FAQ GMSplus
Firmware Upgrade from SD Card

Document Revision

Version	Date	Modification	Prepared	Checked	Released
1	24.11.2022	Initial Version	WES	ALV	BES
2	28.11.2022	Added verification through Webinterface	WES	ALV	BES

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Table of Contents

1. Introduction

This procedure will lead you through the process of upgrading GMSplus firmware from SD card.

2. Required Material and Tools

- GMSplus to upgrade
- Size 8 allen key (to open GMSplus top cover)
- Laptop / Computer with SD card reader
- Firmware file to upgrade (gms-linux-firmware-rXXX_XXXXXXXX.gsfw)
- RS232 connection cable for **CONSOLE** access (only needed if there is no network connection to GMSplus)
- Terminal software like ucon installed on Computer (only needed if there is no network connection to GMSplus)

3. Preliminary Steps

3.1. Download latest firmware file

- Download latest firmware file for GMSplus from GeoSIG website under Support -> Downloads: https://www.geosig.com/Downloads-pg37.aspx

Description	Important Notes and Instructions	Download	Changelog
GMSPlus	1) This container contains the standard instrument firmwares only for GMSplus series instruments. In case of project specific firmwares with an armdas version other than 21.xx.xx contact us for details. 2) **IMPORTANT** Firmware releases "rootfs-gms-79" and lower must be upgraded in two steps: First to the release rootfs-gms-80 and then to the newest release. 3) Firmware releases "rootfs-gms-80" (instruments manufactured after September 2013) and higher can be upgraded directly to the newest release.	firmware r149	changelog

4. Firmware Upgrade

4.1. Turn off GMSplus

- Use the allen key to open GMSplus top cover and turn off the instrument by pressing and holding the **POWER** button for at least 3 seconds
- Wait until **RUN** LED stops flashing

4.2. Connect SD card to your computer

- Take out the SD card from its slot (push to release)

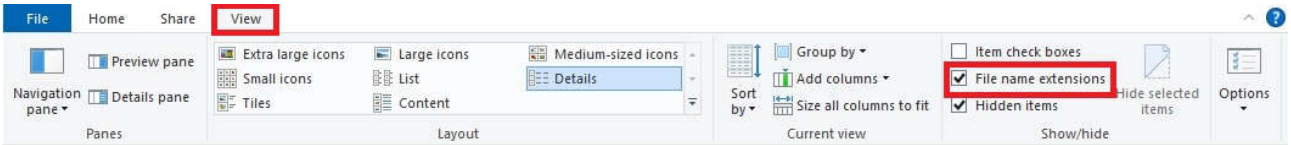
- Connect the SD card to your computer's card reader
- Windows cannot detect all partitions on the SD card, so it may ask you to format the card:
  PLEASE DO NOT FORMAT THE CARD, OTHERWISE ALL RECORDED DATA WILL BE LOST!
- The Windows message can be ignored (press Cancel)

- The SD card should appear as drive named with the serial number of your GMSplus

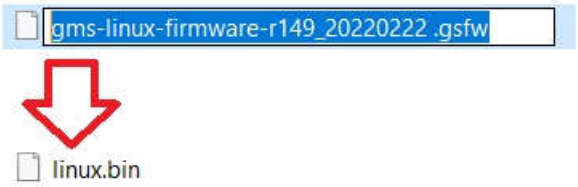
- It is not expected that data on the SD card is altered during the upgrade process – however, it is recommended to backup all data stored on the SD card before continuing with further steps.

4.3. Rename firmware file and place it on the SD card

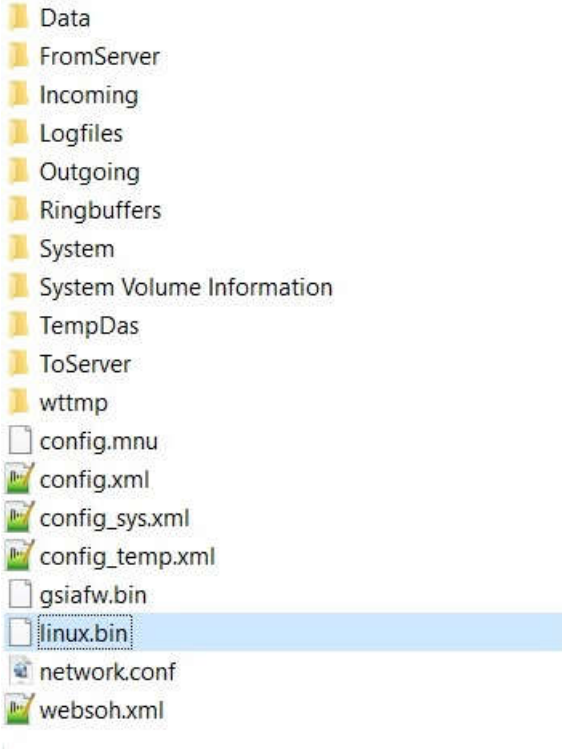
- Make sure you have file extensions visible in your file explorer (**View** Tab -> Tick **File name extensions**)



