V100 GNSS RTK System Getting Started

HI TARGET

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Preface

Introduction

Welcome to use Hi-Target V100 receiver, this introduction is applicable to Hi-Target V100 products. The introduction describes how to install, set and use V100 products.

Experience requirement

In order to help you use Hi-Target series products better, Hi-Target suggests you carefully reading the instruction. If you are unfamiliar with V100 products, please refer to *www.hi-target.com.cn*

Tips for safe use



Exclusion

Before using the products, please carefully read the operating instruction, and it will help you better use the product. Hi-Target Surveying Instrument Co., Ltd will not assume the responsibilities if you fail to operate the product according to the requirements in operating instruction, or operate the product wrongly because of failing to understand the operating instruction.

Hi-Target is committed to constantly perfect product functions and performance, improve service quality and reserve the rights to change the contents in operating instruction without separate notice.

We have checked the consistency between contents in instruction and software & hardware, without eliminating the possibility of deviation. The pictures in operating instruction are only used for reference. In case of inconformity with products, the products shall prevail.

Technology and service

If you have any technical issues, you can call Hi-Target technology department for help, we will answer your question in time.

Relevant information

You can get this introduction in the following ways:

1.After purchasing Hi-Target V100 receiver, there will be "V100 GNSS RTK System Getting Started" in the instrument container to guide you how to operate instrument.

2.Log in Hi-Target official website, download the electronic version introduction in "Download Center" \rightarrow "Manual" \rightarrow "Surveying Products"

Advice

If you have any advice or suggestion on V100, please call us or Dial the national hotline: +86 400-678-6690. Your feedback information will improve the production quality.

CHAPTER 1 Products Introductions • Hardware structure

- Power supply system
- Button operation
- ∎ LED
- Handheld controller iHand20

1.1. Hardware structure

The product appearance is divided into three parts, upper cover, bottom cover and control panel.



Figure 1-1-2



- Connection screw: for the instrument fixed to the base or the pole.
- Battery compartment: for housing lithium battery.
- Five-pin socket: for external data linking and external power supply.
- Mini USB socket: for connection to the host and external devices, upgrade firmware and download the static data, can also charge or supply electricity to the host.
- Protective plug: for dustproof and waterproof.

Notice:

If it is unnecessary to use five-pin socket, and USB interface, please cover the rubber plug to prevent dust.

1.2. Power supply system

Battery, adapter type

Name	Туре
lithium battery	BLP-6300S
Power adapter	PSAI10R-050Q

Lithium battery



Figure 1-2-2

Recharge

V100 lithium battery should be charged by PSAI10R-050Q adapter, about 7 hours of charging time.

U Warning:

1. Only the battery and charger configured by the manufacturer can be used; the battery must not be thrown into fire or used in metal short circuit electrode.

2. Stop using when the battery is heating, deformation, liquid leakage, smelling or other abnormal reactions, please exchange new battery.

3. Stop using when the battery's working time has been Significantly reduced, the battery is aged, please exchange new battery.

Battery installation and removal

(1) Push up the battery cover button, open battery cover.



Figure 1-2-3

(2) Align battery pole with battery compartment pole, push the battery to the end and the mental button will upspring.



(3) Close the battery cover.

Removal

Push up the battery cover button to open it, then press the metal button and remove battery.

Power supply

Power supply mode

	Devues events and a	Internal: lithium battery
Power supply	Power supply mode	External: USB, Five-pin socket
r ower supply		USB socket: DC power 4.2-5.5V/1.5A
	External power supply request	Five-pin socket: DC power 6-28V/1A

When external power supply, the host will automatically detect the voltage of lithium battery and external power supply, and choose the higher voltage power. As for external power supply, it shall use the special power specified by Hi-Target.

Notice:

1. The service time of lithium battery will decrease along with the decrease in temperature and charging-discharging times increasing. A new 6300mAh lithium battery can be used for 7 hours of static data collection or rove work.

2. Please charge the battery within 24 hours after using up, to extend the service life of battery, or the battery performance will be damaged.

