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Connecting u-center with GY-NEO6MV2 GPS Module

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	About u-center This software was developed by u-blox AG, Switzerland. It demonstrates the powerful capabilities of the u-blox AG global newsjotan satellite system (GNSS) receiver tamly.	× Satelites
	Veriion: 20.10 (5a283d10M) Build: Oct 6 2020 >> OPT:00000001<<<	
Text Console	Contact: u-blox AG Curchentrase 68 CH-9800 Thatwi Switzerland Mitz //www.u-blox.com Support: <u>support@u-blox.com</u> Developed by: u-blox AG GNSS Software Riesarch and Development Team.	
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Introduction:

u-center is highly intuitive GNSS evaluation software that is easy to use, personalized, and compatible with leading u-blox technologies. In this guide we'll guide you on how to connect your GPS module with the provided software for troubleshooting process. With this software you can check the satellite position, signal strength, compass, altitude meter, speed meter & time or date.

Preparation:

- 1. GY-NEO6MV2 GPS Module
- 2. Arduino or Serial Converter / TTL
- 3. Jumper Wire
- 4. Arduino IDE V1.8.xx (Software https://www.arduino.cc/en/software)
- 5. u-center V21.xx (Software https://www.u-blox.com/en/product/u-center)

Objective:

To setup connection between GPS Module with u-center software using Arduino or Serial Converter / TTL. This Guide will split into 3 section A (if you using Arduino), B (if you using USB Serial Converter/ TTL) & C (Software setup).



A. Connecting GPS Module using Arduino

1. Open Arduino IDE and click on **New Sketch** button. After that, a new Arduino IDE tab will open.



2. Upload the recently opened Blank Code to Arduino board.



3. Connection setup:





B. Connecting GPS Module using USB Serial Converter/ TTL

1. For this guide we've use FT232RL FTDI USB Serial Converter. Change the Voltage Selection Mini Jumper from 3v to 5v.



2. Connection Setup:

FT232RL FTDI	GY-NEO6MV2
VCC	VCC
GND	GND
ТХ	RX
RX	ТХ





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C. Using u-center Program.

 After finish installing u-center, connect the Arduino or USB Serial Converter to PC. Open **Device Manager** and navigate to **Ports (COM & LPT)**. This will display your connected devices; PC will register connected devices with COMxx, each PC may vary. For example, our PC register with COM5 & COM6.



2. Open u-center program, click on **connect** & select **your device earlier**.





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3. Make sure Baud-Rate 9'600 selected.



4. Click on Binary Console & Text Console to view your GPS module data.



 Click on Windows > Tile Horizontally, to organize recently opened Binary Console & Text Console tab.





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D. UI Description



1. Toolbar / Menu Bar

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Color	Title	Description
Orange	Standard Menu Bar	Access all U-Center features
Purple	Standard Toolbar	For opening, saving & print current view
Blue	Views Toolbar	Toggle or Disable views windows
Green	Communication Toolbar	Select serial connection Port & Baud rate
Black	Log File Toolbar	Record & Replay Status Log
Red	Action Toolbar	Send Cold, Warm & Hot Start command to GPS

2. Status Bar

Ready	𝒶⊕ NTRIP client: Not conn	ected u-blox 6 00:21:45 UTC @
	Color	Description
	Red	Standard Status Bar / Status Display
	Yellow	NTRIP Client / Server Information
	Green	Receiver / GPS Model
	Purple	Port Information
	Orange	File
	Black	Protocol Information
	Blue	Operating Time & UTC / GPS Time
	Pink	Receiver Status



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3. View Windows



4. Console Windows

Console Windows will show all data acquired from GPS module, user can select the data representation whether in Packet, Binary or Text.

