



PROFESSIONAL DUAL BAND RADIO

# User's Manual



**F-20V/U**

PROFESSIONAL DUAL BAND RADIO



## **F-20V/U**

4/5 W

199CH

50 CTCSS

107 DCS

1500mA Li-ion

PC Programmable

# CONTENTS

<b>1. SAFETY INFO</b> .....	1
<b>2. UNPACKING AND CHECKING EQUIPMENT</b>	
SUPPLIED ACCESSORIES.....	2
<b>3. BATTERIES</b> .....	3-5
<b>4. PREPARATION</b>	
INSTALLING/REMOVING THE BATTERY PACK.....	6
INSTALLING THE ANTENNA.....	6
INSTALLING THE BELT CLIP.....	6
<b>5. YOUR FIRST QSO</b> .....	7
<b>6. GETTING ACQUAINTED</b>	
KEYS AND CONTROLS.....	8-9
DISPLAY.....	10
<b>7. BASIC OPERATIONS</b>	
SWITCHING THE POWER ON/OFF.....	11
ADJUSTING THE VOLUME.....	11
ADJUSTING THE SQUELCH.....	11
A/B SWITCHING / TRANSMITTING .....	12
SELECTING AN OUTPUT POWER.....	13
SELECTING A FREQUENCY.....	13
VFO MODE.....	13
MHZ MODE/DIRECT FREQUENCY ENTRY.....	14

# CONTENTS

<b>8. MENU SETUP</b>	
MENU DESCRIPTION.....	15
MENU ACCESS.....	15-16
MENU FUNCTION LIST.....	17
<b>9. OPERATING THROUGH REPEATERS</b>	
OFFSET PROGRAMMING FLOW.....	18
PROGRAMMING AN OFFSET.....	19
SELECTING AN OFFSET DIRECTION.....	19
SELECTING AN OFFSET FREQUENCY.....	20
ACTIVATING THE CTCSS/DCS FUNCTION.....	20-21
REVERSE FUNCTION.....	21
<b>10. MEMORY CHANNELS</b>	
STORING DATA IN MEMORY.....	22
THE OPERATING OF MEMORY CHANNEL.....	22-23
STORING OPERATION.....	23
RECALLING A MEMORY CHANNELS.....	23
USING A NUMERIC KEYPAD TO RECALL A MEMORY CHANNEL.....	24
FM RADIO FUNCTION OPERATION .....	24-25
CLEARING MEMORY CHANNELS.....	26
CHANNEL DISPLAY.....	26-27
RESUMING THE OPERATING OF CHANNEL DISPLAY MODE.....	27

# CONTENTS

## 11. SCAN

SCAN RESUME METHODS.....	28
ACTIVATE SCANNING.....	28

## 12. SELECTIVE CALL

CTCSS AND DCS.....	29
CTCSS.....	29
USING CTCSS.....	29-30
SELECTING A RX/TX CTCSS FREQUENCY.....	30
SELECTING RX CTCSS FREQUENCY.....	31
SELECTING TX CTCSS FREQUENCY.....	31
DCS.....	32
USING DCS.....	33
SELECTING A RX/TX DCS FREQUENCY.....	33-34
SELECTING RX DCS CODE.....	35
SELECTING TX DCS CODE.....	35-36
LAMP.....	36
KEY LOCK FUNCTION .....	36
MONITOR.....	37
ACTIVATE THE MONITOR FUNCTION.....	37
ROGER BEEP FUNCTION.....	37

## 13. OPERATOR CONVENIENCES

BATTERY GAUGE.....	38
CHANNEL SETUP.....	38

# CONTENTS

TIME-OUT TIMER.....	39
VOX (VOICE-OPERATED TRANSMISSION).....	39-41
BEEP FUNCTION.....	41-42
LED.....	42
SELECTING CALL TONE.....	42-43
BATTERY SAVER.....	43-44
KEYPAD LOCK (MANU/AUTO).....	44
BUSY CHANNEL LOCK-OUT (BCL).....	44
POWER ON MESSAGE.....	45
NAMING A MEMORY CHANNEL.....	45-46
PROGRAMMING PRIORITY SCAN (OPTIONAL).....	47
USING PRIORITY SCAN (OPTIONAL).....	48
A/B DOUBLE-STANDBY.....	49

## 14. QUICK REFERENCE TO KEYS AND MAIN FUNCTIONS.....

## 15. STANDARDS.....

## 16. SPECIFICATIONS.....

## 17. ACCESSORIES.....

# 1 SAFETY INFO

## NOTE TO THE USER

- Government law prohibits the operation of unlicensed radio transmitters within the territories under government control.
- Illegal operation is punishable by fine or imprisonment or both.
- Refer service to qualified technicians only.

## SAFETY:

- It is important that the operator is aware of and understands hazards common to the operation of any transceiver.
- We do not guarantee the safety and operation of the transceiver when using accessories and /or attachments not sold by us.

## WARNING:

EXPLOSIVE ATMOSPHERES(GASES, DUST, FUMES, etc. )

- Turn off your transceiver while taking on fuel, or while parked in gasoline service stations.

## PRECAUTIONS

Observe the following precautions to prevent fire, personal injury and transceiver damage.

- Do not modify or attempt to adjust this transceiver for any reason.
- Do not expose the transceiver to long periods of direct sunlight, nor place it close to heating appliances.
- Do not place the transceiver in excessively dusty, humid, and/or wet areas, nor on unstable surfaces.
- If an abnormal odor or smoke is detected coming from the transceiver, switch OFF the power immediately and remove the optional battery pack from the transceiver. Contact your dealer.

# 2 UNPACKING AND CHECKING EQUIPMENT

Carefully unpack the transceiver. We recommend that you identify the items listed in the following table before discarding the packing material. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

## SUPPLIED ACCESSORIES

Item	Quantity
antenna	1
Metal antenna	1
Earphone	1
charger(with adaptor)	1
Li-ion battery pack	1
Belt clip	1
User's manual	1
Hand strap	1



# 3 BATTERIES

## CHARGING WARNINGS:

Initially charging the battery pack after purchase or extended storage (longer than 2 months) will not bring the battery pack to its normal operating capacity. After repeating the charge/discharge cycle two or three times, the operating capacity will increase to normal. Please replace or charge the battery pack while low power alarm.

## AVAILABLE BATTERIES

Please use our specified battery to charge transceiver, if using other brand batteries, it may explode and damage nearby subjects or people.

### Notice:

1. Do not short the battery terminals or dispose of the battery by fire. Never attempt to remove the casing from the battery pack.
2. The ambient temperature should be between 5 and 40°C while charging is in progress. Charging outside this range may not fully charge the battery.
3. Always switch OFF the transceiver equipped with a battery pack before charging. Using the transceiver while charging its battery pack will interfere with correct charging.
4. Do not plug/unplug the AC adaptor and battery during charging, to avoid interfering the charging program.
5. The battery pack life is over when its operating time decreases even though it is fully and correctly charged. Please replace the battery pack.
6. Do not recharge the battery pack if it is already fully charged. Doing so may cause the life of the battery pack to be shortened or the battery pack may be damaged.

# 3 BATTERIES

7. Do not charge transceiver while the battery or any units were wet.

Ought to dry it with cloth before charging, avoid damaging the unit.

