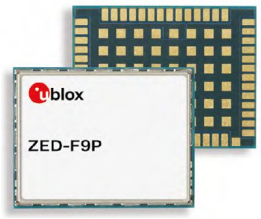
FW 1.00 HPG 1.51

ZED-F9P

Release note



Abstract
This document contains general information, interface changes and firmware changes (features, improvements), along with known limitations for FW 1.00 HPG 1.51.

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C1-Public

Document information

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Contents

1 General information

1.1 Scope

This Release note applies to ZED-F9P with 1.00 HPG 1.51 firmware.

The document covers the changes in the ZED-F9P firmware compared to firmware version FW 1.00 HPG 1.50. Please refer to u-blox ZED-F9P Release Note FW 1.00 HPG 1.50 for a full description.

1.2 Released firmware image

File	UBX_F9_100_HPG_151_ZED_F9P.6c43b30ccfed539322eccedfb96ad933.bin
Firmware version	EXT CORE 1.00 (9e1716) FWVER=HPG 1.51
ROM base support	ROM 1.02 - ROM BASE 0x118B2060 ROM 1.01 - ROM BASE 0xDD3FE36C ROM 0.40 - ROM BASE 0xCAAF619C

Table 1: Released firmware image for u-blox ZED-F9P

1.3 Related software

Version 24.10 (or later) of u-center GNSS evaluation software is recommended for use with the released firmware. Please contact FAE if this version is not available on the official web site.

1.4 Open-source declaration

This u-blox positioning product described in this release note, comprising the company's proprietary software, does not contain open-source software to declare.

1.5 Related documents

[1] HPG 1.51 Interface description, UBXDOC-963802114-13124
[2] ZED-F9P-05B Data sheet, UBXDOC-963802114-12824
[3] ZED-F9P Integration manual, UBXDOC-963802114-10977
[4] ZED-F9P Release note FW 1.00 HPG 1.50, UBXDOC-963802114-12826

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2 Firmware description

This section highlights selected features supported by this firmware.

- The firmware image contains multi-band (L1/L2) RTK base and rover using all major GNSS constellations.
- The firmware image supports raw code and carrier phase measurement output for all supported GNSS signals.

2.1 Supported GNSS constellations and signals

- GPS: L1C/A, L2C
- GLONASS: L1, L2
- Galileo: E1B, E5b
- BeiDou: B1I, B2I
- QZSS: L1C/A, L2C

2.2 High precision GNSS features

- RTK rover receiver features:
  - High precision RTK fixed navigation using multi-band, multi-constellation GNSS
  - RTCM input support (details below), supporting Network RTK (VRS) and local base stations, e.g. another ZED-F9P module
  - SPARTN input support for GPS, GLONASS, Galileo and Beidou with fast reconvergence time
  - CLAS input support for QZSS
    - The CLAS augmentation service is broadcasted by a QZSS L6 signal which is not part of the frequency range covered by ZED-F9P. As such, ZED-F9P does not support receiving, demodulating and decoding of the QZSS L6 signal. This is supported by NEO-D9C which then must pass the correction stream to ZED-F9P in the form of UBX-RXM-QZSSL6 messages. This enables the ZED-F9P to directly use these messages and extract the compact SSR (cSSR) formatted corrections in order to use them directly without further processing or reformatting by an intermediary.
  - SBAS
- RTK reference receiver features:
  - Fixed position mode and Survey-in mode
  - Output RTCM standard format
- Raw measurements:
  - Multi-band, multi-GNSS raw measurement data output (UBX-RXM-RAWX)
  - Navigation data subframe output (UBX-RXM-SFRBX)
- UBX messages on all interfaces
- Protection Level output to indicate level of trust in position output
- Secondary standard precision GNSS output in addition to RTK output
- Embedded spectrum analyzer to visualize in-band noise sources
- Direct physical connection with L-band receiver
- Moving base

3 Message interface

The message interface is described in the FW 1.00 HPG 1.51 Interface description, UBXDOC-963802114-13124. The released firmware supports UBX protocol version 27.50.

3.1 UBX

The ZED-F9P relies exclusively on the configuration interface using the UBX-CFG-VALSET, UBX-CFG_VALGET and UBX-CFG-VALDEL. Although some undocumented legacy UBX-CFG-* messages are functional, users are strongly discouraged from using these deprecated messages.

The protocol is completely documented in the Interface description.

3.2 NMEA

FW 1.00 HPG 1.51 supports up to NMEA protocol version 4.11.

Five NMEA standards are supported. The default NMEA version is 4.11, and, alternatively, versions 4.10, 4.0, 2.3, and 2.1 can be enabled.

3.3 RTCM

FW 1.00 HPG 1.51 supports up to RTCM3 standard version 3.4.

3.4 SPARTN

FW 1.00 HPG 1.51 supports up to SPARTN protocol version 2.0.1.

3.5 Interface changes

☞ Interfaces changes are comparing HPG1.50 to this version.

3.5.1 New

Message / Configuration item	Description / Comment

3.5.2 Modified

Message / Configuration item	Description / Comment
-	-

3.5.3 Removed

Message / Configuration item	Description / Comment
-	-

4 Improvements

- OSNMA: fixed an issue in OSNMA decoding causing some customers to experience authentication failures
- OSNMA: fixed an issue related to number of satellites authenticated

5 Known limitations

- A receiver moving at very slow speed (less than 10 cm/s) does not update the heading information in UBX-NAV-PVT. The velocity vectors can be used reliably.
- Geofence status pin must not be re-assigned to another pin
- If the receiver is configured to output RTCM messages on several ports, the ports must have the same RTCM configuration, otherwise the MSM multiple message bit might not be set correctly
- Time pulse can only be synced to GNSS. Configuration items and relevant flag cannot be set to false (CFG-TP-SYNC_GNSS_TP1, UBX-CFG-TP5)
- In FW HPG 1.50 and later, ZED-F9P-05B update rate is lower than in earlier FW versions. For more details, see Data sheet.