3. If the battery won't be used for long times, please charge once every month to extend the service life of battery.

1.3. Button operation

Most settings and operations of receiver are completed using a button on control panel.



Figure 1-3-1

Operation name	Description
On	Shutdown status, long press the button one second to boot, all lights are on
Off	Boot status, long press the button three seconds, all lights double fast flash, release the button
Automatic setting station	Shutdown status, long press the button six seconds, all lights double fast flash, release the button, the instrument will automatically set the base station
Operating mode switching	Double-click the button to switch working mode, double-click each time to switch between static and RTK mode
Status inquiry	Click power button, power LED flashing times displays power
Reset motherboard	Boot status, long press the button more than six seconds, all lights flash at the same time, release the button, it will reset motherboard

Description of power button operation

1.4. LED

To indicate different status under different work mode.





LED	Mea	aning
Power LED (Green)	Long-term lighting	Full battery
Power LED (Yellow)	Long-term lighting	Full battery voltage: internal battery≥3.9V (100% power)
	Long-term lighting	Normal voltage: 6% <internal battery="" power="" td="" ≤99%<=""></internal>
	Slow flash	Low voltage: internal battery≤5%
Power LED (Red)	Fast flash	Power indication: 1-4 flash per minute under the direction of electricity 1: 0%~25% 2: 25%~50% 3: 50%~75% 4: 75%~100%
Network LED	Off	Static mode
(Green)	Long-term lighting	RTK mode
Network LED (Red)	Slow flash Fast flash	 RTK mode: flash as difference data interval Static mode: flash as sampling interval Static mode, storage space<10MB
Satellite LED	Long-term lighting	Satellite lock
	Slow flash	satellites are lost
Three LEDs	Fast flash	Satellite LED, Network LED, Power LED all fast flash at the same time, when release power button, the motherboard will be reset.

LED Function Description

1.5. Handheld controller iHand20

Front of handheld controller

The front of iHand20 handheld controller includes touch screen, keyboard and microphone





• Touch screen: Multipoint capacitive touch screen with touch pen, which supports Chinese and English input.

• Keyboard: Photograph, direction control, switch between Chinese and English, data collection, volume control, power on, power off and other functions.

• Microphone: Internal microphone can be used for field collection of voice message.

Reverse side of handheld controller

There are camera, battery cover, belt, speaker, etc. on the reverse side of iHand20 handheld controller.



Figure 1-5-2

- Camera: Used for field collection of image information.
- Battery cover: Internal removable lithium battery.
- Belt buckle: Connect the belt to prevent sliding down.
- Speaker: Conduct real-time voice broadcast for the instrument operation and status.

Side of handheld controller



Figure 1-5-3

- ♦ Mini USB: Used for connecting USB data line and iHand20 handheld controller.
- Audio port: Used for connecting headphone cable and iHand20 handheld controller.

(!) Warnings: In case of not using audio port or Mini USB, please close the rubber cover so as to achieving waterproof and dustproof.

Handheld controller accessories

Charger



Figure 1-5-4

Battery (Lithium battery: 3.7V /6300mAh)



To use the touch pen to operate the handheld controller, it is required to start the function of "handwriting pen", and open the handheld controller's [system setting] \rightarrow [auxiliary function] \rightarrow check [handwriting pen]

Operation of handheld controller

Keyboard

Most settings and operations of Hi-Target iHand20 handheld controller can be completed by the touch pen, and commonly used operations can be completed by keyboard. Appearance and functions of keyboard are introduced briefly as follows.





Keyboard include: Back, OK, Power, APP, Fn, Collect, Camera, etc. on button board of iHand20. **Back:** Delete or exit the operation of current window.

OK: Confirmation.

Power: Press it for above 3s for power on/ power off. Under the power on status, press power button for 1s to turn off / turn on the screen backlight.

APP: Quick start of Hi-Survey software, press button APP for a long time for the Road popup, then select "Hi-Survey Road" and click [Ok]. And the software selected this time can be started quickly only by pressing key APP next time.

