



6.-BATTERY CHARGING: Use only the charger specified by the manufacturer. The charger's LED indicates the charging progress. Red LED flashes, while Green LED glows Standby (no-load) Charging Red LED solidly glows **Fully Charged** Green LED solidly glows Red LED flashes, while Green LED glows

-Turn off the radio before removing the battery. -Slide the battery latch, at the bottom of the radio's body, in the direction

-Slide down the battery for about 1 to 2 centimeters, and then remove

the battery from the radio's body.

1. Fully charge a battery before you store it for a long time, to avoid battery damage due to over-2. Recharge a battery after several months' storage (Li-Ion batteries: 6 months), to avoid battery capacity reduction due to over-discharge. 3. Store your battery in a cool and dry place under room temperature, to reduce self-discharge.

8.-PARTS, CONTROLS AND KEYS:

8.1.-RADIO OVERVIEW:

2. The dust on the battery contact may cause the battery cannot work or charge. Please use a clean dry cloth to wipe it before attaching the battery to the radio.



Description Icon :88 Operating channel. Operating frequency. CT 'CTCSS' activated. DCS 'DCS' activated.

Frequency offset direction for accessing repeaters

Dual Watch/Dual Reception functions activated.

Function 'VOX' enabled

Wide Band selected.

Battery Level indicator

Low transmit power.

Operation frequency.

Signal Strength Level.

12.11.- SC-REV(SCAN RESUME METHOD):

D023N

D025N

12

Reverse function activated.

Keypad lock function activated

S

VOX

R

N

4111

all

The display icons appear when certain operations or specific features are activated.

8	BEEP(Keypad beep)	OFF/ON ·
9	TOT(Transmission timer)	15/30/45/60/585/600seconds
10	R-DCS(Reception digital coded squelch)	OFF/D023ND754I
11	R-CTS(Reception Continuous Tone Coded Squelch)	67.0Hz254.1Hz
12	T-DCS(Transmission digital coded squelch)	OFF/D023ND754I
13	T-CTS(Transmission Continuous Tone Coded Squelch)	67.0Hz254.1Hz
14	VOICE(Voice prompt)	OFF/ON
15	ANI(Automatic number identification of the radio, only can be set by PC software.	Hotele the kepts electrolys in the click to the control of the con
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)	00.00069.990
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

-ANI (Automatic Number Identification) is also known as PTT ID because an ID is transmitted when the PTT button of the radio is pressed and/or released. This ID tells the dispatcher which field radio Only could be set by PC software. 12.10.- DTMFST (DTMF TONE OF TRANSMITTING CODE): First you should set the PTT-ID as BOT/EOT/BOTH ""OFF" - Under transmitting mode, you can't hear the DTMF tone, while you press the key to transmit the code or code automatically transmitted. "DT-ST"-Under transmitting mode, you can hear the DTMF tone, while you press the key to transmit -"ANI-ST"-under transmitting mode, you can hear the DTMF tone, while the code automatically transmitted.

""DT-ANI"—under transmitting mode, you can hear the DTMF tone, while you press the key to transmit the code or the code automatically transmitted.

This transceiver allows you to scan memory channels, all the bands or part of the bands. When the transceiver detects a communication, the scan will stop automatically.

This function can automatically control the time we transmit each time you press [PTT] on the transceiver. This feature is very useful to avoid overheating excessive power transistors of the transceiver. The transceiver will be off transmission automatically once the set time.

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

Notes:
- "TO" (Time Operation):
Scanning will stop when it detects an active signal. The scanning will stop on each channel or active frequency for a predetermined time, after that time the scan will resume automatically.
- "CO" (Carrier Operation): The scanning will stop and remain in the frequency or channel, until the active signal disappears. - "SE" (Search Operation): The scanning will stop and remain in the frequency or channel after it detects an active signal. 14.-DCS TABLE: No Code No Code No Code No Code No Code

43

D251N

D252N

D371N

D411N

85

D532N

D546N

D131N

D132N

22

23

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

5.2.- INSTALLING THE BELT CLIP: If necessary, install the belt clip at the rear of the battery compartment cover as shown in the figure below.

