



Meridian



FixLand-Geodesy
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MBase High Performance Base Receiver

The MBase GNSS receiver is a fully integrated, professional-grade GNSS base station tailored to address 95% of surveyors' requirements for UHF GNSS base and rover operations. It also has built-in 4G connectivity, Bluetooth, Wi-Fi, and a 5W data transmission radio, enabling high-speed data transfer and User-friendly WebUI, which improves efficiency and convenience.

The MBase has a rugged design, making it suitable for outdoor and harsh environments. Equipped with a 5-watt radio module, it ensures reliable GNSS RTK coverage extending up to 35 kilometers under ideal conditions, makes MBase the perfect base station receiver.



Longer Working Distance

Equipped the MeridianLink protocol internal radio and upper radio antenna port, Mbase offers up to 35km working range and increases flexibility. By eliminating the need for an external radio, the MBase becomes more lightweight, less complex, and more portable, which can lead to increased efficiency and convenience in the field.



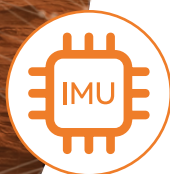
Highly Integrated Four-in-one Antenna

The highly integrated four-in-one antenna on the MBase provides several advantages, including saving space, improving performance and reliability, and reducing the failure rate during use, making MBASE more portable and easier to handle, increasing the efficiency and accuracy of measurements.



Lightweight, Compact & Rugged Design

MBase is an ideal solution for surveyors who require portability and durability in demanding field conditions and eliminates the need for heavy external radio and accessories, ensuring easy transport and quick setup. This combination of lightweight portability, compact form factor, and rugged durability makes it a versatile tool for professionals on the go.



Enhanced Tilt IMU

With 2cm accuracy and no limitation on tilt angle, it allows for quick and accurate measurements without leveling the pole. Concentrate on where the pole tip needs to go, which is especially useful during a stakeout.



Meridian MBase Specification

GNSS Signal	Channel	1408
	BDS	B1I, B2I, B3I, B1C, B2a, B2b*
	GPS	L1 C/A, L1C, L2P(Y), L2C, L5
	GLONASS	L1, L2, L3*
	GALILEO	E1, E5a, E5b, E6*
	QZSS	L1C/A, L1C, L2C, L5, L6*
	SBAS	L1, L5*
	NavIC(IRNS S)*	L5
	L-band	B2b-PPP*, E6B-HAS*
	Data Format	CMR, CMR+, RTCM2.X, RTCM3.X
Positioning Performance	Data Output	NMEA-0183, RINEX, TXT
	Data Updating Rate	Up to 20Hz
	Time to Recapture	<1s
	Cold Start	<40s
	Single Point Positioning (RMS)	Horizontal: 1.5m Vertical: 3.0
	DGPS (RMS)	Horizontal: 0.4m Vertical: m
	Real-Time Kinematic (RMS)	Horizontal: $\pm(8\text{mm}+1\text{ppm})$ 0.8
	Speed Accuracy (RMS)	Vertical $\pm(15\text{mm}+1\text{ppm})$ m
	Static Accuracy (RMS)	0.03m/s
	Time Accuracy (RMS)	Horizontal: $\pm(2.5\text{mm}+0.5\text{ppm})$
Communication	Speed Accuracy	Vertical $\pm(5\text{mm}+0.5\text{ppm})$
	Tilt Compensation Accuracy	20ns
	IMU Update Frequency	$\geq 0.03\text{m/s}$
	Bluetooth	$\leq 2\text{cm}$ (Tilt Angle $\leq 60^\circ$), no tilt angle limitation
	WiFi	200Hz
	Cellular	V5.2 Dual Mode, 2.4GHz@+5dBm
	Storage	IEEE 802.11b/g/n
	Internal Radio	LTE FDD: B1/3/5/7/8/20
	Specifications	LTE TDD: B38/40/41
	Operating Times	UMTS/HSPA+: B1/8
Battery	Charging	GSM/GPRS/EDGE: 900/1800 MHz
	Operating Temperature	32GB, Up to 64GB
	Storage Temperature	Transmitting power: 5W, 2W, 1W
	Anti-seismic	Frequency: 410~470MHz
	Dust & waterproof	Protocol: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT, SATEL, MeridianLink
	Display	Air Baud Rate: 9600, 19200, 11000
	LED Lamp	7.2V, 6600mAh lithium-ion Rechargeable Battery
	Physical button	RTK Rover: Up to 20 hours (Typical Power Consumption)
	I/O Interference	Static: Up to 35 hours (Typical Power Consumption)
	Dimensions	Suport USB PD 15V/2A (Supports Quick Charging Adapter)
Physical	Weight	-40°C~+85°C
		-55°C~+85°C
		2m Pole Drop Onto Concrete
		IP68
		0.96" OLED Display
		Signal, Power
		2
		1x USB type-C port; 1 x TNC antenna port; 1x SIM card slot;
		1 x 5 pin LEMO port
		133mm×133mm×84.5mm

*All specifications are subject to change without notice.

(1) Compliant, GLONASS L3, Galileo E6, Galileo E6 High Accuracy Service (HAS), BDS B2b and SBAS L5 will be provided through future firmware upgrade.

(2) Accuracy and reliability are determined under open sky, free of multipaths, optimal GNSS geometry and atmospheric condition. PPP accuracy is subject to the region, environment, and convergence time. High-precision static requires a minimum of 24 hours of long-term observation and precise ephemeris.

