

# Easy Operation Instructions

## I. Panel Description

- ① **【PWR DAIL】** : Power Switch **【PWR】**/Volume Adjustment **【VOL】**/Frequency Adjustment/MENU Key/Enter Key etc.

**Operation:**

- ◆ Power Switch **【PWR】** :

To switch the transceiver ON/OFF, press Power Switch (1s).

- ◆ Volume Adjustment **【VOL】** :

Turn the Volume control in clockwise direction to increase the audio output level and turn in counterclockwise direction to decrease the output level.

(The volume level is from 0 to 31, 15th level is the initialized level).

- ◆ Frequency Adjustment:

**【VOL】** + **【S.T】** can adjust the volume and frequency/channel adjustment. Press **【S.T】** and turn the **【VOL】** in clockwise direction will increase the frequency, turn in counterclockwise direction will decrease the frequency. It is determined by the frequency step.

- ◆ MENU Key / Enter Key:

Enter **MENU** or other modes users can turn **【PWR DAIL】** to select your desired option, and press the **Enter** to confirm.

- ② **Speaker Microphone Socket: Voice Communication, Wire Cloning**

- ◆ For voice communications, connect the standard microphone equipped with an 8-pin modular plug into the modular socket on the front of the main unit .Press firmly on the plug until the locking tab clicks.

- ◆ Wire cloning: Insert two crystal heads of date cable into speaker microphone socket of two transceivers.

- ③ **【CALL】 : CALL/1750/2100/1450/1000**

**Function:**

Press **【CALL】** to switch the frequency to call channel and transmit corresponding frequency.

- ④ **【LOW】** Selecting An Output Power And Named Switch Key

**Function:**

- ◆ Press this key to select an output power.

- ◆ Press and hold this key for 1 sec to select named switch key of memory mode.

- ⑤ **【MR PRIO】** Memory / Priority Monitor Key

**Function:**

- ◆ Press this key to switch to memory mode.

- ◆ Press and hold this key for 1 sec to activate priority monitor.

- ⑥ **【SET LOCK】** MENU Key, Keypad Lock

**Function:**

- ◆ Press **MENU** to enter menu setting mode.

- ◆ Press and hold this key for 1 sec to turn ON/OFF keypad lock function.

- ⑦ **【VFO SCAN】**

**Function:**

- ◆ Press this key to switch to VFO mode.
- ◆ Press and hold this key for 1 sec to activate scanning. Press this key to cancel during scanning.

## ⑧ **【TONE】** TONE and TONE Scanning Selection

### **Function:**

- ◆ Press this key to select TONE function.
- ◆ Long press to activate CTCSS scanning.

## ⑨ **【S.T】**

### **Function:**

- ◆ Press this key to switch volume adjustment to frequency adjustment.
- ◆ Memory Writing key: Press and hold this key for 1 sec to edit selected memory channel, long press this key to increase the memory channel automatically.
- ◆ Adjustment Knob Switch: Used for selecting the operation frequency, memory channel, set mode item setting and scanning direction selection.

## II. Operation Basics

### 1. Power ON / OFF:

Press **【PWR】** for 1 sec to switch the transceiver **Power ON / OFF**.

### 2. Selecting VFO Mode:

- ◆ This transceiver with two basic operation modes: VFO (Full-Frequency Mode) and MR (Channel Mode).
- ◆ Press **【VFO SCAN】** to select VFO mode; press **【MR PRIO】** to select channel mode.

### 3. Setting Frequency By Adjustment Knob

- ◆ Turn **【DIAL】** knob to set frequency.  
If you are not in VFO mode, press **【VFO SCAN】** to select the VFO mode; the frequency variation depends on the selected frequency step value.
- ◆ Press **【PWR】** to switch the frequency step to be 10MHz or 1MHz, then turn [DIAL] to set the frequency.
- ◆ Press **【S.T】** to switch the frequency according to the step to change frequency after the decimal point.

### 4. Lock Function

Press **【SET LOCK】** for 1 sec to switch the LOCK Function to turn ON/OFF.

### 5. Receiving

- ◆ Press **【PWR】** for 1 sec to switch the transceiver **Power ON**.
- ◆ Set the volume control: Turn adjustment **【DIAL】** to select your desired volume.
- ◆ Set the squelch level.  
Press **【SET LOCK】** to enter the MENU setting. Turn **【DIAL】** to select the menu No.1"SQ1".  
Press **【PWR】** to enter the corresponding MENU, turn **【DIAL】** to select the squelch level.
- ◆ Set the operating frequency.
- ◆ With the squelch opening, you will hear sound while actually receiving signals.  
The "BUSY" appears, and the received signal strength showed on S/RF.

### 6. S-meter Squelch

- ◆ S-meter squelch causes the squelch to open only when a signal with strength greater than or the same as the S-meter setting is received. This function relieves you from constantly resetting the squelch when receiving weak stations you have no interest in.
- ◆ Press **【SET LOCK】** to enter the setting mode, turn **【DIAL】** to select the menu No. 2 "SMETRE".
- ◆ Press **【PWR】** to enter corresponding menu, turn **【DIAL】** to select the S-meter level.

## 7. Transmitting

CAUTION: The transceiver will be damaged once transmitting without an antenna.

- ◆ Set the operating frequency.
- ◆ Select output power level if desired.  
The output power of this transceiver has three levels. Selecting the low output power to avoid the interference in other transceivers and reduce power loss in the short communication range. Press **【LOW】** key several times to select output power of H/M/L.
- ◆ Press and hold **【PTT】** to transmit.  
The "TX" appears; the S/R/F shows the relative transmit output power.  
Speak into the microphone in your normal tone of voice. Don't hold the microphone too close to your mouth to avoid the audio harmonic distortion.
- ◆ Release **【PTT】** to receive.

