e-survey

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2021

Product CATALOG

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e-survey
To be the leading Provider of High-Precision Professional,
Solution & Service in the Global Geospatial Industry
X.P. (Xinping) Guo
The Founder of UniStrong

e-survey

ABOUT
Unistrong Group

UniStrong, founded in 1994, is rooted in high precision products and services. With a series of key technologies and products that own completely independent intellectual property rights, UniStrong has realized the layout in whole industrial chain from chip board, terminal equipment, solutions to service platform. All these technologies have been widely used in surveying and mapping, precision agriculture, machine control, smart city, and other fields. Unistrong was listed in 2010 and employs over 2,000 employees worldwide.

About eSurvey

eSurvey is Unistrong’ s brand for overseas sales. The main products include board, surveying and mapping, the automatic navigation of agricultural machinery, machine control, rugged handheld, and various software. eSurvey was established in September 2018,esurvey has established a cooperative relationship with more than 50 countries.



Welcome
TO JOIN US

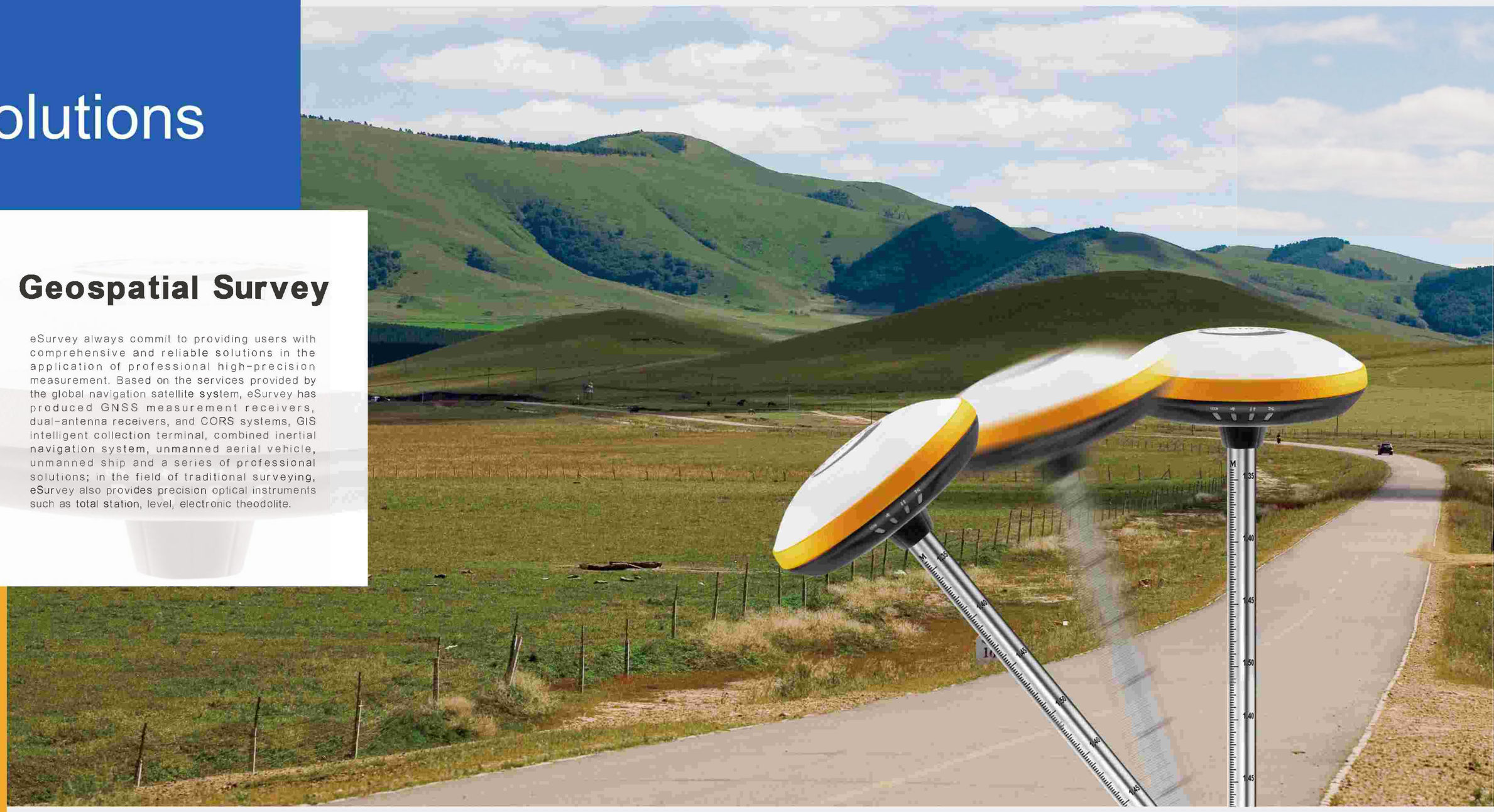
eSurvey is not only serving global customers with high precision products, but also trying to build up a team. If you are interested in joining eSurvey or desires to cooperate with us, please contact us by email at info@esurvey-gnss.com.

e-survey

Solutions

Geospatial Survey

eSurvey always commit to providing users with comprehensive and reliable solutions in the application of professional high-precision measurement. Based on the services provided by the global navigation satellite system, eSurvey has produced GNSS measurement receivers, dual-antenna receivers, and CORS systems, GIS intelligent collection terminal, combined inertial navigation system, unmanned aerial vehicle, unmanned ship and a series of professional solutions; in the field of traditional surveying, eSurvey also provides precision optical instruments such as total station, level, electronic theodolite.



Solutions

Precision Agriculture

Agricultural Automated Steering System generally refers to precision positioning system, auto-steering system, application control system and terminals. eSurvey independently research & develop all the fundamental products, including chips, boards, antennas, portable and fixed base stations, display terminal and ECU. eSurvey products focus on high precision GNSS positioning system for ground agriculture and have a solid reputation within the industry, keeping the vehicle on path within centimeter level which means the growers could complete more of their work in less time. The more precise they are on each pass, the closer they come to eliminate overlap. Improve your bottom line by reducing input, labor, fuel, and time on the equipment.



e-survey

Solutions

Machine Control

The intelligent machine control solution relies on the core technologies of high-precision satellite positioning, inertial navigation, mechanical control, Internet and other fields. Through three-dimensional design data model, construction site positioning and data collecting system, numerical control system, and two-way communication technology, it can guide and control the single or multiple heavy equipment, monitor the construction progress in real time. Finally, we can achieve the goals of improving construction efficiency, reducing labor and material costs, improving work accuracy, and ensuring operation safety.

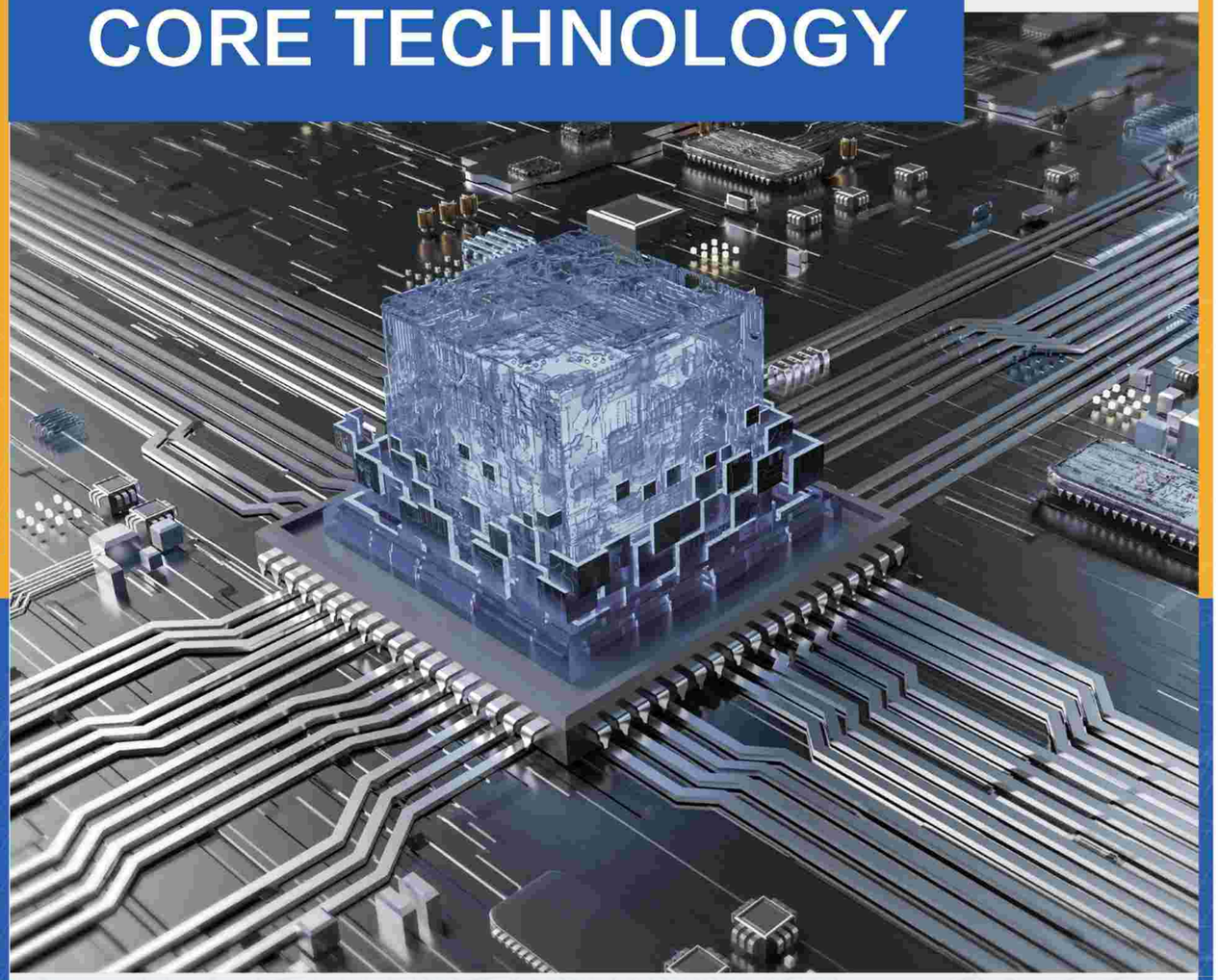


Solutions

Rugged

In the fields of logistics express and manufacturing, retail, medical treatment and utility service, handhold smart controller are always needed. Due to the bad operating environment and strict requirements, ordinary smart controller can not meet the requests of most users. Therefore, eSurvey' s rugged handhold controller is a great solution. It' s waterproof, dustproof, and drop-proof, also has high stability and long battery life, and also supports a variety of sensors to meet different industrial applications.

CORE TECHNOLOGY



Technology is eSurvey’ s core. eSurvey is an international company, it has nearly 400 professional R&D engineers around the world. eSurvey has strong production and R&D capabilities in algorithms, chips, circuit boards, and antennas.

ATLAS

SCALABLE, GLOBAL GNSS CORRECTION SERVICE

Atlas is an innovative, industry-leading GNSS-based global L-band correction service, providing robust performance at competitive market prices. Atlas is a flexible and scalable service, delivering its correction signals via L-band satellites at accuracies ranging from meter to sub-decimeter levels. Leveraging more than 200 reference stations worldwide and with L-band satellites distributing Atlas corrections, the entire globe is virtually covered. The Atlas GNSS global correction service provides correction data for GPS, GLONASS, BeiDou, and Galileo constellations.

aRTK

SATELLITE-BASED RTK AUGMENTATION

aRTK is an innovative feature available in eSurvey receiver products that greatly mitigates the impact of land-based communication instability. Powered by Hemisphere’ s Atlas L-band service, aRTK provides an additional layer of communication redundancy to RTK users, assuring that productivity is not impacted by intermittent data connectivity.

Athena™

ATHENA

SATELLITE-BASED RTK AUGMENTATION

Athena RTK (real-time kinematic) is next-generation RTK engine redesigned to support all available constellations and take advantage of the new signals available to the GNSS community. This future-proof foundation enables Athena to have market-defining performance, flexibility, and reliability. Athena was designed to seamlessly integrate into existing product portfolios, supporting all major industry correction formats and standards.

aRTK™

RTK FUSION

RTK Fusion is the 4th generation calibration-free tilt measurement technology. In the field of GNSS tilt measurement algorithms, the first generation of tilt measurement used a multi-point common sphere algorithm to achieve tilt measurement on software, which is cumbersome and low in accuracy; the second generation of tilt measurement uses e-bubble plus software algorithm fusion, calculation efficiency of both them is not high; the third-generation tilt measurement uses a magnetic sensor, which takes longer time to calibrate and is susceptible to magnetic interference; the fourth-generation eSurvey tilt measurement algorithm integrates IMU, gyroscope, thermometer and other sensors without calibration , real-time calculation results can be used for data collection and stakeout, this greatly enhance work efficiency.



Lyra II

DIGITAL ASIC TECHNOLOGY

The Lyra™ II digital ASIC incorporates a scalable design architecture to provide users with the most flexible and scalable GNSS positioning platform in the industry. Lyra II also delivers access to all the modern GNSS signals with very low power consumption making it an ideal option for integration into various mobile and unmanned applications. Its dedicated acquisition engine searches multi-hypothesis in parallel for better Time-To-First-Fix (TTFF) in cold-start and signal-degraded environments.



Aquila

WIDEBAND RF ASIC TECHNOLOGY

New Aquila™ wideband RF ASIC can receive multiple frequency bands and use integrated software to best handle incoming signals. Using flexibility to support different bandwidths, Aquila is positioned on the cutting-edge of signal acquisition to easily integrate new and future signals from each constellation.

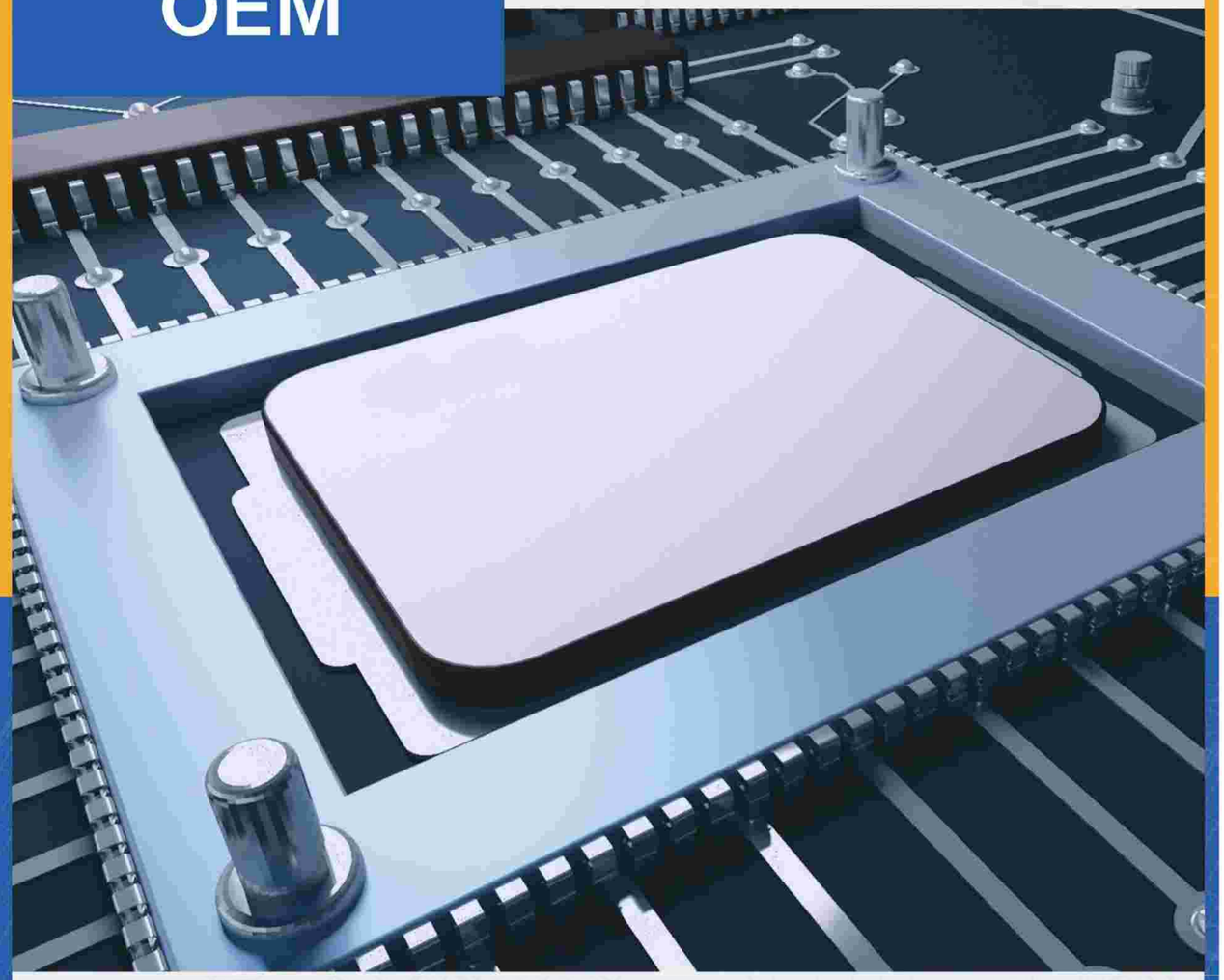
Cygnus™

Cygnus

INTERFERENCE MITIGATION TECHNOLOGY

The all-new Cygnus™ interference mitigation technology incorporates the latest digital filtering technology and an integrated Fast Fourier Transforms (FFT) analyzer for real-time spectrum analysis and interference detection. The Cygnus architecture deploys precisely targeted technology in-band filtering measures with minimal impact or disruption to available GNSS constellation signals resulting in higher satellite availability in environments where band interference is present. Cygnus also uses high-resolution Analog to Digital Converters (ADC) for superior anti-jamming performance.

OEM



Based on the latest "Lyra II" baseband chip and "Aquila" Broadband RF Chip, The Phantom series high-precision positioning boards and Vega series high-precision direction finding boards were design and developed. The performance of the full series of board products is fully upgraded, the number of channels is up to 1100 channels, and supports full constellation and all frequencies; built-in Athena RTK engine, Cygnus anti-jamming technology, on-board IMU, greatly improving the availability and reliability ofthe receiver in complex scenarios Sex. Supports Atlas satellite-based differential services, and high-precision location information can be easily obtained from any location in the world. Different packages and sizes can meet various integration requirements. It can be used in various high-precision application fields such as surveying and mapping, precision agriculture, machinery control, marine, automotive.

