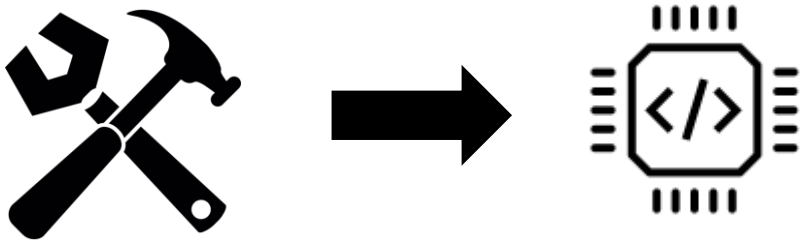
ExpoM – RF 4

Firmware Release Notes

Document Release 4.2 (September 18th, 2025)



FIELDS at work

Contents

1 Introduction

This document describes the modification history of the ExpoM-RF4 Firmware. It describes new added features and known and resolved issues that has impact on the customers experience.

2 Release Descriptions

Release #	Description
4.6	- **Resolved Issue:** Resolved issue in timestamp retrieval leading to occasional inaccurately reported second/minute value around minute changes
4.5	- **Resolved Issue:** Improved device behavior when applying device settings with ExpoM-RF 4 Utility.
4.4	- **Resolved Issue:** When requesting a scan data sample on the Android mobile app while the device is logging data, the scan datum point is now properly added to the current data recording. The scan and log data can then be distinguished using the Expom-RF4 Utility. - **Modification:** Flash duration for low battery indication is increased from 100ms to 300ms to differentiate it from a regular logger flash by both its colour and effect.
	Above releases are only compatible with ExpoM-RF4 Utility releases 4.3.1.0 and newer. **Below releases are only compatible with ExpoM-RF4 Utility v4.2.7.0**
3.5	- **New Feature:** Device now accepts logger settings containing band specific names and are logged separately for each measurement data set.[1] - **New Feature:** Access to the device can now be blocked by setting up a PIN. This blocks all access to the device's settings and data. In case the PIN code was lost, contact the manufacturer to request a device specific PUK code to unlock your device again.
2.9	- **Resolved Issue:** In very rare situations a certain code section occupied the CPU of the device longer than previously expected, causing the so-called watch dog to reboot the device. This issue used to occur when initializing the GPS module, consequently it won't have occurred during a logging session. - **Resolved Issue:** (This concerns only devices with serial number 21050 and above) The SD-Card driver didn't work reliably with the SD-Cards used in devices produced in the year 2021 and later.
2.5	- **New Feature:** Added WiFi capability to be connectable to the mobile app. - **Modification:** When disconnecting the device from the utility (and from the app as well) a 5-seconds-delay is implemented before starting a new measurement season. This way the user has time to turn the device off

[1] This feature can be used using ExpoM-RF 4 Utility release 4.2.6.6 and above.

	before the it starts to set up and start a new measurement session (a useless sample data set with only a single sample would then be stored on the device). - **Modification:** New communication protocol has been introduced for communicating to the utility and app.
	Above releases are only compatible with ExpoM-RF4 Utility releases 4.2.0.0 and newer. **Below releases are only compatible with ExpoM-RF4 Utility v4.1.x.x**
1.14	- **Resolved Issue:** When pressing the marker button the device run into a rebooted time by time. This was caused by running at a reduced CPU speed which is the case e.g. in between measurement intervals for power saving reasons.
1.13	- **Resolved Issue:** When turning the device on in some cases there were a long pause until the LED started to light up, giving the feeling that something is wrong. This issue is now solved. - **Resolved Issue:** In rare cases the integrated SD card was malfunctioning because of a too fast start-up procedure.
1.12	- **Resolved Issue:** On certain ExpoM-RF4 the front LED didn't work correct (e.g. when connected to the utility the LED was shining blue instead of pink and the red light could hardly be recognized when sampling). Background: In release 1.11 the LED driver got reworked so that the intensity of the front LED could be adjusted (so far by firmware only). It occurred that this didn't work reliably on all hardware so this feature got disabled again at least for the short term.
1.11	- **Resolved Issue:** It turned out that the SD-Card insertion observation is malfunctioning giving wrong feedback (SD-Card seemed not to be inserted even it was). This observation was part of the system check during start- up leading in a reboot if it fails. Consequently the device remains in a rebooting loop. This observation has now been turned off. If the SD-Card is faulty or really not inserted this is still detected during actively accessing the SD-Card. - **Modification:** Improved power management so that the device is able to measure 24 h (before < 15 h) by battery with GPS on (at 25 defined bands and an interval of 10 s). Having the GPS deactivated the device lasts for more then a week (before about 40 h).
1.9	- **Resolved Issue:** Issues got visible when messages were transmitted that caused the CPU of the device to be busy for a while (about > 2.73 ms). Trying

	to communicate with the device then ended in a communication error. A readiness message is implemented so that the client (computer) can check if the device is responsive. - **Resolved Issue:** When modifying the logger settings the sensitivity will now be adapted to the scan settings. If the default logger settings are loaded the sensitivity will be adapted as well. - **Resolved Issue:** Battery Charger needs to be reset at start-up. Reason: Device suddenly refused to charge. This is because the battery charger is never turned off (unless the battery runs low) causing the charging safety timer to steps in. To avoid this the registers of the battery charger will be reset at start-up before writing dedicated settings. - **Resolved Issue:** Download got interrupted time by time (usually very rarely, once very often hardly to bring it down). This issue could be back traced to an unspecified carriage return symbol sent at the end of every packet which is now removed. - **Resolved Issue:** Restarting after system got shut down due to low battery and turned on after a while is now avoided. - **Resolved Issue:** Charing current is now increased from 1.0 A to 1.5 A. Before it was reduced to 1.0 A about 40 seconds after the device got (re-)started. - **Resolved Issue:** if no logger bands were defined in the logger settings the device loads the default settings saved inside the device. This process failed leaving the device without any bands defined. Error mode occurred right after the device was started up (it disappeared again after bands were defined manually.)
1.0	- **Initial Release**