## 8. Split Frequency Operation

Split frequency operation allows you to transmit and receive on two different frequencies (in the same band).

- ◆ Press **【SET LOCK】** to enter the repeater setting mode, turn **【DIAL】** until "Shift" appears.
- ◆ Press **【PWR】** to enter the corresponding menu, turn **【DIAL】** to select your desired offset frequency direction, "-" or "+" appears, indicating which offset direction is selected.
- ◆ Press **【Tone】** several times to activate CTCSS code.
- ◆ Press and hold **【PTT】** to transmit. The displayed frequency automatically changes to the transmitting frequency (the repeater input frequency).
- ◆ Release **【PTT】** to receive.

## III. Memory Mode Operation

The transceiver with 207 memory channels (including 6 boundary scanning channels and a call channel), each channel can be separately programmed: frequency, split frequency mode direction, offset frequency, CTCSS, scanning skip etc channels information.

### 1. Memory Channel Selection

Press **【MR PRIO】** to select memory mode. "MR" appears, turn **【DIAL】** to select the desired memory channel for storing ones.

### 2. Compile memory channel

Set the desired frequency in VFO mode.

- Press **【VFO SCAN】** to select VFO mode.
- Turn **【DIAL】** to set the desired frequency.
- If desired, set the other dates (such as CTCSS, split frequency operation information etc.).
- ◆ Press **【S.T】** : "MR" indicator and the name of store channel blinks.
- ◆ Turn **【DIAL】** to store the desired memory channel. (Non-stored memory channel is empty.)
- ◆ Press and hold **【S.T】** for 1 sec to store the frequency to current channel. (Hear two BEEP sound) .
- ◆ Press and hold **【S.T】** after stored, the memory channel number increase automatically.

### 3. Storing Memory/Call Channel Contents to VFO

- ◆ Select the desired stored channel.  
Press **【MR PRIO】** to switch to the memory channel or press **【Call】** to switch to call channel.
- ◆ Long press **【S.T】**  
"MR" and "--" flash to be the VFO channel.
- ◆ Press and hold **【S.T】** for 1 sec to store the frequency to VFO channel.

### 4. Memory/Call → Call/Memory

- ◆ Select the desired stored memory/call channel.  
Press **【MR PRIO】** to switch to the memory channel or press **【Call】** to switch to call channel.
- ◆ Long press **【S.T】**  
"MR" and "--" flash, show the VFO state.
- ◆ Turn **【DIAL】** to select target memory channel.  
"C" flashes, after selected the call channel to be target channel.  
Scanning boundary channel 1A/1b, 2A/2b and 3A/3b also can be selected as the target channel.
- ◆ Press **【S.T】** for 1 sec to store all selected memory/call channel contents to the target memory.

### 5. Naming A Memory Channel

You can name memory channel and call channel using up to 6 alphanumeric characters— the available characters table are shown in the following table.

(space)	1(+)	--(-)	=(=)	*(*)	/(/)	{(())	:(:)	( )	0(0)
1(1)	2(2)	3(3)	4(4)	5(5)	6(6)	7(7)	8(8)	9(9)	A(A)
B(B)	C(C)	D(D)	E(E)	F(F)	G(G)	H(H)	I(I)	J(J)	K(K)
L(L)	M(M)	N(N)	O(O)	P(P)	Q(Q)	R(R)	S(S)	T(T)	U(U)
V(V)	W(W)	X(X)	Y(Y)	Z(Z)					

- ① Press **【MR PRIO】** to switch to memory channel or press **【Call】** to switch to Call channel.
- ② Press **【LOW】** for 1 sec to select channel name display mode (Nothing indicator)
- ③ Press **【LOW】** to enter the named setting mode.
- ④ Press **【PWR】** to the next adjustment.
- ⑤ Press **【TONE】** to the last adjustment, turn **【DIAL】** to select the current character.
- ⑥ Press **【SET LOCK】** to exit the setting mode

**NOTE :** If you selected the channel name display mode, press **【SET LOCK】** key to enter the named channel status. If desired, please press and hold **【LOW】** for 1 sec to cancel the channel name display to the setting mode.

### 6. Clearing A Memory Channel

- ◆ Press and hold **【S.T】** for 1 sec, "M" and memory channel number flash. Turn **【DIAL】** to select the memory channel you want to erase. (Non-programmable memory channel is empty.)
- ◆ Quick press **【S.T】**, press and hold **【S.T】** for 1 sec (Note: This operation must be finished within 1.5 sec).  
The frequency is cleared after two BEEP sound, "MR" and memory channel number flash continuously.



- ◆ The current VFO state is re-programmed to the call channel automatically after clearing the call channel.

## 7. Call Channel Operation

Selecting Call Channel

- Press **【Call】** to select the call channel. “C” appears. (Instead of memory channel no.)
- Press **【MR PRIO】** to return to memory mode, or press **【VFO SCAN】** to select VFO mode.

## IV. SCAN OPERATION

This transceiver provides the following three types of scans:

- ◆ All Band Scan: The transceiver repeats scanning the entire band.
- ◆ Channel Scan: The transceiver scans all of the Memory Channels in which you have stored frequencies. (Except the channels which have been set SKIP). This scan type is used in usual called channel and regular busy channel (Such as the frequency of Repeater).
- ◆ Program Scan: By the means of setting boundary frequencies (the start and end frequencies) to make the transceiver repeat scanning the entire band of the frequency you select. This scan type is to examine the selected frequencies (Such as the output frequencies of repeater). 3 groups of boundary frequencies are available.

