

# u-center v8.27

## *Release notes*

### **Abstract**

Release notes containing general information, features, improvements, changes and known limitations for u-center v8.27

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Objective Specification Document contains target values. Revised and supplementary data will be published later.

Advance Information Document contains data based on early testing. Revised and supplementary data will be published later.

Early Production Information Document contains data from product verification. Revised and supplementary data may be published later.

Production Information Document contains the final product specification.

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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 u-blox GNSS receivers.

## 1.1 Released Files

The following table lists the files that have been released.

File	Description
u-center_v8.27.exe	u-center installer incl. u-blox GNSS Standard Driver for Windows v1.2.0.8, u-blox GNSS Sensor Device Driver for Windows v2.33 and u-blox GNSS VCP Device Driver for Windows v3.03
u-center-v8.27_ReleaseNote_(UBX-17053718).pdf	Public release note
u-center_UserGuide_(UBX-13005250).pdf	User guide

## 1.2 Version and Checksum of Files

The following table lists the versions and the checksums of the files inside the files as in [Released Files](#).

File	Version	MD5
u-blox GNSS Standard Driver for Windows	1.2.0.8	
u-blox GNSS Sensor Device Driver for Windows	2.33	
u-blox Virtual COM port driver for Windows	3.03	
u-Center.exe	8.27	3916e3e3bf14477fa75255c428584762
flash.xml	200037	1c8ede645ea9e3550c1dd317af8467e7
flash.xml_changelog.txt		e095a563b90a11b22f6ff4dcb3febe6d
flash.txt	101098	b49a4b5d33efa113737208e788cf3afc
NMEA.dll	8.27	113326c8e316b6b215bbec0fa99550a
RTCM.dll	8.27	600fa435f49567048c87dc0cb04c4df6
sqlite3.dll	3.15.1.0	da722e08aeede16b499a52759e134919
UBX.dll	8.27	62bcc11925dff04b6a473f5b432e3a2e
ubxfwupdate.exe	2.10	3b1d8533cd3caa763062566728c3a9e6

## 1.3 Revision Number

The u-center has the revision number **296c4e0**.

## 1.4 Released Documentation

- Public Release Notes (UBX-17053718)
- u-center User Guide (UBX-13005250)

## 2 Features

### 2.1 Supported Microsoft Windows versions

u-center v8.27 will run on Microsoft Windows Vista up to and including Windows 10.

### 2.2 Supported Receiver Generations

u-center v8.27 can update the firmware of the following receiver generations:

- u-blox 5 with ROM 3.00, ROM 4.00, ROM 5.00
- 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/M8 with ROM 0.21, ROM 0.22, ROM 2.01, ROM 3.01



u-blox 5 receivers support is end of life and will be removed in one of the next versions.

### 2.3 Supported Protocol Specification Version

u-center v8.27 supports the u-blox protocol specification from version 10.00 up to and including version 23.10.

### 2.4 External hardware support

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

Interface	Device	DLL version
DDC/I2C	Totalphase Aardvark I2C/SPI Host Adapter	aardvark.dll v5.15 for Windows 32-bit
DDC/I2C	Diolan U2C-12 USB-I2C/SPI/GPIO Adapter	i2cbrdg.dll v1.0.0.9 for Windows 32-bit
SPI	Totalphase Aardvark I2C/SPI Host Adapter	aardvark.dll v5.15 for Windows 32-bit
SPI	Totalphase Cheetah SPI Host Adapter	aardvark.dll v5.15 for Windows 32-bit
SPI	Diolan U2C-12 USB-I2C/SPI/GPIO Adapter	i2cbrdg.dll v1.0.0.9 for Windows 32-bit

### 2.5 Multiple GNSS AssistNow Service

u-center v8.27 includes the multiple GNSS AssistNow Service (libMGA) version 1.10.