Note: All batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touches exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

## CHARGE OPERATION

If a battery is in place while the transceiver lights red and there are three beeps sounding each 30 seconds, it means low in power, please start to charge the transceiver.

Please use our specified charger for battery charging, the charger LED display charger cause.

LED appears	Status	Battery Type
Red	Charging	Li-ion battery
Green	Fully charged	Li-ion battery

## TO CHARGE BATTERY PACK, PERFORM THE FOLLOWING STEPS:

1. Plug the AC adaptor cable into the adaptor jack located on the rear of the charger.
2. Slide the battery pack or transceiver with a battery pack into the charger.
3. Plug the AC adaptor into AC outlet.

## 3 BATTERIES

4. Make sure the battery pack is in contact with the charging terminals, the charger LED lights red and charging begins.
5. When the supplied charger LED lights green, charging is completed. Remove it or the transceiver equipped with it from the charger.

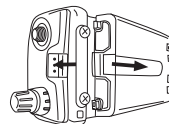
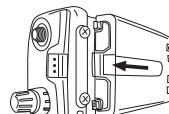
### Note:

1. The charger LED flashes before plugging in the battery pack, it is normal.
2. When replace a battery pack to the charger, please wait until LED is steady.
3. The charger lights red while charging the battery, while if the LED flashing means the battery is damaged or the surrounding temperature is too high or low.

## 4 PREPARATION

### INSTALLING/REMOVING THE BATTERY PACK

The battery pack is not charged at the factory; Charge it before use.



1. Match the two bulges of the battery pack with the corresponding guides on the back of the transceiver, then press the battery pack and transceiver firmly together until the release latch on the top of the transceiver locks.

2. While pressing the release latch, pull the battery pack away from the transceiver.

### INSTALLING THE ANTENNA

Screw the antenna onto the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

**Note:** The antenna is neither a handle, a key ring retainer, nor a speaker/microphone attachment point. Using the antenna in these ways may damage the antenna and degrade your transceiver's performance.



### INSTALLING THE BELT CLIP

If necessary, attach the belt clip using the two supplied screws.

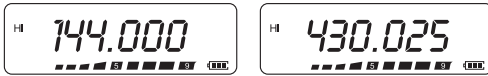
**Caution:** Do not use glue which is designed to prevent screw loosening when installing the belt clip, as it may cause damage to the transceiver. Acrylic ester, which is contained in these glues, may crack the transceiver's back panel.

# 5 YOUR FIRST QSO

## FIRST QSO

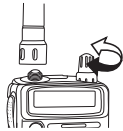
Are you ready to give your transceiver a quick try? Reading this chapter should get your voice on the air right away. The instructions below are intended only for a quick guide. If you encounter problems or there is something you would like to know more, read the detailed explanations given later in this manual.

1. Turn on the transceiver, example shown below.



- A high pitch double beep sounds and a Programmable Greeting Message appears momentarily. The various indicators and the current operating frequency appear on the LCD.
- The transceiver stores the current parameters when it is turned OFF and automatically recalls these parameters the next time you turn the transceiver ON.

2. Turn the **PWR/VOL** control clockwise.

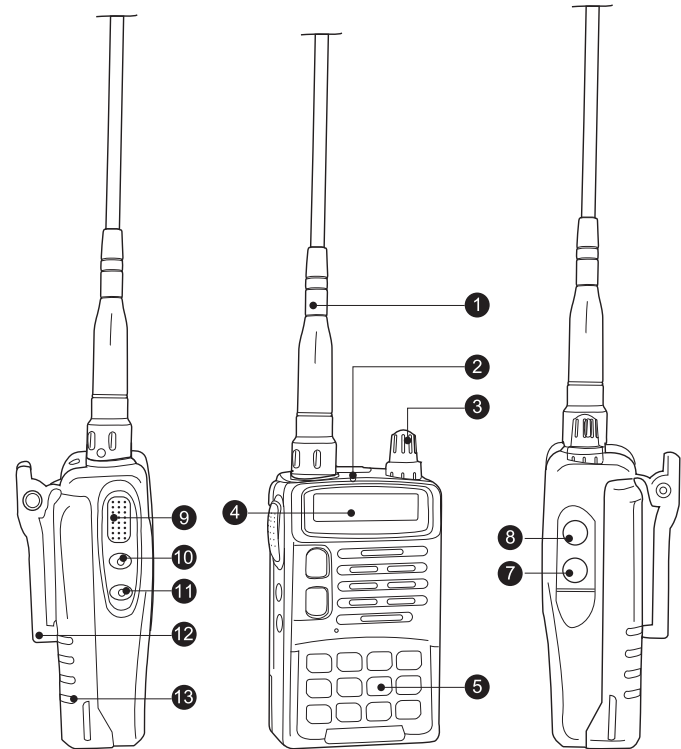


3. Press **▲/▼** keys to select a reception frequency.

- You may further turn the **PWR/VOL** control to adjust the volume level of the signal.
4. To transmit, hold the transceiver approximately 5 cm (2 inches) from your mouth.
5. Press and hold **【PTT】**, then speak in your normal tone of voice.
6. Release **【PTT】** to receive.
7. Repeat steps 4, 5 and 6 to continue communication.

# 6 GETTING ACQUAINTED

## KEYS AND CONTROLS

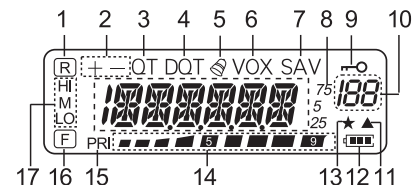


## 6 GETTING ACQUAINTED

1. Antenna
2. LED indicator  
Lights red while transmitting. Lights green while receiving a signal. Flashes red when the battery voltage is low while transmitting.
3. Power & Volume control knob.  
Turn clockwise to switch ON the transceiver. To switch OFF the transceiver, turn counterclockwise until a click sounds. Rotate to adjust the volume level.
4. LCD display  
For displaying operation status and other function.
5. Keypad  
For entering specified frequencies and other functional data.
6. Speaker/Microphone  
Acts as a speaker and microphone.
7. MIC jack  
For connecting the hand free microphone set.
8. SP jack  
For connecting the hand free microphone set.
9. PTT  
Press and then speak into the microphone to call a station. Release to receive.
10. CALL key.
11. MONI (monitor) key  
Press and hold **MONI** key ,squelch function is turned off. You will hear background noise. Release **MONI** key,squelch function is turned on again.
12. Belt Clip
13. Battery Pack

## 6 GETTING ACQUAINTED

### DISPLAY



1. Appears when the Reverse function is activated.
2. Appears when the repeater shift function is activated.
3. Appears when the CTCSS function is activated.
4. Appears when the DCS function is activated.
5. Appears when the call alarm tone is activated.
6. Appears when the VOX function is ON.
7. Appears when set the unit in saving mode.
8. Displays the frequencies, Menu settings and other information.
9. Appears when the Lock function is ON.
10. Displays the Menu number, memory channel number, and status
11. Appears when the displayed memory channel has data.
12. Displays the battery gauge.
13. Appears when the A/B double-standby function is ON.
14. S-meter (RX) and TX Power Output indicator when the transceiver transmits.
15. Appears when a Priority Scan function is activated.
16. Appears when setting shortcut function.
17. **HI** appears when high power transmission is selected, **M** appears when medium power is selected, and **LO** appears when low power is selected.

