

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 modem¹ 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 15km² 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.

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 °C ~ +65 °C |
| Storage temperature | -40 °C ~ +85 °C |
| 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.

©2023 SingularXYZ Intelligent Technology Ltd. All rights reserved. SingularXYZ® is the official trademark of SingularXYZ Intelligent Technology Ltd., registered in People's Republic of China, EU. All other trademarks are the property of their respective owners.