

## Introduction

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

Check the STMicroelectronics support website at [www.st.com](http://www.st.com) for the newest version. For the latest release summary, refer to [Table 1](#).

**Table 1. STM32CubeMonRF 2.17.0 release summary**

Type	Summary
Minor release	<ul style="list-style-type: none"><li>– Alignment with STM32CubeWB firmware 1.22.0</li><li>– Alignment with STM32CubeWBA firmware 1.6.0</li><li>– Alignment with STM32CubeWB0 firmware 1.2.0</li><li>– Support of STM32WBA6x devices</li><li>– Bug fixes</li></ul>

## Customer support

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

## Software updates

Software updates and all the latest documentation can be downloaded from the STMicroelectronics support web page at [www.st.com/stm32cubemonrf](http://www.st.com/stm32cubemonrf).

# 1 General information

## 1.1 Overview

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

- Perform RF (radio frequency) tests of Bluetooth® Low Energy applications
- Perform RF (radio frequency) tests of 802.15.4 applications
- Send commands to Bluetooth® Low Energy parts to perform tests
- Configure Bluetooth® Low Energy beacons and manage file over-the-air (OTA) transfers
- Discover Bluetooth® Low Energy device profiles and interact with services
- Send commands to OpenThread parts to perform tests
- Visualize Thread® device connections
- Sniff 802.15.4 network

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>(b)</sup> 10 and 11, 64-bit (x64)
- Linux®<sup>(c)</sup> Ubuntu®<sup>(d)</sup> LTS 22.04 and LTS 24.04
- macOS®<sup>(e)</sup> 14 (Sonoma), macOS®<sup>(e)</sup> 15 (Sequoia)

### Software requirements

For Linux®, the Java®<sup>(f)</sup> runtime environment (JRE) is required for the installer.

For 802.15.4 sniffer only:

- Wireshark v2.4.6 or later is available from <https://www.wireshark.org>
- Python™ card v3.8 or later is available from <https://www.python.org/downloads>
- pySerial v3.4 or later, available from <https://pypi.org/project/pyserial>

arm

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## 1.3 Setup procedure

### 1.3.1 Windows®

#### 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 administrator rights on the computer to run the installation.

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

#### 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. Left-click on *STM32CubeMonitor-RF* from STMicroelectronics publisher and select the *Uninstall* function.

### 1.3.2 Linux®

#### Software requirements

The Java® runtime environment is required for the Linux® installer. It can be installed with the command *apt-get install default-jdk* or the package manager.

#### Install

1. Download *STM32CMonRFLin.tar.gz*.
2. Unzip this file to 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*, or from Ubuntu® 19.10 onward, and choose the option *Allow launching*.

#### Information about COM port on Ubuntu®

The *modemmanager* process checks the COM port when the board is plugged in. Due to this activity, the COM port is busy for a few seconds, and STM32CubeMonitor-RF cannot connect.

The users need to wait for the end of the *modemmanager* activity before opening the COM port. If the user does not require the *modemmanager*, it is possible to uninstall it with the command *sudo apt-get purge modemmanager*.

For the sniffer mode, the modem manager must be uninstalled or disabled through the command *sudo systemctl stop ModemManger.service* before connecting the sniffer device.

If the *modemmanager* cannot be disabled, it is also possible to define rules so that the *modemmanager* ignores the sniffer device. The *10-stsniffer.rules* file, available in the

~/STMicroelectronics/STM32CubeMonitor-RF/sniffer directory can be copied in */etc/udev/rules.d*.

### Uninstall

1. Launch the *uninstaller.jar* located in the 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 the *Uninstall* button.