() Cautions:

When installing Hi-Survey Road for the first time, it is necessary to press button APP for 3s for software quick start selection settings. Otherwise, corresponding software cannot be started quickly by only pressing button APP.



Figure 1-5-9

Fn button: Press Fn button for 3s and popup interface of software switching so as to achieve fast switch of input method. In case of [physical button input method], only press Fn button to switch over input methods of Chinese Pinyin ,strokes, digitals and letters under input status.

Collect button: Collect data by manual operation.

Camera button: Press it for a short time to enter into photograph interface; Press it for 3s on the non-camera interface to start up/shut down flashlight function.

Screenshot: Press "VOL-" and power button simultaneously for 3s, screen capture will be kept in the file of "Mobile phone storage \rightarrow Pictures \rightarrow Screenshots".

(!) Cautions:

1. When the iHand20 handheld controller is not used in the work, please turn off the backlight for saving electric quantity and prolonging the working time.

2. Only the image collection interface supports the shortcuts operation. In order to avoid the input conflict of input box, the text interface does not support shortcuts operation.

(1)Average collection shortcut is Button "7";

(2) Indirect measurement shortcut is Button "8".

Data download

1. Connect handheld controller to computer by USB data line, and pull down the notice column and click USB computer connection [open USB storage].

2. If it is required to synchronously operate handheld controller or install and use third-party software to debug data on the computer, "USB debugging" function shall be ticked. Turn on the handheld controller, and click [System Settings] \rightarrow [Developer options] \rightarrow [USB debugging] on the desktop menu.

3. In the popup debugging window, click [OK] to complete the connection between handheld controller and computer.

4. In the computer, file operations between handheld controller and computer can be conducted by [Portable Devices].



GNSS configuration

Table	1	GNSS	configuration
-------	---	------	---------------

System core	International first-class PCC new efficient intelligent real-time
	core
Channel	220
BDS	B1, B2
GPS	L1 C/A, L2E, L2C, L5
GLONASS	L1 C/A, L1 P, L2 C/A $(Limited GLONASSM$ and L2P)
GALILEO	Upgrade reserve
Output format	ASC II: NMEA-0183 and binary : Trimble GSOF
Difference support	sCMRx, CMR, CMR+, RTCM2.1/2.2/2.3/3.0/3.2
RTK positioning accuracy	Plane: ±(8mm+1×10-6D)
	Height: ±(15 mm+1×10-6D)
Static rapid static accuracy	Plane: $+(2.5 \text{ mm} + 1 \times 10 - 6 \text{D})$
	Height: $\pm (5 \text{ mm} + 1 \times 10 \cdot 6D)$
	Code difference: 0.4m
	SBAS difference: 1.2m
Initialization time	Typical 8s
Initialization reliability	>99.9%
Data update rate	<20Hz

System configuration

- ◆ Operation system: intelligent real-time system
- ♦ Boot time: 1s
- ♦ Data storage: built-in 8GB storage

Built-in communication

- ◆ NFC near field communication
- Dual mode Bluetooth communication

Control panel

- ♦ Panel: one button
- ◆ Indicator: three bi-color LED lights

External interface

- ♦ 1 USB socket
- ♦ 1 five-pin socket

Electric characteristics

♦ Battery: high capacity lithium 6300mAh/3.7V, removable, continuously operating time

reaches above 7 hours

- ♦ Voltage: USB interface: DC 4.2-5.5V/1.5A; five-pin interface: DC6-28V/1A
- Power consumption: 3.2W

Physical characteristics

- ◆ Core control chip CotexA8, built-in 16GB Flash memory
- ◆ Size: 127.5mm×57mm
- ◆ Weight: ≤700g (including battery)
- ◆ Material: magnesium alloy

Environment characteristics

- Protection class: IP67; protect 2m temporary soaking underwater, completely prevent dust
- ♦ Shock-proof: Anti 2 m natural fall
- ♦ Working temperature: -40 °C ~ 65 °C
- ♦ Storage temperature: -40°C~75°C
- Relative humidity: 100%, anti-condensation

Private cloud service

The cloud service supports for 24 hours, realizes integrated technique of indoor work and field work, remote manage serve and support equipment. It manages team project, shares parameters and control points, post backs real-time verify and note track of result data by cloud background. After the user's authorization, terminal servers can remotely provide customers with technical support, including system version upgrading, system registration, remote debugging and other services.

