u-center 21.05

GNSS evaluation software for Windows

Release note

Abstract
This release note contains general information, features, improvements, changes and known limitations for u-center 21.05.

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UBX-21022937 - R01
C1-Public
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1 General information

The u-center GNSS evaluation software for automotive, mobile terminal and infrastructure applications provides a powerful tool for evaluation, performance analysis and configuration of the u-blox GNSS receiver.

1.1 Released files

The following table lists the files that have been released.

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>u-center_v21.05.exe</td>
<td>u-center installer including u-blox CDC-ACM (USB) (x64 bit) driver v1.2.0.8 for Windows 7 and 8</td>
</tr>
<tr>
<td>u-center-v21.05_ReleaseNote_(UBX-20048354).pdf</td>
<td>Release note</td>
</tr>
</tbody>
</table>

For Windows 10, the CDC-ACM (USB) driver from Microsoft should be used, which is available from Windows Update.

† u-blox Sensor and VCP drivers are deprecated, so they have been removed from the release package.

1.2 Version and checksum of files

The following table lists the versions and the checksums of the Released files.

<table>
<thead>
<tr>
<th>File</th>
<th>Version</th>
<th>MD5</th>
</tr>
</thead>
<tbody>
<tr>
<td>u-blox GNSS Standard Driver for Windows</td>
<td>1.2.0.8</td>
<td>3a78d84e606b2d254e78a59b6f6288a1</td>
</tr>
<tr>
<td>u-center.exe</td>
<td>21.05</td>
<td>cc672cec579490e6cfb9726a81287c1</td>
</tr>
<tr>
<td>bssndrpt.exe</td>
<td></td>
<td>24e4da53ab6b3b7bb924eabcd46a59ec</td>
</tr>
<tr>
<td>bugsplat.dll</td>
<td></td>
<td>efa8f6d360edf491e1de52798bdaa6e</td>
</tr>
<tr>
<td>bugsplatrc.dll</td>
<td></td>
<td>458ac61a574fd0d7d56ae48dc5238265</td>
</tr>
<tr>
<td>flash.xml</td>
<td>200058</td>
<td>52dc2335917d87e9c53be2daca4a55</td>
</tr>
<tr>
<td>flash.xml_changelog.txt</td>
<td></td>
<td>b49a4b5d3eaa113737208e788cf3afc</td>
</tr>
<tr>
<td>flash.txt</td>
<td>101098</td>
<td>babc3079032691f57769385826c30cb</td>
</tr>
<tr>
<td>NMEA.dll</td>
<td>21.05</td>
<td>89eecee2aea99649bd4074c8ccf3a0ce1cd</td>
</tr>
<tr>
<td>paho-mqtt3c.dll</td>
<td>21.05</td>
<td>a6353c9ed1216a4ae90376b62766d72</td>
</tr>
<tr>
<td>RTCM.dll</td>
<td>21.05</td>
<td>babc3079032691f57769385826c30cb</td>
</tr>
<tr>
<td>sqlite3.dll</td>
<td>3.21.0.0</td>
<td>07fb6d31f37fb1b4164bfe301306c288</td>
</tr>
<tr>
<td>UBX.dll</td>
<td>21.05</td>
<td>03d82097fca42170c6f96475f6ae09f</td>
</tr>
<tr>
<td>ubxfwupdate.exe</td>
<td>21.05</td>
<td>babc3079032691f57769385826c30cb</td>
</tr>
</tbody>
</table>

1.3 Released documentation

• Public release note (UBX-20048354)
• u-center user guide (UBX-13005250)
2 Features

2.1 Supported Microsoft Windows versions
u-center 21.05 runs on Microsoft Windows Vista and later versions up to (including) Windows 10.

2.2 Supported receiver generations
u-center 21.05 supports the following receiver generations:

- u-blox 6 with ROM 6.00, ROM 6.02, ROM 7.03
- u-blox 7 with ROM 0.10, ROM 0.11, ROM 0.14, ROM 1.00
- u-blox 8/MB with ROM 0.21, ROM 0.22, ROM 2.01, ROM 3.01
- u-blox 9 with ROM 0.30, ROM 0.40, ROM 1.01, ROM 1.02
- u-blox 10 with ROM SPG 5.00

2.3 Supported protocol specification version
u-center 21.05 supports the u-blox protocol specification from version 10.00 and later versions up to (including) version 38.

