

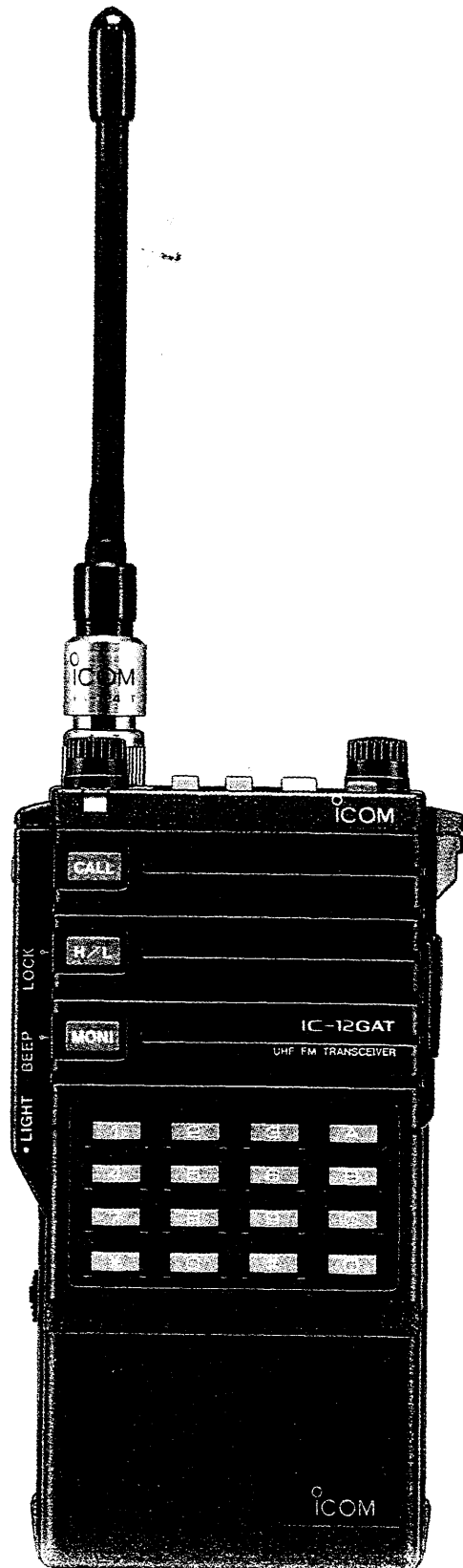
# ICOM



## INSTRUCTION MANUAL

1200MHz FM TRANSCEIVER

# IC-12GAT IC-12GE



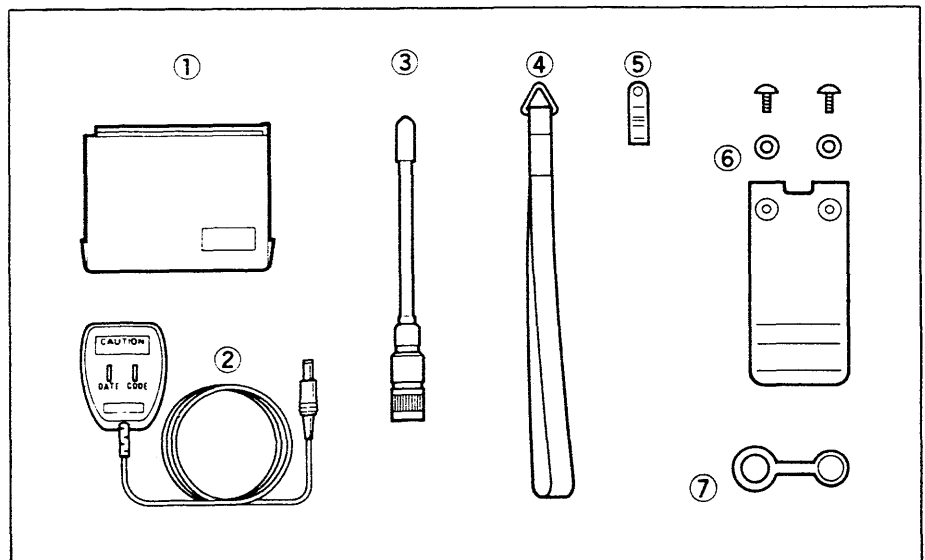
Icom Inc.

# FOREWARD

Thank you for buying an IC-12GAT/GE 1200MHz FM transceiver. Compact and easy-to-operate, this transceiver is sturdily built to withstand daily use in rugged environments.

Please read this instruction manual thoroughly before operating the transceiver. For further information, contact an authorized Icom dealer or Service Center.

## UNPACKING



①	Battery pack (BP-3) . . . . .	1
②	Wall charger* . . . . .	1
③	Flexible antenna . . . . .	1
④	Handstrap . . . . .	1
⑤	Handstrap clip. . . . .	1
⑥	Belt clip . . . . .	1
	[screws(2), nylon washers(2)] . . . . .	
⑦	Rainproof cap . . . . .	1

\* IC-12GAT : BC-25U  
IC-12GE : BC-26E

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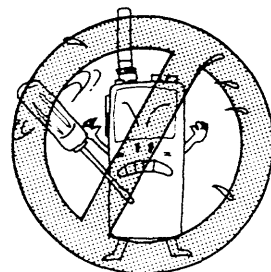
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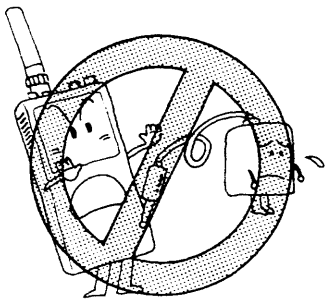
# 1. PRECAUTIONS



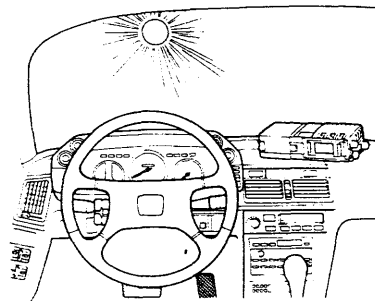
**NEVER** use benzine, thinner, etc., to clean the transceiver.



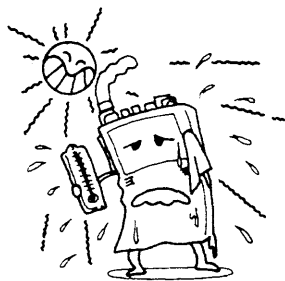
**NEVER** disassemble the transceiver.



**NEVER** use chargers other than those specified.



**NEVER** leave the transceiver on the dashboard in direct sunlight.



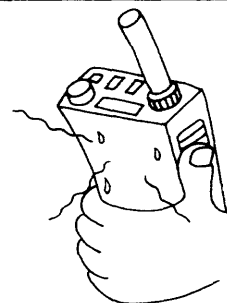
**AVOID** continuous operation in direct sunlight.



**AVOID** using the transceiver in excessive cold.



**AVOID** dust.



**BE CAREFUL!** The rear panel may become hot when transmitting continuously for a long time.

## ■ PROGRAMMED SCAN AND MEMORY SCAN

The Programmed Scan function scans all frequencies between 2 programmable scan edges. The Memory Scan function scans all Memory Channels in succession. Use the Memory Channel Skip function to skip channels in a Memory Scan.

## ■ SQUELCH MONITOR

Opens the squelch and the Tone Squelch. When working a repeater, push this switch to monitor the repeater input frequency.

## ■ 20 MEMORY CHANNELS

Each Memory Channel stores an operating frequency, a tone frequency, a repeater offset frequency, the offset direction, and the Tone Squelch ON/OFF.

## ■ CALL CHANNEL (IC-12GAT only)

The Call Channel is a separate Memory Channel which provides easy access to your most often used frequency and stores information as a Memory Channel does.

## ■ SPLASH RESISTANT

Rubber gaskets ensure that water splashed on the transceiver does not penetrate the casing.

## ■ POCKET BEEP (IC-12GAT only)

When the UT-40 TONE SQUELCH UNIT (sold separately) is installed, the transceiver functions as a pager. When the frequency of a received tone equals the tone frequency you have selected, the speaker emits a 30sec. alarm and "SQL" flashes.

## ■ POWER SAVER

Keeps battery current drain to only 20mA. When operating Packet, turn OFF the power saver in an instant.

## ■ RECEIVER INCREMENTAL TUNING (RIT)

RIT shifts the receive frequency by up to  $\pm 5\text{kHz}$  in 7 steps of 800Hz. Use RIT to tune in an off-frequency signal.

## ■ VARIABLE CRYSTAL OSCILLATOR (VXO)

VXO shifts the receive and transmit frequency by up to  $\pm 5\text{kHz}$  in 7 steps of 800Hz.

# 3. PRE-OPERATION

## 3-1 MODE DIRECTORY

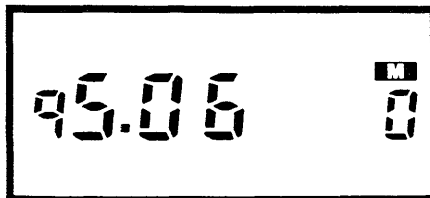
### ■ VFO MODE

The VFO is used for operating within the band edges.



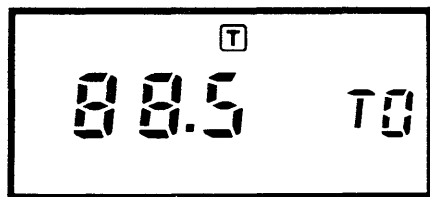
### ■ MEMORY MODE

A Memory Channel is used for operating on the frequency written in it. Each channel also stores all the information required to work a repeater.