 Do not use any kind of glue to fix the screw on the belt clip. The solvents Glue may damage the battery casing. 5.3.- MICRO-HEADSET INSTALLATION OF EXTERNAL: Plug the external micro-headset connector into the jack of 'SP. & MIC' of the transceiver as shown in the figure below.

Plug the power cord into the adapter.
 Plug the AC connector of the adapter into the AC outlet socket.
 Plug the DC connector of the adapter into the DC socket on the back of the charger.

4. Place the radio with the battery attached, or the battery alone, in the charger.

5. Make sure the battery is in good contact with the charging terminals. The charging process initiates

Knight the LEED lights about 4 hours later indicating the battery is fully charged. Then remove the radio with the battery attached or the battery alone from the charger.

New batteries are shipped uncharged fully from the factory. Charge a new battery for 5 hours before initial use. The maximum battery capacity and performance is achieved after three full charge/discharge cycles. If you notice the battery power runs low, please recharge the battery.

-Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household

WARNING: -To reduce the risk of injury, charge only the battery specified by the manufacturer. Other batteries may burst, causing bodily injury and property damage. -To avoid risk of personal injury, do not dispose of batteries in a fire!

05

7.2.-BATTERY TIPS: 1. When charging your battery, keep it at a temperature among 5℃ - 40℃. Temperature out of the limit may cause battery leakage or damage. 2. When charging a battery attached to a radio, turn the radio off to ensure a full charge.

3. Do not cut off the power supply or remove the battery when charging a battery.

4. Never charge a battery that is wet. Please dry it with a soft cloth prior to charge.

5. The battery will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal performance, it is time to buy a new battery. 7.3.-PROLONG BATTERY LIFE: 1. Battery performance will be greatly decreased at a temperature below 0℃. A spare battery is necessary in cold weather. The cold battery unable to work in this situation may work under room temperature, so keep it for later use.

Please follow these steps:

when the red LED lights.

7. -BATTERY INFORMATION:

waste.
-Never attempt to disassemble the battery.

8.2.- COMMAND/KEY DEFINITION:

▶ [PTT](PUSH-TO-TALK):

▶ SK-SIDE KEY1/[CALL]:

75MHz/76-108MHz). ▶[*SCAN]KEY

▶FUNCTION KEYPAD:

- Press the [CALL] button, to activate the FM Radio; Press it again to deactivate the FM Radio.
- Press and hold on the [CALL] button, to activate the alarm function; Press and hold it again, to deactivate the alarm function. ▶ SK-SIDE KEY2/[MONI]: Press the [MONI] button, to turn on the flashlight; Press it again to turn off. Press and hold on the [MONI] button, to monitor the signal. ▶[VFO/MR]BUTTON: -Press the [VFO/MR] button, to switch the frequency mode and channel mode. ►[A/B]BUTTON:
-Press the [A/B] button,to switch frequency display. -Press the [BAND]button,to switch band dispaly.
-While FM radio being activated,press the [BAND]button to switch the band of FM radio(band 65-

-Press the [*SCAN] key to activate the Reverse function, it will exchange a separate reception and

The user needs to establish long distance communications through an amateur radio repeater which is activated after receiving a 1750 Hz tone. Press and hold on the [PTT], then press the [BAND] button to transmit a 1750Hz tone.

-Rotate the knob clockwise to turn the radio on, and rotate the knob fully counter-clockwise until a 'click' is heard to turn the radio off. Turn the knob clockwise to increase the volume, or counter-

You can program your transceiver operating in the setup menu to suit your needs or preferences.

Available settings

HIGH/LOW

OFF/1/2/3/4

WIDE/NARR

OFF/1/2/3/4/5s

OFF/1,2,3...10

OFF/1,2,3...10

FULL/MGS

ON/OFF

MENU

▼ PARAMETER

3

VFO/ALL

MENU

PARAMETER

(4)

OFF/0-10

OFF/ON

2.5/5/6.25/10/12.5/25kHz

-Make sure the antenna and battery are installed correctly and the battery charged.