## V. SCAN RESUME CONDITIONS (SCAN RESUME TIMER)

There are four conditions: three time scans and one time-out scan.

**Note:** Users can use TONE scan function to seek CTCSS. (For example, when you are searching CTCSS frequencies of the repeater you can use TONE scan function.)

### 1. Scan ON/OFF

- ① To activate all band scan and program scan please press **【VFO SCAN】** to enter VFO mode, and press **【MR PRIO】** to enter channel mode.
- ② Set squelch point. (Squelch point refers to the point when noise is silent.)
- ③ Press **【VFO SCAN】** for more than 1 sec to activate scan function.
  - Press **【DIAL】** to change the scan direction.
  - The scan type blinks in the display screen of memory channel.
- ④ Press **【SET LOCK】** to switch all band scan (ALL), program scan (P1, P2, P3) in turn.
- ⑤ Press **【VFO SCAN】** to stop scanning.

### 2. Program Scan Boundary

Scan boundary can be programmed into the memory channel in the same way.

- ① Set your desired boundary frequencies in VFO mode.
  - Press **【DIAL】** to set the frequency.
  - If desire, you can set other data. (For example: The related data when you are working on the split frequency.)
- ② Long press **【S.T】** . “MR” and channel number blinks.
- ③ Turn **【DIAL】** to select scan boundary, 1A, 2A or 3A.
- ④ Press **【TUNE】** for more than 1 sec to program.
  - ◆ When hear two BEEP sounds, the transceiver selects VFO mode automatically.
  - ◆ After programming, press **【S.T】** and the scan boundary channel 1b, 2b or 3b will be selected automatically.

Program other scan boundary please repeat the steps from ① to ④.

### 3. Selection of Scan Resume Condition

Scan resume condition has two choices: time scan or time-out scan, and it apply to priority monitor as well.

- ① Press **【SET LOCK】** to enter setting mode.

- ② Turn **【DIAL】** until “SCAN-S” comes into being.
- ③ Press **【PWR】** to enter the corresponding menu.
- ④ Turn **【DIAL】** to select your desired timer:
  - ◆ “SCT-15”: when receiving the signal, the scan stops 15 seconds.
  - ◆ “SCT-10”: when receiving the signal, the scan stops 10 seconds.
  - ◆ “SCT-5”: when receiving the signal, the scan stops 5 seconds.
  - ◆ “SCP-2”: when receiving the signal, the scan stops. The transceiver resumes scan 2 seconds after the signal disappears.
- ⑤ Press **【SET LOCK】** to exit setting mode.

## VI. PRIORITY MONITOR

When working on the memory channel, the priority monitor tests the signal of VFO every 5 seconds. This transceiver has the following three selections of priority monitor. When working on the priority monitor mode; you can transmit in the VFO frequency.

### 1. Mode Of Priority Monitor

- ① **Memory Channel Monitor**  
When working in the VFO frequency, the priority monitor tests the selected memory channel signal every 5 seconds.
- ② **Memory Scan Monitor**  
When working in the VFO frequency, the priority monitor tests every memory channel signal in turn.  
**(The function of “SKIP” in the memory scan is useful to speed up the scan.)**
- ③ **Call Channel Monitor**  
When working in the VFO frequency, the priority monitor tests call channel signal every 5 seconds.

### 2. Priority Monitor Operation

- ① Select VFO mode and set working frequency.
- ② Set monitor channel.  
Memory channel monitor: select your desired memory channel.  
Memory scan monitor: select memory mode and press **【VFO SCAN】** 1 sec to activate memory scan.  
Call channel monitor: press **【CALL】** to select call channel.
  - ◆ Press **【MR PRIO】** 1 sec to activate monitor. The transceiver will test the memory channel signal or call channel signal every 5 seconds.
  - ◆ Monitor resume depends on the state of your selected scan resume.
  - ◆ When monitor stops, press **【MR PRIO】** to resume the monitor manually.
- ③ Press **【MR PRIO】** to stop monitor.  
**Note: when memory or call channel pausing or receiving signal, “PRIO” blinks.**

## VII. DTMF STORAGE ENCODER

### 1. Programming DTMF

The transceiver has 16 DTMF storage channels (D0~D9/DA~DF), and the common DTMF which are used in storage are up to 24.

- ① Press **【SET LOCK】** to enter the setting mode. Turn **【DIAL】** until “DTMFID” comes into being.
- ② Press **【PWR】** to enter the corresponding menu.
- ③ Turn **【DIAL】** to select channel which will be programmed: DTMF memory channel indicator blinks.
- ④ Press **【PWR】** the first number blinks. Turn **【DIAL】** to select your desired DTMF.
- ⑤ Press **【PWR】** to select the next character and press **【VFO SCAN】** to select the last character.

- ⑥ Repeat the steps of ④⑤ to set the DTMF list.  
(S/Rf indicator shows digital group. The displayed digital raises every six.)
- ⑦ Press **【SET LOCK】** to exit DTMF storage program.

## 2. Transmit DTMF

- ① Press **【SET LOCK】** to enter the setting mode. Turn **【DIAL】** until the “DTMF” comes into being.
- ② Press **【PWR】** enter the corresponding menu. Turn **【DIAL】** to select “DTM-DM”.
- ③ Press **【SET LOCK】** to exit setting mode. “D” appears in hundred’s place.
- ④ Press **【PTT】** to transmit selected DTMF channel number. When press **【PTT】** the transceiver transmit the DTMF automatically.