Environmental requirements

The receiver shall operate in dry working environment regardless of waterproof materials. In order to advance the stability and service cycle of receiver, the receiver shall be prevented from extreme environment, such as:

- ♦ Moisture
- ◆ Temperatures above 65 degrees centigrade
- ◆ Below 40 degrees centigrade
- Corrosive liquids or gases

Electronic jamming

The receiver shall not be installed in the place near to strong electric power and interference signal, such as:

- Oil duct (spark plugs)
- Telvision and computer display
- ♦ Generator
- ♦ Battery-operated motor cycle
- ◆ DC-AC power supply changeover equipment
- ♦ Fluorescent lamp
- Power supple

CHAPTER

Work Modes Introduction

- Static mode
- Network rover mode
- Base mode with external radio

3.1. Static mode

3.1.1. Static data collection

V100 GNSS Receiver can collect static data. Relative operations are as below.

1. Set up receiver on a control point, centering and leveling strictly.

2. Measure the height of receiver for three times, on condition that the difference of each measuring

is less than 3mm and the final height of the receiver should be the average height. Below is the schematic.



Notice:

1). Instrument height should be measured from control point to the height measurement point of the measurement reference bench.

2). The measurement reference bench radius is 0.130 meter.

3. Record point name, receiver S/N, receiver height, beginning time.

4. Press power button to power on and double click power button to set static collecting mode.

Notice:

The satellite LED flashing means the receiver is searching the satellites. The satellites are fixed once the satellite LED stays light on. Network LED flashes due to your collection interval set, which means an epoch will be collected every flash.

5. Turn off the receiver after static data collected and record the turn off time.

6. Download and post-process static data.

() Caution:

1) Don't move the tri-branch or change the collecting set while the receiver is collecting data.

2) V100 GNSS receiver doesn't support recording Rinex format data.

3.1.2. Static data storage and download

Collected GNSS static data is stored in "static" disk that 8GB internal storage of V100 receiver, effective storage space is 6.6GB, includes two folders: log and gnss, log folder stores log information, the data format storage in gnss folder is * .gns. You can connect the receiver to computer through USB data cable, copy static data to your computer like using a U disk.

🗢 G; \		
GISS		DO LOG
	Figure 3-2	

Notice:

When the receiver storage space is less than 10MB, data light (red) fast flash, and it stop recording data, the existing data files will not be overwritten.

The receiver can download data like U disk, it need Mini USB data cable, one end of Mini USB data cable is connected to computer USB port and the other end is connected to Mini USB port of receiver. It will appear "static" disk after being connected, then open the disk, copy the collected static files to computer's hard disk.



Figure 3-3

The steps of modify point name and antenna height of downloaded static file are:

1. Choose *. GNS files and double click the mouse.

2. Modify point name and input antenna height in the popping up dialogue of "file edit", and then click "OK".

Marker Name:	DIE
(less than 4 charactors	5)
Antenna Slant Height:	2.0000
ОК	$(\underline{O}) \qquad \qquad$

Deaution:

It only supports copy procedure when connected to computer. Deleting static files and formatting disk can be only operated by handheld software.

F

3.2. Network rover mode

Pair with the powerful surveying software Hi-Survey, the intelligent V100 GNSS receiver will turn into a portable network rover.

The main operating procedures in brief:

- Project setting
- ♦ Data collecting
- Staking out
- Data exporting

3.2.1. Project setting

- ◇ New project
- ♦ Project settings
- \diamond Device connecting
- ◇ Rove settings.

1. New project

After new project is built before the measurement, the collecteddata will be saved in the project. When building new project, relevant setting needs to be conducted, for example, setting of project information, and coordinate system, etc...



 New project can be built and the existing project can be opened or deleted.

