



RECYCLED PACKAGING

**QuanzhouLANCHONLH Electronics Co., Ltd.**

Add: TangfangMiddle Road, BeifengSubdistrict Office,  
Fengze District, Quanzhou City

Mobile: 13799506783

www.qzledz.com QQ: 2186719536



**LANCHONLH**

联畅领航



**HG-UV98**

PROFESSIONAL WIRELESS WALKIE-TALKIE

国内首款**双段 APRS**专业对讲机

USER'S MANUAL

**DISTRIBUTOR:**

Wuxi Venus Information Technology Co., Ltd

<https://ba4tb.qth.com>

Caring tips from Fujian Provincial Bureau of Information Industry (Fujian Radio Management Office):

The purchase and use of this device belong to the setup and use behavior of a radio (station) and must go through relevant approval formalities for the setup of radio station and get a radio license. During use, users are supposed to work as approved by the radio license.

Administrative penalties shall be imposed on the setup of a radio (station) without authorization, interference with radio business, not working as approved by the radio license and other behaviors against radio regulations. Severe radio illegal behaviors may also violate Article 288 of “ Criminal Law ” or Article 28 of “ Law of the PRC on Penalties for Administration of Public Security ” and be sentenced to less than 3 years of imprisonment, detention or public surveillance, concurrently or independently sentenced to a fine as criminal punishment or detention by a public security organ as administrative penalty.

**WARNING** 

>>Explosive environment (gas, dust and smoke, etc.)

>>Please turn off the walkie-talkie when refueling or parking at a gas station.

## CAUTION

**LANCHONLH** walkie-talkie is a product with excellent design and advanced technology. The following recommendations will help you fulfill your obligations under warranty terms, learn and understand the safety of the use of walkie-talkies.

1. Please put the walkie-talkie and all the components and accessories out of reach of children.
2. Don't try to disassemble the walkie-talkie. The processing by a non-professional person may damage it.
3. Please use a battery pack and charger made by our company, in case that the walkie-talkie is damaged.
4. Please use an antenna made by our company, in case that the range is shortened.
5. Don't expose the walkie-talkie to sunlight or put it in a hot place for a long time.
6. Don't put the walkie-talkie in a dusty or damp place.
7. Don't clean the walkie-talkie with strong chemicals, detergents or strong detergents.
8. Don't transmit without an antenna.
9. If the walkie-talkie emits an odor or smoke, please turn it off immediately, remove the battery pack and contact your **LANCHONLH** dealer.

## Notice

- >>All of the above recommendations are equally applicable to **LANCHONLH** walkie-talkie and its accessories. If they don't work properly, please contact your **LANCHONLH** dealer in time.
- >>If you use accessories or fittings that are not manufactured or sold by **LANCHONLH**, **LANCHONLH** will not guarantee the safety and operability of the walkie-talkie.

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## Unboxing and Device Inspection

Please carefully remove your walkie-talkie from the package box. We suggest that you confirm whether items listed in the following table are available in the box before discarding the packaging materials. If any items are lost or damaged during handling, please check with your **LANCHONLH** dealer.

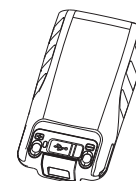
### List of Accessories



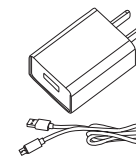
Walkie-talkie



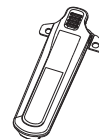
High-gain antenna



Polymer battery pack



AC adapter



Belt clip



Hand strap



User manual

## Installation before Use

### Install/remove the battery pack

#### CAUTION

>>The battery pack is featured with short-circuit protection. When short circuit occurs, please activate it using the attached charger before use.

>> Don't short-connect the battery terminals or put the battery into fire.

>> Don't try to take down the case from the battery pack.

1 Insert the top of the battery pack into the top of the back of the walkie-talkie and fit the battery pack into the bottom of the walkie-talkie until the battery pack latch is locked (see Figure 1 for details).

2 To remove the battery pack, pull up the latch at bottom of the battery pack, until the latch is entirely disengaged from the walkie-talkie. Remove the battery pack normally (see Figure 2 for details).

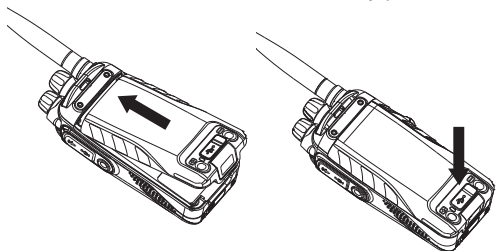


Figure 1

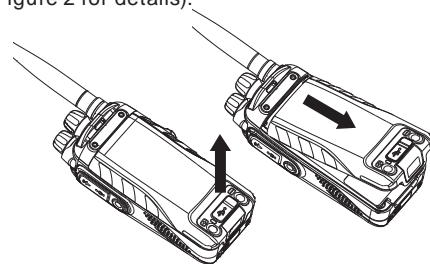


Figure 2

2

## Get Familiar with This Machine

### I. Functions and Features

1. Suitable for frequencies in different countries and regions

Standard frequencies

Area A: Area B:

TX:136-174MHz(FM) TX:136-174MHz(FM)

400-470MHz(FM) 400-470MHz(FM)

2. UHF/VHF dual-frequency, dual-display and dual-reception

3. TFT large screen

4. High power: UHF:4W VHF:5W, low power: UHF/VHF:1W

5. Chinese/English menus, Chinese/English voice prompts

6. Complete APRS beacon reception and transmission

7. Support multiple satellite systems, GPS/ BeiDou /GLONASS/automatic recognition

8. Support the complete display of GPS information

9. Support the reporting of temperature, atmospheric pressure and battery voltage

10. Support the setting of APRS parameters, such as call, ID, icon and comment, etc.

11. Support SPORT and FIXED site applications

12. Support APRS relay function

13. The Bluetooth supports multiple data formats, KISS data and two-way

communication

14. The Bluetooth supports GPWPL waypoint data, UI text data and GPS positioning

data (GPRMC\GPGLGA)

15. Support the setting and memory of various APRS parameters

16. Support the storage and export of beacons

17. Support firmware upgrade

18. Day/night mode

19. The editing and display of channel names in Chinese or English

(to be edited in the supporting

20. 50 CTCSS codes, 210 CDCSS codes

21. Multiple scanning modes

22. VOX (Voice Activated Transmit)

23. Custom side keys

24. Multiple single-tone pulses (1750HZ, 2100HZ, 1000HZ and 1450HZ)

25. Multiple keyboard lockout methods

26. Wideband and narrowband

27. Backlight

28. Battery saver

29. Roger beep

30. The setting of Squelch Tail Elimination (STE) and repeater echo

31. Standard 7.4V and 2500mAh polymer Li-ion battery

32. 5V quick charge through USB

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## Get Familiar with This Machine

### II. Technical Specifications

Overall		Receiver	Wideband	Narrowband
Frequency Match	Area A: TX:136-174MHz(FM)	Adjacent Channel Selectivity	≤70dB	≤60dB
	Area B: TX:136-174MHz(FM)	Intermodulation	≤65dB	≤60dB
	400-470MHz(FM)	Spurious Response	≤70dB	≤70dB
	400-470MHz(FM)	Audio Response	+1~3dB (0.3~3KHz)	+1~3dB (0.3~2.55KHz)
Step Frequency	5KHz/6.25KHz/10KHz/12KHz/25KHz/50KHz/100KHz		SNR	≥45dB
Number of Channels	128		Audio Distortion	≤5%
Operation mode	F2D/F3E		Audio Power	Main unit≤500mW
Operating Temperature	-20°C ~ 40°C		Sensitivity	UHF/VHF:0.25μV(12dB SINAD)
Antenna Damping	50Ω			
Power Requirement	7.4VDC			
Weight	295g			
Overall Dimensions	131X51X34(mm )			

Transmitter	Wideband	Narrowband	Transmitter	Wideband	Narrowband
Modulation Mode	16K F3E	11K F3E	Maximum Offset	±5KHz	±25KHz
Adjacent Channel Power	≥70dB	≥60dB	Frequency Stability	±2.5ppm	
Spurious Response	≥60dB	≥60dB	Audio Distortion	≤5%	
Audio Response	+1~3dB(0.3~3KHz)	+1~3dB(0.3~2.55KHz)	Output Power	5W/1W(VHF)	
				4W/1W(UHF)	

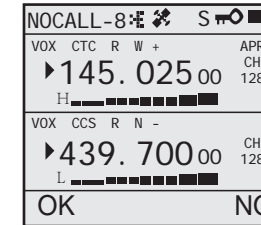
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## Get Familiar with This Machine

### III. Structure

#### Screen:

On the screen, various indicators that represent the selected content can be seen.

