

## Introduction

This release note is updated periodically to keep abreast of the STM32CubeMonRF (herein after referred to as STM32CubeMonitor-RF) evolution, problems and limitations.

Contact STMicroelectronics support team for its latest version.

Refer to [Table 1](#) for the latest release summary.

**Table 1. STM32CubeMonitor-RF 2.3.0 release summary**

Type	Summary
Official release	Application to test Bluetooth® Low Energy, Open Thread and 802.15.4 RF with STM32WB Series

## Customer support

For more information or help concerning STM32CubeMonitor-RF, contact the nearest STMicroelectronics sales office. For a complete list of STMicroelectronics offices and distributors refer to [www.st.com](http://www.st.com).

## Software updates

Software updates and all the latest documentation can be downloaded from the ST microcontroller support web page at [www.st.com/stm32softwaretools](http://www.st.com/stm32softwaretools).



# 1 General information

## 1.1 Overview

STM32CubeMonitor-RF is a tool provided to help designers to:

- perform RF (Radio Frequency) tests of Bluetooth<sup>®</sup> Low Energy (BLE) applications
- perform RF (Radio Frequency) tests of 802.15.4 applications
- send commands to BLE parts to perform tests
- configure BLE beacon and manage file over-the-air (OTA) transfers
- discover BLE devices profiles and interacts with services
- send commands to OpenThread parts to perform tests

This software applies to microcontrollers of the STM32WB Series, based on Arm<sup>®(a)</sup> cores.

## 1.2 Host PC system requirements

### Supported operating systems and architectures

- Windows<sup>®</sup> 7, 8 or 10, 32-bit (x86) or 64-bit (x64)
- Linux<sup>®</sup> Ubuntu<sup>®(b)</sup>, version 16.04, 18.04 64-bit
- macOS<sup>®(c)</sup>, minimum version OS X<sup>®</sup> Yosemite

### Software requirements

For Linux, java<sup>(d)</sup> runtime is required for the installer.

## 1.3 Setup procedure

### 1.3.1 Windows<sup>®</sup>

#### Install

If an older version of STM32CubeMonitor-RF is already installed, the existing version must be uninstalled before installing the new one. The user must have the administrator rights on the computer to perform the installation.

1. Download *STM32CMonRFWin.zip*
2. Unzip this file in a temporary location
3. Launch *setupSTM32CubeMonitor-RF.exe* to be guided through the setup process



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b. Ubuntu is a registered trademark of Canonical Ltd.

c. macOS is a trademark of Apple Inc. registered in the U.S. and other countries.

d. Oracle and Java are registered trademarks of Oracle and/or its affiliates.

## Uninstall

To uninstall STM32CubeMonitor-RF, follow the steps below:

1. Open the Windows Control panel
2. Select Programs and Features to display the list of programs installed on the computer
3. Right click on STM32CubeMonitor-RF from STMicroelectronics publisher and select the Uninstall function

### 1.3.2 Linux®

#### Software requirements

The Java™ Run Time Environment is required for the Linux installer. It can be installed with the command `apt-get install default-jdk` or with the package manager.

#### Install

1. Download *STM32CMonRFLin.tar.gz*
2. Unzip this file in a temporary location
3. Make sure you have access rights to the target installation directory
4. Launch the execution of the *SetupSTM32CubeMonitor-RF.jar* file, or launch manually the installation with `java -jar <install path>/SetupSTM32CubeMonitor-RF.jar`
5. An icon appears on the desktop. If the icon is not executable, edit its properties and select the option "Allow executing file as program".

#### Information about com port on Ubuntu

The modemmanager process is checking the com port when the board is plugged. Due to this activity, the com port is busy for a few seconds, and STM32CubeMonitor-RF is unable to connect.

The users need to wait for the end of modemmanager activity before opening the com port. If modemmanager is not required by the user, it is possible to uninstall it with the command `sudo apt-get purge modemmanager`.

#### Uninstall

1. Launch the "*uninstaller.jar*" located in installation directory `/STMicroelectronics/STM32CubeMonitor-RF/Uninstaller`. If the icon is not executable, edit its properties and select the option "Allow executing file as program".
2. Select "Force deletion..." and click on Uninstall button

### 1.3.3 macOS®

#### Install

1. Download “*STM32CMonRFMac.zip*”
2. Unzip this file in a temporary location
3. Make sure you have access rights to the target installation directory
4. Double click on the *installerSTM32CubeMonitor-RF.dmg* file
5. Open the STM32CubeMonitor-RF new disk
6. Drag and drop STM32CubeMonitor-RF shortcut to the Applications shortcut
7. Drag and drop the document folder to a location of your choice

If an error "STM32CubeMonitor-RF can't be opened because it is from an unidentified developer" occurs, the command `sudo spctl --master-disable` must be used to disable the verification.

