SingularXYZ®

Z1

GNSS RECEIVER

Accurate in Your Palm



ACCURATE IN PALM SIZE

Ultra-compact design of only Φ107 mm × 58.7 mm, Z1 GNSS receiver keeps its body as small as an apple without compromising on functionality, easily fit in your palm. Inside this ultra-small body, Z1 features full-constellation tracking and anti-interference capability, delivering centimeter-level positioning even under challenging environment.

FLEXIBLE WORK MODES

In order to cope with different using scenarios, Z1 supports comprehensive working modes - 8GB storage for static measurement, enhanced UHF modem for up to 15km internal radio mode for both RTK base & rover, and Bluetooth connectivity that allows PDA CORS mode to access the local CORS network.

VERSATILE FUNCTIONALITY

Aiming to provide users with first-class working experience, Z1 combines all common functionalities in rugged IP67 housing. Equipped with UHF/WiFi/Bluetooth/USB for flexible transmission, built-in IMU for 60° tilt measurement, NFC for simple connection, web UI for easy download and upgrade, Z1 can always meet your needs.

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SATELLITES TRACKING

Channels	1408
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GPS	L1C/A, L1C, L2C, L2P(Y), L5
GLONASS	G1, G2, G3
Galileo	E1, E5a, E5b, E6
QZSS	L1C/A, L1C, L2C, L5
NavIC	L5
SBAS	WAAS, EGNOS, SDCM, BDSBAS, GAGAN
L-Band	Support
Cold start	<30s
RTK Initialization Time	<5s(typical)
RTK initialization reliability	>99.9%
Re-acquisition	<1s

ACCURACY

Standalone	1.5m Horizontally 2.5m Vertically
DGPS	0.4m Horizontally 0.8m Vertically
Static Post-processing	2.5mm+0.5ppm Horizontally 5mm+0.5ppm Vertically
RTK	8mm+1ppm Horizontally 15mm+1ppm Vertically
PPP	5cm Horizontally 10cm Vertically
SBAS	< 1.0 m 3D RMS
Time Accuracy	20ns
Tilt Surveying	< ±2.5cm, within 60° Tilt Range

DATA FORMAT

Data Output Format	- NMEA-0183 - RINEX 3.02/3.04 - Binary Format *.xyz
Data Update Rate	1～50Hz selectable
Correction Data Format	- RTCM v3.3/3.2/3.1/3.0
Supported Protocols	Ntrip client, Ntrip Server, Ntrip Caster, TCP, UDP

COMMUNICATION

UHF Modem[1]	- Working range: Up to 15km with optimal conditions - Frequency range: 410-470MHz - Protocol (TX & RX): LoRa - Protocol (RX): TRIMATLK, SATEL, TRANSEOT, TRIMMARK3, etc. - Channel spacing: 25KHz - Transmit power: 0.5W~2W Selectable
Bluetooth	BT4.0 Dual Mode
NFC	Support NFC Connection
WiFi	802.11 a/b/g/n/ac
Interface	- 1 Type-C Interface for Data Transmission and Charging - 1 SMA Connector for UHF Antenna

USER INTERACTION

Front Panel	- 3 LED indicators indicating satellite tracking, differential data transmission and power - 1 button for power on/off
WebUI	- Accessible via Wi-Fi - Support configuration, status checking, data transfer, data storage and system upgrade

ELECTRICAL

Power Consumption	1.5 W[2]
Input Voltage	DC 5-15V
Battery	- 4200 mAh, over 15 Hours Working Time - Fast Charge of 3 Hours Charging Time

PHYSICAL

Size	Φ107 mm × 58.7 mm
Weight	547 g
Storage	8 GB[3]
Housing Material	Magnesium-aluminum Alloy

ENVIRONMENTAL

Working Temperature	-40 ℃ to + 65 ℃
Storage Temperature	-55 ℃ to + 85 ℃
Humidity	100% Non-condensing
Waterproof & Dustproof	IP67
Drop	Designed to Survive a 2m Drop onto Concrete

1. The enhanced UHF base is not compatible with normal UHF rovers on the market. For different user needs, SingularXYZ also provides normal UHF as an option compatible with UHF of other brands. Please clarify your requirements when placing the order.
2. The power consumption varies with the different work modes.
3. Storage can be expanded according to user demands.

All specifications are subject to change without notice.

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