STM32CubeMonitor-Power release 1.2.1

Introduction

This release note is updated periodically to keep abreast of the STM32CubeMonitor-Power (STM32CubeMonPwr) evolutions, problems, and limitations. Check the STMicroelectronics support website at www.st.com/stm32softwaretools for the latest version. Refer to Table 1 for the latest release summary.

Table 1. STM32CubeMonitor-Power 1.2.1 release summary

Type	Summary
Minor release	Correct voltage issue with X-NUCLEO-LPM01A

Customer support

For more information or help concerning STM32CubeMonitor-Power, contact the STMicroelectronics nearest sales office. For a complete list of STMicroelectronics offices and distributors, refer to the *www.st.com* webpage.

Software updates

Software updates and all the latest documentation can be downloaded from the ST microcontroller support webpage at www.st.com/stm32softwaretools.

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For further information contact your local STMicroelectronics sales office.

www.st.com

1 General information

1.1 Overview

STM32CubeMonitor-Power is a PC software tool:

- Allowing the end user to display on the PC power data coming from an STLINK-V3PWR probe, from an X-NUCLEO-LPM01A expansion board connected to a target evaluation board, or from the energy meter of an STM32L562E-DK Discovery kit:
  - With very accurate power-data values, from 100 nA to 500 mA for an STLINK-V3PWR, from 100 nA to 50 mA for an X-NUCLEO-LPM01A expansion board, or from 300 nA to 150 mA for the energy meter of an STM32L562E-DK Discovery kit
  - At a high sampling rate, up to 100 kHz
- Bringing advanced features to analyze data: zoom, measurement reports, and others
- Allowing the end-user to perform an estimation of the ULPMark™ score

STM32CubeMonitor-Power supports STM32 32-bit microcontrollers based on the Arm® Cortex®-M processor.

Note: *Arm is a registered trademark of Arm Limited (or its subsidiaries) in the US and/or elsewhere.*

1.2 Host PC system requirements

Supported operating systems and architectures

- Windows® 10: 64-bit (x64)
- Linux® (tested on Red Hat®, Fedora®, and Ubuntu®, 64-bit)
- macOS® (minimum version OS X® Yosemite)

Note: *Red Hat® is a registered trademark of Red Hat, Inc.*

Fedora® is a trademark of Red Hat, Inc.

Ubuntu® is a registered trademark of Canonical Ltd.

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

Software requirements

- For Linux®, Java™ runtime is required by the installer.

Note: *Java is a registered trademark of Oracle and/or its affiliates.*

Hardware requirements

- One free USB2 host port
- USB Type-A to Micro-B cable
- 200-Mbyte free storage

1.3 System requirements

Supported hardware

- STLINK-V3PWR probe (for more details refer to the STLINK-V3PWR webpage)
- X-NUCLEO-LPM01A expansion board (for more details refer to the www.st.com/x-nucleo webpage)
- STM32L562E-DK Discovery kit (for more details refer to the www.st.com/en/evaluation-tools/stm32-discovery-kits webpage)

Supported firmware

- STM32-LPM01-XN (for more details refer to the STM32-LPM01-XN webpage)

1.4 STM32 Virtual COM port driver

To connect the STM32CubeMonitor-Power tool to the supported hardware, users have to install the STSW-STM32102 driver. The STSW-STM32102 driver is available for download at the www.st.com/stsw-stm32102 webpage. For any installation details, refer to the STSW-STM32102 'Readme' file.

1.5 Setup procedure

Refer to the *STM32CubeMonitor-Power software tool for power and ultra-low-power measurements* user manual (UM2202) available at the www.st.com/stm32softwaretools webpage.

1.6 Licensing

STM32CubeMonitor-Power is delivered under the SLA0048 software license agreement and its Additional License Terms.

