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[1]..................... Simultaneous L1 BOC, E5A, E5B, E5AltBOC(Optional)
BDS.. B1, B2

POSITIONING PERFORMANCE[2]
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[3]... 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℃ to +65℃ (-49℉ to +149℉)
Storage temperature................................ -55℃ to +85℃ (-67℉ to +185℉)
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
Transmiting Power... 5W/25W
Transmiting 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, GGK, GGA, GSA, ZDA, VTG, GST, PJT, PJK, BPQ, GLL, GRS, GBS
Navigation outputs binary: GSOF
1 Pulse Per Second Output

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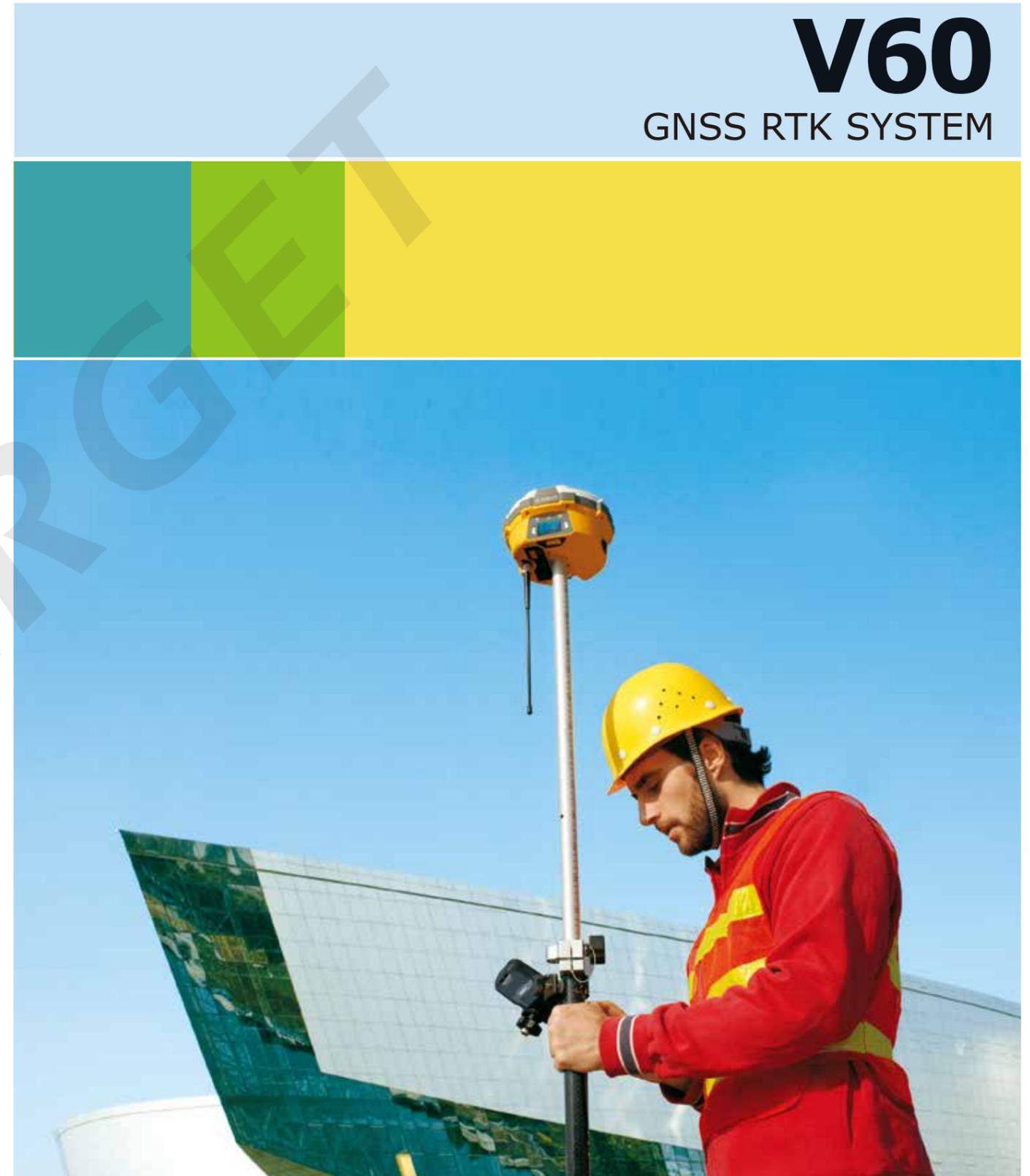[3]GPS only and depends on SBAS system performance. FAA WAAS accuracy specifications are <5 m 3DRMS.

Descriptions and Specifications are subject to change without notice

HI-TARGET
Surveying the world, Mapping the future.

V60
GNSS RTK SYSTEM

Hi-Target Surveying Instrument Co. Ltd

FC CE K IP67

ADD: Building13, Tian'An Technology Zone HQ center, No.555, the North of Panyu RD, Panyu District 511400, Guangzhou, China.
www.hi-target.com.cn   +86-20-28688296   info@hi-target.com.cn

19M223

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.

● 5-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 Processer: 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℃ ~ +60℃(Operating); -30℃~ +70℃(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
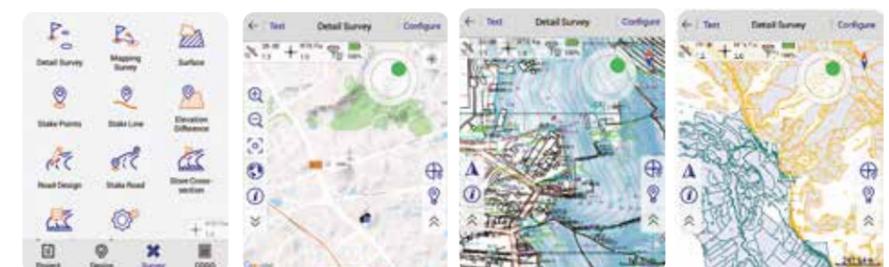
▶ Tilt survey,quasi-dynamic technology, detail survey, timing static survey, etc.

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

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