

High power Portable FM Two Way Radio

- Channel Scan / Prior Channel Scan
- Compandor ▪ Scrambler ▪ Whisper



USER'S MANUAL

GENERAL	
Frequency Range	TX:420-450MHz RX:400-480MHz
Channel Capacity	199
Frequency Spacing	5.00/6.25/10.00/12.50/25.00KHz
Working Voltage	7.4V
Operating Temperature Range	-25℃~ +60℃
Dimension (L×W×H)	123.5mm×59mm×40mm
Weight (including Antenna and Battery)	265g
RECEIVER	
Receiving Sensitivity	0.18uV
Audio Output Power	1W
Audio Distortion	≤5%
TRANSMITTER	
Output power	2W/5W/10W
Audio Distortion	≤5%

Foreword

Thank you for choosing the FM two way radio. This product is designed to meet the requirements of a radio that is easy to operate and give excellent performance.

Please read this manual carefully before using the radio. The information herein will help you to find the maximum performance, operating method and maintenance of your radio.

PRODUCT INSPECTION

Before using, you are recommended to inspect the products as follows. First check the shipping carton for any signs of damage. If any damage has occurred, please contact your dealer immediately. Confirm the supplied product against the packing slip to accuracy.

WARNING

MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR
RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED
UNDER FCC RULES AND FEDERAL LAW.

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 including received interference that may
cause undesired operation.

The grantee is not responsible for any changes or modifications not
expressly approved by the party responsible for compliance. Such
modifications could void the user's authority to operate the equipment.
Replacement of any transmitter component (crystal, semiconductor, etc)
not authorized by the FCC equipment authorization for this radio could
violate FCC rules.

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.

FEATURES

- 199 Channels
- CTCSS (50)
- DCS (214)
- VOX / VOX Delay Function
- Time-out Timer
- Roger
- Keypad Lock
- Scan CTCSS / DCS
- Channel Scan / Prior Channel Scan
- Auto Power Off and Battery Saving
- Emergency Call
- Channels Named
- Three Operation Modes
- Menu / Shortcut Key Operation
- FM Radio
- Tail Tone Eliminate
- Compandor
- Scrambler
- Whisper

CONTENT

PRODUCT INSPECTION	01
RADIO OVERVIEWS	02-03
PREPARATION	04-07
Battery Information	04-06
Attachment Installing & Removing	06-07
BASIC OPERATIONS	08-09
Power Switch	08
Volume Adjustment	08
Squelch Adjustment	08
Channel Selection	08
Transmitter	09
Receiver	09
FUNCTIONS OPERATIONS	10-24
The Shortcut Key	10-11
Functions of MENU	12-13
Functions of MENU Operations	14-22

FM RADIO OPERATIONS	23-24
FREQUENCY (MHz) LIST TABLE	25-26
CTCSS FREQUENCY CHART	25
DCS CODES TABLE	26

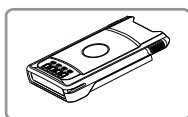
PRODUCT INSPECTION

Please unpack the package box carefully and check that all items shipped are received; report any missing or damaged items to your dealer.

Items	QTY. (pcs)
Antenna	1
Li-poly Battery	1
Desk-top Charger	1
AC Adaptor	1
Belt Clip	1
Screws of Belt Clip	2
Hand Strap	1
User's Manual	1
Main Unit	1
Headset	1
Programming Cable	



