RN0093
Release note

ST-LINK/V2-1 firmware upgrade

About this release note

This Release note contains information about the latest version of the ST-LINK/V2-1 firmware. It can be used to identify the version of the firmware currently running and, if necessary, to upgrade the firmware through the USB port.

The part number of the ST-LINK/V2-1 firmware upgrade application is STSW-LINK007.

1 Host PC system requirements

PC and compatibles running with:

- Windows 7, Windows 8 and Linux 32-bits operating systems
- Windows 7, Windows 8, Linux and MacOS-X 64-bits operating systems

The application requires the Java Runtime Environment 7u51 (or more recent) being installed. On Windows operating system, the ST-Link/V2-1 board requires a dedicated USB driver to be installed. In case the driver was not installed by the used toolset, it can be found at www.st.com/stm32nucleo.

On Linux, the application relies on libusb-1.0, which must be installed separately: for instance on Ubuntu, this is done through the command "sudo apt-get install libusb-1.0".

On Linux, users must be granted with rights for accessing the ST-Link USB devices. To do that, it might be necessary to add rules into /etc/udev/rules.d: for instance on Ubuntu, this is done through the command "sudo cp 49-stlinkv2-1.rules /etc/udev/rules.d".

2 Changes in version 2.24.11

On ST-Link/V2-1 boards, upgrade firmware to the version V2J24M11.

Corrections:

- bugfix SWV not working withV2J23Mx firmware on some recent PCs

New features:

- Provide a command for JTAG clock frequency selection
- Added support for management 32L053DISCOVERY and 32F3348DISCOVERY boards
- Added support for STM32F746

3 Known problems and limitations

- On targets running at low CPU frequencies (less than 250 kHz), the SWD clock frequency must also be reduced for correct communication
- The SWD maximum clock frequency (4 MHz approximately) is not functional on targets powered under 2.8 V. Such targets should use lower SWD clock frequency (to configure from the toolset using the ST-Link)
- ST-Link (V1) boards are not supported on Linux and MacOS-X systems. Only ST-Link/V2 and ST-Link/V2-1 boards can be updated from these operating systems
- Applications programmed through the Mass Storage interface (drag & drop to disk) must fulfill both following constraints. Applications not respecting one of these

constraints, will not be programmed in this way (but could be programmed through any other tool, such as ST-LinkUtility):

– a Stack Pointer value (first entry of the vector table) in the range of the microcontroller RAM range
– a Reset vector value (second entry of vector table) in the range of the microcontroller flash range

4 Release information for previous releases

4.1 Changes in version 2.23.10

On ST-Link/V2-1 boards, upgrade firmware to the version V2J23M10.

Corrections:

- bugfix Mass Storage interface badly connecting on MacOS-X Yosemite operating system
- modification of flash programming algorithm for STM32F4, STM32F7 and STM32L4 microcontrollers families
- added check against the validity of the application, when it is programmed through the mass storage interface (validity algorithm based on Reset and Stack Pointer values in the vector table)
- set default SWCLK to 4 MHz for a better performance

New features:

- Added support for recent boards (NucleoF070RB, NucleoL073RZ and NucleoL476RG)
- Added support for Linux and MacOS-X operating systems (see *Section 1* for details)

4.2 Changes in version 2.23.6

On ST-Link/V2-1 boards, upgrade firmware to the version V2J23M6.

Corrections:

- in the virtual comm port, suppressed a possible delay in data reception by the host (like a cache flush issue)
- in the virtual comm port, suppressed a possible communication failure during data emission by the host, on some USB3 ports
- modified the mass storage interface enumeration after a programming of the target application, reducing the risk to loose the VCP communication during such operation
- suppressed one target reset sequence during the power on sequence
- modified SWD communication in order to reduce the noise generated by SWD signals

4.3 Changes in version 2.22.5

On ST-Link/V2-1 boards, upgrade firmware to the version V2J22M5.

New functionalities:

- Added support for Nucleo-F411RE
- Added command for SWCLK frequency selection

4.4 Summary of changes in version 2.21.5

On ST-Link/V2-1 boards, upgrade firmware to the version V2J21M5.

Corrections

- Set NRST pin high, when exiting the firmware update mode

4.5 Summary of changes in version 2.20.4

On STM32 Nucleo board, upgrade firmware to V2J20M4.

Corrections

- Suppressed “high speed device” notification, when plugging to a non-high speed USB port or to an USB3 port
- Keep the virtual com port session valid (if any opened), when reprogramming the application
- Fixed potential lockup condition in SWV trace management and Virtual Com Port management

4.6 Summary of changes in version 2.19.3

On STM32 Nucleo board, upgrade firmware to V2J19M3.

Corrections

- Fixed the issue about the application sometimes not running after being programmed (STM32Fxx targets, programmed through a “save as” action with long filename).

5 Customer support

For more information or help concerning ST-LINK/V2-1, please contact the nearest sales office. For the complete list of ST offices and distributors, please refer to *www.st.com*.

6 Revision history

Table 1. Document revision history

Date	Revision	Changes
13-Feb-2014	1	Initial release.
14-Apr-2014	2	Added content for new version 2.21.4.
02-June-2014	3	Added content for new version 2.21.5.
10-July-2014	4	Added content for new version 2.22.5
22-Sept-2014	5	Added content for new version 2.23.6
02-April-2015	6	Added content for new version 2.23.7
25-May-2015	7	Added content for new version 2.24.11