V90 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
SBAS ..... Simultaneous L1 C/A, L5
Galileo ..... Simultaneous L1 BOC, E5A, E5B, E5AltBOC[1]
BDS B1, B2
QZSS ..... L1 C/A, L1 SAIF, L2C, L5

POSITIONING PERFORMANCE[2]

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
Vertica ..... 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
SBAS[3] ..... 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) range20-50km

HI-TARGET Internal UHF Radio(Standard)

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

Pacific Crest XDL Micro Internal UHF Radio

Frequency ..... 403~473MHz
Transmitting power ..... 0.5W, 1W, 2W adjustable
Transmitting speed ..... Up to 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℃ to +65℃ (-40 °F to +149 °F)
Storage temperature ..... -55℃ to +85℃ (-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 10 hours
RTK rover (UHF/GPRS/3G) 6-10 hours
RTK base more than 6 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

[1]Developed under a License of the European Union and the European Space Agency.
[2]Precision 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.
[3]GPS 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

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FC CE IP67

HI-TARGET

V90

GNSS RTK SYSTEM



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V90 GNSS RTK SYSTEM

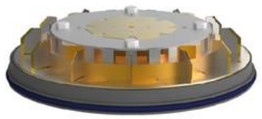
With a hi-tech, fully integrated design, the conveniently sized V90 is one of the most flexible choices for any measuring task. Built-in Linux3.2.0 operating system, pre-loaded multiple smart applications such as tilt surveying, electronic bubble calibration, NFC and voice DIY, V90 GNSS system provides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

83mm HEIGHT / *153mm* DIAMETER / *950g* WEIGHT

30° NFC UHF

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 Pacific Crest TrimTalk© 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

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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.

Graphic display | Intelligent acquisition | Voice prompt





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℃ to +55℃ Storage temperature: -30℃ to +65℃ Water/dustproof: IP68 Anti-shock: 1.2m natural fall	Integrated keyboard Size: 178mm x 89mm x 30mm Weight: 530g (with battery) Operating temperature: -30℃ to+60℃ Storage temperature: -40℃ to+70℃ Water/dustproof: IP68 Anti-shock: 1.82m natural fall

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