

Firmware Release Notes

Survey

Date: February 1, 2013

Product: ProMark 800

Subject: ProMark 800 V1.5 Firmware Release

Introduction:

This document is the firmware release note of the ProMark 800 V1.5. This version is minor and does not require a new registration code.

Upgrade procedure

The procedure to upgrade the receiver is the following:

- 1- Copy the file p_800_upgrade_V1.5.S810Ko26.tar.bz2 to an USB memory key.
- 2- Make sure that there are at least 10Mb of free memory after having copied these files
- 3- Switch off the ProMark 800
- 4- Plug the ProMark 800 into an external power and make sure that there is also an internal battery
- 5- Connect the USB memory key to the ProMark 800
- 6- Turn on the ProMark 800 while keeping pressed the button 'Scroll' (during about 5 seconds)
- 7- Wait for the complete upgrade, which should take about 30 minutes.

Firmware list and versions

General version number: V1.5 - S810Ko26

SYS:	S210
GNSS:	Ko26
RFS:	810
BOOT LOADER:	1.1.5.9
KERNEL:	2.6.19
PMU:	2.31
GSM:	R7.46

The radio firmwares compatible with the ProMark 800 V1.5 are:

- Internal Pacific Crest ADL RXO: 3.04 (2280, 2288 or 2300)

- External Pacific Crest ADL Vantage: 3.04 (2280, 2288 or 2300)

- External Pacific Crest ADL Vantage Pro: 3.04 (2280, 2288 or 2300)
- External Pacific Crest HPB: 2.58 or 2.42
- Internal U-Link: 1.02
- External U-Link: 1.03 (HW: AD), 1.04 (HW: AE) or 1.09 (With Connector)

The software compatible with ProMark 800 V1.5 are:

- FAST Survey:	3.0
- GNSS Solutions:	3.80.8
- RINEX Converter:	4.3.0
- Conf Radio:	2.3.2
- Spectra Precision Survey Pro:	5.2

- Spectra Precision Survey Office: 2.80

New features (compared to ProMark 800 V1.2)

- 1. **Z-Blade** algorithm improvements resulting in better positions stability and reliability, especially in obstructed environment.
- 2. **RTK performance improvements** in difficult ionospheric conditions: accuracy and TTFF, protecting from the increasing ionospheric activity
- 3. **GLONASS-only mode**: GPS ON/OFF setting is supported (standalone / RTK positions with GLONASS satellites only). *The new Fast Survey 3.1 and Survey Pro 5.2.1 versions are required to support this feature. Their availability date will be announced soon.*
- 4. Possibility to track and use **QZSS satellites** in standalone positioning. QZSS tracking is disabled by default. New serial command *\$PASHS,QZS,ON* allows to enable the QZSS tracking (QZSS tracking can be also turned ON by means of filed software).
- 5. **GLONASS network corrections**: Improved GLONASS bias support in case of 3rd party networks / bases, resulting in improved TTFF and reliability of RTK positions.
- 6. Faster GNSS L1 signal reacquisition.
- 7. Optimization of Ashtech Strobe[™] technique reducing GPS and GLONASS L1 code multipath error.
- 8. RTCM3 messages 1030 and 1031 decoding and processing
- 9. User-defined text message can be outputted on any port with help of the command *\$PASHS,NME,USR*. The message content can be specified with the command *\$PASHS,USR,TXT* or can be a GGA message with a position entered via the command *\$PASHS,USR,POS*.
- 10. Processing of the RTCM3 message type 1025 and computation of local projected coordinates. When local projected coordinates are computed, the receiver displays easting and northing coordinates on the OLED screen.

- 11. The NMEA GMP message is now supported. It allows outputting the local projected coordinates when the RTCM3 message type 1025 is received and processed.
- 12. Possibility to enable or disable tracking of the particular satellite, with the new command \$PASHS, GPS/GLO/SBA/QZS, USE
- 13. New alarm: "wrong base position at the base" is raised at the base when it transmits reference position (entered for instance) too far from the internally computed position. The feature allows minimizing the risk of operator mistakes during base position configuration.
- 14. New alarm: "wrong base position at the rover" is raised at the rover when the received base position is too far from the base position computed by the rover for check. Short term alarm can be raised when Network provider change reference data ID.
- 15. Possibility to delete all G-Files or all files on any type from the internal memory by using the user interface of the receiver (buttons and OLED screen)
- 16. Possibility to format the internal memory by using the user interface of the receiver (buttons and OLED screen)
- 17. **GALILEO raw and navigation data** for E1 and E5 is supported via ATOM RNX messages. The receiver also can output almanac and ephemeris for GALILEO satellites.
- 18. The GPS L5: raw data output is supported via ATOM RNX messages.

Resolved Problems (compared to ProMark 800 V1.2)

- 1. The command *\$PASHS,FIL,D* could reset the receiver. This command was used by FAST Survey filed software to delete a G-File from the memory.
- 2. The command *\$PASHQ, CPD, ANT* returned 0.0 antenna height value when no information about base antenna height had received. Now it returns empty field in such case.
- 3. Reboot when no SIM card: when the modem was in automatic power mode and there were no SIM card inserted, the receiver may reboot automatically.
- 4. Antenna names are not checked for "NONE" radome name. Antenna name with this prefix is mapped to legacy name, which was without prefix.
- 5. Coordinate Transformation: for messages RTCM3 MT1021 and MT1022, "Undefined area of validity" is now considered as "Global area of validity"
- 6. The RMS values reported by the receiver were too pessimistic. Reported RMS values are now better aligned with real values.

Known issues

- When you connect the ProMark 800 to a PC with the USB Cable and delete some files located in the internal memory with the Windows Explorer, the list of files returned by the *\$PASHQ,FIL/FLS* commands is not correct anymore (as well as files displayed by FAST Survey). It is necessary to perform a power cycle in order to retrieve the correct list of files.
- 2. When the command *\$PASHS,RST* is issued, the message *GNSS Board not detected* may appear sometimes. Then after few seconds, the receiver works properly.

Recommendations

1. Power consumption of GSM modem is higher in 3G mode than in 2G mode. When 2G is available, it is recommended to force the modem into 2G mode in order to increase the autonomy of the receiver (save battery).