SV200 INS GNSS RECEIVERS

Version 24-06-2026

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
RTK	8mm+1ppm Horizontally 15mm+1ppm Vertically
PPP	5cm Horizontally 10cm Vertically
SBAS	< 1.0 m 3D RMS
Velocity accuracy	0.03 m/s
Heading Accuracy	(0.2/R)° [1]
Time Accuracy	20 ns

COMMUNICATION

4G modem	FDD-B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 TDD-LTE B38/B39/B40/B41 UMTS B1/B2/B4/B5/B6/B8/B19 GSM B2/B3/B5/B8
Bluetooth	Optional
Interface	- 3 6-pin connectors, including RS232, 1 PPS output, 1 EVENT input, 1 power supply, and 1 CAN interface - 1 SMA connector for primary GNSS antenna - 1 SMA connector for secondary GNSS antenna - 1 SMA connector for 4G antenna - 1 NANO SIM card slot - 1 TF card slot

PHYSICAL

Size	110.6×70×28.6 mm, including connectors
Weight	203.3 g
Housing material	Aluminum Alloy

INS PERFORMANCE

IMU Type	MEMS
Gyroscope	- Bias Repeatability: 0.4°/h - Range: ±350°/s - Bias Instability: 1.6°/h (XY), 1.3°/h (Z) - Angle Random Walk: 0.08°/√h (XY), 0.08°/√h (Z)
Accelerometer	- Range: ±8g - Bias Repeatability: 15 mg - Bias Instability: 16 μg - Velocity Random Walk: 35 mm/s/√h
IMU data update rate	100 Hz

DATA FORMAT

Data output format	- NMEA-0183 - Binary format *.xyz
Data update rate	1-200Hz selectable
Correction data format	RTCM v3.3/3.2/3.1/3.0

USER INTERACTION

LED indicators	4 LEDs indicating RTK status, power, satellite tracking and network

ELECTRICAL

Power consumption	<2.8W
Input voltage	9 - 28V DC
MTBF	> 20,000 hours
Electrical Protection	Reverse polarity protection, over-voltage protection, and under-voltage protection

DATA RECORDING

Storage	Supports custom expandable storage with TF card
Storage format	NMEA-0183, Binary format *.xyz

ENVIRONMENTAL

Working temperature	-40 ℃ to + 85 ℃
Storage temperature	-50 ℃ to + 85 ℃
Humidity	95% non-condensing
Drop	Designed to survive a 2m drop onto concrete
Vibration	MIL-STD-810

1. R (unit: meter) is the distance of the baseline, for SV200 INS model.

All specifications are subject to change without notice.

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SV200-INS

GNSS RECEIVERS

Seamless GNSS/INS Fusion for Reliable Navigation



INTRODUCTION

The SV200 INS is an entry-level GNSS receiver designed for autonomous vehicles, mobile mapping, and marine navigation applications. Integrated INS technology enhances navigation continuity by delivering continuous positioning, velocity, and attitude, even during temporary GNSS signal interruptions.



GNSS+INS Fusion

Featuring high-performance MEMS IMU and advanced tightly-coupled GNSS+INS fusion technology, SV200 INS delivers high-precision, low-drift positioning with stable and reliable performance in dynamic environments.



Uninterrupted Navigation Confidence

Advanced fusion of GNSS, INS, and WSI technologies enables stable, high-precision navigation outputs, ensuring reliable performance even when satellite signals are obstructed or unavailable.

Small Size, Big Capability

Compact and lightweight design for easy integration into space-constrained platforms while delivering reliable navigation performance.

Dual-Antenna Design

Dual GNSS antennas deliver accurate heading information for autonomous navigation applications.

