

TDS-GU7020*

GPS User Guide for GU7020N and GU7020W

(Chip: u-blox7 UBX-G7020-KT)

Revision 0.2

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1. Instruction

1.1 Overview

The suitable for integration in variety of consumer devices such as PDA, Personal Navigation Device, Digital Camera Vehicle Navigation, Telematics and other applications requiring Position, Velocity and Time. High Sensitivity GPS technology provides unprecedented indoor and outdoor positioning capability including urban canyon and under thick foliage. provides standard NMEA output for compatibility with all user applications, and map engines.

1.2 Features

- * u-blox7 UBX-G7020-KT GPS chip
- * Active jammer detection and reduction
- * Multi-path detection and compensation
- * DGPS(WAAS/EGNOS/MSAS/GAGAN) QZSS support
- * Update Rate: 1Hz (max up to 10Hz, Configurable by firmware)
- * RoHS compliant
- * Support u-blox USB connection
- * Support to NMEA-0183 compliant protocol
- * Module: Made in Korea

1.3 Supported Operation System

When using USB connection, Window is the recommended platform. Although IOS can be used with this GPS, you will need additional software.

1.4 Helpful Resources:

*ublox u-center: <https://www.u-blox.com/en/product/u-center>

- While installing the u-center, u-center will automatically install the USB driver on your windows.

- The Windows USB driver installation file can also be found here:

https://texasdatalinksolutions.com/wp-content/uploads/2024/12/ublox_R4_R6_L6_windows_3264_v2.0.0.0.zip

*ublox UBX-G7020 series resource page:

<https://www.u-blox.com/en/product/ubx-g7020-series?legacy=Current#Document-&-resources>

This page includes:

1. Product Summary
2. Interface Manual
3. Firmware Update
4. Etc.

2. General Guide on Using TDS-GU7020 with u-center

2.1 Installing and Using u-center

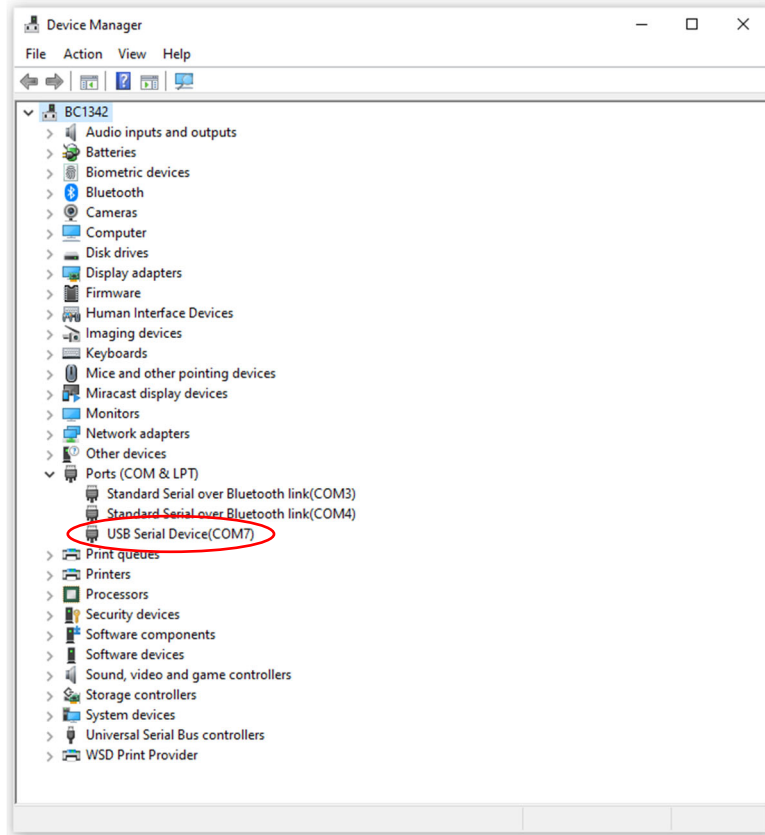
Installation file can be found here: <https://www.u-blox.com/en/product/u-center>