### 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-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 be additionally enabled or polled when pressing the "Debug Messages" button for ADR product line:

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

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

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

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

- UBX-MON-IO
- UBX-NAV-SOL
- UBX-MON-AOPSTATUS

## 3 Improvements and Changes

### 3.1 Version 8.27

- Update of UBX-MON-GNSS: Minor cosmetic changes in view.
- Update of UBX-NAV-SBAS: Minor bug fix in element type.
- Update of UBX-CFG-PM2: Single GNSS POT transition conditions.
- Fix to show correct colors for DR history in map view.
- Fixing the offset of image when saving map in map view.
- Logging raw data coming directly from HW interfaces.
- Extending the size of custom UBX hex input window to 2976 (992 bytes).
- Enabling debug messages based on firmware type.
- Added search filter to the message view.
- Integration of external Firmware Update Tool to u-Center.

### 3.2 Version 8.26

- Update of UBX-CFG-PMS: 4Hz Power Save Mode now public.
- Update of UBX-CFG-NAVX5: v3 now public.
- Update of UBX-NAV-RELPOSNED: accN, accE and accD now scaled down by 10000 instead of 1000 (treated as 0.1mm instead of 1mm).
- Added GAL E5a to database.
- Improvements to launching dialogs from status bar clicks.
- Improvements to robustness NTRIP support.
- Fix some unicode issues.
- Support for fetching almanac, time and position aiding for Offline MGA services and improved Offline services dialog.
- Added auto receiver information detection, with UI to enable/disable this feature.
- Improved UI responsiveness of Satellite ground view.
- Restored previous list of enabled messages in Debug feature whilst maintaining subset for ADR firmware.
- Added option to limit size of database.
- Improvements in speed vectors in map view. Now showing arrow heads.

### 3.3 Version 8.25

- Added RTCM 4072 sub type 0 proprietary message
- Update of UBX-AID-INI: Fixed view
- Update of UBX-NAV-PVT: Added support for magnetic declination
- Update of UBX-NAV-RELPOSNED: Added additional fields
- Removed some messages which get activated on Debug Messages button
- Support for custom baud rate
- Update of map view: Support moving baseline
- Making UI responsive also when processing data from log file at high speed
- Supporting Sqlite external database to store history
- Various minor general and cosmetic improvements

### 3.4 Version 8.24

- Update of RTCM: Added messages 1074, 1084, 1124 and 1230
- Update of UBX-CFG-CFG: Fix to properly show data in view

- Update of NMEA GSA: Set correct type of fix according to protocol specification
- Fix to properly store and show ECEF Y and Z
- Support for Google Earth server added
- Various minor cosmetic updates

### 3.5 Version 8.23

- Update of UBX-CFG-PRT: Handle flow control fields and cosmetic UI improvements
- Update of UBX-CFG-PM2: Update of the field "updatePeriod"
- Support for the use of SSL in online and offline assistance services
- Support for the NTRIP client
- Support for the NTRIP server/caster
- Show Galileo in Sky view
- Multiselect enabled on property search/select dialog
- Chart view now has a 'sync' button to make all the x-axis use the same database property
- Short cut keys Ctrl-X, Ctrl-C, Ctrl-V now work in the text, binary and packet views
- Correctly storing UBX-CFG-MSG RTCM messages when pressing the Record button
- Various minor cosmetic updates

### 3.6 Version 8.22

- New message UBX-RXM-RTCM
- New message UBX-CFG-REMFS
- New message UBX-NAV-HPPOSECEF
- New message UBX-NAV-HPPOSLLH
- Update of UBX-ACK/NAK: Bug fixes
- Update of UBX-CFG-TMODE3: Cosmetic UI improvements
- Update of UBX-ESF-STATUS: Speed flag now set
- Update of UBX-CFG-NMEA: Added high precision flag
- Update of UBX-MON-MSGPP: Cosmetic UI improvements
- Update of UBX-MON-SENIFF: Cosmetic UI improvements
- Update of UBX-NAV-SOL: Updated extraction of revision bits
- Update of UBX-NAV-PVT: Cosmetic UI improvements, updated extraction of revision bits
- Update of UBX-NAV-RELPOSNED: Reporting additional receiver information to u-center's database
- Update of UBX-CFG-ESFDWT: Cosmetic UI changes
- Update of UBX-CFG-ESFGWT: Cosmetic UI changes
- Update to UBX-NAV-ATT: Reporting additional receiver information to u-center's database
- UBX-CFG-HPGROV renamed to UBX-CFG-DGNSS, plus cosmetic UI changes
- New RTCM3 parser
- New option to reset to default colors in preference property pages
- New access tokens preferences property page
- Map view overhauled and upgraded to compensate for the loss of Google Earth view
- Added Google maps API key entry to access tokens property page
- Various minor cosmetic updates

