

## PERFORMANCE SPECIFICATIONS

### MEASUREMENTS

- 220 Channels
- 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

### 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<sup>1</sup>..... Simultaneous L1 BOC, E5A, E5B, E5AltBOC(Optional)  
BDS..... Simultaneous L1 BOC, E5A, E5B, E5AltBOC(Optional) B1, B2

### POSITIONING PERFORMANCE<sup>2</sup>

Hot Start ..... Typically <10s  
Cold Start ..... Typically <15s

### High-Precision Static

Horizontal ..... 2.5 mm + 0.1 ppm RMS  
Vertical ..... 3.5 mm + 0.4 ppm RMS

### Static and Fast Static

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

### Post Processing Kinematic

#### (PPK / Stop & Go) GNSS Surveying

Horizontal..... 8mm+1ppm RMS  
Vertical..... 15mm+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 2-10s  
Initialization reliability..... Typically > 99.9%

### Code Differential GNSS Positioning

Horizontal..... 25cm+1ppm RMS  
Vertical..... 50cm+1ppm RMS  
SBAS<sup>3</sup>..... 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%, condensing  
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(2402MHz to 2480MHz)  
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  
Network RTK (via CORS) range 20-50km

#### HI-TARGET Internal UHF Radio

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

#### SATEL Internal UHF Radio(Optional)

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

#### HI-TARGET External UHF Radio

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

#### Advanced External UHF Radio(Optional)

Frequency..... 410-470MHz  
Transmitting Power..... 5W/25W  
Transmitting Speed.....9.6Kbps,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  
1 Pulse Per Second Output

<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.

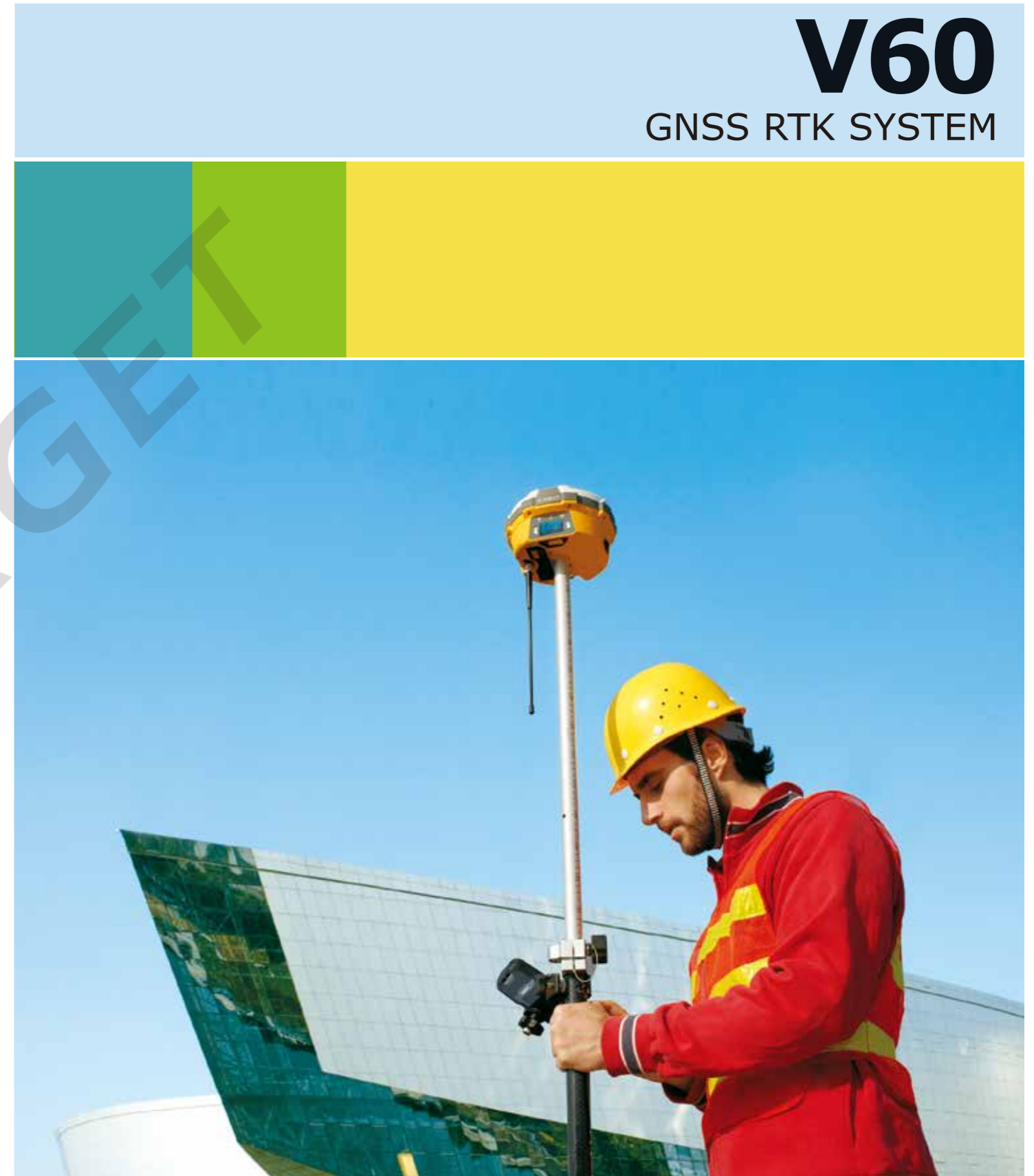
Descriptions and Specifications are subject to change without notice