4 VOX 5 WN 6 ABR 0 S

-Press the [#SCAN] as a transmission frequency.
-Press the [#SCAN] key for 2 seconds to start scanning(frequency/channel).
- While FM radio being activated, press the [#SCAN] key to search FM radio station.
-While setting the RX CTCSS/DCS, press the key [#SCAN] to scan the RX CTCSS/DCS.

-Under channel mode, press [#r→] key to switch High/Low transmit power. -Press [#r→] key for 2 seconds to lock/unlock the keypad.

Press and hold down the [PTT] button to transmit; release it to receive.

-[MENU]key:
-To enter the menu of the radio and confirm the setting. -Press [a]or[a]key, the scanning will be opposite. -[EXIT]key:
-To cancel /clear or exit. **▶NUMERIC KEYPAD:** -Used to enter information for programming the radio's lists and the non-standard CTCSS -Under transmission mode, press the numeric key to send the signal code(the code should be set by PC software).

10.- 1750 Hz TONE FOR ACCESS TO REPEATERS:

11.1.-RADIO ON-OFF/VOLUME CONTROL:

11.- BASIC OPERATION:

clockwise to decrease the volume.

12-ADVANCED OPERATION:

12.1.-SET MENU DESCRIPTION:

SQL (Squelch level)

STEP(Frequency step)

TXP(Transmit power)

SAVE(Battery save,1:1/1:2/1:3/1:4)

VOX(Voice operated transmission)

W/N(Wideband/narrowband)

TDR(Dual watch/dual reception)

ABR(Display illumination)

Menu | Function/Description

5

11.2.- SELECTING A FREQUENCY OR CHANNEL: -Press the key[a]or[a]to select the desired frequency/channel you want. The display shows the -Press and hold down the key [A]or[A] for frequency up or down fast. - You can not select a channel if not previously stored.

RP_STE(Tail tone elimination in communication through 36 RPT_RL(Delay the tail tone of repeater) 37 PONMGS(Boot display) 38 ROGER(tone end of transmission) RESET (Restore to default setting) 12.2.-SHORTCUT MENU OPERATION:

MENU NO. PARAMETER 1

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.

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. -The squelch mute the speaker of the transceiver in the absence of reception. With the squelch level correctly set, you will hear sound only while actually receiving signals and significantly reduces battery current consumption. It is recommended that you set Level 5.

12.6.- 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 received signal disappears. 12.12.- PTT-ID(PTT OR RELEASE PTT TO TRANSMIT THE SIGNAL CODE):

12.13.- BCL(BUSY CHANNEL LOCKOUT):

12.14.- SFT-D(DIRECTION OF FREQUENCY SHIFT): The "OFFSET" is the difference or offset between the reception frequency and the frequency of transmission for access to amateur radio repeaters. Set the "OFFSET" according to the "OFFSET" amateur radio repeater through which want to communicate. 12.15.- OFFSET(FREQUENCY SHIFT): When communicating via a repeater, the direction of displacement of frequency should be timed to the displacement of the transmission frequency is higher or lower than the receiving frequency. example:

If we want to make a communication through amateur radio repeater whose frequency input is 145,000 MHz and 145,600 MHz is output, we select the "OFFSET" of the previous section in 0600 and the direction of travel "SHIFT" programmed to [-], so the transceiver will always 145,600 MHz in frequency and when you press [PTT] to transmit transceiver, the frequency will automatically move to

17 114.8 82.5 8 85.4 18 118.8 88.5 19 123.0 127.3 10 91.5 15.-TECHNICAL SPECIFICATION:

Nº

11

12

13

14

15

Tone(Hz)

94.8

97.4

103.5

107.2

Nº

21

Up to 128 channels

50 Ω

4W/1W **FM**

<-60 dB

16KΦF3E/11KΦF3E (W/N)

 $\leq \pm 5 \text{ kHz}/ \leq \pm 2.5 \text{ kHz (W/N)}$

Tone(Hz)

131.8

136.5

Operating temperature -20 ℃ to +60 ℃ Rechargeable Lithium-Ion mAh 7.4V/1800 Supply voltage Consumption in standby Consumption in reception 380mA Consumption in transmission 15.2. - TRANSMITTER:

Spurious emissions 15.3. - RECEIVER: Receiver sensitivity Intermodulation **Audio output** Adjacent channel selectivity

0.2 µ V(at 12 dB SINAD) 60 dB 1000mW 65/60dB - All specifications shown are subject to change without notice.

or proceed to the battery. The battery is not installed correctly, remove the battery and

Make sure the volume setting is too low.