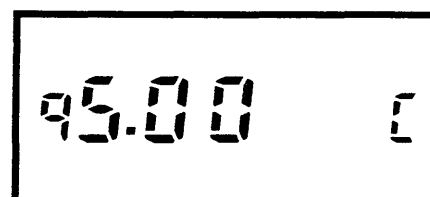
### ■ SET MODE

In SET mode, the user selects the tone frequency (IC-12GAT only), the offset frequency, the tuning step, the programmed scan band edges and the power save function ON/OFF.

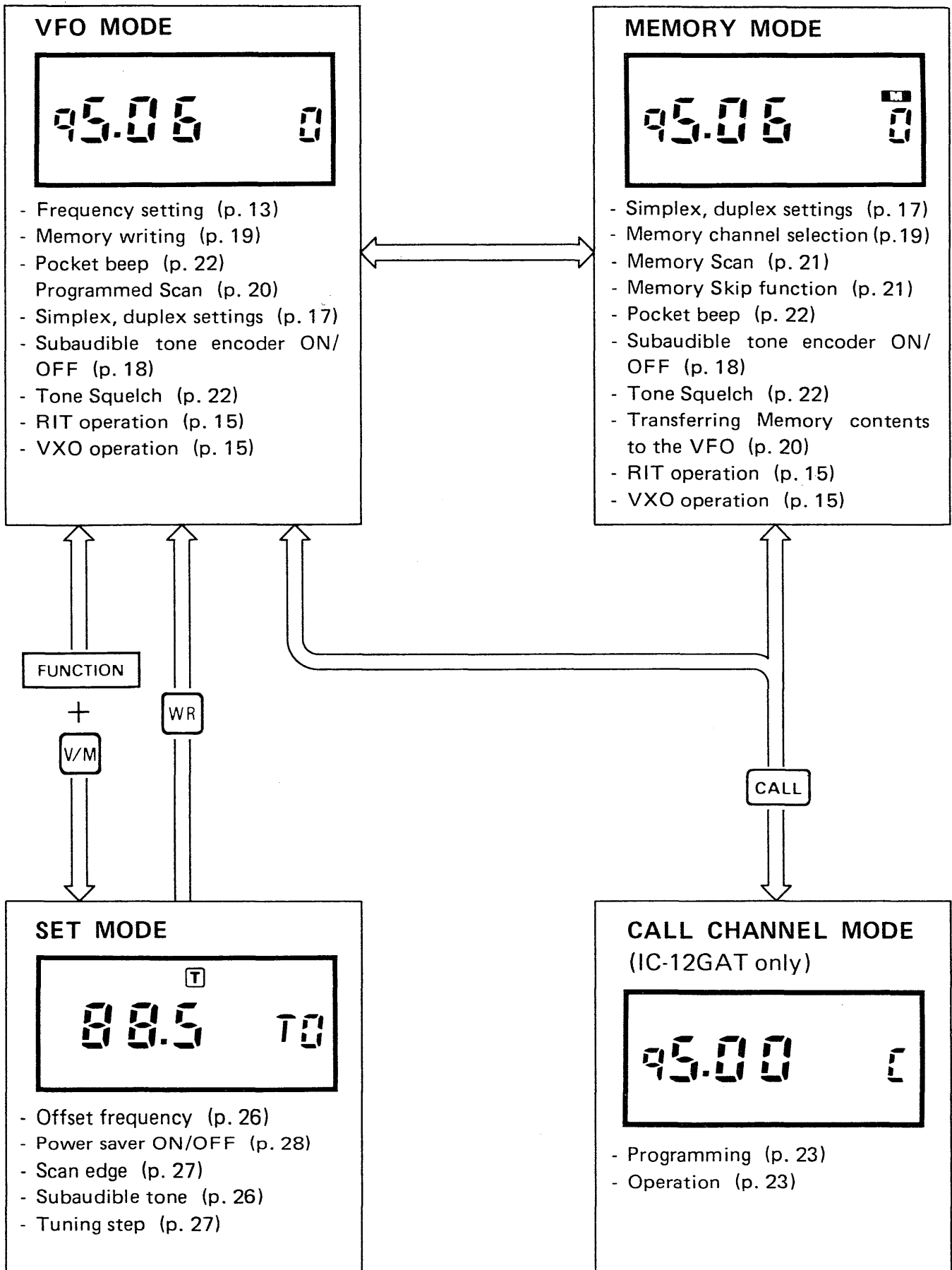


### ■ CALL CHANNEL MODE (IC-12GAT only)

The Call Channel is provided for one touch access to an important or often used frequency.



3-2 MODE FLOW CHART



# 4. PANEL DESCRIPTION

## 4 - 1 FRONT AND SIDE PANELS

This diagram shows IC-12GAT. IC-12GE does not have a DTMF KEYBOARD.

**POWER SWITCH/VOLUME CONTROL [OFF/VOL]**  
Turns ON the power and increases the volume.

**TRANSMIT INDICATOR**  
Lighted when transmitting.

**SQUELCH CONTROL [SQL]**  
Sets the squelch threshold.

**ANTENNA CONNECTOR**

**FUNCTION SWITCH [FUNCTION]**  
Activates the secondary function of some switches.

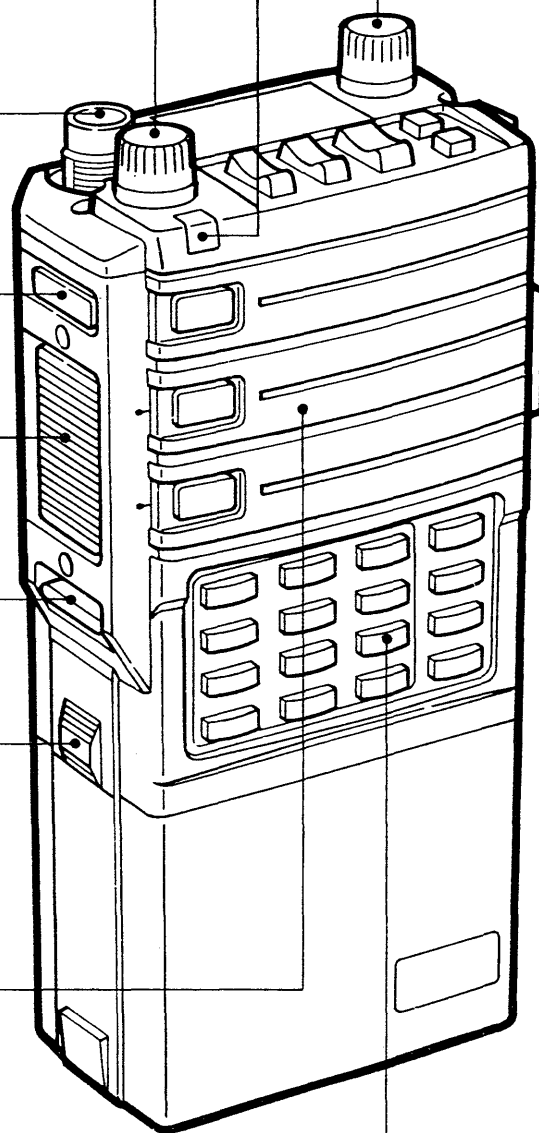
**PTT SWITCH**  
Microphone push-to-talk switch.

**LIGHT SWITCH [LIGHT]**  
Lights the FUNCTION DISPLAY. After 5sec., the light remains ON if other switches are pushed.

**BATTERY PACK RELEASE BUTTON [RELEASE]**  
Unlocks the battery pack for removal from the transceiver.

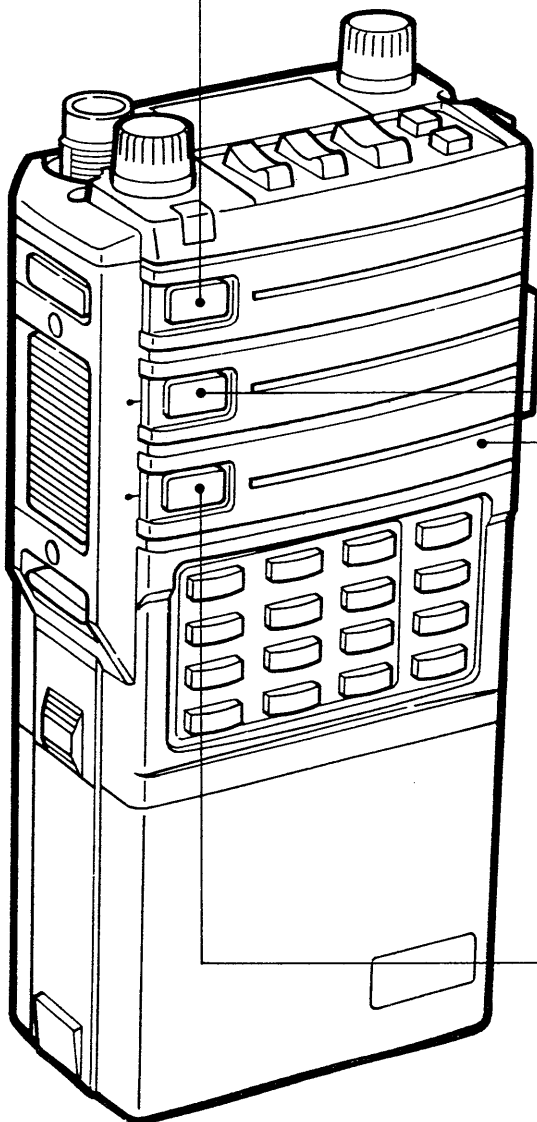
**SPEAKER**

**DTMF KEYBOARD (IC-12GAT only)**  
Produces subaudible tones to access a repeater and make an autopatch.





## PANEL DESCRIPTION 4.



### **CALL SWITCH [CALL]**

(IC-12GAT only)

Brings up the Call Channel.