## 1.3.3 macOS®

### Install

1. Download *STM32CMonRFMac.zip*.
2. Unzip this file to 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 the 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 cannot 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. In the applications folder, select the STM32CubeMonitor-RF icon and move it to trash.
2. In the user's home directory, remove the folder *Library/STM32CubeMonitor-RF*.  
If the *Library* folder is hidden:
  - a) Open the *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 STM32WB55 Nucleo and dongle boards (P-NUCLEO-WB55), the STM32WB15 Nucleo board (NUCLEO-WB15CC), the STM32WB5MM-DK Discovery kit, the STM32WBA5x Nucleo board, the STM32WBA6x Nucleo board, and the STM32WB0x Nucleo board.

The boards based on STM32WBxx are compatible if they feature:

- A connection through a USB Virtual COM port or a serial link and
- A test firmware:
  - *Transparent mode* for Bluetooth® Low Energy
  - *Thread\_Cli\_Cmd* for Thread®
  - *Phy\_802\_15\_4\_Cli* for 802.15.4 RF test
  - *Mac\_802\_15\_4\_Sniffer.bin* for sniffer

The boards based on STM32WBAxx are compatible if they feature:

- A connection through a serial link and
- A test firmware:
  - *Transparent mode* for Bluetooth® Low Energy
  - *Thread\_Cli\_Cmd* for Thread®
  - *Phy\_802\_15\_4\_Cli* for 802.15.4 RF test

The boards based on STM32WB0x are compatible if they feature:

- A connection through a serial link and
- A test firmware:
  - *Transparent mode* for Bluetooth® Low Energy

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

## 2 Release information

### 2.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.22.0
- Alignment with STM32CubeWBA firmware 1.6.0
- Alignment with STM32CubeWB0 firmware 1.2.0
- Support of STM32WBA6x devices

### 2.2 Fixed issues

This release:

- Fixes issue 185894 - Support STM32WB1x BLE\_Stack\_light\_fw upgrade
- Fixes issue 195370 - ACI\_GAP\_SET\_NON\_DISCOVERABLE return Command disallowed error
- Fixes issue 196631 - Could not perform RF Tests on WB05X

### 2.3 Restrictions

When the device under test is disconnected, the software might 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 it and then reconnect it.

For sniffer on macOS®, the sniffer Python™ file must be set with an executable right after copy. The command is `chmod+x stm32cubeMonRf_sniffer.py`.

STM32WB firmware versions before 1.16 are not supported, a more recent version is required.

During STM32WB0x Bluetooth® Low Energy RF tests and STM32WB0xx RX tests, RSSI measurement values are not provided.

The *Beacon* and *ACI Utilities* panels are not functional for STM32WB05N.

For both STM32WBxx and STM32WB0xx, in Bluetooth® Low Energy RX and PER tests, the PHY value 0x04 is proposed but not supported by the receiver. This leads to no received packet.

### 2.4 Licensing

STM32CubeMonRF is delivered under the SLA0048 software license agreement and its additional license terms.

## 3 STM32CubeMonitor-RF release information

### 3.1 STM32CubeMonitor-RF V1.5.0

- Tool first version to support Bluetooth® Low Energy features of STM32WB55xx. Versions 1.x.y have only Bluetooth® Low Energy support.

### 3.2 STM32CubeMonitor-RF V2.1.0

- Addition of OpenThread 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 the 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 a loop in the script (refer to the user manual for details)
- User interface update: the disabled items are now colored in gray
- Implementation of search command for threads
- Addition of the selection of Bluetooth® Low Energy PHY and modulation index
- In Bluetooth® Low Energy 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 is updated: When the target device configuration is in OTA loader mode, the target address is incremented by one. STM32CubeMonitor-RF now uses the incremented address for the download.

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

## 3.5 STM32CubeMonitor-RF V2.3.0

### 3.5.1 New features/enhancements

Alignment with STM32WB55 cube firmware 1.0.0

Addition of 802.15.4 RF tests

New features in the *ACI Utilities* panel:

- The discovery of remote Bluetooth® Low Energy devices
- Interaction with the services of remote devices

## 3.6 STM32CubeMonitor-RF V2.4.0

### 3.6.1 New features/enhancements

Alignment with STM32WB cube firmware 1.1.1

Support the over-the-air firmware update of the wireless stack (FUOTA).

