When the radio is on VFO mode, the frequency can be input by the keypad directly.

Note:
● You can not select a channel without previously stored.

6.TDR (Dual Watch/ Dual Reception)
This feature allows you to operate between frequency A and frequency B. Periodically, the transceiver checks whether a signal is received on another frequency that we have scheduled. If you receive a signal, the unit will remain in the frequency until the recived signal disappears.

In standby, press[MENU] + keyboard [7TDR] and then screen will display 'TDR'. Press [MENU] enter, then press [UP] or [DOWN] to select 'TDR' OFF or ON. Press [MENU] to confirm, then press [EXIT] to return to standby.

7.DEL-CH (Delete Channel)
In standby, press [MENU]+ [Number key 28] and then screen will display 'DEL-CH'
Press [MENU] enter, press [UP] or [DOWN] to select the channel you wanto to delete.
Press [MENU] to confirm, then press [EXIT] to return to standby.

The transceiver has 128 memory channels from 000 to 127. Operate invalid when you into channel without DH- display, it means this channel not parameter.

8. MEM-CH (Stored In Memory Channel)
When transceiver works in frequency mode or in standby, input the frequency and any kind of parameteryou want to store.

In standby, press [MENU] +[Number key 27] and then screen will display 'MEM-CH' , then press [MENU] enter, press [UP] or [DOWN] to select the desired channel order. Press [MENU] to confirm then press [EXIT] to return to standby.

A complete memory channel includes RX frequency, TX frequency, CTCSS, DCS, RF Power, Bandwidth, PTT-ID, BCL, ANI, Scan add to, Channel Name, etc. Except for the setting of Scan add to and Channel Name, other settings could be finished by keypad under VFO mode.

Example: We want programming all the data into CH106, please do as following:

RX Frequency	450.625MHz
TX Frequency	440.625MHz
RX CTCSS	100.0Hz
TX DCS	250.3Hz
RF Power	High
Bandwidth	Wide
PTT-ID	OFF

1.We have to check whether there are any data in CH106 or not. Come to MENU 28, if there is a 'CH' before '106', that means there are data. So please delete it and you will find there is not a 'CH' before '106', or else you can't have new data in this channel.
2.Press and hold [MENU] key, then power on, come to VFO mode. Press [EXIT/AB] key to select frequency A (UP).
3.Enter 450.625MHz

4.Now through the MENU, you can set other parameters. CTCSS,DCS, RF Power, Bandwidth, etc.
5.After you finish all the other settings, press [MENU] key, then come to MENU 27, press [MENU] key two times, you will know all the data have been stored into CH106, however now only RX frequency was stored. At the same time, you press [MENU] key another two times,

> **Note:**
> ● If you want the TX frequency 450.625 stored into CH106, you should do the same steps after you store the RX frequency into CH106.

9. CTCSS/DCS SCANNING
Before setting the CTCSS/DCS scanning, you should have a RX frequency and cancel the Dual Standby function, ensure the radio is working under VFO mode.

Come to MENU 11, press [MENU] one time, then press [*/SCAN] key, at the same time, you should press the PTT of another radio, then you will see the CTCSS scanning automatically. When the scanning stops, that means you find the same CTCSS as that of another radio, now press [MENU] to store the CTCSS.

10.REPEATER TAIL TONE
We all know that repeaters receive on one frequency and simultaneously retransmit that same information on a different frequency. We hear the courtesy tone almost every time we use the repeater. It's that innocuous beep that lets us know that the repeater is alive and, most importantly, that it has heard us. The MENU 35, 36,37 are very helpful settings while your radio work through repeater. MENU 35 and MENU 36 better be set OFF. The parameter of MENU 37 is from 1-10, better set 5.

Sound-Light Alarm/ Cancel the alarm

There are 3 alarm modes in this radio, Alarm, Sending alarm code, sending the backfround sound. Press [SOS] alarm function, the radio will sound the alarm sound, the light flights also.
Press [SOS] again to stop the alarm.

When the radio is in emergency alarm, there are only [PTT] and SOS key workable. Press[PTT] to transmit , when the radio receive the transmit the alarm will stop also.