#### Uninstall

1. From applications folder select STM32CubeMonitor-RF icon and move it to trash
2. In user home directory, remove the folder Library/STM32CubeMonitor-RF.  
If Library folder is hidden:
  - a) open Finder
  - b) hold down Alt (Option) and choose Go from the drop-down menu bar at the top of the screen
  - c) the Library folder is listed below the Home folder.

## 1.4 Devices supported by STM32CubeMonitor-RF

#### Supported devices

The tool is tested with the STM32WB Nucleo board (P-NUCLEO-WB55).

Boards based on STM32WBxx are compatible if they feature:

- a connection through a USB “Virtual COM port” or a serial link
- and
- a “transparent mode” firmware, bridging the UART to the BLE stack controller or command line software.

The device connection details and firmware location are described in Section 2 of *STM32CubeMonitor-RF software tool for wireless performance measurements* (UM2288).

## 2 Release information

### 2.1 New features / enhancements

Alignment with STM32WB55 cube firmware 1.0.0

Addition of 802.15.4 RF tests

New features in ACI utilities panel:

- The discovery of remote BLE devices
- Interaction with services of remote device

### 2.2 Restrictions

When the device under test is disconnected the software may not immediately detect the disconnection. In this case an error is reported when a new command is sent. If the board is not detected after the error, it is necessary to unplug and then reconnect it.

## 2.3 Licensing

The software license agreement is SLA0048.

**Table 2. List of licenses embedded in tool**

Name	Version	License <sup>(1)</sup>	Details
jssc	2.8.0	LGPL-3.0-or-later	<a href="https://mvnrepository.com">https://mvnrepository.com</a> <sup>(2)</sup>  <a href="https://github.com/google/fonts/tree/master/apache/roboto">https://github.com/google/fonts/tree/master/apache/roboto</a>  <a href="https://github.com/google/fonts/tree/master/apache/cousine">https://github.com/google/fonts/tree/master/apache/cousine</a>
commons-lang3	3.5	Apache-2.0	
Apache Commons IO	2.5		
log4j-api	2.8.1		
log4j-core			
izpack	5.1.3		
gson	2.2.4		
Roboto font	2.137		
Cousine font	1.211		
font awesome svg icons	5.2.0	CC-BY-4.0	<a href="https://github.com/FortAwesome/Font-Awesome/blob/master">https://github.com/FortAwesome/Font-Awesome/blob/master</a>
launch4j	3.12	BSD-3-Clause	<a href="https://sourceforge.net/projects/launch4j/">https://sourceforge.net/projects/launch4j/</a>

1. License identifier as defined by SPDX. See <https://spdx.org/licenses> to get license details.
2. Search for the proper version of the component in the MVN repository.

**Table 3. List of software bundled with the tool**

Name	Version	License	Details
Java SE and Java FX	1.8.0_192	Oracle® Binary Code License Agreement	Copy of license is in "License" folder. <a href="http://www.oracle.com">http://www.oracle.com</a> <sup>(1)</sup>
Inno setup	5.5.9a	Inno Setup license	Windows installer Copy of license is in "License" folder. <a href="http://www.innosetup.com/">http://www.innosetup.com/</a>

1. Search for Java SE in the Oracle web site.

## 3 STM32CubeMonitor-RF release information

### 3.1 STM32CubeMonitor-RF V1.5.0

- First version of the tool to support BLE features of STM32WB55. The version 1.x.y have only BLE support.

### 3.2 STM32CubeMonitor-RF V2.1.0

- Addition of Open Thread support in the tool

### 3.3 STM32CubeMonitor-RF V2.2.0

- Improvement of OpenThread command windows: Option to clear windows/history, details about OT commands selected in tree
- Addition of "read param" and "set param" buttons for OT commands used to read or set parameters
- Addition of scripts for OpenThread
- It is possible to add loop in the script (see user manual for details)
- User interface update: the disabled items are now colored in gray
- Search command for thread has been implemented
- Addition of the selection of BLE PHY and BLE modulation index
- In BLE RF tests, the frequency can be changed when the test is running

### 3.4 STM32CubeMonitor-RF V2.2.1

#### 3.4.1 New features / enhancements

The OTA download procedure has been updated: When the target device is configured in OTA loader mode, the target address is incremented by one. STM32CubeMonitor-RF will now use the incremented address for the download.

The list of OpenThread commands is aligned with the Thread stack.