## 3. The DTMF Transmission Speed

- ① Press **【SET LOCK】** into setting mode. Turn **【DIAL】** until “DTMF D” comes into being.
  - ② Press **【PWR】** to enter the corresponding menu. Turn **【DIAL】** to select your desired speed.
- |       |        |        |                           |
|-------|--------|--------|---------------------------|
| 100MS | 100 MS | 5.0cps | (cps: No. of character/S) |
| 200MS | 200 MS | 2.5cps |                           |
| 300MS | 300 MS | 1.6cps |                           |
| 500MS | 500 MS | 1.0cps |                           |

## VIII .CTCSS & DTCS/DCS

### CTCSS & DTCS/DCS Operation

Only when received CTCSS and DTCS code is the same as user set, you can activate the function DTCS.

- ① Set working frequency.
- ② Program CTCSS frequency & DTCS code.
- ③ Press **【TONE】** several times until the “ENC DEC” or “DCS” displayed on the screen.
  - Display “ENC DEC” means CTCSS; Display “DTCS” means DCS.
- ④ When received the matching CTCSS, the DTCS is activated and the sound can be heard.
  - When received the unmatched CTCSS, the DTCS is not activated. But the S/Rf displays the received signal intensity.
- ⑤ Operate the transceiver in normal way. (Press **【PTT】** to transmit; release **【PTT】** to receive).  
To cancel CTCSS/DCS, press **【TONE】** several times until “ENC DEC” and “DCS” disappear.

## IX. DTCS/DCS Scan (TONE Scan)

- ① Set the CTCSS frequency and DTCS code channels which will be tested.
- ② Press **【TONE】** several times to select the state of CTCSS or the types of scan.
- ③ Press **【TONE】** for 1 sec to activate tone scan.
  - ◆ Turn **【DIAL】** can change the scan direction.
- ④ When CTCSS frequency and DTCS code are matching, DCS will be activated and CTCSS frequency will be put into selected memory channel or call memory temporarily.
  - ◆ When CTCSS frequency or DTCS code are detected, scan stops.
  - ◆ Whether the detected CTCSS frequency or DTCS code is used to code or encode/decode depends on your selection in step ②.
    - If there is not indicator means users can not activate the scan.
    - “ENC” : CTCSS encode
    - “ENC DEC”: CTCSS encode/decode
    - “DCS” : DTCS encode/decode
- ⑤ Press **【VFO SCAN】** to stop the scan.

## X. CALL

### Call Function

This function can use DTMF to call and identify caller when leaving the transceiver for the present.

#### 1. Code Program Mode

Program call and the DTCS/DCS code need transceiver ID and group code. These codes are made of three DTMF. Before operating, users should put them into the code channel.

- ① Set the transceiver ID and the group code.
- ② Program the transceiver ID. The transceiver ID should be put into code channel (CO), and other transmit code can be put into code channel C1-C6.

ID/Group code	Number of code channel	Receive permitted
Transceiver ID	C0 channel	Put on
Group code	C1~C6 channel	Any channel can be put on or off
Transmit code	Any of C1~C6 which is the last programmed code when exit menu.	Transmit code should be the same as called transceiver ID or called group code.

#### 2. Code Setting Mode

- ① Press **【LOW】** to put the transceiver on. Press **【PWR】** to enter the password inputting box. Users will enter the uninitialized menu after inputting the password.
- ② Turn **【DIAL】** until the item 10“COD-ID”comes into being. Press **【PWR】** and turn **【DIAL】** to select the channel you will program. Any of “C0”--“C6” blinks.
- ③ Press **【PWR】** the number one digit blinks. Turn **【DIAL】** select your desired code. Press **【PWR】** the number two digit blinks but the number one digit stop blinking. To program the number three digit do as before.
- ④ “receive permitted”/“receive prohibited”:
  - ◆ CO channel can not set in “receive prohibited”。
  - ◆ Press **【S.T】** ]to program the “receive permitted”/“receive prohibited” of channel C1-C6.
  - ◆ “SKIP” displayed when set in receive prohibited.
  - ◆ When the transceiver receives the code which is the same as code channel:  
If the channel is set in “receive permitted”. “CALL” will make a warning sound.  
If the channel is set in “receive prohibited”, “CALL” will not make any sound.
- ⑤ Press **【SET LOCK】** to return to previous menu.

#### 3. Call Operation

- ◆ Press **【SET LOCK】** into MENU setting and turn the [DIAL] to select Menu No.17 “DTMF”.
- ◆ Press **【PWR】** into corresponding Menu, turn the [DIAL] to select “DTM-PG”.
- ◆ Press **【SET LOCK】** to exit setting Mode, “P” will appear in the hundred’s place.
- ◆ Press **【PTT】** to transmit Call code.
- ◆ When the code which is transmitted by the calling transceiver (hereinafter referred to as Calling) is received by the called transceiver (hereinafter referred to as Called), the display screen of called transceiver will show the information of calling transceiver. At this time the Called should press PTT, by doing this users can transmit a respond code (Respond code is the Called’s transmitting code) to the Calling and it will recover to display the working frequency.
- ◆ Both transceivers connect after received the respond code from Calling and then both transceivers do not need to transmit the TX-Code for communication.  
**Note:** If the transceiver does not receive code over 2S after connected, it means the connection suspends and you need check the code again.



- A. Example:** Called ID C0: 123  
 Calling ID C0: 424, TX-Code designate C1: 123  
 After Calling transmit, Called shows as below:



The picture means the Called received the call which IP is 424.

- B. Group Call:** Called ID C6: 888  
 Calling ID C0: 424, TX-Code designate C2: 888  
 After Calling transmits, that Called shows as below: it means group call C6 received the call.