# 7 BASIC OPERATION

## SWITCHING THE POWER ON/OFF

Switch ON the transceiver by turning the POWER & VOLUME CONTROL knob clockwise.

- A high pitch double beep sounds, full display appears and a POWER ON message appears briefly followed by the frequency and other indicators.
- To switch the transceiver OFF by turning the POWER & VOLUME CONTROL knob anticlockwise.

The transceiver stores the current frequency and parameters when it is turned OFF and recalls their parameters the next time you turn the transceiver ON.

## ADJUSTING THE VOLUME

- Turn the POWER & VOLUME CONTROL knob clockwise to increase the audio output level and anticlockwise to decrease the output level.
- If you are not receiving a signal, press and hold 【MONI】 key to un-mute the speaker, then adjust the POWER & VOLUME CONTROL to a comfortable audio output level.

## ADJUSTING THE SQUELCH

The purpose of squelch is to mute the speaker when no signal is present. With the squelch level correctly set, you will hear sound only when actually receiving signals. The higher the selected squelch level, the stronger the signal must be in order to receive it.

The appropriate squelch level depends on the ambient RF noise conditions.

# 7 BASIC OPERATION

1. Press 【MENU】 key twice , and then press 【MENU】 again.  
The current squelch level appears.



2. Press 【▲/▼】 key to adjust the level.
  - Select the level at which the background noise is just eliminated when no signal is present.
  - The higher the level, the stronger the signals must be received.
  - 9 different levels can be set (0: minimum, 9: Maximum, Default value: 5) .
3. Press 【MENU】 key to store the new setting and continue to set other functions. Or press 【 A/B 】 key to store the new setting and exit Menu mode.

## A/B SWITCHING

In the whole frequency mode ,you can use 【A/B】 key to seled what you need to use the U-band or V-band.

## TRANSMITTING

1. To transmit, hold the transceiver approximately 5 cm (2 inches) from your mouth, then press and hold 【PTT】 and speak into the microphone in your normal tone of voice.
  - The LED lights red and the bar-graph meter appears.
2. When you finish speaking, release 【PTT】 .

**Note:** If TOT function is activated, continuously transmit for longer than the time specified, the internal time out timer generates a warning beep and the transceiver stops transmitting. In this case, release 【PTT】 and let the transceiver stop for a while, then press 【PTT】 again to resume transmission.

# 7 BASIC OPERATION

## SELECTING AN OUTPUT POWER

Selecting a lower transmission power is the best way to reduce battery consumption, if communication is still stable and reliable. You can configure different power levels for transmission.

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 10 (POW) .
3. Press **【MENU】** key.

Appears on the display.

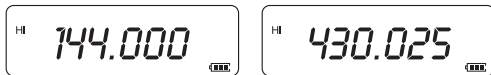


4. Press **【▲/▼】** key to select a desired transmission power and cycle between "HI" (high), "M" (medium), and "LO" (low).
5. Press **【MENU】** key to store the new setting and continue to set other function. Or press **【A/B】** key to store the new setting and exit Menu mode

## SELECTING A FREQUENCY

### ◆ VFO Mode

This is the basic mode for changing the operating frequency. Press **【▲】** to increase the frequency and press **【▼】** to decrease the frequency.



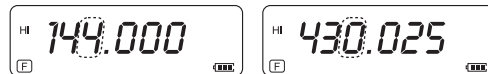
# 7 BASIC OPERATION

### ◆ MHz Mode

If the desired operating frequency is far away from the current frequency, it is quicker to use the MHz Tuning Mode to adjust the MHz digit:

1. Press **【MENU】**

■ The MHz digit blinks.



2. Press **【▲/▼】** key to select the desired MHz value.
3. After selecting the desired MHz value, press **【A/B】** to exit the mode and return to normal VFO Mode.
4. Continue adjusting the frequency if necessary, using the **【▲/▼】** key.

### ◆ Direct Frequency Entry

In addition to pressing **【▲/▼】** key, there is another way to select the frequency. When the desired frequency is far away from the current frequency, you can directly enter a frequency using the numeric keypad.

when in UHF directly enter      when in VHF directly enter



1. Press the numeric keys ( **【0】** to **【9】** ) to enter your desired frequency.
2. Press **【VFO】** key to delete if you enter wrong number.

**Note:**

- If the entered frequency does not match the current frequency step size, the frequency is automatically rounded down to the next available frequency.
- When the desired frequency cannot be entered exactly, confirm the frequency step size.
- If you press **【▲/▼】** key while entering the frequency, the transceiver clears the entry and changes to the next available frequency.

## 8 MENU SETUP

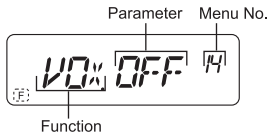
### MENU DESCRIPTION

Many functions on this transceiver are selected or configured via a software-controlled Menu rather than through the physical controls of the transceiver. Once you become familiar with the Menu system, you will appreciate its versatility. You can customize the various timings and programming functions on this transceiver to meet your needs without using many controls and switches.

### MENU ACCESS

1. Press **【MENU】**

A brief explanation of the Menu, and the setting and Menu No. appear on the display.



2. Press **【▲/▼】** key to select your desired Menu. As you change the Menu No., a brief explanation of each Menu appears along with its current parameter.

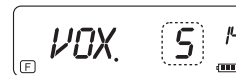


3. Press **【MENU】** to configure the parameter of the currently selected Menu No.



## 8 MENU SETUP

4. Press **【▲/▼】** key to select your desired parameter.



5. Press **【MENU】** to store the new setting, press **【▲/▼】** key to continue to select other Menu, or press **【A/B】** key to store the new setting and exit Menu mode.

# 8 MENU SETUP

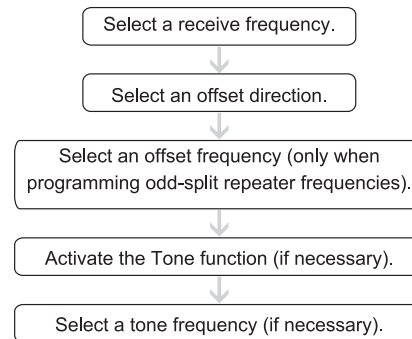
## MENU FUNCTION LIST

On the display	Menu No	Function	Selections	Default	Description
SOL	1	Squelch Setting	00 to 09	05	5 level
STP	2	Frequency step	5,6,25,10,12,5,25KHz	25KHz	25KHz
CT.DCS	3	CTCSS/DCS selection	OFF/CTCSS/DCS	OFF	OFF
RC	4	RX CTCSS setting	67.0 – 254.1Hz	OFF	OFF
TC	5	TX CTCSS setting	67.0 – 254.1Hz	OFF	OFF
CT	6	RX/TX CTCSS setting	67.0 – 254.1Hz	OFF	OFF
RD	7	RX DCS setting	023N – 754N 023I – 754I	OFF	OFF
TD	8	TX DCS setting	023N – 754N 023I – 754I	OFF	OFF
DC	9	RX/TX DCS setting	023N – 754N 023I – 754I	OFF	OFF
POW	10	TX power selection	H, M, L	H	High power
OFFSET	11	Offset frequency	0.00 – 50MHz	10.000MHz	10MHz
SFT	12	Offset direction	OFF / - / +	OFF	OFF
TOT	13	Time-out timer	OFF/1/3/10 minutes	1	1 minute
VOX	14	VOX function	OFF/1 – 16 level	OFF	OFF
BP	15	Beep	ON/OFF	ON	ON
LED	16	Lamp setting	ON/OFF/AUT	AUT	Auto
SCAN	17	Scan resume method	TO/CO/SE	TO	Time
CK	18	Call tone selection	OFF/1 – 8 /1750MHz	1	1
SAV	19	Save power selection	OFF/0.2/0.4/0.6/0.8/1.0	0.4	0.4 second
KY	20	Keypad lock selection	MANU/AUTO	MANU	Manual
BCL	21	Busy Channel Lock-out	ON/OFF	ON	ON
PON	22	Power ON message	6-alpha		
M.NAME	23	Storing Alpha	6-alpha		
MDF	24	Alpha/Freq display	MN/FRQ	FRQ	FREQ
PRI	25	Priority scan	ON/OFF	OFF	OFF
PRI	26	Priority scan time setting	3.5,8,10 sec	3	
N/W	27	Wide/narrow band selection	N/W	W	wide
A/B	28	Double-waiting	ON/OFF	ON	ON

