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Chapter I : A brief introduction of S82V

The SOUTH S82V is a RTK GNSS receiver, built for precision, reliability and user friendliness.

S82V is able to receive GPS signals, and also satellite signals from GLONASS and GALILEO.

The S82V main receiver unit is integrated with GNSS antenna interface, GNSS module, Bluetooth device to facilitate working convenience for the user.

The S82V receiver is lightweight and sturdy, and designed for rugged usage. The receiver housing is waterproof and dustproof, and built with superior material to withstand long lasting operation in the field.

The embedded receiver firmware can customize different RTK software for different applications. The data transfer process is a very convenient one.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION:

- a) The disposal of electric and electronic device as solid urban waste is strictly prohibited: they must be collected separately.
- b) Contact Local Authorities to obtain practical information about correct handling of the waste, location and times of waste collection centres. When you buy a new device of ours, you can give back to our dealer a used similar device.
- c) The dumping of these devices at unequipped or unauthorized places may have hazardous effects on health and environment.
- d) The crossed dustbin symbol means that the device must be taken to authorized collection centres and must be handled separately from solid urban waste.

NOTES:

The treatment, recycling, collection and disposal of electric and electronic devices may vary in accordance with the laws in force in the Country in question.

You could contact export@southsurvey.com for any enquiries pertaining to the S82V.

Chapter II : S82V receiver main unit

II.1 The receiver main body

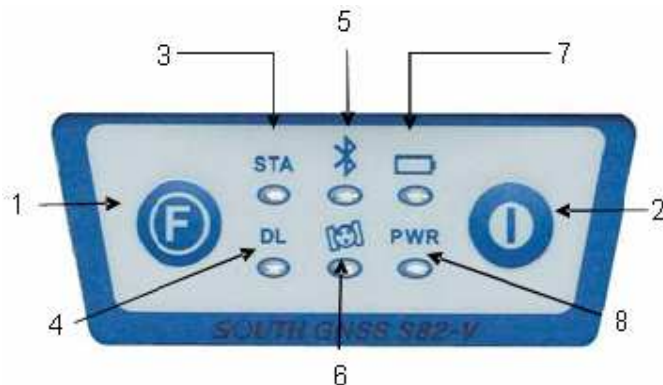
There are three parts to the main unit: the cover, a protective rubber ring and the main

structure. The cover protects the GNSS antenna inside. The protective rubber ring has the function of additional protection against water and dust. The display LED panel and control keys are integrated into front of the main structure. On the bottom there is a slot for the built-in a compartment for the batteries. All the others components of the receiver (Bluetooth device, main board, etc.) are contained inside the main structure of the receiver.



Fig. 2.1 - S82V main unit

II.2 Indicator lights and instrument setup



1. Function Key
2. Power Key
3. Status light
4. Data link light

5. Bluetooth light
6. Satellite light
7. Built-in power supply light
8. External power supply light

Fig. 2.2 – S82V keys and indicator lights

As you see by the figure 2.2 there are three sets of indicator LEDs, each with two different colors and two different functions.

From the left to the right are:

1st indicator: status indicator light (red), data link indicator light (green)

2nd indicator: Bluetooth indicator light (red), satellite indicator light (green)

3rd indicator: Battery power light (red), external power supply indicator light (green).

The descriptions of the LEDs are as follows

BAT (red): Built-in power supply light (Fig.2.3).

The status of the battery power supply are indicated as follows

1. Fixed: Battery power supply in good condition.
2. Flashing: Battery power supply low.

Usually when the light begins to flash you have one hour of power left.



Fig. 2.3 - S82V battery power LED

PWR (green): external power supply light (Fig. 2.4).

The status of the external power supply are indicated as follows

1. Fixed: External power supply in good condition.
2. Flashing: External power supply low



Fig. 2.4 - S82V external power LED

BT (red): Bluetooth indicator light (Fig. 2.5).

When the controller is connected with the receiver, this light will light up.



Fig. 2.5 - S82V Bluetooth LED

SAT (green): Satellite light (Fig. 2.6).

It shows the amount of located satellites, when the receiver obtains satellites signals, it will start to blink, the number of blinks corresponds with the number of located satellites.



Fig. 2.6 - S82V satellite LED

STA (red): Status light (Fig. 2.7).

In static mode, this LED lights when the receiver is recording data. In RTK mode, it shows if the data link module working in good condition.



Fig. 2.7 - S82V status LED

DL (green): Data Link light (Fig. 2.8).

In static mode, it will remain lit in normal operation conditions. In RTK mode, it shows if the data link module working in good condition.



Fig. 2.8 - S82V Data Link LED

F Key : Function key

Switches between the working modes (static, base or rover) and RTK communication modes.

P Key: Power key

Powers unit on/off and confirms selected functions.

Power on receiver: Press P key one time, the receiver will power on.

Power off receiver: Press and hold P key for few seconds, after three beeps all LEDS will turn off. At that point release the key, the receiver will power off .

Self-Check: when the receiver work abnormally, you can make a self-check to fix it, the

operation procedure is as follows:

- Press and hold P key for more than 10 seconds as for turning it off but keeping pressed the key after all lights have turned off.
- Release the key when you hear another beep: receiver will start to make a self-check.