2.Input project name.(Note: The name of new project shall not be the same as the name of old projects.)

2. Project settings

History

seven chau

Name:

ø

Repeat PtName: Support

demo

demo

test

Project settings include coordinate system and other parameters settings.

0

For measurement, coordinate system must be configured, because it is related to the accuracy of coordinate. There are two methods to set the coordinate system.



(1) Build a coordinate system

New Prj System	Option	interface.
Coord Params of		
Projection	>	
•Note: A project can have only one Truc	*Point	
TruckPoint		
TruckPoint Info	>	
RegulatePoint	Ose	
RegulatePoint Info	>	()
Data Management		
	3 511 511 🗃 3:52 PM	2, Select a coordinate system from
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Notice: Any question about "User Defined" pleases contact technical support.

(2) Add existing coordinate system files

A 8 A	0	5л 5л 🚆 3:52 рм	1. Click (1) to add an existing datum
New Prj	System	Option	system file.
Coord Params	of O) 🗱 😱	
Projection		>	
-Note: A project can	have only one Truck	kPoint	
TruckPoint			
TruckPoint Info	2	>	
RegulatePoint		<u>)</u> 94	
RegulatePoint I	nfo	>	
Data Manager	ment		
□ ≜ ▲	8	해 해 🖹 3:54 PM	2. Select a datum system file be importe
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S	elect dam Fil	e oK	2. Select a datum system file be importe before.
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 \angle Notice: The dam file can be built with HGO post processing software or be output by User Defined. Copy it to the "Geopath" folder, then it can be loaded by software.

3. Device connecting

NFC (Near Field Communication)*

NFC is used to quickly establish Bluetooth connection. On condition that the handheld controller or smart phone supports NFC function

The application of NFC, combined with new intelligent handheld, a light touch will realize automatically connecting to receiver and run the software through Bluetooth. Compared to the past complicated connection process, V100 GNSS receiver is more convenient and efficient.



Bluetooth connection

The receiver can also be connected by Bluetooth manually.



Bluetooth	6 Or select the receiver from the lis
Bluetooth	directed
The paired devices	directly.
Search device Search device Bluetooth pairing request To pair with: 11 Type the device's required PIN: 21 1234 Usually 0000 or 1234 PIN contains letters or symbols You may also need to type this PIN on the other device.	7. When connect to a new receiver, PIN is needed. 8. Enter 1234,press OK.

4. Rover setting









8. Enter the IP &Port value got from the CORS operator.

9. Press Set to get and select

mount-points (nodes).

10. Enter the username & password.

11. Tick RTCM1021/RTCM1023 if your CORS service operator provides this type of message.

12. Select the Message Type same as the node you selected.13. Set the needed Elevation.

Press Set to finish setting.

5. Floating box





"Solution state":

It is mainly divided into the following several modes (except for fixed coordinate, precision is arranged from high level to low level): The given point refers to fixed coordinate (Base) \rightarrow RTK fixed solution \rightarrow RTK float solution \rightarrow RTD solution \rightarrow single point positioning \rightarrow no solution type(indicates: no GNSS data)

"Correction latency":

Refers to calculating time after Rover receives the signal from Base.

"PDOP value":

Intensity factor of space geometry where the satellite is distributed. Generally, the better the satellite distribution is, the smaller the PDOP value is. Generally, the value is less than 3 as the more ideal state.

"Number of visible satellites":

Number of satellite received by receiver, at least 5 satellites required by RTK work.

"Number of public satellites":

Base hasn't it and only Rover has it after receiving the difference data. It refers to the satellite used for calculation when the Base and Rover participate in the searching of ambiguity of whole cycles at the same time, which are generally more than 5 so as to ensure normal work.

Click the satellite icon in the floating window to rapidly check detailed information of current connected receiver satellite.

(1) Position information





Press here to display position information of current point, including position, speed, solution state and time, etc...