**C. Error Call**



When you received one of above two pictures, but the mode did not show as CX+\*+C0 it will show E.

**XII. Code Squelch**

This function provides a signal for transceiver. When user receives a signal which contains the correct code, the Code Squelch turns OFF and users can communicate normally. Press the **【PTT】** switch every time, it will transmit three digits encode.

**Operation:**

- ① Press **【SET LOCK】** to enter **【MENU】** and turn **【DIAL】** to select the Menu 17 “DTMF-CS”
- ② Press **【PWR】** into corresponding Menu. Turn **【DIAL】** to select the “DTM-CS”.
- ③ Press **【SET LOCK】** to exit setting Mode, “CS” will appear in the hundred’s place.
- ④ After set, use the transceiver in a regular way; press the **【PTT】** to transmit and release it to receive.
- ⑤ The value of code squelch is set on the special function Menu no.10 “COD-ID”. If users want to turn the transceiver squelch ON two transceivers (the calling and called) should set the same Code.

**XIII. Other Functions**

**1. PTT ID**

- ① In initialized Menu, turn on PTT ID TX-mode and setting Begin PTT/ID and End PTT-ID (The longest PTT ID is 8 bit).
- ② Press PTT will auto transmitting PTT-ID code. (PTT ID code can be used in all calls, group call, CTCSS/DCS wake-up code, stun-code, kill-code, etc).

## 2. Radio Stun:

- ① In initialized menu, turn on radio stun function and set stun-code and wake-up code.
- ② The transceiver in stun state when received specified stun-code, it only can receive but transmit. (User can set transmit stun-code by PTT-ID).
- ③ The transceiver will automatically release stun state when received correct wake-up code , and then it will recover to working mode (User also can release Radio Stun manually).

## 3. Radio Kill:

- ① In initialized menu, turn on radio kill function and set kill-code and wake-up code.
- ② The transceiver in kill state when received specified kill-code, it neither receive nor transmit\_ (User can set transmitting kill-code by PTT-ID)
- ③ The transceiver will automatically release kill state when received correct wake-up code, and then it will recover to working mode (User also can release Radio Kill manually).

## 4. Wake Up:

The transceiver will automatically release Stun/kill state when received correct wake-up code, and then it will recover to working mode.

# XIV. SETTING MODE

### MENU SETTING

- ① Press **【SET LOCK】** to menu setting.
- ② Turn the **【DIAL】** to select your desired Menu.
- ③ Press **【PWR】** to the corresponding Menu No.
- ④ Turn the **【DIAL】** to select your desired state or numerical value.
- ⑤ Press **【SET LOCK】** to exit setting Mode.

### MENU FUNCTION LIST

On the display	Menu No.	Function	Selections	Default		
SQL	1	Squelch level	0~9	3		
SMETER	2	S-Meter squelch	OFF/S1~S7	OFF		
BRIGHT	3	Display brightness	0~22	15		
LIGHT	4	Backlight Switch	ON/OFF	ON		
TX-CT	5	Transmission CTCSS frequency	67~254.1HZ	88.5HZ		
CTCSS	6	CTCSS frequency	67~254.1HZ	88.5HZ		
DCS	7	DCS code	023~754	023N		
DCS N/R	8	DCS code reverse	NN/NR/RN/RR	NN		
ARS	9	Automatic Repeater	ON/OFF	OFF		
SHIFT	10	Shift Direction	OFF/-/+	OFF		
OFFSET	11	Repeater offset	0~70M	7.6M		

		frequency				
REV	12	Frequency Reverse Switch	OFF/ON	OFF		
STEP	13	Frequency step size	2.5/5/6.25/10/12.5/15/20/25/30/50KHz	5K		
SCAN-S	14	Scan Resume method	5/10/15/SCP-2	10		
SKIP	15	Skip channel scan	OFF/ON	OFF		
CLKSFT	16	Beat Shift	OFF/ON	OFF		
DTMF	17	DTMF mode	OFF/PG/CS/DM	OFF		
DTMF D	18	DTMF dialer period	100/200/300/500MS	100		
NAME	19	Store Memory Name	ON/OFF	OFF		
BEEP	20	Beep Switch	ON/OFF	ON		
TOT	21	Time-out Timer	OFF/1M~15M	OFF		
CALL	22	CALL Function	CALL/1750/2100/1450/1000	CALL		
APO	23	Automatic Power-off	OFF/30/1H~8H	OFF		
BUSY	24	Busy Channel Lockout	OFF/RP/BU	OFF		
DISPLA	25	Display mode	FR/CH/NM	FR		
W/N	26	Wide/Narrow	W/N	W		
DTMFID	27	Automatic dialer Channel	D0~D9 DA DB DC DD DE DF	D0		
RESET	50	Reset selection	VF/AL	-		
FUN	28-31	P1-P4				

### **Setting Menu Operations**

MENU 1: [SQL] Squelch level

Selection: 0~9

Default: 3

Function: According to you need to set different squelch level. Set "0" that is always open.

MENU 2: [SMETER] S-Meter Squelches

Selection: OFF/S1~S7

Default: OFF

Function: S-meter Squelch causes the squelch open only when a signal with strength greater than or the same as the S-meter setting is received. This function relieves you from constantly resetting the squelch when receiving weak stations you have no interest in. (The [SQ1] will be ineffectual when select any one of the level S1~S7).

MENU 3: [BRIGHT] Backlight Control

Selection: 1~22

Default: 15

Function: The backlight can control the brightness of LCD which will meet users' requirements in different conditions.