Antenna



Li-poly Battery



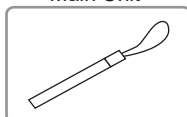
Main Unit



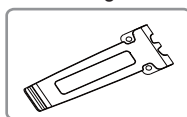
Charger



AC Adaptor



Hand Strap



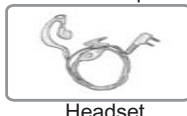
Belt Clip



Screws



User's Manual

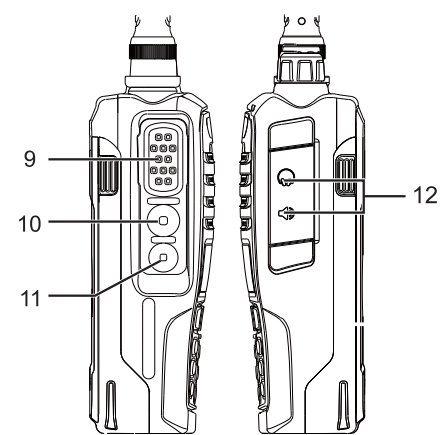
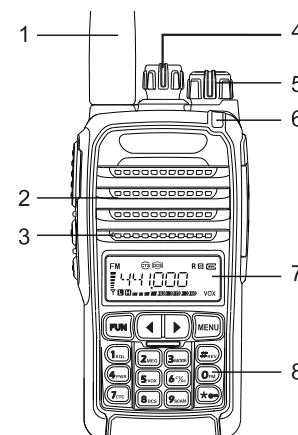


Headset



Programming Cable

RADIO OVERVIEWS



(1) Antenna	(2) Speaker	(3) MIC	(4) Channel Selector Knob
(5) Power & Volume Knob	(6) LED indicator	(7) LCD Display	(8) Keyboard
(9) PTT Key	(10) Lamp Key	(11) Monitor Key	(12) MIC/SPK Jack

LCD Display



	Keyboard Lockup Indicator
	CTCSS Tones Indicator
	DCS Tones Indicator
	Frequency Shift Positive / Opposite Direction Indicator
	Indicator When Frequency Reverse
	Battery Saver Indicator
	Battery Capacity Indicator
	Scan Add Indicator
	Narrow Bandwidth Indicator
	VOX Function Enabled
	Signal Strength Indicator (The more bars, the stronger signals.)
	Low Output Power Indicator
	High Output Power Indicator
	FM Radio Status Indicator

PREPARATION

Battery Information

Applicable Battery Packs

To reduce the risk of injury, charge only the Ex-battery specified by the manufacturer.

Unauthorized batteries could result in failure of Ex-protection and thus cause bodily injury and property damages.

The average life of Ex-battery pack is 16 hours. Average times are calculated using 5% transmit, 5% receive and 90% standby.

Caution:

- To avoid risk of personal injury, do not dispose of batteries in fire!
- Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.
- Never attempt to disassemble the battery.

Battery Tips

- When charging your battery, keep it at a temperature among 5℃ - 40℃. Temperature out of the limit may cause battery leakage or damage.
- When charging a battery attached to a radio, turn the radio off to ensure a full charge.
- Do not return fully charged batteries to a charger for an "extra boost". This action will significantly reduce battery life.

- Never charge a battery that is wet. Please dry it with a soft cloth prior to charge.
- The battery will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new one.
- Charge only the Ex-battery outside the Ex-area with the designated charger. Unauthorized chargers could damage the battery.

Battery Storage

- Fully charge a battery before you store it for a long time, to avoid battery damage due to self-discharge.
- Recharge a battery after several months' storage (Li-ion / Li-Pol battery: 6 months), to avoid reducing battery capacity due to over-discharge.
- When storing your battery, keep it in a cool and dry place under room temperature.

Charging the Battery

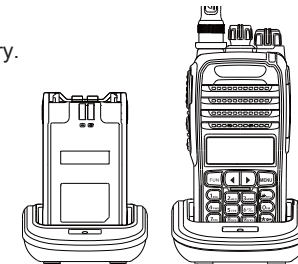
Please use the supplied charger to charge up the battery pack. And refer to the operation way as below:

- 1)Put the adaptor's DC plug into charger's DC jack which located at rear of charger.
- 2)Put the adaptor into AC power's socket. The charger's LED will blink orange lights 1 second at the same time then return to green light continuously. It means the power has been connected.

- 3)Put the battery pack or radio with battery pack in charger cup. The LED will change to red light continuously . It means the battery pack is been charging.
- 4)When the red light goes out, and the green light illuminate, it means the battery pack is charged fully.
- 5)Pull out the adapter from AC power's socket and take out battery.