RTK Int	Diff Age 2.0		RTK Int	Diff Age	2.0
07-26 + RTKInt	50%	Base	e Coord		
E 1360114.52 Z 34.4227	49	BL	22:59:00 113:22:0	0.64280N 03.49682E	
HRMS 0.0042 VRMS 0.0100 Azi 216:31:46 /elocity 0.09718 UTC 2015-04-	.46998	Bas Le Azi	seline 2.0 ngth imuth 11	0948 3:22:47.20560	RTKI
Reset RTK	Reset Antenna				2.0
Connect Net	Disconnect Net				
Location Info	Base Station	L	ocation Inf	o Base S	Station

(2) Stellar map



Figure 3-7

♦ Distribution situation of projection position of satellite can be viewed by pressing here. Roundness refers to GPS satellite and SBAS satellite, square refers to GLONASS and BDS satellite. GPS: Prn value is 1-32; GLONASS: Prn value is 65-96; BDS: Prn value is 161-197.



◇View elevation cut-off angle of GNSS satellite and click "Set" to set the elevation cutoff angle of receiving satellite.

◇Click "Status", and give the color according to L1 carrier signal to noise ratio of satellite: Orange<=15, yellow<=35, green>35As shown in the following figure.

(3) Signal-to-noise ratio figure of satellite:

Prn refers to number of satellite; Azi refers to azimuth angle of satellite; Ele refers to satellite elevation, L1 refers to signal to noise ratio of L1, and L2 refers to signal to noise ratio of L2.

Sats 28	PDO	P 1.9	levation(* 10) Set
Prn	Azi	Ele	L1	L2
12	40	18	39	24
14		52	47	34
18	160	40	48	32
22	201	71	50	+ BTKInt
25	61	54	47	37
26	201	20	40	23
31	282	48	50	37
SATVi	ew	Status	SA	T Info

♦ Click "SAT Info", and Prn refers to number of satellite, L1 refers to signal to noise ratio of L1, L2 refers to signal to noise ratio of L2.

3.2.2. Data collecting

- \Diamond Single-point mode
- \diamondsuit Average mode
- \diamondsuit Automatic mode

After the settings for the above project and Base as well as Rover being completed successfully, enter into data collection interface for collection. Corresponding collection methods can be selected according to different demands.



1. Single-point collection

Single-point collection means collecting the data of each point by manual operation.



The information of point, including point name, target height (the first point needs to be measured and this value will be set as the default to the next points) and point position description (non-input optional).Click "OK" to complete the collection of the point.

2. Average collection

That is averaging for the multi-measurement value of coordinate for each point.



3. Automatic collection

Point measurement will be recorded automatically according to the configured record condition.

• • • • • • • • • • • • • • • • • • •	Config C	1. Press ① to start automatic collection.
•	¥ base8	
Auto	26.00 cm	 Select the mode and enter the interval. Press OK to start collecting.
Interval	2 5	
Prefix ID	pt4	
Desc	A FixPos	



4. All the points will be auto saved. Press here to end collecting.

4. View all collected points



1. Press (1) to view all collected

points.

Press 2 to manage the raw data.

Coor	d Stake	Control
Name	< N	E
pt8	2567355.2376	1360114.5285
pt7	2567355.2266	1360114.5233
pt6	2567354.1453	1360116.9575
pt5	2567355.1295	1360114.6789
pt4	2567354.9076	1360114.6879
pt3	2567355.2386	1360114.5222
pt2	2567355.2394	1360114.5287
pt1	2567355.2378	1360114.5276
Q Sea	urch	Ø Set

All the collected points will be displayed in this interface.

3.2.3. Stake out

1. Import the stake point

1) Add the point manually



1. Press ① to add the point manually.



2) Import the points/lines from file



1. Press 1 to import the points from file.

- 2. Slip to Stake Point.
- 3. Select Import.
- 4. Choose the file you uploaded.

All(*.*)

9____ок

2. Point Staking





You can add stake point by: (4) Enter the point name then search it from list (5) Input the coordinates manually and save the point to the list by ticking the option (6) Select from list (7) Map picking Press OK to confirm and start staking-out.