COMPARISON

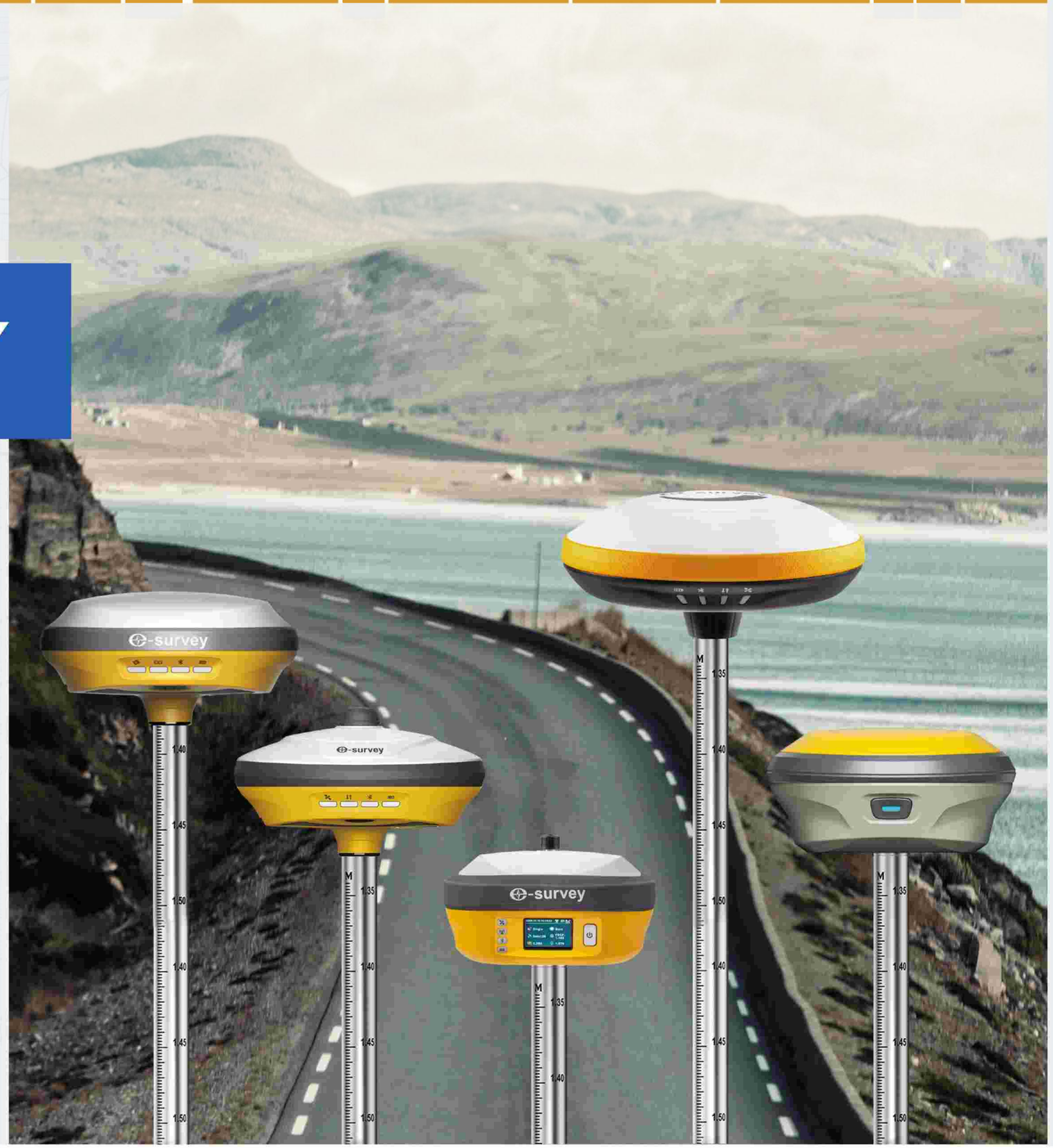


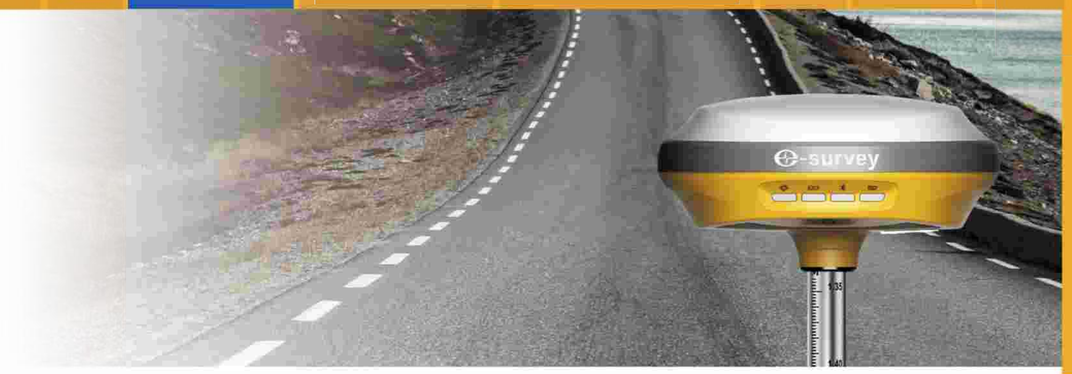



Model Name		P20	P40	P50	V28
Channels		800	800	800	1100
PinNo.		20 (2 x 10)	40 (24+16)	50 (2 x 25)	28(2x14)
Antenna Connector Type		MCX	MMCX	Surface mount	MMCX
GPS Sensitivity		-142 dBm		-142 dBm	-142 dBm
Update Rate		5Hz, up to 50Hz		Up to 50Hz	Up to 20Hz
Signals Tracking	GPS	L1CA, L1C, L1P, L2C, L2P, L5		L1CA, L1C, L1P, L2C, L2P, L5	L1CA, L1C, L1P, L2C, L2P, L5
	GLONASS	G1, G2, G3		G1, G2	G1, G2, G3
	BEIDOU	B1I, B2I, B3I, B1C, B2a, B2b, ACEBOC		B1I, B2I, B3I, B1C, B2a, B2b, ACEBOC	B1I, B2I, B3I, B1C, B2a, B2b, ACEBOC
	GALILEO	E1, E5a, E5b, ALTBOC, E6		E1, E5a, E5b, ALTBOC, E6	E1, E5a, E5b, ALTBOC, E6
	QZSS	L1C/A, L1C, L2C, L5, LEX		L1C/A, L1C, L2C, L5	L1C/A, L1C, L2C, L5, LEX
	L-BAND	ATLAS		ATLAS	ATLAS
	SBAS	YES		YES	YES
	IRNSS	YES		YES	YES
Position Accuracy(67%)	RTK	H: 8 mm + 1 ppm, V: 15 mm + 1 ppm		H: 8 mm + 1 ppm, V: 15 mm + 2 ppm	H: 8 mm + 1 ppm, V: 15 mm + 2 ppm
	DGPS	H: 0.3 m, V: 0.6 m		H: 0.3 m, V: 0.6 m	H: 0.3 m, V: 0.6 m
	Auto	H: 1.2 m, V: 2.5 m		H: 1.2 m, V: 2.5 m	H: 1.2 m, V: 2.5 m
Heading (RMS)		None		None	0.16° rms@0.5 m antenna separation 0.08° rms@1.0m antenna separation 0.04° rms@2.0m antenna separation 0.02° rms@5.0m antenna separation
Pitch/Roll (RMS)		None		None	0.5°
Heave (RMS)		None		None	30 cm rms (DGNSS) , 5 cm rms (RTK)
1PPS Accuracy		10ns		10ns	10ns
Dimension (L x W x H)		7.11 * 4.04 * 0.98 cm	10 * 6 * 1 cm	5 * 4 * 0.375 cm	7.1 * 4.5 * 1 cm
Weight		22g	44g	15 g	24 g
Communication	Correction I/O Protocol	ROX, RTCM v2.3, v3.2, CMR, CMR+		ROX, RTCM v2.3, v3.2, CMR,CMR+	ROX, RTCM v2.3, v3.2, CMR,CMR+
	Data I/O Protocol	NMEA0183, Crescent binary	NMEA 0183, NMEA2000, Crescent binary	NMEA 0183, NMEA2000, Crescent binary	NMEA 0183, Crescent binary
	Event Marker Input	Yes		Yes	Yes
Power	Power Consumption	1.8W	2W	1.8W	2.5W

LAND SURVEY

eSurvey GNSS is dedicated to provide customers with survey solutions to meet the needs of different applications. eSurvey has advanced R&D technology including core algorithms, OEM board, radio module, integrated antenna and manufacturing technique to provide professional services. By selecting eSurvey GNSS, you will work more efficiently and accurately.





E100



NETWORK RTK RECEIVER

E100is a network receiver 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, E100 is suitable for different applications such as car and machine control.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With 800 channels of GNSS tracking, E100 provides stable and reliable accuracy. All GNSS signals are coming with standard including GPS, BDS, GLONASS, GALILEO, QZSS and SBAS.

ATHENA™ & LEGACY™ DUAL GNSS ENGINE

Dual GNSS positioning engine supplies normal, survey and strict solution mode, which could allow user to easily find balance between fixed rate and precision performance and quickly select the best method for different surveying environment.

MEMS DYNAMIC TILT SURVEY

eSurvey' s innovation tiit 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 yourwork.

L-BANDATLAS

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E100 can 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.

WEBUI

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

INTELLIGENT VOICE

E100 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.

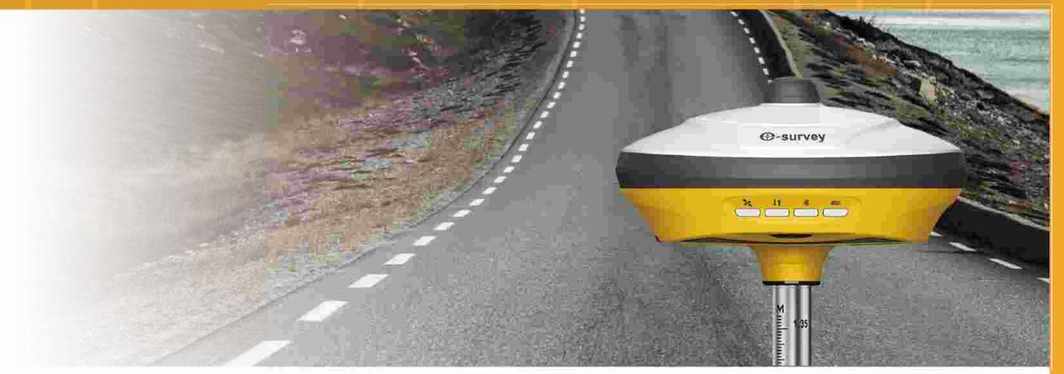
RUGGED DESIGN

E100 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		Channels	800	Internal Memory	8 GB (32GB Customizable)	SBAS	H:0.3 m V:0.6m
Satellites Tracking	GPS: L1CA/L1P/L1C/L2P/L2C/L5 BDS: B1I/B2I/B3I/B1C/B2a/B2b/ ACEBOC GLONASS: G1/G2/G3, P1/P2 GALILEO: E_1/E5a/E5b/E6/AL TBOC QZSS: L_1CA/L_1C/L2C/L5/LEX IRNSS: L5 SBAS1: L1, L5 L-Band: Atlas H10/H30/Basic	Signal Reacquisition	< 1 sec			L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
		Cold Start	< 60 sec	Performance			
		Warm Start	<30sec	High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm		
		Hot Start	< 10 sec			Internet Modem	
		RTK Signal Initialization	<8 sec	Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5mm +0.4ppm	Support Band	Global GSM /WCDMA/LTE
		Initialization Reliability	> 99 .9%				
		Update Rate	10 Hz standard, up to 50 Hz	RTK	H: 8 mm + 1 ppm V:15 mm + 1 ppm		
		Operation System	Linux	Code Differential	H: 0.25 m V: 0.45 m		

Power Supply		5-pin Port	Connect to external radio and power NMEA data output	Correction Data	CMR, CMR+, RTCM2, RTCM3,RTCM 32	Shock	Survivea 2 m drop on concrete floor
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V ~ 6800 mAh	Type-C Port	Charge and data transmission	MEMS	Fast initialization, dynamic tilt survey up to 60°	Vibration	Vibration resistant
Voltage	9-28 VD, with over-voltage protection					Humidity	Up to 100%
Working Time	RTK: Up to 14 hours Static: Up to 15 hours	WebUI	View status, update firmware, set up working mode, downloaddata	Physical		Indicators	Satellites, datalink, battery, Bluetooth
ChargingTime	Typically4 hours			Dimension	Φ148 mm x H60 mm	Button	Power button, short press to voice broadcast status
Communication		Intelligent Voice	Broadcast workingstatus	Weight	900 ± 5 g		
Bluetooth	BT 50, BLE	NMEA Output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	Operating Temperature	-40℃ ~ +65℃	Certificate	CE, FCC, NGS Calibration
WIFI	802.11 b/g/n(HT20)/ac			Storage Temperature	-45℃ ~+80℃		
SIM Card	Support			Water/Dust Proof	IP67		



E200



DESIGNED FOR ROVER

E200 is a rover receiver 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. The Global 4G Network and RX radio makes it suitable as a rover station.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With 800 channels of GNSS tracking, E200 provides stable and reliable accuracy. All GNSS signals are coming with standard including GPS, BDS, GLONASS, GALILEO, QZSS and SBAS.

ATHENA™ & LEGACY™ DUAL GNSS ENGINE

Dual GNSS positioning engine supplies normal, survey and strict solution mode, which could allow user to easily find balance between fixed rate and precision performance and quickly select the best method for different surveying environment.

MEMS DYNAMIC TILT SURVEY

eSurvey' s innovation tiit 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 yourwork.

L-BAND ATLAS

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E200 can 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.

WEBUI

it can view position status, set up working mode, download data and update firmware from Web user interface with any phone, tablet or PC.

INTELLIGENT VOICE

E200 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

E200 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		Channels	800	Internal Memory	8GB	SBAS	H: 0.3 m V: 0.6 m
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 SBAS1: L1, L5 L-Band: Atlas H10/H30/Basic	Signal Reacquisition	<1s ec			L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
		Cold Start	< 60 sec	Performance			
		Warm Start	< 30 sec	High Precision Static	H: 2 mm + 0.1 ppm V:3 mm +0.4 ppm		
		Hot Start	< 10 sec			Internet Modem	
		RTK Signal Initialization	< 8 sec	Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm	Support Band	Global GSM /WCDMA/LTE
		Initialization Reliability	>99.9%				
		Update Rate	10 Hz standard, up to 50 Hz	RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm		
		Operation System	Linux	Code Differential	H: 0.25 m V: 0.45 m		

Power Supply		Communication		NMEA Output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	Shock	Survive a 2 m drop on concrete floor
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V ~ 6800 mAh	Bluetooth	BT 5.0, BLE	Correction Data	CMR, CMR+, RTCM2, RTCM3, RTCM32	Vibration	Vibration resistant
Voltage	9-28 VD, with over-voltage protection	WIFI	802.11 b/g/n			Humidity	Up to 100%
Working Time	RTK: 10 hours Static: 14 hours	SIM Card	Support	MEMS	Fast initialization, dynamic tilt survey up to 60°	Indicators	Satellites, datalink, battery, Bluetooth
Charging Time	Typically 4 hours	5-pin Port	Connect to external radio and power NMEA data output	Physical		Button	Power button, short press to voice broadcast status
Internal Radio		Type-C Por	Charge and data transmission	Dimension	Φ152 mm x H92 mm		
Type	RX Only	Web UI	View status, update firmware, set up working mode, download data	Operating Temperature	-40℃ ~ +65℃	Certificate	CE, FCC, NGS Calibration
Frequency Range	410 ~ 470 MHz			Storage Temperature	-45℃ ~ +80℃		
Channel Spacing	12.5 KHz / 25 KHz			Water/Dust Proof	IP67		
Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget	Intelligent Voice	Broadcast working status				

E300 PRO

FULL-FEATURED RTK RECEIVER

E300 Pro is a new generation 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, E300 Pro is suitable for different applications such as car and machine control.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With 800 channels of GNSS tracking, E300 Pro provides stable and reliable accuracy. All GNSS signals are coming with standard including GPS, BDS, GLONASS, GALILEO, QZSS, IRNSS and SBAS.

ATHENA™ & LEGACY™ DUAL GNSS ENGINE

Dual GNSS positioning engine supplies normal, survey and strict solution mode, which could allow user to easily find balance between fixed rate and precision performance and quickly select the best method for different surveying environment.

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 yourwork.

L-BAND ATLAS

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E300 Pro can 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.

WEBUI

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

INTELLIGENT VOICE

E300 Pro 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

E300 Pro 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		Channels	800	Internal Memory	8 GB	SBAS	H:0.3 m V:0.6 m
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	Signal Reacquisition	< 1 sec			L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
		Cold Start	< 60 sec	Performance			
		Warm Start	< 30 sec	High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm		
		Hot Start	< 10 sec				
		RTK Signal Initialization	< 8 sec	Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm	Internet Modem	
		Initialization Reliability	>99.9%			Support Band	GlobalGSM /WCDMA/LTE
		Update Rate	10 Hz standard, up to 50 Hz	RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm		
		Operation System	Linux	Code Differential	H: 0.25 m V: 0.45 m		

Power Supply		Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions[2]	WebUI	View status, update firmware, set up working mode, download data	Operating Temperature	-40℃ ~ +65℃
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V ~ 6800 mAh	Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget	Intelligent Voice	Broadcast working status	Storage Temperature	-45℃ ~ +80℃
Voltage	9~28VDC with over-voltage protection	Communication		NMEA Output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	Water/Dust Proof	IP67
Working Time	Up to 12 hours	Bluetooth	BT 5.0, BLE	Correction Data	CMR, CMR+, RTCM2, RTCM3, RTCM32	Shock	Survive a 2 m drop on concrete floor
Charging Time	Typically 4 hours	WIFI	802.11 ac/n(HT20)a/b/g	MEMS	Fast initialization, dynamic tilt survey up to 60°	Vibration	Vibration resistant
Internal Radio		SIM Card	Support	Physical		Humidity	Up to 100%
Type	TX and RX	5-pin Port	Connect to external radio and power, NMEA output	Dimension	Φ158 mm x H53 mm	Indicators	Satellites, datalink, battery, Bluetooth
Frequency Range	410 ~ 470 MHz, 902.4 ~ 928 MHz	Type-C Port	Charge and internal storage access	Weight	940 g	Button	Power button, short press to voice broadcast status
Channel Spacing	12.5 KHz /25 KHz	TNC Port	Connect to internal radio antenna			Certificate	CE, FCC, NGS Calibration
Emitting Power	1 W						

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.