# 9 OPERATING THROUGH REPEATERS

The place of the installation and maintenance of repeaters are usually located on mountain tops or other elevated locations. They generally operate at higher ERP (Effective Radiated Power) than a typical station. This combination of elevation and high ERP allows communications over much greater distances than communicating without using repeaters. Most repeaters use a receive and transmit frequency pair with a standard or non-standard offset. In addition, some repeaters must receive a tone from the transceiver to be accessed. For details, consult your local repeater reference.

## OFFSET PROGRAMMING FLOW



If you store all the above datas in a memory channel, you will not need to reprogram the parameters every time. Refer to “MEMORY CHANNELS”.



# 9 OPERATING THROUGH REPEATERS

## PROGRAMMING AN OFFSET

You must first select an amateur radio repeater downlink frequency as described in “Selecting an Offset Frequency”.

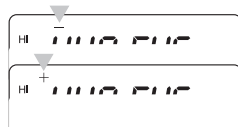
### ◆ Selecting an Offset Direction

Select whether the transmission frequency will be higher (+) or lower (-) than the reception frequency.

1. Press **【MENU】** key twice.



2. Press **【▲/▼】** key to select Menu No. 12 (SFT) .
3. Press **【MENU】** .
4. Press **【▲/▼】** key to select “+” or “-”.
5. Press **【MENU】** to store the new setting, press **【▲/▼】** key to continue to select other Menu, or press **【A/B】** key to store the new setting and exit Menu mode .



- “+” or “-” appears above the frequency, indicating which offset direction is selected.

If the offset transmission frequency falls outside the allowable range, transmission is inhibited and an alarm beep sounds. In this case, adjust the reception frequency so that the transmission frequency is within the band limits.

# 9 OPERATING THROUGH REPEATERS

### ◆ Selecting an Offset Frequency

To access a repeater, which requires a pair of non-standard offset frequencies, change the offset frequency to avoid affecting normal communication.

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 11 (OFFSET).
3. Press **【MENU】** key .

- Appear the current offset frequency on the display.



4. Press **【▲/▼】** key to select the appropriate offset frequency or enter the desired offset frequency number.

The selectable range is from 0.000 MHz to 50.0000MHz.

5. Press **【MENU】** to store the new setting, press **【▲/▼】** key to continue to select other Menu, or press **【A/B】** key to store the new setting and exit Menu mode.

### ◆ Activating the CTCSS/DCS Function

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 3 (CT.DCS).Info appears on the display.



3. Press **【MENU】** .
4. Press **【▲/▼】** key to select “DCS”.

## 9 OPERATING THROUGH REPEATERS

5. Press **【MENU】** to store the new setting. Then press **【▲/▼】** key to select other Menu, or press **【 A/B 】** key to store the new setting and exit Menu mode

■ “DQT” appears when the DCS function is ON.

**Note:** You cannot use the Tone and CTCSS/ DCS functions at the same time. Switching the CTCSS function ON after activating the DCS deactivates the DCS function automatically.

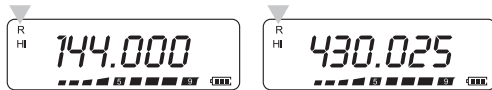
### REVERSE FUNCTION

The Reverse function exchanges a separate reception and transmission frequency. So, while using a repeater, you can manually check the strength of a signal that you are receiving directly from the other station. If the station’s signal is strong, both stations should move to a simplex frequency and free up the repeater.

To swap the transmission and reception frequencies:

Press **【MENU】** , **【 A/B 】** to switch the Reverse function ON (or OFF) .

■ “R” appears when the function is ON.



#### Note:

You can turn the Reverse function ON when you are operating in Simplex Mode. However, it does not change the Transmission/Reception frequency.

## 10 MEMORY CHANNELS

In memory channels, you can store frequencies and related data that you frequently use so that you do not need to reprogram that data every time. You can quickly recall a programmed channel through simple operation. A total of 199 memory channels are available for storing frequencies, modes and other operating conditions.

### STORING DATA IN MEMORY.

You can use each memory channel as a simplex & repeater channel or a non-standard offset channel. Store only one frequency to use as a simplex & repeater channel or two separate frequencies to use as a non-standard offset channel. Select either application for each channel depending on the operations you need.

#### ◆ Simplex & repeater channels allow:

- Simplex frequency operation
- Repeater operation with a standard offset (if an offset direction is stored)

#### ◆ Non-standard offset channels allow:

- Repeater operation with a non-standard offset

**Note:** Not only you can store data in memory channels, but you can also overwrite existing data with new data.

### THE OPERATING OF MEMORY CHANNEL

Please confirm the desired store functions prior to store operating.

1. Power output selection (HI, M, LO)
2. RX/TX CTCSS selection
3. RX CTCSS selection

# 10 MEMORY CHANNELS

4. TX CTCSS selection
5. RX/TX DCS selection
6. RX DCS selection
7. TX DCS selection
8. Offset frequency
9. Offset direction ( + , - )

## STORING OPERATION

1. Press **【▲/▼】** key to select desired frequency.
  - You can enter a desired frequency by numeric keypad directly.
2. press **【MENU】** key and then press **【MONI】** key.
  - A memory channel number appears and blinks.



3. Press **【▲/▼】** key to select a desired channel number.
4. Press **【MONI】** key to store.

## RECALL A MEMORY CHANNEL

1. Press **【MONI】** to enter Memory Recall Mode.
  - The memory channel last used is recalled.
2. Press **【▲/▼】** key to select your desired memory channel.



- You cannot recall an empty memory channel.
- To restore VFO Mode, press **【VFO】**.

# 10 MEMORY CHANNELS

## USING A NUMERIC KEYPAD TO RECALL A MEMORY CHANNEL

You can also recall a memory channel by entering a desired memory channel number with the keypad.

1. Press **【MONI】** to enter Memory Recall Mode.
2. And then enter the channel number using 3 digits.
  - For example, to recall channel 90, press **【0】** , **【9】** , **【0】** .

### Note:

- You cannot recall an empty memory channel. An error beep sounds.
- When you recall a non-standard offset memory channel, "+" and "-" appear on the display. Press **【MENU】** , **【A/B】** (Reverse function) to display the transmission frequency.
- After recalling a memory channel, you may modify data such as power output. However, these settings are kept in the stored files once you select another channel or the VFO Mode. To permanently store the data, overwrite the channel contents.