Stake interface



Backward: Southward Towards the Right: Eastward Delta H: Altitude difference between stake coordinate and actual position Name : Name of stake point σ: Relative precision HD: Horizontal Distancestaking-out

3. Line staking

1. Stake line from line library.



Notice: You can define the line to be staked-out manually or import it from files. Please refer to the manual of Hi-Survey software to get the procedures.

3.2.4. Data exportt

Data achievement export supports the following format: *.txt, *.CSV, *.dxf, (shp File)*.shp and (Excel File)*.csv.

· 도 한 양 👄 🛛 🕄 🐨 11 11 💼 3:52 PM	1. Press Data Transfer.
Single 0.0 Project Info Project Project Info Project Project Info Project Project Info Project Project Project	
Raw Data Stake Point Control Point Exchange Types Directory /storage/sdcard0/ZHD/Out	 2. Press ⁽²⁾ to select data type. 3. Press ⁽³⁾ to select exchange type. 4. Choose the path to output. 5. Name the file.
6	6. Select the format. Press OK to confirm.
csv_112011 Excel File(*.csv)	

3.2.5. Auto-backup and quickly recover

Project is auto restored in Hi-Survey. External SD card is used for important data backup (Including: Raw data, project file, coordinate system or encryption code file).





Notice :

- 1. External SD card is necessary for this function.
- 2. All the backup operations are over version 1.0.2.

3.3. Base mode with external radio

When connected with an external radio,V100 GNSS receiver can also work as a GNSS base.

WAAS Device Base Device Base Rover Rover Demo HPC Others Others	1. Connect to V100 GNSS receiver then press Base.
Set Base Set Set Base Set Antenna Antenna [V100] GNSS Antenna Target H 2.0000 Pole Vertical Slant Ground Point Support S	 2. Select the height type and input the Target Height. 3. Set the coordinates of base by. ③Input manually ④Smooth from receiver ⑤Select from point library





Notice :

For the details of Radio which is supported and how to configure the connection, please refer to the related documents on Hi-Target website :

www.hi-target.com.cn

CHAPTER

Trouble Shooting

- Registration procedure
- Firmware upgrade
- Reset operation
- Schedule1 factory default parameters
- Schedule2 key accessories information

4.1. Registration procedure

Register iHand20



Figure 4-1-1

Register GNSS receiver via Hi-Survey App



Step 3: Power on your GNSS receiver then run the Hi-Survey App and click the Device icon.

Step 4: Connect your GNSS receiver first, and then click the Register icon. Input the 24 bit registration code, press OK.



Step 5: Registration should be successful. If failed, please check the code and try more times.

4.2. Firmware upgrade

The receiver can upload data like U disk , it need Mini USB data cable, one end of Mini USB data cable is connected to computer USB port and the other end is connected to Mini USB port of receiver. It will appear "UPDATE" disk after being connected, then open the disk, copy the firmware files to it. Remove it and disconnect USB cable, restart GNSS receiver. The receiver will upgrade the firmware automatically.

The new firmware can be downloaded from: www.hi-target.com.cn



Figure 4-2-1

4.3. Reset operation

When the Bluetooth is not connected, satellite searching fails and network connection fails, the operation can be conducted in case that instrument restarting does not work.

Reset receiver: In power on status, long press power button (>6s) when LED begins flashing, release power button to reset, and then restart the receiver.

Schedule1 factory default parameters

Options content		The factory default parameters
System	Working mode	Rover
parameters	Data link	Data collector internet
	Differential mode	RTK
	Correction format	RTCM(3.2)
	Elevation angle	10°
	GPS	Enable
	BDS	Enable
	GLONASS	Enable
	Static collection interval	55
	Static elevation angle	10
Others	none	

Table 2 Factory default parameters

Schedule2 key accessories information

Table 3 key accessories information

Name	Version	Manufacturer	Main performance index
Motherboard	BD970	Trimble	220channels
Antenna	Small measuring zero phase antenna	Hi-Target Surveying Instrument Co., Ltd	51dB
Databoard	ZHD20150010B [PCBA]	Hi-Target Surveying Instrument Co., Ltd	