Note:

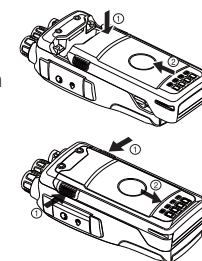
- If the battery voltage less then 6V, the LED blink red light, then change to illuminate red light after period of time.
- If the LED blink red light, and don't change to illuminate red light, it means that battery pack is broken. Please replace this battery pack



Attachment Installing & Removing

1.Attaching / Removing the Battery

- 1)Put the battery pack towards radios aluminum alloy chassis. Then push the battery pack upwards, until it "click" in to lock the battery.
- 2)Press the battery locker on both sides of battery, then push the battery downward until take out.



2.Attaching / Removing the Antenna

- 1)With the radio off, turn the antenna clockwise to attach it.
- 2)With the radio off, turn the antenna counter-clockwise to remove it.(See Figure 1)

3.Attaching the Belt Clip

Alignment screw holes on back of radio, using a screwdriver to lock the belt clip with special screws from manufacturer.(See Figure 2)

4.Attaching the Accessory

Open (not remove) the MIC/SPK Jack, and plug the audio accessory firmly into the MIC/SPK Jack. (See Figure 3 and 4)



Figure 1

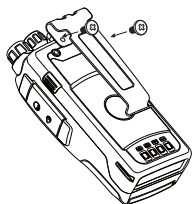


Figure 2

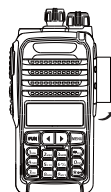


Figure 3

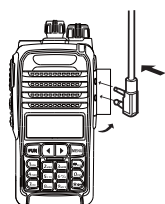


Figure 4

BASIC OPERATIONS

Power Switch

Rotate Power knob clockwise to turn the radio on. You will hear "Di" sound and find the screen is on. If you want to off radio, just rotate it counter-clockwise until hear a beep.

Volume Adjustment

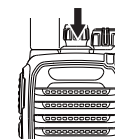
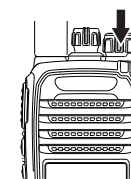
Press the [Monitor] key to hear activities on the current channel, and then rotate the radio power/volume knob clockwise to adjust the volume you want.

Squelch Adjustment

The purpose of the squelch is to mute the speaker when no signal at present. With the squelch level correctly set, you will hear sound only while actually receiving signal. The higher squelch level the stronger received. The appropriate squelch level depends on the ambient RF noise conditions.

Channel Selection

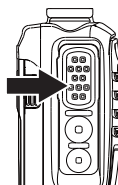
Rotate the channel selector or [◀]/[▶] key to select a desired channel. Or you can press numeric keys to get a channel you want when the radio



under frequency mode.

Transmitter

To transmit, press and hold down the [PTT] key, and speak into the microphone at your normal voice level. Hold the radio about 2.5-5 centimeters away from your mouth. The LED indicator is red light and bar graph-meter appears.



Receiver

Release the [PTT] key to receive.

FUNCTIONS OPERATIONS

The Shortcut Key

FUN + 1 _{SOL}	Squelch level: 0-9
FUN + 2 _{MEG}	Emergency channel
FUN + 3 _{MODE}	Operation modes: channel (CH) / frequency (FR) / memory (MR)
FUN + 4 _{POWER}	Output power: Hi / Lo
FUN + 5 _{VOX}	VOX sensitivity: OFF, 1-9
FUN + 6 _{CTCSS}	Receiving / Transmitting CTCSS and DCS tone setup; press FUN key to switch CTCSS / DCS tone.
FUN + 7 _{CTC}	Receiving CTCSS and DCS tone setup; press FUN key to switch CTCSS / DCS tone.
FUN + 8 _{DCS}	Transmitting CTCSS and DCS tone setup; press FUN key to switch CTCSS / DCS tone.
FUN + 9 _{SCAN}	Scan
FUN + 0 _{FM}	FM radio
FUN + * _{LOCK}	Keypad lock
FUN + # _{REV}	Reverse receiving & transmitting frequencies
FUN + MENU	Channel storage under frequency mode
Hold and Press FUN	Keypad Unlock

Note:

1.Reverse receiving & transmitting frequencies

When use this function, the receiving and transmitting frequencies will be change. The receiving frequency switches to transmitting frequency. It means transmitting frequency become to receiving's. If a CTCSS / DCS tone is set, it will interchange too. The screen will display icon "R".