ATHENA™ & LEGACY™ DUAL GNSS ENGINE

Dual GNSS positioning engine supplies normal, survey and strict solution mode, which could allow user to easily find balance between fixed rate and precision performance and quickly select the best method for different surveying environment.

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 yourwork.

L-BAND ATLAS

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E500 can 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.

WEBUI

It can 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.





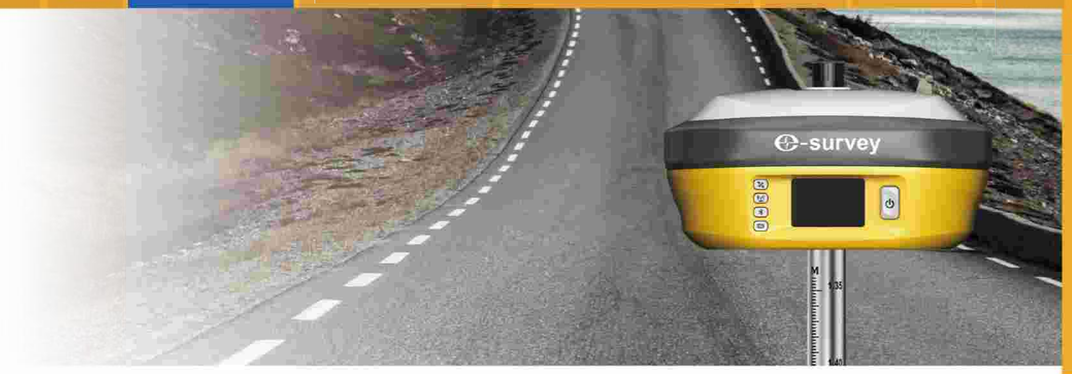




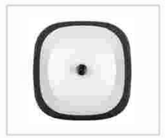
Product Specification

GNSS		Channels	800	Internal Memory	8GB	SBAS	H:0.3m V:0.6m
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	Signal Reacquisition	< 1 sec			L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
		Cold Start	< 60 sec	Performance			
		Warm Start	< 30 sec	High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm		
		Hot Start	< 10 sec				
		RTK Signal Initialization	< 8 sec	Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm	Internet Modem	
		Initialization Reliability	>99.9%				
		Update Rate	10 Hz standard, up to 50 Hz	RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm	Support Band	GlobalGSM /WCDMA/LTE
		Operation System	Linux	Code Differential	H: 0.25 m V: 0.45 m		

Power Supply		Operation Range	3 - 5 Km typically 10 Km with optimal conditions[2]	WebUI	View status, update firmware, set up working mode, download data	Operating Temperature	-40℃ ~ +65℃
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V ~ 6800 mAh	Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget	Intelligent Voice	Broadcast working status	Storage Temperature	-45℃ ~ +80℃
Voltage	9~28VDC with over-voltage protection	Communication		NMEA Output	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL, Binary	Water/Dust Proof	IP68
Working Time	Up to 12 hours	Bluetooth	BT 5.0, BLE	Correction Data	CMR, CMR+, RTCM2, RTCM3, RTCM32	Shock	Survive a 2 m drop on concrete floor
Charging Time	Typically 4 hours	WIFI	802.11 b/g/n	MEMS	Fast initialization, dynamic tilt survey up to 60°	Vibration	Vibration resistant
Internal Radio		SIM Card	Support			Humidity	Up to 100%
Type	TXand RX	5-pin Port	Connect to external radio and power, NMEAoutput			Indicators	Battery
Frequency Range	410 - 470 MHz, 902.4 - 928 MHz	Type-C Port	Charge and internal storage access	Physical		Button	Power button
Channel Spacing	12.5 KHz / 25 KHz			Dimension	Φ148 mm x H74.5 mm	Certificate	CE, FCC, NGS Calibration
Emitting Power	1 W	TNC Port	Connect to internal radio antenna	Weight	1.06 kg		









E800H/E800T

HIGH-PERFORMANCE RTK RECEIVER

E800 is a high-performance 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. The colorful touch screen is convenient for quick configurations.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With 800 channels of GNSS tracking, E800 provides stable and reliable accuracy. All GNSS signals are coming with standard including GPS, BDS, GLONASS, GALILEO, QZSS, IRNSS and SBAS.

BATTERIES FOR LONG TIME OPERATION

E800 is equipped with 13600 mAh Li-ion battery. There is no worry for long time field operation up to 15 hours. The USB type-c quick charge promise a full charge within 5 hours.

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 (For E800H only)

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, E800 can achieve centimeter accuracy without any base station.

ARTK (For E800H only)

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 fall without additional cost.

5-WATT INTERNAL RADIO

The 5-watt internal radio modem extremely extend the working range up to 15Km. User can adjust the radio power between 2w and 5w depending on the demand.

COLORFUL TOUCH SCREEN

The 1.45" colorful touch screen is viewable in sunlight. The position status is under control with a glimpse. Working mode is settle down by simply sliding the screen.

WEBUI

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

INTELLIGENT VOICE

E800 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

E800 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 (E800H +E800T)

MODEL	E800(H)	E800(T)
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/AL TBOC QZSS: L1CA/L1C/L2C/L5/LEX IRNSS: L5 SBAS1: L1/L5 L-Band: Atlas H10/H30/Basic	GPS: L1CA/L2E/L2C/L5 BDS: B1/B2/B3 GLONASS: L1CA/L2CA/L3 CDMA GALILEO: E1/E5a/E5b/E6/AL TBOC QZSS: L1CA/L1 SAIF/L1C/L2C/LEX NAVIC: L5 SBAS1: L1/L5 L-Band:RTX
Channels	800	336
Signal Reacquisition	<1sec	
Cold Start	< 10 sec	
Warm Start	< 10 sec	
Hot Start	< 10 sec	
RTK Signal Initialization	< 8sec	
Initialization Reliability	>99.9%	
Update Rate	10 Hz standard, up to 50 Hz	50 Hz standard, up to 50 Hz
Operation System	Linux	
Internal Memory	32GB	
Performance		
High Precision Static	H: 2mm + 0.1 ppm V: 3mm + 0.4 ppm	
Static/Fast Static	H: 2.5mm + 0.1 ppm V: 3.5mm + 0.4 ppm	
RTK	H: 8mm + 1.0 ppm V: 15mm + 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 (For E800H only)	
Power Supply		
Battery	Rechargeable and built-in Lithium-ion battery, 7.2 V - 13.6 Ah	
Voltage	9~28 V DC with over-voltage protection	
Working Time	Up to 15 hours	
Charging Time	Typically 5 hours	
Internal Radio		
Type	TXand RX	
Frequency Range	410~ 470 MHz	
Channel Spacing	12.5 KHz / 25 KHz	
Emitting Power	5W	
Operation Range	8 ~10 Km typically 15Km 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, BLE	
WIFI	802.11 ac/n(HT20)/a/b/g	
SIM Card	Support	Micro 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	
WebUI	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	Φ154 mm x H76 mm	
Weight	1.5kg	
Screen	1.45'' colorful touchable screen	
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	Satellites, datalink, battery, Bluetooth	
Button	Power button, short press to voice broadcast status	
Certificate	CE, FCC, NGS Calibration	

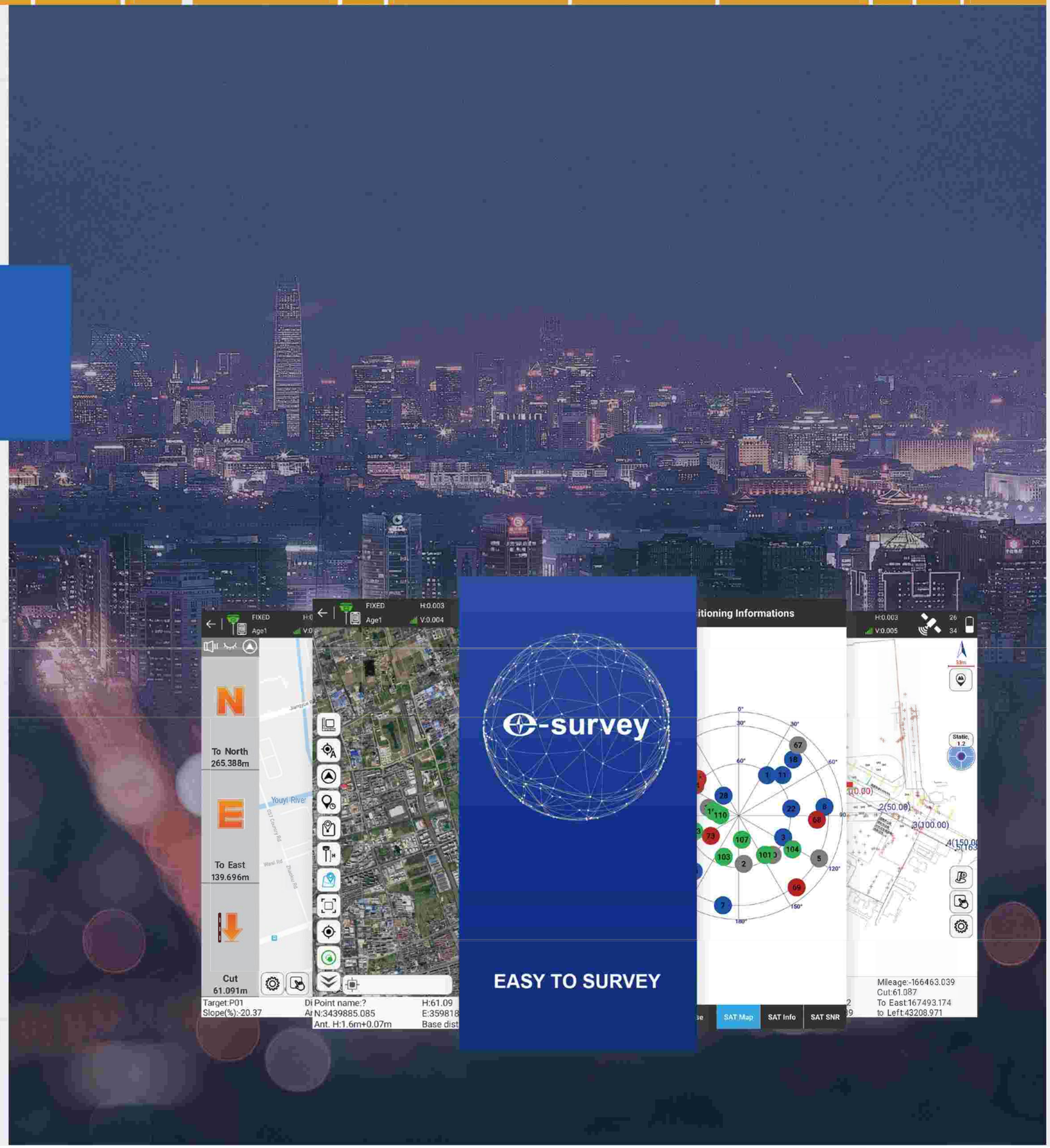
ESURVEY GNSS RECEIVER

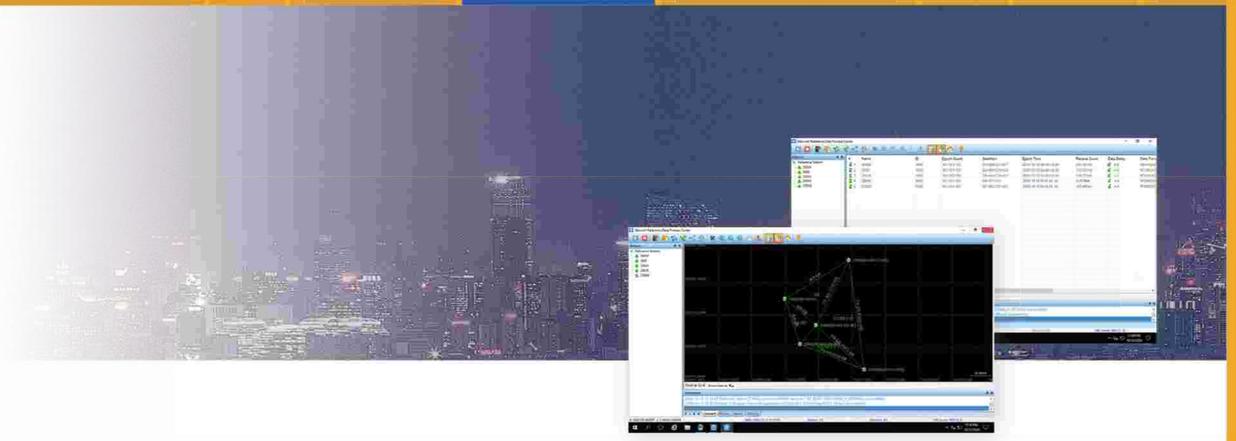


MODEL		E100	E200	E300 Pro	E500	E800H	E800T
CHANNELS		800	800	800	800	800	336
SIGNAL TRACKING	GPS	YES	YES	YES	YES	YES	YES
	GLONASS	YES	YES	YES	YES	YES	YES
	BEIDOU	YES	YES	YES	YES	YES	YES
	GALILEO	YES	YES	YES	YES	YES	YES
	QZSS	YES	YES	YES	YES	YES	YES
	L-BAND	ATLAS	ATLAS	ATLAS	ATLAS	ATLAS	RTX
	IRNSS	YES	YES	YES	YES	YES	YES
	SBAS	YES	YES	YES	YES	YES	YES
UPDATE RATE	STD	10Hz	10Hz	10Hz	10Hz	10Hz	50Hz
	MAXIMUM	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
MEMORY INTEGRATED		8GB	8GB	8GB	8GB	32GB	
MEMORY EXTENSION		NO	NO	NO	NO	NO	
RADIOPOWER		NO	Receive	1W	1W	5W	
INTERNAL GSM		YES	YES	YES	YES	YES	
SENSOR		MEMS	MEMS	MEMS	MEMS	MEMS	
SCREEN		NO	NO	NO	NO	Touchable	
BATTERY	REMOVEABLE	NO	NO	NO	NO	NO	
	HOTSWAP	NO	NO	NO	NO	NO	
	CAPACITY	6800 mAh	6800 mAh	6800 mAh	6800 mAh	13600 mAh	
WEIGHT	WITH BATTERY	900 g	900 g	940g	1.06 Kg	1.5 kg	
DIMENSION		148*60 mm	152*92 mm	158*53 mm	148*75 mm	154*76 mm	
WATER/DUST PROOF		IP67	IP67	IP67	IP68	IP67	

GNSS SOFTWARE

In addition to providing reliable and high-precision GNSS hardware equipment, eSurvey is also committed to developing software applications suitable for user habits. SurPad is a field data collection software based on Android devices. It integrates equipment configuration, data collection, CAD, GIS, point stakeout, line stakeout, road stakeout and other functions, which can meet the field needs of most surveying workers; GEO-Solution provides Static, PPK, Stop and Go high-precision post-processing services; The "NTRIP Caster" provides a single station network NTRIP data forwarding service; The "GNSS.NET" is a CORS software that can provide VRS and basic NTRIP services to meet the data management of multiple base stations in large areas, Integrate, process and distribute requirements.





GNSS.NET

VRS MANAGEMENT SOFTWARE

GNSS.NET is the software to combine multiple base stations as a network providing VRS service. It includes functions such as station management, user management, physical base station data transmission, VRS service, coordinate system transmission. The system includes two parts "GNSS.NET Reference Data Process Center" and "GNSSCaster". The first part software is used to manage reference stations and connect all stations as a network to provide VRS service. The second part software is used to create mountpoints and manage user account.

Product Specification

GNSS.NET Reference Data Process Center

Reference Station Management	
Communication	Serial port, TCP server, TCP client, Ntrip client
Station Coordinate	Manual input
Station Coordinate Type	Geocentric coordinate, Geodetic coordinate
Export Stations	KML, DAT
Export Configuration	Support
Station Number	At least 5 stations, depend on the subscription

System Setting	
Virtual Reference Station	Support
Nearest Reference Station	Support
Recording Observation	Support

Network Configuration Parameter	
Supported Parameters	Maximum distance between stations Minimum distance between stations Range of physical base station Virtual base station network expansion distance

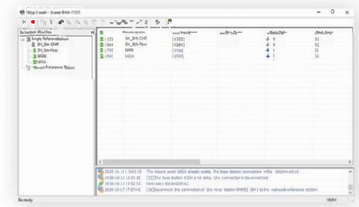
Data Format	
Supported Constellation	GPS, BDS, GLONASS, Galileo
Supported Formats	CMR, RTCM2, RTCM23, RTCM31, RTCM32 MSM4
Broad Ephemeris	Support
Precise Ephemeris	Support

Station View	
Station Satellite Map	Support
View Stations in List	Support
View Stations in Map	Support Support measuring distance

GNSSCaster

GNSSCaster Function	
User Number	No limitation
User Authentication	Support
GGA Track Log	Support
Coordinate System over	RTCM RTCM1021~1027
Coordinate System Parameter	Ellipsoid parameter Projection parameter Seven parameters Geoid parameters

NTRIPCASTER



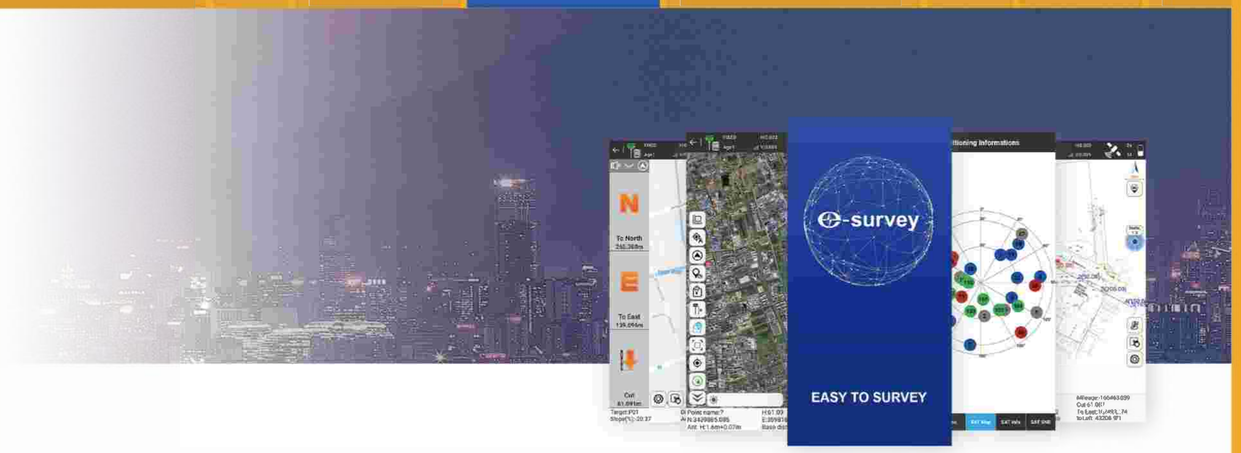
NTRIPCASTER MANAGEMENT SOFTWARE

The "NTRIP Caster" provides customers with a single station network NTRIP data forwarding service. For small area measurement requirements, the software can transmit data from base station in real time, provide differential data support for mobile stations and support user management, tracking and coordinate system network broadcast.