### 3.7 Version 8.21

- Support for ADR4.00
- Support for HPG1.00
- Support for TIM1.10



- Support for UDR1.00
- New message UBX-CFG-HNR
- New message UBX-CFG-TMODE3
- New message UBX-NAV-RELPOSNEED
- New message UBX-RXM-RLM
- Update of UBX-CFG-GNSS: Layout changes
- Update of UBX-CFG-MSG: RTCM messages 1005, 1077, and 1087 added
- Update of UBX-CFG-NAV5: Signal attenuation feature is public
- Update of UBX-CFG-NAVX5: Flag `useAdr` is public
- Update of UBX-CFG-PM2: Message version selector visible
- Update of UBX-CFG-PMS: Aggressive 2Hz option is public
- Update of UBX-CFG-PRT: RTCM3 added
- Update of UBX-CFG-SBAS: Flag `enable` and `maxSbas` marked deprecated for u-blox 8
- Update of UBX-CFG-TP5: Rename of `Invert pulse polarity` to `Rising Edge of TOS`
- Update of UBX-NAV-PVT: Flag `carrierSoln` is public
- Added epoch detection options
- Added PC time option to console views
- Added DGNSS interface option
- Connected receiver can be recognized based on the boot screen
- Support of new signal IDs in various messages
- Support of legacy aiding (online and offline) with MGA servers
- Rename of carrier phase to carrier range
- Fixed warning when database is cleared for UBX-CFG-NMEA
- Fixed auto-poll for UBX-CFG-GEOFENCE
- Update of 2D and 3D accuracy data view: Allow smaller values to display increased accuracy
- Update of status bar: Tooltips, DGNSS and receiver power state information added
- General harmonization with Protocol Specification
- Log file player speed adaptations and clarification. Based on messages/second.
- Default file name changed for retrieved log file
- Update of tinyXML2 library to version bb4d246

### 3.8 Version 8.20

- Fix bug in USB alternate update method for firmware update with ROM 3.01

### 3.9 Version 8.19

- New message UBX-CFG-DYNSEED
- New message UBX-CFG-FIXSEED
- New message UBX-CFG-GEOFENCE
- New message UBX-NAV-EOE
- New message UBX-NAV-GEOFENCE
- New message UBX-NAV-TIMEGAL
- New message UBX-RXM-IMES
- New message UBX-RXM-RLM
- New message UBX-SEC-SIGN
- New message UBX-SEC-UNIQID
- Support of new message version for UBX-RXM-PMREQ
- Support of new message version for UBX-RXM-RAWX
- Support of new message version for UBX-RXM-SFRBX

- Add wrist model to UBX-CFG-NAV5
- Update constrains in UBX-CFG-RATE
- Add Galileo to UBX-CFG-TP5
- Add Galileo to UBX-MON-GNSS
- Add geofence pin to UBX-MON-HW
- Add spoofing detect state to UBX-NAV-STATUS
- Add unknown source of leap seconds to UBX-NAV-TIMELS
- Add wake up sources to UBX-RXM-PMREQ
- Support from ROM 3.01
- Remove of Google Earth view
- Support of legacy aiding in Multiple GNSS AssistNow Online
- Support of new GNSS in Multiple GNSS AssistNow
- u-center can now connect to Location and Sensor API of Windows 7 onwards
- Fix Google Earth Server functionality
- Using new code signing certificate
- Increase internal resolution of latitude and longitude
- Decouple the epoch detection for NAV and HNR messages
- Color selection in Preferences is now public
- Main window title now shows either connection name of log file name
- Enabled more than 2GB of memory to be used on 64 bit versions of Windows
- Update database of known firmwares
- Various cosmetic fixes (typos, unicode issues, user interface elements positions and sizes)
- Various stability fixes

