Release note

Topic **ZED-F9H FW1.00 HDG1.13**

UBX-20047673 C1-Public

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Date 30 October 2020

Contents

1 General information

1.1 Scope

This Release Note applies to ZED-F9H module firmware version 1.00 HDG 1.13.

The document covers the changes in the ZED-F9H firmware compared to firmware version 1.00 HDG 1.12. Please refer to release notes and public documentation [1], [2], [3] and [4] for a full description.

1.2 Related documentation

[1] u-blox ZED-F9H Interface Description, UBX-19030118
[2] u-blox ZED-F9H Data Sheet, UBX-19027170
[3] u-blox ZED-F9H Integration Manual, UBX-19030120
[4] u-blox ZED-F9H Release Note FW 1.00 HDG 1.12, UBX-19027215

1.3 Related software

It is recommended to use u-center GNSS evaluation software version 20.06 (or later) with the released product.

2 Released firmware image

Released firmware image for u-blox ZED-F9H	
File	UBX_F9_100_HDG_113_ZED_F9H.14686e10d9b58b3bed64aae32ad21cea.bin
Firmware version	EXT CORE 1.00 (f10c36) FWVER=HDG 1.13
ROM base support	ROM 1.02 - ROM BASE 0x118B2060

3 Message interface

3.1 UBX protocol

This firmware supports UBX protocol version 31.12.

3.2 NMEA protocol

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

The main differences between NMEA 4.11 and NMEA 4.10 are the talker ID, system ID and signal ID introduced for QZSS and BeiDou.

- For BeiDou, the talker ID, system ID and signal ID used by u-blox for version 4.10 were aligned to those specified in the new NMEA 4.11, except for the BeiDou B2I signal ID. The signal ID for BeiDou B2I in NMEA version 4.11 is set to '11'.
- For QZSS, the specific talker ID ('GQ') and system ID ('5') are introduced. The signal ID remains unchanged.

3.3 Interface changes

3.3.1 New messages

Message / Configuration item	Description / Comment
NMEA-GQQ	Poll standard message for QZSS (talker ID GQ)
NMEA-RLM	Galileo Return Link Message (RLM)
CFG-RTCM-DF003_IN CFG-RTCM-DF003_IN_FILTER	Configuration items to filter out input RTCM messages based on their reference station ID RTCM data field (DF003)
CFG-NMEA-PROTVER	CFG_NMEA_PROTVER_V411 added for enabling NMEA 4.11
UBX-MON-SPAN	Message reporting signal info to be used as a basic spectrum analyzer
UBX-NAV-SBAS	SBAS-related output message
UBX-CFG-SBAS	SBAS-related (deprecated) configuration message
CFG-SIGNAL-SBAS-* CFG-SBAS-*	SBAS-related configuration items
UBX-NAV-SLAS	SLAS-related output message

UBX-NAV-TIMEQZSS	QZSS time solution
CFG-SIGNAL-QZSS_L1S_ENA	Configuration item to enable QZSS L1S support
CFG-QZSS-USE_SLAS_*	SLAS-related configuration items
CFG-BDS-USE_PRN_1_TO_5	Enable BeiDou geostationary satellites

3.3.2 Modified messages

Message / Configuration item	Description / Comment
UBX-RXM-RTCM	RTCM reference station ID reported. If the RTCM message has no reference station ID, it is reported as not available. New *msgUsed* flag to indicate if an input RTCM message was used or not.
UBX-NAV-STATUS	Added *carrSoln* flag to indicate RTK status
UBX-TIM-TP	New flag to indicate if the reported quantization error is valid

3.3.3 Removed messages

Message / Configuration item	Description / Comment
CFG-NAVSPG-USE_PPP	Use Precise Point Positioning (PPP feature not supported on HPG or HDG products)

4 Firmware changes

4.1 New features

- BeiDou geostationary satellites (Space Vehicles ID 1 to 5) are supported. The use of these satellites can be enabled using the CFG-BDS-USE_PRN_1_TO_5 configuration key. Default configuration is false.
- SBAS support is added. SBAS (WAAS, EGNOS, MSAS, GAGAN) corrections are used when no RTCM corrections are available. SBAS is enabled in the default configuration.
- SLAS (QZSS L1S) support is added. SLAS corrections are used when no RTCM corrections are available. SLAS corrections take precedence over SBAS corrections. The use of SLAS correction is disabled in the default configuration.
- Added NMEA version 4.11 support.

4.2 Improvements

- Improved RTK and receiver performance.
- Increased navigation update rate.
- The RTCM MSM4 messages can replace RTCM MSM7. In addition, the proprietary RTCM MT 4072.1 is no longer needed. Changing from MSM7 to MSM4 does not compromise performance and is therefore recommended as this will lower the load on the communication channel.
- NMEA output on UART2 is available regardless of UART1 configuration.
- Improved USB and I2C interface robustness.
- Message UBX-CFG-VALGET returns NAK for unsupported configuration items.
- Fixed SBAS/RTCM/SLAS correction flags in UBX-NAV-SAT message.
- RTC reset mechanism

5 Firmware known limitations

- The Geofence status pin is only available in the default pin configuration.
- 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).
- RTK_STAT pin operation works properly only when SBAS is disabled.