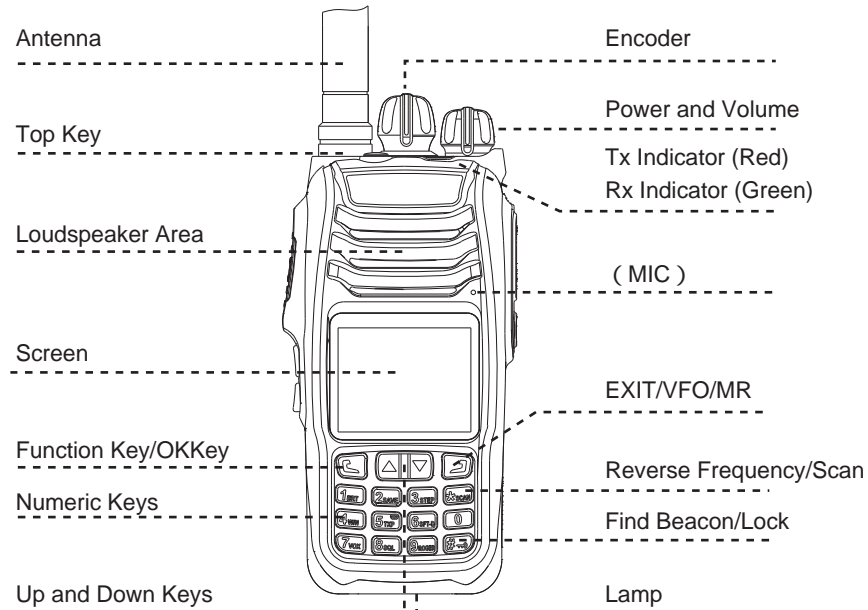


1. NOCALL-8 call display area
2. Bluetooth icon
3. Red icon: GPS hasn't positioned/black: GPS has positioned
4. S: battery saver on
5. Keyboard lockout icon
6. Battery power display icon
7. VOX: voice control
8. CTC: turn on CTCSS
9. DCS: turn on CDCSS
10. R: reverse frequency
11. H: high power
12. L: low power
13. +: positive offset
14. -: negative offset
15. W: wideband mode
16. N: narrowband mode
17. CH 128: current channel number
18. Signal strength bar: transmission and reception signal strength indicator
19. APRS: receiving channel

**Special Tip: All interfaces in this manual are subject to actual interfaces. The software is being upgraded constantly.**

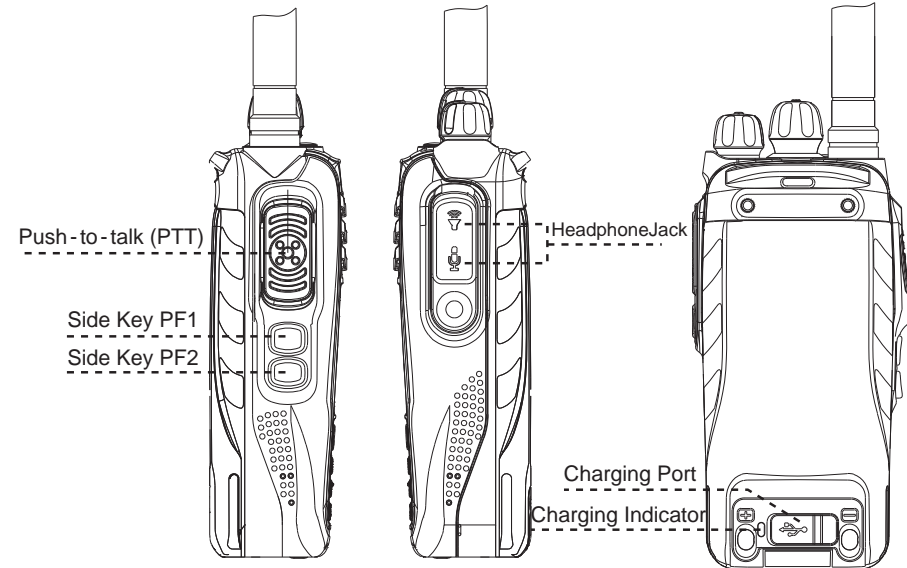
5

## Get Familiar with This Machine



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## Get Familiar with This Machine



1. Short/long press of Side Key PF1: backlight, scan, squelch, flashlight and AB key
2. Short/long press of Side Key PF2: send beacon, find beacon, flashlight and backlight
3. Short/long press of Top Key: on-spot alarm, remote alarm and flashlight

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## Common Operations


### I. Shortcuts

#### (1) Master frequency switch



When the walkie-talkie leaves the factory, the default short-press function of Side Key PF1 is AB key (master frequency switch key).

Tickle the Side Key PF1 to change the master frequency once. The region to which the master frequency arrow is directed is the operation region.



For example, if the master frequency arrow is directed to Area A, when [PTT] is pressed, signals will be transmitted according to the frequency or channel parameters set for Area A.

For example, when the master frequency arrow is directed to Area A, when Function Key [  ] is pressed, the change of parameters is targeted at Area A.

#### (2) Quick search

When setting various functions or functional parameters, various parameters can be searched up or down quickly, by pressing  or  once.

#### (3) ESC/VFO/MR

Short press [  ] to return or Esc. Long press [  ] for 2 seconds to switch between operation modes (frequency mode and channel mode).

The channel mode can be set using “ Menu 10: Operation mode ” . Detailed operation: See p.30 {Channel Memory} for details.

## Common Operations

#### (4) [\*] key

In the wait state:

Short press: start or stop reverse frequency

Long press: long press for 2 seconds to start scanning

#### (5) [#] key

In the wait state:

Short press: [#] once, to switch between {GPS Interface}{Beacon List} and {Real-time Beacon}.

Long press :[#] to lock the keyboard

#### (6) The use of a smart AC adapter

When the power is low, the walkie-talkie will give a “ low power ” voice reminder and send a “ low power ” voice reminder every 30 seconds.

1. When the battery pack is connected to an AC adapter, the red light will stay solid on, indicating that the walkie-talkie is being charged. When the green light stays solid on, it means that the charging has been completed.

### II. This machine has a total of 8 menus (see Figure 3 for details)

- |                 |                    |
|-----------------|--------------------|
| 1. LOCAL SETUP  | 6. BLUETOOTH SETUP |
| 2. GPS SETUP    | 7. VERSION         |
| 3. BEACON SETUP | 8. ADVANCED SETUP  |
| 4. BEACON TYPE  |                    |
| 5. RELAY SETUP  |                    |

Figure 3



















































## How to Operate Menus

Function No.	Function Name	Enter Function Settings	Screen Display	Select Parameters	Optional Parameters	OK	Return to the Standby State
1	ABR	→	backlight timeout 150S	press /▼ to select parameters	OFF/05-150秒	→	→
2	SAVE	→	battery saver on	press /▼ to select parameters	ON/OFF	→	→
3	STEP	→	step frequency 5.00	press /▼ to select parameters	to select parameters, (1-6) kinds of step frequency: 5.0K,6.25K,10.0K,12.5K, 20.0K,25.0K	→	→
4	W/N	→	bandwidth settings, narrowband	press /▼ to select parameters	bandwidth (25K), narrowband (12.5K)	→	→
5	TXP	→	power level, high power	press /▼ to select parameters	HIGH: high power LOW : low power	→	→
6	SFT-D	→	repeater shift direction	press /▼ to select parameters	+ : positive - : negative OFF: turn off SFT-D	→	→
7	VOX-GRO	→	VOXOFF	press /▼ to select parameters	OFF/VOX Levels 1-9	→	→
10							














































## How to Operate Menus

8	SQL	→	sqlch level 5	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	OFF/Squelch Levels 1-9	→
9	ROGER	→	Roger Beep OFF	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	OFF/BOT/EOT /BOTH	→
10	CH - MDF	→	channel display and frequency display	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	frequency mode/ channel mode	→
11	V/M	→	channel mode (channel number)	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	frequency+channel number/channel number/channel name	→
12	TX-DCS	→	TxCode D017N	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	105CDCSS (D023N- D7541), OFF: turn off CDCSS	→
13	TX-CTC	→	TxCode 67.0HZ	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	50CTCSS (67.0Hz-254.1Hz) OFF:turn off CTCSS	→
14	RX-DCS	→	Rx Code D017N	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	105CDCSS (D023N-D7541) OFF:turn off CDCSS	→
15	RX-CTC	→	Rx Code 67.0HZ	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	50CTCSS (67.0Hz-254.1Hz) OFF:turn off CTCSS	→
16	TDR	→	single - display dual - band	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	single - band/dual - band	→
17	OFFSET	→	offset frequency 00.00625	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	press /▼ to select parameters	optional from 0 to 69.99500MHZ	→














































## How to Operate Menus

18	MENULANG	 →  	menu language Chinese	press /▼ to select parameters	→ Chinese/English	 → 
19	VOICE	 →  	voice switch OFF	press /▼ to select parameters	→ ON/OFF	 → 
20	BEEP	 →  	beep switch ON	press /▼ to select parameters	→ ON/OFF	 → 
21	DIS-MODE	 →  	display mode day	press /▼ to select parameters	→ day/night	 → 
22	ABR-LV	 →  	backlight level 5	press /▼ to select parameters	→ optional Levels 1 - 10	 → 
23	BCL	 →  	busy channel lockout ON	press /▼ to select parameters	→ ON/OFF	 → 
24	TOT	 →  	time out timer 15S	press /▼ to select parameters	→ OFF/ TOT, 600S, 15S per level	 → 
25	TOA	 →  	timeout alarm 2S	press /▼ to select parameters	→ OFF/ TOA, 1 - 10S	 → 
26	VOX-DLY	 →  	VOX delay 1	press /▼ to select parameters	→ VOX-DLY, 1 - 10S	 → 
27	SC-REV	 →  	scan mode carrier	press /▼ to select parameters	→ there are 3 scan modes: TO: Time Operation CO: Carrier Operation SE: Search Operation	 → 











