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
Galileo ..... Simultaneous E1 BOC, E5A, E5B, E5AltBOC[1]
BDS B1, B2
SBAS ..... L1 C/A, L5

555 Channels (Optional)

GPS L1C/A, L1C, L2C, L2P, L5
GLONASS L1C/A, L2C, L2P, L3, L5
BeiDou B1, B2, B3
Galileo ..... E1, E5A AltBOC, E5a, E5B, E6[1]
IRNSS L5
SBAS L1, L5
QZSS L1C/A, L1C, L2C, L5,L6
L-band ..... Up to5 channels
TerraStar Correction Services[4]

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 ..... 5mm + 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

Single Baseline

Horizontal ..... 8mm+1ppm RMS
Vertical ..... 15mm+1ppm RMS

Network RTK

Horizontal ..... 8mm+0.5ppm RMS
Vertical ..... 15mm+0.5ppm 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

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 Advanced Internal UHF Radio:

Frequency 403-473MHz
Transmitting power ..... 1W, 2W, 4W adjustable
Transmitting linkrate 9.6Kbps, 19.2Kbps
Support most of radio protocols
Working range ..... 3-5km typically, 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 protocol
Working range ..... 3~5km typically, 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 typically, 15~20km optimal

Advanced External UHF Radio (Optional)

Frequency ..... 410~470MHz
Transmitting power 5W/25W
Compatible with third party radio
Working Range ..... 8~10km typically, 15~20km optimal

HARDWARE

Physical

Dimensions (W x H) ..... 153mm x 83mm (6.02inch x 3.27inch)
Weight ..... 950g (2.09lb) without internal battery
Operation temperature ..... -40℃~+75 ℃(-40 ℉ ~+167 ℉)
Storage temperature ..... -55℃~+85 ℃(-67 ℉ ~+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 2m(6.56ft) 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 12 hours
RTK Rover (UHF/GPRS/3G) 10 hours
RTK base more than 8 hours

I/O Interface

Bluetooth, NFC,standard USB2.0port ,TNC antenna connector
RS232 serial port,DC power input (5-pin), MicroSD card port

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.
[4]Available to subscribe for TerraStar-C, RTK ASSIST, requiring additional service fee.

Descriptions and Specifications are subject to change without notice

AUTHORIZED DISTRIBUTION PARTNER

Hi-Target Surveying Instrument Co. Ltd

ADD: Building 13, Tian'An Technology Zone HQ Center, No. 555,
North of Panyu RD, Panyu District, 511400 Guangzhou, China.
www.hi-target.com.cn +86-20-28688296 info@hi-target.com.cn

FC CE IP67

19M120

HI-TARGET
Surveying the world, Mapping the future.

V90 PLUS

GNSS RTK SYSTEM

V90 PLUS

GNSS RTK SYSTEM

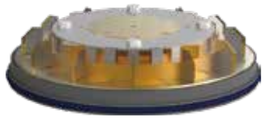
With a hi-tech, fully integrated design, the conveniently sized V90 Plus is one of the most flexible choices for any measuring task. Built-in Linux3.2.0 operating system, pre-loaded multiple smart applications such as tilt surveying, electronic bubble calibration, NFC and voice DIY. The V90 Plus GNSS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

83mm HEIGHT / 153mm DIAMETER / 950g WEIGHT

NFC UHF

Multi-constellation Tracking

- 220 tracking channels
- NGS approved full-wave 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

Advanced BD970 OEM is a compact multi-constellation receiver designed to deliver centimeter accuracy to a variety of applications.

Advanced BD970 OEM is a compact multi-constellation receiver designed to deliver centimeter accuracy to a variety of applications.

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 SATEL 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

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.

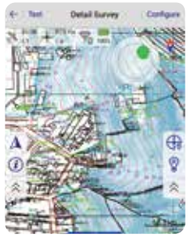
Hardware Configuration	OS: Android 6.0 Processer: 1.5GHz, 4 core Storage: RAM 2G, ROM 16GB (up to 32GB extension Micro-SD) Display: 3.7'', 640 x 480, sunlight readable Camera: 8MP, tag available Sensors: G-sensor, E-compass, barometer, light-field sensor, gyro
Communication	Cellular mode: Dual SIM card, 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



Various algorithms to achieve high accuracy in corresponding measuring circumstances with a better reliability.

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

Express interacting functions to greatly improve the work efficiency.

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

Integrated professional measurement functions for engineering applications.

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