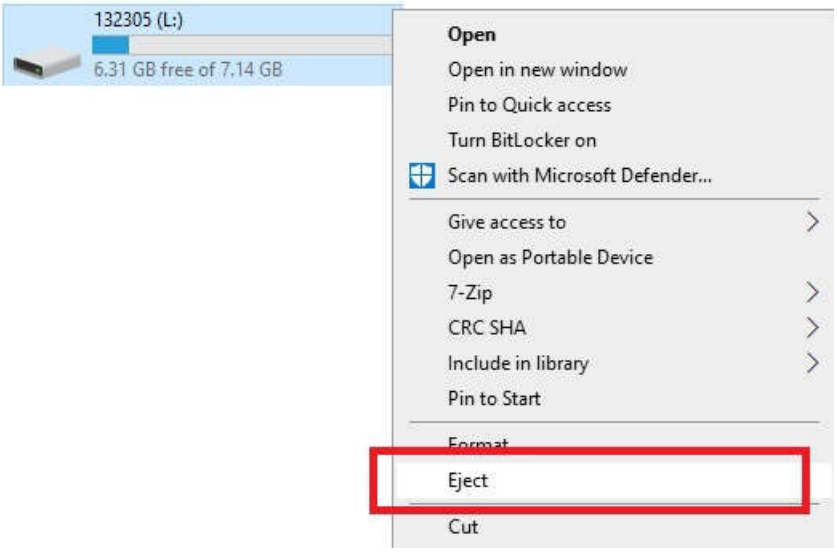
- Rename the downloaded firmware file from **gms-linux-firmware-rXXX_XXXXXXXX.gsfw** to **linux.bin**



- Copy the renamed file linux.bin to the SD card of the GMSplus



- Safely remove the drive (Right-click -> Eject)



4.4. Restart GMSplus to upgrade Firmware

- Insert the SD card back in the card slot of the GMSplus
- Start GMSplus by pressing and holding the **POWER** button for at least 2 seconds
- Wait until the upgrade is finished, GMSplus may restart several times during the upgrade process

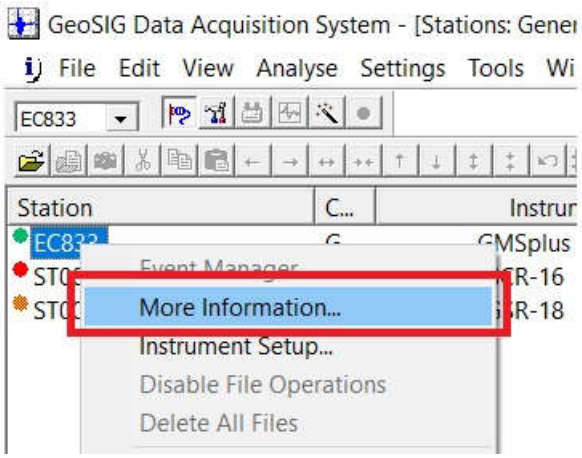
5. Verify installed Firmware Version

There are several ways to verify the correct firmware version:

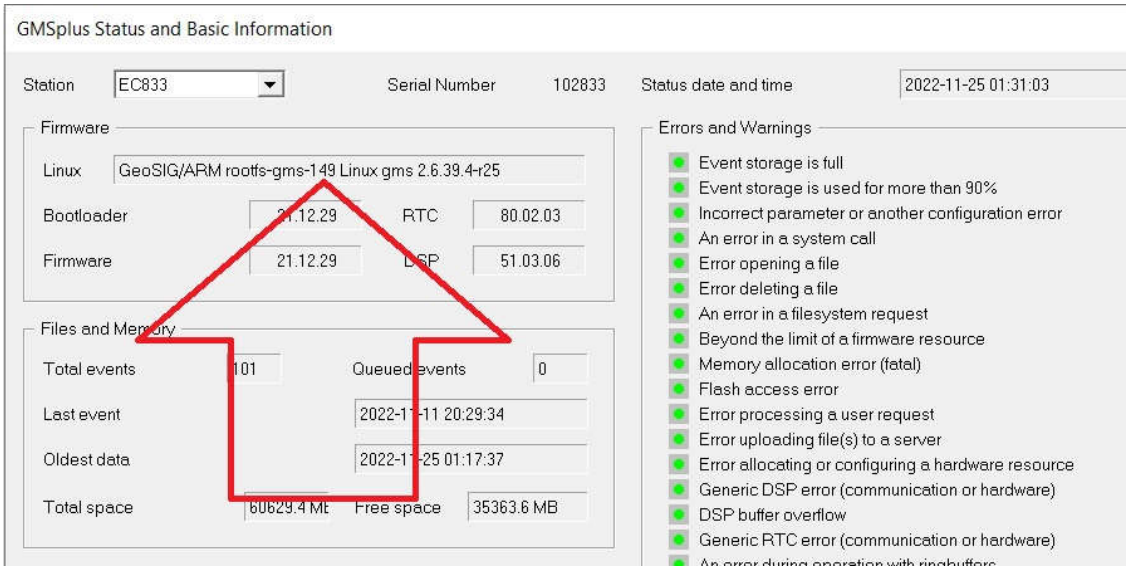
- If your instrument connects to GeoDAS, follow the steps under 5.1.
- If your instrument doesn't connect to GeoDAS, but you have access to the webinterface, follow 5.2
- If you have no network access to your instrument, you can verify through the local console under 5.3