Basic Function	
Base Station Number	No limitation
Rover Number	No limitation
GGA Track Log	Support

Authentication	
Base Station Authentication	Support
Rover Authentication	Support
Simultaneous Rover Online	Support

Coordinate System	
Transmit Coordinate System	RTCM1021~1027
Coordinate System Parameter	Ellipsoid parameter, Projection parameter Seven parameters Geoid parameters



SURPAD 4.2

FIELD DATA COLLECTION SOFTWARE

SurPad 4.2 is a GNSS surveying and mapping software. It is designed based on years of accumulated market experiences, combining them with the international mainstream of surveying and mapping data acquisition function of the software, integrating RTK control, GIS data collection and road design and layout into one place. The software has outstanding graphic interaction, powerful functions and can humanize operation process.

Product Specification

Basic Information	
Platform	Android
Update	Support online update
Activation	Support online activation

Communication	
Bluetooth	Support
WIFI	Support
Serial Port	Support
Simulation	Support customized coordinate

Map Function	
Online	Google street map¹ Google satellite map¹ Open street map
Offline	SHP, DXF, DWG, XML

Coordinate System	
Predefined	Large number of coordinate Systems
Localization	Four parameters and seven parameters
Geoid Files	GGF, SGF, UGF
Grid Files	GSB
Sharing Function	Share with QR code or save locally
RTCM1021~1027	Support

Import & Export	
Export	CSV, DAT, DXF, KML, GPX, HTML···
Import	CSV, DAT, TXT, DXF, KML···

Survey Mode	
Point Type	Topo Point
	Control Point
	Quick Point
	Auto Point by time/distance Corner Point
	Tilt Point
	Stop and Go
CAD Entity	Line, Polyline, Rectangle, Polygon, Circle, Arc, Spline

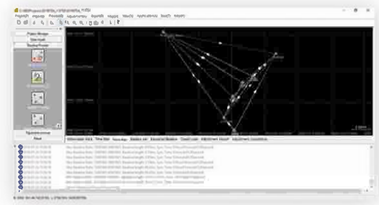
CAD Function	
CADLayer	Support DXF, DWG, XML
View in 3D	Support
Real-time Drawing	Support
Manual Drawing	Support
CAD Surveying	Support
CAD Calculation	Angle, distance and area

COGO	
COGO Function	Coordinate inverse calculation
	Point line calculation
	Vector
	Two lines angle
	Intersection calculation
	Resection
	Forward intersection
	Coordinate positive calculation
	Offset point calculation
	Equal point calculation

Stakeout	
Stakeout Target	Point, line, road, cross section
Stakeout Reference	North or forward direction
Voice	Support voice prompt

Language		
Software language	English	Simplified Chinese
	Traditional Chinese	Portuguese
	Korean	Polish
	Spanish	Turkish
	Russian	Italian
	Japanese	Magyar
	Sweden	Serbian
	Greek	French
	Bulgarian	Slovensky
	Czech	Finnish
	Germany	Lithuania

GEO SOLUTION



GEOSolution is mainly for processing baselines of GNSS ephemeris data, then the result will be used to adjust constrained network to obtain final report for control network. GEOSolution provides users the convenience to customize the project ellipsoid parameters and select diverse coordinate system. The entire process, including baseline solution, network adjustment and other operations, are operating in the project folder. This software records all operations automatically, and it can export the progress of processed date which is saved at any time, then to continue processing or check the results.

- RINEX DATA CONVERTER
- IGS DATA DOWNLOAD
- PRECISE EPHEMERIS DATA DOWNLOAD
- SUPPORT LARGE SET OF COORDINATE SYSTEM
- 5.BASELINE POST PROCESS: STATIC, DYNAMIC, STOP AND GO
- VIEW AND EDIT BASELINE RESIDUAL
- NETWORK ADJUSTMENT AND REPORT
- DATA EXPORT: *.DAT, *.DXF, *.KML
- LANGUAGE SUPPORT: SIMPLIFIED CHINESE, ENGLISH, RUSSIAN
- SUPPORT GPS, GLONASS, BDS, GALILEO

HEADING & NAVIGATION

eSurvey directional navigation receiver adopts multi-satellite and multi-frequency satellite signal processing technology and RTK technology to achieve centimeter-level real-time positioning; equipped with dual-antenna directional calculation engine, it can achieve dual-antenna high-precision real-time heading and elevation angle information, up to the highest orientation accuracy is 0.02° ; the small and lightweight modular split design can be easily mounted or embedded in the integrated system as a module. It can fully meet the high-precision orientation application requirements of vehicles, ships, aircrafts and other carrier environments.











M1G2

PORTABLE HEADING SOLUTION

M1G2 is suitable for monitoring, machine control and CORS reference station. It has rich data streams such as radio, serial port, Bluetooth, WIFI and 4G network. User can use any phone or tablet to configurate device easily form the powerful Web UI.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With full channels of GNSS tracking, M1G2 covers multiple GNSS signals to provide stable and reliable data source.

RICH DATA INTERFACE

M1G2 supports multiple data interface such as serial port, 1PPS, event to demand various of applications. Its powerful Linux system ensures a smooth operation without any worries.

RICH WIRELESS COMMUNICATION

M1G2 supports WIFI, Bluetooth, Ethernet, SIM card. User can send or receive data through any methods.

SUITABLE FOR BASE AND ROVER

Its lightweight design makes it possible to set up M1G2 as rover or base station for different applications.

L-BAND ATLAS (FOR M1G2-H ONLY)

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, M1G2 can achieve centimeter accuracy without any base station.

WEBUI

It can view position status, configurate device, download data and update firmware from Web user interface with any phone, tablet or PC.

SMART ALERT

It will alert user through email or SMS once the temperature is too high or memory storage is almost full.

RUGGED DESIGN

M1G2 provides strong shock and vibration resistant characteristics. IP67 certification ensures operation in various of tough environments.

Product Specification M1G2 (H/N)

MODEL	M1G2 (H)	M1G2 (N)
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	GPS: L1CA/L1C/L2P/L2C BDS: B1/B2 GLONASS: L1CA/L2CA/L2P GALILEO[1]: E1, E5b QZSS: L1CA/L1C/L2C IRNSS[1]: L5 SBAS[2]: L1/L5
Channels	1100	555
Signal Reacquisition	<1 sec	
Cold Start	< 60 sec	
Warm Start	< 30 sec	
Hot Start	< 10 sec	< 19 sec
Initialization Reliability	>99.9%	
Update Rate	10 Hz standard, 20 Hz optional	20 Hz standard
Operation System	Linux	
Internal Memory	8GB	
External Memory	Support SD card up to 32GB	
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: 0.3 m V: 0.6 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 (For M1G2 (H) only)	
1PPS	10 ns	20 ns
Heading	0.16° @0.5 m baseline 0.08° @1.0 m baseline 0.04° @2.0 m baseline 0.02° @5.0 m baseline	0.08° @2 m baseline 0.05° @4 m baseline
Internet Modem		
Support Band	Global GSM/WCDMA/LTE	
Power Supply		
Voltage	10-28 VDC with over-voltage protection	
Internal Radio		
Type	TX and RX	
Frequency Range	410 ~ 470 MHz	
Channel Spacing	12.5 KHz / 25 KHz	
Emitting Power	1 W	
Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions[3]	
Protocol	Satel, PCC, TrimTalk, TrimMark III, South, HiTarget	
Communication		
Bluetooth	BT5.0	
WIFI	802.11 b/g/n, hotspot/client mode	
Ethernet	Support	
Port	2 x Lemo-0, 2-pin, DC In / 2 x GNSS TNC female / 1 x LTE, SMA female / 1 x UHF 1 xNano SIM / 1 x TF card / 1 x DB26: / 2 x RS485 1 x RS232 / 1 xCAN / 1 x Mini USB, support OTG 1 x 1PPS, SMA female / 1 x Event, SMA female / 1 x RJ45 ethernet	
WebUi	Support	
NMEA Output	NMEA0183, NMEA2000, Binary	
Correction Data	RTCM2.X, RTCM3.X (MSM), CMR, CMR+, DGPS, BINEX, RAW	
Data Recording	Support 8 recording simultaneously	
Recording Format	Binary, RINEX, BINEX	
Recording Interval[3]	Up to 20 Hz	
Smart Alert	Email and SMS alert	
FTP Function	Support	
NTP Server	Support	
Others	DDNS, SNMPD, Firewall	
Physical		
Dimension	150 x 105 x 34 mm	
Weight	550g	
Operating Temperature	-40℃ ~ +65℃	
Storage Temperature	-45℃ ~ +80℃	
Water/Dust Proof	IP67	
Shock and Vibration	Survive a 1.2 m drop on concrete floor	
Humidity	Up to 100%	
Certificate	CE	

CORS

The GNSS continuous operation reference station system enables to provide the services of broadcasting real-time differential correction data and downloading high-precision post-processing data for regional users, which can satisfy the demands of different industries for different navigation and positioning precision levels.



NET10

MINI CORS SOLUTION

NET10 is specially designed for user who needs to set up reference stations. With the 3D choke-ring antenna, the device provides stable correction data to the rover. Integrated with Bluetooth, WIFI, Web UI, Ethernet and serial port, NET10 brings possibility for more applications.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With 800 channels of GNSS tracking, NET10 covers all GNSS signals including GPS, BDS, GLONASS, GALILEO and IRNSS, QZSS to provide stable and reliable data source.

EASY FOR INSTALLATION AND CONFIGURATION

NET10 is designed to be small but efficient. The small and simple body decrease the operation difficulty. Operator will master the process with quick training.

LARGE MEMORY STORAGE

The internal 32 GB storage ensure user to store the data for long time. It also supports FTP push to make it more convenient for data management.

L-BAND ATLAS

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, NET10 can achieve centimeter accuracy without any correction data.

WebUI

It can view position status, configurate device, download data and update firmware from Web user interface with any phone, tablet or PC.

SMART ALERT

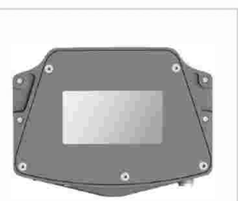
It will alert user through email once the charger is disconnected, battery level is too low, temperature is too high or memory storage is almost full.

RUGGED DESIGN

NET10 main body is using aluminum alloy materials to provide strong shock and vibration resistant characteristics. IP67 certification ensures operation in various of tough environments.









Product Specification

GNSS				Performance		1PPS	10ns
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/AL TBOC QZSS: L1CA/L1C/L2C/L5/LEX IRNSS: L5 SBAS[1]: L1/L5 L-Band: Atlas H10/H30/Basic	Channels	800	High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm	L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
		Signal Reacquisition	< 1 sec				
		Cold Start	< 60 sec	Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm		
		Warm Start	< 30 sec				
		Hot Start	< 10 sec				
		Initialization Reliability	>99.9%	RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm	Power Supply	
		Update Rate	10 Hz standard, up to 20 Hz			Power	2-pin DC in
				Code Differential	H: 0.3 m V: 0.6 m	Voltage	8~36VDC with over-voltage protection
		Operation System	Linux + A8	SBAS	H: 0.3 m V: 0.6 m		
		Internal Memory	32GB				

Communication		Recording		Physical	
Bluetooth	BT5.0 + EDR, compatible with BLE	Format	Binary, RINEX, BINEX	Dimension	131 x 36.5 x 97 mm
WIFI	802.11 b/g/n/ac	Recording Interval[2]	2s, 5s, 10s, 15s, 30s, 60s 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz	Operating Temperature	-40℃ ~ +65℃
Ethernet	Support			Storage Temperature	-45℃ ~ +80℃
Port	1 x Lemo-0, 2-pin, DC in 1 x DB9 female, RS232 1 x RJ45 ethernet 1 x GNSS TNC female	Data Stream	1 x Bluetooth 1 x Serial port 4 x NTRIP server streams 1 x NTRIP client streams 5 x Socket (TCP/UDP) streams	Water/Dust Proof	IP67
				Shock and Vibration	EP455 Section 5.15.1 Random
				Humidity	Up to 95%
				Indicators	Power, satellite, recording, datalink
Baud Rate	9600 ~ 115200 bps			Button	1 x Reset button
WebUI	Support	Smart Alert	Email and SMS alert	Certificate	CE
NMEA Output	NMEA0183, NMEA2000, Binary	FTP Function	FTP server FTP client (FTP push)		
Correction Data	RTCM2.X, RTCM3.X, CMR, CMR+, DGPS, BINEX, RAW	NTP Server	Support		
Data Recording	Support 8 recording simultaneously	Others	DDNS, SNMPD, Firewall, VPN		









NET20 PLUS

HIGH-QUALITY CORS SOLUTION

NET20 PLUS is specially designed for high-precision CORS reference stations. The rich data interface demands various of applications such as monitoring and machine control. User can use any phone or tablet to configurate device easily from the powerful Web UI.

MULTI-CONSTELLATION AND MULTI-FREQUENCY

With full channels of GNSS tracking, NET20 PLUS covers all GNSS signals including GPS, BDS, GLONASS, GALILEO and IRNSS, QZSS to provide stable and reliable data source.

RICH DATA INTERFACE

Net20 PLUS supports multiple data interface such as serial port, 1PPS, event to demand various of applications. Its powerful Linux system ensures a smooth operation without any worries.

RICH WIRELESS COMMUNICATION

Net20 PLUS supports WIFI, Bluetooth, Ethernet, SIM card. User can send or receive data through any methods.

LARGE BATTERY

The 13600 mAh battery lasts up to 12 hours to respond to emergencies. it also ensures the data is stored safely.

LARGE MEMORY STORAGE

The internal 32 GB storage and TF card expansion ensure user to store the data for long time. It also supports FTP push to make it more convenient for data management.

L-BAND ATLAS (FOR NET20 PLUS-H ONLY)

Atlas is a service to provide global precision correction service over L-band satellites. With ATLAS subscription, Net20 PLUS can achieve centimeter accuracy without any correction data.

WEBUI

It can view position status, configurate device, download data and update firmware from Web user interface with any phone, tablet or PC.

SMARTALERT

It will alert user through email or SMS once the charger is disconnected, battery level is too low, temperature is too high or memory storage is almost full.

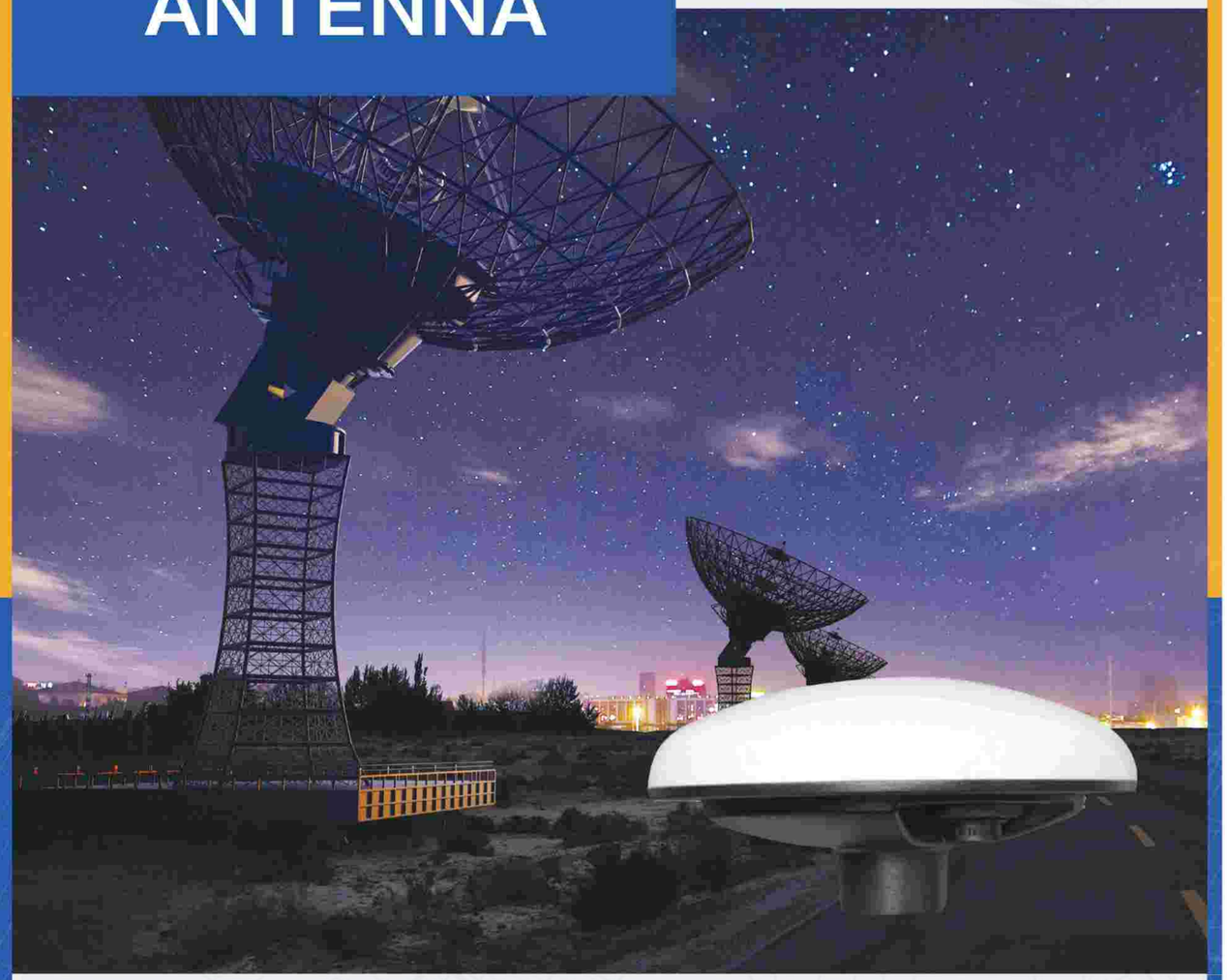
RUGGED DESIGN

Net20 PLUS main body is using aluminum alloy materials to provide strong shock and vibration resistant characteristics. IP67 certification ensures operation in various of tough environments.

