

SOFTWARE

FIELD SURVEYING SOFTWARE

- Compatible with most brands of NMEA devices
- Available Datums of most countries and regions
- Full work modes – PDA CORS, internal/external radio, GSM and etc.
- Various survey methods – topo survey, road stake, surface stake, CAD stake and etc.
- Support tilt initialization and measurement
- Abundant formats supported – TXT, DXF, CSV, HTML, KML, SHP and etc.
- SingularPad can be used with both GNSS receiver and total station.



GNSS POST-PROCESSING SOFTWARE

- Support both static and kinematic post-processing
- Support GPS/GLONASS/BeiDou/Galileo GNSS raw data processing
- Support raw data formats like binary, RINEX, RTCM32 and etc.
- Support multiple baseline processing and adjustment methods
- Support various output formats, including HTML, TXT, KML and etc.



X1 GNSS RECEIVER

Version 10-07-2024

SATELLITES TRACKING

Channels	1408
BDS	B1I, B2I, B3I, B1C, B2a, B2b ¹
GPS	L1 C/A, L1C, L2P, L2C, L5
GLONASS	G1, G2, G3
Galileo	E1, E5a, E5b
QZSS	L1, L2, L5
IRNSS	L5
SBAS	WAAS, EGNOS, SDCM, BDSBAS, GAGAN
L-Band	Upgradeable
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
SBAS	< 1.0 m 3D RMS
Time Accuracy	20ns
Tilt surveying	< ±2.5cm, within 60° tilt range

COMMUNICATION

4G modem (For X1 & X1 Pro only)	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	- Working range: 5km – 15km ³ , in ideal environments - Frequency range: 410-470MHz - Protocol: TRIMATLK, TRANSEOT, SATEL, 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 7-pin lemo port for RS232 transmission and power supply - 1 SIM card slot for 4G(For X1 & X1 Pro only) - 1 TNC connector for UHF antenna - 1 Type-C USB port for static data download & firmware upgrade

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 - CMR
Supported protocols	Ntrip client, Ntrip Server, Ntrip Caster, TCP

USER INTERACTION

Indicators	4 LEDs indicating battery/charging, satellite tracking, correction data transmission, and 4G status/static recording
Display(For X1 Pro only)	1.1" OLED color display
Button	2 buttons for power and function
WebUI	- Accessible via Wi-Fi - Support configuration, status checking, data transfer, data storage and system upgrade

ELECTRICAL

Power consumption	2.0 W ⁴
Input voltage	DC 9~28V
Battery	- 6700 mAh, over 20 hours working time - Fast charge of 3 hours charging time

PHYSICAL

Size	Φ133.5 mm × 67 mm
Weight	870 g
Storage	8 GB ⁵
Housing material	Magnesium-aluminum alloy
Speaker (optional)	For voice broadcast of real-time status

ENVIRONMENTAL

Working temperature	-40 ℃ to + 65 ℃
Storage temperature	-55 ℃ to + 85 ℃
Humidity	100% non-condensing
Waterproof & dustproof	IP68
Drop	Designed to survive a 2m drop onto concrete

- The BDS B2b signal is reserved for future upgrade.
- The enhanced UHF modem supports LoRa TX & RX as well as common UHF RX. To accommodate the need to use X1-Series as base for other common UHF rovers, SingularXYZ also offers regular UHF as an option. Please clarify your demands when placing the order.
- The maximum working range of the enhanced UHF modem is 15km in ideal environments.
- The power consumption of X1-series varies with the different work modes.
- Storage can be expanded to 32GB according to user demands.

All specifications are subject to change without notice.

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SingularXYZ Intelligent Technology Ltd.

📍 Floor 2, Building A, No. 599 Gaojing Road, 201702 Shanghai, China

☎ +86-21-60835489
☎ +86-21-60835497
✉ singularxyz@singularxyz.com
🌐 www.singularxyz.com

X1-SERIES GNSS RECEIVERS

PROFESSIONAL SURVEYING SOLUTIONS

Meet your needs at different levels



X1-SERIES GNSS RECEIVERS

Today, as more and more “full-featured” GNSS receivers appear on the market, how to make receivers smaller and more durable while maintaining their functionality has become a focus.

On the one hand, the X1 series has greatly optimized RTK performance and main functions in all aspects, while also making it smaller in size, reducing your burden and providing the smallest size at the same performance level.

On the other hand, in response to different levels of user needs, the SingularXYZ team launched multiple models of the X1 series to provide more choices for users.



X1-SERIES GNSS RECEIVERS

X1 Lite
GNSS Receivers

X1
GNSS Receivers

X1 Pro
GNSS Receivers



FULL-CONSTELLATION

1408 channels for synchronously track GPS, GLONASS, BeiDou, Galileo, QZSS, Navic and SBAS, delivering centimeter accuracy.

IMU

60° TILT IMU

The built-in IMU module supports up to 60° tilt surveying while keeping the accuracy within 2.5cm



PDA CORS

Connected via Bluetooth, X1 Lite can obtain CORS data through the PDA network to get a stable RTK fixed solution.

IP68

RUGGED HOUSING

IP68 waterproof and dustproof protection and 1.5m anti-drop design of X1-series, coping with harsh working environments.



WEB UI

Accessed via WiFi, users can easily configure work modes, download data, upgrade firmware and check device status via web UI.



UHF

ENHANCED UHF

The enhanced UHF can achieve up to 15km working range with 2W power, reducing your burden without the need of external radio.

NFC

NFC CONNECTION

Equipped with an NFC chip, users can easily connect the X1 Lite and the data collector with just one touch, without searching for pairing



PORTABLE SIZE

Compared with most GNSS receivers, X1 Lite shows small size and light weight for your convenience in the field.



6700MAH BATTERIES

Built-in battery with 6700mAh large capacity support more than 20hrs working time and less than 3 hrs charging time.



8GB STORAGE

8GB large internal memory guarantees your long-time GNSS raw data recording for static surveying.



INTERNAL 4G

With a plug-in SIM card, you can set up the X1 as an internal GSM base station or connect to CORS without a PDA network.

OLED

1.1" COLOR SCREEN

Clear & detailed device status checking and easy configuration via the HD color screen.

X1-SERIES GNSS RECEIVERS

Strong Performance in Different Environments



SC200 DATA COLLECTOR



Powered by Android 11 OS

IP67

IP67 & 1.5m anti-drop



4G/WiFi/Bluetooth communication



5.5" 5.5" sunlight-readable touch screen



7700mAh battery for 12h operating



4GB RAM + 64GB ROM + Extend TF