

SingularXYZ



P2 Series GNSS Receiver User Manual

V1.1

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This is the V1.0 (Jun, 2024) revision of the P2 GNSS Receiver User Guide. It cannot be copied or translated into any language without the written permission of SingularXYZ.

Technical Assistant

If you have any questions that can't be solved in this manual, please contact your local SingularXYZ distribution partner. Alternatively, request technical support from SingularXYZ Intelligent Technology Ltd.

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Chapter 1 Overview

1.1 About P2

Embedded with high precision GNSS module, P2 GNSS receiver can automatically track constellations including GPS, GLONASS, BDS, Galileo, QZSS and SBAS, combined with its anti-jamming and anti-spoofing algorithm, it can deliver centimeter-level RTK accuracy and sub-meter standalone accuracy via ultra-small size — it weights even lighter than a smart phone.it is suitable for personnel tracking, vehicle trajectory tracking, inspection and investigation industries.

1.2 Specification

Key Features:

- Portable/Wearable
- PocketSize: 122.5*62*22 mm (L*W*H)
- Lighter than smartphones: 146 grams
- Precision positioning: centimeter-level RTK accuracy and sub-meter standalone accuracy
- IP65 rated waterproof & dustproof
- Integrated Bluetooth module, support Ntrip Client mode
- Up to 15 hours operation

1.3 Packing List

Thanks for choosing SingularXYZ P2 GNSS receiver, please check your package for items listed below.

Table 1: Packing list of P1 GNSS receiver


No.	Name	Quantity	Figure
1	P 2 GNSS receiver	1	



Figure 1.1 P1 Connected on Centering Pole

This section focuses on the various parts of P2 and notes on their use.

2.1 Enviromental Requirements

P2 GNSS receiver is so rugged and designed compactly, but to keep the receiver with a reliable performance and have a lengthy life span, we strongly advise you to use P1 under circumstances below:

- Operating Temperature: -40°C ----- 85°C (-40°F --- 185°F)
- Storage Temperature: -40°C --- 85°C (-40°F --- 185°F)
- Humidity: 100% non-condensing.
- Avoid violent impact (designed to survive a 1.5m drop onto concrete) .
- Avoid Soaking in fluid.
- With a clear view of sky.

2.2 Front Panel

P2 GNSS Receiver front panel contains one power button and one OLED display.

- Power Button: long press to turn on/off the receiver, short press to check receiver Status
- OLED Display: You can check receiver status like power, communication, coordinate, satellite, mode, RMS, etc.
- Breathing LED Light: Frequently Shrinking while alarming.



2.3 Right Panel

The right housing of the receiver contains a Type C port for charging and data transfer.



2.4 Lowering House

A centering pole attachment port on the lowering House of the receiver.





3.1 Function Panel


This part is aimed to introduce the detailed function of P2 main screen.

● **Rover Mode**

In this screen basic information about device contained.

 : Number of Satellites.

 : Horizontal RMS

 : Positioning Status

 : Connecting Status

 : Battery Status

● **WIFI Mode**

SSID: SN number of the device , marking the WIFI name.

IP: Address of the device

In this mode, WIFI of device will be activated , you can connect to the device WIFI and input IP in your browser to enter the configure Page.

● **NTRIP INFO**

Port : port of the device

IP : ip of the device

Mounting Point : An entry for file system

Link Status : status of NTRIP

● **DEVICE INFO**

HW Ver : GNSS Board Firmware version

SW Ver : Firmware version

3.2 Surveying

For survey purpose, singularpad is a professional field survey software.

Ntrip Service mode

The most frequently used work mode of P2 is RTK based on CORS. We recommend using SingularPad software. Connecting to the Internet with your controller or cell phone, then follow the workflow below:

3.2.1 Device connection

Step1: **Main interface -> Device -> Communication -> Set Device manufacturer, Device Type, Connection Type.**

Step2: Click the **<Bluetooth logo>** to connect to P2. The Bluetooth device name is its **SN number** on the back of P2, find it on Bluetooth Device list, select and connect. We selected a P2 GNSS receiver named with number P2-1823P0009.



3.2.2 Phone Internet

The P2 GNSS receiver can receive correction data from continuously operating reference station via phone internet.

- Go to <Main interface> -> <Device> -> <Rover>.
- Click the <Datalink>, choose <Phone Internet> (getting internet from phone which P2 is connected) .
- Click <Connection Type> to set parameters,
- Back to <Rover Mode Settings> -> Click “Get” button to obtain mounting point -> select a suitable mounting point.
- Apply settings. When communication is built , you will see circling on left side of the top panel.



FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

3.3 How to contact us

If you have any question and cannot find the answer in this manual, please contact us from

SingularXYZ Website: www.singularxyz.com

Technical support email: support@singularxyz.com

Your feedback about this manual will help us improve it with future revisions