### **TONE CALL SWITCH [T.CALL]**

(IC-12GE only)

Emits a 1750Hz tone to access a repeater.

### **EXTERNAL SPEAKER AND MICROPHONE JACKS [EXT SP MIC]**

### **RF OUTPUT POWER SWITCH [H/L]**

Selects HIGH or LOW output power.

HIGH: 1W

LOW : 0.1W

Turns ON and OFF the LOCK function when pushed simultaneously with [FUNCTION].

### **MICROPHONE**

### **MONITOR SWITCH [MONI]**

Opens the squelch (and the tone squelch when UT-40 is installed).

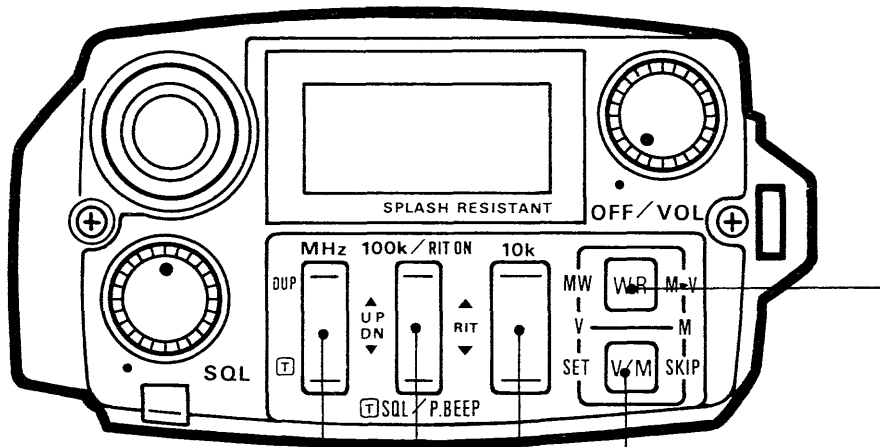
Monitors the repeater input frequency in duplex.

Turns the beep tones ON and OFF when simultaneously pushed with [FUNCTION].

## 4. PANEL DESCRIPTION

### 4-2 TOP PANEL

#### 4-2-1 SWITCH FUNCTIONS IN VFO MODE



#### MHz DIGIT UP/DOWN SWITCH [MHz]

Moves the frequency in 1MHz steps.

Selects -duplex or +duplex when pushed up simultaneously with [FUNCTION].

Turns ON and OFF the subaudible tone encoder. (IC-12GAT only)

#### 100Hz DIGIT UP/DOWN AND RIT SWITCH [100kHz/RIT]

Moves the 100kHz digit up and down in 100kHz steps.

Selects UT-40 TONE SQUELCH UNIT (optional) functions when pushed down simultaneously with [FUNCTION]. (IC-12GAT only)

Turns ON and OFF the RIT or VXO function.

#### WRITE SWITCH [WR]

Writes the contents of the FUNCTION DISPLAY in a Memory Channel when pushed and held.

#### VFO/MEMORY SWITCH [V/M]

Accesses the MEMORY mode.

Calls up the SET mode displays when pushed simultaneously with [FUNCTION].

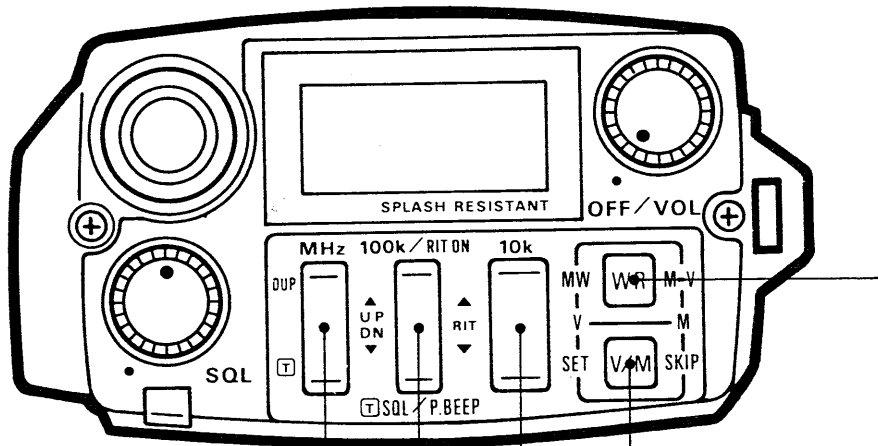
#### 10kHz DIGIT UP/DOWN SWITCH [10k]

Moves the 10kHz digit up and down in the programmed tuning step.

Starts a Programmed Scan when pushed simultaneously with [FUNCTION].

Selects the RIT or VXO incremental tuning step.

4 - 2 - 2 SWITCH FUNCTIONS IN MEMORY MODE



**MHz DIGIT UP/DOWN SWITCH [MHz]**

Selects -duplex or +duplex when pushed up simultaneously with [FUNCTION].

Turns ON and OFF the subaudible tone encoder. (IC-12GAT only)

**100kHz DIGIT UP/DOWN AND RIT SWITCH [100kHz/RIT]**

Changes a Memory Channel by adding or subtracting 10 from the displayed Memory Channel number.

Selects UT-40 TONE SQUELCH UNIT (optional) functions when pushed down simultaneously with [FUNCTION]. (IC-12GAT only)

Turns ON and OFF the RIT or VXO function.

**WRITE SWITCH [WR]**

Transfers the displayed Memory Channel contents to the VFO when pushed and held.

**VFO/MEMORY SWITCH [V/M]**

Accesses the VFO mode.

When pushed simultaneously with [FUNCTION], designates a Memory Channel to be skipped during a Memory Scan.

**10kHz DIGIT UP/DOWN SWITCH [10k]**

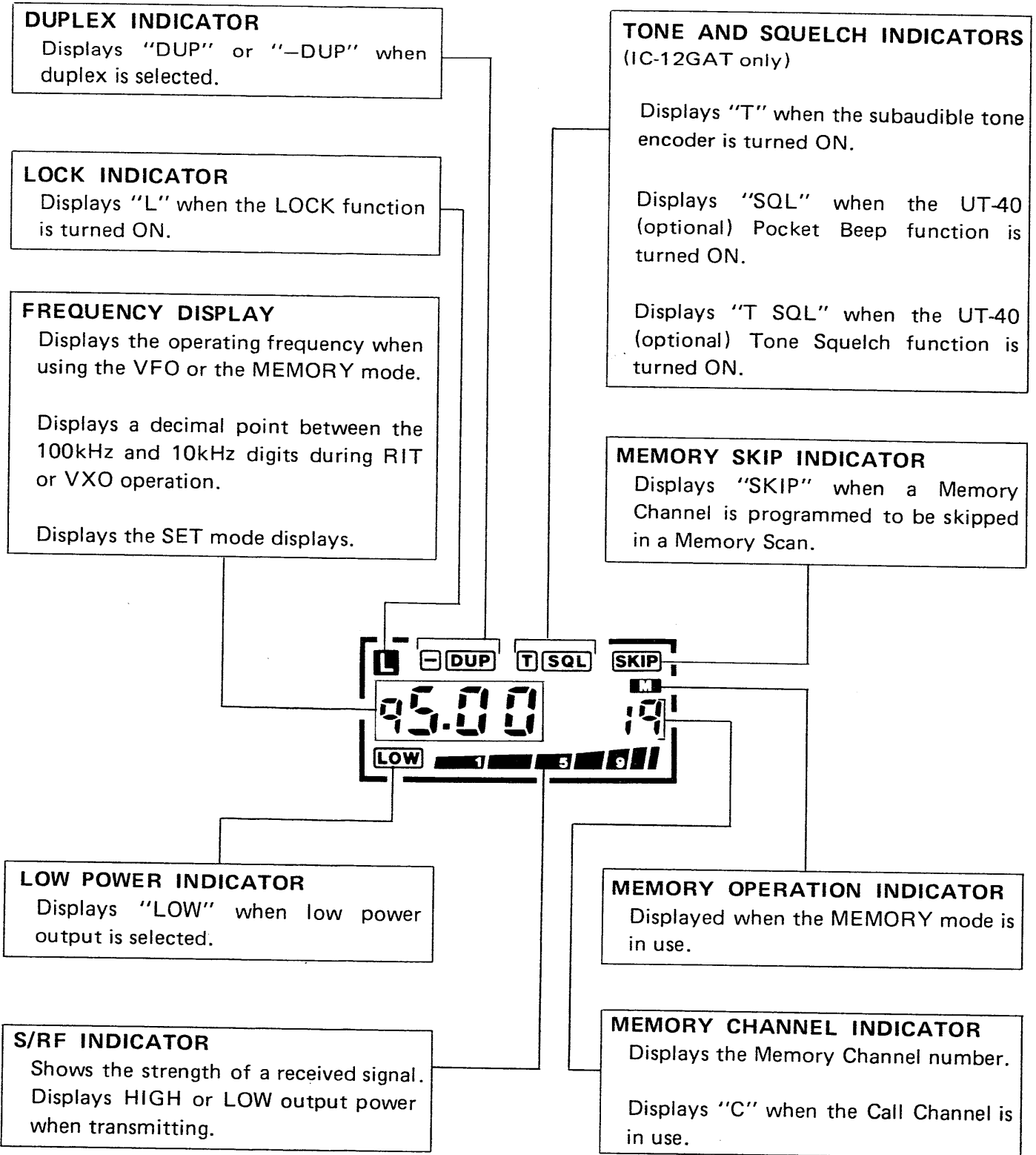
Selects a Memory Channel.

