e-survey

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	
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
Channels	800
Signal Reacquisition	< 1 sec
Cold Start	< 60 sec
Warm Start	< 30 sec
Hot Start	< 10 sec
RTK Signal Initialization	< 8 sec
Initialization Reliability	> 99.9%
Update Rate	10 Hz standard, up to 50 Hz
Operation System	Linux
Internal Memory	8 GB

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

Internal Radio	
Type	TX and RX
Frequency Range	410 ~ 470 MHz, 902.4 ~ 928 MHz
Channel Spacing	12.5 KHz / 25 KHz
Emitting Power	1 W
Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions[2]
Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget

Internet Modem	
Support Band	Global GSM /WCDMA/LTE

Communication	
Bluetooth	BT 5.0 + EDR, BLE
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℃ ~ +65℃
Storage Temperature	-45℃ ~ +80℃
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

1. SBAS supports WAAS, EGNOS, GAGAN, SDCM, MSAS.
2. Depend on the environment and electromagnetic interference.