A. Select “u-center” and click the Download button.

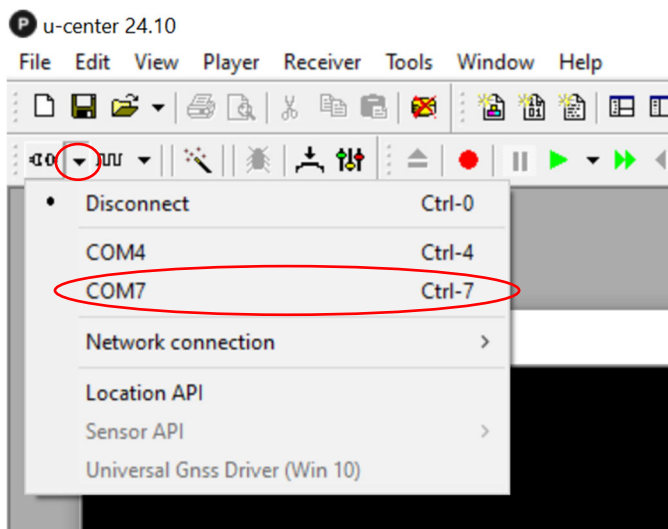
The screenshot shows the u-blox website's product page for u-center. The page includes the u-blox logo, navigation links for Products & Services, Solutions, Support, and Company, and a breadcrumb trail: Home → Product Selector → u-center. The main heading is "u-center" with the subtitle "GNSS evaluation software for Windows". Below this, there are "Highlights" and a list of features: Fully compatible with u-blox leading positioning technologies, Quick product configuration for key use cases, Flexible user interface with personalized workspaces, Powerful logging functionality for efficient development support, and Easy evaluation of u-blox GNSS services. A screenshot of the u-center software interface is shown next to a "P positioning" logo. Under the "Product variants" section, there are two rows: "u-center" with a description "Software designed for u-blox MB, M9, F9, and legacy GNSS products, and for other compatible systems." and a red "Download" button circled in red; and "u-center 2" with a description "Software for u-blox M10 and F10 products" and a red "Download" button, along with a "more info" link.

B. After installing the u-center, connect TDS-7020 to computer via USB.

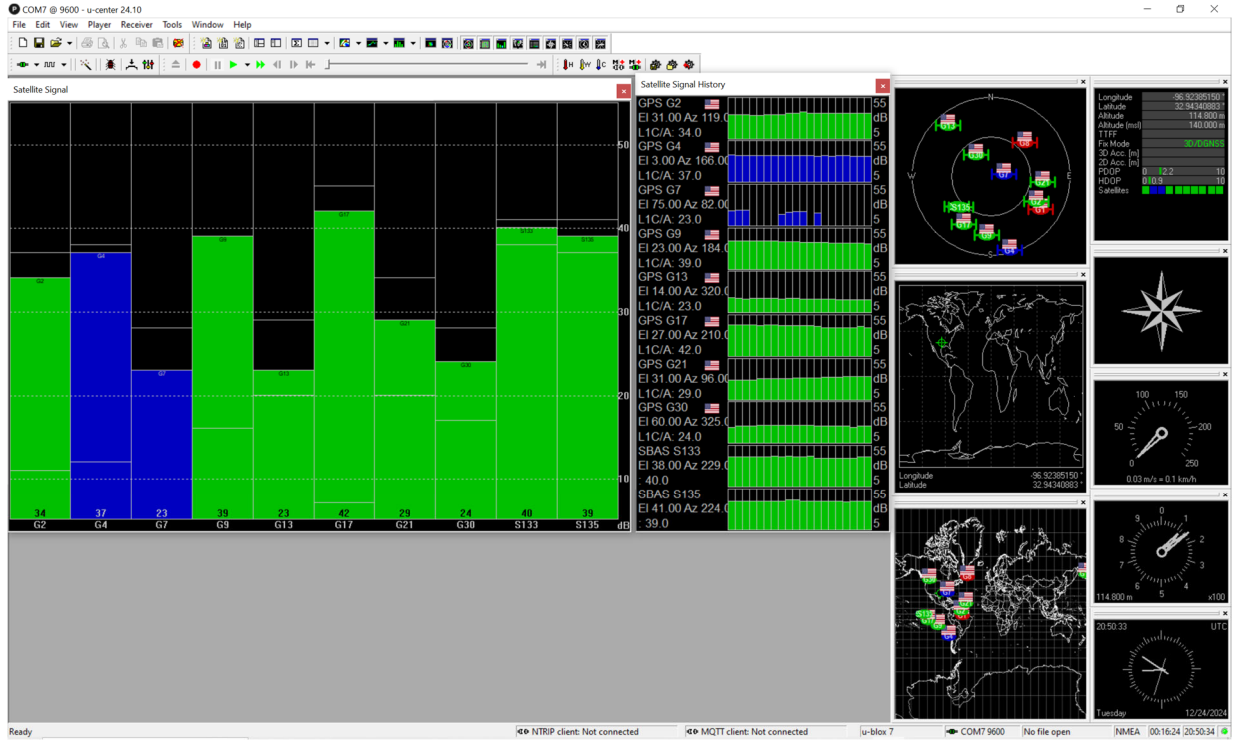
C. Open the Device Manager on your window and locate the “COM Port” for GPS’s USB under Ports (COM & LPT)



