



E500

Portable Tilt-featured RTK Receiver

E500 is a light-weight tilt-featured product by eSurvey GNSS. The durable IP67 design makes it possible to work in various of environments. Multi constellation and frequency tracking always gives a Fixed solution for your job. Thanks for the small-size design, E500 is suitable for different applications such as car and machine control.

Multi-constellation and multi-frequency

With 800 channels of GNSS tracking, E500 provides stable and reliable accuracy. All GNSS signals are coming with standard including GPS, BDS, GLONASS, GALILEO, QZSS, IRNSS and SBAS.

Intelligent Battery LED Indicators

Without powering on device, it is able to check the battery level on the battery LED indicators by simply clicking the power button.

MEMS Dynamic Tilt Survey

eSurvey's innovation tilt survey solution provides a surprising experience. The sensor is adapted to various of working environments and can be ready within 10 sec. Maximum 60 ° incline angle ensures a tilt-to-go survey without stopping your work.

L-band Atlas

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E500 is able to achieve centimeter accuracy without any base station.

aRTK

Powered by Atlas, the innovative aRTK technology operates on any Atlas-capable device by enabling it to maintain RTK-level accuracy, availability, and reliability when RTK corrections fail without additional cost.

Web UI

It is able to view position status, set up working mode, download data and update firmware from Web user interface with any phone, tablet or PC

Intelligent Voice

E500 will broadcast voice automatically to remind user the solution status is changed. It is also able to manually broadcast current working mode and solution status by short pressing power button.

Rugged Design

E500 main body is using magnesium materials to provide strong shock and vibration resistant characteristics. IP67 certification ensures operation in various of tough environments.

Product Specification

GNSS		Internal Radio	
Satellites Tracking	GPS: L1CA/L1P/L1C/L2P/L2C/L5 BDS: B1I/B2I/B3I/B1C/B2a/B2b/ ACEBOC GLONASS: G1/G2/G3, P1/P2 GALILEO: E1/E5a/E5b/E6/ALTBOC QZSS: L1CA/L1C/L2C/L5/LEX IRNSS: L5 SBAS ¹ : L1, L5 L-Band: Atlas H10/H30/Basic	Type	TX and RX
Channels	800	Frequency Range	410 ~ 470 MHz, 902.4 ~ 928 MHz
Signal Reacquisition	< 1 sec	Channel Spacing	12.5 KHz / 25 KHz
Cold Start	< 60 sec	Emitting Power	1 W
Warm Start	< 30 sec	Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions ²
Hot Start	< 10 sec	Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget
RTK Signal Initialization	< 8 sec	Internet Modem	
Initialization Reliability	> 99.9%	Support Band	Global GSM /WCDMA/LTE
Update Rate	10 Hz standard, up to 50 Hz	Communication	
Operation System	Linux	Bluetooth	BT 5.0 + EDR, BLE
Internal Memory	8 GB	WIFI	802.11 b/g/n
		SIM Card	SIM card
		5-pin Port	Connect to external radio and power, NMEA output
		Type-C Port	Charge and internal storage access
		TNC Port	Connect to internal radio antenna
		Web UI	View status, update firmware, set up working mode, download data
		Intelligent Voice	Broadcast working status
		NMEA Output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary
		Correction Data	CMR, CMR+, RTCM2, RTCM3, RTCM32
		MEMS	Fast initialization, dynamic tilt survey up to 60°
		Physical	
		Dimension	Φ148 mm x H74.5 mm
		Weight	1.06 kg
		Operating Temperature	-40°C ~ +65°C
		Storage Temperature	-45°C ~ +80°C
		Water/Dust Proof	IP67
		Shock	Survive a 2 m drop on concrete floor
		Vibration	Vibration resistant
		Humidity	Up to 100%
		Indicators	Battery
		Button	Power button
		Certificate	CE, FCC, NGS Calibration
Performance			
High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm		
Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm		
RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm		
Code Differential	H: 0.25 m V: 0.45 m		
SBAS	H: 0.3 m V: 0.6 m		
L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS		
Power Supply			
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V ~ 6800 mAh		
Voltage	9~28 VDC with over-voltage protection		
Working Time	Up to 12 hours		
Charging Time	Typically 4 hours		

1. SBAS supports WAAS, EGNOS, GAGAN, SDCM, MSAS.

2. Depend on the environment and electromagnetic interference.