2.Channel storage

Under frequency mode, press [FUNK] key then press [MENU] key, the screen will display "SAVE" and the top right corner number is flash, you can press [◀] / [▶] key or numerical keys to edit the channel number (001-199). If a channel number you desire was occupied, you will see a triangle icon under the number at right. You could switch to memory mode to check the channel after you saved a channel.

Channel deletion

When you want to delete a certain channel, such as the 21st channel, please switch back to memory mode, select the 21st channel, and then turn off the power. While pressing and holding down the [DEL] while turning on the phone, the screen will display "DEL 21". Press the [waa] key to confirm, and the screen will display "DELETE" to indicate that the channel has been successfully deleted, and the walkie talkie will return to memory mode.

3.Under the frequency mode, we can setup difference tones for transmitting and receiving. For example, when the transmitting and receiving are difference as below:

TX is 400.0000, we setup the tone is CTCSS RX is 420.000, we setup the tone is DCS.

Also you can make the TX's tone is DCS and RX's tone to CTCSS.

Functions of MENU

Press [MENU] key enter menu page, and press [◀] / [▶] key to check the functions you want to setup. Press [MENU] key again to confirm your setting after operation or press [FUNK] key return to standby status.

NO.	Functions	Functions Description	Selection	Default	Operation Modes		
					FR	CH	MR
1	SCAN	Scan Modes	CO/TO	CO	●	●	●
2	TOT	Time-out Timer	OFF, 30, 60...240S	60S	●	●	●
3	VOX	Voice-operated Transmission	OFF, 1 - 9	OFF	●	●	●
4	CAL	Calling Music	OFF, 1, 2, 3	OFF	●	●	●
5	ROG	Roger	OFF, 1, 2, 3	OFF	●	●	●
6	BEP	Beep Sound	ON / OFF	ON	●	●	●
7	KY	Keypad Locker Modes	MANU / AUTO	MANU	●	●	●
8	MEM	Emergency Channel	001 - 199	CH-001	●	●	●
9	LED	Background Light	AUT / ON / OFF	AUT	●	●	●
10	POW	Output Power	H / L	H	●	●	●
11	APO	Auto Power Off	OFF, 10M, 30M, 1H, 2H	OFF	●	●	●
12	CTSCAN	CTCSS Scan		OFF	●	●	●
13	DCSCAN	DCS Scan		OFF	●	●	●
14	SQL	Squelch	00 - 09	5	●	●	●
15	SAV	Battery Save	ON / OFF	ON	●	●	●
16	MODE	Radio Display Modes	FR / MR / CH	CH	●	●	●

NO.	Functions	Functions Description	Selection	Default	Operation Modes		
					FR	CH	MR
17	C	RX&TX Tone	CTCSS / DCS	OFF	●	●	●
18	R	RX Tone	CTCSS / DCS	OFF	●	●	●
19	T	TX Tone	CTCSS / DCS	OFF	●	●	●
20	OFFSET	Difference Frequency	0.0000 - 70.000	0	●	x	x
21	SFT	Direction of Difference Frequency	OFF / + / -	OFF	●	x	x
22	STEP	Frequency Steps	5.00K, 6.25K, 10.00K, 12.50K, 25.00K	25.00K	●	x	x
23	FMR	FM Radio Monitor	OFF / ON	OFF	●	●	●
24	SCN	Scan Skip	ADD / DEL	ADD	x	●	●
25	NAME?	Channel Name Editor	*****		x	●	x
26	NAM	Channel Named Display	ON / OFF	OFF	x	●	x
27	STE	Tail Tone Eliminate	ON / OFF	OFF	●	●	●
28	VOIDCE	Adjustment degree of voice transmission	1/2/3/4/5	3	●	●	●
29	N/W	Narrow / Wide Bandwidth	NAR /WID	WID	●	●	●

Functions of MENU Operations

SCAN: Scan Modes

There are two modes for scan functions, they are "CO" and "TO".