## FM RADIO FUNCTION OPERATION

### 1. Enter FM radio mode.

In transceiver mode, Press **【MENU】** + **【0】** to enter radio mode. In the radio mode, if someone calls this transceiver or press **【PTT】** to call other transceivers, it automatically switch to receiving / transmitting mode, 10 seconds after the call finish, the transceiver will switch back to the radio mode.

# 10 MEMORY CHANNELS

## 2. Exit the FM radio mode

In the FM radio mode, press **【MENU】** + **【0】** to exit the FM radio mode, back to transceiver mode.

## 3. FM radio channel Search

Press **【MENU】** + **【3】**, begin to entering the search mode, when search to an available channel, the transceiver will stop 5 seconds then search for next channel automatically. During the stay after searching an available channel, you can press **【▲】** continue to search for channels up, and press **【▼】** continue to search for channels down, press other keys to exit channel searching.

## 4. FM radio channel storing

You can use the above method to search radio channel, when you search an available channel, exit the search mode, then press **【A/B】** + **【MENU】** to enter radio channel storaction mode, two digits on the right part of display represent the frequency channel number to be stored. Press **【▲/▼】** or 0-9 to select the desired channel number to store. Press **【PTT】** or **【A/B】** to confirm and store. Under VFO mode, you can directly enter radio frequency by numeric keys, then repeat the about steps to store the channel.

## 5. FM radio mode switching and operation

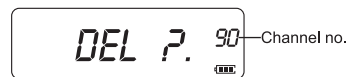
In radio mode, press **【MENU】** to switch between VFO mode(channel mode) and MR mode(memory mode). In VFO mode, you can press numeric keys or press **【▲/▼】** to select the radio frequency. In MR mode, you can press numeric keys or press **【▲/▼】** to select the stored radio channel.

# 10 MEMORY CHANNELS

## CLEARING A MEMORY CHANNEL

To clear the data from an individual memory channel:

1. Recall the memory channel you want to clear.
2. And then turn OFF power
3. Press **【MONI】** key to turn ON power
  - A confirmation message appears.



4. Press **【MONI】** to clear the channel data.
  - The contents of the memory channel are cleared.

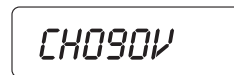
### Note:

While the transceiver is in Channel Display Mode or Lock-out function is activated, you cannot clear the channel data. To clear the channel data, must be free from channel lock-out.

## CHANNEL DISPLAY

While in this mode, the transceiver displays only memory channel numbers (or Memory names if they have been stored), instead of frequency.

1. Press **【PTT】** + **【MENU】**.
  - The transceiver displays the memory channel number in place of the operating frequencies.



# 10 MEMORY CHANNELS

2. Press **【▲/▼】** key to select your desired memory channel number.  
While in Channel Display Mode, only the following functions can be operated.

Note: You can not switch the empty channel (Did not store any channel)

1. Squelch setting
2. Power output
3. TOT function
4. VOX function
5. BP
6. LED
7. Scan function
8. CK (Call tone)
9. SAV (save power)
10. Keypad lock-out (manual/auto)
11. BCL (busy channel lock-out)
12. PON (power ON message)

## RESUMING THE OPERATING OF CHANNEL DISPLAY MODE

Press **【PTT】** + **【MENU】** and Turn the power ON.

# 11 SCAN

## SCAN RESUME METHOD

The transceiver stops scanning through the frequencies (or memory channel) where a signal is detected. Then it continues or stops scanning according to which Resume Mode you have selected.

### ◆ Time-Operated Mode (default)

The transceiver remains on a busy frequency (or memory channel) for approximately 5 seconds, and then continues to scan even if the signal is still present.

### ◆ Carrier-Operated Mode

The transceiver remains on a busy frequency (or memory channel) until the signal drops out. There is a 5-second delay between signal dropout and scan resumption.

### ◆ Seek Mode

The transceiver moves to a frequency or memory channel where a signal is present and stops.

## To change the scan resume method:

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 17 (SCAN).
3. Press **【MENU】**.
4. Press **【▲/▼】** key to select "TO" (Time-Operated), "CO" (Carrier-Operated), or "SE" (Seek) Mode.



5. Press **【MENU】** key to store new setting and continue to set other function, or press **【 A/B 】** key to store new setting and exit Menu mode.

## ACTIVATE SCANNING

Activate scanning function under frequency and channel mode.

1. Press **【 A/B 】** key and then press **【3】** key to start scanning.
2. Press any key to cancel the function except **【MONI】**.

# 12 SELECTIVE CALL

## CTCSS AND DCS

You may sometimes want to hear calls only from specific persons or groups. In this case, use the Selective Call. This transceiver is equipped with CTCSS (Continuous Tone Coded Squelch System) and DCS (Digital Coded Squelch). These Selective Calls allow you to ignore (not hear) unwanted calls from other persons who are using the same frequency. The transceiver responds only when it receives a signal having the same CTCSS tone or DCS code.

### Note:

CTCSS and DCS do not cause your conversation to be private or scrambled. It only relieves you from listening to unwanted conversations.

## CTCSS

A CTCSS tone is a sub-audible tone and is selectable from among the 50 tone frequencies listed in the table.

### ◆ Using CTCSS

1. Press **【MENU】** key twice, and then press **【▲▼】** key to select Menu No. 3 (CT,DCS).
2. Press **【MENU】** and then press **【▲▼】** key to select “CTCSS”.



- As you press **【▲▼】** key, the selection cycles as follows:  
“OFF” → “CTCSS” → “DCS” → “OFF”

3. Press **【MENU】** key to store new setting and continue set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode.

# 12 SELECTIVE CALL

- “QT” appears on the upper part of display, indicating that the CTCSS function is activated.

**Note:** When CTCSS is ON, you will hear calls only when the selected CTCSS tone is received. To answer the call, press and hold **【PTT】**, then speak into the microphone.

### Note:

- You cannot use the CTCSS and DCS functions simultaneously. Switching the DCS function ON after having activated the CTCSS functions deactivates the CTCSS functions automatically.
- If you select a high CTCSS frequency, receiving audio or noise that contains the same frequency portions may cause CTCSS to function incorrectly. To prevent noise from causing this problem, select an appropriate squelch level.

### ◆ Selecting a RX/TX CTCSS Frequency

1. Press **【MENU】** key twice, and press **【▲▼】** key to select Menu No. 6 (CT).
- The current CTCSS frequency appears.
2. Press **【MENU】** and press **【▲▼】** key to select your desired CTCSS frequency.
- The selectable CTCSS frequencies refer to the table on the following page.



3. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu Mode.

# 12 SELECTIVE CALL

**Note:** To use the selected CTCSS tone, you must turn the CTCSS function ON.

## ◆ Selecting RX CTCSS frequency

1. Press **【MENU】** key twice, and then press **【▲/▼】** key to select Menu No. 4 (RC).

■ The current CTCSS frequency appears on the display.



2. Press **【MENU】** key.

3. Press **【▲/▼】** key to select desired CTCSS frequency.

4. Press **【MENU】** to store the new setting and continue to set other function. Or press **【A/B】** key to store new setting and exit Menu Mode.

■ The selectable CTCSS frequencies refer to the table on the following page.