MENU 4: [LIGHT] Display Backlight

Selection: ON/AUTO/OFF

Default: ON

Function: There are three modes of Display Backlight you can choose: ON/ AUTO / OFF. Activated Backlight, the LCD backlight ON when press key of panel and microphone key .The backlight out after 10 seconds.

MENU 5: [TX-CT] CTCSS Code Setting

Selection: 67~254.1HZ

Default: 88.5HZ

Function: This function is to set CTCSS code frequency. 42 CTCSS tone frequencies are available.

MENU 6: [CTCSS] CTCSS Encoding & Decoding Setting

Selection: 67~254.1HZ

Default: 88.5HZ

Function: Setting CTCSS code/Decoding frequency. Available CTCSS Tone Frequencies are the same as above.

50 CTCSS Frequencies (Hz)							
<b>67.0</b>	<b>85.4</b>	<b>107.2</b>	<b>136.5</b>	<b>165.5</b>	<b>186.2</b>	<b>210.7</b>	<b>254.1</b>
<b>69.3</b>	<b>88.5</b>	<b>110.9</b>	<b>141.3</b>	<b>167.9</b>	<b>189.9</b>	<b>218.1</b>	
<b>71.9</b>	<b>91.5</b>	<b>114.8</b>	<b>146.2</b>	<b>171.3</b>	<b>192.8</b>	<b>225.7</b>	
<b>74.4</b>	<b>94.8</b>	<b>118.8</b>	<b>151.4</b>	<b>173.8</b>	<b>196.6</b>	<b>229.1</b>	
<b>77.0</b>	<b>97.4</b>	<b>123.0</b>	<b>156.7</b>	<b>177.3</b>	<b>199.5</b>	<b>233.6</b>	
<b>79.7</b>	<b>100.0</b>	<b>127.3</b>	<b>159.8</b>	<b>179.9</b>	<b>203.5</b>	<b>241.8</b>	
<b>82.5</b>	<b>103.5</b>	<b>131.8</b>	<b>162.2</b>	<b>183.5</b>	<b>206.5</b>	<b>250.3</b>	

MENU 7: [DCS] DCS (Digital Coded Squelch) SETTING

Selections: 023-754

Default: 023

Function: DCS Encode/Decode Setting. 104 DCS Codes are available.

104 DCS Codes									
<b>023</b>	<b>065</b>	<b>132</b>	<b>205</b>	<b>255</b>	<b>331</b>	<b>413</b>	<b>465</b>	<b>612</b>	<b>731</b>
<b>025</b>	<b>071</b>	<b>134</b>	<b>212</b>	<b>261</b>	<b>332</b>	<b>423</b>	<b>466</b>	<b>624</b>	<b>732</b>
<b>026</b>	<b>072</b>	<b>143</b>	<b>223</b>	<b>263</b>	<b>343</b>	<b>431</b>	<b>503</b>	<b>627</b>	<b>734</b>
<b>031</b>	<b>073</b>	<b>145</b>	<b>225</b>	<b>265</b>	<b>346</b>	<b>432</b>	<b>506</b>	<b>631</b>	<b>743</b>
<b>032</b>	<b>074</b>	<b>152</b>	<b>226</b>	<b>266</b>	<b>351</b>	<b>445</b>	<b>516</b>	<b>632</b>	<b>754</b>
<b>036</b>	<b>114</b>	<b>155</b>	<b>243</b>	<b>271</b>	<b>356</b>	<b>446</b>	<b>523</b>	<b>654</b>	
<b>043</b>	<b>115</b>	<b>156</b>	<b>244</b>	<b>274</b>	<b>364</b>	<b>452</b>	<b>526</b>	<b>662</b>	
<b>047</b>	<b>116</b>	<b>162</b>	<b>245</b>	<b>306</b>	<b>365</b>	<b>454</b>	<b>532</b>	<b>664</b>	
<b>051</b>	<b>122</b>	<b>165</b>	<b>246</b>	<b>311</b>	<b>371</b>	<b>455</b>	<b>546</b>	<b>703</b>	
<b>053</b>	<b>125</b>	<b>172</b>	<b>251</b>	<b>315</b>	<b>411</b>	<b>462</b>	<b>565</b>	<b>712</b>	
<b>054</b>	<b>131</b>	<b>174</b>	<b>252</b>	<b>325</b>	<b>412</b>	<b>464</b>	<b>606</b>	<b>723</b>	

MENU 8: [DCS N/R] DCS REVERSE

Selections: NN/NR/RN/RR

Default: NN

Function: Set receive/transmit and forward/reverse DCS

NN—Receive and transmit DCS negative

NR—Transmit DCS forward, Receive DCS reverse

RN—Transmit DCS reverse, Receive DCS forward

RR—Receive and transmit DCS reverse

MENU 9: [ARS] AUTOMATIC REPEATER SHIFT

Selections: ON/OFF

Default: OFF

Function: (Note: Automatic Repeater turned [438.2M-439.425M], Started automatic a negative offset).

MENU 10: [SHIFT] SELECTING AN OFFSET DIRECTION

Selections: OFF/—/+

Default: OFF

Function: Select the transmit frequency will be higher (+) or lower (–) than the receive frequency. “+” or “–” appears in the screen, indicating you select that offset direction.

If the offset transmit frequency beyond the allowed range, transmission is inhibited. In this case, adjust the receiving frequency so that the transmit frequency is within the band limits or change the offset direction.

MENU 11: [OFFSET] SELECTING AN OFFSET FREQUENCY

Selections: 0~70M

Default: 7.6M

Function: To access a repeater which requires an odd-split frequency pair, change the offset frequency from the default which is used by most repeaters. The VHF default frequency is 600 KHZ, UHF default difference is 7.6 MHz. The select offset frequency range is 0.00 MHZ to 69.95 MHz; the channel step is 50 KHZ.