## How to Operate Menus

28	LOCKMODE	 →  	lock mode keyboard	press /▼ to select parameters	→ keyboard/keyboard +encoder/keyboard +encoder+PTT	 → 
29	AUTOLOCK	 →  	auto lock manual	press /▼ to select parameters	→ 1.turn on auto lock; 2.turn on manual lock	 → 
30	TONE	 →  	single - tone 1000HZ	press /▼ to select parameters	→ single - tone Txfrequencyoptions: 1000HZ,1450HZ, 1750HZ,2100HZ	 → 
31	PF1 SHORT	 →  	PF1SHORT master frequency	press /▼ to select parameters	→ backlight/scan/squelch/ flashlight/master frequency	 → 
32	PF1 LONG	 →  	PF1long press squelch level	press /▼ to select parameters	→ backlight/scan/squelch/ flashlight/master f requency	 → 
33	PF2 SHORT	 →  	PF2 short press send beacon	press /▼ to select parameters	→ send beacon/find beacon/flashlight/ backlight	 → 
34	PF2 LONG	 →  	PF2long press find beacon	press /▼ to select parameters	→ send beacon/find beacon/flashlight/ backlight	 → 
35	TOPSHORT	 →  	TOP short press flashlight	press /▼ to select parameters	→ on - spot alarm/remote alarm/flashlight	 → 
36	TOPLONG	 →  	TOP long press on - spot alarm	press /▼ to select parameters	→ on - spot alarm/remote alarm/flashlight	 → 

## How to Operate Menus

37	MEN-CH	 →  → 	channel memory CH-128	press /▼ to select parameters	→ 125 channels	→  → 
38	DEL-CH	 →  → 	channel deletion CH-128	press /▼ to select parameters	→ 125 channels	→  → 
39	RPT-RCT	 →  → 	Repeater Echo OFF	press /▼ to select parameters	→ ON/OFF	→  → 
40	V-BAT	 →  → 	battery voltage 8.1V	press /▼ to select parameters	→ current voltage	→  → 
41	CT-SCN	 →  → 	scanningCSS, 1: save, 0: not save	press /▼ to select parameters	→ 1: save, 0: not save	→  → 
42	DCS-SCN	 →  → 	scanningCSS, 1: save, 0: not save	press /▼ to select parameters	→ 1: save, 0: not save	→  → 
43	SC-QT	 →  → 	CSS save type, decode	press /▼ to select parameters	→ decode/encode/encode, decode	→  → 
44	SCAN-ADD	 →  → 	scan and add, OFF	press /▼ to select parameters	→ ON/OFF	→  → 
45	PRI-CH	 →  → 	priority channel PBI-CH:1	press /▼ to select parameters	→ 128 channels	→  → 

## Description of local settings

46	PRI-SCN	 →  → 	priority scan OFF	press /▼ to select parameters	→ ON/OFF	→  → 
47	RESET	 →  → 	initialize VFO	press /▼ to select parameters	→ VFO/ALL	→  → 

### Backlight Timeout (ABR) - Menu 1

Function: To set how long the screen light will be on

Option: OFF/05-150S, with a 5S step

Default: OFF

### Battery Saver (SAVE) - Menu 2

Function: To turn on or off the battery saver

Default: OFF

### Step Frequency(STEP) - Menu 3

Function: To set the step of VFO frequency

Option: 5K, 6.25K, 10K, 12.5K, 25K, 50K, 100K

Default: 5K

注：在信道模式下不能设置。

## Description of local settings

### Bandwidth Setting (W/N) - Menu 4

Function: By default, this menu is used for transmission and reception, to set the walkie-talkie to work in wideband FM(25K) mode, or narrowband FM(12.5K) mode

Option: Wideband/narrowband

Default: Wideband

### Tx Power(TXP) - Menu 5

Function: To select the output power of the walkie-talkie

Option: High or low. UHF H:4W,L:1W

VHF H:5W,L:1W

Default: High power

### Repeater Shift Direction(SFT-D) - Menu 6

Function: To set whether the transmitting frequency is higher than (+) or lower than (-) the receiving frequency

Option: OFF/+/-

Default: OFF

注：在信道模式下不能设置。

## Description of local settings

### VOX-GRD- Menu 7

By using VOX, there is no need to press [PTT] manually in every transmission. Once the VOX circuit detects that you speak into the microphone, the walkie-talkie will enter the transmission state automatically. When using VOX, please select VOX gain properly. The higher gain, the louder you need to speak, so that the VOX circuit can detect and enter the transmission state. To ensure the continuity of VOX detection, you can also set up Menu 26[VOX-DLY].

Option: Levels 1-9

Default: OFF

Special Tips

>>VOX function is only valid for master frequency.

>> VOX can only be used for FM Bands A/B.

### Squelch Level (SQL) - Menu 8

Function: The purpose of squelch is to mute the speaker when there is no signal. If the squelch level is correctly set, the sound will only be heard when a signal is actually received. The higher squelch level, the stronger the signal has to be in order to be received.

Option: Levels 1-9

Default: 5

## Description of local settings

### Roger Beep(ROGER) - Menu 9

The roger beep is used as a single tone for the transmission and end of transmission of the walkie-talkie when PTT is pressed.

Option: OFF/BOT/EOT/BOTH

Default: OFF

### Operation Mode (CH-MDF) - Menu 10

Option: Channel display/frequency display

Default: Frequency display

### Channel Mode (V/M) - Menu 11

Option: Frequency+channel number/channel number/channel name

Default: Channel name

### CDCSS Encode (TX-DCS) - Menu 12

Function: To transmit CDCSS

Option: OFF/105 standard CDCSS codes

Default: OFF

18

## Description of local settings

### CTCSS Encode (TX-CTC) - Menu 13

Function: To transmit CTCSS.

Option: OFF/50 standard CTCSS codes

Default: OFF

### CDCSS Decode (RX-DCS) - Menu 14

Function: To receive CDCSS

Option: OFF/105 standard CDCSS codes

Default: OFF. Note: Decode is invalid in APRS mode.

### CTCSS Decode (RX-CTC) - Menu 15

Function: To receive CTCSS

Option: OFF/50 standard CTCSS codes

Default: OFF. Note: Decode is invalid in APRS mode.

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## Description of local settings

### Single-display(TDR)- Menu 16

Option: Single-band/dual-band

Default: Dual-band

### Offset Frequency(OFFSET)- Menu 17

Function: To set offset frequency

Option: Optional from 0 to 69.99500MHz

Default: 00.00000

注：在信道模式下不能设置。

### Menu Language (MENULANGE)- Menu 18

Function: To select the language for menu display and voice prompt

Option: Chinese/ English

Default: Chinese

### Voice Switch(VOICE)- Menu 19

20

## Description of local settings

Function: To turn on or off the prompt tone for menu operation.

Option: ON/OFF

Default: ON

### BeepSwitch(BEEP)- Menu 20

Function: The beep is a prompt tone to identify operation tips, errors or troubles of the walkie-talkie

Option: ON/OFF

Default: ON

### Display Mode (DIS-MODE)- Menu 21

Option: Day/night

Default: Day

### Backlight Level (ABR-LV)- Menu 22

Option: Optional between 1~10

Default: 10

21

## Description of local settings

### Busy Channel Lockout(BCL)~Menu 23

Function: If the selected channel or frequency is being occupied by another channel or frequency, once enabled, this function can prevent conflicts with other radio stations that are in communication. At this moment, the walkie-talkie cannot transmit, even if PTT is pressed.

Option: ON/OFF

Default: OFF

### Time Out Timer (TOT) - Menu 24

TOT refers to the time limit for each transmission. When the transmission time reaches a pre-set time, the transmission will stop automatically, whether you hold PTT or not. Meanwhile, the walkie-talkie will send a [TOT] voice prompt.

Option: 15-900S, with a 15S step

Default: 90S

### Time out Alarm (TOA) - Menu 25

Function: TOA refers to an alarm before a transmission timeout is reached. At this moment, a prompt tone will be given.

Option: OFF/1 - 10S, with a 1S step

Default: OFF

22

## Description of local settings

### VOX Delay (VOX-DLY) - Menu 26

Function: VOX-DLY refers to the delayed release of PTT after VOX is activated, when VOX is ON.

Option: 1-10S

Default: 1S

### Scan Mode (SC-REV) - Menu 27

Function: To choose a scan mode

Option: TO/CO/SE

Default: SE

Note:

TO: To continue scanning if no operation is input within 5 seconds, after a carrier signal is scanned.

CO: To stop scanning after a carrier signal is scanned and continue scanning 3 seconds after the carrier signal disappears.

SE: To stop scanning after a carrier signal is scanned.

### Lock Mode (LOCKMODE) - Menu 28

23

## Description of local settings

Function: Long press # key for 1 second to lock or unlock the keyboard in the wait state

Option: Keyboard/keyboard+encoder/keyboard+encoder+PTT

Default: Keyboard

Special Tips:

If “ keyboard ” is selected, only the key area will be locked.

If “ keyboard+encoder ” is selected, the key area and the encoder will be locked.

If “ keyboard+encoder+PTT ” is selected, all of the above keys will be locked.

### Auto Lock (AUTOLOCK)- Menu 29

Function: When “ AUTOLOCK ” is activated, the system will lock the keyboard automatically 15S after the keyboard stops operating.