TO: It is time scanning. When you scan a signal without any operation, it will pass the signal 5 seconds later and continue scanning.

CO: It is carrier scanning. It will stop scan when received a signal until the signal disappear 3 seconds then re-start scanning.

TOT: Time-out Timer

You could control the transmitting time you want. Once a talking over the time you setup, the transmitting will stop and alert you. And you must be press [PTT] key again to continue transmitting. It could avoid someone occupied a channel for a long time.

VOX: Voice-operated Transmission

It is useful when you inconvenient to press [PTT] key by hand. Then you could use this function to help your working without to press [PTT] key. Only keep radio about 2.5-5 centimeters away from your mouth. It has 1 -9 levels, and high level high sensitivity.

CAL: Calling Music

Before transmitting, you could press []+[PTT] key to send a short melody to other users to notice them that someone is calling.

ROG: Roger

When you finished talking and release the [PTT] key. Other users will received a short melody from you which remind them transmitting was finished,

KY: Keypad Locker Modes

This function could help you avoid some mistake operation. You could choose the keypad locker by manual or automatic when you finished operation.

MANU: Must be press keys to lock the keypad by you after operation.

AUTO: It will lock the keypad automatic after 30 seconds without any operation.

Note: When the keyboard is locked, the PTT/MONI/LAMP key can still be used effectively.

MEM: Emergency Channel

It is a useful function when found hazardous situation. Press the shortcut key could contact with special channel at first time and ask some helps. You could choose one channel from 001 to 199 for emergency channel.

LED: Background Light

It could help you operate the radio easy in dark.

AUT: The radio will bright once you press any key and will flameout without any operation 10 seconds later.

ON: Will bright always once the radio power on.(Press LAMP key to off)

OFF: Will turn off the light always.(Press LAMP key to open)

POW: Output Power

There are two output powers for your radio.

Low power could save battery, but the communication distance will be shorter.

High power could get long distance but not save battery.

APO: Auto Power Off

If you don't need the radio working all time and forgot to turn off power often. You can setup this function to help you turn off power. You could choose the time when you want to turn off automatic.

There are 10m, 30m, 1h and 2h for your selection.(m = minute, h = hour)

CTSCAN: CTCSS Scan

If you use same frequency but difference CTCSS, then you could enter this function to scan the CTCSS directly. It could help you get the correct CTCSS.

DCSCAN: DCS Scan

If you use same frequency but difference DCS, then you could enter this function to scan the CTCSS directly. It could help you get the correct DCS.

SQL: Squelch

People hear background noise often when use radio. In order to solve it, the circuit has design mute function which has difference noise levels. You could adjust it according to actual condition.

SAV: Battery Save

After this function action, the radio will be asleep without any operation 10 seconds later. The LCD display will not show when the radio enter sleeping status. And the radio will exit sleeping status when a signal coming or press the keys to operate the radio. It could avoid battery loss and make radio longer working.

MODE: Radio Display Modes

There are three display modes for difference user's operation habit.



FR: frequency mode, you could press the [] [] key to select the frequency or directly input

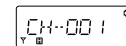
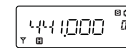
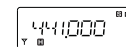
the desired frequency and save it to channels group under this mode.

The default step value for this machine is 25KHz. If you need to change it, please refer to "STEP" on page 21.

MR: memory mode, it could show you a channel frequency and channel number together but can not enter the frequency under this mode but could delete channels from this mode which you don't need.



CH: channel mode, just show you channel number only, and you can edit channel name under this mode.

In the (MR)/(CH) mode, press the [] [] key to select the channel. When the gap between the channel you want to use and the current channel is large, you can directly enter the channel number you want to use.





C: RX&TX Tone

If you don't want to receive or transmit a signal to other radios out your working group, you could setup the tones here. There are 50 CTCSS frequencies and 214 DCS codes for your selection. After setup, the Receiving and Transmitting frequencies will be same tone.

Note: Press [] key to switch CTCSS / DCS tone. In DCS tone, press the [] key to switch N/I



R: RX Tone

If you don't want to receive a signal from other radios out your working group, you could setup the tone here. There are 50 CTCSS frequencies and 214 DCS codes for your selection.