Starts a Memory Scan when pushed simultaneously with [FUNCTION].

Selects the RIT or VXO incremental tuning step.

# 4. PANEL DESCRIPTION

## 4 - 3 FUNCTION DISPLAY



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# BATTERY INFORMATION 5.

## 5 - 1 BATTERY CHARGING

When battery pack voltage is low, the transceiver's output power is reduced and its functions do not operate properly.

### ■ ATTACHING THE BATTERY PACK

Slide the battery pack onto the base of the transceiver until you hear a click.

### ■ REMOVING THE BATTERY PACK

Push up the [RELEASE] BUTTON, and slide the battery pack to the right to remove it from the transceiver.

### ■ WHEN TO CHARGE A BATTERY PACK

The following problems are usually caused by a low battery pack:

- Able to transmit for only a short time.
- Audio volume is low or nil.
- Squelch does not function.
- Output power seems to be lower than normal.

### ■ PRECAUTIONS

- **NEVER** throw the battery pack into a fire. Battery gas may explode.

- **NEVER** out the battery pack in water. If the battery pack is wet, wipe it dry before charging.

- **NEVER** short the terminals on the top panel of the battery pack. When the battery pack is separated from the transceiver, insert the plastic insulator strip (supplied) over the terminals.

### ■ BATTERY MEMORY EFFECT

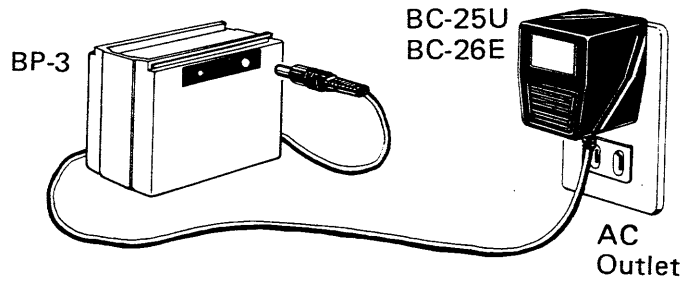
Repeatedly charging a NiCd battery pack that is partially discharged may reduce its charge capacity. If the battery capacity seems to be low, completely discharge the battery pack through normal use before recharging.

## 5. BATTERY INFORMATION

### ■ CHARGING CONNECTION

To charge the battery pack, connect the transceiver to a power source as shown below. Use the supplied wall charger, the BC-35U/E or the BC-36 AC BATTERY CHARGERS (optional).

- Charging the BP-3 BATTERY PACK.



### ■ FULLY CHARGED BATTERY PACK OPERATION TIMES

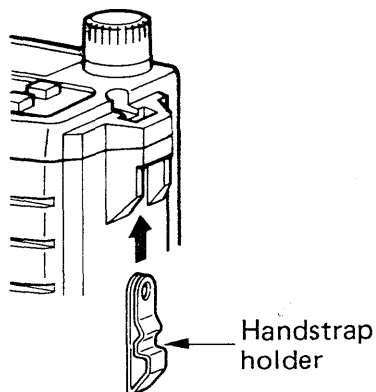
The approximate operation times shown below are calculated from the ratio:

**CONDITION**      **TRANSMIT : RECEIVE : STANDBY**  
 Operation time (minutes)      1 : 1 : 8

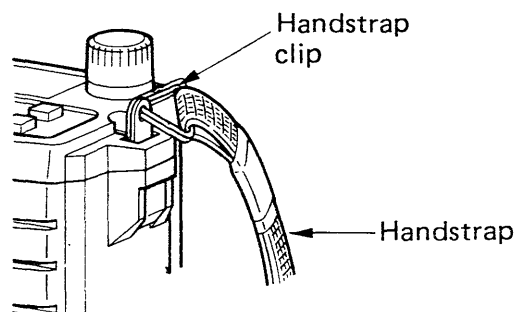
	<b>BP-2</b>	<b>BP-3</b>	<b>BP-5 BP-5A</b>	<b>BP-7</b>	<b>BP-8</b>	<b>BP-70</b>
Capacity	450mAh	270mAh	450mAh	450mAh	800mAh	270mAh
Voltage	7.2V	8.4V	10.8V	13.2V	8.4V	13.2V
Operation times	3.5hrs.	2.2hrs.	3.5hrs.	3.5hrs.	6.5hrs.	2.2hrs.

# ACCESSORIES: ATTACHMENT 6.

## ■ HANDSTRAP ATTACHMENT

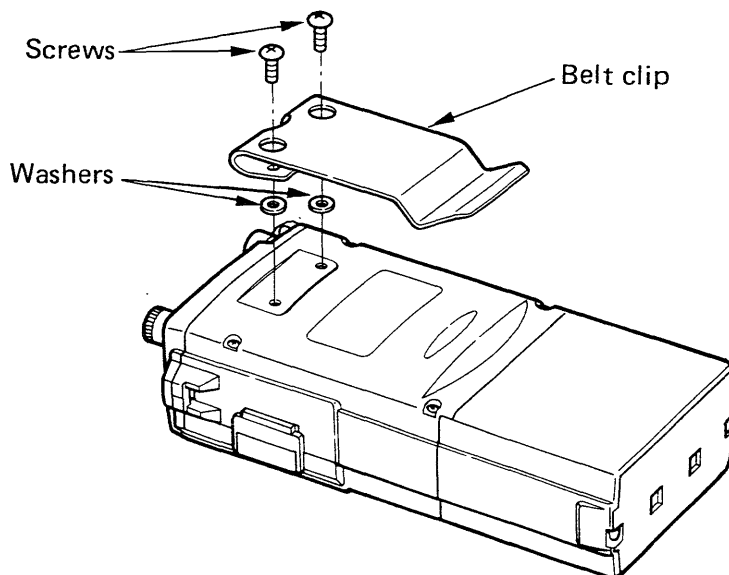


- 1) Insert the handstrap clip as shown below.
- 2) Slide the handstrap holder through the hole in the handstrap clip.



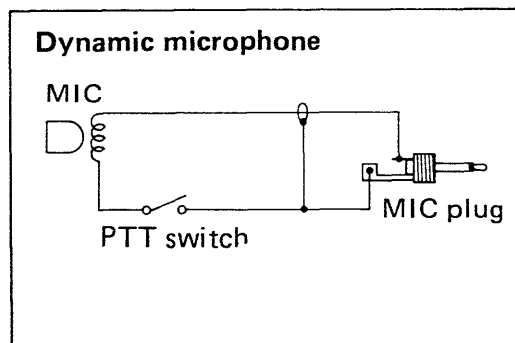
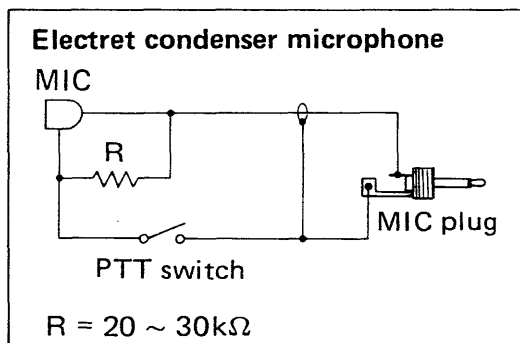
## ■ BELT CLIP ATTACHMENT

- 1) Remove the bushings from the 2 holes in the middle of the rear panel.
- 2) Attach the belt clip to the rear panel using the screws and washers (supplied) as shown below.



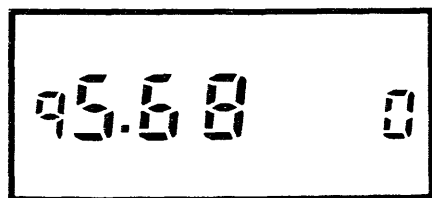
## ■ EXTERNAL MICROPHONE CONNECTIONS

Connect a microphone element to a MIC plug as shown below.



# 7. BASIC OPERATION

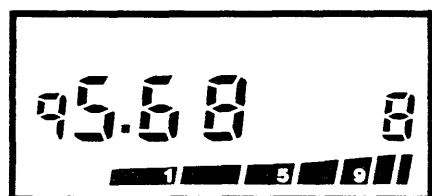
## 7 - 1 FREQUENCY SETTING



The **Digital Touchstep Switches** on the top panel set the operating frequency.

- 1) Rotate [OFF/VOL] to turn ON the power.
- 2) If the FUNCTION DISPLAY shows "M" or "C," push [V/M] to access the VFO mode.
- 3) Push the DIGIT UP/DOWN SWITCHES for the desired frequency.
  - The [10k] SWITCH moves the frequency up and down in the programmed tuning step. Refer to p. 27 to select the tuning step.

## 7 - 2 RECEIVING



S/R F INDICATOR

- 1) Rotate [OFF/VOL] to turn ON the power and adjust the volume.
- 2) Rotate [SQL] clockwise until the speaker is muted.
- 3) Push the DIGIT UP/DOWN SWITCHES for the desired frequency.
  - A signal which opens the squelch is heard over the speaker, and the S/R F INDICATOR displays its strength.
- 4) Push and hold [MONI] to open the squelch and the Tone Squelch (when UT-40 is installed), if desired.



7 - 3 TRANSMITTING

**CAUTION:** To avoid damaging the transceiver, do not transmit without an antenna.

1) Rotate [OFF/VOL] to turn ON the power.

2) Push [H/L] to select the output power.

HIGH (H) : 1W

LOW (L) : 0.1W

- "LOW" appears when LOW power is selected.

- There is no display for HIGH power.