Optimize FUOTA connection parameters to increase performance. Adds a warning if the address is below `0x6000`.

Correction of UART detection issue on Windows® 10

The tool properly uses the *write without response* function to write a characteristic with *write without response* permission.

Update the device name in the device information box.

Fix the value of `HCI_LE_SET_EVENT_MASK`.

Correction of the text about the error reason description

Fix issues with OpenThread scripts.

Set a maximum size for graphs.

Update some control locks to prevent wrong actions from the user.

## 3.7 STM32CubeMonitor-RF V2.5.0

### 3.7.1 New features/enhancements

Network Explorer is added to a new tab of Thread® mode.

This feature displays the connected Thread® devices and the connections between them.



## 3.8 STM32CubeMonitor-RF V2.6.0

### 3.8.1 New features/enhancements

802.15.4 RF tests are added.

In the transmitter test, the sending of MAC frames is available. The user defines the frame.

In the receiver test, the LQI, ED, and CCA tests are available and the PER test shows the decoded frames.

### 3.8.2 Fixed issues

This release:

- Updates the C1\_Read\_Device\_Information command description,
- Disables the navigation link when the 802.15.4 receiver test is in progress,
- Updates ST logo and colors,
- Fixes the blank popup message displayed when the script detects an error,
- Disables the start button as soon as the channel list is inconsistent in the 802.15.4 PER multichannel test,
- And includes a workaround to prevent freeze observed on a serial port with macOS®.

## 3.9 STM32CubeMonitor-RF V2.7.0

### 3.9.1 New features/enhancements

Updates OpenThread API with version 1.1.0.

Adds the OpenThread CoAP secure API.

Adds 802.15.4 sniffer mode.

### 3.9.2 Fixed issues

This release:

- Fixes the address bytes inverted in the *OTA updater* panel,
- Fixes the OpenThread network explore button label management,
- Fixes the behavior of the parameter field when the parameter is from the terminal and is wrong,
- Fixes the naming of Bluetooth® Low Energy commands according to the AN5270 specification,
- Fixes the connection fail behavior of the OpenThread COM port,
- Fixes Bluetooth® Low Energy tester connection fail behavior on Linux®,
- Fixes OpenThread panId hexadecimal value display,
- Improve SBSFU OTA and tests,
- Fixes ACI client characteristic configuration after reconnection.

## 3.10 STM32CubeMonitor-RF V2.7.1

### 3.10.1 New features/enhancements

802.15.4 sniffer fixes.

### 3.10.2 Fixed issues

This release:

- Fixes the error on quick Wireshark sniffer stop then start.
- Removes two extra bytes in sniffed data.

## 3.11 STM32CubeMonitor-RF V2.8.0

### 3.11.1 New features/enhancements

OTA improvement:

- Adds an option in the *OTA* panel to increase the packet length (MTU) to optimize speed.
- Adds a menu to select the target. It is required to compute the number of sectors to erase for SMT32WB15xx.
- Removes the modulations not suitable for the PER test in the PER picklist.

### 3.11.2 Fixed issues

This release:

- Fixes issue 102779: Displaying offset and attribute data length is reversed for ACI\_GATT\_ATTRIBUTE\_MODIFIED\_EVENT.
- Aligns the message HCI\_ATT\_EXCHANGE\_MTU\_RESP\_EVENT with AN5270.
- Fixes the attribute name in HCI\_LE\_DATA\_LENGTH\_CHANGE\_EVENT.
- Improves the welcome screen layout for small screens.

