

Specification

A90 GNSS RTK

Product model		A90 ZX	A90 ZH
GNSS	Channels	336 channels	800 channels
	Satellite Signals	GPS: L1 C/A, L2E, L2C, L5 BDS: B1, B2, B3 GLONASS: L1 C/A, L2 C/A, L3 Galileo: E1, E5A, E5B, E5AltBOC, E6 QZSS: L1 C/A, L1 SAIF,L1C, L2C, L5, LEX SBAS: L1 C/A, L5 MSS L-Band: Trimble RTX IRNSS L5	GPS: L1C/A,L1C,L1P,L2C,L2P,L5; GLONASS:G1P1,G1OC,G2OC,G2P2,G3OC BDS: B1I, B2I, B3I, B1C, B2a, B2b, ACEBOC; Galileo: E1BC, E5a, E5b, ALTBOC, E6 QZSS: L1C/A, L1C, L2C, L5, LEX; SBAS: L1, L5; IRNSS: L5; L-Band
Accuracy	Static	H: ± (2.5mm+0.5 x10 <sup>-6</sup> . D) RMS , V: ± (5mm+0.5 x10 <sup>-6</sup> . D) RMS	
	RTK	H: ± (8mm+0.5 x10 <sup>-6</sup> . D) RMS , V: ± (15mm+0.5 x10 <sup>-6</sup> . D) RMS	
	DGNSS	<0.5m	
	ATLAS H10	8cm	
	Initialization Time	8s	
	Initialization Reliable	99.9%	
System	OS	Linux	
	Memory	8GB, support expandable MicroSD 32G	
	Wi-Fi	802.11 b/g/n, support WebUI management: update, data download, operation setting and etc.	
	Bluetooth	V2.1+EDR/V4.1Dual, Class2	
	E-Bubble	Support	
	IMU Tilt Survey	Fusion positioning, 400Hz refresh rate, 2cm (@60°Tilt degree)	
	Audio	support TTS audio broadcast	
Datalink	UHF radio	Tx/Rx Internal Radio, 0.5W/2W adjustable, 410-470MHz	
	Radio protocol	Support GeoTalk, SATEL, PCC-EOT, TrimTalk 450S, TrimMark III, South, Hi-Target and etc.	
	Network	4G-LTE, TE-SCDMA, CDMA(EVDO 2000), WCDMA, GSM(GPRS)	
	Reference outputs	RTCM2.3, RTCM3.2, RTCM3.X, CMR,CMR+,ROX and etc.	
Physical	Interface	1*TNC Radio Antenna, 1*5Pin(Power & RS232),1*7Pin (USB 81 RS232)	
	Button	1 Power Button	
	Indication Light	4 Indication Lights	
	Size	Φ156mm×H76mm	
	Weight	1.2kg	
Power supply	Battery capacity	7.4V, 24.5Wh(standard two batteries:3400mAH*2)	
	Life Timer	Static Survey: 15 hours, Rover RTK survey: 12h	
	External power source	DC 9-18V, with overvoltage protection	
Environment	Work Temperature	-35°C~+65°C	
	Storage Temperature	-55°C~+85°C	
	Waterproof & dustproof	IP68	
	Humidity	100% anti-condensation	

(1) Accuracy and reliability specifications may be affected by multipath, satellite geometry and atmospheric Conditions. Performances assume minimum of 5 satellites, follow up of recommended general GPS practices.

(2) Operating time varies based on temperature. Specifications are subject to change without notice.



GNSS RTK Receiver

A90



## A90 Features

Since A90 launch, A90 has been recognized by the majority of users for its excellent quality and excellent performance, and has become a star product in the RTK market. Now, the A90 is newly upgraded, the A90 is launched, and a new inertial navigation technology is added to support the fusion positioning.



"Athena" RTK engine,



ATLAS



aRTK

### Core Technology

The A90 ZH Extreme Edition is equipped with a new generation of high-precision positioning boards, 800 super channels, supporting 4-satellites full-band satellite signal reception, and fully supports the fourth-generation GNSS positioning technology.

- Support "aRTK" technology, maintain a fixed resolution for a period of time in the case of a differential data link interruption.



### Smart Base Station

Real-time reminder of base station offset, real-time display of base station power, Even your base station is near the sky, it is almost in front of you



### IMU Tilt Survey

Newest IMU Tilt Survey technology, New algorithm, no need calibration. Using fusion positioning technology, built-in high-precision IMU inertial navigation module, patented IMU inertial navigation and GNSS fusion positioning algorithm, Support 400Hz positioning data output, tilt 60 degrees positioning accuracy 2cm, can do tilt measurement, Surveying at any time.