# HI-TARGET

Surveying the world, Mapping the future.

# V60

## GNSS RTK SYSTEM



AUTHORIZED DISTRIBUTION PARTNER

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# 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.

# iHand30

## Professional Field Controller

The iHand30 is a rugged field controller that is designed for data collection and GNSS device control. Based on the Android operating system, it is compatible with Hi-Target professional software and third-party Android software. Combining the physical keyboard with a touchscreen, it can boost efficient field work and provide express solutions for users.

### KEY FEATURES



Ergonomically designed, lighter and easy to hold.



Industrial-grade protection that can withstand tough environments.



Convenient wireless data transmission via Bluetooth, Wi-Fi and 4G.



Quick charge, with large capacity lithium battery to ensure all day work.

Hardware Configuration	OS: Android 6.0 Processor: 1.5GHz, 4 core Storage: RAM 2G, ROM 16GB (up to 32GB extension Micro-SD) Display: 3.7" 640 x 480, sunlight readable Camera: 8MP, tag available Sensors: G-sensor, E-compass, barometer, light-field sensor, gyro
Communication	Cellular mode: Dual SIM card, dual stand-by Cellular network: 4G TDD-LTE, FDD-LTE, WCDMA, GPRS Wi-Fi: IEEE 802.11b/g/n, 2.4GHz/5GHz Bluetooth: V2.0/4.0 USB: Type-C, supports OTG NFC
Physical	Weight: 440g(within battery) Size: 208mm*83mm*24mm Temperature: -20°C ~ +60°C(Operating); -30°C~ +70°C(Storage) Free fall: 1.2m IP67
GNSS Features	GNSS: GPS, GLONASS, AGPS, 20 channels Update rate: 1Hz
Power Supply	Battery: Removable 3.7V lithium battery, 5200mAh Duration: 15 hours

# Hi-Survey Road

## Survey Data Collection Software

The Hi-Survey Road is an android software that is designed for all types of land survey and road engineering projects in the field. It is compatible with Hi-Target professional controllers, android phones, tablets and other third-party android devices. It is a sleek and easy-to-use software that supports the operating of big data with build-in tools. With customized industrial application solutions, more possibilities are created for users.

### KEY FEATURES



▶ Tilt survey, quasi-dynamic technology, detail survey, timing static survey, etc.



▶ Cross-projects points selection, QR code scanning, multi-format support, etc.



▶ Road functions, DTM surface operations, Google online base map, 3rd party rangefinders, etc.