User Guide: M.2 u-blox ZED-X20P

Product Overview

This product uses a standard footprint: M.2 2230 Key A+E.

What does this complex name mean? It means is compatible with M.2 connector both M.2 connector Key A, and M.2 connector Key E. These 2 connectors have been developed for USB peripherals. The 2230 just means the size of the board: 22mm x 30mm.

To integrate this product, you will have to add a standard connector to your board, together with a mounting hole in the correct location to fix the board with a screw or a clamp. A recommendation that we can give you is to not use cheap receptacles. Cheap receptacles (especially popular from unknown chinese suppliers) use very contaminated metals for the contacts, which leads to sporadic failures in the field and early death of the socket. We can recommend the top quality TE 2199230-8.

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Get Started

Connect to u-center 2

You can download u-center 2 [here].
u-center 2 has been tested on Windows 10 (64 bit) platform and Windows 11. Once the installation has completed successfully, you need to enter your u-blox support portal account credentials and log in with a browser. If you don't have a u-blox account click **Register***. Follow this quick guide to connect.*

1. Connect the GNSS antenna to your receiver. Make sure the antenna has a good view of the sky for testing functionality. Otherwise, you won't see the satellite view or receiver signal data.
2. Connect the receiver to your PC via the USB port labelled as **POWER+GPS**.
3. Click the Devices icon on the left menu bar, click **+** icon. Select the COM port of the device. Select **Autobauding** for automatic detection of the baud rate. Click **Add device**.
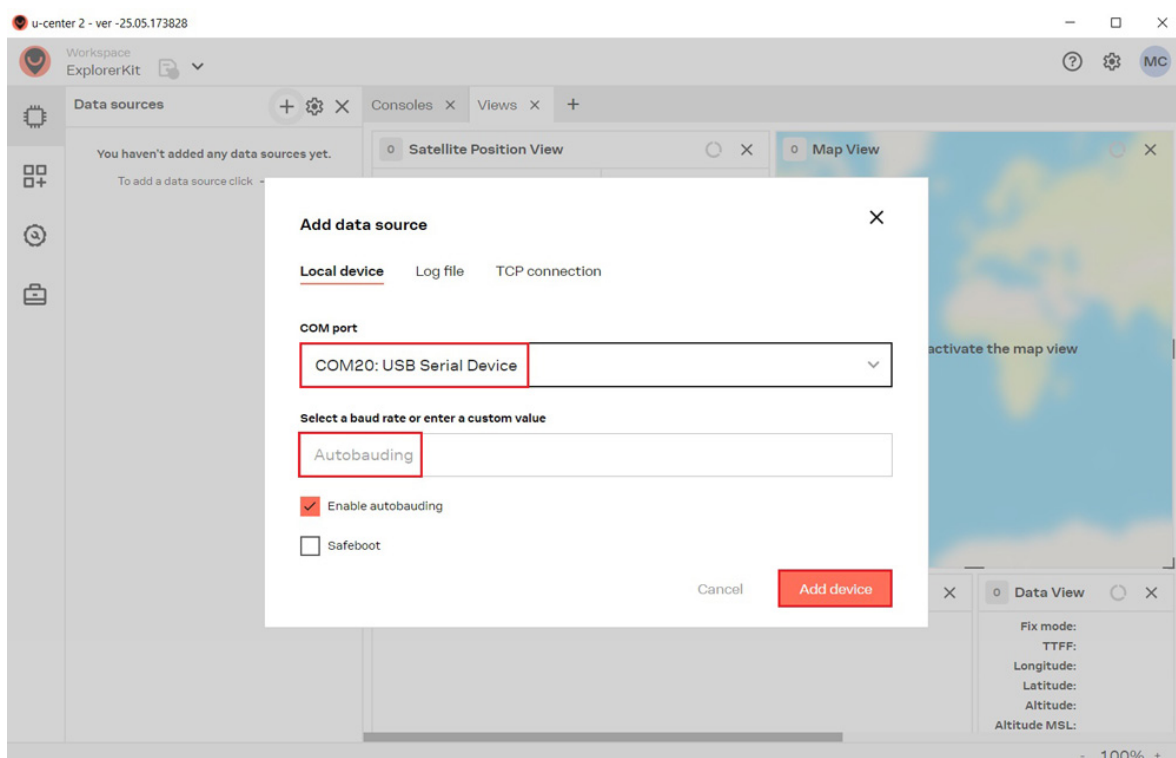
Get RTK corrections
To achieve centimeter- or millimeter-level accuracy with our GNSS receivers, RTK corrections are required.
NTRIP (Networked Transport of RTCM via Internet Protocol) is a protocol used for streaming GNSS data over the internet. It facilitates the transmission of real-time