Option: Auto/manual

Default: Manual

### Single-tone Setting (TONE)- Menu 30

Function: To set the single-tone pulse frequency required for transmission (mainly used to start the relay)

Option: 1000HZ, 1450HZ, 1750HZ and 2100HZ

Default: 1750HZ

## Description of local settings

### PF1 Short Press (PF1 - SHORT) - Menu 31

Function: To define the short press function of Side Key PF1.

Option: Backlight/scan/squelch/flashlight/ master frequency

Default: Master frequency

Scan: Short press to turn on/off scan

Squelch: Short press to turn on/off squelch

Master frequency: Short press to switch between Bands A and B

Flashlight: Turn on/off the flashlight

### PF1 Long Press (PF1 - LONG) - Menu 32

Function: To define the long press function of Side Key PF1.

Option: Backlight/scan/squelch/flashlight/ master frequency

Default: Squelch

Scan: Short press to turn on/off scan

Squelch: Short press to turn on/off squelch

## Description of local settings

Master frequency: Short press to switch between Bands A and B

Flashlight: Turn on/off the flashlight

### PF2Short Press(PF2 - SHORT) - Menu 33

Function: To define the short press function of Side Key PF2.

Option: Send beacon/find beacon/flashlight/backlight

Default: Send beacon

### PF2Long Press(PF2 - LONG) - Menu 34

Function: To define the long press function of Side Key PF2.

Option: Send beacon/find beacon/flashlight/backlight

Default: Find beacon

### TOPShort Press(TOP - SHORT) - Menu 35

Function: To define the short press function of Top Key.

Option: On - spot alarm/remote alarm/flashlight

26

## Description of local settings

Default: Flashlight

Flashlight: Turn on/off the flashlight

Emergency Alarm: When this key is pressed, the master frequency will start transmitting, and the loudspeaker will give an alarm.

### TOPLong Press(TOP - LONG) - Menu 36

Function: To define the long press function of Top Key.

Option: On - spot alarm/remote alarm/flashlight

Default: Remote alarm

Flashlight: Turn on/off flashlight

Emergency Alarm: When this key is pressed, the master frequency will start transmitting, and the loudspeaker will give an alarm.

### Channel Memory (MEM - CH) - Menu 37

Function: To store a required frequency to a specified channel

Option: A total of 128 channels

### Channel Deletion (DEL - CH) - Menu 38

Function: To delete a useless channel

Option: A total of 128 channels

27

## Description of local settings

### Repeater Echo(RPT - RCT) - Menu 39

Function: Repeater echo refers to an acknowledgement tone of off-line received when the repeater goes offline after it relays and transfers a signal.

Option: ON/OFF

Default: OFF

### Battery Voltage (V - BAT) - Menu 40

Function: To query the current voltage of the battery.

### CTCSS Scan (CT - SCN) - Menu 41

Function: To choose to scan CTCSS

Option: 1: save; 0: not save

### CDCSS Scan(DCS - SCN) - Menu 42

Function: To choose to scan CDCSS

Option: 1: save; 0: not save

### CSS Save Type (SC - QT) - Menu 43

Function: To choose the save type for scanned CSS in frequency mode

## Description of local settings

Option: Decode/encode/encode, decode

Default: Decode

### Scan and Add (SCAN - ADD) - Menu 44

Function: To set whether the selected channel is involved in channel scanning.

Option: ON/OFF

Default: ON

### Priority Channel(PRI - CH) - Menu 45

Option: 128 channels

### Priority Scan(PRI - SCN) - Menu 46

Option: ON/OFF

Default: OFF

### Initialize(RESET) - Menu 47

Function: To initialize the menu functions of [VFO] and initialize [ALL]

Option: VFO/ALL

Default: VFO

## Detailed Description of Some Functions

### I. Channel Memory:

When the current operation mode is channel mode, all parameters except the channel name will be copied to all stored channels.

When the current operation mode is frequency mode, different offset frequencies, offset directions and other frequency parameters can be set and then the channels can be stored. In doing so, channels with the same band but different frequencies, or channels with different bands and different frequencies can be set.

Example 1: To store channels with the same frequency (the receiving and transmitting frequencies are the same)

For example, to set Channel [10], both the receiving and transmitting frequencies are 450.525MHz. The receiving CSS is 67Hz and the transmitting CSS is DN023.

Step 1: Input [4], [5], [0], [5], [2] and [5] successively under VFO (frequency mode).

Step 2: Press [Function Key], enter [LOCAL SETUP], select " Menu 15 CTCSS Decode " , press [Function Key] to enter settings, select " 67.0Hz " , press [Function Key] to confirm and press [Esc] to return to the wait interface.

Step 3: Press [Function Key], enter [LOCAL SETUP], select " Menu 12 CDCSS Encode " , press [Function Key] to enter settings, select " DN023 " , press [Function Key] to confirm and press [Esc] to return to the wait interface.

Step 4: Press [Function Key], enter [LOCAL SETUP], select " Menu 37 Channel Memory " , press [Function Key] to enter, input [0] [1] and [0] successively, press [Function Key] to confirm and press [Esc] to return to the wait interface.

Special Tips: If no reception of CSS is set up, Step 2 can be omitted. If no transmission of CSS is set up, Step 3 can be omitted.

## Detailed Description of Some Functions

Example 2: To store channels with different frequencies (the receiving and transmitting frequencies are different)

For example, to set Channel [18], the receiving frequency is 450.525MHz, the transmitting frequency is 460.525MHz and the transmitting CSS is 67Hz.

Step 1: Input [4], [5], [0], [5], [2] and [5] successively under VFO (frequency mode).

Step 2: Press [Function Key], enter [LOCAL SETUP], select " Menu 6 Repeater Shift Direction " , press [Function Key] to enter settings, select " + " , press [Function Key] to confirm and press [Esc] to return to the wait interface.

Step 3: Press [Function Key], enter [LOCAL SETUP], select " Menu 17 Offset Frequency " , press [Function Key] to enter settings and input [1] [0] [0] [0] [0] and [0] successively. Press [Function Key] to confirm and press [Esc] to return to the wait interface.

Step 4: Press [Function Key], enter [LOCAL SETUP], select " Menu 13 CTCSS Encode " , press [Function Key] to enter settings, select " 67.0Hz " , press [Function Key] to confirm and press [Esc] to return to the wait interface.

Step 5: Press [Function Key], enter [LOCAL SETUP], select " Menu 37 Channel Memory " , press [Function Key] to enter, input [0] [1] and [8] successively, press [Function Key] to confirm and press [Esc] to return to the wait interface.

## Detailed Description of Some Functions

### II. The Settings of CSS

CSS is divided into two types: CDCSS and CTCSS. CSS can be set for both reception and transmission.

The range of CTCSS is 67 - 254.1Hz. There are a total of 50 codes.

Positive CDCSS codes are 023N - 754N. There are a total of 105 positive codes.

Negative CDCSS codes are 023I - 754I. There are a total of 105 negative codes.

How to select CSS quickly:

For example, to set the receiving decode to be CTCSS 156.7Hz,

Method: (1) Press [Function Key] in the wait state to enter [LOCAL SETUP]+[1]+[5]+[Function Key].

Explanation: To enter Menu 15

(2) Press [2]+ [6] again.

Explanation: To input the serial number of 156.7Hz, i.e., 26

(3) Press [Function Key]+ [Esc] Key

Explanation: To confirm and return to the wait interface.

## Detailed Description of Some Functions

For example, to set the receiving decode to be CDCSS D431N,

Method: (1) Press [Function Key] in the wait state to enter [LOCAL SETUP]+[1]+[4]+[Function Key].

Explanation: To enter Menu 14

(2) Press [6]+ [9] again.

Explanation: To input the serial number of D431N, i.e., 69

(3) Press [Function Key]+ [Esc] Key

Explanation: To confirm and return to the wait interface.

Technical Parameters (CTCSS/CDCSS)

附录 ( 1 )

模拟 ( CTCSS )

1	67.0	11	94.8	21	131.8	31	171.3	41	203.5
2	69.3	12	97.4	22	136.5	32	173.8	42	206.5
3	71.9	13	100.0	23	141.3	33	177.3	43	210.7
4	74.4	14	103.5	24	146.2	34	179.9	44	218.1
5	77.0	15	107.2	25	151.4	35	183.5	45	225.7
6	79.7	16	110.9	26	156.7	36	186.2	46	229.1
7	82.5	17	114.8	27	159.8	37	189.9	47	233.6
8	85.4	18	118.8	28	162.2	38	192.8	48	241.8
9	88.5	19	123.0	29	165.5	39	196.6	49	250.3
10	91.5	20	127.3	30	167.9	40	199.5	50	254.1

Technical Parameters (CTCSS/CDCSS)

附录 ( 2 )

