RinoNav

CRIUS

A RUGGED, RELIABLE & FIELD-READY GNSS RECEIVER

CRIUS is a portable receiver that integrates IMU and high-precision GNSS modules. Equipped with IMU tilt compensation technology, it enables fast and accurate measurement and layout even in complex environments. The device features a compact and lightweight design, making it ideal for fieldwork, and offers flexible solutions for various high-precision positioning scenarios.

Lightweight and Portable with Long Battery Life

Weighing only 380 grams and compact enough to fit in the palm of your hand, the device provides up to 12 hours of continuous operation in mobile station mode, ensuring reliable performance for all-day fieldwork.

60° Tilt Measurement Technology

Revolutionizing traditional workflows, this technology eliminates the need for precise leveling:
• No Need for Adjustment: Accurate measurements can be obtained even when the pole is not perfectly vertical.
• Precision Layout: Focuses on tip positioning, making it particularly effective for complex terrains and point marking.
• Adaptability: Easily handles challenging environments such as building corners and slopes, expanding the scope of surveying applications.
• Stable and Reliable: Measurements remain precise even with minor pole movement, as long as the tip remains stationary.

Multi-System and Multi-Band Support

With 1,408 GNSS tracking channels, the receiver simultaneously processes signals from GPS, BDS, GLONASS, Galileo, QZSS, NavIC, SBAS, and L-Band, ensuring high-precision and stable positioning for a wide range of applications.

Integrated Drop Protection and Efficient Operation

• Robust Construction: The body is designed to withstand 2-meter pole drops, ensuring durability in harsh conditions.
• Smart Notifications: Built-in voice prompts and multi-color indicator lights provide real-time feedback on operational status.
• High-Speed Connectivity: Equipped with a Type-C interface and Bluetooth 5.0, it supports fast data transfer and seamless connectivity.

Product Specification

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GNSS Performance

Satellites tracking	GPS	L1C/A/L1C/L2P (Y)/L2C/L5
	BDS	B1I/B2I/B3I/B1C/B2a/B2b
	GLONASS	L1/L2/L3
	GALILEO	E1/E5a/E5b/E6
	NavIC	L5
	QZSS	L1/L2/L5
	SBAS	WAAS, GAGAN, MSAS, EGNOS, SDCM,BDS
	L-Band	B2b PPP(Only for the Asian-Pacific region) [1]

Channels	1408
Signal reacquisition	< 1 second
Cold start	< 30 seconds
Warm start	< 20 seconds
Hot start	< 5 seconds
RTK signal initialization	< 5 seconds
Initialization reliability	> 99.9%
Update rate	20 Hz
High precision static	■ H: 2.5 mm + 0.1 ppm RMS ■ V: 3.5 mm + 0.4 ppm RMS
Static and Fast Static	■ H: 2.5 mm + 0.5 ppm RMS ■ V: 5 mm + 0.5 ppm RMS
RTK	■ H: 8 mm + 1 ppm RMS ■ V: 15 mm + 1 ppm RMS
Standard point positioning	■ H: 1.5 m RMS ■ V: 2.5 m RMS
Code differential	■ H: 0.4 m RMS ■ V: 0.8 m RMS
SBAS	■ H: 0.3 m RMS ■ V: 0.6 m RMS
Correction data	RTCM V3.X, RTCM2.X, CMR
Data output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary

Power Supply

Battery	Rechargeable Built-in Lithium-ion battery x 1 3.65V - 5800 mAh
Voltage	Type-C PD 12V/1.5 A
Working time	Up to 12 hours as rover
Charging time	Typically 1.5 hours

System

Operation system	Linux
Internal memory	8 GB
Bluetooth	BT 5.0 BR + EDR, BLE
Wi-Fi	802.11 b/g/n
Type-C port	Charge and data transmission
Web UI	View status, update firmware, set up working mode, download data, etc.
Intelligent voice	Broadcast working mode and status
Tilt sensor	MEMS (Fast initialization, dynamic tilt survey up to 60°)

Physical

Dimension	Φ98mm x 98mm x 47.2 mm
Weight	380 g
Operating temperature	-30°C ～ +60°C
Storage temperature	-40°C - +80°C
Water / dust proof	IP67
Shock	■ Withstand topple over from a 2 m survey pole onto hard surfaces ■ Survive a 1.2 m free drop
Vibration	Vibration resistant
Humidity	Up to 100%
Indicators	Satellites, datalink
Button	Power button, short press to voice broadcast working mode and status
Certificate	FCC, CE, NGS, IGS

1: It will be supported through future firmware update.