## 3.12 STM32CubeMonitor-RF V2.8.1

### 3.12.1 Fixed issues

This release:

- Fixes issue 64425: Send command button unlocked during OTA transfer.
- Fixes issue 115533: During the OTA update, the issue in the ACI\_GAP\_START\_GENERAL\_DISCOVERY\_PROC command.
- Fixes issue 115760:
- During OTA updates, when the *Optimize MTU size* check box is ticked, the download stops after the MTU size exchange.
- Fixes issue 117927: change address type to public device address for OTA.
- Fixes issue 118377: wrong sector size erased before OTA transfer.
- Set OTA block size according to MTU size exchange.

## 3.13 STM32CubeMonitor-RF V2.9.0

### 3.13.1 New features/enhancements

- Adds compatibility with the OpenThread stack of STM32Cube\_FW\_V1.14.0. This stack is based on the OpenThread 1.2 stack and supports the O.T. 1.1 commands.
- Adds new Bluetooth<sup>®</sup> Low Energy commands and events. Updates some existing commands to be compatible with the release 1.14.0 of the stack.

Commands added:

- HCI\_LE\_READ\_TRANSMIT\_POWER,
- HCI\_LE\_SET\_PRIVACY\_MODE,
- ACI\_GAP\_ADD\_DEVICES\_TO\_LIST,
- HCI\_LE\_READ\_RF\_PATH\_COMPENSATION,
- HCI\_LE\_WRITE\_RF\_PATH\_COMPENSATION

Events added:

- HCI\_LE\_EXTENDED\_ADVERTISING\_REPORT\_EVENT,
- HCI\_LE\_SCAN\_TIMEOUT\_EVENT,
- HCI\_LE\_ADVERTISING\_SET\_TERMINATED\_EVENT,
- HCI\_LE\_SCAN\_REQUEST\_RECEIVED\_EVENT,
- HCI\_LE\_CHANNEL\_SELECTION\_ALGORITHM\_EVENT

Command removed:

- ACI\_GAP\_START\_NAME\_DISCOVERY\_PROC

Command updated (parameters or description):

- ACI\_HAL\_GET\_LINK\_STATUS,
- HCI\_SET\_CONTROLLER\_TO\_HOST\_FLOW\_CONTROL,
- HCI\_HOST\_BUFFER\_SIZE,
- ACI\_HAL\_WRITE\_CONFIG\_DATA,
- ACI\_GAP\_SET\_LIMITED\_DISCOVERABLE,
- ACI\_GAP\_SET\_DISCOVERABLE,
- ACI\_GAP\_SET\_DIRECT\_CONNECTABLE,
- ACI\_GAP\_INIT,
- ACI\_GAP\_START\_GENERAL\_CONNECTION\_ESTABLISH\_PROC,
- ACI\_GAP\_START\_SELECTIVE\_CONNECTION\_ESTABLISH\_PROC,
- ACI\_GAP\_CREATE\_CONNECTION,
- ACI\_GAP\_SET\_BROADCAST\_MODE,
- ACI\_GAP\_START\_OBSERVATION\_PROC,
- ACI\_GAP\_GET\_OOB\_DATA,
- ACI\_GAP\_SET\_OOB\_DATA,
- ACI\_GAP\_ADD\_DEVICES\_TO\_RESOLVING\_LIST,
- ACI\_HAL\_FW\_ERROR\_EVENT,
- HCI\_LE\_READ\_ADVERTISING\_PHYSICAL\_CHANNEL\_TX\_POWER,
- HCI\_LE\_ENABLE\_ENCRYPTION,
- HCI\_LE\_LONG\_TERM\_KEY\_REQUEST\_NEGATIVE\_REPLY,
- HCI\_LE\_RECEIVER\_TEST\_V2,
- HCI\_LE\_TRANSMITTER\_TEST\_V2,
- ACI\_HAL\_WRITE\_CONFIG\_DATA,
- ACI\_GAP\_SET\_DIRECT\_CONNECTABLE,
- HCI\_LE\_SET\_EVENT\_MASK,
- HCI\_LE\_TRANSMITTER\_TEST

Updates 802.15.4 sniffer firmware for STM32WB55 Nucleo and new firmware for STM32WB55 USB dongle

### 3.13.2 Fixed issues

This release:

- Fixes issue 130999: Some packets are missed in the PER test.
- Fixes issue 110073: Some panId values cannot be set in the Network Explorer tab.