DCS

1	D023N	43	D251N	85	D532N	127	D131I	169	D371I
2	D025N	44	D252N	86	D546N	128	D132I	170	D411I
3	D026N	45	D255N	87	D565N	129	D134I	171	D412I
4	D031N	46	D261N	88	D606N	130	D143I	172	D413I
5	D032N	47	D263N	89	D612N	131	D145I	173	D423I
6	D036N	48	D265N	90	D624N	132	D152I	174	D431I
7	D043N	49	D266N	91	D627N	133	D155I	175	D432I
8	D047N	50	D271N	92	D631N	134	D156I	176	D445I
9	D051N	51	D274N	93	D632N	135	D162I	177	D446I
10	D053N	52	D306N	94	D645N	136	D165I	178	D452I
11	D054N	53	D311N	95	D654N	137	D172I	179	D454I
12	D065N	54	D315N	96	D662N	138	D174I	180	D455I
13	D071N	55	D325N	97	D664N	139	D205I	181	D462I
14	D072N	56	D331N	98	D703N	140	D212I	182	D464I
15	D073N	57	D332N	99	D712N	141	D223I	183	D465I
16	D074N	58	D343N	100	D723N	142	D225I	184	D466I



### Technical Parameters (CTCSS/CDCSS)

17	D114N	59	D346N	101	D731N	143	D226I	185	D503I
18	D115N	60	D351N	102	D732N	144	D243I	186	D506I
19	D116N	61	D356N	103	D734N	145	D244I	187	D516I
20	D122N	62	D364N	104	D743N	146	D245I	188	D523I
21	D125N	63	D365N	105	D754N	147	D246I	189	D526I
22	D131N	64	D371N	106	D023I	148	D251I	190	D532I
23	D132N	65	D411N	107	D025I	149	D252I	191	D546I
24	D134N	66	D412N	108	D026I	150	D255I	192	D565I
25	D143N	67	D413N	109	D031I	151	D261I	193	D606I
26	D145N	68	D423N	110	D032I	152	D263I	194	D612I
27	D152N	69	D431N	111	D036I	153	D265I	195	D624I
28	D155N	70	D432N	112	D043I	154	D266I	196	D627I
29	D156N	71	D445N	113	D047I	155	D271I	197	D631I
30	D162N	72	D446N	114	D051I	156	D274I	198	D632I
31	D165N	73	D452N	115	D053I	157	D306I	199	D645I
32	D172N	74	D454N	116	D054I	158	D311I	200	D654I
33	D174N	75	D455N	117	D065I	159	D315I	201	D662I
34	D205N	76	D462N	118	D071I	160	D325I	202	D664I
35	D212N	77	D464N	119	D072I	161	D331I	203	D703I
36	D223N	78	D465N	120	D073I	162	D332I	204	D712I
37	D225N	79	D466N	121	D074I	163	D343I	205	D723I
38	D226N	80	D503N	122	D114I	164	D346I	206	D731I

### Technical Parameters (CTCSS/CDCSS)

39	D243N	81	D506N	123	D115I	165	D351I	207	D732I
40	D244N	82	D516N	124	D116I	166	D356I	208	D734I
41	D245N	83	D523N	125	D122I	167	D364I	209	D743I
42	D246N	84	D526N	126	D125I	168	D365I	210	D754I

## GPS SETUP

### GPS POWER - Menu 1

Option: ON/OFF

Default: ON

### Position- Menu 2

Option: Degree /degree and minute/degree, minute and second

Default: Degree and minute

### TimeZone- Menu 3

Option: UTC-13~UTC-0UTC+1~UTC+13

Default: UTC+8

### SpeedUnit- Menu 4

Option: Kilometer/nautical mile/mile

Default: Kilometer

### Distance Unit- Menu 5

Option: Kilometer/nautical mile/mile

Default: Kilometer

### AltitudeUnit- Menu 6

Option: Meter/foot

Default: Meter

### FixedSite- Menu 7

Option: Fixed coordinates/GPS coordinates

Default: Fixed coordinates

### Fixed Latitude- Menu 8

Function: After entering the menu, press Up and Down Keys to select the desired latitude and press  to confirm.

Default: 3135.90N

### FixedLongitude- Menu 9

Function: After entering the menu, press Up and Down Keys to select the desired longitude and press  to confirm.

Default: 12022.80E

## Beacon Setting Description

### BEACON SETUP

#### CALL- Menu 1

Function: To edit up to 6 digits consisting of capital English and Arabic numerals.

How to edit: Step 1. To enter {Call} edit mode. Three rows of numbers/letters will appear on the interface.

Step 2. To press Up and Down Keys to select characters. Pitch on a character and press OK to confirm. If a wrong character is entered, please press Backkey to delete it.

Step 3. To enter the call and press # key to confirm and save.

#### SSID- Menu 2

Option: 0~15

Default: 1

#### SSID Symbol Table- Menu 3

Option: ^

Default: /

#### Comment- Menu 4

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## Beacon Setting Description

Function: Only 40 letters or Arabic numerals can be edited in the menu.

How to edit: See p.40 for details.

The Bluetooth programming software on the PC side can edit 60 letters or Arabic numerals or 20 Chinese characters.

Note: Chinese information cannot be displayed on a handheld radio.

#### SYMBOL- Menu 5

Option: See the symbol table of handheld radio for details.

#### MIC-EON/OFF- Menu 6

Option: ON/OFF

Default: ON

#### MIC-ETYPE- Menu 7

Option: M0:OFFDUTY/M1:EnRoute/M2:InService/M3: Returning/M4:Committed/M5:Special/M6:Priority

Default: M0:OFFDUTY

#### PATH1- Menu 8

To edit up to 6 digits consisting of capital English and Arabic numerals.

[How to edit: See p.40 for details.]

#### PATH1COUNT- Menu 9

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## Beacon Setting Description

Option: 0~9

Default: 1

### PATH2- Menu 10

Function: To edit up to 6 digits consisting of capital English and Arabic numerals. [How to edit: See p.40 for details.]

### PATH2COUNT- Menu 11

Option: 0~9

Default: 1

### TXVoltage- Menu 12

Function: To select whether to send voltage parameter or not

Option: OFF/ON

Default: ON

### TXTemp- Menu 13

Function: To select whether to send temperature parameter or not

Option: OFF/ON

Default: ON

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## Beacon Setting Description

### PressureReport- Menu 14

Function: To select whether to send atmospheric pressure parameter or not

Option: OFF/ON

Default: ON

### TXPressure- Menu 15

Function: To select whether to send satellite parameter or not

Option: ON/OFF

Default: ON

### TXMileage- Menu 16

Function: To select whether to send mileage parameter or not

Option: OFF/ON

Default: ON

## BEACONMODE

### PTTAfter- Menu 1

Function: Every time PTT is pressed, when it is released, a beacon will be transmitted once automatically.

Option: OFF/ON

## Beacon Type Setting Description

Default: ON

### Smart Mode- Menu 2

Option: OFF/TYPE1/TYPE2/TYPE3/

Default: OFF

### Time Mode- Menu 3

Function: To send a beacon regularly

Option: OFF/ON

Default: ON

### Time Interval- Menu 4

Function: To set how often a beacon will be sent automatically

How to set: To input directly. For example, to set in such a way that a beacon will be sent every 10 seconds. Input 0010 directly after entering the menu and press OK to confirm.

Default: 20S

### Queue Mode- Menu 5

To carry out APRS transmission after APRS is enabled, according to the preset permutation time, with 60S as a cycle.

Option: OFF/ON

## Relay Settings Description

Default: ON

### Queue Interval- Menu 6

Function: Queue time, set as 0-59S

Option: 0~59

Default: 0

## DIGI SETUP

### DIGICH- Menu 1

Function: To turn to channel selection after receiving valid APRS information

Option: CHA/CHB/CHA+CHB

Default: CH A

### DIGI1ON/OFF- Menu 2

Option: OFF/ON

Default: ON

### DIGI1NAME- Menu 3

## Relay Settings Description

Function: To edit up to 6 digits consisting of capitalEnglish and Arabic numerals.

How to edit: See p.40 for details.

### DIGI2ON/OFF- Menu 4

Option: OFF/ON

Default: ON

### DIGI2NAME- Menu 5

Function: To edit up to 6 digits consisting of capitalEnglish and Arabic numerals.

How to edit: See p.40 for details.

### DIGITXWAIT- Menu 6

Option: 0~9

Default: 0

### RemotePassword- Menu 7

Function: To edit up to 6 digits of numerical passwords.

## Bluetooth Settings Description

### BLUETOOTH SETUP

#### DATAOUTPUT- Menu 1

Option: OFF/KISSHex/UI/GPWPL/KISSAcs

Default: UI

#### GPSOUTPUT- Menu 2

Option: OFF/ON

Default: ON

#### BTPOWER- Menu 3

Option: OFF/ON

Default: ON

### VERSION

#### HardwareVersion- Menu 1

Function: To query the version of hardware.

## Advanced Settings Description

### LocalVersion- Menu 2

Function: To query the version of this machine.

### APRSVersion- Menu 3

Function: To query the version of APRS.

## ADVANCED SETUP

### APRSRXCH- Menu 1

Option: OFF/CH A/CH B

Default: CH A

Special Tips: This menu is set as CH A or CH B. The battery saver will be turned off automatically.