Note: Press [] key to switch CTCSS / DCS tone. In DCS tone, press the [] key to switch N/I

T: TX Tone

If you don't want to transmit a signal to other radios out your working group, you could setup the tone here. There are 50 CTCSS frequencies and 214 DCS codes for your selection.

Note: Press [] key to switch CTCSS / DCS tone. In DCS tone, press the [] key to switch N/I

OFFSET: Difference Frequency

When the receiving and transmitting frequencies are difference, you could setup it by this function.

The max. frequency difference is 70MHz(UHF) you can setup. For example, when your RX frequency is 400.0000MHz and TX also is 400.0000MHz. But you want to receive 470.0000MHz frequency, you need to setup the directly is "+", then setup the frequency as 70.0000MHz, then the frequency will be RX frequency is 400.0000MHz and TX is 470.0000MHz.

SFT: Direction of Difference Frequency

It will use with OFFSET function together. To setup the difference frequency direction then can transmit correct frequency to desire users.

OFF: When you choose this item, the OFFSET function will not using whether you setup the difference frequency or not.

++: When choose this one, the transmitting will add the difference frequency to transmitting frequency. If the transmit frequency is max. one already, it can not transmitting, the radio will alert you when you press [PTT] key.

--: When choose this one, the transmitting will reduce the difference frequency to transmitting frequency. If the transmit frequency is lowest one, it can not transmitting, the radio will alert you when you press [PTT] key.

STEP: Frequency Steps

There are 5.00KHz, 6.25KHz, 10.00KHz, 12.50KHz and 25.00KHz five frequency steps for channels spacing.

FMR: FM Radio Monitor

It is useful function when you in FM radio mode. When this function is action, you will receive all signals from your team when you listening.

OFF: The radio mode is not compatible with the walkie talkie mode. When this option is selected, the walkie talkie cannot receive/transmit signals in radio mode.

ON: Radio mode and walkie talkie mode are compatible for use. When this option is selected, the walkie talkie can receive/transmit signals in radio mode.



SCN: Scan Skip

When a channel you don't want to scan it, then you could delete it from your scan group. The scanning will skip the channel which you delete from your group.

ADD: Add current channel to scan group

DEL: Remove current channel from scan group

NAME? : Channel Name Editor

The radio could edit six characters at most. For a channel named, you could press []/[] key to select the letter you want and press [MONI] key to move the cursor when you edit a channel.

NAM: Channel Named Display

After finished a channel named, it must be set "ON" here then can display it when in standby status.

Note: It is effective after Channel Name Editor only.

STE: Tail Tone Eliminate

The function avoid the tail tone send out after finished communication. The carrier signal disappear when the communication finished. The receiver will received the noise cause it cannot get the signal immediately from transmitter. So user can setup this function to open the squelch before the carrier disappear.

VOIDCE: Adjustment degree of voice transmission

This feature may adjust the size of the voice sent, with 1-5 levels. The higher the level, the louder the voice sent. The factory default level of the machine is 3.

N/W: Narrow / Wide Bandwidth

Bandwidth refers to the channel transmission capacity at a fixed time. Wide Bandwidth can simultaneously transmit more signals at a channel, so it's easier to receive some weak signals, but meanwhile it's easier to be affected by noise signals. Narrow Bandwidth makes the voice clearer and occupies less channel resource, but it's easier to miss some weak signals which may be useful to you.

FM RADIO OPERATIONS

When you feel free, you could press [**FUN**] key and [**Q.M**] key enter FM radio mode, the radio will show "FM" 2 seconds then enter FM radio. You could check this mode follow below operations. If want to exit FM radio, press [**FUN**] + [**Q.M**] key again then switch to transceiver mode.

Channel Listening

You could press numeric keys or [**◀**]/[**▶**] keys to get a desire channel. The FM radio frequency range from 87.50 – 108.00MHz you could listen.

Channel Memory

When you get an interesting channel and want to save it. You could press [**MEMO**] key, the screen will display you "SAVE", press any numeric key from keypad (1-9 it means you just can save 9 channels at most).