3) If "DUP" or "-DUP" appears, push [MHz] while pushing [FUNCTION] until it disappears.

4) To transmit, push [PTT] and speak into the microphone.

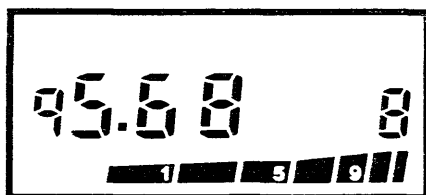
**NOTE:** To prevent distortion, do not put your mouth directly up to the microphone or talk loudly.

- The TRANSMIT INDICATOR becomes lighted.

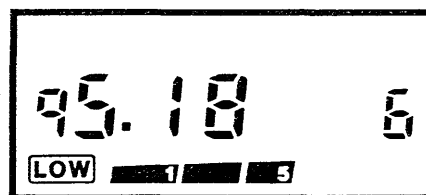
- When the battery pack is low, the TRANSMIT INDICATOR does not light.

- The S/R F INDICATOR displays the output power selection.

LOW POWER:



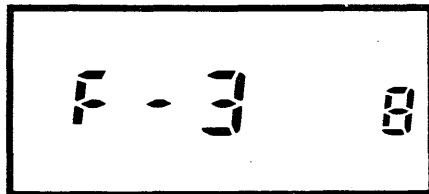
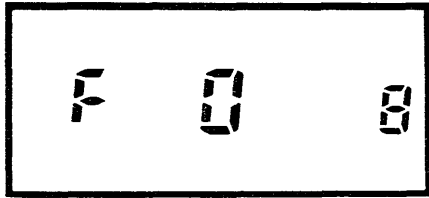
HIGH POWER:



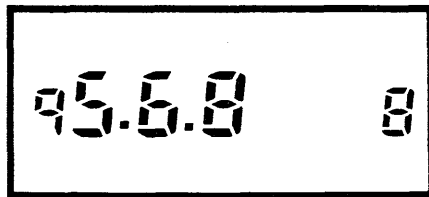
## 7. BASIC OPERATION

### 7 - 4 USING RIT AND VXO

#### ■ USING RIT



F-3  $\cong$  -2.5kHz



#### ■ USING VXO

Use RIT to tune in a signal that is slightly off frequency.

1) While pushing [FUNCTION], push [10k] up.

- "F 0" is displayed.

2) Continue pushing [FUNCTION]. Push [10k] up or down to select the frequency increment.

- Each step equals approx. 800Hz. Maximum 7 steps plus or minus.
- A decimal point appears between the 1MHz and 100kHz digits when [FUNCTION] is released.

**NOTE:** Changing the operating frequency does not change the RIT frequency increment.

VFO (Variable Crystal Oscillator) shifts both the receive and transmit frequencies in the same frequency increment.

Receive and transmit frequencies can not be separately shifted.

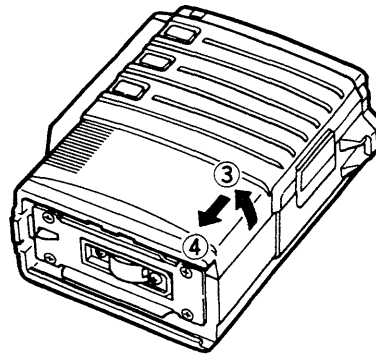
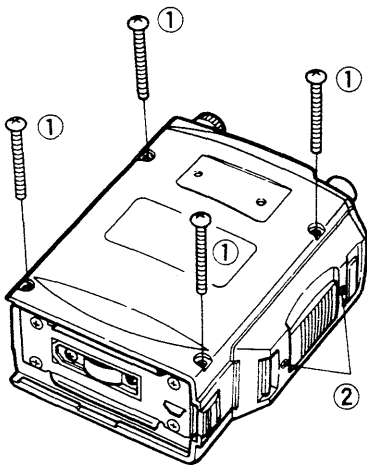
To activate the VXO function, see p. 16. When activated, the separate RIT function can not be used.

Use VXO as you would use RIT (see above). The VXO displays are the same as the RIT displays.

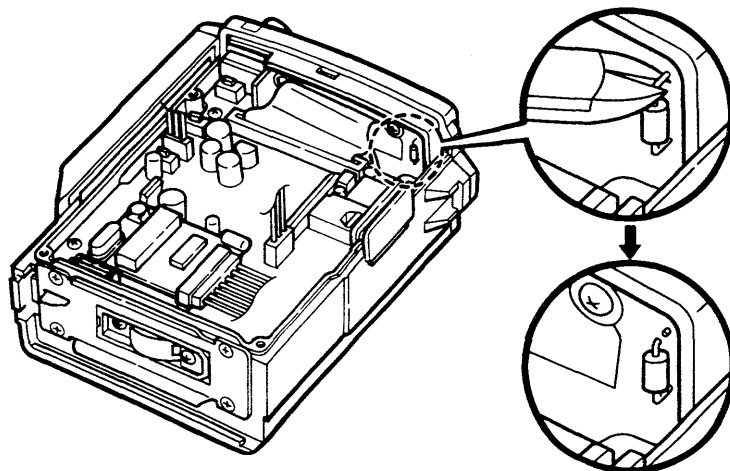
## ■ ACTIVATING VXO

To activate VXO, follow the instructions below and refer to the diagrams.

- 1) Remove the battery pack from the transceiver.
- 2) Remove 4 screws from the rear panel of the transceiver ①
- 3) Loosen the 2 screws to either side of the PTT switch ②.
- 4) Slowly pull the front panel up ③ and out ④.  
Do not pull apart the speaker wires.



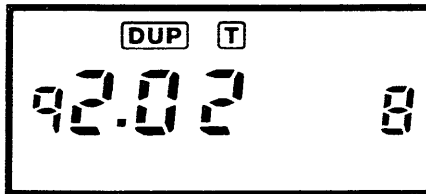
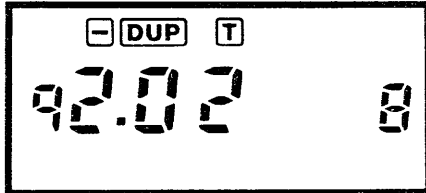
- 5) Locate the white jumper under the right hand side of the top panel.
- 6) Using a wire cutter, cut the top lead of the jumper. **DO NOT** cut the bottom lead.



## 7. BASIC OPERATION

### 7 - 5 REPEATER OPERATION

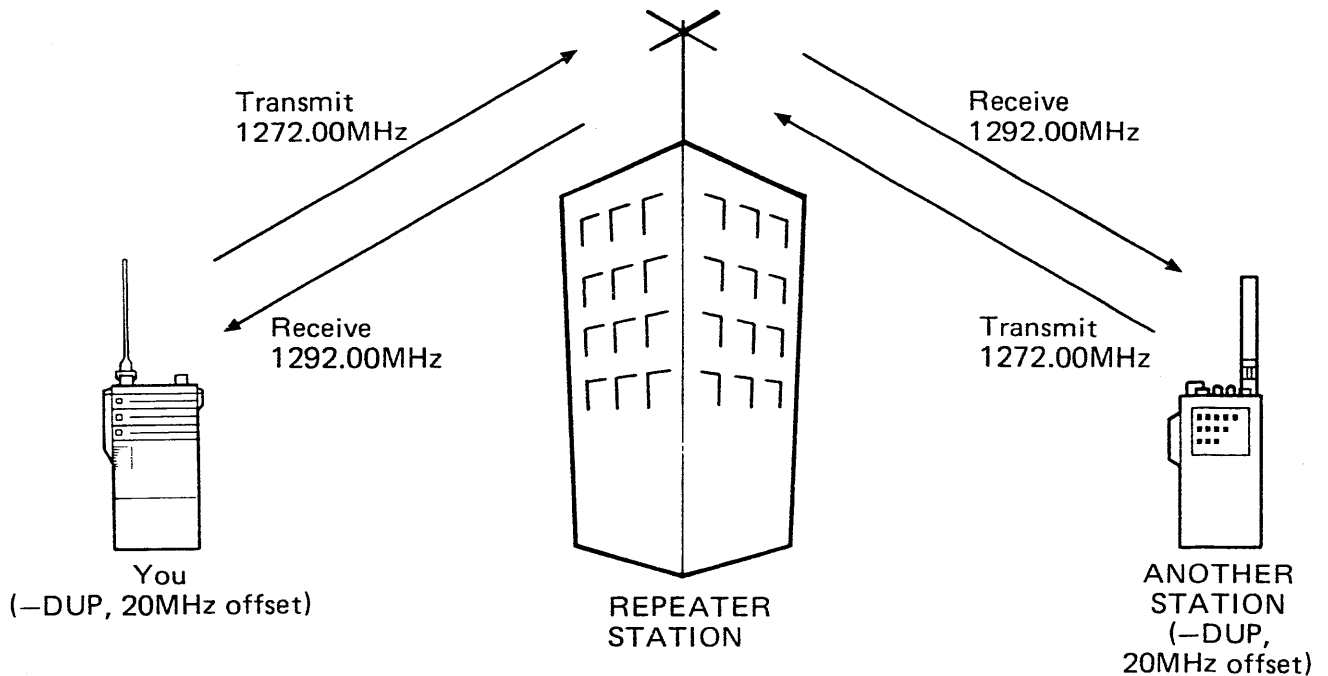
Mountains and buildings block the path of a signal. A repeater, usually installed at a high elevation to overcome signal path blocking, receives a signal, amplifies it, and then retransmits it.



1) Set the receiver frequency. See p. 13.

2) While pushing [FUNCTION], push [MHz] once for "-DUP." Push once again for "DUP."