### 3.10 Version 8.18

- Updates to UBX-CFG-DAT
- Updates to UBX-CFG-ESFGWT
- Updates to UBX-CFG-NAV5
- Updates to UBX-CFG-PM2
- Updates to UBX-CFG-RXM
- Updates to UBX-MGA messages
- Updates to UBX-NAV-PVT
- Updates to UBX-RXM-PMREQ
- Updates to UBX-RXM-RAWX
- Updates to UBX-TIM-SMEAS
- Fixed miscellaneous minor bugs
- Added auto scale feature on deviation map by double clicking in deviation map view
- Fixed issues with displaying COG in the Table View
- Message view's hex area not displayed by default
- Improvements in BeiDou support

### 3.11 Version 8.17

- Updates to UBX-CFG-GNSS
- Updates to UBX-CFG-ESFGWT
- Updates to UBX-ESF-STATUS
- Updates to UBX-MON-HW
- Updates to UBX-CFG-NAV5
- Updates to NMEA-PUBX

- Updates to UBX-INF
- Updates to UBX-RXM-RAW
- Updates to UBX-CFG-ANT
- Updates to Dump Receiver Diagnostics
- Improved Binary view window display speed
- Miscellaneous memory leak fixed
- u-center acting as a Google Earth server now fixed (unicode issue)
- Table, Chart and Histogram views now have improved property search facility

### 3.12 Version 8.16

- Sky View shows additional satellite systems (Glonass, Beidou, Galileo)
- Satellite names in the various views (and flags in the satellite view) are now correct

### 3.13 Version 8.15

- AssistNow Online fixed (reported wrong username/password)

### 3.14 Version 8.14

- Update of UBX-TIM-TOS handling: allow enabling/disabling
- Update of UBX-ESF-STATUS: add error status field
- Update of UBX-TIM-VCOCAL: make command 'STOP' public
- Update of UBX-CFG-MSG list: matching protocol specification
- Update of UBX-CFG-RST: Allow 'User Defined' option, make SFDR and TCT public
- Update of UBX-MON-EXCEPT
- Add keyboard shortcut for firmware update dialog (Ctrl-u)
- Add toolbar icon for firmware update dialog
- Add status text for 'Sky View': azimuth and elevation
- Make configuration of antenna supervisor pins public
- Negative Course over Ground values can now plotted in the ChartView
- Google Earth view saves KML file as ASCII text
- Default name for exporting as KML file based on time and date
- Save GNSS configuration to file fixed
- Switch to UNICODE
- Update of shortcuts
- Update TotalPhase Cheetah driver to v3.08
- Rename of database entry 'TTAG (from ITOW)' to iTOW (according to protocol specification)
- Fix of GPS time from UBX-NAV-TIMEBDS
- Tooltip delay set to 200ms
- Minor fixes

### 3.15 Version 8.13

- Support of messages for M8L products
- Update of graphs for UBX-ESF-MEAS
- Visual improvements when using several monitors
- Update of statistic view (search and sort function)
- Fix problem with empty entries in table view
- Add option to hide tree and HEX view
- Add File transfer dialog

- Update of deviation map
- Show IRNSS flags

### 3.16 Version 8.12

- Update UBX-CFG-PM2
- Update UBX-CFG-TXSLOT
- Update UBX-NAV-TIMEUTC
- Update UBX-TIM-TP
- Update UBX-TIM-TM2
- Update UBX-TIM-VCOCAL
- Update UBX-ESF-MON
- Update UBX-MON-EXCEPT
- Update UBX-MON-HW
- Add support for LEA-M8T messages and firmware
- Add support for UTC standard (NTSC)
- Add Qi to database
- Add more EKF fields to database
- Add 2D error ellipse to database
- Odometer fields are now public in database
- Improve speed for deleting database
- Workspace and view configuration format changed
- Fix mismatch between binary console and message view
- Fix problem when saving map view
- Add extra line in consoles to separate data packets
- Add tooltip for satellite level view
- Add direction indicator of messages
- Add possibility to filter message tree by protocol specification versions
- Fix possible memory leak problems