11.CTCSS/DCS:
In some cases only want to establish communications in a closed user group at a particular frequency or channel, for it will use "CTCSS" or code "DCS" for reception.

The "squelch" opens only when receiving a frequency with "CTCSS" or codes "DCS" same as the programmed in your transceiver. If codes of the received signal differs from those programmed in your transceiver, the "squelch" will not open and the received signal can be heard.

> **Note:**
> ● The use of "CTCSS" or "DCS" in a communication, does not guarantee complete confidentiality communication.

CTCSS TABLE:

No	Tone (Hz)	No	Tone (Hz)	No	Tone (Hz)	No	Tone (Hz)	No	Tone (Hz)
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

DCS TABLE:

No	Code	No	Code	No	Code	No	Code	No	Code
1	D023N	22	D131N	43	D251N	64	D371N	85	D532N
2	D025N	23	D132N	44	D252N	65	D411N	86	D546N
3	D026N	24	D134N	45	D255N	66	D412N	87	D565N
4	D031N	25	D143N	46	D261N	67	D413N	88	D606N
5	D032N	26	D145N	47	D263N	68	D423N	89	D612N
6	D036N	27	D152N	48	D265N	69	D431N	90	D624N
7	D043N	28	D155N	49	D266N	70	D432N	91	D627N
8	D047N	29	D156N	50	D271N	71	D445N	92	D631N
9	D051N	30	D162N	51	D274N	72	D446N	93	D632N
10	D053N	31	D165N	52	D306N	73	D452N	94	D645N
11	D054N	32	D172N	53	D311N	74	D454N	95	D654N
12	D065N	33	D174N	54	D315N	75	D455N	96	D662N
13	D071N	34	D205N	55	D325N	76	D462N	97	D664N
14	D072N	35	D212N	56	D331N	77	D464N	98	D703N
15	D073N	36	D223N	57	D332N	78	D465N	99	D712N
16	D074N	37	D225N	58	D343N	79	D466N	100	D723N
17	D114N	38	D226N	59	D346N	80	D503N	101	D731N
18	D115N	39	D243N	60	D351N	81	D506N	102	D732N
19	D116N	40	D244N	61	D356N	82	D516N	103	D734N
20	D122N	41	D245N	62	D364N	83	D523N	104	D743N
21	D125N	42	D246N	63	D365N	84	D526N	105	D754N

SHORTCUT MENU OPERATION:

1.Press the key MENU,then press the key [▲] or [▼] to select the desired menu.
2.Press the key MENU again, come to the parameter setting.
3.Press the key [▲] or [▼] to select the desired parameter.
4.Press the key MENU to confirm and save, press the key EXIT to cancel setting or
   clear the input.

```
  ▲  MENU    NO.        MENU    NO.
     PARAMETER       ▼  PARAMETER
```
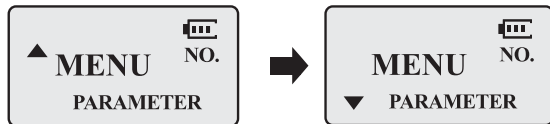
Note:
• Under channel mode, the following menu settings are invalid: CTCSS,DCS,W/N,PTT-ID,BCL,
  SCAN ADD TO,S-CODE,CHANNEL NAME. Only the H/L power could be changed by pressing
  # ᴼ.

SET MENU DESCRIPTION:

Menu	Function/Description	Available settings
0	SQL (Squelch level)	0-9
1	SPACING (Frequency spacing)	12.5 /25 kHz
2	TXP(Transmit power)	HIGH/ LOW
3	SAVE(Battery save,1:1/1:2/1:3/1:4)	OFF/1/2/3/4
4	VOX(Voice operated transmission)	OFF/1-10
5	W/N(Wideband/narrowband)	WIDE/NARR
6	ABR(Display illumination)	OFF/1/2/3/4/5s
7	TDR(Dual watch/dual reception)	OFF/ON
8	BEEP(Keypad beep)	OFF/ON
9	TOT(Transmission timer)	15/30/45/60.../585/600seconds
10	R-DCS(Reception digital coded squelch)	OFF/D023N...D754I
11	R-CTS(Reception Continuous Tone Coded Squelch)	67.0Hz...254.1Hz
12	T-DCS(Transmission digital coded squelch)	OFF/D023N...D754I
13	T-CTS(Transmission Continuous Tone Coded Squelch)	67.0Hz...254.1Hz
14	VOICE(Voice prompt)	OFF/ON
15	ANI(Automatic number identification of the radio,only can be set by PC software.	
16	DTMFST(The DTMF tone of transmitting code.)	OFF/DT-ST/ANI-ST/DT+ANI

17	S-CODE(Signal code, only could be set by PC software.)	1,......,15 groups
18	SC-REV(Scan resume method)	TO/CO/SE
19	PTT-ID(press or release the PTT button to transmit the signal code)	OFF/BOT/EOT/BOTH
20	PTT-LT(delay the signal code sending)	0,......,30ms
21	MDF-A(under channel mode, A channel displays. Note:name display only can be set by PC software.	FREQ/CH/NAME
22	MDF-B(under channel mode, B channel displays. Note:name display only can be set by PC software.	FREQ/CH/NAME
23	BCL(busy channel lockout)	OFF/ON
24	AUTOLK(keypad locked automatically)	OFF/ON
25	SFT-D(direction of frequency shift)	OFF/+/-
26	OFFSET(frequency shift)	00.000...69.990
27	MEMCH(stored in memory channels)	000,...127
28	DELCH(delete the memory channels)	000,...127
29	WT-LED(illumination display color of standby)	OFF/BLUE/ORANGE/PURPLE
30	RX-LED(illumination display color of reception)	OFF/BLUE/ORANGE/PURPLE
31	TX-LED(illumination display color of transmitting)	OFF/BLUE/ORANGE/PURPLE
32	AL-MOD(alarm mode)	SITE/TONE/CODE
33	BAND(band selection)	VHF/UHF
34	TX-AB(transmitting selection while in dual watch/ reception)	OFF/A/B

35	STE(Tail Tone Elimination)	OFF/ON
36	RP_STE(Tail tone elimination in communication through repeater)	OFF/1,2,3...10
37	RPT_RL(Delay the tail tone of repeater)	OFF/1,2,3...10
38	PONMGS(Boot display)	FULL/MGS
39	ROGER(tone end of transmission)	ON/OFF
40	A/B-BP(Tone end of reception)	OFF/A/B
41	RESET (Restore to default setting)	VFO/ALL

Reset(Restore To Default Setting)
The transceiver has a menu which resets VFO and ALL message. When you use RESET VFO, all parameter will be return to factory default. When you use RESET ALL, all transceivers and channel parameter will be return to factory default.
In standby, press [MENU]+[Number Key 40], and then screen will display "RESET". Press [MENU] enter, press [UP] or [DOWN] to select the desired work mode VFO or ALL. Press [MENU] to confirm, then press [EXIT] to return to standby.

COPYING
The following step to copy Radio A to Radio B.
1) Connecting the two radios with special data cable.
2) Turn on the radio B on
3) Press [MONI] at the meantime, turn on the radio A, the screen showing COPYING , when the copy finished, Radio B will power off auto and power on auto.
Repeat the above 2 and 3 steps to clone more radios, if you can not clone successful, please turn off both A and B eadio, and make sure they were connected correctly with clone cable

TECHNICAL SPECIFICATION:

1.GENERAL:

Frequency range:	VHF:136-174MHz UHF:400-480MHz（Rx） VHF:144-148MHz UHF:420-450MHz（Tx）
Memory channels:	Up to 128 channels
Frequency stability:	2.5ppm.
Frequency spacing :	12.5kHz /25kHz.
Antenna impedance:	50 Ω.
Operating temperature:	-10℃ to +40℃.
Supply voltage:	Rechargeable Lithium-Ion mAh 7.4V/1800.
Consumption in reception:	380mA
Consumption in transmission:	≤1.4 A.
Mode of operation:	Simplex or semi-duplex.
Duty cycle:	03/03/54 min. (Rx / Tx / Standby).
Dimensions:	65mmx41.5mmx133.8mm
Weight:	279g (approximate).