**NOTE:** Choose "-DUP" or "DUP" according to the repeater input/output frequencies.



- When “-DUP” is selected, the offset frequency is subtracted from the receive frequency.
- When “DUP” is selected, the offset frequency is added to the receive frequency.
- Refer to p. 26 to set the offset frequency.

Write the repeater frequencies in a memory channel to be called up later. See p. 19.

3) If the frequency is clear, push [PTT] and speak into the microphone.

- The transceiver automatically compensates the offset frequency.

4) To open the squelch on the repeater input frequency, push [MONI].

1) Set a tone frequency. See p. 26.

2) While pushing [FUNCTION], push [MHz] down to turn ON the subaudible tone encoder.

- The tone frequency is emitted when you transmit.

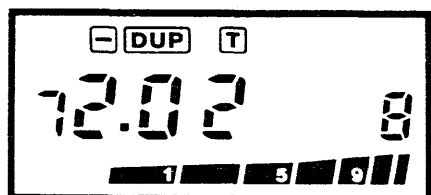
3) To turn OFF the encoder, repeat step 2.

Use the DTMF KEYBOARD to access a repeater, make an autopatch, etc.

1) Push and hold the [PTT] SWITCH.

2) Push the required keys.

Push [T.CALL] for about 3 seconds to transmit a 1750Hz tone and bring up the repeater.



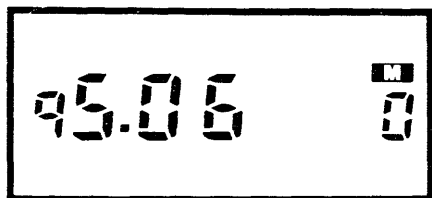
### ■ CTCSS TONE ACCESSED REPEATERS (IC-12GAT only)

### ■ USING THE DTMF KEYBOARD (IC-12GAT only)

### ■ 1750Hz TONE ACCESSED REPEATERS (IC-12GE only)

# 8. RELATED FUNCTIONS

## 8 - 1 MEMORY READING



Each of the 20 Memory Channels stores an operating frequency, the duplex setting, a subaudible tone frequency and the Memory Channel Skip function.

1) To access the MEMORY mode, push [V/M] until "M" appears on the FUNCTION DISPLAY.

2) Push [100k] and [10k] for the desired Memory Channel number.

## 8 - 2 MEMORY WRITING

1) Access the MEMORY mode and select a Memory Channel. See Section 8 - 1, steps 1 and 2.

2) Push [V/M] to access the VFO mode.

- "M" disappears from the FUNCTION DISPLAY.

3) Select an operating frequency, duplex or simplex, the offset frequency, etc. See pgs. 13, 17, and 25 ~ 28.

4) To write the information into the Memory Channel, push and hold [WR] until the speaker emits 3 beeps.

5) To access the Memory Channel just written, push [V/M].

- "M" appears on the FUNCTION DISPLAY.

**8 - 3 MEMORY TRANSFERRING**

Copy and transfer the displayed Memory Channel contents into the VFO mode.

Use this function to search for signals around the Memory Channel operating frequency.

- The Memory Channel is not erased.

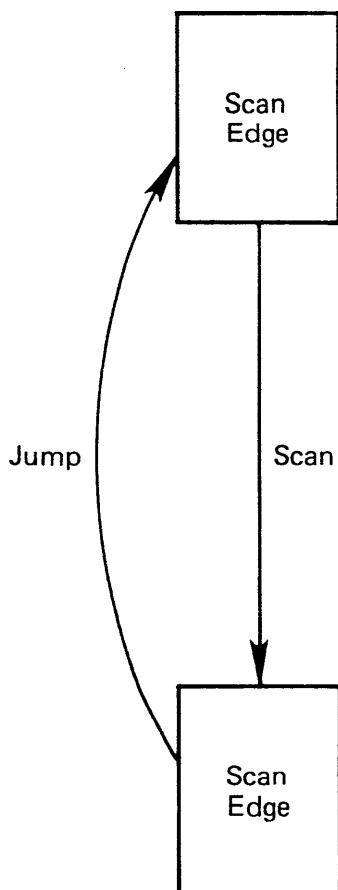
1) To select the desired Memory Channel, see Section 8 - 1, steps 1 and 2.

2) Push and hold [WR] until the speaker emits 3 beeps.

- "M" disappears from the FUNCTION DISPLAY.

**8 - 4 PROGRAMMED SCAN**

The Programmed Scan function scans all frequencies between two frequencies. Refer to p. 27 to set the scan edges.



1) Push [V/M] until "M" or "C" disappears from the FUNCTION DISPLAY.

2) Rotate [SQL] until the speaker is muted.

3) While pushing [FUNCTION], push [10k] up to start an upwards scan; or push down to start a downwards scan.

- The decimal point blinks.
- The scan stops when a signal opens the squelch.
- The scan waits on a signal for 15 seconds before resuming.
- The scan resumes 2 seconds after a signal disappears.

4) To stop the scan, push any switch.

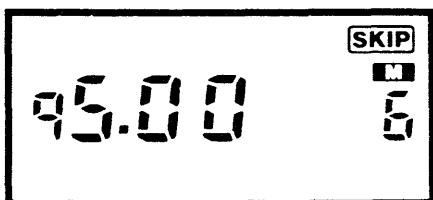
## 8. RELATED FUNCTIONS

### 8 - 5 MEMORY SCAN

The Memory Scan function scans all Memory Channels in succession.

- 1) Push [V/M] until "M" appears on the FUNCTION DISPLAY.
- 2) Rotate [SQL] until the speaker is muted.
- 3) While pushing [FUNCTION], push [10k] up to start an upwards scan; or push down to start a downwards scan.
  - The decimal point blinks.
  - The scan stops when a signal opens the squelch.
  - The scan waits on a signal for 15 seconds before resuming.
  - The scan resumes 2 seconds after a signal disappears.
- 4) To stop the scan, push any switch on the top panel.

### 8 - 6 MEMORY CHANNEL SKIP FUNCTION



Use this function to skip Memory Channels in a Memory Scan.

- 1) Select the Memory Channel to be skipped. See Section 8 - 1, steps 1 and 2.
- 2) To write the SKIP function into the Memory Channel, push [V/M] while pushing [FUNCTION].
  - Repeat this step to cancel SKIP for that channel.



**8 - 7 TONE SQUELCH AND POCKET BEEP**

(IC-12GAT only)

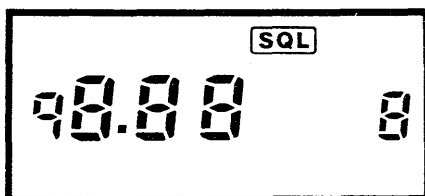
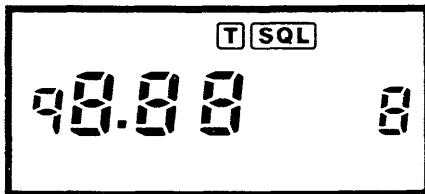
Install the UT-40 TONE SQUELCH UNIT (sold separately) to operate TONE SQUELCH and POCKET BEEP.

**TONE SQUELCH:**

The squelch opens when a tone received from another station equals the tone you have set.

**POCKET BEEP:**

The transceiver functions as a pager. The speaker emits an alarm for 30 seconds when a tone received from another station equals the tone you have set.



- 1) To turn ON the Tone Squelch, push [100k] down once while pushing [FUNCTION].

- "T SQL" is displayed.
- To select a tone squelch frequency, see p. 26.

- 2) To turn ON Pocket Beep, once again push [100k] down while pushing [FUNCTION].

- "SQL" is displayed.
- To select a tone frequency, see p. 26.

- 3) When the Pocket Beep alarm rings, push any switch to turn it OFF.

- The Tone Squelch is turned ON automatically.

- 4) To turn OFF the Tone Squelch, push [100k] down while pushing [FUNCTION].

## 8. RELATED FUNCTIONS

### 8 - 8 CALL CHANNEL OPERATION (IC-12GAT only)

#### ■ READING



#### ■ WRITING

The Call Channel is a separate Memory Channel which provides easy access to your most often used frequency.

1) Push [CALL] to bring up the Call Channel.

- "C" appears on the FUNCTION DISPLAY.

2) Push [CALL] again to return to the previous operating frequency.

1) Push [V/M] or [CALL] until "M" or "C" disappears from the FUNCTION DISPLAY.

2) Set the operating frequency, the tone frequency, etc., as you would program a Memory Channel. See p. 19.

3) Push [CALL].

- "C" appears on the FUNCTION DISPLAY.

4) To write the information into the Call Channel, push and hold [WR] until the speaker emits 3 beeps.

### 8 - 9 BEEP ON/OFF

The speaker emits a beep when a switch is pushed.

While pushing [FUNCTION], push [MONI] once to turn OFF the beeps. Push again to turn ON the beeps.

- Turning these beeps ON and OFF does not affect Pocket Beep.

### 8 - 10 LOCK FUNCTION

The LOCK function disables all switches except [H/L], [MONI], [PTT] and [LIGHT], preventing accidental frequency changes, etc.