correction data from a reference station to a rover or user device. If you don't have your own base station for corrections, you can find third party NTRIP corrections at RTK Correction Services in your Country to gain credential (server address, port, user and password) of NTRIP. You can connect to NTRIP using a PC, smartphone, or our Communication Plugins.
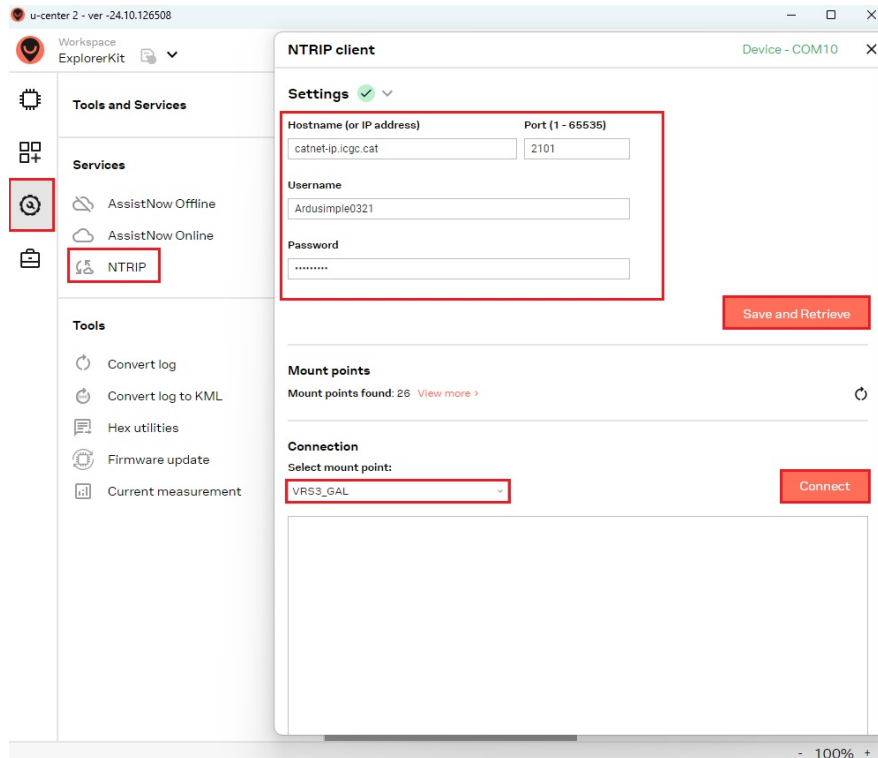
Before starting, make sure your receiver is configured as a Rover. Follow this hookup guide to receive corrections on your PC.

4. To connect to the caster for correction data, **UBX-NAV-PVT** or NMEA standard **GGA** messages must be enabled. You can skip this step if you load our Rover configuration file.

5. Go to **Tools and Service –> Services –> NTRIP.** Enter the hostname or IP address, port, username and password of the NTRIP caster.Click **Save and Retrieve** to get an up-to-date list of all available mount points.Select mount point then click **Connect**.

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If you are an advanced user seeking detailed information, please refer to the integration guide at u-blox ZED-X20P configuration page.

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Pinout

The following diagram shows the different pins available including its functionality.

Description	Function	Pin		Function	Description
			1		
	VIN_3V3	2	3		
	GND	4	5		
		6	7		
		8	9	GND	
		10	11		
		12	13		
		14	15	GND	
		16	17		
	GND	18	19		
Feature disabled	W_DISABLE	20	21	GND	
Feature disabled	RESET	22	23		
	VIN_3V3	24	25		
	GND	26	27	GND	
		28	29	GND	
		30	31		
		32	33		
	GND	34	35	GND	
	USB_DN	36	37	GND	
	USB_DP	38	39	VIN_3V3	
	GND	40	41	VIN_3V3	
		42	43	GND	
		44	45		
		46	47		
		48	49		
	GND	50	51		
	VIN_3V3	52			

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PCB Footprint

As there are so many softwares, we used an external company to develop footprint libraries for all possible software. The file is not ready yet. After we finish, you can download them from this link. If you face any problem just contact us.

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Integration considerations

The one peculiarity of a GPS system is that the RF signals it works with, are extremely weak (down to -170dBm!). For this reason, GPS systems are especially delicate and not immune against noise.

Between the GPS receiver and the GPS antenna, the GPS antenna is by far the one with the most critical installation. We want to give you some tips to make sure you integrated your ArduSimple receiver and it works at the first attempt:

- GPS receiver. This part of the system doesn't like airflow, vibration and sudden temperature changes. Just try to avoid that: pick the location in your vehicle with the lowest vibration, try to use it inside a box and far away from any fan, and don't place the board next to an electric engine that can go from cold to very warm in a matter of seconds.
- GPS antenna. For this item we have a separate guide we recommend you to follow and it's our GPS/GNSS Antenna Installation Guide.

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Configuration and Software Integration

With this product you have direct access to ZED-X20P functionalities, it will help you to read the extensive u-blox documentation. Nevertheless you can use our configuration page as a starting point for your project. And if you need help at any point just contact us, we always answer.