Product Specification M1G2 (H/N)

MODEL	NET20 PLUS-H	NET20 PLUS-T
GNSS		
Satelites 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 SBAS1: L1/L5 L-Band: Atlas H10/H30/Basic	GPS: L1CA/L2E/L2C/L5 BDS: B1/B2/B3 GLONASS: L1CA/L2CA/L3 CDMA GALILEO: E1/E5a/E5b/E6/ALTBOC QZSS: L1CA/L1 SAIF/L1C/L2C/LEX NAVIC: L5 SBAS1: L1/L5 L-Band:RTX
Channels	800	336
Signal Reacquisition	<1 sec	
Cold Start	< 60 sec	
Warm Start	< 30 sec	
Hot Start	< 10 sec	
Initialization Reliability	>99.9%	
Update Rate	10 Hz standard, up to 50 Hz	50 Hz standard, up to 50 Hz
Operation System	Linux	
Internal Memory	32GB	
External Memory	TF card	
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: 8mm + 1 ppm V:15mm +1 ppm	
Code Differential	H:0.3m V:0.6m	
SBAS	H:0.3m V:0.6m	
L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS (For NET20 PLUS-H only)	
1PPS	10ns	
Internet Modem		
Support Band	Global GSM/WCDMA/LTE	
Power Supply		
Battery	7.2 V, 13600mAh	
Working Time	Up to 12 hours with internal battery	
Voltage	9-28 VDC,2A with over-voltage protection	
Communication		
Bluetooth	V2.1 + EDR/V4.1 dual model	
WIFI	802.11 b/g/n, hotspot/client mode	
Ethernet	Support	
Port	1 x Lemo-0, 2-pin, DC in 1 x Lemo-0, 7-pin, USB OTG, host/client 1 x Lemo-0, 5-pin, RS232 1 x Lemo-0, 5-pin, RS232/RS485 1 x DB9 female, RS232 1 x LTE, SMA female 1 x 1PPS, SMA female 1 x Event, SMA female 1 xSIM Slot 1 x TF card 1 x RJ45 ethernet 1 x GNSS TNC female 1 x OSC, MMCX, 50Ω, 5/10 MHz	
Baud Rate	9600 ~ 115200 bps	
WebUI	Support	
NMEA Output	NMEA0183, NMEA2000, Binary	
Correction Data	RTCM2.X, RTCM3.X, CMR, CMR+, DGPS, BINEX, RAW	
Data Recording	Support 8 recording simultaneously	
Recording Format	Binary, RINEX, BINEX	
Recording Interval[2]	2s, 5s, 10s, 15s, 30s, 60s,1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 50 Hz	
Data Stream	1 x Bluetooth 3 x Serial port 4 x NTRIP server streams 1 x NTRIP client streams 5 x Socket (TCP/UDP) streams	
Smart Alert	Email and SMS alert	
FTP Function	FTP server FTP client (FTP push)	
NTP Server	Support	
Others	DDNS, SNMPD, Firewall, VPN	
Physical		
Dimension	222x164 x 79 mm	
Weight	2Kg	
Screen	2.75", 64 x 256 pix, yellow font	
Operating Temperature	-40℃ ~ +65℃	
Storage Temperature	-45℃ ~ +80℃	
Water/Dust Proof	IP67	
Shock and Vibration	Survive a 1.2 m drop on concrete floor	
Humidity	Up to 100%	
Indicators	Battery, recording, Bluetooth, datalink	
Button	1 x Power/confirm button 1 x Function button 2 x Selection button	
Certificate	CE, FCC	

ANTENNA



Antenna is a necessary receiving component of GNSS receiver. The performance of GNSS antenna product determines the quality of the received satellite navigation signal and affecting the positioning result. eSurvey's antenna uses a new material microwave medium, and adopts multi-frequency, anti-interference and anti-multipath design. For different application areas, eSurvey has launched a series of high-performance GNSS antennas, including measurement antennas, choke coil antennas and receiver integrated smart antennas.



UA301

SMART POSITIONING ANTENNA

UA301 has superior antenna gain, phase difference, quadrature axis ratio performance to obtain centimeter-level positioning accuracy. It can be used for agricultural, machinery assisted driving, engineering vehicles, ships, surveying and mapping and other fields.

1.Integrated OEM Board with Multi-constellation and Multi-frequency
2.L-band Atlas
3.Build-in WIFI and Bluetooth module
4.WebUI
5.Rugged Design



UA35

GNSS ANTENNA

UA35 covers the reception of GNSS signals such as GPS, GLONASS, BDS, Galileo, QZSS and L-Band. It has the superior performance of the antenna phase center. Its small size and light weight make it easy to be carried and installed.

1.Multi-constellation and Multi-frequency
2.Superior Antenna Phase Center
3.High Gain Antenna
4.Weak Signal Tracking
5.Small Size and Light Weight
6.Rugged Design



CM004

CHOKE RING ANTENNA

CM004 is a multi-system full-frequency reference station antenna covering BDS, GPS, GLONASS, GALILEO, with a unique choke structure design. The product has obvious characteristics of stable phase center, good multi-path suppression, high positioning accuracy, and good reception at low elevation angles.

1.The accuracy of the phase center reaches the sub-millimeter level, with high stability and good repeatability
2.Small size and light structure
3.Unique choke coil and choke plate design, with excellent multipath suppression effect
4.Low elevation angle, high gain, strong satellite tracking ability
5.IP67 waterproof and dustproof, can work normally outdoors for many years



UA91

CHOKE RING ANTENNA

UA91 adopts high-gain broadband antenna to receive GNSS signals such as GPS, BDS, GLONASS, Galileo, QZSS and L-Band. The scheme of multi-stage 3D choke coils with completely symmetrical distribution is adopted to achieve higher phase center stability and excellent anti-multipath interference performance. It has excellent performance that the phase center coincides with the mechanical center.

1.Multi-constellation and Multi-frequency
2.Superior Antenna Phase Center
3.Excellent Polar Axis Ratio Performance
4.Multipath Suppression

RADIO



eSurvey digital radio station is a high-performance professional data transmission radio station, it realizes the combination of digital signal processing technology and software wireless technology. As the transmission medium of differential data, digital radio plays an important role in RTK positioning technology. The eSurvey digital radio has the characteristics of high sensitivity, low bit error rate and long transmission distance. Users can flexibly choose according to their own usage scenarios, power requirements and usage frequency.









TRU35

WIRELESS DATA TRANSCEIVER

TRU35 is a high-power, small-size, half-duplex digital radio model which is designed using advanced 32-bit cortex M4 microcontroller technology, wireless transceiver RF technology, and digital communication technology. It uses high-quality RF components, excellent EMC and EMI processing.

RICH DATA PROTOCOL

TRU35 supports lots of protocols including TrimTalk, TrimMark, Satel, PCC, South, Hi-target···

ALLIN ONE

TRU35is integrated with transmitting and receiving functions for different kinds of applications.

RADIO RELAY

Increase the transmitting distance by receiving data and transmitting out with another frequency.

VOLTAGE PROTECTION

Two-stage surge protection is used to protect the radio from damage when the input voltage or current exceeds the normal range or positive and negative stages are reversed.

STANDING WAVE DETECTION PROTECTION

Prevent damage caused by long-time open circuit or short circuit.

THERMAL PROTECTION

TRU35 can adjust the transmit power adaptively, automatically reduce the power when temperature is too high, and increase the power when temperature decreases to ensure radio equipment is always in a stable power range and will not be damaged by overheating.

IP67 PROTECTION

BLUETOOTH FUNCTION

Bluetooth can be used to configurate operating mode, protocol, frequency, power level. The Bluetooth can be also used as a replace for cable to receive correction data.

LONG TRANSMISSION DISTANCE

Transmission distance can reach 25Km in optimal conditions.

Product Specification

General Specifications		
Frequency Range	410~470MHz	
Operating Mode	Half-duplex	
Channel Spacing	12.5KHz/ 25KHz	
Channels	16	
Modulation	GMSK/4FSK	
Operating Voltage	Nominal voltage 12.5V (10.8~15V)	
Power Consumption (Typical)	Transmit (High Power)	91W
	Receive	6.5W
RF Power Stability	≤±1.0ppm	
Dimension	165×125×81mm	
Weight	1680g	
Operating Temperature	-40~+85℃	
Storage Temperature	-45~+90℃	
IPRate	IP67	
Antenna Interface	TNC, female	
Antenna Interface Impedance	50ohm	
Data Interface	LEMO 5pin	

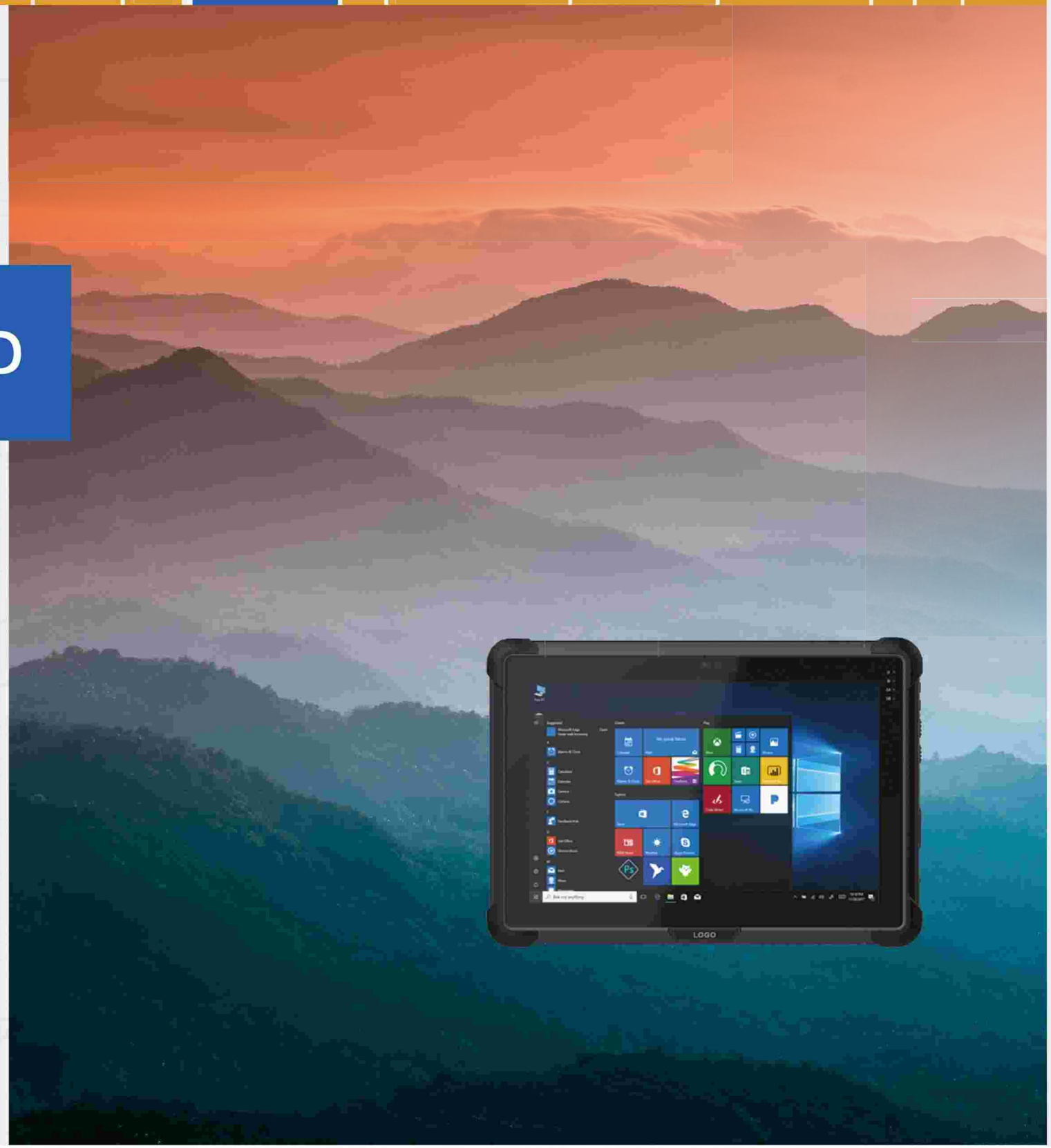
Transmitter Specifications	
RF Output Power	10W/ 30W (12.5V Input)
RF Power Stability	±1.5dB
Adjacent Channel Inhibition	>50dB

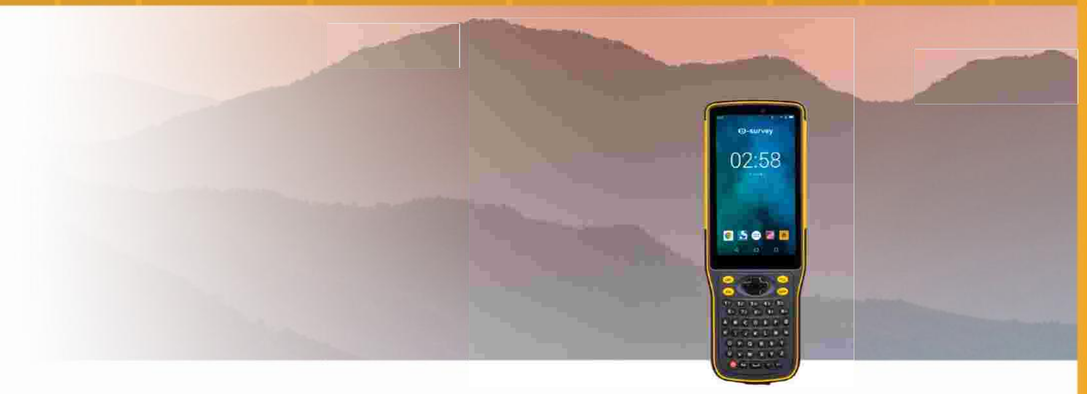
Receiver Specifications	
Sensitivity	Better than -116dBm@BER 10^{-4}, 9600bps
Co-channel Inhibition	>-12dB
Block	>70dB
Adjacent Channel Selectivity	>52dB@25KHz
Perturbation Resistance Stray	>55dB

Modulator	
Air Rate	9600bps,19200bps
Modulation	GMSK/4FSK

RUGGED HANDHELD

For different industry applications, eSurvey provides various range of rugged handheld devices with different operating systems and different sizes. Equipped with a high-performance processor, a large-capacity battery and a large-size touch screen, it brings users a more comfortable experience; the three-proof design of waterproof, dust-proof and drop-proof, can be competent in any harsh environment; based on Pogo Pin Open physical interface, it supports external high-precision module, barcode scanner and other sensors to meet the special needs of the industry.







P8II

5” RUGGED ANDROID HANDHELD

With IP67 certificated, P8II is designed for anyone who works in harsh environments. User never feels tired with the ergonomic design. The battery handles whole day’s work for different kinds of applications. P8II is suitable for outdoor work such as survey and GIS.

HIGH PERFORMANCE CPU

Equipped with octa-core 2.0 GHz processor and Android 9.0 system, P8II brings with smooth experience.

HIGH FIDELITY SCREEN

The 5-inch capacitive screen with 1280 x 720 resolution makes P8II a high-fidelity device. 400-nits brightness makes it Sunlight viewable.

LONG-TIME OPERATION

The 5200 mAh rechargeable and replaceable battery ensures whole day’s work without interruption. Quick charge 3.0 brings you fast charging experienca.

DUAL SIM CARDS WITH 4G NETWORK

P8II supports dual Nano SIM cards with 4G network. You can use it for daily work anytime, anywhere.

ALL GNSS CONSTELLATIONS SUPPORTED

Build-in MTK GNSS module supports GPS, BDS, GALILEO and GLONASS. All constellations can bring you a more convenient survey experience.

LARGE MEMORY STORAGE

Its 32 GB internal storage to support large data access. It also supports SD card expansion up to 128 GB.

STYLUS PEN

Equipped with stylus, it is more accurate to operate even in rain mode.

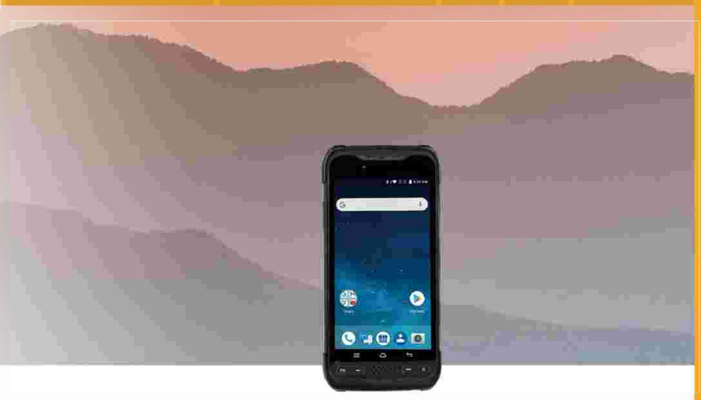
RUGGED DESIGN

P8II is IP67 certificated as a rugged device. It survives a 1.5 m drop on concrete floor.

Product Specification

System		Screen		Camera			Communication	
Processor	MT6762, Octa-core, 2.0 GHz	Screen Size	5”	Camera	Rear	13MP	GSM	Global GSM/WCDMA/LTE 2 x NanoSIM
		Resolution	1280 x 720		Flash Light	Support		
OS	Android 9.0	Density	320 dpi		Auto Focus	Support		
RAM	3GB	Brightness	400 nits	GNSS			WIFI	802.11 a/b/g/n/ac
ROM	32GB	Touch Panel	Capacitive, TFT	Channels	72		Bluetooth	BT4.1, BLE
		Touch	10touch points	Tracking	GPS,BDS, GLONASS, GALILEO		SD Card	Support, up to 128 GB
				Accuracy	Single:1~3m		USB	1 x USB Type-C Support OTG and headphone

Power Supply		Sensor		Physical		Buttons	
Battery	Rechargeable and replaceable Lithium-ion battery, 3.8 V, 5200 mAh	Speaker	Yes	Dimension	225 x 78 x 14.5 mm		1 x Battery 4 x Arrow 1 x Return 1 x Confirm 1 x APP quick button 1 x Backspace 1 x FN 1 x Caps lock 1 x Dot 1 x Space key 10 x 0-9 26 x A-Z
		Microphone	Yes	Weight	360 g with battery 265 g Without battery		
		Light	Yes	Operating Temperature	-20℃ ~ +60℃		
		Proximity	Yes	Storage Temperature	-40℃ ~ +70℃		
Working	Up to 12 hours[1]	Magnetometer	Yes	Water/Dust Proof	IP67		
Charge	Less than 5 hours	Gyroscope	Yes	Shock	Survive a 1.5 m drop on concrete floor		
		Accelerometer	Yes	Humidity	95%		
		Gravity	Yes	Indicator	Bluetooth , battery		
		Compass	Yes	Certificate	FCC,CE,ROHS,REACH,WEEE		





UT12P

6” RUGGED ANDROID HANDHELD

IP68 certificated, UT12P is designed for anyone who works in harsh environments. User never feels tired with the ergonomic design. The battery handles whole day’s work for different kinds of applications. UT12P is suitable for outdoor work such as survey, GIS, retail, logistics, monitoring.