The Self-check process lasts typically for about 1 minute, after which receiver will turn on and resume normal operation.

Selecting the working mode

- With the battery inserted, then press and hold P key + F key: the receiver will start.
- Keep the P key + F key pressed until the six LEDs blink at the same time (Fig. 2.9), then release the keys.

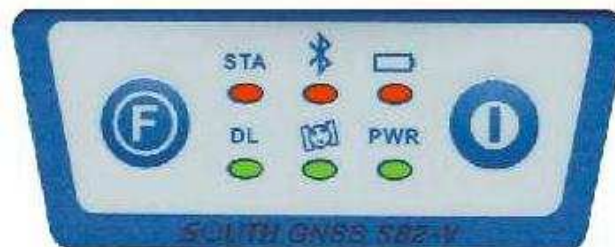


Fig. 2.9 - S82V six LEDs blinking simultaneously

- STA LED is lit, now every time the F key is pressed, the working mode will change.
- Press P key when the chosen LED is blinking and the receiver will start the working mode selected.

Base mode: When the BT light blinks, press P key to confirm, you will enter base mode. The following display shows the receiver in base mode:



Fig. 2.10 - S82V Bluetooth LED

Static mode: When the BAT light blinks, press P key to confirm, you will enter static mode. The following display shows the receiver in static mode:



Fig. 2.11 - S82V battery power LED

Selecting the communication mode

After you have entered working mode, press and hold F key, when you hear 2 beeps, and see a green light blinking, release the key, wait several seconds, then press F key, the 3 green lights will blink in turns. Then you can select the different data link methods through the different LED choices.

Checking the working mode and communication mode during operation

You can press F key one time to check the work mode and communication mode. There are 6 kinds of status, such as follows.

Static mode: When you press F key one time and see the following figure, it means static mode.



Fig. 2.12 - S82V battery power LED



Fig. 2.13 - Bluetooth and DL LEDs

Chapter III : S82V accessories

III.1 The case of S82V



Fig. 3.1 - S82V case



III.2 Power supply

Receivers

The standard configuration contains two batteries and a slot for charging batteries (named “charger” for simplicity) and an adaptor. The batteries are “lithium-ion” batteries: a technology which has a high energy-to-weight ratio with respect to NiCd or NiMh batteries, lack of memory effect, and slow self-discharge when not in use.



Fig. 3.2 - Lithium-ion battery

The charger can charge both batteries simultaneously. The lights of the charger show if a battery is being charged or if it's already charged.



Fig. 3.3 - 82V charger and adaptor

Controllers

The Psion controller standard configuration includes two batteries, a charger and an adaptor.

Chapter IV S82V accessories



Fig. 3.4 - Psion battery



Fig. 3.5 - Psion adaptor



Fig. 3.6 - Psion charger

III.3 Cables

Radio cable

External power supply cable (PCRR) shape a “Y” connection cable.

It is used to connect the base mainframe (red), transmitting radio (blue) and connect the accumulator (red and blue clip). It has the function of power supply and data transfer .(Fig 3.7)



Fig. 3.7 - External power supply cable

Controllers cable

USB communication cable is used for connecting handheld and computer, using the software Microsoft ActiveSync if you use Windows XP or an earlier version, or Windows Mobile Device Center if you use Vista or Windows 7 (you can free download these programs from Microsoft website). There are different cables for different controllers.



Fig. 3.8 - USB communication cable for Psion



Fig. 3.9 - USB communication cable

Receivers cable

Multi-function communication cable: this cable is used for connecting receiver and computer used for transfer the static data, update of firmware and the license. It can also be used for connecting GEOS controller and receiver, in case of malfunctioning of the Bluetooth device. See Fig. 3.10.



Fig. 3.10 - Multi-function communication cable

Inside the Psion bundle there is also a cable used for connecting Psion and receiver, in case of malfunctioning of Bluetooth device. See Fig. 3.11.



Fig. 3.11 - Communication cable between Psion and receiver



Fig. 3.12 - 30cm supporting pole



Fig. 3.13 - Bracket for controllers



Fig. 3.14 - Tribrach and adapter with optical plummet



Fig. 3.15- Connector between tribrach and receiver



Fig. 3.16 - Measuring tape

On the basis of the configuration chosen (base or rover) some of these accessories are included or not in the receiver bundle.



Appendix 1: Frequently Asked Questions

1. The receiver is set in static mode but it does not save data even if more than three satellites are locked. The three red lights are blinking.

Solution: the internal memory of receiver is full, please delete some files.

2. The external and built-in power lights are blinking and I do not succeed in receiving differential corrections.

Solution: The serial code is expired, please contact SOUTH for a new code.

3. I do not succeed in connecting handheld and receiver by Bluetooth.

Solution: you are in static mode and Bluetooth is disabled, please switch mode.

If you are in rover or base mode and Bluetooth still does not work, please perform a receiver self-check.

If the problem persists please check config.ini, it may be in a wrong format, please contact SOUTH for a new config.ini file.