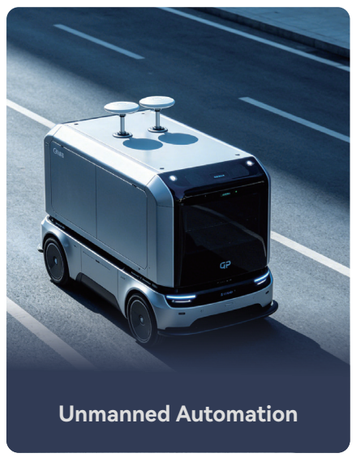
Built for Reliable Operation

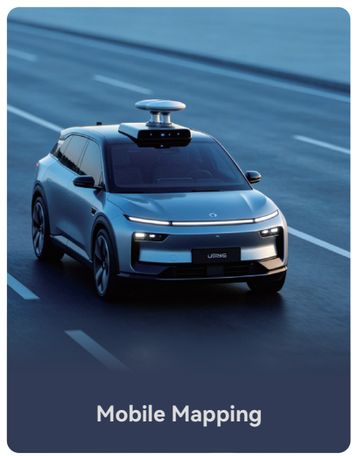
MTBF over 20,000 hours with integrated power protection for stable, long-term operation.

Multiple Interface Support

Rich communication interfaces including RS232, CAN, PPS, EVENT, and 4G enable flexible data transmission and seamless integration.

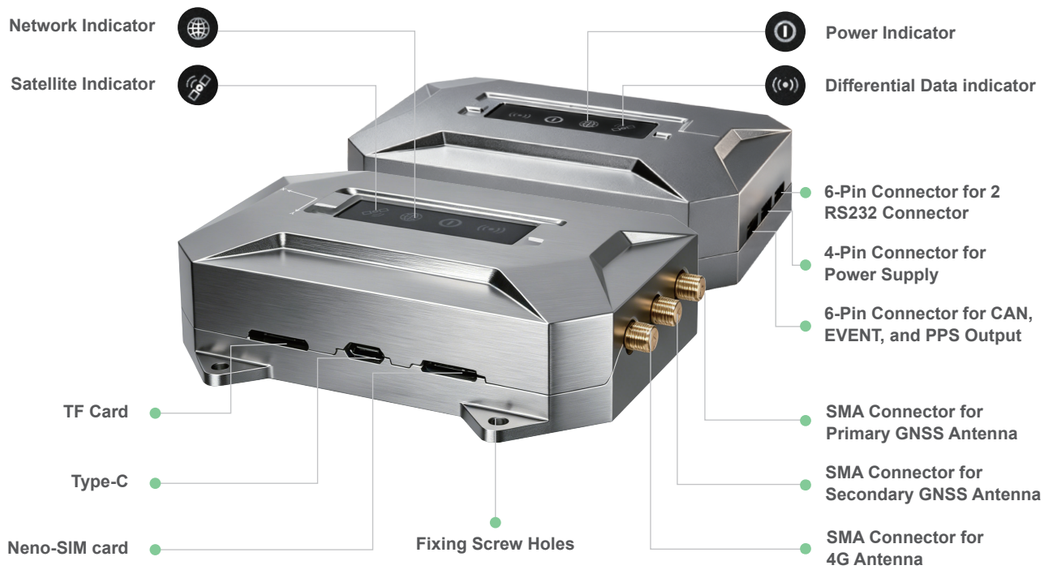
APPLICATIONS


Unmanned Automation


Mobile Mapping


Marine Applications

SV200 INS SERIES INTERFACES



PERFORMANCE DURING GNSS OUTAGES

GNSS Outages (s)	Position mode	Position Accuracy(m)RMS		Velocity Accuracy(m/s)RMS		Attitude Accuracy (°) RMS		
		Horizontal	Vertical	Horizontal	Vertical	Roll	Pitch	Yaw
0	RTK	0.008	0.015	0.015	0.010	0.010	0.010	0.020
10	DR	0.550	0.300	0.060	0.040	0.025	0.030	0.060
60	DR	2.100	0.800	0.110	0.050	0.055	0.065	0.120

GNSS ANTENNA OPTIONS



SA102
GNSS ANTENNA

- Full-constellation support
- IP67 waterproof & dustproof
- Compact and lightweight
- Stable performance for vehicle use



SA150
ANTI-VIBRATION ANTENNA

- Full-constellation support
- IP67 waterproof & dustproof
- Anti-vibration structure
- Reliable in dynamic environments