

V30/50 GNSS RTK System Manual



Hi-Target GPS

Target On No.1 GPS Brand In China

Manual Revision

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CHAPTER

1

Preface

Chapter Instruction

- Instruction
- Relative Information
- Your Suggestions

Instruction

Welcome to Hi-Target V30/50 Series GNSS RTK system manual. This manual is designed for V30/50 GNSS RTK system, and use V30 GNSS RTK as an example to explain the installation, set up, and usage of the GNSS RTK system.

If you have used other GNSS RTK system before, Hi-Target suggests you read this manual carefully and this manual will help you to understand our V30 GNSS RTK system easily. If you do not familiar with GNSS RTK, please check Hi-Target website: <http://www.zhdgps.com>

Relative Information

You can get the manual from: 1, the complement CD when purchasing Hi-Target V30 equipment. You can get this manual from folder named Manual; 2, Download from Hi-Target website, Go to "Download Section" -> "Products Manual" -> "Surveying Instruments".

Your Suggestions

If you have any suggestions or comments on the manual, please upload your comment and suggestion to Hi-Target website, "Technical Service" -> "Suggestions & Complaint" message plate, write your feedback, it will help us to improve our manual quality greatly.

CHAPTER

2

Summary

Chapter Introduction

- Introduction
- Products Features
- Usage and Notes

Introduction

V30 GNSS RTK system adopts motorization design, so as to enable users to change into different differential transmission modules according to various requirements. Meanwhile the designed self-rectify function can automatically check the working status of all hardware and software of the V30 receiver while working, and arouse the problem part by its intelligent voice messenger in case of some problem.

Data collection controller can be connected with receiver mainframe via Bluetooth or cable; built-in high-capacity battery is suitable for long-time field work; static data can be stored in the built-in memory card of receiver and downloaded via USB port to your PC.



- Tips:**
1. V30 GNSS RTK system has some more modules. This manual does not represent standard configuration. Users need to notify their own requirements for the different configuration due to different applications.
 2. And before using, we suggest users firstly to check whether the package box is damaged, and then open careful and check whether inner items matched with the order list of their own. If there are some missing or damaging cases exist for products and accessories, please contact with the local distributor or Hi-Target Foreign Trade Dep. Immediately.
 3. Last but not least, please carefully read manual before carrying, handling and using!

Product Features

1. BD970 mother board of Pacific Crest, a Trimble Company, multi-satellite, multi-system kernel.
2. 1+X multi-module communication units.
3. Double battery capacity as 4400mAh, 12 hours for RTK operating.
4. The highest performance in waterproof, dustproof and anti-drop.

Usage and Notes

Although V30 receiver using chemical agents and impact resistance material, but still necessary taking care and maintenance is still required for such a precise instrument.



Warning: The receiver must be used and stored in the specified temperature. More details please refer to Chapter 7: Technical Parameters / Environment.

To ensure the quality of continuous tracking satellites and signals, surveying work should be in open air, while there should no any obstacle in space above 15 ° altitude angle; in order to reduce all kinds of electrical interference to the GNSS satellite signals. Besides, there should no strong electrical interference around within about 200m range, such as the television tower, microwave stations, high voltage transmission line. Also, in order to avoid or reduce the occurrence of multi-path effect, stations should be away from terrain or geographical objects, which will strong effect electrical signal, such as high-rise buildings, large area water, etc.

Receiver Introduction

Chapter Introduction

- Introduction
- Receiver Appearance
- Control Panel
- Upper Cover
- Below Cover
- Battery
- Environmental Requirement
- Electric Interference

Introduction

This Chapter mainly introduces V30 receiver appearance, buttons and indicator leds and so on.

Receiver Appearance

Receiver Appearance mainly including 4 parts: upper cover, below cover, guard collar and control panel, as Figure 3-1



Figure 3-1 Receiver Appearance

Control Panel

Figure 3-2, in the middle of red frame of V30 receiver is control panel. And the control panel contains the F1 key (function key 1), F2 key (function key 2) and the power button, 3 indicator leds which are respectively satellite led, the status led (dual-color led), the power led (dual-color led). The simple three buttons include all the features setting of the v30 receiver.