## ◆ Selecting TX CTCSS frequency

1. Press **【MENU】** key twice, and then press **【▲/▼】** key to select Menu No. (TC)

■ The current CTCSS frequency appears on the display.



2. Press **【MENU】** key.

3. Press **【▲/▼】** key to select desired CTCSS frequency.

# 12 SELECTIVE CALL

4. Press **【MENU】** to store the new setting and continue to set other function. Or press **【A/B】** key to store new setting and exit Menu Mode.

■ The selectable CTCSS frequencies refer to the table on the following page.

## Available CTCSS Tone Frequencies

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

## DCS

DCS is similar to CTCSS. However, instead of using an analog audio tone, it uses a continuous sub-audible digital waveform that represents a 3-digit octal number. You can select a DCS code from among the DCS codes listed in the above table on the following page.

# 12 SELECTIVE CALL

# 12 SELECTIVE CALL

## ◆ Using DCS

1. Press **【MENU】** key twice, and then press **【▲/▼】** key to select Menu No. 3 (CT.DCS).
2. Press **【MENU】** and then press **【▲/▼】** key to select "DCS".



- As you press **【▲/▼】** key, the selection cycles as follows:

"OFF" → "CTCSS" → "DCS" → "OFF"

3. Press **【MENU】** key to store new setting and continue to set other function. Or press **【A/B】** key to store new setting and exit Menu mode.

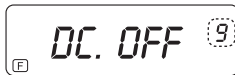
- "DQT" appears on the upper part of display, indicating that the DCS function is activated.

**Note:** If "DQT" doesn't appear on the above of the display, please select DCS code. When DCS is ON, you will hear calls only when the selected DCS tone is received. To answer the call, press and hold **【PTT】**, then speak into the microphone.

**Note:** You cannot use the CTCSS and DCS functions simultaneously. Switching the CTCSS function ON after having activated the DCS functions deactivates the DCS functions.

## ◆ Selecting a RX/TX DCS Code

1. Press **【MENU】** key twice, and press **【▲/▼】** key to select Menu No. 9 (DC). The current DCS code appears.



2. Press **【MENU】** and press **【▲/▼】** key to select your desired DCS code.

- The selectable DCS code, refer to the DCS code table (Normal"N"/Reverse"I").

### DCS CODE TABLE(The Inverse code)

OFF	053N	131N	205N	261N	343N	432N	516N	645N
017N	054N	132N	212N	263N	346N	445N	523N	654N
023N	065N	134N	223N	265N	351N	446N	526N	662N
025N	071N	143N	225N	266N	356N	452N	532N	664N
026N	072N	145N	226N	271N	364N	454N	546N	703N
031N	073N	152N	243N	274N	365N	455N	565N	712N
032N	074N	155N	244N	306N	371N	462N	606N	723N
036N	114N	156N	245N	311N	411N	464N	612N	731N
043N	115N	162N	246N	315N	412N	465N	624N	732N
047N	116N	165N	251N	325N	413N	466N	627N	734N
050N	122N	172N	252N	331N	423N	503N	631N	743N
051N	125N	174N	255N	332N	431N	506N	632N	754N

### DCS CODE TABLE(The Normal code)

OFF	053 I	131 I	205 I	261 I	343 I	432 I	516 I	645 I
017 I	054 I	132 I	212 I	263 I	346 I	445 I	523 I	654 I
023 I	065 I	134 I	223 I	265 I	351 I	446 I	526 I	662 I
025 I	071 I	143 I	225 I	266 I	356 I	452 I	532 I	664 I
026 I	072 I	145 I	226 I	271 I	364 I	454 I	546 I	703 I
031 I	073 I	152 I	243 I	274 I	365 I	455 I	565 I	712 I
032 I	074 I	155 I	244 I	306 I	371 I	462 I	606 I	723 I
036 I	114 I	156 I	245 I	311 I	411 I	464 I	612 I	731 I
043 I	115 I	162 I	246 I	315 I	412 I	465 I	624 I	732 I
047 I	116 I	165 I	251 I	325 I	413 I	466 I	627 I	734 I
050 I	122 I	172 I	252 I	331 I	423 I	503 I	631 I	743 I
051 I	125 I	174 I	255 I	332 I	431 I	506 I	632 I	754 I



# 12 SELECTIVE CALL

3. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu Mode.

## ◆ Selecting RX DCS code

1. Press **【MENU】** key, and then press **【▲/▼】** key to select Menu No. 7 (Rd) .

The current DCS code appears on the display.



2. Press **【MENU】** key, then Press **【▲/▼】** key to select desired DCS code.

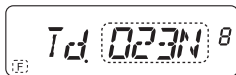
- The selectable DCS code, refer to the DCS code table (Normal“N”/Reverse“1”) .

3. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu Mode.

## ◆ Selecting TX DCS code

1. Press **【MENU】** key twice, and then press **【▲/▼】** key to select Menu No. 8 (TD)

The current DCS code appears on the display.



2. Press **【MENU】** key, then Press **【▲/▼】** key to select desired DCS code

- The selectable DCS code, refer to the DCS code table **35** (Normal“N”/Reverse“1”)

# 12 SELECTIVE CALL

3. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu Mode.

## LAMP

To illuminate the display and keys.

Press **【LAMP】**

- If not press other keys, the light turns off approximately 5 seconds after the **【LAMP】** key is released.

- When the display and keys are lighting, press any keys except **【LAMP】** will activate the 5 seconds timer to start counting.

- When the display and keys are lighting, press **【LAMP】** turn ON/OFF the light.

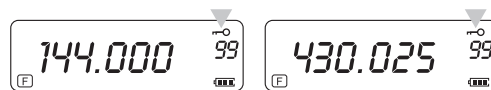
Note: Lamp setting, please refer to Operator Conveniences.

## KEY LOCK FUNCTION

The key lock function disables most of the keys to prevent you from accidentally activating a function.

1. Press **【MENU】** (3 seconds).

“→”appears when this function is ON.



- The following keys cannot be locked: **【PTT】**、**【MENU】** (3seconds)、**【MONI】**、PWR/VOL control.

2. Press **【MENU】** (3seconds) to unlock keys.

**Note:** Manual/Auto key lock function setting, refer to Operator Conveniences.

# 12 SELECTIVE CALL

## MONITOR

1. When you are receiving as the squelch function is ON, weak signals may become intermittent.
2. If the CTCSS or DCS function is ON, you may want to disable the squelch function temporarily to monitor the current channel activities.
3. In both of these cases, use the Monitor function to temporarily disable the squelch function.

### Activate the Monitor function:

1. Press and hold **【MON】** key for 3 seconds.
  - The speaker is un-muted and you can monitor the signals.
2. Release **【MON】** key to return to normal operation.

# 13 OPERATOR CONVENIENCES

## BATTERY GAUGE

Before you operate the transceiver outside using a battery pack, it is important to know how long the battery pack will last, so as not to affect your normal conversation

The battery gauge shows the battery strength level.

- ▬ High battery power
- ▬ Medium battery power
- ▬ Low battery power
- Recharge or replace the batteries.

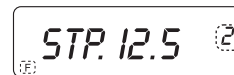
## CHANNEL SETUP

When press **【▲/▼】** key to select a receiving frequency, you must select correct frequency step. You can select a desired frequency step from following value.