### As solid as a rock



High purity magnesium alloy material + independent closed space capsule design. Make independent loops between different RF modules. Minimize internal crosstalk, the internal noise control of the instrument reaches the world's top level.

## Easy Surveying

### Combined Antenna



A new generation of combined antennas, GNSS, WiFi, Bluetooth, 4G. The antenna is integrated, the system level is optimized, and the signal strength is improved Up 30%!

### Dual Batteries Dual insurance



Dual battery + dual battery compartment double insurance design, unique ingenuity, battery self-contained power intelligent detection chip, remaining power, one click know!



WebUI



Intelligent Voice



cloud services

### Intelligent System



Based on intelligent operating system, the newly designed new generation WebUI makes RTK operation as simple as the Internet; intelligent TTS voice prompts support user DIY settings; UniCloud private cloud service, remotely control the working status, make your instrument smarter!

Beyond, because I don't believe in perfection



## SurPad 4.0 surveying software



Brand new UI design, support CAD mapping, stake out, support direct import of road curve feature table, built-in 11 commonly used projection methods worldwide and more than 1600 coordinate systems in hundreds of countries. Professional function modules and one-click help design help you efficient measurement

<b>Mobile CAD platform</b> Powerful CAD function, field connection of field measurement data, direct calculation and drawing of various CAD images in the field, straight line processing of complex line field CAD, support for import and export of DXF files.	<b>Internationalized Global Coordinate System</b> Supports 11 commonly used projection methods worldwide, with more than 1,600 coordinate systems built in hundreds of countries.
<b>Powerful road function module</b> Support direct import of road straight curve table, support line element method, intersection method input, cross section, slope stake out, map preview, etc.	<b>Graphical photo annotation</b> The measurement points are taken and marked in real time, attribute recording is more convenient, and finding points in the field is easier.
<b>Convenient parameter QR code sharing</b> It supports sharing of two-dimensional codes such as conversion parameters, coordinate systems and configuration sets, which is convenient and quick.	<b>Easy earthmoving calculations</b> A variety of earthmoving measurement algorithms.
<b>Practical National 2000 Frame Conversion</b> Support frame conversion of Atlas and National 2000 coordinate system. Atlas can directly measure national 2000 coordinate results.	<b>One-click help</b> The software has a built-in guide-type help module, and one-click help for various functions. The software is no longer complicated and measurement is easier.
<b>New UI design</b> More reasonable page function distribution, simple and beautiful software operation interface, support interface style switching, icon hiding and other functions	

## P9III Controller

- Operating System Android 9.0
- Built-in Bluetooth, WIFI module
- 4.3 inches, readable in sunlight, touch screen
- 13 megapixels built-in camera
- Protection level IP67



GNSS Performance (Option)		Power Supply	
Satellite Tracked	MTK support GPS/BDS/GLONASS	Internal Battery	22.8Wh
Update Rate	1Hz		
Position accuracy	2.5 m CEP (Autonomous)	Operating Time	No less than 12 hours
	2.0m CEP (SBAS)	Charging Time	Typically 4 hours
Cold Start	30 seconds		PE quick charge 9V/2A
Hot Start	1 second	Data Interface	
Communication		Display	4.3 inch
Memory	2 GB		480 x 800
Storage	16 GB		Sunlight readable
Bluetooth	BT2.1 + EDR/3.0/4.1/4.2 BLE	Keypad	Alphanumeric key and function key
WIFI	2.4G/5G, 802.11 a/b/g/n/ac	Connectors	Type C(For charging and data transfer, OTG)
NETWORK			
	FDD-LTE :B1//B3/B5/B8	Operating System	Android 9.0
	TDD-LTE B34/B38/ B39/B40/B41	Processor	Qualcomm 506, 8 cores
	EVDO/CDMA:BC0	Micro SD Card Slot	Up to 256 GB
	WCDMA B1/B8	SIM Card	SIM card
	GSM/EDGE:900/1800MHz	Environment	
Physical		Operating Temperature	-20°C ~ 55°C
Dimensions	215x82x26mm	Storage Temperature	-40°C ~ 70°C
Weight	470g	Water/Dust Proof	IP67
		Drop Resistance	1.5m to concrete
		Humidity	0-95% RH, no-condensing