2.4 External hardware support
The following external hardware is supported to interface with the receiver:

<table>
<thead>
<tr>
<th>Interface</th>
<th>Device</th>
<th>DLL version</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDC/I2C</td>
<td>Totalphase Aardvark I2C/SPI Host Adapter</td>
<td>aardvark.dll v5.15 for Windows 32-bit</td>
</tr>
<tr>
<td>DDC/I2C</td>
<td>Diolan U2C-12 USB-I2C/SPI/GPIO Adapter</td>
<td>i2cb3d.dll v1.0.0.9 for Windows 32-bit</td>
</tr>
<tr>
<td>SPI</td>
<td>Totalphase Cheetah SPI Host Adapter</td>
<td>aardvark.dll v5.15 for Windows 32-bit</td>
</tr>
<tr>
<td>SPI</td>
<td>Totalphase Aardvark I2C/SPI Host Adapter</td>
<td>aardvark.dll v5.15 for Windows 32-bit</td>
</tr>
<tr>
<td>SPI</td>
<td>Diolan U2C-12 USB-I2C/SPI/GPIO Adapter</td>
<td>i2cb3d.dll v1.0.0.9 for Windows 32-bit</td>
</tr>
</tbody>
</table>

2.5 Multiple GNSS AssistNow Service
u-center 21.05 includes the multiple GNSS AssistNow Service (libMGA) version 20.08.

2.6 Debug messages
The following messages will be enabled or polled when pressing the "Debug Messages" button:

- Any UBX-INF
- UBX-MON-MSGPP
- UBX-NAV-CLOCK
- UBX-NAV-PVT
- UBX-NAV-SIG
- UBX-NAV-ORB
- UBX-NAV-SAT
- UBX-RXM-SVSI (every 30 seconds)
- UBX-MON-HW (polled)
- UBX-MON-EXCEPT (polled)
- and additional u-blox debug messages
The following messages will additionally be enabled or polled when pressing the "Debug Messages" button for ADR product line:

- UBX-ESF-MEAS
- UBX-ESF-STATUS

The following messages will additionally be enabled or polled when pressing the "Debug Messages" button for HPG product line:

- UBX-NAV-RELPOSNED
- UBX-NAV-SVIN
- UBX-MON-IO
- UBX-NAV-SOL
- UBX-NAV-AOPSTATUS

The following messages will additionally be enabled or polled when pressing the "Debug Messages" button for SPG product line:

- UBX-MON-IO
- UBX-NAV-SOL
- UBX-NAV-AOPSTATUS
3 Improvements and changes

For detailed information on any new messages or protocols, contact u-blox support or see product interface description.

3.1 Version 21.05

- Feature: Added new message UBX-SEC-SIGLOG.
- Feature: Added MQTT client in Receiver > MQTT client for high precision GNSS service.
- Improvement: Checkbox for NAV2 messages in Receiver > Epoch detection is renamed to indicate the behavior better.
- Improvement: New field "Age of the most recently received differential correction" added in messages UBX-NAV-PVT and UBX-NAV2-PVT.

3.2 Version 21.02

- Feature: Relevant UBX-NAV2-* messages are available including UBX-CFG-NAV2 configuration group and CFG-MSGOUT-UBX-NAV2-* configuration items. This will enable the support for the secondary navigation solution output messages.
- Feature: Display data from UBX-NAV2-* messages in views 'Receiver' > 'Epoch detection' is available for dual band receiver.
- Feature: Added UBX-RXM-SPARTN message to monitor SPARTN input status.
- Feature: SPARTN protocol reported as a correction source in messages like UBX-NAV-SAT, UBX-NAV-SIG and reported as an input protocol in messages like UBX-MON-COMMS, UBX-MON-MSGPP.
- Feature: Added support for BeiDou SVs with PRN 38 - PRN 63.
- Feature: Added support in UBX-NAV-SAT to report SLAS as a correction source.
- Feature: Added new flag in UBX-NAV-SBAS and UBX-NAV2-SBAS messages as 'SBAS integrity used' to indicate if SBAS integrity feature has been used by the receiver or not.
- Bug fix: Fixed issue with reading/writing values for configuration items of type I4.
- Bug fix: UBX-CFG-RATE no longer marks invalid input values. Before it would mark measurement periods and navigation rate values as not acceptable, while the receiver would accept them fine as expected.
- Bug fix: Fixed issue where in NMEA 4.11 some BeiDou SVs could be misidentified as GLONASS.