D. Open u-center and click ▼ to open the port connection and select the USB port for the GPS.

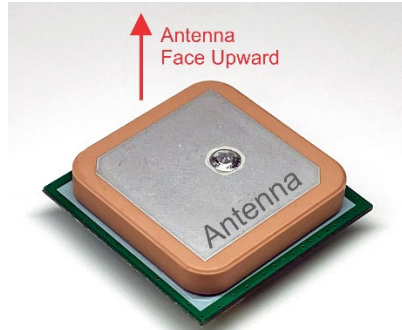


E. After the selecting the designated port, u-center will automatically run receptions from the GPS.



2.2 Antenna Position

TDS-GU7020N: Position the antenna *facing upward toward the sky* to ensure optimal signal reception.



**Position the antenna facing toward sky for optimal signal reception.*

TDS-GU7020W: Position the "GPS" lettering side *facing upward toward the sky* to ensure optimal signal reception.



3. FAQs

Q: Reception signal is weak; how do I increase it?

A: Make sure the antenna side is facing upward toward the open sky. In addition, placing the antenna near a CPU, Memory, or other devices may decrease the reception signal as the “noise” from these devices may interfere with the GPS antenna’s performance. Thus, placing the antenna away from these devices may help with the reception. Please contact us for details.

Q: Do you have USB driver available for windows?

A: Yes, it is available here: https://texasdatalinksolutions.com/wp-content/uploads/2024/12/ublox_R4_R6_L6_windows_3264_v2.0.0.0.zip

Q: How do I connect the GPS to a microcontroller?

A: You can use UART, TX/RX connections, with the TDS-GU7020N.

Q: How do I configure the module's output messages?

A: Use the UBX-CFG-MSG command to enable or disable NMEA or UBX protocol messages. Tools like u-center can simplify this process.

Q: How can I save custom settings so they persist after a power cycle?

A: After configuring the module, use the UBX-CFG-CFG command with the save option to store the settings in non-volatile memory.

Q: What is the typical cold start time-to-first-fix (TTFF)?

A: Cold start TTFF is typically **30 seconds** under clear sky conditions. Warm start and hot start times are much shorter.

Q: How do I configure the module for a specific application (e.g., pedestrian, automotive)?

A: Use the UBX-CFG-NAV5 message to set the **dynamic platform model**, which optimizes performance for various applications like pedestrian, stationary, or automotive.

4. Contact Information

Address: 1505 Luna Road, Suite 180, Carrollton, Texas 75006, USA

E-Mail: support@TexasDatalinkSolutions.com