

V90PLUS PERFORMANCE SPECIFICATIONS

Satellite Signals Tracked Simultaneously

220 Channels
 GPS Simultaneous L1C/A, L2C, L2E, L5
 GLONASS Simultaneous L1C/A, L1P, L2C/A (GLONASS M only), L2P
 Galileo Simultaneous L1 BOC, E5A, E5B, E5AltBOC¹
 BDS B1, B2
 SBAS L1 C/A, L5 (EGNOS, WAAS, MSAS, GAGAN, QZSS)

POSITIONING PERFORMANCE²

Hot Start Typically < 10s Cold Start Typically < 15s
Static and Fast Static GNSS Surveying

Horizontal 2.5mm+0.5ppm RMS
 Vertical 5mm+0.5ppm RMS

Post Processing Kinematic (PPK / Stop & Go) GNSS Surveying

Horizontal 1cm+1ppm RMS
 Vertical 2.5cm+1ppm RMS
 Initialization time Typically 10 minutes for base while 5 minutes for rover
 Initialization reliability Typically > 99.9%

Real Time Kinematic(RTK) Surveying

Single Baseline

Horizontal 8mm+1ppm RMS
 Vertical 15mm+1ppm RMS

Network RTK

Horizontal 8mm+0.5ppm RMS
 Vertical 15mm+0.5ppm RMS
 Initialization time Typically < 8seconds
 Initialization reliability Typically > 99.9%

Code Differential GNSS Positioning

Horizontal 25cm+1ppm RMS
 Vertical 50cm+1ppm RMS
 SBAS³ 0.50m Horizontal, 0.85m Vertical

COMMUNICATION

Network Communication

Fully integrated, fully sealed internal WCDMA, compatible with GPRS, GSM
 Wifi frequency is 2.4G, supports the standard protocol 802.11b/g/n
 Network RTK (via CORS) range 20-50km

HI-TARGET Internal UHF Radio(Standard)

Frequency 450-470MHz with 116 channels
 Transmitting power 0.5W, 1W, 2W adjustable
 Transmitting speed 9.6Kbps, 19.2Kbps
 Working range 5km typical, 8-10km optimal

SATEL Internal UHF Radio

Frequency 403-473MHz
 Transmitting power 0.1W ~1W adjustable
 Transmitting speed 9.6Kbps, 19.2Kbps
 Support most of radio communication protocol
 Working range 3-5km typical, 8-10km optimal

HI-TARGET External UHF Radio (Standard)

Frequency 460MHz with 116 channels
 Transmitting power 5W, 10W, 20W, 30W adjustable
 Transmitting speed Up to 19.2Kbps
 Working range 8-10km typical, 15-20km optimal

Pacific Crest ADL Vantage Pro External UHF Radio

Frequency 390-430MHz or 430-470MHz
 Transmitting power 4W to 35W adjustable
 Transmitting speed Up to 19.2Kbps
 Support most of radio communication protocol
 Working range 8-10km typical, 15-20km optimal

HARDWARE

Physical

Dimensions (W x H) 153mm x 83mm (6.02inch x 3.27inch)
 Weight 950g (2.09lb) without internal battery
 Operating temperature -40°C to +65°C (-40 °F to +149 °F)
 Storage temperature -55°C to +85°C (-67 °F to +185 °F)
 Humidity 100%, considering
 Water/dustproof IP67 dustproof, protected from temporary immersion to depth of 1m (3.28ft).
 Shock and vibration Designed to survive a 3m(9.84ft) natural fall onto concrete.

Electrical

Power 6V to 28V DC external power input
 Power consumption ≤ 3.5W
 Automatic switching between internal power and external power
 Rechargeable, removable 7.4V, 5000mAh Lithium-ion battery in internal battery compartment

Internal Battery Life

Static more than 12 hours
 RTK Rover (UHF/GPRS/3G) 10 hours
 RTK base more than 8 hours

I/O Interface

Bluetooth, NFC X1
 standard USB2.0port X1
 TNC antenna connector X1
 RS232 serial port X1
 DC power input (5-pin) X1
 MicroSD card port X1

Tilt Survey System

Electronic Bubble

SYSTEM CONFIGURATION

System

Data storage 16GB Internal storage+ Internal Micro SD Card memory (Support up to 32GB extension)
 Record GNS and Rinex format simultaneously

Data Formats

[1Hz positioning output, up to 50Hz - depends on installed option]
 CMR: sCMRx, CMR, CMR+input and output
 RTCM: RTCM 2.1, 2.2, 2.3, 3.0, 3.1, 3.2 input and output
 Navigation outputs ASCII: NMEA-0183 GSV, AVR, RMC, HDT, VGK, VHD, ROT, GGK, GGA, GSA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL, GRS, GBS
 Navigation outputs binary: GSOF

¹Developed under a License of the European Union and the European Space Agency.

