e-survey

eRTK20

VISUAL STAKEOUT GNSS RECEIVER



The eSurvey eRTK20 GNSS receiver combines GNSS, IMU, wide-angle dual cameras, and a compact design to dramatically improve surveying efficiency. The CAD AR visual stakeout can increase project stakeout efficiency by 40%. With inbuilt radio (Tx and Rx) and a 60° inclination IMU function, the eRTK20 is ideal for any survey scenario.

GNSS Receiver

CAD AR Stakeout: Improved Efficiency

CAD drawings are directly marked on the Surpad interface, so no need to choose each point individually. The CAD AR stakeout is a highly effective tool for optimizing stakeout operations and simplifying complex construction tasks in a variety of construction scenarios. The eRTK20 improves stakeout productivity by 40% by combining CAD base maps and augmented reality (AR) visualization.

Tx/Rx UHF Modem and 4G Modem

The built-in worldwide 4G Network and Tx/Rx UHF modem enable eRTK20 to transmit GNSS corrections seamlessly regardless of the operating environment. The eRTK20 is compatible with traditional major radio protocols.

Max 60° Tilt Survey: A Different Way of Working

- Accurately measure points while standing or walking without leveling the pole.
- Focus on where the pole tip should go, especially during stakeouts.
- Conveniently conduct surveys in difficult-to-reach areas such building corners and slopes.
- No need to worry about the movement of the pole when measuring, as long as it remains steady.

Multi-Constellation and Multi-Frequency

With 1408 GNSS tracking channels, it ensures robust and reliable accuracy while also being extremely resistant to multipath effects and interference. All GNSS signals come with the standard including GPS, BDS, GLONASS, Galileo, QZSS, NavIC, SBAS and L-Band.

Website & Social media

Product Specification

eRTK20

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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[1]
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		20Hz
High precision static		■ H: 2.5 mm + 0.1 ppm (RMS) ■ V: 3.5 mm + 0.4 ppm (RMS)
Static and fast static		■ H: 2.5 mm + 0.5 ppm (RMS) ■ V: 5 mm + 0.5 ppm (RMS)
RTK		■ H: 8 mm + 1 ppm (RMS) ■ V: 15 mm + 1 ppm (RMS)
Standard point positioning		■ H: 1.5 m (RMS) ■ V: 2.5 m (RMS)
Code differential		■ H: 0.4 m (RMS) ■ V: 0.8 m (RMS)
SBAS		■ H: 0.3 m (RMS) ■ V: 0.6 m (RMS)
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 1 3.6 V ~ 13400 mAh
Voltage	9 - 28V DC
Working time	11 hours as UHF base
Charging time	Typically 5 hours

Internet Modem	
Supported band	Global 4G LTE FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 LTE TDD: B38/B39/B40/B41 WCDMA: B1/B2/B4/B5/B6/B8/B19 GSM: 850/900/1800/1900 MHz

System	
Operation system	Linux
Internal memory	8 GB
Bluetooth	BT5.0+EDR, BLE
Wi-Fi	IEEE 802.11 a/b/g/n/ac
SIM card	✓
TNC	Connect internal radio with antenna
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
Tilt sensor	MEMS Fast initialization, dynamic tilt survey up to 60°

Physical	
Dimension	Φ136 mm x H74 mm
Weight	890 g
Operating temperature	-30℃ ~ +65℃
Storage temperature	-40℃ ~ +80℃
Water / dust proof	IP68
Shock	■ Withstand topple over from a 2 m survey pole onto hard surfaces ■ Survive a 1.2 m free drop
Vibration	Vibration resistant
Humidity	Up to 100%
Indicators	Satellites, datalink, battery, Bluetooth
Button	Power button, short press to voice broadcast working mode and status
Certificate	FCC, CE, KC, ANATEL

Internal Radio	
Type	TX and RX
Emitting power	1 W / 2 W
Operation range	3-5 km typically up to 15 km with optimal conditions[2]
Frequency range	410 - 470 MHz
Channel spacing	12.5 KHz / 25 KHz
Protocol	TRIMTALK, TRIMMK III , SOUTH, TRANSEOT, GEOTALK, GEOMK3, SATEL, HITARGET, HZSZ, PCCEOT, PCCEOT_SATEL, PCCFST, PCCFST_ADL, SATEL_ADL, FARLINK, elink_Ultra, geotalk_Ultra

Visual Configuration	
Pixel	Dual cameras with 2MP for the bottom and 5MP for the front
FOV	72° for the bottom and 90° for the front

1: It will be supported through future firmware update.
2: It varies with the obstacle, terrain and protocols.

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