3.3 Version 20.10

- Improvement: Changed some ADR/UDR messages from confidential to PUB.
- Improvement: Added protocol version 33 used by ZED-F9R (HPS 1.0) to u-center Receiver > Protocol Filter > u-blox Generation 9.
• Bug fix: Fixed bug for the u-center crash when NTRIP server/caster is opened.
• Bug fix: Fixed UBX-CFG-NMEA reporting of version number when V4.11 is selected.
• Bug fix: Fixed for crashes when changing GNSS configuration.

3.4 Version 20.06.01

• Feature: Added remaining NMEA 4.11 specific features such as support for QZSS and NavIC talker/signal IDs in NMEA-GBS and NMEA-GRS messages. Also new child messages added to all NMEA message views for the fore-mentioned constellations.
• Feature: u-center support for UBX-NAV-NMI.
• Bug fix: Fixed the bug of reporting IMU-mount Alignment Status flag on ESF-STATUS message.
• Bug fix: u-center side panes now correctly show fix information for receivers that only have UBX-NAV-RELPOSNED output enabled.
• Bug fix: Fixed "Receiver > Protocol Filter" tab, it shows the menu properly when user selects it for the second time.
• Bug fix: Fixed the NTRIP connection problem.
• Bug fix: Fixed GNSS ID letter (G->Q) in NMEA-GQGSV and fixed QZSS and NAVIC GNSS ID letters in NMEA-GNGSA which were crossed.

3.5 Version 20.01

• Feature: Added new NMEA SV IDs to support NMEA 4.11.
• Improvement: Replaced data and satellite signal level view with new logic of getting data for satellites (multi-band) and improved satellite signal history view.
• Bug fix: UBX-CFG-VALGET messages are now displayed when playing log file.
• Bug fix: Fixed crashing of u-center when AssistNow Online GNSS runs in the background.
• Bug fix: Copyright date updated to 2020 in "Help > About u-center..." dialog.

3.6 Version 19.12

• Feature: Added new version of NMEA (4.11) to UBX-CFG-NMEA and to the config item CFG-NMEA-PROTVER.
• Feature: Message UBX-NAV-SIG adds support for the prsmooth flag in the Message View. When the PR of a signal is smoothed, it will show the PPP led and mark it as ‘S’. This is similar to what UBX-NAV-SAT (the predecessor of UBX-NAV-SIG) was already supporting.
• Improvement: A file overwrite warning dialog shows up while overwriting an existing configuration file.
• Bug fix: Fixed the issue that would crash u-center when protocol version was changed from menu Receiver > Protocol Filter. Added/fixed generation MA & 9 & 10 protocol filter options.
• Bug fix: Satellite Position view updated to display data from all signals (multi-band).
• Bug fix: Message UBX-ESF-STATUS now shows the correct calibration status for all sensors even when they are not being used.
• Bug fix: u-center is now prevented from ending up in a "no-response" status if NTRIP connection is lost, and the u-center window is minimized.
• Bug fix: Sky view updated to display data from all signals (multi-band) and the performance of Sky view has been improved.
• Bug fix: Fixed returning invalid mountpoints due to case sensitive names in u-center.
• Bug fix: Supported unicode file paths when opening zipped files (ubz, ubx.gz) which now fixed the Japanese named folder issue.
4 Known limitations

4.1 Known issues

- Enumerating the ports on a computer with many ports can take a long time.
- Using the protocol filter with “silent” or “no receiver” results in an empty message tree.
- Full support for u-blox 10 generation receiver is not yet available.
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### 5.1 Licenses

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The basic library functions are written in C and are freestanding. Also included in the distribution is a just-in-time compiler that can be used to optimize pattern matching. This is an optional feature that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS
-------------------------------

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