## 3.14 STM32CubeMonitor-RF V2.9.1

### 3.14.1 New features/enhancements

- Updates 802.15.4 sniffer firmware software.
- Fixes some issues reported on version 2.9.0.

### 3.14.2 Fixed issues

This release:

- Fixes issue 131905: The Bluetooth® Low Energy TX LE PHY menu is not visible in RF tests.
- Fixes issue 131913: The tools do not identify some Bluetooth® Low Energy versions.

### 3.14.3 Restrictions

This version of STM32CubeMonitor-RF does not provide *Extended advertising* commands. For some operations (FUOTA, ACI scan), the Bluetooth® Low Energy stack with legacy advertising must be used. Refer to the user manual UM2288 to see which firmware must be used.

## 3.15 STM32CubeMonitor-RF V2.10.0

### 3.15.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.15.0
- OpenThread 1.3 support
- Bluetooth® Low Energy extended advertising support
- Bluetooth® Low Energy commands alignment with AN5270 Rev. 16
- New Bluetooth® Low Energy RSSI acquisition method

### 3.15.2 Fixed issues

This release:

- Fixes issue 133389: A command with variable length crashes the tool.
- Fixes issue 133695: Bluetooth® Low Energy missing HCI\_LE\_TRANSMITTER\_TEST\_V2 PHY input parameter.
- Fixes issue 134379: RF transmitter test, payload size is limited to 0x25.
- Fixes issue 134013: Wrong text seen after launching and stopping tests by checking the *Get RSSI* box.

## 3.16 STM32CubeMonitor-RF V2.11.0

### 3.16.1 New features/enhancements

- Support of STM32WBx devices except for OTA firmware update
- Continuous wave mode in the 802.15.4 transmitter test (STM32CubeWB firmware 1.11.0 and later)
- Availability to save Bluetooth® Low Energy ACI log information in a csv formatted file
- Alignment with STM32CubeWB firmware 1.16.0
- Alignment with STM32CubeWBA firmware 1.0.0
- Update of 802.15.4 sniffer firmware
- Removal of 802.15.4 RX\_Start command before RX\_get and Rs\_get\_CCA

### 3.16.2 Fixed issues

This release:

- Fixes issue 139468: Advertising test generates all advertising channels without being selected
- Fixes issue 142721: Event with the length of the next param on more than 1 byte is not managed
- Fixes issue 142814: Unable to set some command parameters with variable length
- Fixes issue 141445: VS\_HCI\_C1\_WRITE\_REGISTER - ERROR found in script results
- Fixes issue 143362: The tool gets blocked when setting the variable param length to 0

### 3.16.3 Restrictions

New issue 139237: In the *ACI* panel, when advertising starts before a scan is performed, the tool does not properly manage the advertising icon and state.

New issue in *ACI Utilities* panel: It is not possible to launch a scan if advertising is started. Advertising must be stopped before.

## 3.17 STM32CubeMonitor-RF V2.12.0

### 3.17.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.17.0
- Alignment with STM32CubeWBA firmware 1.1.0
- Fix advertising issues using GAP commands instead of legacy
- Add STM32WBA OTA firmware update support
- Fix 802.15.4 sniffer issues around the Python™ script
- Upgrade Java® runtime version from 8 to 17
- Update missing Bluetooth® Low Energy parameters values and description

### 3.17.2 Fixed issues

This release:

- Fixes issues 149148 and 149147: 802.15.4 sniffer leading into negative timestamps on Wireshark
- Fixes issue 150852: Bluetooth® Low Energy OTA profile application could not be discovered on STM32WBx
- Fixes issue 150870: Missing parameters description in HTML wireless interface
- Fixes issue 147338: Gatt\_Evt\_Mask parameter must be a bit mask
- Fixes issue 147386: Missing ACI command to control antenna switching mechanism for AoA/AoD
- Fixes issue 139237: Improve the advertising mechanism