²Precision and reliability may be subject to anomalies due to multipath, obstructions, satellite geometry, and atmospheric conditions. The specifications stated recommend the use of stable mounts in an open sky view, EMI and multipath clean environment, optimal GNSS constellation configurations, along with the use of survey practices that are generally accepted for performing the highest-order surveys for the applicable application including occupation times appropriate for baseline length. Baselines longer than 30 km require precise ephemeris and occupations up to 24 hours may be required to achieve the high precision static specification.

³GPS only and depends on SBAS system performance. FAA WAAS accuracy specifications are < 5 m 3DRMS.

Descriptions and Specifications are subject to change without notice

HI-TARGET

V90 PLUS

GNSS RTK SYSTEM



HI-TARGET

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83mm HEIGHT / 153mm DIAMETER / 950g WEIGHT

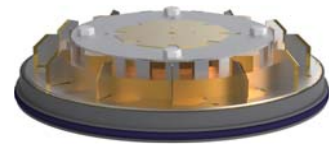
V90 PLUS GNSS RTK SYSTEM

With a hi-tech, fully integrated design, the conveniently sized V90 Plus is one of the most flexible choices for any measuring task. Built-in Linux3.2.0 operating system, pre-loaded multiple smart applications such as tilt surveying, electronic bubble calibration, NFC and voice DIY, V90 Plus GNSS system provides surveyor industry-leading GNSS solutions.



Multi-constellation Tracking

- 220 tracking channels
- NGS approved full-wave GNSS antenna
- Supports GPS, GLONASS, GALILEO, BDS, SBAS



Advanced Trimble® BD970 OEM is a compact multi-constellation receiver designed to deliver centimeter accuracy to a variety of applications.

- Supports a wide range of satellite signals
- A large receiving area designed for multipath mitigation
- Air dielectric is light and stable

Smart Application

- Offers tilt survey with a maximum tilt angle of 30 degrees
- Supports electronic bubble
- Intelligent voice assistance guides field operations. Voice can be DIY
- Standard Rinex data and HI-TARGET raw data recorded simultaneously



Optional Transceiver UHF Radio

- The transceiver UHF radio enables switchable working modes between base and rover
- Three types of internal UHF radio provide different frequencies based on users requirements. The SATEL internal UHF radio is compatible with other radios

Multi-network Connection

- Supports GPRS, GSM and WCDMA
- Supports WIFI

Powerful Battery

- Powered by high-capacity (5000mAh) Li-ion battery to ensure full day operation

Rugged Design

- IP67 dustproof and waterproof
- Able to survive a 3-meter natural fall onto concrete

iHand20 Field Controller Default Configuration

The iHand20 is designed for intelligent RTK with NFC sensor, a durable keyboard, ultra-long battery life and sensitive touchscreen, preinstalled free and intelligent Hi-Survey software. Hi-Survey software is the first high-precision survey software of Hi-Target running on the Android platform, supports tilt survey and electronic bubble, can perfectly cooperate with V90 Plus.



Getac PS336 Field Controller Optional

This field-ready workhorse is built for power, functionality and ruggedness. It features a large 3.5 inch display with a pressure sensitive touchscreen, advanced GPS, integrated keyboard and plenty of power to run your apps. The unit is fully compatibility with SurvCE, MicroSurveyFieldGenius, Digiterra Explorer and EsriArcPad. The PS336 Field Controller is compact enough to operate in one hand and it offers the highest durability standards in the industry.

Post-processing Software

HI-TARGET Geomatics Office (HGO) software

- Provides the complete GPS/GLONASS/BDS/GALILEO processing solution
- Standard Rinex data format and Hi-Target raw data format can be processed flexibly and easily
- Easy operation



CONTROLLER PERFORMANCE SPECIFICATIONS

	iHand20	GETAC PS336
System configuration	OS: Android 4.2 Processor: MT6589, 1.5GHz, 4core RAM: 1GB Flash memory: 4 GB	OS: Windows Mobile 6.5 Processor: TI AM3715, 1GHz RAM: 512MB Flash memory: 8 GB
Communication interface	Bluetooth NFC Mini USB WIFI:802.11b/g MicroSD card slot, support up to 32 GB Dual Sim Dual Standby, support 2G and 3G	Bluetooth 9-pin serial port 4-pin docking connector Mini USB WIFI:802.11b/g MicroSD card slot, supports up to 32GB
Power supply	3.7V, 6300mAh lithium battery, up to 25 hours continuous operation	3.7V, 5600mAh lithium battery, up to 12 hours continuous operation
Physical properties	Integrated keyboard Size: 213mm x 89mm x 35mm Weight: 520g (with battery) Operating temperature: -20°C to +55°C Storage temperature: -30°C to +65°C Water/dustproof: IP68 Anti-shock: 1.2m natural fall	Integrated keyboard Size: 178mm x 89mm x 30mm Weight: 530g (with battery) Operating temperature: -30°C to +60°C Storage temperature: -40°C to +70°C Water/dustproof: IP68 Anti-shock: 1.82m natural fall