2 STM32CubeMonitor-Power V1.2.1 release information

2.1 Corrections

Solve issue with X-NUCLEO-LPM01A when power voltage is changed

3 STM32CubeMonitor-Power V1.2.0 release information

3.1 New features

STM32CubeMonitor adds the following features:

- Support of STLINK-V3PWR
- New Power On/Off button allowing to power up/down the target during acquisition

4 STM32CubeMonitor-Power V1.1.1 release information

4.1 Corrections

- Correction of raw log files not created under macOS®
- Correction of current calculation on binary mode

5 STM32CubeMonitor-Power V1.1.0 release information

5.1 New features

STM32CubeMonitor adds the following features:

- Add the support to the energy meter of the STM32L562E-DK Discovery kit. In particular, add the support of the new current range from 300 nA to 150 mA
- Provide the means to calibrate the X-NUCLEO-LPM01A expansion board or the energy meter of the STM32L562E-DK Discovery kit
- Add a pop-up window inviting you to calibrate the X-NUCLEO-LPM01A expansion board or the energy meter of the STM32L562E-DK Discovery kit, when the temperature value changes by +/- 5°C since the last calibration

5.2 Improvement

JRE is now bundled in STM32CubeMonitor-Power. It is no longer necessary to install JRE before installing STM32CubeMonitor-Power.

5.3 Known problems and limitations

- Power measurements can unexpectedly stop if computer performances are too low for the requested acquisition parameters (CPU horsepower or mass storage data throughput). To avoid this issue, use a more powerful computer or lower sampling frequency or acquisition time.
- When power measurements unexpectedly stop, out-of-range current values can sometimes be returned by X-NUCLEO-LPM01A or the energy meter of the STM32L562E-DK Discovery kit. To avoid this issue, lower sampling frequency or acquisition time.

6 STM32CubeMonitor-Power V1.0.3 release information

6.1 Corrections

Update the shape and location of social network icons.

7 STM32CubeMonitor-Power V1.0.2 release information

7.1 Corrections

STM32CubeMonitor-Power software tool ordering code is changed to STM32CubeMonPwr.

8 STM32CubeMonitor-Power V1.0.1 release information

8.1 Improvement

Documentation and the software installer are updated to consider the new STSW-STM32102 Virtual COM port driver (version 1.5.0).

8.2 Corrections

This release contains one correction for the following issue:

- The abscissa and ordinate axes are sometimes truncated when resizing the tool window.

9 STM32CubeMonitor-Power V1.0.0 release information

9.1 New features

STM32CubeMonitor has the following features:

- Select the X-NUCLEO-LPM01A expansion board.
- Take and release control of the expansion board.
- Perform power measurements:
  - Start and stop power measurements.
  - Configure power measurement acquisition:
    - ○ Set a sampling frequency of up to 100 Ksamples/s.
    - ○ Set a finite (0.1, 1, 10, or 100 s) or infinite acquisition time.
    - ○ Set the target input voltage for the STM32 board.
    - ○ Set the current threshold used to trigger events inside the expansion board.
    - ○ Configure the source and the delay of the trigger used to start the acquisition.
    - ○ Select the functional mode ("Optimized" or "High currents").
  - Save the power measurements in the data log file.
  - Load previously saved power measurements into the acquisition chart.
  - Select measurements in acquisition charts.
  - Zoom in, zoom out.
- Perform the ULPBench™ test:
  - Configure ULPBench™ session: set the target input voltage for the STM32 board, and set the number of iterations.
  - Start the ULPBench™ session.
  - Compute ULPMark™ score.
  - Select measurements in acquisition charts.
  - Zoom in, zoom out.

Revision history

Table 2. Document revision history

Date	Version	Changes
28-Sep-2017	1	Initial release.
3-Oct-2017	2	Added restriction for Java SE runtime environment 9 in section 1.2: Host PC system requirements
20-Dec-2017	3	Tool installer aligned with VCP driver 1.5.0. Some minor corrections performed in tool SW
9-Feb-2018	4	STM32CubeMonitor-Power software tool ordering code changed to STM32CubeMonPwr
6-Mar-2018	5	STM32CubeMonitor-Power installers aligned with ordering code STM32CubeMonPwr
18-Sep-2018	6	Updated the shape and location of social network icons
26-Sep-2019	7	Added support to the energy meter of the STM32L562E-DK Discovery kit. JRE bundled in the STM32CubeMonitor-Power tool.
17-Mar-2020	8	Corrections regarding raw log file creation under macOS® and calculation in binary mode
9-Mar-2023	9	Added support to the STLINK-V3PWR probe
3-May-2023	10	Correction regarding X-NUCLEO-LPM01A issue when power voltage is changed

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