## 4 Revision history

**Table 4. Document revision history**

Date	Revision	Changes
02-Mar-2017	1	Initial release.
25-Apr-2017	2	Modified for release 1.2.0: – updated <a href="#">Section 2: Release information</a> – updated <a href="#">Section 2.3: Restrictions</a> – added <a href="#">Section 3.2: STM32CubeMonitor-RF V1.2.0 information</a>
27-Jun-2017	3	Changed document classification to ST Restricted. Modified for release 1.3.0, hence updated document title and added <a href="#">Section 3.3: STM32CubeMonitor-RF V1.3.0 information</a> . Updated <a href="#">Section 1.2: Host PC system requirements</a> , <a href="#">Section 1.3: Setup procedure, Device configuration</a> , <a href="#">Section 2.1: New features / enhancements</a> , <a href="#">Section 2.2: Fixed issues</a> , <a href="#">Section 2.3: Restrictions</a> and <a href="#">Section 3.2: STM32CubeMonitor-RF V1.2.0 information</a> .
29-Sep-2017	4	Modified for release 1.4.0, hence updated document title and added <a href="#">Section 3.4: STM32CubeMonitor-RF V1.4.0 information</a> . Updated <a href="#">Section 1.1: Overview</a> , <a href="#">Section 1.2: Host PC system requirements</a> , <a href="#">Section 1.3.1: Windows</a> , <a href="#">Section 1.4: Devices supported by STM32CubeMonitor-RF</a> , <a href="#">Section 2.1: New features / enhancements</a> , <a href="#">Section 2.2: Fixed issues</a> and <a href="#">Section 2.3: Restrictions</a> . Added <a href="#">Section 1.3.2: Linux</a> , <a href="#">Section 1.3.3: macOS</a> and <a href="#">Section 2.4: Licensing</a> . Updated <a href="#">Table 1: STM32CubeMonitor-RF 1.4.0 release summary</a> .
29-Jan-2018	5	Modified for release 1.5.0, hence updated document title and added <a href="#">Section 3.5: STM32CubeMonitor-RF V1.5.0 information</a> . Updated <a href="#">Section 1.2: Host PC system requirements</a> , <a href="#">Section 1.3.2: Linux, Device configuration</a> , <a href="#">Section 2.1: New features / enhancements</a> , <a href="#">Section 2.2: Fixed issues</a> and <a href="#">Section 2.3: Restrictions</a> . Updated <a href="#">Table 1: STM32CubeMonitor-RF 1.5.0 release summary</a> and <a href="#">Table 2: List of licenses</a> .
14-May-2018	6	Modified for release 2.1.0, hence updated document title and added <a href="#">Section 3.6: STM32CubeMonitor-RF V2.1.0 information</a> . Updated <a href="#">Section 1.1: Overview</a> , <a href="#">Section 1.2: Host PC system requirements</a> , <a href="#">Section 2.1: New features / enhancements</a> , <a href="#">Section 2.2: Fixed issues</a> , <a href="#">Section 2.3: Restrictions</a> . Updated <a href="#">Table 1: STM32CubeMonitor-RF 2.1.0 release summary</a> and <a href="#">Table 2: List of licenses</a> .
24-Aug-2018	7	Modified for release 2.2.0, hence updated document title and added <a href="#">Section 3.7: STM32CubeMonitor-RF V2.2.0 information</a> . Updated <a href="#">Section 2.1: New features / enhancements</a> , <a href="#">Section 2.2: Fixed issues</a> , <a href="#">Section 2.2: Restrictions</a> . Updated <a href="#">Table 1: STM32CubeMonitor-RF 2.3.0 release summary</a> and <a href="#">Table 2: List of licenses</a> .



Table 4. Document revision history (continued)

Date	Revision	Changes
15-Oct-2018	8	Modified for release 2.2.1, hence updated document title and added <a href="#">Section 3.8: STM32CubeMonitor-RF V2.2.1 information</a> . Updated <a href="#">Section 1.1: Overview</a> , <a href="#">Section 1.3.2: Linux®</a> , <a href="#">Section 1.3.3: macOS®</a> , <a href="#">Section 2.1: New features / enhancements</a> and <a href="#">Section 2.2: Restrictions</a> . Removed former <a href="#">Section 2.2: Fixed issues</a> .
15-Feb-2019	9	Updated: -Title, <a href="#">Table 1</a> and <a href="#">Section 2</a> switch to 2.3.0 release - <a href="#">Section 3</a> former releases history - <a href="#">Section 1.1: Overview</a> to add Open Thread and 802.15.4 RF - <a href="#">Section 1.3: Setup procedure</a> with different OS

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