HIGH PERFORMANCE CPU

Equipped with Octa-core 2.2 GHz processor and Android 10.0 system, UT12P brings with smooth experience.

HIGH FIDELITY SCREEN

The 6-inch screen with 1920 x 1080 resolution makes UT12P a high-fidelity device. 450-nits brightness makes it Sunlight viewable.

LONG-TIME OPERATION

The 8000 mAh rechargeable and replaceable battery ensures whole day’s work without interruption. Quick charge 3.0 brings you fast charging experience.

DUAL SIM CARDS WITH 4G NETWORK

UT12P supports dual Nano SIM cards with 4G network. You can use it for work and life anytime, anywhere.

GNSS CONSTELLATION SUPPORTED

Build-in U-blox GNSS module supports GPS, BDS and GLONASS. For a better signal acquisition, the external antenna is supported.

LARGE MEMORY STORAGE

UT12P has 64 GB internal storage to support large data access. It also supports SD card expansion up to 128 GB.

POWERFUL EXTENSION FUNCTION

The pogo pin makes UT12P a powerful device for different kinds of applications. It can connect to external scanner and other modules as you want.

RUGGED DESIGN

UT12P is IP68 certificated as a rugged device. It survives a 1.5 m drop on concrete floor and passes the MIL-STD-810G certifications.

Product Specification

System		Screen			GNSS		Communication	
Processor	Qualcomm MSM8953 Pro Octa-Core, 2.2GHz	Screen Size	6”		Tracking	GPS/BDS/GLONASS/	SMS	Support
		Resolution	1920 x 1080		SBAS	Support	WIFI	802.11 a/b/g/n/ac
OS	Android 10.0	Density	480 dpi		Accuracy	Single: 1 ~ 3 m	Bluetooth	4.1
RAM	4GB	Brightness	450 nits			SBAS: 0.6 m	SD Card	Support, up to128 GB
ROM	64GB	Touch Panel	Capacitive		External Antenna	Support, Female MMCX	USB	1 x USB Type-C Support OTG and headphone
GMS	Support	Camera	Rear	13 MP	Communication			
			Front	5 MP	GSM	GSM/WCDMA/LTE 2 x NanoSIM	Pogo pin	14 pins
			Flash Light	Support				
			Auto Focus	Support	Call	Support		

Power Supply		Microphone	Yes	Physical		Buttons	
Battery	Rechargeable and replaceable Lithium-ion battery, 3.8 V, 8000 mAh	Light	Yes	Dimension	191.6 x 91 x 14.5 mm		PTT, volume +/-, power, 3 x FN
		Proximity	Yes	Weight	375 g with battery 230 g Without battery	Keyboard	Virtual keyboard Virtual home, return, menu keys
Working	Up to 15 hours[1]	Magnetometer	Yes				
Charge	Qualcomm quick charge 3.0	Gyroscope	Yes	Operating Temperature	-20℃ ~ +60℃		
Safety Lock	With battery safety lock	Barometer	Yes	Storage Temperature	-40℃ ~ +70℃	Certificate	FCC, IC, CE, ROHS, REACH, WEEE
Sensor		Accelerometer	Yes	Water/Dust Proof	IP68		
NFC	Yes	Gravity	Yes	MIL-STD	MIL-STD-810G		
Speaker	Yes	Compass	Yes	Shock	Survive a 1.5 m drop on concrete floor		
				Humidity	95%		





UT20

7” RUGGED WINDOWS TABLET

IP68 certificated, UT20 is designed for anyone who works in harsh environments. The large memory storage, SD card expansion and SSD expansion demands large data requirement. The 7-inch screen is suitable for outdoor work such as survey, GIS, retail, logistics, monitoring.

HIGH PERFORMANCE CPU

Equipped with Intel Celeron CPU N3350 and Windows 10 system, UT20 brings with smooth experience.

HIGH FIDELITY SCREEN

The 7-inch screen with 1280 x 800 resolution makes UT20 a high-fidelity device. 550-nits brightness makes it Sunlight viewable.

LONG-TIME OPERATION

The new 4050 mAh rechargeable and replaceable battery ensures long time operation up to 6 hours without interruption. The n0t-swap battery supports up to three-minutes standby.

LARGE MEMORY STORAGE

UT20 has 64 GB internal storage to support large data access. It also supports SD card and SSD expansion.

POWERFUL EXTENSION FUNCTION

The pogo pin makes UT20 a powerful device for different kinds of applications. It can connect to external scanner and other modules as you want.

RUGGED DESIGN

UT20 is IP68 certificated as a rugged device. It survives a 1.5 m drop on concrete floor and passes the MIL-STD-810G, MIL-STD-461F certifications.

Product Specification

System		Screen	Screen Size	7”	GNSS		Communication	
Processor	Intel Celeron CPU N3350, 1.1 GHz		Resolution	1280 x 800	Channels	72, U-blox M8N, L1	GSM	GSM/WCDMA/LTE 1 x Nano SIM
OS	Micro Windows 10 Enterprise 64bit		Density	320 dpi	Tracking	GPS, BDS, GLONASS	WIFI	802.11 a/b/g/n/ac
RAM	4 GB		Brightness	550 nits	SBAS	Support	Bluetooth	4.2
ROM	64GBEMMC		Touch Panel	Capacitive	Accuracy	Single: 1 ~ 3 m SBAS:0.6m	SD Card	Support Micro SD card, up to 128 GB
			Touch	10 touch points			SSD	Support SSD expansion
		Camera	Rear	8MP	External Antenna	Support	USB	1 x USB Type-C, Support OTG 1xUSB3.0
			Front	2MP				
			Flash Light	Support			Pogo pin	35 pins
			Auto Focus	Support				

Power Supply		Sensor		Physical		Buttons	Power, 2 x FN
Battery	Rechargeable and replaceable Lithium-ion battery, 7.6 V, 4050 mAh	Speaker	Yes	Dimension	207 x 138 x 19.8 mm	Others	DC-in, Kensington locker TMP2.0 3 x MS-147 Port (WIFI, 4G,GNSS)²
Hot swap	Yes, more than 3 minutes standby	Light	Yes	Weight	745 g with battery 575 g Without battery		
Working	4-6 hours¹	Magnetometer	Yes				
Charge	4 hours	Gyroscope	Yes	Operating Temperature	-20℃ ~ +60℃		
Safety Lock	With battery safety lock	Accelerometer	Yes	Storage Temperature	-40℃ ~ +70℃	Certificate	FCC, IC, CE, RoHS, REACH, WEEE, RCM, E-mark
		Compass	Yes	Water/Dust Proof	IP68		
				MIL-STD	MIL-STD-810G MIL-STD-461F		
				Shock	Survive a 1.5 m drop on concrete floor		
				Humidity	95%		





UT32

8” RUGGED ANDROID TABLET

IP67 certificated, UT32 is designed for anyone who works in harsh environments. The battery handles whole day’s work for different kinds of applications. UT32 is suitable for outdoor work such as survey, GIS, retail, logistics, monitoring.

HIGH PERFORMANCE CPU

Equipped with octa-core 2.2 GHz processor and Android 10.0 system, UT30 brings with smooth experience.

HIGH FIDELITY SCREEN

The 8-inch screen with 1280 x 800 resolution makes UT32 a high-fidelity device. 400-nits brightness makes it Sunlight viewable.

LONG-TIME OPERATION

The 8200 mAh rechargeable and replaceable battery ensures whole day’s work without interruption. Quick charge 3.0 brings you fast charging experience.

GNSS CONSTELLATION SUPPORTED

Build-in GNSS module supports GPS, BDS, GLONASS and GALILEO. For a better signal acquisition, the external antenna is supported.

LARGE MEMORY STORAGE

UT32 has 64 GB internal storage to support large data access. It also supports SD card expansion up to 128 GB.

POWERFUL EXTENSION FUNCTION

The pogo pin makes UT32 a powerful device for different kinds of applications. It can connect to external scanner and other modules as you want.

RUGGED DESIGN

UT32 is IP67 certificated as a rugged device. It survives a 1.2 m drop on concrete floor and passes the MIL-STD-810G certifications.

Product Specification

System		Screen	Screen Size	8”	GNSS		Communication	
Processor	Qualcomm MSM8953 Pro Octa-Core, 2.2GHz		Resolution	1280 x 800	Tracking	GPS/BDS/GLONASS/ GALILEO	GSM	GSM/WCDMA/LTE 1 x Nano SIM
OS	Android 10.0		Density	320 dpi			Call	Support
RAM	4GB		Brightness	400 nits	SBAS	Support	SMS	Support
ROM	64GB		Touch Panel	Capacitive	Accuracy	Single: 1 ~ 3 m SBAS:0.6m	WIFI	802.11 a/b/g/n/ac
GMS	Support						Bluetooth	4.1
		Camera	Rear	13MP	External Antenna	Support, Female MMCX	SD Card	Support, up to 128 GB
			Front	5MP			USB	1 x USB Type-C Support OTG and headphone
			Flash Light	Support				
			Auto Focus	Support			Pogo pin	14 pins

Power Supply		Microphone	Yes	Physical		Buttons	Menu, home, return, volume +/-, power, 2 x FN
Battery	Rechargeable and replaceable Lithium-ion battery, 3.8 V, 8200 mAh	Light	Yes	Dimension	235 x 146 x 14.5 mm		
		Proximity	Yes	Weight	660 g with battery 505 g Without battery	Certificate	FCC, IC, CE, RoHS, REACH, WEEE
		Magnetometer	Yes				
Working	Up to 15 hours¹	Gyroscope	Yes	Operating Temperature	-20℃ ~ +60℃		
Charge	Qualcomm quick charge 3.0	Barometer	Yes	Storage Temperature	-40℃ ~ +70℃		
Safety Lock	With battery safety lock	Accelerometer	Yes	Water/Dust Proof	IP67		
Sensor		Gravity	Yes	MIL-STD	MIL-STD-810G MIL-STD-461F		
NFC	Yes	Compass	Yes	Shock	Survive a 1.2 m drop on concrete floor		
Speaker	Yes			Humidity	95%		









UT55

10” RUGGED WINDOWS TABLET

The UT55 uses industry-leading protection technology and a high brightness electromagnetic screen to overcome a variety of harsh environments. A variety of interfaces and extensions are available to enable a wide range of industry and engineering applications. The UT55 is your reliable partner to achieve your goals.

HIGH PERFORMANCE CPU

Equipped with Intel Kaby lake i5-7300U processor, UT55 brings with smooth experience. The cooling system keeps the temperature in a reasonable range.

HIGH FIDELITY SCREEN

The 10-inch screen with 1920 x 1200 resolution makes UT55 a high-fidelity device. 800 lumens brightness makes it Sunlight viewable.

SUPPORT HIGH-PRECISION PEN

With the pen coming with UT55, user can focus on the target precisely. It is important for some applications such as CAD drawing.

LONG-TIME OPERATION

The rechargeable and replaceable battery ensures long time operation up to 12 hours. The hot-swap function never interrupt work when change battery.

LARGE MEMORY STORAGE

UT55 has 128 GB SSD storage and 512 GB optional for large data access, also supports SD card expansion.

POWERFUL EXTENSION FUNCTION

The pogo pin makes UT55 a powerful device for different kinds of applications. It can connect to external modules as you want.

RUGGED DESIGN

UT55is IP67 certificated as a rugged device. It survives a 1.5 m drop on concrete floor and passes the MIL-STD-810G certifications.

Product Specification

System		Screen			GNSS			WIFI	
Processor	Intel Kaby lake-U i5-7300U 2.60GHz		Screen Size	10.1”				WIFI	802.11 a/b/g/n/ac, 2.4G/5G
OS	Windows 10 Enterprise 64bit		Resolution	1920 x 1200	Channels	72, U-blox M8N, L1		Bluetooth	V5.0
RAM	8GB		Density Brightness	220 dpi 800 nits	Tracking	GPS, GLONASS, BDS, Galileo, QZSS		SD Card	Support Micro SD card, up to 128 GB
ROM	128 GB SSD (512 GB Optional)		Touch Panel	Capacitive	SBAS	Support		USB	1xUSB3.0 1xUSBTypeC
			Pen	Electromagnetic pen	Accuracy	Single: 1 ~ 3 m SBAS: 0.6m		Pogo pin	35 pins
		Camera	Rear	8MP				Security	Kensington Lock, Encryption (FTPM)(DTPM2.0 Optional)
			Front	2 MP	External Antenna	Support			
			Flash Light	Support	Communication			Optional (Choose one)	Global 4G x 1 or TPM 2.0 Module x 1
			Auto Focus	Support	GSM (Optional)	1 x Nano SIM			

Power Supply		Speaker		Physical		Others	
Battery	Rechargeable and replaceable Lithium-ion battery, 11.4 V, 2900 mAh *2	Fingerprint	Yes	Dimension	270x190x19mm		1xDCin 1 x 3.5mm Audio Jack 1 x HDMI Type-D 1 x 35-pin docking connector 1 x GNSS antenna port
		Microphone	Yes	Weight	1.2 kg with battery 0.8 kg Without battery		
		Hall	Yes	Operating Temperature	-10℃ ~ +55℃		
Hot swap	Yes	Light	Yes	Storage Temperature	-20℃ ~ +70℃		
Working	8-12 hours*	Proximity	Yes	Water/Dust Proof	IP67	Optional Port (Choose one)	1 x RJ45 1 x RS232 1 x 2D Barcode Reader
Charge	4 hours	Magnetometer	Yes	MIL-STD	MIL-STD-810G		
Safety Lock	With battery safety lock	Gyroscope	Yes	Shock	Survive a 1.5 m drop on concrete floor		
Sensor		Accelerometer	Yes	Humidity	95%	Certificate	FCC, IC, CE, RoHS, REACH, WEEE, ROM
NFC	Optional			Buttons	Power, volume +/-, back button		

COMPARISON

HANDHELD &TABLET









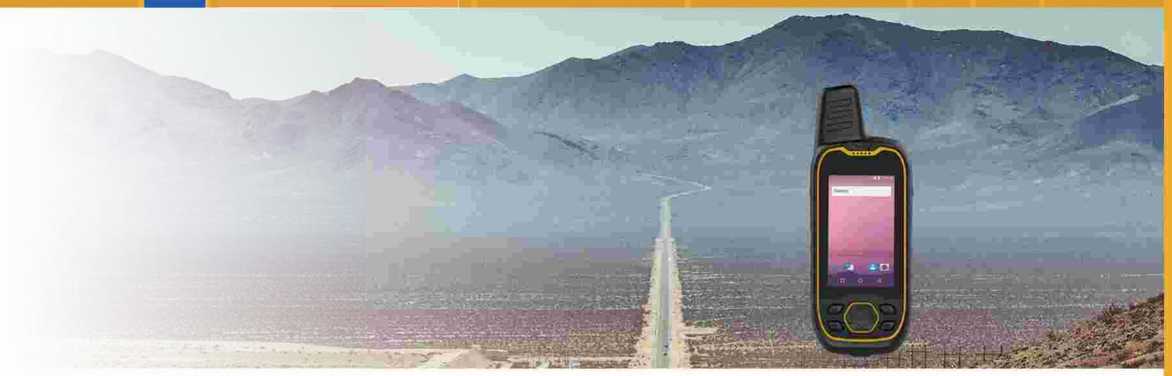


MODEL	P8II	UT12P	UT20	UT32	UT55
SCREEN SIZE	5”	6”	7”	8”	10.1”
SYSTEM	Android 9	Android 10	Win10	Android 10	Win10
GNSS	YES	YES	YES	YES	YES
RAM	3GB	4GB	4GB	4GB	8GB
ROM	32	64GB	64GB	64GB	128GB (512GB Optional)
4G	YES	YES	YES	YES	Optional
TF CARD	YES	YES	YES	YES	YES
REARCAM	13MP	13MP	13MP	13MP	8MP
FRONTCAM	NO	5MP	5MP	5MP	2MP
LAN	NO	NO	NO	NO	Optional
WIFI	YES	YES	YES	YES	YES
BLUETOOTH	YES	YES	YES	YES	YES
NFC	NO	YES	NO	YES	YES
SIM CARD	Dual	Dual	YES	YES	YES
BATTERY	5200mAh	8000mAh	4050mAh	8200mAh	2900mAh * 2
WEIGHT	360g	375g	745g	660g	1.2kg
WATER/DUST PROOF	IP67	IP68	IP68	IP67	IP68

GIS HANDHELD



The eSurvey hand-held GIS terminals are mainly applied in mobile positioning, with functions such as measuring coordinates, navigation, and calculation. With the continuous development and utilization of software and the continuous upgrading of hardware systems, handheld terminal applications are becoming more and more widespread and popular. It is widely used in many industries and fields such as electric power, communications, land, urban construction, transportation, energy, environmental protection, aerospace, agriculture, forestry, education and health, river survey, mine surveying, petroleum geophysical prospecting and so on.



G639/G659





3.2" RUGGED GIS HANDHELD

IP68 certificated, G639/G659 are designed for anyone who works in harsh environments. The helical antenna ensures a stable and amazing satellite signal tracking performance. The battery handles whole day's work. G639/G659 is small size and easy for carrying especially for GIS application.

HIGH PRECISION POSITIONING

The helical antenna ensures e stable and amazing satellite tracking performance. G659 can receive correction data through network to obtain centimeter level accuracy.

OPEN ANDROID 7 SYSTEM

Equipped with Quad-core Qualcomm processor, user can install software on the Android 7 platform.

SUNLIGHT VIEWABLE SCREEN

The 400-nits brightness makes the device Sunlight viewable.

LONG-TIME OPERATION

The 4000 mAh rechargeable and replaceable battery ensures whole day's work without interruption.

LARGE MEMORY STORAGE

Internal 8 GB storage and the expansion up to 128 GB makes sure it is suitable for large data application.