5KHz, 6.25KHz, 10KHz, 12.5KHz, 25KHz.

### ◆ To Change the Frequency Step

1. Press **【MENU】** key twice, and then press **【▲/▼】** key to select Menu No.2 (STP) .
  - The currently frequency step appears on the display.



2. Press **【MENU】** key and then press **【▲/▼】** key to select a desired frequency step.
3. press **【MENU】** key to store new setting and continue to set other function. Or press **【A/B】** key to store new setting and exit Menu mode.

**Note:** If you change a frequency step which does not match the current frequency step size, the transceiver is automatically adjust the frequency to match the new frequency step size.

# 13 OPERATOR CONVENIENCES

## TIME-OUT TIMER

The Time-out Timer limits the time of each transmission. The built-in Time-out Timer limits each transmission time to be 1 (default) , 3 or 10 minutes. Just before the transceiver stops the transmission, a warning beep sounds. This function is necessary to protect the transceiver from thermal damage due to overheat and therefore is recommended not to be turned OFF.

1. Press **【MENU】** key twice , and then press **【▲/▼】** key to select Menu NO.13 (TOT) .



2. Press **【MENU】** ,and then press **【▲/▼】** key to select 1 (default) , 3 or 10 minutes.
3. Press **【MENU】** key to store the new setting and continue to set other function. Or press **【 A / B 】** key to store new setting and exit Menu mode.

## VOX (VOICE-OPERATED TRANSMISSION)

VOX eliminates the necessity of manually switching to the Transmission Mode each time you want to transmit. The transceiver automatically switches to Transmission Mode when the VOX circuitry senses that you have begun speaking into the microphone.

### ◆ To turn the VOX function ON:

1. Press **【MENU】** key twice, then press **【▲/▼】** key to select Menu No. 14 (VOX).

# 13 OPERATOR CONVENIENCES

2. Press **【MENU】** then press **【▲/▼】** key to select the desired VOX gain level from 1 (least sensitive) to 16 (most sensitive).



3. To turn OFF the VOX function, select "OFF" in step 2.

### Note:

- While in Menu Mode, the VOX function is temporarily disabled.
- Since the VOX circuit must detect the presence of your voice, you may notice a slight delay in transmission; the very first part of your message may not be transmitted.
- VOX might not be used with an optional earphone.

## VOX Gain

To enjoy the VOX function, take the time to properly adjust the VOX Gain level. This level controls the VOX circuit to detect the presence or absence of your voice.

### ◆ While the VOX function is ON:

1. Speak into the headset microphone using your normal tone of voice to transmit.
  - If the transmission does not begin, you must readjust the VOX Gain so that transceiver transmits while you are speaking. To select a more sensitive gain level.
2. Adjust the VOX Gain, the transceiver reliably switches to transmission mode each time you speak while the transceiver is transmitting.

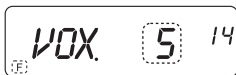
### From the Menu:

1. Continue from step 1 and step 2 and from VOX (Voice-Operated Transmission).

# 13 OPERATOR CONVENIENCES

2. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode.

- "VOX" appears on the top right of the display when the VOX function is ON.



3. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store the new setting and exit Menu mode.

4. Adjust the VOX Gain, performing steps 1 to 3 until the transceiver reliably switches between transmission and reception each time you speak.

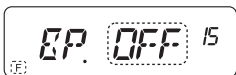
**Note:** The setting should not allow background noise to switch the transceiver to Transmission Mode.

## BEEP FUNCTION

The Beep function provides confirmation of entry, error status, and malfunctions of the transceiver. We recommend you leave this function ON in order to detect erroneous operations and malfunctions.

However, to turn the beep function OFF:

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 15 (BP).
3. Press **【MENU】** .
4. Press **【▲/▼】** key to select "OFF".



# 13 OPERATOR CONVENIENCES

5. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode.

**Note:** The beep output level is linked to the VOL control knob position.

## LED

To illuminate the display and keys:

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No.16 (LED)
3. Press **【MENU】** .

- The current parameter appears on the display.



4. Press **【▲/▼】** key to select a desired parameter.

- AUT: The light turns OFF approximately 5 seconds.
- OFF: To keep the light OFF.
- ON: To keep the light ON continuously.

5. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode.

## SELECTING CALL TONE

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No18. (CK).
3. Press **【MENU】** .

# 13 OPERATOR CONVENIENCES

4. Press **【▲/▼】** key to select a desired call tone (1-8 selections or 1750Hz) .



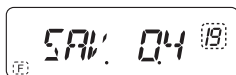
5. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode

## BATTERY SAVER

The Battery Saver extends the operating time of the transceiver. It automatically activates when the squelch is closed and no key is pressed for more than 10 seconds. To reduce battery consumption, this function shuts the receiver circuit OFF for a programmed time, then momentarily turn it back ON to detect a signal.

To program the receiver shut-off period for the battery saver:

1. Press **【MENU】** key twice.
2. Press **【▲/▼】** key to select Menu No. 19 (SAV) .
  - The current parameter appears on the display.



3. Press **【MENU】** .
4. Press **【▲/▼】** key to select the receiver shut-off period from OFF, 0.2, 0.4 (default) , 0.6, 0.8 and 1.0 seconds.
5. Press **【MENU】** to store the new setting and continue to set other function. Or press **【 A/B 】** key to store new setting and exit Menu mode.

# 13 OPERATOR CONVENIENCES

## Note:

The longer the shut-off period, the more you can save on battery consumption. However, there is a greater chance of missing a signal.

## KEYPAD LOCK (MANU/AUTO)

1. Press **【MENU】** key twice then press **【▲/▼】** key to select Menu No. 20 (KY) .

The current parameter appears on the display.



2. Press **【MENU】** then press **【▲/▼】** key to select a desired lock mode.
  - MANU: manual mode (press **【FUNC】** key 3 seconds)
  - AUTO: auto lock mode (auto lock the keypad while you do not press any keys for approximately 60 seconds)

## BUSY CHANNEL LOCK-OUT (BCL)

This function is used in order to prevent transmitting on a channel or frequency that somebody else is currently using. When turned ON, an error beep sounds and you cannot transmit even if you press **【PTT】** .

1. Press **【MENU】** twice then press **【▲/▼】** key to select Menu No. 21
2. Press **【MENU】** then press **【▲/▼】** key to select a desired mode.
  - OFF: radio can normally transmit while in the receive mode.
  - ON: radio cannot transmit while in the receive mode.

# 13 OPERATOR CONVENIENCES

# 13 OPERATOR CONVENIENCES

## PROGRAMMABLE GREETING MESSAGE

You can change the Programmable Greeting Message (a maximum of 6 characters) when the transceiver is turned ON.

1. Press **【MENU】** then press **【▲/▼】** key to select Menu No. 22(PON. MSG)
2. Press **【MENU】** key.  
The current message and entry cursor appear.  
Press **【MENU】** key to move the cursor to the next digit.
3. press **【▲/▼】** key to select a character.  
You can enter the following alphanumeric characters:  
0 ~ 9, A ~ Z, - (hyphen), / (slash) and a space.
4. press **【MENU】** key.  
The cursor moves to the next digit.
5. Repeat steps 3 and 5 to enter up to 6 digits  
Press **【MONI/SQL】** to delete the character at the current cursor position.
6. To complete the entry, press **【MENU】** without selecting a character and continue to set other function. Or press **【PTT】** key to store new setting and exit Menu mode. Otherwise, press any key other than **【MENU, PTT, MONI】** key to cancel the entry.

