

V60 PERFORMANCE SPECIFICATIONS

MEASUREMENTS

- 220 Channels
- Advanced Pacific Crest Maxwell 6 Custom Survey GNSS Technology
- High precision multiple correlator for GNSS pseudo range measurements
- Unfiltered, unsmoothed pseudo range measurements data for low noise, low multipath error, low time domain correlation and high dynamic response
- Very low noise GNSS carrier phase measurements with <1 mm precision in a 1 Hz bandwidth
- Signal-to-Noise ratios reported in dB-Hz
- Proven Pacific Crest low elevation tracking technology

Satellite Signals Tracked Simultaneously

GPS..... Simultaneous L1C/A, L2C, L2E, L5  
GLONASS..... Simultaneous L1C/A, L1P, L2C/A (GLONASS M only), L2P  
SBAS..... Simultaneous L1 C/A, L5 (EGNOS, WAAS, MSAS, GAGAN, QZSS)  
Galileo..... Simultaneous L1 BOC, E5A, E5B, E5AltBOC  
BDS..... B1, B2

POSITIONING PERFORMANCE

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

Horizontal..... 8mm+1ppm RMS  
Vertical..... 15mm+1ppm RMS  
Initialization time..... Typically < 8seconds  
Initialization reliability..... Typically > 99.9%

Code Differential GNSS Positioning

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

HARDWARE

Physical

Dimensions (W x H).....18.20cm x 9.80cm (7.17inch x 3.86inch)  
Weight..... 1.25kg (2.76lb) without internal battery  
Operating temperature..... -45 C to +65 C (-49 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 13 - 15 hours  
RTK rover (UHF/GPRS/3G) 10 - 12 hours

RTK base 8 - 10 hours

I/O Interface

1 x Bluetooth  
1 x standard USB2.0 port  
1 x TNC UHF connector  
2 x RS232 serial port  
2 x DC power input (8-pin & 5-pin)  
1 x MicroSD card port

COMMUNICATION AND DATA STORAGE

3G Communication

Fully integrated, fully sealed internal 3G, compatible with GPRS, GSM  
Network RTK (via CORS) range20-50km

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

Support Other External Communication Device

For example, external GSM modem.

Data Storage

1GB Internal storage + 8GB 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, GGG, GGA, GSA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL,  
GRS, GBS  
Navigation outputs binary: GSOF

<sup>1</sup>Developed under a License of the European Union and the European Space Agency.

<sup>2</sup>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.

<sup>3</sup>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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IP67

HI-TARGET

V60  
GNSS RTK SYSTEM





V60 GNSS RTK SYSTEM

Improved and updated, the Hi-Target V60 GNSS RTK system is far more intelligent and efficient.

Smart Operation

- Visual LED screen and voice assistance guide your field operation quickly.
- Multi one-button operations. Auto base setup by one button without controller.
- Standard Rinex data and HI-TARGET raw data recorded at the same time.
- Quick upgrade by USB.

Multi-constellation Tracking

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

Optional Transceiver UHF Radio

- The transceiver UHF radio enables the working mode to be switchable between base and rover.
- 2-watt HI-TARGET internal UHF radio and 1-watt Satel internal UHF radio are optional. Satel internal UHF radio is compatible with other radios.

Seamlessly Operation in CORS System

- Built-in cellular makes V60 work perfectly with network RTK positioning.

Powerful Battery

- Powered by high-capacity (5000mAh) Li-ion battery to insure whole day operation.

Rugged Design, IP67

- IP67 dust/water protection.
- Withstands 3-meter natural fall onto concrete.

iHand20 Field Controller

- Android 4.2 OS.
- Durable keyboard.
- Lightweight and anti-drop design, IP68 dust/water protection.
- Preinstalled intelligent Hi-Survey software.
- Ultralong battery life.

Qmini MP Field Controller

- Microsoft Windows Mobile 6.5 OS.
- Preinstalled free and user-friendly Hi-RTK software.
- Fully compatible with Carlson SurvCE, MicroSurvey FieldGenius, Digiterra Explorer, Esri ArcPad, etc.
- Lightweight and anti-drop design, IP65 dust/water protection.

Post-processing Software

HI-TARGET Geomatics Office (HGO) software

- Provides total GPS/GLONASS/BDS processing solution.
- Standard Rinex data format and Hi-Target raw data format can be processed flexibly and easily.
- Easy to operation.

CONTROLLER PERFORMANCE SPECIFICATIONS

	iHand20	Qmini MP
System configuration	OS: Android 4.2 Processor:MT6589, 1.2GHz, 4core RAM:1GB Flash memory:4 GB	OS: Windows Mobile 6.5 Processor: 806MHz RAM: 256MB Flash memory: 8 GB
Communication interface	Bluetooth Mini USB WIFI:802.11b/g MicroSD card slot, support up to 32 GB Dual Sim Dual Standby, support 2G and 3G	Bluetooth Mini USB WIFI:802.11b/g MicroSD card slot, supports up to 32GB Built-in 3G module
Power supply	3.7V, 6300mAh lithium battery, up to 25 hours continuous work.	3.7V, 3100mAh lithium battery, up to 8 hours continuous work.
Physical properties	Physical keyboard. Size:213mm x 89mm x 35mm Weight:520g (with battery) Operating temperature: -30℃ to +65℃ Storage temperature: -45℃ to +75℃ Water/dustproof: IP68 Anti-shock: 1.2m natural fall	10 keys, include the four arrow keys Size: 152mm x 82mm x 32mm Weight: 315g (with battery) Operating temperature: -20℃ to +70℃ Storage temperature: -30℃ to +80℃ Water/dustproof: IP65 Anti-shock: 1.5m natural fall