

# 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 and Status Indicator

The battery indicator provides real-time information about the remaining battery power. The status indicator on the button changes colors to show various working conditions.

### Integrated Tx/Rx UHF Modem

Upgrade the built-in transceiver radio modem for both the base and rover which is compatible with major radio protocols, allows E500 to provide more reliable and long range communication.

### 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

### PORTABLE TILT-FEATURED GNSS RECEIVER



GNSS Performance		
Satellites tracking	GPS	L1 C/A, L1C, L2P(Y), L2C, L5
	BDS	B1I, B2I, B3I, B1C, B2a, B2b
	GLONASS	L1, L2, L3
	GALILEO	E1, E5a, E5b, E6
	QZSS	L1, L2, L5
	NavIC	L5
	SBAS	WAAS, GAGAN, MSAS, EGNOS, SDCM, BDS
	L-Band	B2b PPP (Only for the Asian-Pacific region), HAS <sup>1</sup>
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	<ul style="list-style-type: none"> <li>H: 2 mm + 0.1 ppm RMS</li> <li>V: 3 mm + 0.4 ppm RMS</li> </ul>	
Static and Fast Static	<ul style="list-style-type: none"> <li>H: 2.5 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 + 1 ppm RMS</li> <li>V: 10 mm + 1 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.X, CMR	
Data output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	

Power Supply	
Battery	Rechargeable Built-in Lithium-ion battery x 2 3.6 V - 6800 mAh x 2
Voltage	9 - 28V dc
Working time	Up to 25 hours as rover
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>WCDMA: B1/B2/B4/B5/B6/B8/B19</li> <li>GSM: 850/900/1800/1900 MHz</li> </ul>

System	
Operation system	Linux
Internal memory	8 GB
Bluetooth	BT5.0+EDR, BLE
Wi-Fi	802.11 b/g/n
SIM card	✓
TNC	Connect internal radio with antenna
Type-C port	Charge, data transmission and connect to external radio.
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	φ148 mm x H74.5 mm
Weight	1000 g
Operating temperature	-30°C - +65°C
Storage temperature	-40°C - +80°C
Water / dust proof	IP68
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, working status
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	3 - 5 km typically
Frequency range	410 - 470 MHz, 902.4 - 928 MHz <sup>3</sup>
Channel spacing	6.25 KHz <sup>2</sup> / 12.5 KHz / 25 KHz / 280 KHz <sup>3</sup>
Protocol	TrimTalk 450s, PCC-GMSK, PCC-4FSK, Satel, Satel_ADL, HITARGET, TrimTalk, HZSZ South, TrimMark III, GEOTALK, GEOMARK, PCCFST, PCCFST_ADL, 900M Hopping <sup>3</sup>

- 1: It will be supported through future firmware update.
- 2: It is only available for radio protocol "Satel", and the radio firmware is later than G001.02.27.
- 3: It is only available for certain radio module