### APRSTXCH- Menu 2

Option: CH A/CH B/CH A+CH B

Default: CH A

### TXPriority- Menu 3

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## Advanced Settings Description

Option: Talk/APRS

Default: Talk

### TXDelay- Menu 4

Option: 200ms-600ms

Default: 350ms

### TXLevel- Menu 5

Option: -10.5dB/-9.0dB/-7.5dB/-6.0dB/-4.5dB/-3.0dB/-1.5dB/0dB

Default: -9.0dB

### RXLevel- Menu 6

Option: -10.5dB/-9.0dB/-7.5dB/-6.0dB/-4.5dB/-3.0dB/-1.5dB/0dB

Default: -9.0dB

### MileageZero- Menu 7

Function: To clear the mileage record

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## Advanced Settings Description

### MileageMemory- Menu 8

Option: Clear at startup/auto totalizer

Default: Clear at startup

### CH AMUTE- Menu 9

Option: OFF/ON

Default: OFF

### CH BMUTE- Menu 10

Option: OFF/ON

Default: OFF

### RX-TONEO- Menu 11

Function: A prompt tone that shows that APRS has received decodes successfully.

Option: OFF/ON

Default: OFF

## Advanced Settings Description

### TX-TONEO- Menu 12

Function: A prompt tone of the transmission of APRS

Option: OFF/ON

Default: OFF

### RXPOPUP- Menu 13

Option: OFF/ON

Default: OFF

### ListClean- Menu 14

Function: To clear the beacon list

### FactorySetting- Menu 15

Function: To make APRS restore the factory settings



## Detailed Description of APRS Functions

### I. Brief Description of APRS Functions

HG-V98 is a professional APRS dual-band handheld radio that uses standard APRS numerical codes and directly locates each other using radio U/V signals.

HG-V98 doesn't need the support of a mobile network. It can directly send to and receive from each other and is widely used in outdoor sports, rescue and other occasions.

Brief Description of Functions:

(1) Main unit:

UV dual-band, 5W, the frequency is entirely input by hand

Support direct charge of battery using USB

Built-in temperature, atmospheric pressure, voltage and other auxiliary sensors

Support users' independent upgrade of firmware

(2) APRS channel

APRS channel and voice channel can be set arbitrarily. A/B channel APRS, A/B channel voice

Support that CH A receives, CH A transmits, CH A receives, CH B transmits (transposes), CH A receives, A transmits+B transmits

Support that CH B receives, CH B transmits, CH B receives, CH A transmits (transposes), CH B receives, A transmits+B transmits

Support offline use, dispense with the need for a network, directly locate each other

## Detailed Description of APRS Functions

(3) Interface

1.8 inch color screen, Chinese/English Menu

Support advanced GPS interface, beacon list interface, real-time beacon interface and beacon record analysis interface

(4) APRS Track

Support 2 site modes: FIXED site and SPORT site.

Support complete TRACK tracker, intelligent, timing, PTT linkage and queue beacons

Support additional information of beacons, such as mileage, number of satellites, voltage, temperature and atmospheric pressure, etc.

Support mileage calculation, mileage accumulation and automatic clearing.

Support auto symbol (TRACK intelligent mode)

Support GPS powersaver (TRACK PTT linkage mode and TRACK timing mode)

(5) Bluetooth

Built-in state-of-the-art 2.0+4.0 dual-mode Bluetooth, compatible with Android and iPhone

The Bluetooth supports KISS HEX, UI, GPWPL, KISSASC, GS232 and other protocols

Support GPS data (GPRMC+GPGLL) output through Bluetooth. Support mixed output

## Detailed Description of APRS Functions

Support two-way transparent transmission of KISS data via Bluetooth

Support EleCloud, APRSdroid, LOCUS, Ovitalmap and other apps

Support setting parameters using wireless Bluetooth

(6) APRS relay

Support complete DIGI relay, user-defined relay name and remote relay switch

Support remote peripheral sensor input, relay and other telemetric control modules

(7) GPS/BeiDou

Built-in high-performing multi-mode hybrid positioning engine (GPS\BeiDou\GLONASS)

(8) APRS solver

Built-in advanced CMX hardware codec solver

Built-in 8-level digital level controller (allows both transmission and reception)

Data analysis

Built-in large-capacity data storage, 100 beacons, viewing and intelligent sorting

54

## Detailed Description of APRS Functions

Built-in advanced solver. Support abundant data analysis functions

Support the calculation of heading, due north bearing and relative bearing

Support Maidenhead network

Support the calculation of APRS distance, horizontal angle, elevation angle and other trigonometric functions

Support automatic following control of G5500 aircraft and ships, etc.

(9) Software

Attached PC software (Chinese/English) (NET4.0)

(10) Interface switch of handheld radio

Short press # to switch between GPS interface, beacon list interface and real-time beacon interface in turn (see

Figure 4 for details)

10: 24: 07	
SPD: 00000Km	OL94GW
ALT: 00000M	
24° 56.92' N	东
118° 32.70' E	西
2018-10-22	南
8.2V	34.0°C
1018.1hPa	
OK	NO

IDX: 001	
▶ NOCALL-7	0.0Km
TEST-9	2.4Km
-----	.-Km
-----	.-Km
-----	.-Km
OK	NO

实时信标 NOCALL-7	
速度: ---.-Kmh	-- N
距离: 0.0Km	
海拔: -----M	
31° 35' 90 N	东
120° 21' 80 E	西
OK	NO

Figure 4

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## Detailed Description of APRS Functions

### (11) View beacon records

In the beacon list interface, press Up and Down Keys to select a stored beacon and press OK Key to view detailed information about the beacon.

### (12)GPS interface

Display the following information:

Time, speed, altitude, longitude, latitude, heading, date, Maidenhead grid, auxiliary sensors, battery voltage, temperature, atmospheric pressure and number of valid satellites, etc. (see Figure 5 for details)

10: 24: 07	
SPD: 00000Km	OL94GW
ALT: 00000M	
24° 56.92' N	东
118° 32.70' E	西
2018-10-22	南
8.2V	34.0°C 1018.1hPa
OK	NO

Figure 5

### (13) Beacon list interface

Display the following information: 100 beacons, intelligent sorting, received call and distance (see Figure 6 for details)

56

## Detailed Description of APRS Functions

IDX: 001	✖
▶NOCALL-7	0.0Km
TEST-9	2.4Km
-----	.-Km
-----	.-Km
-----	.-Km
OK	NO

Figure 6

### (14) Real-time beacon interface

Receive a beacon from the other party in real time and make an analysis and display

Display the following information:

Call, speed, heading, altitude, distance, longitude, latitude, direct north bearing, relative bearing, time and date of receipt, path of this beacon, comment of the other party (see Figure 7 for details)

实时信标	NOCALL-7
速度: ---.-Kmh	-- N
距离: 0.0Km	
海拔: -----M	
31° 35' 90 N	东
120° 21' 80 E	西
OK	NO

实时信标	NOCALL-7
对方航向: ---	
正北方位: 前	
相对方位: 前	
日期: --:--:--	
时间: --:--:--	
OK	NO

实时信标	NOCALL-7
路径1: NOCALL-7*	
路径2: WI DE1*	
路径3: -----	
路径4: -----	
路径5: -----	
OK	NO

实时信标	NOCALL-7
备注: B135.90N/1202	
1.80E[51X1C3 7.2V	
39.8C 1017.1hPa	
OK	NO

Figure 7

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## Detailed Description of APRS Functions

(15) Basic operations:

Most of the APRS functions of this machine can be performed in menu using the keyboard by hand.

Meanwhile, the attached software has a visual interface and provides more abundant options. It is recommended to set up APRS functions of this machine using the attached software. There are three connection methods. This machine can be set up using the attached APRS software.

1. Use the standard upgrade cable of this machine (see Figure 8 for details)
2. The computer comes with Bluetooth. Connect the computer Bluetooth with the Bluetooth module of this machine.
3. Use a special Bluetooth main unit module (optional) (see Figure 9 for details)

Connect with the standard upgrade cable of this machine. This is also the upgrade mode of APRS of this machine.

Connect using a special Bluetooth main unit module (optional), to make the connection and pairing easy.

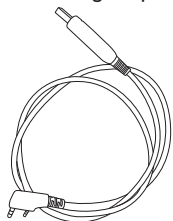


Figure 8

Upgrade Cable

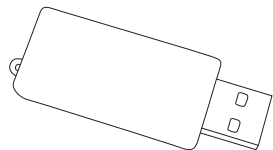


Figure 9

Bluetooth Main unit Module

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Note: APRS setting software (The version is changed constantly. The interface is for reference only).

## Detailed Description of APRS Functions

(16) Basic settings (see Figure 10 for details)

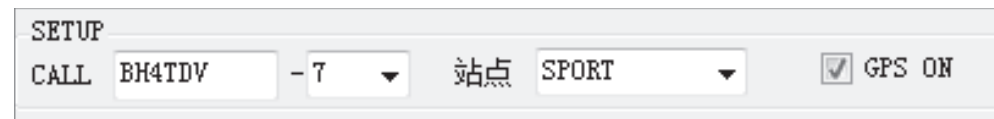


Figure 10

CALL sets the local call. The default call is NOCALL. It is in numeral or capital English, up to 6 digits.

SSID sets the SSID of the beacon. The default is 7. The range of parameter values is 0-15.

Site type:

SPORTS: to set this machine as a SPORT site

Use real-time GPS data to send various types of beacons

Calculate the relative distance, due north bearing and relative bearing, etc. from the other party using the real-time longitude and latitude data of GPS.

FIXED: to set this machine as a FIXED site

Use the set latitude and longitude of the FIXED site to send various types of beacons

Calculate the relative distance, due north bearing and relative bearing, etc. from the other party using the set latitude and longitude of the FIXED site.