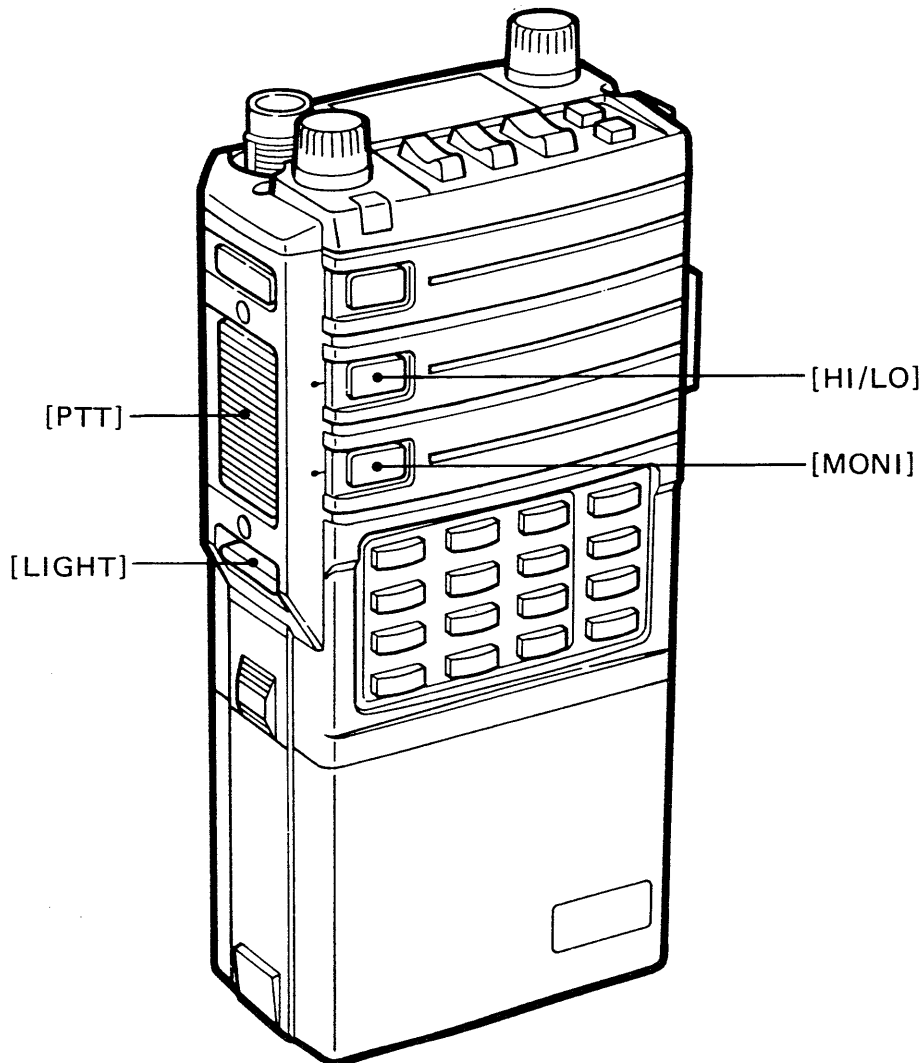


1) While pushing [FUNCTION], push [H/L] to lock all switches.

- "L" appears on the FUNCTION DISPLAY.

2) Repeat step 1 to unlock the switches.

When the LOCK function is ON, these switches remain unlocked:

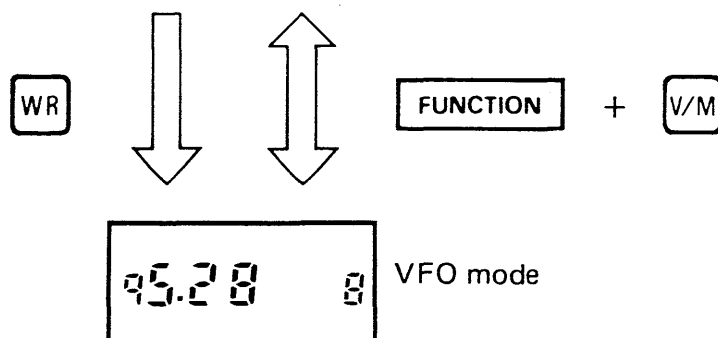
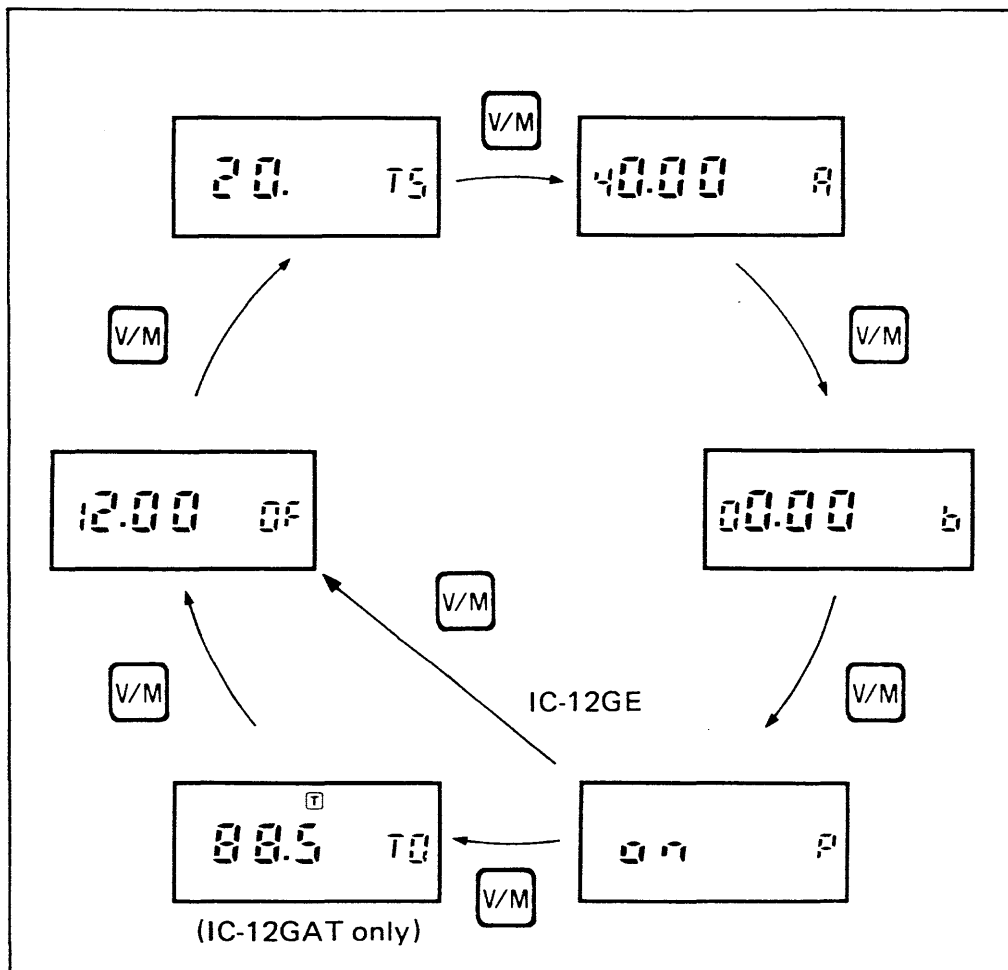


# 9. SET MODE

## 9-1 THE SET MODE DISPLAYS

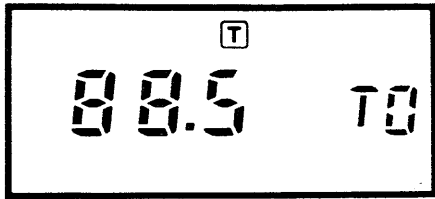
Program the following information when the SET mode displays appear on the FUNCTION DISPLAY:

- Subaudible tone frequency
- Offset frequency
- Tuning step
- Scan edges
- Power saver ON/OFF



**9 - 2 SUBAUDIBLE TONE**

(IC-12GAT only)



Initial tone frequency: 88.5Hz

Select one of 38 subaudible CTCSS tone encoded frequencies for repeater operation; or 37 encoder/decoder frequencies when the UT-40 TONE SQUELCH UNIT (sold separately) is installed.

- 1) When using the VFO mode, push [V/M] while pushing [FUNCTION].
- 2) Push [V/M] until "TO" flashes on the FUNCTION DISPLAY.
- 3) To select a tone frequency, push [10k].
- 4) Push [WR] to return to the VFO mode; or push [V/M] for the next SET display (p. 25).

**9 - 3 OFFSET FREQUENCY**



Initial offset frequencies:  
 IC-12GAT: 12MHz  
 IC-12GE : 35MHz

Select the offset frequency for repeater operation.

- 1) When using the VFO mode, push [V/M] while pushing [FUNCTION].
- 2) Push [V/M] until "OF" flashes on the FUNCTION DISPLAY.
- 3) Push the DIGIT UP/DOWN SWITCHES for the desired offset frequency.

**Example:** Repeater input frequency  
 1296.00MHz

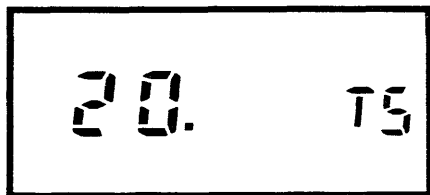
Repeater output frequency  
 1284.00MHz

Set the offset frequency to "12.00."

- 4) Push [WR] to return to the VFO mode; or push [V/M] for the next SET display (p. 25).

## 9. SET MODE

### 9 - 4 TUNING STEP

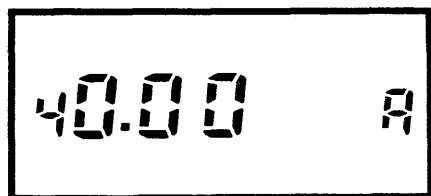


Tuning step settings:  
IC-12GAT: 10 or 20kHz  
IC-12GE : 12.5 or 25kHz

The tuning step is the frequency change in kHz effected by pushing [10k] once.