Figure 3-2 control panel



satellite led (green led)



status led (red-green dual-color led)



power led (red-green dual-color led)



Function Key: settings of working mode, reset receiver and so on.

satellite elevation angle



Function Key: settings of data link, collection interval,



ON-OFF power key: setting confirmation, automatically base setting and so on.

Upper Cover

Figure 3-3 indicates the upper cover of V30 receiver, the main function of which is anti-drop and anti-scratch.

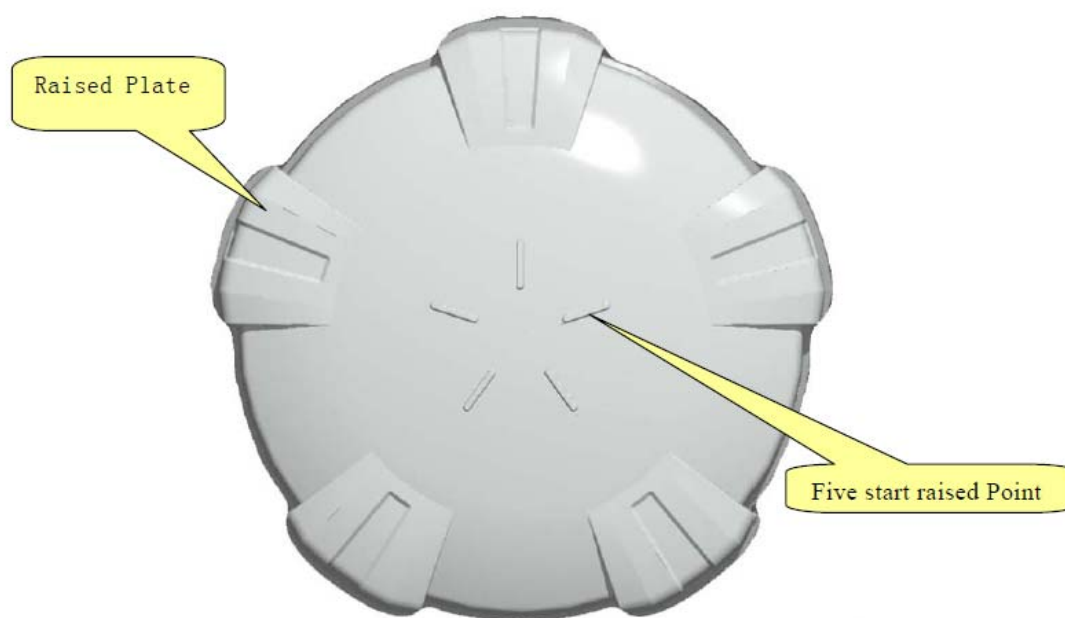


Figure 3-3 Upper Cover

- ✧ Raised Point: anti-wear point to avoid instrument being scratched
- ✧ Raised Plate: 5 raised plates can avoid wear-out and falling

Below Cover

As figure 3-4, below cover of V30 includes communication module slot, battery groove, five-pin port, eight-pin port, speaker and so on.