GPS switch

If this machine is used in a FIXED site, OFF can be chosen to save energy.

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## Detailed Description of APRS Functions

### (17) Track settings

Note: When this machine is used in a SPORT site, whichever beacon mode is selected, the beacon will not be transmitted, unless it is effectively positioned by GPS (see Figure 11 for details)

Figure 11

Intelligent mode:

After GPS positions, a beacon will be transmitted automatically, according to heading and speed.

## Detailed Description of APRS Functions

Manual mode:

After GPS positions, every time the PTT button of the handheld radio is released, a beacon will be transmitted once automatically.

Timing mode:

After GPS positions, a beacon will be transmitted automatically according to the set time.

Queue mode:

To transmit according to the number of seconds in a minute that has been set

Note: The time base is different from that of general timed transmission. The actual transmission time is always the set time +1 second.

For example, if the queue time is set to be 0 second, a beacon will be transmitted according to the following time law (see Figure 12 for details)

时间	msg
2018-09-20 10:05:01	[3134.35N/12019.88E>0t@/>/"4]}51X1C3 0001.0Km 4.1V 32.0C S02
2018-09-20 10:04:01	[3134.35N/12019.88E>0t@/>/"4Y}51X1C3 0001.0Km 4.1V 32.3C S02
2018-09-20 10:03:01	[3134.34N/12019.88E>0tE>/"4W}51X1C3 0001.0Km 4.1V 32.5C S03
2018-09-20 10:02:01	[3134.34N/12019.88E>0tE>/"4V}51X1C3 0001.0Km 4.1V 32.6C S02
2018-09-20 10:01:01	[3134.33N/12019.87E>0s>/"4V}51X1C3 0001.0Km 4.1V 32.8C S02
2018-09-20 10:00:01	[3134.34N/12019.88E>0t>/"4J}51X1C3 0001.0Km 4.1V 32.5C S02
2018-09-20 09:59:01	[3134.35N/12019.88E>0t@/>/"4V}51X1C3 0001.0Km 4.1V 32.1C S02
2018-09-20 09:58:01	[3134.36N/12019.88E>0t@/>/"4]}51X1C3 0000.9Km 4.1V 30.4C S02

Figure 12

## Detailed Description of APRS Functions

### GPS power saver

When pressed by hand or the set time is up, GPS will be turned on automatically. GPS will have a warm boot, position in a few seconds and then transmit. After that, GPS will be turned off.

Note: Only the manual mode or timing mode is valid.

### PATH1, PATH2

To require the relay called WIDE1 or WIDE2 to relay according to the number of relays.

Default settings: WIDE1 -1 WIDE2 -0, that is, to require the relay called WIDE1 to relay once, but not to require WIDE2 to relay.

### MIC-E

The beacon data are compressed and then transmitted. This can effectively shorten the transmission time, reduce the probability that the data is interfered by other signals in the air and improve the success rate of the receiver ' s decoding.

### PTT delay

Before transmitting a signal, PTT will trigger a delay. When the SQL response from the other party is slow, the PTT delay can be increased.

### Symbol 1:

! stands for the data type designator. The fixed length is 1 character. Generally speaking, there is no need to change it. If need be, refer to APRS protocol manual.

/ stands for the symbol table. Generally speaking, there is no need to change it. If need be, refer to APRS protocol manual.

> stands for the symbol pattern displayed on the server map. The fixed length is 1 character. Refer to APRS Symbol Table to change it.

## Detailed Description of APRS Functions

### Auto Symbol 2:

There are three parameters: wait time, Symbol 2 and Symbol Table 2

180: Wait time, in seconds

/ stands for Symbol Table 2

P stands for Symbol 2

When the quiescent time reaches the set wait time in the intelligent mode, the symbol will be converted to Symbol 2 automatically.

### ① Comment

See p.40 [Comment] for details.

### ② Beacon options

Mileage: SPORT site beacons include mileage that is calculated automatically, while FIXED site beacons don ' t include it.

Satellite: SPORT site beacons include the number of valid satellites, while FIXED site beacons don ' t include it.

Atmospheric pressure: Both SPORT and FIXED site beacons include auxiliary atmospheric pressure sensor data.

Voltage: Both SPORT and FIXED site beacons include battery voltage sensor data.

Temperature: Both SPORT and FIXED site beacons include auxiliary temperature sensor data.

## Detailed Description of APRS Functions

Note: Subject to the machine size and structure, the temperature data are for reference only.

Note: The comment is the shorter, the better. The beacon options are the fewer, the better. The longer data, the longer transmission time and the greater probability of interference from the air. This may lead to a decline in the decoding rate of the other party.

### ⑬ Mileage Memory

When this option is checked, every time a beacon is transmitted, the real-time mileage will be saved automatically and accumulated in the next startup.

If this option is not checked, the mileage will be cleared automatically in the next startup.

### ⑭ TX Test Key

When the handheld radio is in a FIXED site, by pressing this key, the handheld radio will transmit a FIXED site beacon automatically.

When the handheld radio is in a SPORT site and GPS has effectively positioned, by pressing this key, the handheld radio will transmit real-time site beacon automatically.

## Detailed Description of APRS Functions

(18) Bluetooth Setup (see Figure 13 for details)

OUT 1, Bluetooth data output 1, the rate is 9600

KISS HEX output standard and KISS data command, used for various standard APRS computers or PC software

UI To output standard UI text data, used to upload to the server for the secondary development of users

GPWPL To output standard GPWPL waypoint data, the user's Garmin navigator

KISSASC To output standard KISSASC data command, used for the secondary development of users

GS232B To output standard GS232B data command, used to control G5500 rotator

OFF To turn off data output

OUT 2, Bluetooth data output 2, the rate is 9600

GPS To output GPS data (GNRMC+GNGGA). This data can be output together with OUT1.

OFF To turn off GPS output

Bluetooth power switch

ON/OFF

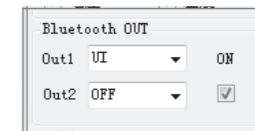


Figure 13

## Detailed Description of APRS Functions

(19) The DIGI function of APRS digital relay (see Figure 14 for details)

2 relay names can be set

Relay Name 1: WIDE1 by default, in numeral or capital English, up to 6 digits

Relay Name 2: WIDE2 by default, in numeral or capital English, up to 6 digits

Relay condition: when the machine receives a valid beacon, the beacon contains the relay name of the machine and the number of relays is greater than 1, the machine will relay once and reset the number of relays (minus 1), repackage and transmit the beacon.

If among the beacons, the number of relays is 0, then the beacons will not be relayed.

For APRS digital relay, each relay is a process of reception, decoding, recoding and transmission, so no matter how many times it is relayed, the signal quality remains the best. This is a difference from traditional analog voice relay.

For APRS digital relay, since there are a prescribed number of relays among the beacons, the beacons will not be relayed infinitely.

(20) Remote password (see Figure 15 for details)

The default password is 123456. There must be 6 digits.

It is possible to operate the remote relay switch, external control relay and sensor, etc.



Figure 14

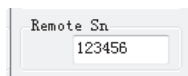


Figure 15

## Detailed Description of APRS Functions

When a valid beacon is received and the beacon contains passwords and commands, the following operations shall be performed:

1. Command A0 to close DIGI 1
2. Command A1 to open DIGI 1
3. Command B0 to close DIGI 2
4. Command B1 to open DIGI 2
5. Command R0 resets and restarts

For example: to send a comment through 51 TNC and fill in 123456A0 as the comment. After sending the beacon, the relay DIGI 1 will be turned off (see Figure 16 for details)




图16

(21) FIXED site setup (see Figure 17 for details)

Latitude stands for the latitude used by a FIXED site. The fixed length is 7 digits (including a decimal point), degree and minute, in minute format.

The fixed length of N/S is 1 digit.



## Detailed Description of APRS Functions

Figure 17

Longitude stands for the longitude used by a FIXED site. The fixed length is 7 digits(including decimal point), degree and minute, in minute format.

The fixed length of W/E is 1 digit.

Altitude, in meters. When tracking an aircraft, it is necessary to set the altitude of the home site.

After positioning, in the FIXED site mode, the set longitude and latitude will be used to transmit various types of FIXED site beacons.

Calculate the relative distance, due north bearing and relative bearing, etc. from the other party using the set longitude and latitude.

When it is used to track an aircraft, it is necessary to set the local longitude, latitude, altitude and call of the target aircraft (see Figure 18 for details)

## Detailed Description of APRS Functions

Figure 18

This machine has a built-in multiple analysis solver, including distance, bearing and elevation angle, etc. When receiving an aircraft beacon, the solver will analyze the relative bearing and elevation angle and control G5500 to achieve automatic tracking(see Figure 19 for details)

Figure 19

## Instructions on How to Query Track on the Computer

### How to Query My Track on the Computer

HG-V98 uses standard APRS encoding. When there is an APRS gateway nearby and a local beacon is received, the tracks and other information of this machine will be displayed on the APRS map.

At present, there are several common methods to browse APRS tracks:

BG6CQ server, 202.141.176.2, automatic positioning, quick and convenient to view data, multiple shortcut references.

BA7CK APRS data server is recommended: <http://aprs.helloq.net/>. It is quick and convenient.

Support track playback and direct view.