P Text Console	
07:55:04 \$GPGSV,2,2,08,21,11,205,36,22,44,247,18,26,28,020,,27,56,144,27*76 07:55:04 \$GPGLL,0517.07204,N,10029,67101,E,075504.00,A,A*63 07:55:05 \$GPVTG,07,505.00,A,0517.07199,N,10029.67078,E,0.080,,201221,,A*79 07:55:05 \$GPGSA,075505.00,0517.07199,N,10029.67078,E,1,03,4.51,-0.1,M,-14.6,M,,*5E 07:55:05 \$GPGSA,A,2,03,21,08,,,,4.62,4.51,1.00*0A 07:55:05 \$GPGSA,A,2,03,21,08,,,4.62,4.51,1.00*0A 07:55:05 \$GPGSA,2,1,08,01,05,226,20,03,39,279,37,04,20,333,21,08,37,186,40*72 07:55:05 \$GPGSV,2,1,08,01,05,36,22,44,247,19,26,28,020,,27,56,144,27*77 07:55:06 \$GPGSV,2,1,08,01,05,36,22,44,247,19,26,28,020,,27,56,144,27*77 07:55:06 \$GPGMC,075506.00,A,0517.07179,N,10029.67035,E,0.788,275.92,201221,,A*67 07:55:06 \$GPGRA,075506.00,0517.07179,N,10029.67033,E,1,03,4.51,0.0,M,-14.6,M,,*76 07:55:06 \$GPGSA,A,2,03,21,08,,,,.,462,4.51,1.00*0A 07:55:06 \$GPGSA,A,2,03,21,08,,,.,,462,4.51,1.00*0A 07:55:06 \$GPGSA,4,2,03,21,08,01,05,226,21,03,39,279,37,04,20,333,20,08,37,186,40*72 07:55:06 \$GPGSV,2,1,08,01,05,226,21,03,39,279,37,04,20,333,20,08,37,186,40*72 07:55:06 \$GPGSV,2,1,08,01,05,226,21,03,39,279,37,04,20,333,20,08,37,186,40*72 07:55:06 \$GPGSV,2,1,08,01,05,226,21,03,39,279,37,04,20,333,20,08,37,186,40*72 07:55:06 \$GPGSV,2,1,08,01,05,226,21,03,39,279,37,04,20,333,20,07,27,56,144,27*70 07:55:06 \$GPGSV,2,00,00,00,00,00,00,00,00,000 07:55:06 \$GPGSV,2,00,00,00,00,00,00,00,00,00,00,00,00,0	^
07:55:06 \$GPGSV,2,2,08,21,11,203,36,22,44,247,20,26,28,020,,27,56,144,27*7D 07:55:06 \$GPGLL,0517.07179,N,10029.67035,E,075506.00,A,A*6E	
	~
P Binary Console	
0010 2C 30 35 2C 32 32 36 2C 32 31 2C 30 33 2C 33 39 ,05,226,21,03,39 0020 2C 32 37 39 2C 33 37 2C 30 34 2C 32 30 2C 33 33 ,279,37,04,20,33 0030 33 2C 32 30 2C 30 38 2C 33 37 2C 31 38 36 2C 34 3,20,08,37,186,4 0040 30 2A 37 32 0D 0A 0*72	^
07:55:06 0000 24 47 50 47 53 56 2C 32 2C 32 2C 30 38 2C 32 31 \$GPGSV,2,2,08,21 0010 2C 31 31 2C 32 30 35 2C 33 36 2C 32 32 2C 34 34 ,11,205,36,22,44 0020 2C 32 34 37 2C 32 30 2C 32 36 2C 32 38 2C 30 32 ,247,20,26,28,02 0030 30 2C 2C 32 37 2C 35 36 2C 31 34 34 2C 32 37 2A 0,,27,56,144,27* 0040 37 44 0D 0A 7D	
07:55:06 0000 24 47 50 47 4C 4C 2C 30 35 31 37 2E 30 37 31 37 \$GPGLL,0517.0717 0010 39 2C 4E 2C 31 30 30 32 39 2E 36 37 30 33 35 2C 9,N,10029.67035, 0020 45 2C 30 37 35 35 30 36 2E 30 30 2C 41 2C 41 2A E,075506.00,A,A* 0030 36 45 0D 0A 6E	
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Important Notes & Tips

- 1) Never power up GY-NEO6MV2 GPS Module more than 5VDC. This module operating voltage range are from 3.3v to 5v. NEO6M runs at 9600 Baud rate.
- 2) Use the GPS on an open space to avoid interferences. Alternatively, user can upgrade the high-end Antenna for better signal quality & reception.
- 3) This module is equipped with small rechargeable battery; it is used for the secure storage of configuration data on a EEPROM. Normally if the module hasn't used for long period of time it will constantly discharge. If the battery completely depleted, GPS Module will take longer time to lock on due to recharging process (Normally known as GPS Cold Start).
- 4) Sample image below as on the Left when the GPS not connected and on the Right when GPS connection Fixed (The Blue bar turn to Green when connected / Fixed):

