Y1

GNSS RECEIVER

Powerful, Versatile, Compact, Cost-effective

FULL-CONSTELLATION TRACKING

Featuring 1598 channels for full constellation tracking, Y1 GNSS receiver can deliver reliable centimeter-level accuracy positioning. Benefiting from the strong signal tracking and advanced RTK algorithm, Y1 shows stable & high fixed rate even in harsh environments, such as city canyon, forest and other signal-limited scenarios.

ENHANCED COMMUNICATION

Integrated with enhanced UHF modem[1] and 4G modem inside, Y1 receiver provides fluent and stable data streams between rover and base in long working distance. The enhanced UHF can achieve up to 15km[2] working range with 2W power, no external radio is required, which is convenient for users to carry on field survey tasks.

VERSATILE FUNCTIONALITY

Aiming to provide users with first-class working experience, Y1 receiver combines all common functionalities in rugged IP67 housing. Equipped with 4G/UHF/WiFi/Bluetooth for flexible transmission, built-in IMU for 60° tilt measurement, NFC for simple connection, OLED display for status checking, web UI for easy configuration and upgrading, Y1 can always meet your needs.

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Y1 GNSS RECEIVER

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SIGNAL TRACKING

Channels	1598
GPS	L1C/A, L2P, L2C, L5, L1C
BDS	B1I, B2I, B3I, B1C, B2a, B2b
GLONASS	L1, L2, L3
Galileo	E1, E5a, E5b, E6, E5 AltBoc
QZSS	L1C, L2, L5, L1C/A
Navic	L5
SBAS	WAAS, EGNOS, SDCM, BDSBAS, GAGAN

ACCURACY

RTK reliability	> 99.99%
RTK initialization	< 10s
Hot start	< 15s
Cold start	< 50s
Re-acquisition time	< 1s
Static post-processing	± 2.5mm+0.5ppm Horizontally ± 5mm+0.5ppm Vertically
RTK	± 8mm+1ppm Horizontally ± 15mm+1ppm Vertically
RTD	± 0.5 m Horizontally ± 1.0m Vertically
SBAS	< 1.0 m 3D RMS
Tilt surveying	< 2.5cm, within 60° tilt

DATA FORMAT

Data recording formats	RINEX 2.X, 3.X, binary data
Correction data formats	RTCM 2.x, 3.x, CMR, CMR+[1]
Data output formats	NMEA-0183 messages, binary data
Data output rate	1Hz, 2Hz, 5Hz, 10Hz, 20Hz
Supported protocols	VRS, FKP, MAC, Ntrip

COMMUNICATION

BT	BT4.0
Wi-Fi	IEEE 802.11 a/b/g/n 2.4G 5G, support configuration & data download via web UI
4G	FDD-LTE B1/B3/B5/B7/B8 TDD-LTE B38/B39/B40/B41 TDSCDMA B34/B39 WCDMA B1/B2/B5/B8 GSM B2/B3/B5/B8 CDMA1x/CDMA2000 BC0/BC1
UHF modem[2]	- Frequency range: 410 – 470Mhz - Channel Spacing: 250 kHz - Transmit power: 0.5W/1W/2W selectable - Working range: 5km – 15km[3]
Interface	1 7-pin lemo port for RS232 transmission and power supply 1 SIM card slot for 4G 1 TNC connector for UHF antenna

ELECTRICAL

Power	6-28V DC
Battery	2×3300mAh, 3.6V, more than 12 hours working time
Power consumption	< 2.85 W[4]

PHYSICAL

Size	12.3 × 12.3 × 7.0cm
Weight	834 g, with batteries inside
Memory	8 GB
Display	0.93” OLED display
Button	2 buttons for power/enter and function
Indicator	2 LEDs indicating satellite tracking and correction data
Housing	Magnesium-aluminum alloy
Speaker	For voice broadcast of real-time status
NFC	NFC easy connection

ENVIRONMENTAL

Working temperature	-30℃ ~ +65℃
Storage temperature	-40℃ ~ +85℃
Waterproof & dustproof	IP67
Shock and Vibration	Designed to survive a 2m drop onto concrete
Humidity	100% no condensation

Note:

1. The CMR and CMR+ formats are only for GPS.
2. The enhanced UHF modem is not compatible with the normal UHF modem 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.
3. The maximum working range of the enhanced UHF modem is 15km in ideal environments.
4. The power consumption of Y1 varies with the different work modes.

All specifications are subject to change without notice.

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