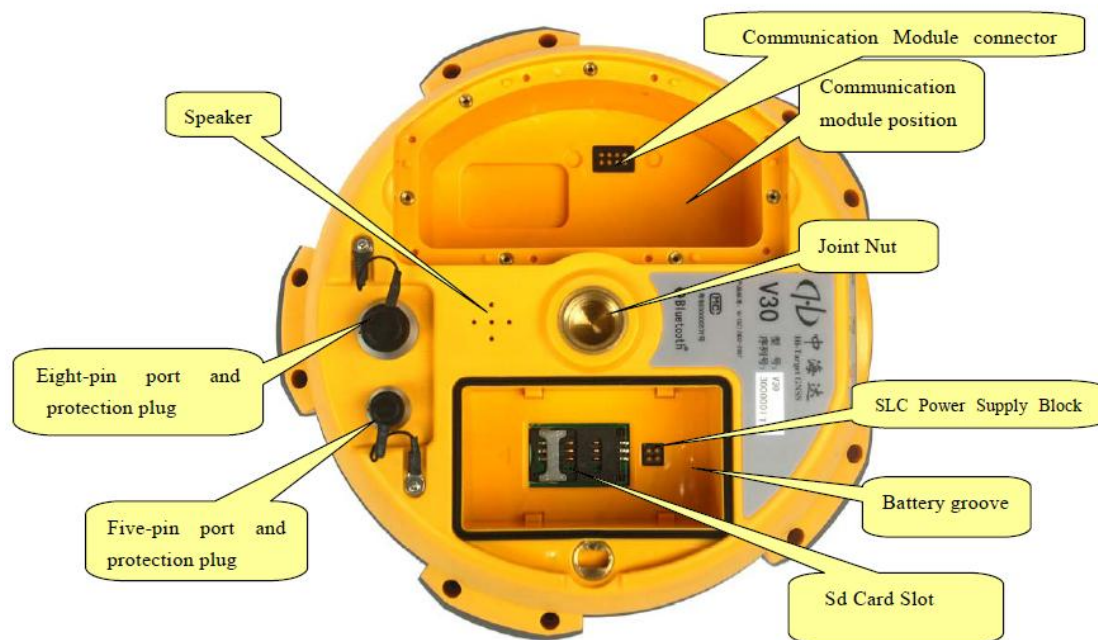


Figure 3-4 Below cover

- ✧ Communication Module: according to different requirements communication module can be chosen
- ✧ Communication module connector: connect communication module and mainframe
- ✧ Battery Groove: install 4400mAh li-ion battery
- ✧ SLC Power Supply Block: connect li-ion battery and mainframe
- ✧ Five-pin port: connect mainframe with external data link or with external power supply

- ✧ Eight Core socket: connect V30 receiver with computer, or controller for data download and delete
- ✧ Protection Plug: anti-dust and waterproof for socket
- ✧ Sd card slot: install Sd card.
- ✧ Joint Nut: fix instrument with tribrach and centering pole.
- ✧ Speaker: voice broadcast for real-time operation and status.



- Tips:**
1. if no need to use five-pin port, eight-pin port and differential antenna port, please affix rubber plugs to achieve waterproof and dustproof.
 2. when speaker is flooding water, maybe speaker becomes silent or sound hoarse. But it will be back to normal after drying speaker.
-

Battery

As figure 3-7, the appearance of 4400mAh li-ion Battery



Figure 3-7 Battery Front

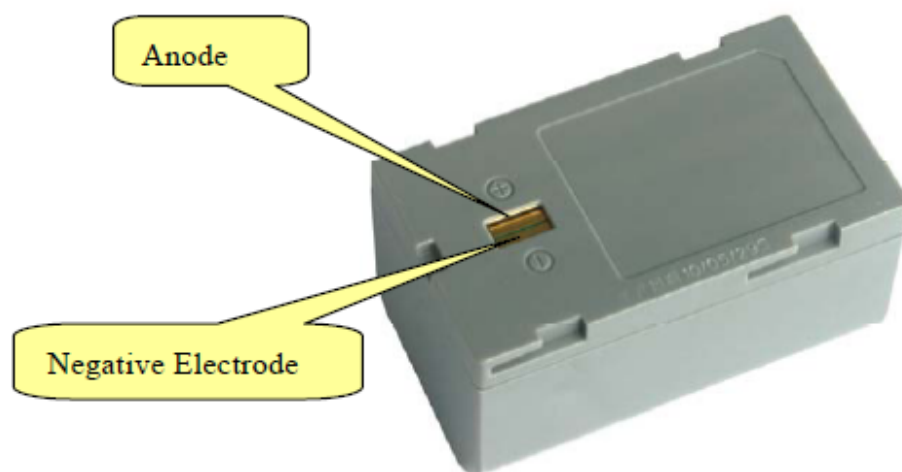


Figure 3-8 Battery Back

Environmental Requirement

Even though V30 receiver uses waterproof materials, maintaining in a dry environment is still helpful. In order to improve the stability, and duration of the receiver, please avoid exposing the receiver in extreme environments, such as:

- ✧ Moist
- ✧ temperature higher than 65 degrees
- ✧ temperature lower than -40 degrees
- ✧ corrosive liquid or gas

Electrical Interference

Do not place GNSS receiver around a strong power interference signal source, such as:

- ✧ Oil Road (spark plug)
- ✧ television and computer monitor
- ✧ generator
- ✧ electric motor
- ✧ DC-AC power conversion equipment
- ✧ Fluorescent Light
- ✧ Power switcher

General Operations

- Introduction
- Button Functions
- Led Status Instructions
- Turn On/Off Receiver
- Static Data Storage
- RTK Data Storage
- Reset Receiver
- Back to Original Settings
- Format Receiver
- Power Supply System
- Firmware

Introduction

Most of the operations of V30 receiver can be done by the three buttons on the mainframe panel.

Buttons on the panel:

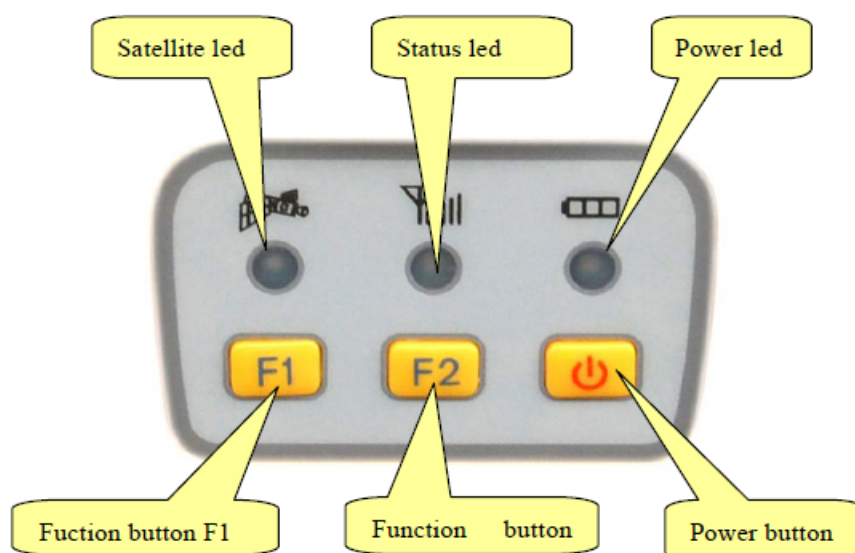


Figure4-1 Mainframe Panel

Explanations of buttons operations and leds hints as below:

Operations	Explanation
Single click button	Press a button less than 0.5 second
Double click button	Double click the button while the clicking interval should be between 0.2 to 1 second
Long pressing button	Pressing button more than 3 second
Super long pressing	Pressing button more than 6 second
Slow flash of led	Flashing interval more than 0.5 second
Fast flash of led	Flashing interval less than 0.3 second

Button functions

Factions		Button operations	Introduction
Work mode		Double click F1	Than single click F1 to choose the receiver work mode
Sttaic	Elevation angle	Long pressing F1	Single press F1 to set elevation angle to be 5 degrees, 10 degrees, or 15 degrees
	Collection interval	Long pressing F2	Single press F2 to set collection interval to be 1s, 5s, 10s
Confirm setting		Single press power button	Than the receiver will speak out its current work mode, data link, meanwhile the power led will flash to hints its power status
Auto-set base		F1+Power button to turn receiver	Press F1 while than press power button at th same time to turn on the receiver until hearing "Dingdong". Then the receiver speak out its current status.
Reset receiver		Long press F1	Reset the mother board
Back receiver to original settings		Long press F2	Then it will automatically rectify, correct and reset to the original settings.
Upgrade mother board		Super long press power button	Enter mother board upgrading