Channel Take Out from Memory

Press [**FUN**] key and numeric keys to take out storage channels you stored. If you have stored a channel in [1] key then you can operate it as below. Press [**FUN**] key, the screen display "LOAD" then press numeric key [1] the display will change to "LOAD 1" and turn to that channels 1 second later.

Channel Scan

If you don't know which program you want to listen. You could use scan function to help you get an interesting program. Press [**#**] key starts scanning. Also you could press [**◀**]/[**▶**] key choose scan direction. When received a signal, the scan will stop that frequency to listen. And you could press [**#**] key to continues scanning.

Busy channel disabling function

This functions must be connected to a PC through a programming cable and modified using programming software. The default factory setting for this machine is off.

This function can prevent interference with the channel being communicated. If you press the [PTT] key and the walkie talkie emits a "beep" sound, it indicates that the current channel is in communication, and your walkie talkie will return to receive mode. To stop the warning tone, release the [PTT] button. There are three options for this machine:

Off: Turn off this feature.

Carrier: When the intercom is receiving a signal, it is prohibited for the unit to transmit the signal simultaneously.

Signaling: When the walkie talkie is receiving signals from CTCSS/DCS with different settings, it is not prohibited for the machine to transmit signals simultaneously; When the intercom is receiving the same CTCSS/DCS signal with the same settings, it is prohibited for the unit to transmit signals simultaneously;

FREQUENCY (MHz) LIST TABLE

CTCSS TONE FREQUENCY CHART

CH.	FRE.(Hz)	CH.	FRE.(Hz)	CH.	FRE.(Hz)
01	67.0	18	118.8	35	183.5
02	69.3	19	123.0	36	186.2
03	71.9	20	127.3	37	189.9
04	74.4	21	131.8	38	192.8
05	77.0	22	136.5	39	196.6
06	79.7	23	141.3	40	199.6
07	82.5	24	146.2	41	203.5
08	85.4	25	151.4	42	206.5
09	88.5	26	156.7	43	210.7
10	91.5	27	159.8	44	218.1
11	94.8	28	162.2	45	225.7
12	97.4	29	165.5	46	229.1
13	100.0	30	167.9	47	233.6
14	103.5	31	171.3	48	241.8
15	107.2	32	173.8	49	250.3
16	110.9	33	177.3	50	254.1
17	114.8	34	179.9	OFF	---

DCS CODE TABLE

(The Bracketed Code is the Normal / Invers Code)

017 (1)	051 (11)	116 (21)	156 (31)	243 (41)	266 (51)	346 (61)	431 (71)	466 (81)	612 (91)	712 (101)
023 (2)	053 (12)	122 (22)	162 (32)	244 (42)	271 (52)	351 (62)	432 (72)	503 (82)	624 (92)	723 (102)
025 (3)	054 (13)	125 (23)	165 (33)	245 (43)	274 (53)	356 (63)	445 (73)	506 (83)	627 (93)	731 (103)
026 (4)	065 (14)	131 (24)	172 (34)	246 (44)	306 (54)	364 (64)	446 (74)	516 (84)	631 (94)	732 (104)
031 (5)	071 (15)	132 (25)	174 (35)	251 (45)	311 (55)	365 (65)	452 (75)	523 (85)	632 (95)	734 (105)
032 (6)	072 (16)	134 (26)	205 (36)	252 (46)	315 (56)	371 (66)	454 (76)	526 (86)	645 (96)	743 (106)
036 (7)	073 (17)	143 (27)	212 (37)	255 (47)	325 (57)	411 (67)	455 (77)	532 (87)	654 (97)	754 (107)
043 (8)	074 (18)	145 (28)	223 (38)	261 (48)	331 (58)	412 (68)	462 (78)	546 (88)	662 (98)	OFF
047 (9)	114 (19)	152 (29)	225 (39)	263 (49)	332 (59)	413 (69)	464 (79)	565 (89)	664 (99)	OFF
050 (10)	115 (20)	155 (30)	226 (40)	265 (50)	343 (60)	423 (70)	465 (80)	606 (90)	703 (100)	OFF