## 3.18 STM32CubeMonitor-RF V2.13.0

### 3.18.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.18.0
- Alignment with STM32CubeWBA firmware 1.2.0
- Add 802.15.4 support for STM32WBx devices
- Add OpenThread support for STM32WBx devices

### 3.18.2 Fixed issues

This release:

- Fixes issue 161417: Combo Box not displayed on 802.15.4 Start TX
- Fixes issue 159767: Replace the Twitter bird logo with the X logo
- Fixes issue 152865: Transfer of firmware via OTA from WB55 device connected to *STM32CubeMonitor-RF* to device type WBA5x not active
- Fixes issue 156240: Missing interval of parameter's possible values in tool description
- Fixes issue 95745 [802.15.4 RF]: No information displayed about the device ID connected
- Fixes issue 164784: Error using online beacon with a random address
- Fixes issues 163644 and 166039: Error using advertising with a random or public not connectable device address
- Fixes issue 69229: Scanning cannot stop when advertising is running.

## 3.19 STM32CubeMonitor-RF V2.14.0

### 3.19.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.19.0
- Alignment with STM32CubeWBA firmware 1.3.0
- Upgrade supported OpenThread version to 1.3.0 API 340

### 3.19.2 Fixed issues

This release:

- Fixes issues 165981 and 172847 to stabilize Linux® and macOS®, 802.15.4 sniffer behavior
- Fixes issues 165552 and 166762 to improve scan and advertising features
- Fixes issue 172471 to extend STM32WBA 802.15.4 power range

## 3.20 STM32CubeMonitor-RF V2.15.0

### 3.20.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.20.0
- Alignment with STM32CubeWBA firmware 1.4.0
- Add support of STM32CubeWB0 firmware 1.0.0
- Upgrade Java® runtime version from 17.0.2 to 17.0.10

### 3.20.2 Fixed issues

This release:

- Fixes issue 174238 - 802.15.4 sniffer malformed packet in Wireshark

## 3.21 STM32CubeMonitor-RF V2.15.1

### 3.21.1 New features/enhancements

- Add support of STM32WB05N firmware 1.5.1

### 3.21.2 Fixed issues

This release:

- Fixes issue 185689: The first value of power in the *ACI Utilities* panel is not displayed for STM32WB or STM32WBA
- Fixes issue 185753: Add STM32WB06 in *STM32CubeMonitor-RF*



## 3.22 STM32CubeMonitor-RF V2.16.0

### 3.22.1 New features/enhancements

- Alignment with STM32CubeWB firmware 1.21.0
- Alignment with STM32CubeWBA firmware 1.5.0
- Alignment with STM32CubeWB0 firmware 1.1.0
- Upgrade supported OpenThread stack to API 420 version 1.3.0
- Update 802.15.4 sniffer firmware
- Add STM32WB0X FUOTA support
- Improve path management

### 3.22.2 Fixed issues

This release:

- Fixes issue 193557 - Vulnerability of commons-io
- Fixes issue 190807 - FUOTA image base address management
- Fixes issue 188490 - WBA PER test change to get RSSI
- Fixes issue 191135 - Cannot connect to STM32WB15
- Fixes issue 190091 - Connection to WB05N does not work the first time
- Fixes issue 190126 - OpenThread, device information menu disabled
- Fixes issue 188719 - Error in baud rate value