Make sure the undertones "CTCSS" or code "DCS" are the members of your group. 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 Your partner or you, are too far Check the level adjustment function "VOX" is not set too sensitive. Change frequency or channel. Change the undertones "CTCSS" or code "DCS" in your group. 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..

MENU NO. **▼** PARAMETER

12.4.- FUNCTION "VOX" (VOICE OPERATED TRANSMISSION):

-This function is not necessary to push the [PTT] on the transceiver for a transmission. Transmission is activated automatically by detecting the radio voice. When finish speaking, the transmission automatically terminated and the transceiver will automatically receive signal. Be sure to adjust the VOX Gain level to an appropriate sensitivity to allow smooth transmission. 12.5.- SELECT WIDEBAND OR NARROW BAND "W/N": In areas where the RF signals are saturated, you must use the narrow band of transmission to avoid interference in adjacent channels.

-This feature allows you to know who call you.
-"OFF"-Don't transmit the code while push the PTT button.
-"BOT"-Transmit the code while push the PTT button.(the code only could be set by PC software.)
-"EOT"-Transmit the code while release the PTT button. -"BOTH"-Transmit the code while push or release the PTT button. The BCLO feature prevents the radio's transmitter from being activated if a signal strong enough to break through the "noise" squelch is present. On a frequency where stations using different CTCSS or DCS codes may be active, BCLO prevents you from disrupting their communications accidentally (because your radio may be muted by its own tone decoder).

> 22 23 141.3 33 177.3 146.2 179.9 24 34 25 151.4 35 183.5 186.2 36 156.7 159.8 189.9 27 37 28 162.2 38 192.8 29 165.5 39 196.6

65MHz-108MHz(Only commercial FM radio reception)

2.5kHz/5kHz/6.25kHz/10kHz/12.5kHz/25kHz

VHF:136MHz-174MHz (Rx/Tx).UHF:400MHz-480MHz (Rx/Tx)

31

32

Tone(Hz)

171.3

173.8

Tone(Hz)

203.5

206.5

210.7

218.1

225.7

229.1

233.6

241.8

250.3

254.1

41

42

43

44

45

46

47

48

49

Simplex or semi-duplex 03/03/54 min. (Rx / Tx / Standby) 58mm x 110mm x 32mm 130 g (approximate)

The battery is low, replace the battery with a charged battery

Once these checks, if you still have problems with the transceiver, check with your distributor,

16.-TROUBLESHOOTING: Problem The radio does not start. The battery runs down quickly. The receiving indicator LED lights but do not hear the speaker.

When transmitting, the other

or low quality.

12.16.-STE (TAIL TONE ELIMATION): This function is used to activate or deactivate the transmission end of the transceiver. this final tone transmission only be used in communications between transceivers and not in communications through a repeater, which must be deactivated. 13.-CTCSS TABLE: No Tone(Hz) 1 67.0 69.3 3 71.9 4 74.4

77.0

15.1.-GENERAL:

Frequency range

Memory channels

Frequency stability

Frequency step Antenna impedance

Duty cycle Dimensions Weight RF power Type of modulation **Emission class**

members of his group do not receive the communication. In"standby"mode, the transceiver transmits without pressing the

dealer or service center.

Receive communications from other user groups while communicating with your group. Communication with other members of your group is poor

The battery life has come to an end, replace the battery with The battery is fully charged, make sure the battery is made in full. same as those programmed in the transceiver of the other You or your partner are in a bad area of RF signal propagation.

Possible cause / solution