APRS.ISmapserver is recommended: <http://aprs.fi/>

## Description about the Firmware Upgrade of APRS

### Steps of the Firmware Upgrade of APRS

Step 1: First of all, download [APRS Firmware] from the official website of LANCHONLH and save it to the PC side.

Step 2: Insert the USB cable from the package of the handheld radio into the PC side and the headphone jack of the handheld

Step 3: Open [APRS Firmware] and a software window will pop up (see Figure 20 for details)

The operation steps are as follows:

- (1) Select a data port that has been searched automatically by the system, as shown in the figure below:
- (2) Click [Upgrade].



Figure 20

## Description about the Firmware Upgrade of APRS

(3) Press down Side Key PF1 of the walkie-talkie and then start up. An APRS UpDataupgrade interface will appear on the walkie-talkie (see Figure 21 for details)

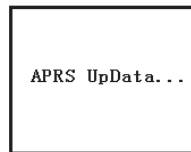


Figure 21

(4) Until it is prompted that the operation succeeds (see Figure 22 for details)



Figure 22

(5) Reboot

## Description about the Firm ware Upgrade of the Walkie-talkie

### Steps of the Firm ware Upgrade of the Walkie-talkie

Step 1: First of all, download [HG-UV98 Firmware Upgrade Software] and [Walkie-talkie firmware] from the official website of LANCHONLH and save them to a separate folder on the PC side.

Step 2: Insert the USB cable into the PC side and the headphone jack of the handheld radio respectively.

Step 3: Open [HG-UV98 Firmware Upgrade Software] and a software window will pop up (see Figure 23 for details)



Figure 23

The operation steps are as follows:

(1) Select [Serial Port Configuration].

(2) Select [Port Number] of the USB cable.

Note: How to query the port number - right-click the PC side [My Computer] > [Attribute] > [Device Manager] > [Ports (COM and LPT)] to query the port number.

(3) Select the baud rate [115200] and then press [OK]

(4) Press [Connect].

(5) Press down the PTT button of the walkie-talkie. At this point, the green light of the walkie-talkie will stay solid on.

## Description about the FirmwareUpgrade of the Walkie-talkie

Move the cursor into the upgrade software interface and click the value[1] on the top leftcorner, until a characterC appears(see Figure 24 for details)

在此位置输入数字【1】直到出现c字符。

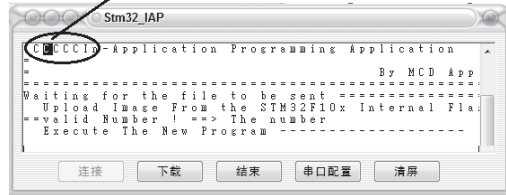


Figure 24

(7) Press [Download] to enter the directory of the downloaded firmware and double-click to open [Walkie-talkie Firmware](see Figure 25 for details). Double-click on the downloaded firmware.

双击已下载固件

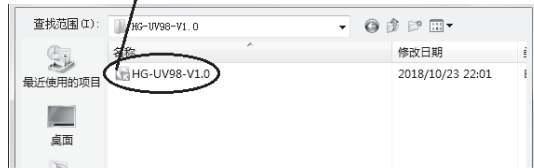


Figure 25

(8) After opening the walkie-talkie firmware, a download page will appear until it is prompted that the download has been completed.(see Figure 26 for details)

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## Description about the Firm wareUpgrade of the Walkie-talkie

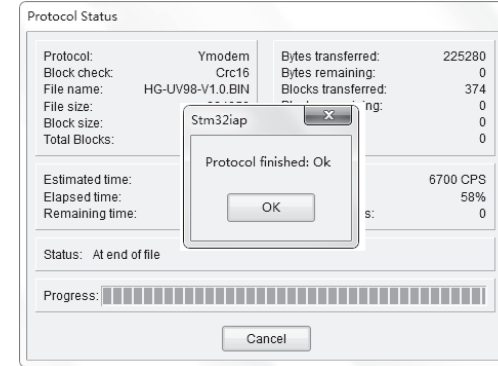
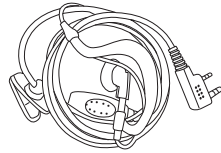
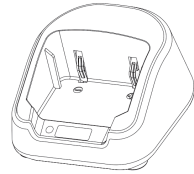


Figure 26

(9) Reboot

## Optional Accessories

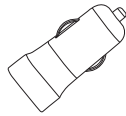
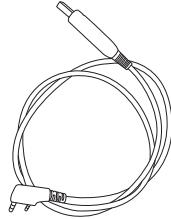
Desktop Charger



Hand Mic



Programming Cable



## Troubleshooting

Before deciding that there is indeed something wrong with the walkie-talkie, check against the following table. If the problem persists, you may initialize the walkie-talkie. Sometimes the incorrect operations can be corrected.

Fault	Solution
The walkie-talkie cannot be started. No power	<ul style="list-style-type: none"> <li>&gt;&gt;The battery may have run out. Please replace with a new battery or recharge it.</li> <li>&gt;&gt;The battery may not be installed properly. Please remove the battery and reinstall it.</li> <li>&gt;&gt;The battery pack has entered the protection state. Please reactivate it using the attached charger before use.</li> </ul>
The battery doesn't last long after being charged	<ul style="list-style-type: none"> <li>&gt;&gt;The battery life has expired. Please replace with a new battery.</li> <li>&gt;&gt;The battery is not fully charged. Please ensure that the battery is fully charged before use.</li> </ul>
The receiving light continues to turn on, but the loudspeaker is silent	<ul style="list-style-type: none"> <li>&gt;&gt;Make sure the volume is turned up loud enough.</li> <li>&gt;&gt;Whether a different CSS from that of other team members has been set. Please recheck and set up the CSS.</li> <li>&gt;&gt;Whether the mute mode has been set properly</li> </ul>
No response when the key is pressed	<ul style="list-style-type: none"> <li>&gt;&gt;Whether the keyboard has been locked</li> <li>&gt;&gt;Whether any other key has been stuck</li> </ul>
In the standby state, the walkie-talkie transmits automatically, even when [PTT] is not pressed.	>>Whether VOX has been turned on and whether the level is too low
Some functions cannot be stored	>>Whether the walkie-talkie is working in channel mode. Some menus cannot be stored in channel mode unless they are edited using programming software.
Other voices (of non-team members) are present in the channel	>>Please change the CSS frequency of all team members.

## Statement

When compiling this manual, we strive to make the content correct and complete. But LANCHONLH Electronics Co., Ltd. will not be liable for any possible omission or mistake in the writing of this manual. LANCHONLH Electronics Co., Ltd. reserves the right to change the design and specifications of the product without prior notice.

## Warranty Card

### Notes

1. This warranty card is only applicable to the warranty service of the above walkie-talkie model and serial number.  
此保修卡只适用于上述所列型号和序号的对讲机保修服务。
2. This warranty card is an important certificate for the end user to enjoy warranty service. Please keep it properly.  
本保修卡为最终用户享受保修服务的重要凭证，请妥善保管。
3. This warranty card will not be valid unless the dealer fills in it completely and affixes a sales seal.  
本保修卡必须由销售商完整填写并加盖销售印章后才能生效。

Client's Name: \_\_\_\_\_ Gender: Male/Female

Client's Add and Zip Code: \_\_\_\_\_

Tel: 电话 \_\_\_\_\_

Model: \_\_\_\_\_

Serial No.: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Invoice No.: \_\_\_\_\_

Dealer's Name: \_\_\_\_\_

Dealer's Add and Zip Code: \_\_\_\_\_

Dealer's Tel: \_\_\_\_\_

Handled by: \_\_\_\_\_

Dear walkie-talkie user,

Hello!

Thank you very much for purchasing our walkie-talkie. We will try our best to provide you with stable, clear and highly efficient wireless communication services. To make you better enjoy high-quality warranty services that we provide for you, please keep a watchful eye on the following information:

- ① The warranty period begins from the date of purchase of this product. For faults caused by normal use of this product during the warranty period, users can enjoy warranty services at our customer service center or a designated authorized maintenance station by presenting the original warranty card and purchase invoice, according to these warranty terms (12 months free warranty service for the main unit, 6 months for accessories (the battery and charger)).
- ② During the warranty period, under the following circumstances, paid maintenance service will be implemented 维修服务:
  - (1) The warranty card and purchase invoice cannot be presented;
  - (2) This warranty card has a sign of alteration or is inconsistent with the product;
  - (3) Defects or damages caused by the abnormal or unconventional use of this product 在非正常或非常规情况下使用本产品造成的缺陷或损坏;
  - (4) Defects or damages caused by improper use, accident, water inflow or negligence; 正确的测试、操作、维修、安装、改装或调整等造成的缺陷和损坏;
  - (5) Defects and damages caused by incorrect testing, operation, maintenance, installation, refitting or adjustment; 造成的缺陷或损坏;
  - (6) Defects or damages caused by unauthorized repair and disassembly, etc.;
  - (7) Defects or damages caused by force majeure;
  - (8) Wear and tear due to normal use;
- ③ When maintenance is needed, please mail or send the walkie-talkie, this warranty card and the purchase invoice to our customer service center or a designated authorized maintenance station. The shipping cost should be borne by the user;
- ④ Please keep this warranty card properly. We will not replace it if it is lost.

## 维修记录

Received on			
Completed on			
Fault Description 故障描述			
Maintenance Record 维修记录			
Maintainer's ID 维修员工编号			
Signature			