MENU 12: [REV] REVERSE FREQUENCY MODE

Selections: OFF/ON

Default: OFF

Function: When select reverse frequency mode, the receive frequency offset on.

Positive-Frequency mode, the transmit frequency offset, as below:

Input Frequency: 447.60MHZ

Direction : —

Offset: 7.6MHZ

Reverse Frequency	OFF	ON
Receiving Frequency	447.60MHZ	440.00MHZ
Transmitting Frequency	440.00MHZ	447.60MHZ

MENU 13: [STEP] FREQUENCY STEP SETTING

Selections: 2.5/5/6.25/10/12.5/15/20/25/30/50/100KHz

Default: 5K

Function: when using a coding knob to select the receive frequency, user should firstly choose the frequency step to make a choice accurately. The selected frequency steps are as follows:

2.5/5/6.25/10/12.5/15/20/25/30/50/100KHz.

MENU 14: [SCAN-S] SCAN RESUME CONDITION SETTING

Selections: 5/10/15/SCP-2

Default: 5

Function: This function includes 3 Timer scanning and 1 carrier scanning.

3 Timer Scanning:

- 5 seconds after a signal is received, continue scanning whether it have signal or not.
- 10 seconds after a signal is received, continue scanning whether it have signal or not.
- 15 seconds after a signal is received, continue scanning whether it have signal or not.

1 carrier scanning: SCP-2 radio stays in busy frequency (or memory channel), 2 seconds after the signal (carrier) disappears, and it will re-start the scan.

MENU 15: [SKIP] SKIP CHANNEL SCANNING

Selections: OFF/ON

Default: OFF

Function: ON Prohibit participating in the current channel scanning, skip scan

OFF Allow participating in the current channel scanning.

MENU 16: [CLKSFT] BEAT SHIFT

Selections: OFF/ON

Default: OFF

Function: Since the transceiver uses a microprocessor to control various functions of the transceiver, the CPU clock oscillator's harmonics or image may appear on some spots of the reception frequencies. In this case, turn the Beat Shift function ON.

MENU 17: [DTMF] DTMF SIGNALING

Selections: OFF/PG/CS/DM

Default: OFF

Function: Call Squelch Highest frequency is displayed P when selected  
Code Squelch Highest frequency is displayed C when selected  
DTMF Dialing Highest frequency is displayed D when selected

MENU 18: [DTMF] SENDING DTMF CODE RATE

Selections: 100/200/300/500MS

Default: 100MS

Function: DTMF Dialing Time

MENU 19: [NAME] NAMED CHANNEL IN MEMORY

Selections: ON/OFF

Default: OFF

Function: Activate named channel in memory

MENU 20: [BEEP] BEEP SWITCH

Selections: ON/OFF

Default: OFF

Function: Beep switch

MENU 21: [TOT] Time out Timer

Selections: OFF/1M~15M

Default: OFF

Function: If the equipment has been in the state of transmitting beyond the set time, the transceiver will stop transmitting. Release the PTT and Re-press it, transceiver can transmit again.

**MENU 22: [CALL] CALL FUNCTION SETTING**

Selections: CALL/1750/2100/1450/1000

Default: CALL

Function: CALL: Press [CALL] changes to the Call Channel  
1750: Press [CALL] transmit a 1750 Hz tone  
2100: Press [CALL] transmit a 2100 Hz tone  
1450: Press [CALL] transmit a 1450 Hz tone  
1000: Press [CALL] transmit a 1000 Hz tone

**MENU 23: [APO] AUTO POWER OFF**

Selections: OFF/30/1H~8H

Default: OFF

Function: Auto power-off after reach the set time.

**MENU 24: [BUSY] Busy channel lockout**

Selections: OFF/RP/BU

Default: OFF

Function: When a signal is received, prevent radio to transmit, avoid interferences with other stations, there are two ways of busy channel lockout: RP and BU.

RP: When receive a signal mismatch CTCSS, prohibit transmit.

Bu: When receive a signal, prohibit transmit.

**MENU 25: [DISPLA]**

Selections: FR/CH/NM

Default: FR

Function: FR: Frequency Mode  
CH: Memory Channel Mode  
NM: Name Mode

**MENU 26: [W/N] WIDE/NARROW**

Selections: W/M/N

Default: W

Function: The transceiver of default operation is FM ( $\pm 5\text{kHz}$ ) in transmitting and receiving, the user also can operate it in narrow FM ( $\pm 2.5\text{kHz}$ ). The display "W" and "N" appear on screen after you set. "M" refers to middle bandwidth FM ( $\pm 4\text{kHz}$ ).

**MENU 27: [DTMF ID]**

Selections : D0~D9 DA DB DC DD DE DF

Default: D0

Function : Press【SET LOCK】to enter the Setting Mode, turn【DIAL】to item 27 : Auto-call Channel.

① Press 【PWR】 to enter a Corresponding Debug Menu; turn 【DIAL】 to select a DTMF Channel to edit.

② Press 【PWR】 to enter the Edit DTMF Channel Content; turn 【DIAL】 to change current DTMF character.

③ Press【PWR】to edit next DTMF Channel Content; press【VFO SCAN】 to edit last DTMF Channel Content.

④ Press 【S.T】 return to previous menu.

⑤ Press 【SET LOCK】 to exit .

MENU 50: [RESET]

Selections: VF/AL

Default: VF

Function: Full RESET (AL): this resets all transceiver parameters to the factory default values.

VFO RESET (VF): this resets the transceiver parameters excluding the DTMF Memory, the Memory channel contents, and the Call channel contents.