## NAMING A MEMORY CHANNEL

You can name memory channels using up to 6 alphanumeric characters. When you recall a named memory channel, its name appears on the display in place of the stored frequency. Names can be call signs, repeater names, cities, names of people, etc.

1. Press **【MONI】** to recall your desired memory channel, and then press **【▲/▼】** key to select a desired memory channel.

2. Press **【MENU】** key twice to enter select mode, and then press **【▲/▼】** key to select MENU number 23 (M.NAME)
3. Press **【MENU】** key.  
A blinking cursor or channel name appears.
4. press **【▲/▼】** key to select a character.  
You can enter the following alphanumeric characters:  
0 ~ 9, A ~ Z, - (hyphen), / (slash) and a space  
press **【MONI】** key to delete the character at current cursor position.
5. Press **【MENU】** key  
The cursor moves to the next digit.
6. Repeat steps 4 and 5 to enter up to 6 digits
7. Press any key other than **【MENU, PTT, MONI】** to cancel the entry.  
After storing a Memory name, the Memory name appears in place of the operating frequency. However, you can still display the operating frequency, if desired. To display the frequency rather than Memory name, access Menu No. 24 (MDF) and select "FRQ". This menu switch the display mode between the Memory name ("MN") and frequency display ("FRQ").

### Note:

- You cannot assign a Memory name to a channel that does not contain data.
- You can overwrite stored names by repeating steps 1 to 6.
- The stored name is erased when you clear the Memory channel data.

# 13 OPERATOR CONVENIENCES

## PROGRAMMING PRIORITY SCAN (OPTIONAL)

1. Press **【▲/▼】** key to select your desired priority channel frequency.  
(You can enter the desired frequency by manual directly).
2. If it's necessary, select the desired selective calling function (CTCSS/DCS).
3. Press **【 A/B 】** key and then press **【MONI】** key to store channel no. and it blinks on the screen.
4. Press **【▲/▼】** key to select the symbol of "Pr".
5. Press **【MONI】** key to store the data into the priority channel.

# 13 OPERATOR CONVENIENCES

## USING PRIORITY SCAN (OPTIONAL)

You may sometimes want to check your favorite frequency activities while monitoring other frequencies. In this case, use the Priority Scan function. Priority Scan checks the activities of the Priority Channel every 3 seconds. If the transceiver detects a signal on the Priority Channel, it recalls the frequency.

1. Press **【MENU】** key then press **【▲/▼】** key to select Menu No. 26 (PRI)
2. Press **【MENU】** key then press **【▲/▼】** key to checking time of priority scan (3,5,8,10 seconds)
3. Press **【PTT】** to begin "Priority Scan" "PRI" appears on the left side under the display.
  - The transceiver checks for a signal on the Priority Channel at a time preset.
  - When the transceiver detects a signal on the Priority Channel, "Pr" blinks and the frequency changes to the Priority Channel.
  - If you do not operate any control or key for 3 seconds after the signal drops, the transceiver returns to the original frequency and resumes Priority Scan.
4. To quit Priority Scan, select "OFF" in step 2.

**Note:** If the transceiver is in channel scan mode and the priority scan is on, "PRI" appears on the left side under the display. When priority scan is shut off, it's in normal scan mode, and "PRI" disappears.

## A/B DOUBLE-STANDBY

When you need to use both required UHF and VHF, you can receive UHF and VHF signals, also can have dialogue between UHF and VHF at the same time.(this function can be activated only in the whole frequency mode).

E.g.: When in UHF whole frequency mode(UHF is the master frequency, and VHF is the sub frequency), when you receive UHF signal, press **【PTT】** to transmit and receive signals. When you receive VHF signal, VHF frequency blinks on the display, after the signal disappears, within 3 seconds, you can transmit and receive signal normally, after 3 seconds the transceiver will come back to the UHF frequency mode begin double-standby.

1. Press **【MENU】** twice, then press **【▲/▼】** to select NO. 28 (A/B OFF)
2. Press **【MENU】** again, then press **【▲/▼】** to select ON or OFF.  
ON indicates that UHF、VHF double-standby is activated, “★” appears on the display.
3. Press **【MENU】** to store the setting or press **【PTT】** to store the setting and exit option mode.

Note: this function is not available under channel mode.

Key	Functions
<b>【▲】</b>	Up
<b>【▼】</b>	Down
<b>【 A/B 】</b>	Switch
<b>【MENU】</b>	Menu Access /shortcut
<b>【CALL】</b>	Call and related functions
<b>【MONI】</b>	Recall stored data and related functions
<b>【0~9】</b>	Number input and related functions

Item	Shortcut Operation
Adjust Squelch	Press <b>【MENU】</b> then press <b>【1】</b> key
Selecting CTCSS/DCS	Press <b>【MENU】</b> then press <b>【2】</b> key
Start to scan	Press <b>【MENU】</b> then press <b>【3】</b> key
RX CTCSS setting	Press <b>【MENU】</b> then press <b>【4】</b> key
TX CTCSS setting	Press <b>【MENU】</b> then press <b>【5】</b> key
RX/TX CTCSS setting	Press <b>【MENU】</b> then press <b>【6】</b> key
RX DCS setting	Press <b>【MENU】</b> then press <b>【7】</b> key
TX DCS setting	Press <b>【MENU】</b> then press <b>【8】</b> key
RX/TX DCS setting	Press <b>【MENU】</b> then press <b>【9】</b> key
Turn ON/OFF the radio	Press <b>【MENU】</b> then press <b>【0】</b> key
Selecting TX power	Press <b>【MENU】</b> then press <b>【MONI】</b> key
Storing Channel	Press <b>【MENU】</b> then press <b>【CALL】</b> key



# 15 STANDARDS

Frequency Range	VHF	UHF	FRS
		144-146MHz	430-432MHz
Channel	199		
Battery Voltage	6.0V(Ni-MH)/ 7.4V (Li-ion) DC $\pm 15\%$		
Antenna Resistance	50 $\Omega$		
Frequency Step	5,6.25,10,12.5,25KHz		
Workable Temp.	-30° C+60° C		
Frequency Stability	$\pm 2.5$ PPM		
Dimension	92X53X30mm		
Weight	200g		
Battery	H-1500mAh(Li-ion)		

Note: The Frequency Is Changed According To Different Countries

# 16 SPECIFICATIONS

## Transmit Part

Parameters	Band	
	UHF	VHF
Power output	4W	5W
Modulation	FM	
Max. Frequency Deviation	$\leq \pm 5$ KHz	
Spurious Radiation	<60dB	
pre emphasis characteristics	per frequency range 6dB	
Transmitting Current	V:1300mA	U:1500mA

## Receiver Part

Sensitivity	<0.2uV (12dB SINAD)
Squelch Sensitivity	0.15u
Inter-modulation Rejection	65dB
Audio Power	450mW

# 17 ACCESSORIES

Item	Quantity
Transceiver	1
Rubber antenna	1
Ni-MH battery pack(or Li-ion battery pack)	1
Ni-MH (or Li-ion) battery charger (with adaptor)	1
Belt Clip	1
User's manual	1

## Optional Extra Accessories

Earphone	1
Enhanced Antenna	1