

# E500

## PORTABLE TILT-FEATURED GNSS RECEIVER

The eSurvey E500 is manufactured for improved performance in complex GNSS conditions. The durable structural design makes it adapt to various working environments. A maximum 60° incline angle ensures a tilt-to-go survey without stopping your workflow.



GNSS Receiver

### **iF Design Award Product**

A global symbol of excellent design – especially with hosting. One of the most prestigious design awards worldwide.

### **Battery Indicator: An Intelligent Hint of Working Time**

Quickly check the remaining battery power in real-time and figure out the working time without data loss.

### **Integrated Tx/Rx UHF Modem**

The built-in transceiver radio modem, which is compatible with major radio protocols, allows the E500 to work as either a base or rover station.

### **Max 60° Tilt Survey: A Different Way of Working**

- Quickly measure accurate points while standing or walking without leveling the pole.
- Concentrate on where the pole tip needs to go, which is especially useful during a stakeout.
- Easily start a survey in environments that are hard to reach, such as building corners and slopes.
- No longer worry about the movement of the pole when measuring, provided that the pole tip is stationary.

### **Rugged Design: Better Resistance to Shock and Fall**

Use it for many years, for it is strongly made and capable of withstanding rough handling.

### **RTK Aid Function: Uninterrupted Work**

Work without interruption even when RTK corrections fail, powered by our RTK aid function.



Website



Social media

# Product Specification

## E500

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GNSS Performance		
Satellites tracking	GPS	L1CA, L2P(Y), L2C, L5
	BDS	B1I, B2I, B3I, B1C, B2a, B2b <sup>1</sup>
	GLONASS	L1, L2
	GALILEO	E1, E5a, E5b, E6 <sup>1</sup>
	QZSS	L1, L2, L5, L6 <sup>1</sup>
	SBAS	WAAS, GAGAN, MSAS, EGNOS, SDCM, BDS
	L-Band	B2b PPP (Only for the Asian-Pacific region)
Channels	1408	
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	<ul style="list-style-type: none"> <li>■ H: 2.5 mm + 0.1 ppm RMS</li> <li>■ V: 3.5 mm + 0.4 ppm RMS</li> </ul>	
Static and Fast Static	<ul style="list-style-type: none"> <li>■ H: 3 mm + 0.5 ppm RMS</li> <li>■ V: 5 mm + 0.5 ppm RMS</li> </ul>	
RTK	<ul style="list-style-type: none"> <li>■ H: 5 mm + 0.5 ppm RMS</li> <li>■ V: 10 mm + 0.5 ppm RMS</li> </ul>	
Standard point positioning	<ul style="list-style-type: none"> <li>■ H: 1.5 m RMS</li> <li>■ V: 2.5 m RMS</li> </ul>	
Code differential	<ul style="list-style-type: none"> <li>■ H: 0.4 m RMS</li> <li>■ V: 0.8 m RMS</li> </ul>	
SBAS	<ul style="list-style-type: none"> <li>■ H: 0.3 m RMS</li> <li>■ V: 0.6 m RMS</li> </ul>	
Correction data	RTCM V3.X, RTCM2, CMR	
Data output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	

Power Supply	
Battery	Rechargeable Built-in Lithium-ion battery x 2 4.2 V ~ 6800 mAh
Voltage	9 - 28V dc
Working time	12 hours
Charging time	Typically 4 hours

Internet Modem	
Supported band	Global 4G <ul style="list-style-type: none"> <li>■ LTE FDD: B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28</li> <li>■ LTE TDD: B38, B39, B40, B41</li> <li>■ UMTS: B1, B2, B4, B5, B6, B8, B19</li> <li>■ GSM: B2, B3, B5, B8</li> </ul>

System	
Operation system	Linux
Internal memory	8 GB
Bluetooth	BT5.0+EDR, BLE
Wi-Fi	802.11 a/b/g/n/ac
SIM card	✓
TNC	Connect internal radio with antenna
5-pin port	Connect to external radio and external power; NMEA output
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
MEMS	Fast initialization, dynamic tilt survey up to 60°

Physical	
Dimension	Φ148 mm x H74.5 mm
Weight	1000 g
Operating temperature	-30°C - +65°C
Storage temperature	-40°C - +80°C
Water / dust proof	IP67
Shock	<ul style="list-style-type: none"> <li>■ Withstand topple over from a 2 m survey pole onto hard surfaces</li> <li>■ Survive a 1.2 m free drop</li> </ul>
Vibration	Vibration resistant
Humidity	Up to 100%
Indicators	Battery
Button	Power button, short press to voice broadcast working mode and status
Certificate	CE, FCC, NGS, IGS

Internal Radio	
Type	TX and RX
Emitting Power	1 W
Operation Range	<ul style="list-style-type: none"> <li>■ 3 - 5 km typically</li> <li>■ 10 km with optimal conditions<sup>2</sup></li> </ul>
Frequency range	410 - 470 MHz, 902.4 - 928 MHz <sup>4</sup>
Channel spacing	6.25 KHz <sup>3</sup> / 12.5 KHz / 25 KHz / 280 KHz <sup>4</sup>
Protocol	Satel, PCC, TrimTalk, TrimMark III, TRANSEOT (PCC-GMSK), South, HiTarget, GEOTALK, GEOMK3, HZSZ, 900M Hopping <sup>4</sup>

1: It is not supported for now. It will be supported after firmware update in the future.

2: It varies with the obstacle and terrain.

3: It is only available for radio protocol "Satel", and the radio firmware is later than G001.02.27.

4: It is only available for certain radio module.



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