## XV. INITIAL SETTINGS

### 1. Operations Mode

- ① Press **【LOW】** to turn the transceiver ON. Screen "CODE": press **【PWR】** enter to password prompt box.
- ② Press **【PWR】** switch to next password, press **【SET LOCK】** return to previous password ,rotate[DIAL] adjust password.
- ③ The transceiver will auto into initialized mode when password is correct.
- ④ Turn **【DIAL】** to select Menu, press **【PWR】** to enter the corresponding Menu.
- ⑤ Turn **【DIAL】** to adjust a relevant content .
- ⑥ Press **【PWR】** for a while to exit.

### Attached List B:

LED Display	MENU	FUNCTION	SELECTION	DEFAULT
TX EN	1	Transmission Enable	TX-ON/TX-OFF	TX-ON
STUN	2	Stun ON/OFF	ON/OFF	OFF
KILL	3	Kill ON/OFF	OFF/ON	OFF
STU-CD	4	Stun-code	0~8	13259867
KIL-CD	5	Kill-code	0~8	24597813
WAK-CD	6	Wake up-code	0~8	69851436
PON-MS	7	Power-on message	Setting message	WELVRC
BEG-ID	8	Begin PTT-ID	0~8	12345678
END-ID	9	End PTT-ID	0~8	12345678
COD-ID	10	CTCSS/DCS ID	C0~C6 Cp	000
PTT-ID	12	PTT-ID TX Mode	OFFF/BE/EN/BO	OFF

MENU 1: [TX EN] Channel Lockout

Selections: TX-ON/TX-OFF

Default: TX-ON

Function: Transmitting is invalid when setting as TX-OFF.

MENU 2: [STUN] Radio Stun ON/OFF

Selections: ON/OFF

Default: OFF

Function: Stun code is working when Radio Stun set as ON (Item 4); the transceiver stop transmitting when set password is entered (Item 4). Radio Stun only can receive signal.

MENU 3: [KILL] Radio Kill ON/OFF

Selections: ON/OFF

Default: OFF



Function: Kill code is working when radio kill setting as ON (Item 5); the transceiver stop transmitting when set password is entered (Item 5). Radio Kill disables signal transmitting and receiving.

MENU 4: [STU CD]

Selections: 1~8

Default: 13259867

Function: Stun Code Setting

MENU 5: [KIL CD]

Selections: 1~8

Default: 24597813

Function: Kill Code Setting

MENU 6: [WAK CD] (Revive)

Selections: 1~8

Default: 69851436

Function: Wake-up Code Setting

MENU 7: [PON MS]

Selections: 1~6

Default: WELVRC

Function: Power-on Message Setting

MENU 8: [BEG ID]

Selections: 1~8

Default: 12345678

Function: Begin PTT-ID Setting

MENU 9: [END ID]

Selections: 1~8

Default: 12345678

Function: END PTT-ID Setting

MENU 10: [COD ID]

Selections C0~C6 Cp

Default: C0

Function: Code channel which can set you required transmit & receive code at secondary item simultaneously.

MENU 12: [PTT ID]

Selections: OFF/BE/EN/BO

Default: OFF

Function: ①BE: press the PTT key, ID code is transmitted.

②EN: release the PTT key, ID code is transmitted.

③BO: press or release the PTT key, ID code is transmitted

④OFF: ID code can't be transmitted when turn off all.

## **2. STUN/KILL/WAKE-UP (REVIVE)/BEGIN PTT-ID/END PTT-ID/POWER-ON MESSAGE**

①Turn **【DIAL】** to select the menu, press **【PWR】** into corresponding menu.

②Turn **【DIAL】** to change current DTMF character.

③Press **【PWR】** to edit next DTMF channel content.

④Press **【VFO SCAN】** to edit previous DTMF channel content.

- ⑤ Press **【S.T】** return to previous menu.
- ⑥ Press **【PWR】** for a while to exit menu.

### **3. Editing CODE-ID**

- ① Press **【LOW】** +Power ON . Screen “CODE”: press **【PWR】** into password prompt box.
- ② Press **【LOW】** switch to next password, press **【S.T】** return to previous password ,turn **【DIAL】** adjust password.  
It will auto into initialized mode when password is correct.
- ③ Turn **【DIAL】** to select Menu” COD-ID”. Press **【PWR】** into corresponding menu.
- ④ Turn **【DIAL】** to select you want to edit channel code C0~C6/Cp.
- ⑤ Press **【PWR】** into Code Channel Contents, turn **【DIAL】** to change current character.
- ⑥ Press **【PWR】** to edit next channel content, press **【VFO SCAN】** to edit previous channel content.
- ⑦ Press **【SET LOCK】** –to turn on /off current channel Skip function(PS: C0/Cp invalid).
- ⑧ Press **【S.T】** return to previous menu.
- ⑨ Press **【PWR】** for a while to exit .

## **XVI. Other Setting**

### **1. VFO RESET**

Users want to reset the VFO frequency & Setting mode content, but would not like to reset the Memory channel contents that you can use this function:

In power OFF state, press **【VFO SCAN】** +Power ON, the transceiver will auto reset .

(User also can reset it by MENU 50).

### **2.ALL Reset**

When users RESET ALL, the transceiver will return to factory default:

In power OFF state, press **【SET LOCK】** + **【S.T】** to turn the transceiver ON, it will auto reset all.

(User also can reset it by MENU 50).

### **3. Cloning**

- ① The cloning cable is connected.
- ② Press **【MR PRIO】** to turn the transceiver ON, and then enter cloning mode.
- ③ Press **【S.T】** to start cloning.