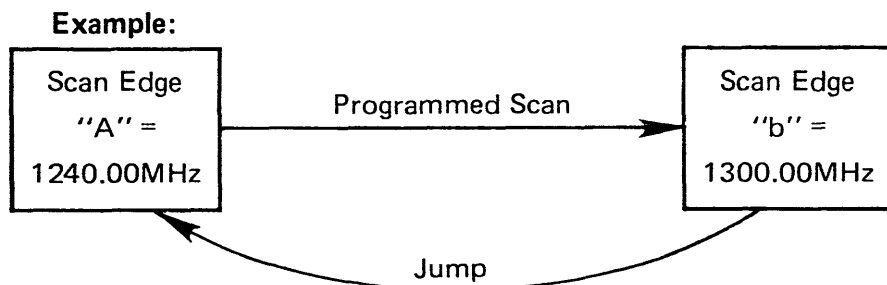
- 1) When using the VFO mode, push [V/M] while pushing [FUNCTION].
- 2) Push [V/M] until "TS" flashes on the FUNCTION DISPLAY.
  - To exchange 10 or 20kHz settings for 12.5 or 25kHz setting reset the CPU. See pgs. 29~30.
- 3) Push [10k] for the desired tuning step.
- 4) Push [WR] to return to the VFO mode; or push [V/M] for the next SET display (p. 25).

### 9 - 5 PROGRAMMED SCAN EDGE



Set the edge frequencies for a Programmed Scan.

- 1) When using the VFO mode, push [V/M] while pushing [FUNCTION].
- 2) Push [V/M] until "A" appears on the FUNCTION DISPLAY.
- 3) Push the DIGIT UP/DOWN SWITCHES for the desired frequency.
- 4) Push [V/M] until "b" appears on the FUNCTION DISPLAY.
- 5) Push [WR] to return to the VFO mode; or push [V/M] for the next SET display (p. 25).



**9 - 6 POWER SAVER  
ON/OFF**

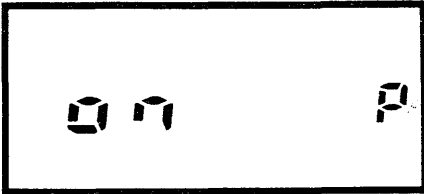
1) When using the VFO mode, push [V/M] while pushing [FUNCTION].

2) Push [V/M] until "P" appears on the FUNCTION DISPLAY.

3) Push [10k] to display "on" or "oFF."

- When "on" is displayed, the power saver function is activated. If no signals are received after 30 seconds, battery current is automatically cut to 20mA.

4) Push [WR] to return to the VFO mode; or push [V/M] for the next SET display (p. 25).



# 10. MAINTENANCE

## 10 - 1 MEMORY BACKUP BATTERY

The life of the memory backup battery is more than 5 years. When this battery is exhausted, the transceiver operates normally. However, detaching the battery pack erases the memory.

The backup battery should be replaced by an authorized Icom Dealer or Service Center.

## 10 - 2 RESETTING THE CPU

Erroneous information displayed on the FUNCTION DISPLAY is usually caused by static or a magnetic field near the transceiver.

**NOTE:** Resetting the CPU erases all information written into the memory channels.

### ■ BEFORE RESETTING

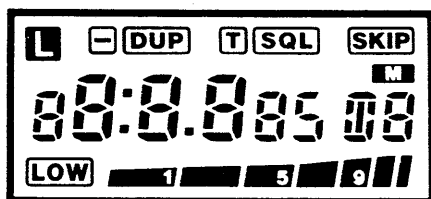
Turn OFF the power, and then turn it ON again after a few seconds.

If erroneous information is still displayed, reset the CPU as described below.

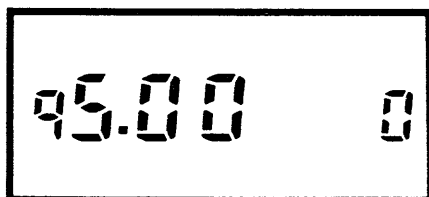
### ■ IC-12GAT

1) While pushing [FUNCTION] and [LIGHT], turn OFF the power.

2) Continue pushing [FUNCTION] and [LIGHT]. Turn ON the power.



• The entire display appears.



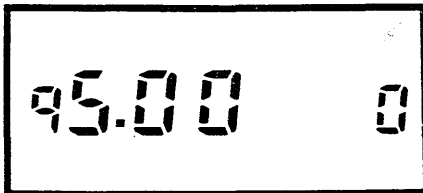
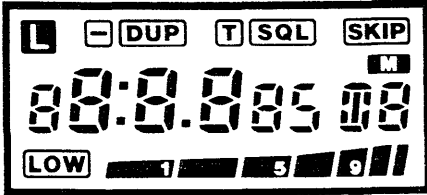
• "95.00" appears after 2 seconds.

3) Stop pushing [FUNCTION] and [LIGHT].

• The CPU has been reset.



## ■ IC-12GE



1) While pushing [LIGHT] and [WR], turn OFF the power.

2) Continue pushing [LIGHT] and [WR]. Turn ON the power.

- The entire display appears.

- "95.00" appears after 2 seconds.

3) Stop pushing [LIGHT] and [WR].

- The CPU has been reset.

## 10 - 3 RESETTING TUNING STEPS

### ■ IC-12GAT

1) To exchange 10 or 20kHz tuning steps for 12.5 or 25kHz steps, follow the above instructions for resetting the CPU in IC-12GE.

2) To return to the initial tuning steps, follow the instructions for resetting the CPU in IC-12GAT (p. 29).

### ■ IC-12GE

1) To exchange 12.5 or 25kHz tuning steps for 10 or 20kHz steps, follow the instructions for resetting the CPU in IC-12GAT (p. 29).

2) To return to the initial tuning steps, follow the above instructions for resetting the CPU in IC-12GE.

# 11. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE
Power does not come ON.	<ul style="list-style-type: none"><li>• Battery pack is exhausted.</li><li>• Battery pack terminals are dirty.</li><li>• Battery pack incorrectly inserted.</li><li>• Dry cells incorrectly inserted.</li></ul>
No sound from the speaker.	<ul style="list-style-type: none"><li>• The squelch is closed.</li><li>• The Tone Squelch is ON (when UT-40 is installed).</li><li>• Audio volume is low.</li><li>• Battery pack is low.</li></ul>
The TRANSMIT INDICATOR does not light when [PTT] is pushed.	<ul style="list-style-type: none"><li>• Battery pack is low.</li></ul>
Can not make a simplex contact.	<ul style="list-style-type: none"><li>• Transceiver set to duplex.</li><li>• Power set to LOW. Switch to HIGH.</li><li>• Tone squelch frequency does not equal that of the other station (when UT-40 is installed).</li></ul>
Can not access a repeater.	<ul style="list-style-type: none"><li>• Transceiver is set to simplex.</li><li>• Tone frequency is incorrect.</li><li>• Offset frequency is incorrect.</li><li>• Power set to LOW. Switch to HIGH.</li></ul>
Can not set a frequency.	<ul style="list-style-type: none"><li>• The LOCK function is ON.</li><li>• The Call Channel is displayed.</li><li>• You are using the MEMORY. Switch to the VFO.</li></ul>
Scans do not function.	<ul style="list-style-type: none"><li>• The squelch is open.</li><li>• The Call Channel is displayed.</li><li>• The LOCK function is ON.</li><li>• Programmed Scan edge frequencies are equal.</li><li>• All memory channels are programmed to be skipped in a Memory Scan.</li></ul>
Audio is distorted.	<ul style="list-style-type: none"><li>• RIT or VXO is turned ON.</li><li>• The signal is off-frequency. Use RIT or VXO to tune it in.</li></ul>

# SPECIFICATIONS 12.

## ■ GENERAL

- Frequency coverage\* : 1240 ~ 1300MHz  
\*Specifications guaranteed for 1260 ~ 1300MHz.
- Mode : FM (F3)
- Tuning steps : IC-12GAT 10 or 20kHz  
IC-12GE 12.5 or 25kHz
- Memory channels : IC-12GAT 20 and a Call Channel  
IC-12GE 20
- Antenna impedance : 50Ω unbalanced
- Power supply requirement : 8.4V DC (standard)  
5.5V ~ 16V DC (acceptable)
- Ground : Negative
- Current drain (at 13.2V) : Receive/max. audio output 250mA (max.)  
Receive/power saver ON 24mA (typical)  
Transmit/HIGH output power 0.9A (max.)  
Transmit/LOW output power 0.4A (max.)
- Usable temperature range : -10°C ~ +60°C (+14°F ~ +140°F)
- Frequency stability : ±3ppm (0°C ~ +50°C) (+32°F ~ +122°F)
- Dimensions : 65(W) x 130(H) x 35(D)mm  
2.6(W) x 5.1(H) x 1.4(D) inches  
(not including projections)
- Weight : 470g (1.0lb.)

## ■ TRANSMITTER

- Output power (at 8.4V DC) : HIGH 1W  
LOW 0.1W
- Modulation system : Variable reactance frequency modulation
- Maximum frequency deviation : ±5kHz
- Spurious emissions : Less than -40dB
- Microphone impedance : 2kΩ

## ■ RECEIVER

- Receiver system : Double-conversion superheterodyne
- Intermediate frequency : 1st 72.2MHz  
2nd 455kHz
- Sensitivity : Less than 0.25μV for 12dB SINAD
- Squelch sensitivity (threshold) : Less than 0.18μV
- Selectivity : More than 15kHz/-6dB  
Less than 30kHz/-60dB
- Spurious response rejection : More than 50dB (1st IF)
- Audio output power : More than 400mW at 10% distortion with an 8Ω load
- Audio output impedance : 8Ω

All stated specifications are subject to change without notice or obligation.

**Count on us!**

