**V90PLUS PERFORMANCE SPECIFICATIONS**

**Satellite Signals Tracked Simultaneously**
- 220 Channels
- OPB: 38 Channels
- L1: 15 Channels
- L2: 15 Channels
- L5: 3 Channels
- B1: 22 Channels
- B2: 12 Channels
- B3: 11 Channels

**Positioning Performance**
- Hot Start: Typically < 10s
- Cold Start: Typically < 15s

**Static and Fast Static GNSS Surveying**
- Horizontal: 2.5mm + 2.5ppm RMS
- Vertical: 3.5mm + 3ppm RMS

**Post Processing Kinematic (PPP) / Static & Fast GNSS Surveying**
- Horizontal: 1cm + 1ppm RMS
- Vertical: 2cm + 1ppm RMS

**Real Time Kinematic (RTK) Surveying**
- Single Baseline
  - Horizontal: 1cm + 1ppm RMS
  - Vertical: 2cm + 1ppm RMS
- Network RTK
  - Horizontal: 2.5mm + 2.5ppm RMS
  - Vertical: 3.5mm + 2.5ppm RMS
  - Initialization reliability: Typically > 97%

**Code Differential GNSS Positioning**
- Horizontal: 35mm + 1ppm RMS
- Vertical: 60nm + 1ppm RMS
- SBAS: 60nm Horizontal, 90nm Vertical

**Communication**
- Fully integrated, fully solated internal WCDMA, cdma2000 with GPS, GMS
- WiFi frequency is 2.4G, supports the standard protocol 802.11bg
- Network RTK via CORS range=20-50km

**HI-TARGET Internal UHF Radio (Standard)**
- Frequency: 430-490MHz with 11 channels
- Transmitting power: 2W, 1W, 6W, 2W, 1W adjustable
- Transmitting speed: 64kKbps, 128Kbps
- Working range: 8-10km typical, 10-15km optimal

**SATCOM Internal UHF Radio**
- Frequency: 430-470MHz
- Transmitting power: 64kKbps, 128Kbps
- Support mode of radio communication protocol
- Working range: 10-15km typical, 15-20km optimal

**HI-TARGET External UHF Radio (Standard)**
- Frequency: 660MHz with 11 channels
- Transmitting power: 2W, 1W, 6W, 2W, 1W adjustable
- Transmitting speed: Up to 125Kbps
- Working range: 8-15km typical, 15-20km optimal

**Pacific Crest ADL Vantage Pro External UHF Radio**
- Frequency: 390-430MHz for 430-470MHz
- Transmitting power: 0.5W, 1W adjustable
- Transmitting speed: Up to 125Kbps
- Support mode of radio communication protocol
- Working range: 8-10km typical, 15-20km optimal

**Hardware**
- Dimensions: 190 x 190 x 86mm (6.29 x 7.48 x 3.39"
- Weight: 1.9kg (4.19 lbs)
- IP rating: 66 rated
- Operating temperature: -10°C to 55°C (14°F to 131°F)
- Storage temperature: -30°C to 60°C (-22°F to 140°F)
- Humidity: 100%, considering dew/frost
- Rainproof: Protected from temporary immersion to depth of 1m (3.28ft)
- Shock and vibration: Tested to survive a 3m (11.81") natural fall onto concrete

**Electricity**
- Power 49 to 28V DC: internal power input
- Power consumption: 6.2W
- Automatic switching between internal power and external power
- Rechargeable, removable 24V, 5000mAh Lithium-ion battery in internal battery compartment

**Internal Battery Life**
- Static: more than 12 hours
- RTK: more than 4 hours

**I/O Interfaces**
- Bluetooth, NFC
- USB 2.0 host, K2 host
- TNC antenna connection
- RS-232 serial port
- DC power input 24V
- MicroSD card port

**Til Survey System**

**System Configuration**
- Data storage: 16GB internal storage, Internal Micro SD Card
- Record GPS and other format simultaneously

**Data Formats**
- [Data provided includes, up to 35Hz (depends on installed option)]
  - CMR, UCMR, CM, CQ, Coordinate output
  - RTCM, RTCM 2.1, 2.2, 2.3, 2.11, 2.12 input and output
  - Navigation outputs binary: DGPS

**Developed under all clauses of the European Union and the European Space Agency programs and standards, as well as relevant international standards. The specifications described herein are subject to change without notice.**

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**V90 PLUS GNSS RTK SYSTEM**
With a high-tech, fully integrated design, the conveniently sized V90 Plus is one of the most flexible choices for any measuring task. Rulibin 1 max 1, 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 fullwave GNSS antenna
- Supports GPS, GLONASS, GALILEO, BDS, SBAS
- 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 assistant 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

**Powerful Battery**
- Powered by high-capacity (3000mAh) Li-ion battery to ensure full day operation
- IP67 dustproof and waterproof
- Able to survive a 3-meter natural fall onto concrete

**Rugged Design**
- Integrated keyboard
- Size: 210mm x 100mm x 40mm
- Weight: 1.0kg
- Operating temperature: -20°C to +55°C
- Storage temperature: -40°C to +70°C
- Waterproof/Proof IP68
- Shockproof: 1.2m natural fall

**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 SunusCE, MicroSurveyFieldGenius, Digiserra Explorer and EuroSoftPad. 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

<table>
<thead>
<tr>
<th>CONTROLLER PERFORMANCE</th>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>iHand20</strong></td>
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<td><strong>GETAC PS336</strong></td>
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**System configuration**
- OS: Android 4.3
- Processor: MTK6589T, 1.5GHz, quad core
- RAM: 1GB
- Flash memory: 4GB

**Communication Interface**
- Bluetooth
- NFC

**Power supply**
- 17V, 3400mAh lithium battery, up to 25 hours continuous operation
- 17V, 5400mAh lithium battery, up to 12 hours continuous operation

**Physical properties**
- Integrated keyboard
- Size: 210mm x 100mm x 40mm
- Weight: 1.0kg
- Operating temperature: -20°C to +55°C
- Storage temperature: -40°C to +70°C
- Waterproof/Proof IP68
- Shockproof: 1.2m natural fall

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