### 3.17 Version 8.11

- Update of UBX-CFG-SMGR
- Update of UBX-CFG-DOSC
- Update of UBX-CFG-SMGR
- Update of UBX-CFG-ESRC
- Update of UBX-CFG-TP5
- Update of UBX-NAV-STATUS
- Update of UBX-TIM-TOS
- Add UBX-MON-SMGR, UBX-TIM-SMEAS and UBX-TIM-FCHG to periodic poll messages
- Set UBX-CFG-DOSC to public
- Set UBX-CFG-ESRC to public
- Set UBX-CFG-SMGR to public
- Set UBX-MON-SMGR to public
- Set UBX-TIM-DOSC to public
- Set UBX-TIM-FCHG to public
- Set UBX-TIM-SMEAS to public
- Set UBX-TIM-TOS to public
- Set UBX-TIM-VCOCAL to public
- Set UBX-TIM-VCOOFF to public

- Link to User's Guide in the help menu
- Fix problem with connection tool tip
- Fix problem with Google Earth plug-in when altitude = null
- Add option to align time-pulse to BeiDou or GLONASS time in UBX-CFG-TP5 (FTS product only)
- Fix problem with x axes label
- Adding the option to continuously update the receiver with MGA data
- Adding pop-up message when connection to receiver fails
- Improve resolution of position and velocity data storage and plots
- Update of MGA online dialog
- NMEA strict 82 characters only applicable for UBX-CFG-NMEA-DATA2
- Fix possible memory leak problem for external interface devices

### 3.18 Version 8.10

- Update of UBX-MON-GNSS dialog
- Update of UBX-CFG-NAV5 dialog (added UTC standard configuration)
- Update of UBX-CFG-PRT dialog (renaming Pin to PIO)
- Set UBX-MGA-QZSS to public
- Set UBX-UPD-SOS to public
- Set UBX-LOG-RETRIEVE, UBX-LOG-RETRIEVEPOS,UBX-LOG-RETRIEVESTRING, UBX-LOG-RETRIEVEPOSEXTRA to public
- Rename of UBX-NAV-ODORESET to UBX-NAV-RESETO
- Make UDP and TCP client public again
- Fix localisation problem
- Fix problem when saving a log file from a network connection (invalid characters)
- Add menu option for AssistNow online and offline
- Add support for tool tips in message views
- Remove Antaris support

### 3.19 Version 8.01

- Update of UBX-CFG-NAVX5 dialog
- Update of UBX-NAV-AOPSTATUS dialog
- Update of UBX-NAV-HNR support
- Update of UBX-NAV-SAT dialog: ANO/AOP was switched
- Update of UBX-RXM-SFRBX dialog
- Support for UBX-EST-MON version 2
- Support for ROM 2.01
- Firmware update mechanism improvements (file system, new settings)
- Added Timemark 1 and 2 edge information and time pulse quantization error to public chart usage
- Update of network connection menu
- Added command line option to connect to receiver
- Fix problem with 'Dump receiver diagnostic' in u-center
- Update of help dialog
- Update of database export to Google Maps HTML file (fix stack overflow in IE8)
- MGA dialog:
  - Button in u-center to request a token
- Support for 50/250bps IMES
- ADR updates:
  - Sensor-to-vehicle frame misalignment angle

- Yaw misalignment angle updates

### 3.20 Version 8.00

- Add UBX-CFG-HNR and UBX-NAV-HNR
- Fix UBX-CFG-PRT dialog: make 'Extended time-out' public
- Update of UBX-CFG-NMEA dialog
- Update of UBX-ESF-MEAS dialog
- Update of UBX-CFG-MSG dialog
- Update of NMEA-GSV
- NMEA-GSA proper handling of several messages (multi GNSS support)
- libMGA: minor fixes
- MGA dialog
  - Set smart flow control as default
  - Fix crash
  - Add UBX-MGA-INI-EOP to known messages
  - Make download button the default
- Add 3D button and support in Google Earth View
- Add zooming feature for Chart view (Ctrl + mouse wheel = zoom in/out, left mouse double click = fit)
- Reset TTF when receiver is cold/warm/hot started
- Renaming

## 4 Known Limitations

### 4.1 Known Issues

- Enumerating the ports on a computer with many ports can take long
- Using protocol filter with silent / no receiver results in empty message tree

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