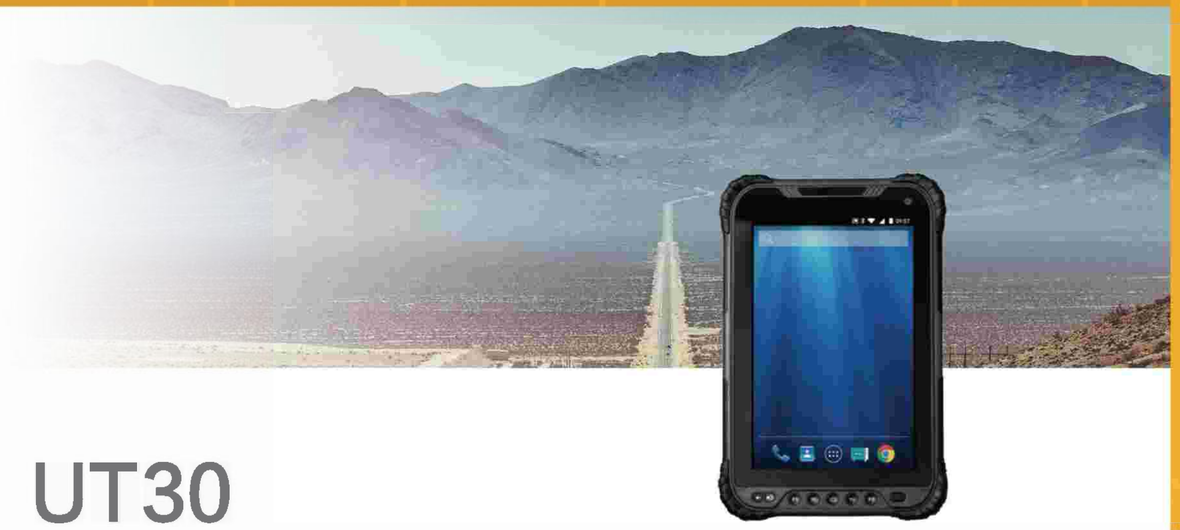
RUGGED DESIGN

Device is IP68 certificated as a rugged device. It survives a 1.8 m drop on concrete floor.

Product Specification

System		Screen		GNSS			Communication		
Processor	Qualcomm MSM8909 Quad-Core, 2.2GHz	Screen Size	3.2"		G639	G659	GSM	G639	G659
		Resolution	800 x 480	Channels	72	72		No	Yes
OS	Android 7	Density	320 dpi	Tracking	GPS/BDS/GLONASS /GPS + BDS /GPS + GLONASS /GPS+GALILEO	GPS/BDS /GPS + BDS	WIFI	Support	
RAM	1 GB	Brightness	400 nits				Bluetooth	Support	
ROM	8 GB	Touch Panel	Capacitive				SD Card	With 16 GB standard, up to 128 GB	
		Camera							
		Rear	8MP	SBAS	Support	Support	USB	1 x USB Type-C	
		Flash Light	Support	Accuracy	Single: 1 ~ 3 m SBAS: 0.6m	Single: 1 ~ 3 m SBAS: 0.6 m DGNSS: 0.5m RTK: 5cm + 1ppm			
		Auto Focus	Support						

Power Supply		Light	Yes	Physical		Buttons	1 x PTT 1 x Power 4 x FN 4 x Navigation
Battery	Rechargeable and replaceable Lithium-ion battery, 3.8 V, 4000 mAh	Proximity	Yes	Dimension	174 x 66 x 32 mm		
		Magnetometer	Yes	Weight	280 g with battery 205 g Without battery		
		Gyroscope	Yes				
Working	Up to 15 hours[1]	Barometer	Yes	Operating Temperature	-20℃ ~ +60℃	Keyboard	Virtual keyboard Virtual home, return, menu keys
Charge	5 hours	Accelerometer	Yes	Storage Temperature	-30℃ ~ +70℃		
Safety Lock	With battery safety lock	Gravity	Yes	Water/Dust Proof	IP68		
Sensor		Compass	Yes	Shock	Survive a 1.8 m drop on concrete floor	Lanyard	Support
Speaker	Yes			Humidity	95%		
Microphone	Yes			Lanyard	Support		



UT30

8" RUGGED ANDROID TABLET

IP67 certificated, UT30 is designed for anyone who works in harsh environments. The battery handles whole day' s work for different kinds of applications. UT30 is suitable for outdoor work such as survey, GIS, retail, logistics, monitoring.

HIGH PERFORMANCE CPU

Equipped with octa-core 2.2 GHz processor and Android 8.0 system, UT30 brings with smooth experience.

HIGH FIDELITY SCREEN

The 8-inch screen with1280 x 800 resolution makes UT30 a high-fidelity device. 450-nits brightness makes it Sunlight viewable.

LONG-TIME OPERATION

The 8200 mAh rechargeable and replaceable battery ensures whole day' s work without interruption. Quick charge 3.0 brings you fast charging experience.

GNSS CONSTELLATION SUPPORTED

Build-in U-blox GNSS module supports GPS, BDS and GLONASS. For a better signal acquisition, the external antenna is supported.

LARGE MEMORY STORAGE

UT30 has 32 GB internal storage to support large data access. It also supports SD card expansion up to 128 GB.

POWERFUL EXTENSION FUNCTION

The pogo pin makes UT30 a powerful device for different kinds of applications. It can connect to external scanner and other modules as you want.

RUGGED DESIGN

UT30 is IP67 certificated as a rugged device. It survives a 1.2 m drop on concrete floor and passes the MIL-STD-810G, MIL-STD-461F certifications.

Product Specification

System	
Processor	Qualcomm MSM8953 Octa-Core, 2.2GHz
OS	Android 8.0
RAM	4GB
ROM	32GB
GMS	Support

Screen	
Screen Size	8"
Resolution	1280 x 800
Density	320dpi
Brightness	450 nits
Touch Panel	Capacitive

Camera	
Rear	13MP
Front	5MP
Flash Light	Support
Auto Focus	Support

GNSS	
Channels	72, U-blox M8N, L1
Tracking	GPS/BDS/GLONASS/ GPS + BDS/GPS + GLONASS
SBAS	Support
Accuracy	Single: 1 ~ 3 m SBAS: 0.6 m
External Antenna	Support, Female MMCX

Communication			
GSM	GSM/WCDMA/LTE 1 xNanoSIM	SD Card	Support, up to 128 GB
Call	Support	USB	1 x USB Type-C Support OTG and headphone
SMS	Support		
WIFI	802.11 a/b/g/n/ac	Pogo pin	14 pins
Bluetooth	4.1		

Power Supply	
Battery	Rechargeable and replaceable Lithium-ion battery, 3.8 V, 8200 mAh
Working	Up to 15 hours'
Charge	Qualcomm quick charge 3.0
Safety Lock	With battery safety lock

Sensor			
NFC	Yes	Gyroscope	Yes
Speaker	Yes	Barometer	Yes
Microphone	Yes	Accelerometer	Yes
Light	Yes	Gravity	Yes
Proximity	Yes	Compass	Yes
Magnetometer	Yes		

Physical			
Dimension	242 x 152 x 17.8 mm	MIL-STD	MIL-STD-810G MIL-STD-461F
Weight	660 g with battery 505 g Without battery	Shock	Survive a 1.2 m drop on concrete floor
Operating Temperature	-20℃~ +60℃	Humidity	95%
Storage Temperature	-40℃ ~ +70℃	Buttons	Menu, home, return, volume +/-, power, 2 x FN
Water/Dust Proof	IP67	Certificate	FCC, IC, CE, RoHS, REACH, WEEE

HP50







HIGH PRECISION MODULE

HP50 is a high-precision module designed for UT30 tablet. It brings with centimeter-level accuracy to meet GNSS and GIS survey job. It is also able to equip an external GNSS antenna to get better antenna phase center measurement. To achieve high accuracy positioning, user can choose to connect network NTRIP server or directly

Product Specification

GNSS	
Satellites Tracking	GPS L1C/A,L1P,L2P, L2C,L5 BDS B1i,B2i,B3i,B1C,B2a,B2b,ACEBOC GLONASS G1/G2 Galileo E1,E5a,E5b,ALTBOC,E6 QZSS L1C/A, L1C,L2C,L5 SBAS[1] L-Band: Atlas H10/H30/Basic
Channels	800
Update Rate	1 Hz

Performance	
RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm
Code Differential	H:0.3m V:0.6m
SBAS	H:0.3m V:0.6m
L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS
Correction Data	CMR, CMR+, RTCM2, RTCM3, RTCM32

Physical	
Dimension	Φ148 mm x H74.5 mm
Weight	1.06 kg
Operating Temperature	-20℃ ~ +55℃
Storage Temperature	-40℃ ~ +70℃
Shock	Survive a 1.2 m drop on concrete floor
Vibration	Vibration resistant
Humidity	Up to95%

PRECISION AGRICULTURE

eSurvey constantly makes technological innovations in the fields of auto-driving, variable control and agricultural informatization to build an integrated intelligent agricultural information system, enhance the agricultural modernization, improve the land utilization rate, and preserve natural environment, so as to achieve sustainable development of agriculture.











EAS301

AUTO-DRIVING SYSTEM

EAS301 is a new automatic steering system using an electric wheel. Based on GNSS technologies, the system is independently developed by eSurvey. Using a driving controller to carry out the steering strategy and controlling the steering wheel rotation axis to drive the agricultural steering wheel to automatically turn, the agricultural machine is controlled to run in AB straight lines and adaptive curves.

HIGH ACCURACY

The high torque and high-speed electric steering wheel make the control faster. The controller with multi constellations and multi frequency GNSS board is built in to make the control more accurate up to 2.5cm.

HIGH FIDELITY SCREEN

The 7-inch screen with 1024 x 600 resolution makes ST5 display a high-fidelity device. 500-nits brightness makes it Sunlight viewable.

EASY TO INSTALLATION

No need to modify the original hydraulic line. And easy to transfer among vehicles. It can adapt to different types of agricuitural machinery, tractor, harvester, plant protection machine and transplanter.

NO START-UP SWAYING

The orientation is fixed by the GNSS positioning, heading and 9-axis MEMS sensor fusion technology.

MULTIPLE OPERATION MODES

Support A-B straight line, diagonal, curve, circle operation mode.

POWERFUL EXTENSION FUNCTION

The controller and display have rich extension ports, such as USB, CANBUS, RS232, RS485, CVBS to satisfy different requirements.

ULTRA-LOW SPEED DRIVING

At the speed of 0.056km/h, the system can ensure the straight-line accuracy of 2.5cm.

Product Specification

EAS301 System Performance	
Accuracy	2.5cm (≤9km/h) Dry land 5cm (≤9km/h) Paddy field
Line acquisition distance	<10m
Vehicle velocity range	0.1km/h-18km/h
Communication protocol	NMEA0183,NMEA 2000,ISO 11783,J1939
Data formats	RTCM3.2, CMR, ROX

ST5-Display

System	
Processor	AllWinner T3 Quad-core Cortex-A7, 1.2 GHz
OS	Android 6.0.1
RAM	2GBDDR
ROM	16 GB EMMC5.0

Power Supply	
Input voltage	9~36VDC

Sensor	
Accelerometer	Triaxial
Speaker	4Ω/2W

Communication	
Bluetooth	4.0 (BLE)
WIFI	2.4G, IEEE802.11 g/b/n
GNSS	GPS+BDS
GSM	FDD LTE: B1/B3 TDDLTE: B38/B39/B0/B41 TDSCDMA: B34/B39 WCDMA: B1 CDMA2000: 1X/EVDO: BC0 GSM: 900/1800MHz
Port	1 x Serial Port, 12-pin, RS232*2, RS485*1 1 x Serial Port, 10-pin, CAN*2, Power 1 x Serial Port, 8-pin, Camera*2, USB Host 1 x USB Type-A, USB Host 1 x USB, Micro-USB, USB Device 1 x SIM Card 1 x TF card 1 x GNSS, Fakra C 1 x GSM, Fakra D

Physical	
Dimension	203mm×140mm×33mm
Weight	665g
Button	1 x Power Button 1 x Back Button 1 x Home Button
Battery	None
Humidity	0%-90%RH
Operating Temperature	-20℃ ~+70℃
Storage Temperature	-30℃~ +80℃
Water/Dust Proof	IP65
Vibration	ISO 16750/MIL-STD-810G

Screen	
Screen Size	7"LCD
Resolution	HD 1024 x 600
Density	240 dpi
Brightness	500 nits
Touch Panel	Capacitive five-point touch screen

MC5 ECu

GNSS Performance	
Channels	1100
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: L1/L5 L-Band: Atlas H10/H30/Basic
Update Rate	5Hz, 10Hz and 20Hz (Optional)
Horizontal Positioning Accuracy	Single: <1.2m (RMS) DGNSS: <0.3m (RMS) SBAS: <0.3m (RMS) RTK: 8mm+1ppm (RMS) Atlas H10: 0.04m (RMS)
Heading Accuracy	<0.08° rms with 1.0 m baseline
Re-acquisition	<1s

Communication Interface	
Bluetooth	4.2
WIFI	IEEE 802.11 b/g/n
GSM	FDD LTE: B1/B3 TDDLTE: B38/B39/B40/B41 TDSCDMA: B34/B39 WCDMA: B1 CDMA2000: 1X/EVDO: BC0 GSM: 900/1800MHz
Port	1 x Serial Port, 18-pin, RS232*2, CAN*2, Network*1 1 x SIM Card 1 x GNSS, TNC 1 x UHF, TNC
I/O Protocol	NMEA 0183, NMEA 2000, SAE J1939/ISO11783

Internal Radio	
Type	TXand RX
Frequency Range	220-240 MHz & 410~ 470 MHz
Channel Spacing	12.5 KHz / 25 KHz
Emitting Power	1W
Operation Range	3 ~ 5 Km typically 10 Km with optimal conditions
Protocol	HZSZ, TrimTalk450S, PCC-GMSK, South

Environment	
Operating temperature	-40° C ~ +70° C
Storage temperature	-40° C ~ +85° C
Humidity	95%
Shock	EP455Section 5.14.1
Vibration	EP 455 section5.15.1 (Random)
Water/Dust Proof	IP67

Power	
Input Voltage	7 ~ 36VDC (ISO16750 4.2 B-H)

Physical	
Dimension	162.2mm×162.8mm×70.2mm
Material	Magnesium alloy
Weight	1.284kg ±20g

EW1- Electric Steering Wheel

Motor	
Working voltage	9-16V DC
Nominal voltage	12VDC
Output torque	DC9V/6.5N.m; DC12V/8.5N.m
Maximum output torque	13N · m
Maximum rotation speed	100RPM
Load steering error	< ±5°
Response delay	full range: 10Hz; straight walking: 20Hz

Working Environment	
Operating temperature	-20℃ ~ +70℃(-68° F ~ 158° F)
Storage temperature	-40℃~ +85℃(-104° F ~ 185° F)
Mechanical shock	EP455 5.14.1
Vibration characteristics	EP455 5.15.1& 5.15.2
Physical	
Dimensions	Φ180×80mm
Weight	4.6kg

EMC / Safety / Environmental Protection	
Radiated interference	IAW ISO14982-2009 /6.4 (broadband) / 6.5 (narrowband)
Radiation immunity	IAW ISO14982-2009/6.6
Electrostatic discharge (ESD)	IAW ISO14982-2009/6.7
Environmental protection standard	2011/65/EU RoHS 2.0

Communication	
Interface	ALTW/1DC-06PMMS-LC7001
Communication Protocol	SAE J1939/ISO11783 CAN BUS

MACHINE CONTROL



Machine control is the application of high-precision positioning in the construction machinery industry. With satellite navigation and positioning as the core, combined with optical, sonar, inertial navigation and other sensor technologies, data acquisition and analysis are performed to determine the target attitude and target position. Based on professional design conversion software, the 3D-data generated by the design that is system recognizable can be used as a benchmark for construction guidance and control to improve construction efficiency and quality. At the same time, the mechanical movement track and the construction process and results are recorded the construction process monitoring and tracing are effectively carried out and the full automation of the construction machinery and the full informationization of the construction are gradually realized.

UES

GNSS INTELLIGENT EXCAVATOR GUIDANCE SYSTEM



The guide control system of excavator uses GNSS real-time dynamic positioning technology to obtain the real-time and accurate 3D position information of the bucket by reading various tilt sensors installed on the excavator. The system can assist the excavator operator to finish the precise operation independently in the complex area, the area of vision less than the area and the high precision demand. Improve operation efficiency, reduce the participation of auxiliary measurement operators, improve the accuracy of operation results, and reduce repeated data check.

SIMPLE

It can provide three-dimensional reference in real time with graphics and numerical values, and the working interface is simple and clear, which can be mastered through simple training.

HIGH ACCURACY

The real-time positioning of centimeter level coordinates of the bucket can achieve an accuracy of ± 3cm.

MAJOR GOAL

Customized hardware products are suitable for severe operating conditions.

HIGH EFFICIENCY

Reduce auxiliary work such as survey, setting out, piling, etc.; refer to system guidance, easily complete high-difficulty projects, and at the same time, work at night will not be affected; avoid rework for high-precision work, reduce survey review, save labor, time and cost.

UCS

INTELLIGENT COMPACTION SYSTEM



With the help of high-precision GNSS positioning technology and sensor technology, GNSS intelligent compaction system (UCS)can display and record the physical parameters such as construction route, traveling speed, compaction intensity, vibration frequency, road temperature, etc. required by the construction specifications in real time, digitally and graphically, and ensure the expected construction index by real-time and effective construction through the number of rolling times and sensor numerical guidance machine.

REAL TIME SHOW COMPACTION CONDITION

Real time show the whole working area compaction condition: compaction pass count、filling thickness、running speed、compaction density, help improve the compaction quality.

REAL TIME SHOW COMPACTION TRACK AND THE QUALITY

Real time show the compaction track and the quality of compaction, efficiently avoid the over compaction and lack of compaction, optimize the compaction work, decrease cost.

HIGH WORK EFFICIENCY

Real time position the compaction weak spot, precisely guide the operator to do the mending work on specific area, guarantee the test reliability, enhance the test efficiency.

DIGITALIZATION OF CONSTRUCTION DATA

Generate the report to reflect the compaction condition, such as compaction density scattergram、relativity validation report and required other reports, digitalize the construction file.

INFORMATION SHARING IN THE WHOLE PROCESS

Real time send back the whole process compaction data to project owner、supervisor、contractor, improve the management.