2.TRANSMITTER:

RF power:	5W/1W.
Type of modulation:	FM.
Emission class:	16KΦF3E/11KΦF3E (W/N).
Maximum deviation:	≤±5 kHz/≤±2.5 kHz (W/N).
Spurious emissions:	<-60 dB.

3. RECEIVER:

Receiver sensitivity:	0.2 μV(at 12 dB SINAD).
Intermodulation:	60 dB.
Audio output:	1W
Spurious Radiation:	≧65dB

Note:
● All specifications shown are subject to change without notice.

TROUBLESHOOTING:

Problem	Possible cause / solution
The radio does not start.	The battery is low, replace the battery with a charged battery or proceed to the battery.The battery is not installed correctly, remove the battery and reattach it.
The battery runs down quickly.	The battery life has come to an end, replace the battery with a new one.The battery is fully charged, make sure the battery is made in full.
The receiving indicator LED lights but do not hear the speaker.	Make sure the volume setting is too low.Make sure the undertones "CTCSS" or code "DCS" are the same as those programmed in the transceiver of the other members of your group.
When transmitting, the other members of his group do not receive the communication.	Make sure the undertones "CTCSS" or code "DCS" programmed in your transceiver are the same as those programmed in the transceiver of the other members of your group.Your partner or you, are too far.You or your partner are in a bad area of RF signal propagation.

In "standby" mode, the transceiver transmits without pressing the "PTT".	Check the level adjustment function "VOX" is not set too sensitive.
Receive communications from other user groups while communicating with your group.	Change frequency or channel.Change the undertones "CTCSS" or code "DCS" in your group.
Communication with other members of your group is poor or low quality.	You or your partner is too far away or in an area of poor radio signal propagation, such as inside a tunnel, inside an underground car park, in a mountainous area, including large metal structures, etc..
Once these checks, if you still have problems with the transceiver, check with your distributor, dealer or service center.	

WARRANTY: (Better buy the radios from local dealer).

WARRANTY CERTIFICATE		
Brand:	Model no.:	Serial no.:
Name of purchaser:		
Address:		
City:	Zip code:	Seal and name of the dealer:
Province/State:	Tel no.:	
Date of purchase:		
WARNING: Warranty is valid provided it is complete and properly filled in legibly and clearly present the seal and name of the dealer and have attached the bill proof of purchase of equipment.		

The device described in this Certificate is guaranteed for a period of TWO YEARS from the date of sale to the final user.This Warranty Certificate is unique and not transferable and may not be reissued for new or original or copy. Substitution of product failure or any part thereof shall not involve extension of the guarantee.

The warranty covers the replacement and free replacement of all parts that are defective in materials and components used in manufacturing and / or assembly of the apparatus.

The warranty does not cover any faults caused by accident, improper installation and use, electric shock (eg storms), connect a power other than that specified, reverse polarity in the diet, or claims due to deterioration in the external appearance of normal use, nor the amount or condition of the accessories.

Checking the accessories is the responsibility of the purchaser at the time of purchasing the device.

The warranty does not cover rechargeable batteries even if they are part of the equipment purchased as they are considered consumables, the impairment must be reported within a period of fifteen days from the date of purchase.

The warranty is void on the following assumptions:
1. Devices that have been manipulated by another or by anyone other than authorized service provider.
2. Equipment and accessories in which the serial number has been altered, deleted or filed unreadable.
3. Use of the product than as intended.
   To make use of the guarantee is necessary to give the dealer or any of the Authorised Service the defective device with its accessories and the following documentation:
   (1).Warranty Certificate duly completed and sealed.
   (2).Original invoice which clearly identifies the device and the date of purchase.
   (3).Description of the faults.

The warranty terms contained in this Certificate of Guarantee do not exclude, modify or restrict the statutory rights of the buyer by virtue of the laws in force at the time of purchase, but are added to them.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.