edition" the free Integrated Development Environment for STM32 microprocessors. You are connected on OpenSTM32.org as bien le: If this is not you, please Log Out and reconnect.	Multiple wiki pages changed, including Multiple new file galleries, including
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Users may have to register for an account in order to download the software •

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2.3. STM32Cubemx (optional)

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STM32Cubemx is a graphical software tool that can be used to configure the STM32 microcontroller board and generate an empty project with C code for the controller initialization. The Evaluation Kit comes with a preconfigured firmware. Unless you would like to start a new project the STM32Cubemx software is not required.

To download the software, go to • http://www.st.com/en/development-tools/stm32cubemx.html Scroll down and click on "Get Software"

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Accept license agreement and download the software. • Note: user may need to create an account in order to download the software.



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2.4. InnoSenT SMR Evaluation Kit GUI

A simple GUI for visualizing can be found in our software package. To download this package please visit: https://avnet.com/wps/portal//ebv/products/product-highlights/ebv-and-infineon-24-ghz/registration-software-download/



3. Software Installation

The kit comes with a download link containing the example firmware source code for the system and a simple GUI for visualizing the signals that are received by the radar. In addition to that the following software packages need to be installed in order to modify and run the source code and make full use of the Evaluation Kit.

3.1 ST-LINK USB Driver

Please install the ST-LINK USB Driver first.



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3.2 SW4STM32 IDE

The SW4STM32 (System Workbench for STM32) IDE is used for programming and uploading the source code onto the STM32 microcontroller board. To install the SW4STM32 software, please follow the instructions below: After downloading the software, proceed with the installing process. Note: If JavaRE is required, it can be downloaded here:

http://www.oracle.com/technetwork/java/javase/downloads/jre7-downloads-1880261.html



3.3 STM32Cubemx (optional)



4. System Setup

Hardware Installation 4.1

- The hardware comes preassembled •
- Jumpers on microcontroller board should be left unchanged .

Connect the SMR-EvalKit to your PC via the mini-USB cable that is included in the kit and wait until your operating system finishes configuring the STM drivers. Note: ST-LINK USB Driver needs to be installed before connecting the SMR-EvalKit with the PC.

4.2 Starting the STM IDE and uploading source code to the microcontroller board

- Create a workspace folder for the project e.g: "C:\SMR_EvaluationKit_WS" a)
- b) Copy the SMR EvalKit firmware project folder into the workspace
- Run SW4STM32 software and select the created workspace folder C)



Go to workbench d)



e) ted" -> OK -> Finish

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f) the project folder -> Refresh. Right click on the project folder -> Build Project.

Import the project containing the source code into the workspace. In the Project Explorer tab -> Right Click -> Import -> General -> Existing Projects into Workspace -> Select root directory -> Brower -> "select directory where the source code project loca-

Build the project: Right click on the project folder -> Clean Project. Right click on

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Upload the source code onto the microcontroller board. Right click on the project folder g) (or left click on debug arrow button) -> Debug As -> Ac6 STM32 C/C++ Application



h) Run application. Click on "Run" button.

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36⊖//#include "arm_math.h"		
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39 #include "adc.n"		
40 #include "cni h"		
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Once the firmware has even uploaded to the target and has been run it will be i) stored in the controllers flash memory and run even without connecting to the system workbench on power up.

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Signal Visualization 4.3

The SMR-EvalKit is a plug-and-play device. The system will run with the current configuration when it's supplied power via USB cable and received signals can be visualized using the GUI. To visualize receive signals:

- open the SMR EvalKit GUI .
- select corresponding Comport of SMR EvalKit •
- Click Connect/Disconnect button to **connect** or **disconnect** to SMR EvalKit Comport •

In the GUI, the upper graph shows the raw receive signals on I- and Q-channel. The magnitudes are scaled in digit values. The bottom graph shows the corresponding FFT of raw receive signals and is displayed logarithmic (dB).

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Note: When starting SMR-Evalkit, in	t may take a few seconds to ring this time. It might take	perform initial frequen a few moments until a :	cy calibration and there is no signal is displayed in the GUI

5. History

Document revision	Date	Change log	Author
1	20.02.2017	first draft	BL
2	25.07.2017	release	CD



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