## 4 Revision history

**Table 2. 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</a> , <a href="#">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<sup>®</sup></a> , <a href="#">Section 1.3.3: macOS<sup>®</sup></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<sup>®</sup></a> , <a href="#">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 2. 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 the 2.3.0 release – <a href="#">Section 3</a> former releases history – <a href="#">Section 1.1: Overview</a> to add OpenThread and 802.15.4 RF – <a href="#">Section 1.3: Setup procedure</a> with different OS
12-Jul-2019	10	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> switch to the 2.4.0 release – <a href="#">Table 2</a> jSerialComm version – <a href="#">Section 3</a> former releases history
03-Apr-2020	11	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> switch to the 2.5.0 release – <a href="#">Table 2</a> Inno setup version – <a href="#">Section 3</a> former releases history
13-Nov-2020	12	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> switch to the 2.6.0 release – <a href="#">Table 2</a> and <a href="#">Table 3</a> details in an added copyright column – <a href="#">Section 3</a> former releases history
08-Feb-2021	13	Updated: – Title, <a href="#">Table 1</a> , <a href="#">Section 1</a> , and <a href="#">Section 2</a> switch to the 2.7.0 release with new 802.15.4 sniffer mode and <a href="#">Host PC system requirements</a> – <a href="#">Table 3</a> Java SE and Java FX version – <a href="#">Section 3</a> former releases history
08-Jun-2021	14	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> switch to the 2.7.1 release with 802.15.4 sniffer fixes – <a href="#">Section 3</a> former releases history
15-Jul-2021	15	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> switch to the 2.8.0 release with OTA speed improvement and new OTA option for STM32WB15xx – <a href="#">Section 1.4</a> NUCLEO-WB15CC support and test firmware explanation – <a href="#">Table 2</a> with SLA0048 in <a href="#">Licensing</a> – <a href="#">Table 3</a> with Inno setup version – <a href="#">Section 3</a> former releases history
21-Dec-2021	16	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2.1</a> switch to the 2.8.1 release with fixes for Bluetooth® Low Energy OTA – <a href="#">Section 3</a> former releases history

Table 2. Document revision history (continued)

Date	Revision	Changes
07-Jul-2022	17	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2.1</a> switch to the 2.9.0 release</li> <li>– Python™ card version in <a href="#">Software requirements</a></li> <li>– <a href="#">Section 2.4: Licensing</a> replacing tables with the suitable license agreement statement</li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
14-Sep-2022	18	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.9.1 release</li> <li>– Java FX-GTK3 conflict moved from <a href="#">Restrictions</a> to Linux® <a href="#">Install</a></li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
29-Nov-2022	19	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.10.0 release</li> <li>– Removed note on fixed GTK2 issue in Linux® <a href="#">Install</a></li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
03-Mar-2023	20	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.11.0 release</li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
04-Jul-2023	21	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.12.0 release</li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
23-Nov-2023	22	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.13.0 release</li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
14-Mar-2024	23	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.14.0 release</li> <li>– macOS® versions in <a href="#">Supported operating systems and architectures</a></li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
01-Jul-2024	24	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a> switch to the 2.15.0 release</li> <li>– Nucleo boards in <a href="#">Devices supported by STM32CubeMonitor-RF</a></li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>
12-Sep-2024	25	Updated: <ul style="list-style-type: none"> <li>– Title, <a href="#">Table 1</a>, and <a href="#">Section 2</a>, including <a href="#">Restrictions</a>, switch to the 2.15.1 release</li> <li>– <a href="#">Section 3</a> former releases history</li> </ul>

Table 2. Document revision history (continued)

Date	Revision	Changes
22-Nov-2024	26	Updated: – Title, <a href="#">Table 1</a> , and <a href="#">Section 2</a> , including <a href="#">Restrictions</a> , switch to the 2.16.0 release – Linux <sup>®</sup> and macOS <sup>®</sup> versions in <a href="#">Supported operating systems and architectures</a> – <a href="#">Section 3</a> former releases history
18-Feb-2025	27	Updated: – Title, <a href="#">Table 1</a> , <a href="#">Section 1.4</a> , <a href="#">Section 2.1</a> , <a href="#">Section 2</a> , including <a href="#">Restrictions</a> , switch to the 2.17.0 release – <a href="#">Section 3</a> former releases history

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