

SOLAR SMS MASTER STLINK

Field Firmware Reprogramming Manual

CHANGES HISTORY

Rev.	Date	Modification	Responsible
0	2024/07/30	First release	M. Román
1	2024/11/08	Revision and firmware version update	M. Román
2	2026/06/09	Revision and firmware version update	M. Román

1. INTRODUCTION

The purpose of this document is to provide a guide for reprogramming the SOLAR SMS MASTER device (article number 4000002958), SOLAR SMS MASTER LORAWAN (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) firmware to latest version.

With this guide, after a successfully reprogramming procedure serial number is erased and microcontrollers are protected against reading.

2. CONTENT OF PACKAGING DELIVERED

The tooling and cable will be packed in a 125 x 100 x 80 mm (length x width x height) box, inside a bubble plastic bag as shown in Figure 1 below:



Figure 1: Image of the content of the SOLAR SMS FIELD UPGRADING KIT

The content of the package will be:

- A white 3D tooling jig attached to a STLink flashing/programming jig
- A USB to micro-USB cable

The box is labelled as follows:



Figure 2: Product label information of the SOLAR SMS FIELD UPGRADING KIT

The tooling label version will be affixed over the *SOLAR SMS MASTER* and *SOLAR SMS MASTER LORAWAN* programming jig as follows:

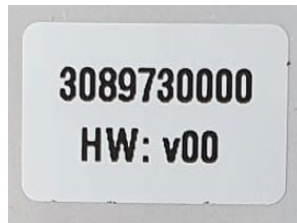


Figure 3: Product version label information of the SOLAR SMS FIELD UPGRADING KIT

3. MATERIALS NEEDED

To perform this task, the following material delivered is needed:

1. Programming *SOLAR SMS MASTER & MASTER LORAWAN STLINK FIELD UPGRADING KIT* containing the STLINK programming jig and USB cable:



Figure 4: SOLAR SMS MASTER & MASTER LORAWAN STLINK programming jig



Figure 5: USB Cable

2. SOLAR SMS MASTER device (article number 4000002958), SOLAR SMS MASTER LORAWAN (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) unit:

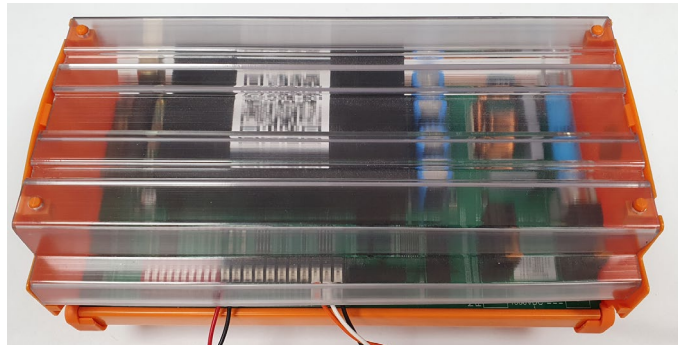


Figure 6: Example of a SOLAR SMS MASTER unit

3. Modern laptop/PC with Windows OS and available/free + USB port.
4. Application folder with “.HEX” file included/delivered by Weidmüller to upgrade the devices.

This application folder can be downloaded from the “Download” section of the following link [PV Monitoring Systems](#).

This folder is portable, so we only need to extract the folder from the compressed “.ZIP” file and execute the application. There are two versions of application available:

- x64 for 64 bit-based systems.
- x86 for 32 bit-based systems.

This is an example of how the folder structure of x86 system should look like:

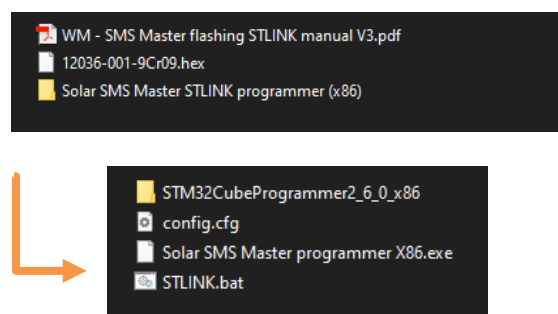


Figure 7: Folder structure example

All the files must be in the same folder, except the “.HEX” file to update.

Don't change any file name, and don't delete/modify any file; fail to observe this will result in having a system not running at the allowed frequency band for the region to operate.

4. STEP-BY-STEP

1. Turn off the supply of the SOLAR SMS MASTER device (article number 4000002958), SOLAR SMS MASTER LORAWAN device (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) unit, connect the USB cable between tooling and laptop.
2. Place the SOLAR SMS MASTER & MASTER LORAWAN STLINK FIELD UPGRADING KIT programmer (jig) over the black power supply of the SOLAR SMS MASTER (article number 4000002958), SOLAR SMS MASTER LORAWAN (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) unit as shown in Figure 8 and 9 below, while aligning the rear side of the DC/DC converter (black rectangle piece) with Solar SMS Master STLINK programmer tooling edges for a correct positioning ensuring matching the corners and ensuring a good contact between the programming needles and their corresponding test points on PCB. Avoid short-circuiting multiple test points with the same needle:

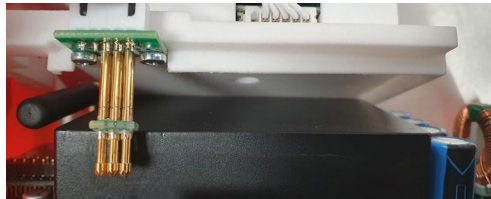


Figure 8: Positioning of SOLAR SMS MASTER & MASTER LORAWAN STLINK FIELD UPGRADING KIT over the power supply



Figure 9: Correct positioning of the SOLAR SMS MASTER & MASTER LORAWAN STLINK FIELD UPGRADING KIT (jig) and its pins over the DC/DC converter

3. Once the SOLAR SMS MASTER & MASTER LORAWAN STLINK FIELD UPGRADING KIT jig is connected and is placed in flashing position, click on the ".EXE" for opening the application file to start the reprogramming process as shown below:



Figure 10: SOLAR SMS MASTER & MASTER LORAWAN STLINK application screenshot

4. Browse for the “.HEX” firmware file with the “File” button and click on the “Update” button to start. A command line window will open, after some tasks it will show some green messages indicating the process is done correctly, and it will close after 2 seconds. There is no need of reading these messages, because the result of the process will be shown under the “Update button”:



Figure 11: Firmware successfully updated

A green “Download verified successfully” means the firmware update is correctly done; while a red message is showing some troubles in the update process, so the process must be repeated after checking the connections of the Solar SMS Master STLINK tooling.

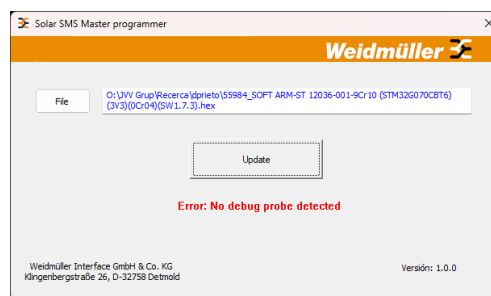


Figure 12: Error during firmware update

5. Afterwards disconnect the tooling in reverse order. Turn on the supply of the SOLAR SMS MASTER device (article number 4000002958), SOLAR SMS MASTER LORAWAN (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) unit and check that LEDs are ON or blinking with normal activity. If not, retry the procedure from the previous step.
6. Now SOLAR SMS MASTER device (article number 4000002958), SOLAR SMS MASTER LORAWAN (article number 4000003329), or SOLAR SMS LORAWAN INTERFACE (article number 4000003489) unit is updated to the latest firmware version.