OPTICAL & SCANNER

In scenarios of some surveying applications, traditional optical equipment is still the first choice of surveyors due to its proven stability and reliability; 3D laser scanning, as an emerging technology, can quickly obtain large number high precision. The data of point cloud data is widely used in cultural relics protection, urban building surveying, topographic surveying and mapping, highway and railway construction, tunnel engineering, bridge reconstruction and other fields. eSurvey provides users with traditional optical measuring instruments such as total stations, levels, electronic theodolites, and static and handheld 3D laser scanners.











E3

TOTAL STATION

E3 is a high-precision total station, providing customers with accurate angle and distance measurement. Built-in with common used measurement formulas. The fast, accurate and stable measurement definitely brings you with new experience.

2" ANGLE MEASUREMENT

30X TELESCOPE MAGNIFICATION

UP TO 800M WITHOUT PRISM

COMPENSATOR RANGE ±3'

FAST AND RELIABLE MEASUREMENT

Product Specification

Angle Measurement	
Reading System	Absolute encoder
Display Resolution	1"/5"/10"
Accuracy	2"

Telescope	
Magnification	30x
Field Angle	1° 30'
Minimum Focus	1 m
Object Aperture	50mm
Image	Erect
Resolution	3"

Distance Measuring Accuracy	
Prism Accuracy	± (2mm+2ppm • D)
Reflector Accuracy	± (3mm+2ppm • D)
Non-Prism Accuracy	± (3mm+2ppm • D)

Laser Plummet	
Laser Accuracy	±1mm/0.8~1.5m
Laser Spot	≤2 mm/0.8~1.5 m
Wavelength	635nm
Safety	Class 3
Output Power	0.7 ~1.0 mW

Battery	
Voltage	DC 7.4V
Capacity	2600mAh
Alert	Low voltage alert power off automatically after 10 min
Working Time	12 hours angle and distance 16 hours angle
Charge Time	4 hours

Compensator	
Compensator Type	Dual axis
Compensator Range	±3'
Compensator Resolution	1"

Distance Measuring Range	
Minimum Reading	0.0001 m
Single Prism Range	5000m
Reflector Range	1200 m
Non-Prism Range	800m

Measurement Time	
Tracking/Rapid/Fine	0.2s/0.6s/1s

Level Vial Sensitivity	
Plate Level	30"/2 mm
Circular Leve	8' /2mm

Data Management	
Memory	50,000 Points
USB Drive	Support
Bluetooth	Support

Physical Specification	
Dimension	170 x 190 x 345 mm
Screen	Dual screens 30 x Key
Fast Measure Key	Support
Interface	RS-232C
Water/Dust Proof	IP55
Working Temperature	-20 ℃ - +50 ℃
Storage Temperature	-40℃ - +70 ℃







ESL2 + ESM1

PRECISE AUTOMATIC LEVEL

ESL2 is used in geodetic control, construction of roads and industrial applications. The ESL2 with ESM1 can supply higher accuracy and be used in monitoring structural deformation etc. The use of automatic compensator speeds up work and improves accuracy. ESL2 supply the possibility to operate in the temperature from -30℃ to +50℃.

EQUIPPED WITH A PRESS BUTTON FOR COMPENSATOR CHECKING.

DISMOUNTABLE EYEPIECE AND ASSORTED ACCESSORIES SUCH AS DIAGONAL EYEPIECES.

ADOPT CROSSING SUSPENDER FRAME AND COMPENSATOR OF AIR DAMPER.

Product Specification

Accuracy	
1Km Error	≤ ±1 mm
With ESM1	≤ ±0.5 mm

Telescope	
Image	Erect
Magnification	32x
FieldAngle	1° 20'
Minimum Focus	1.6 m
Field of View at 100m	2.3m
Object Aperture	45mm
Multiplication Factor	100
Additive Constant	0

Compensator	
Compensator Type	Pneumatic
Compensator Range	±14'
Setting Accuracy	≤ ±0.3"
Setting Time	≤ 2 s
Sensitivity of Circular Level Per 2mm Run	8' /2 mm

Physical Specification	
Dimension	130 x 215 x 140 mm
Weight	2.5 Kg
Operating Temperature	-30℃ ~ +50℃

Parallel Plate Micrometer ESM1 (Optional accessory)	
Range	10mm
Interval	0.1mm
Estimation	0.01 mm
Weight	1.25 Kg



ESL3

RELIABLE AUTOMATIC LEVEL

ESL3 is equipped with a magnetic damping compensation system which has a large compensation range and a high compensation accuracy compensator to ensure that the equipment can guarantee the accuracy and efficiency of the measurement even in the complex environment subject to vibration or shock. 32 times magnification, 38mm large clear aperture equipped with 550nm coating ensures the measurement fast and comfort. The all-metal body and IP66 design ensure that the body is solid and durable while offering ESL3 strong environmental adaptability.

THE INSTALLED MAGNETIC DAMPING COMPENSATOR ENSURES RELIABLE ACCURACY AND FAST COMPENSATION.

32 TIMES MAGNIFICATION, 38MM LARGE APERTURE ALLOWS LIGHTTO BE SEEN CLEARLY AND READ ACCURATELY.

ALL-METAL BODY DESIGN AND DURABLE

IP66 WATERPROOF AND DUST-PROOF LEVEL, PROFESSIONALLY DESIGNED FOR DUST AND DAMP CONDITIONS.

Product Specification

Accuracy	
1Km Error	⩽ ±1.5 mm

Telescope	
Image	Erect
Magnification	32x
Resolution	⩽3.0"
Field Angle	1° 20'
Minimum Focus	0.3 m
Object Aperture	38mm
Multiplication Factor	100
Additive Constant	0

Compensator	
Compensator Type	Magnetic
Compensator Range	±15'
Setting Accuracy	⩽ ±0.5"

Physical Specification	
Water/Dust Proof	IP66
Dimension	135 x 215 x 140 mm
Weight	1.7 Kg



ET2A

ELECTRONIC THEODOLITE

ET2A is a high precision electronic theodolite. This device has 2 "angle measurement accuracy and 30x magnification effect to meet virous of working requirement.

30X TELESCOPE MAGNIFICATION

2" ANGLE MEASUREMENT ACCURACY

COMPENSATOR UP TO 3'

TWO SIDES LCD DISPLAY

Product Specification

Angle Measurement	
Measuring Method	Absolute encoder
Diameter	79mm
Min. Reading	1", 5", 10"
Measuring Unit	360°, 400gon
Vertical Angle 0°	Zenith 0°, Horizontal 0°
Accuracy	2"

Laser	
Length of the Wave	635nm
Power	10mW
Effective Range	250m
Position Error	≤5"
Voltage	DC 3.3 V
Working Temperature	-10° ~ +45°

Telescope	
Image	Erect
Magnification	30x
Effective Aperture	47mm
Resolving power	3.75"
Field of View	1° 30" (26mm/1000m)
Min. Focus	1.5 m
Stadia Ratio	100
Tube Length	169mm

Compensator	
Electronic Tilt Sensor	Vertical compensation
Compensator Range	±3'
Resolving Power	6"

Vial	
Plate Vial	30" /2mm
Circular Vial	8' /2mm

Display	
Type	Two sides LCD

Onboard battery	
Power Resource	Rechargeable Li-on battery
Voltage	DC 7.4 V
Operation Time	BDC 1600 mAh (About 20 hours)

Others	
Storage Temperature	-10° ~ +45°
Dimension	180x 166x 355 m
Weight	5 Kg



X50

3D LASER SCANNER

X50 is a pulse-based 3D laser scanner designed to scan and obtain the 3D coordinates and reflection intensity of the measured object by emitting a safety laser which is harmless to human eyes. It is a non-contact active measurement system which can be used for precision measurement and quickly access the massive point cloud data in complex environments. It is a very cost-effective popular product that eSurvey has launched for a wider range of applications. It will further promote the application of 3D laser scanning technology in more fields and explore more application scenarios and solutions with many users.

EXCELLENT DESIGN AND EASY TO USE

IMAGE AND POINT CLOUD AUTOMATIC MATCHING OUTPUT

FIRST CLASS SAFE LASER

CONVENIENT REMOTE CONTROL AND OPERATION

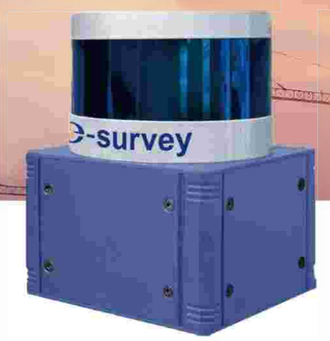
PROFESSIONAL SUPPORTING PROCESSING SOFTWARE

PROTECTION FOR HARSH ENVIRONMENT

Product Specification

System	
Laser safety class	1 class safe laser
Internal camera	5 million Single-fisheye camera
Memory	32GBSSD
Data transfer	Wi-Fi, SD card
Communication	Web UI via Wi-Fi/ PC software/ LCD touch screen/ Smart voice

Performance	
Visual range	Horizontal: 360°
	Vertical: 270° (across the zenith)
Detect distance	0.2-50m
Scanning rate	> 40,000 point/s
Angular resolution	0.125°
Accuracy	< 1mm(10m)
Tilt compensation range	±10°
Tilt compensation accuracy	30'



H5

HANDHELD 3D LASER SCANNER

H5 is a lightweight, independent real-time position and 3D scanner device. Based on advanced 3D laser SLAM algorithm, it can output the six-degree-of-freedom position and attitude information, and high-precision 3D point cloud in real time without external GNSS assistance. It can be applied to surveying and mapping related fields, which can subversively improve the generation efficiency of 3D point clouds and get rid of the dependence on GPS or other external positioning equipment. It can also be used as the core positioning module of mobile robots to provide reliable real-time six-degree-of-freedom position and attitude information.

PORTABLE DESIGN AND EASY TO USE

PROFESSIONAL SUPPORTING PROCESSING SOFTWARE

LONG-DISTANCE WI-FI MODULE

RICH EXTERNAL INTERFACE

EXCELLENT 3D SLAM ALGORITHM

Product Specification

Scan Performance	
Scan accuracy	3-5cm
Scan distance	100m
Point clouds frequency	Up to 300000 points/s
Perspective range	360° horizontal ±15° vertical
Scan mode	Mobile (Free movement with six-degrees-of-freedom)
Scan speed	Line velocity: <8m/s (recommend 0.5-2m/s) Angular velocity: <60° /s

Position Performance	
Position and attitude mode	Six-degrees-of-freedom (x, y, z, yaw, pitch, roll)
frequency	0-200Hz
Relative accuracy	Drift from the initial point<0.8%
Absolute accuracy	Relative prior map position<10cm, attitude<10°
Position mode	Relative initial point/relative prior map
Development interface	The API of Control, position and attitude, point cloud acquisition, customizable
Output interface	Standard WAN port, TCP/IP protocol

UAV



Surveying drones can be used in land and resources surveys, digital city development and construction, the establishment of communication stations, national map surveying and mapping, urban development planning, real-time monitoring of emergencies, disaster prediction and assessment, urban street traffic, network and power grid laying, and mineral development, Environmental management and ecological protection, forest management, smart agriculture and other fields. In the surveying and mapping, the main function of the UAV is to obtain the orthophoto map of the plan view with the kilometer grid, the interior and exterior decoration of the outline and the annotation prepared by the orthophoto.



UF-25

VTOLDRONE

UF-25 fixed-wing vertical take-off and landing drone is the latest generation of intelligent drone, capable of autonomous flight according to the scheduled route, high precision of route control, stable flight attitude and simpler operation. Designed for missions such as long-duration shooting, monitoring, surveying, and data acquisition, it has an excellent mission navigation system that is suitable for long-range and large-scale flight missions.

HIGH-STRENGTH FUSELAGE

Adopt military-grade manufacturing process, full carbon fiber body, high strength, corrosion resistance, good electrical and thermal insulation.

HIGH RELIABILITY

With high reliability and convenient operability, fully automatic vertical take-off and landing can be completed.

LONG WORKING HOURS

Cruise speed: 70-100KM/h
Working hours: 150min

SMARTER AND MORE HUMANIZED CONTROL SYSTEM

With humanized design style, simple operation, it can automatically realize autonomous navigation measurement according to the planned route.

Product Specification

Dimension	
Fuselage	1480mm
Wingspan	2500mm

Takeoff	
MTOW	11kg
Payload	2kg

Mounting Device			
RX1 RXII Camera	Pixel: 42.4M	Weight: 510g	Lens: 35mm
Five-lenses Camera	Pixel: 24.3M X 5	Weight: 760g	Lens: 35mm
Binocular Hanging Warehouse	Magnification: 30x	Weight: 1.4kg	Lens: 25mm thermal imagery

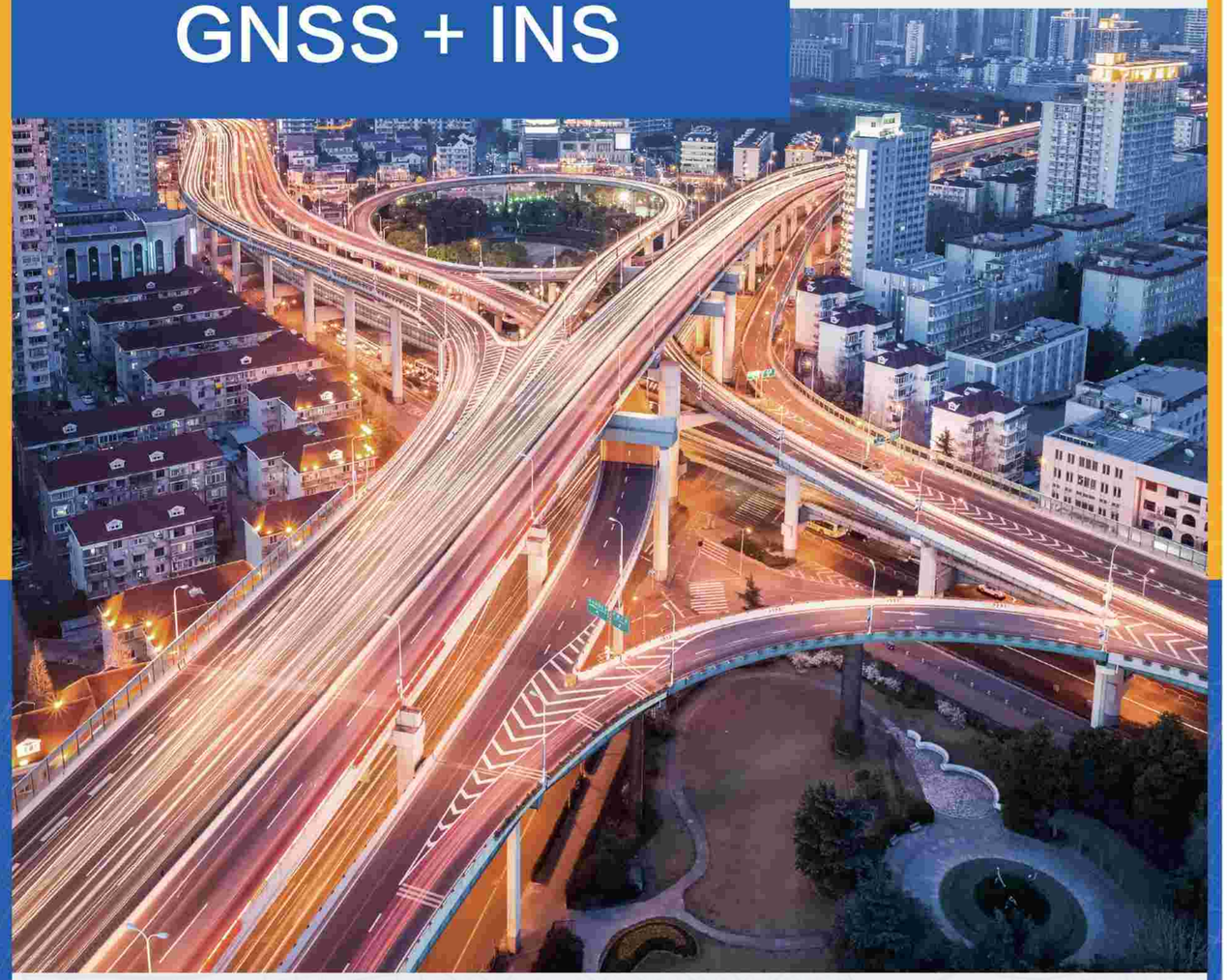
Working Hours	
Maximum	2.5h

Flight Specifications	
Takeoff & Landing Method	VTOL
Automatic Flying Mode	GNSS Navigation
Cruise Speed	70~100km/h
Ceiling Altitude	5000m
Propulsion System	effective brushless motor
Maximum Climbing Speed	10m/s
Noise	≤75dBA@3M
Wind Resistance	Class 6

Physical Specification	
Working Temperature	-20~65℃
Storage Temperature	-25~70℃
Humidity	10%~95%
IPRate	IP54

Battery	
Capacity	35000mah; 5000mah×2
Battery Life	300times

GNSS + INS



The GNSS integrated inertial navigation series products include MEMS and FOG two types of integrated navigation at different levels to meet the needs of different positioning and attitude accuracy. This series gives full play to the respective advantages of satellite navigation and inertial navigation. It can not only continuously output position data in situations where the satellite is out of lock, such as tunnels, viaducts, urban canyons, etc., but also provide the carrier with high-precision attitude, speed, etc. Information, which can bring new solutions in a variety of scenarios such as drone applications, urban autonomous driving, high-speed rail track detection, ocean surveying, map collection and other applications.



UGM512

UGM512 GNSS MEMS integrated navigation system is a cost-effective GNSS and MEMS integrated navigation system for unmanned aerial vehicles and small size unmanned vehicles. The product has built-in high-precision GNSS receiver and cost-effective MEMS inertial device and has a good performance. UGM512 can choose the raw data storage function and navigation post-processing software to provide the users with higher-precision positioning attitude data.



UGM532

UGM532 is a new integrated navigation product and can provide a variety of navigation parameters through combining satellite positioning and inertial measurement and adopting multi-sensor data fusion technology. UGM532 with built-in MEMS gyro and accelerometer, supports external odometer information assistance, makes use of a new generation of accurate calibration technology and multi-sensor data fusion technology, and has greatly improved the system reliability, accuracy and dynamism, and can also provide the information which the satellite navigation cannot provide, such as heading, attitude, etc.



UGF712

UGF712 is a new integrated navigation product and can provide a variety of navigation parameters, through combining satellite positioning and inertial measurement and adopting multi-sensor data fusion technology .UGF712 with built-in optical fiber gyro and quartz accelerometer, supports external odometer information assistance, makes use of a new generation of accurate calibration technology and multi-sensor data fusion technology, and has greatly improved the system reliability, accuracy and dynamism, and can also provide the information which the satellite navigation cannot provide, such as heading, attitude, etc.