5.1. Verification through GeoDAS

- In GeoDAS Window **Stations: General Information**, right-click on the instrument and choose **More Information…**



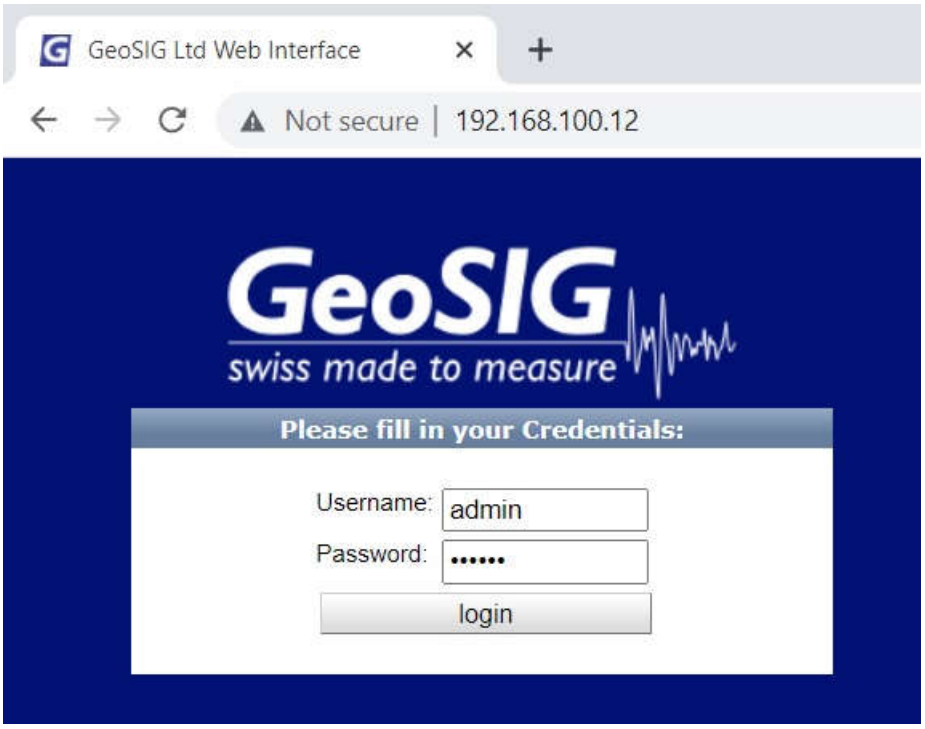
- Verify that 3-digit code of the Linux firmware is matching the 3-digit code of the downloaded firmware file (marked red in the sample below)



Linux: **GeoSIG/ARM rootfs-gms-149 Linux gms 2.6.39.4-r25**
Downloaded firmware file: **gms-linux-firmware-r149_20220222.gsfw**

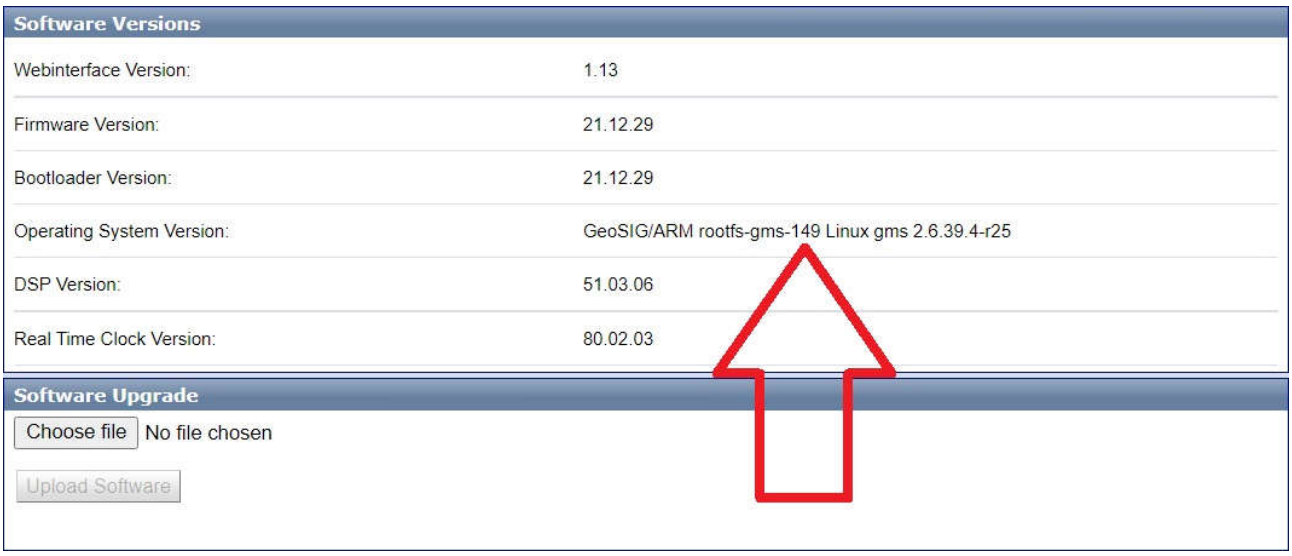
5.2. Verification through Webinterface

- Open your webbrowser and enter the IP address of your GMSplus and login as admin (default password 123456)



- Choose tab **Status and Maintenance → Software**

- Verify that 3-digit code of the Operating System Version is matching the 3-digit code of the downloaded firmware file (marked red in the sample below)



Linux image: **GeoSIG/ARM rootfs-gms-149 Linux gms 2.6.39.4-r25**
Downloaded firmware file: **gms-linux-firmware-r149_20220222.gsfw**

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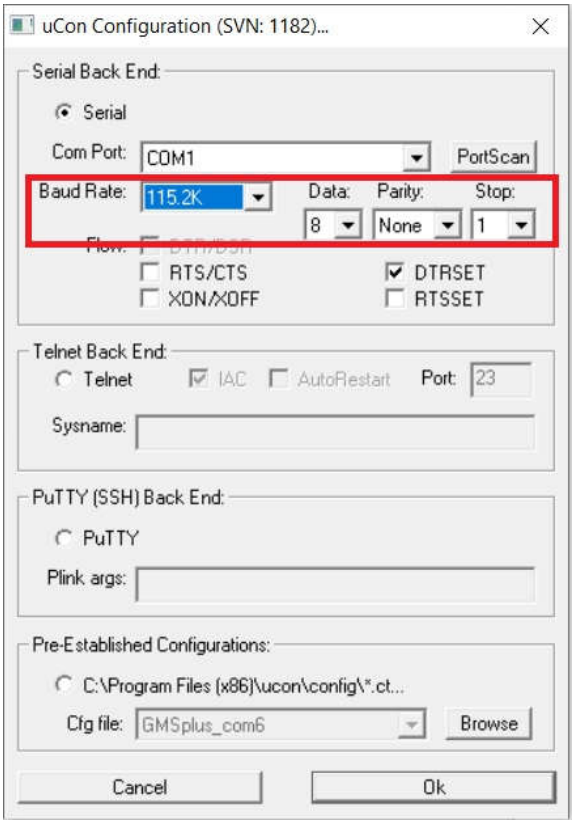
5.3. Verification through RS232 CONSOLE

- Connect to the **CONSOLE** connector with your RS-232 cable

- Open a terminal such as ucon and connect with baud 115200 and 8n1



- Press **ENTER** key on your keyboard and the main menu should appear

```
GMSplus s/n 101077 version 21.12.00-a10
Main menu:
C - Configuration
M - Messages ->
S - Shell command
L - List firmware images
X - Display errors (0) and warnings (0)
W - Clear errors and warnings
F - View/reset RTC trim values
T - File statistics
G - View RTC status
P - View GPS information
H - Set RTC time
U - User request
R - Restart
Q - Quit
```

- Press **L** to list firmware images
- Verify that 3-digit code of the Linux image is matching the 3-digit code of the downloaded firmware file (marked red in the sample below)

```
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Actual firmware versions
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Linux image ........ GeoSIG/ARM rootfs-gms-149 Linux gms 2.6.39.4-r25
Main firmware ...... 21.12.29
RTC firmware ....... 80.02.03
DSP firmware ....... 51.03.06
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```

Linux image: **GeoSIG/ARM rootfs-gms-149 Linux gms 2.6.39.4-r25**
Downloaded firmware file: **gms-linux-firmware-r149_20220222.gsfw**