

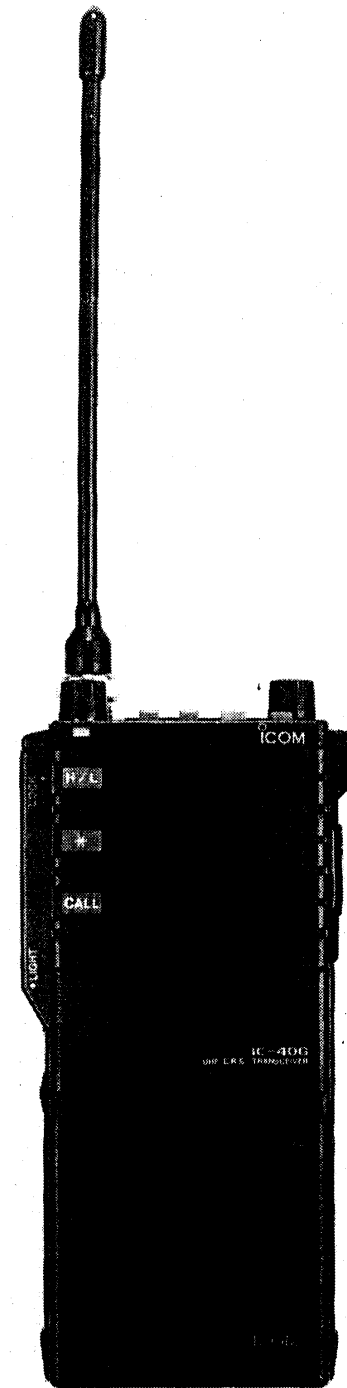
**icom**

**INSTRUCTION MANUAL**

UHF C.R.S. TRANSCEIVER

**IC-40G**

**Icom Inc.**



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## IMPORTANT

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**READ THIS INSTRUCTION MANUAL CAREFULLY** before attempting to operate the transceiver. If you have any questions regarding the operation of the IC-40G, feel free to contact your nearest authorized Icom Dealer or Service Center.

**SAVE THIS INSTRUCTION MANUAL** — This instruction manual contains important safety and operation instructions for the IC-40G.

The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

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## PRECAUTIONS

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**NEVER** allow children to touch the transceiver.

**NEVER** place the transceiver for long periods in direct sunlight.

**NEVER** disassemble the transceiver as this may cause trouble.

**NEVER** connect the transceiver to a power source of more than 16 V DC.

**BE CAREFUL** when transmitting for long periods. The rear panel may become hot.

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## FOREWORD

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Thank you for purchasing the IC-40G UHF C. R. S. TRANSCEIVER. The IC-40G is the most advanced C. R. S. handheld transceiver designed with Icom state-of-the-art handheld technology. The IC-40G is equipped with many convenient functions that provide you with modern hi-tech communications.

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## FEATURES

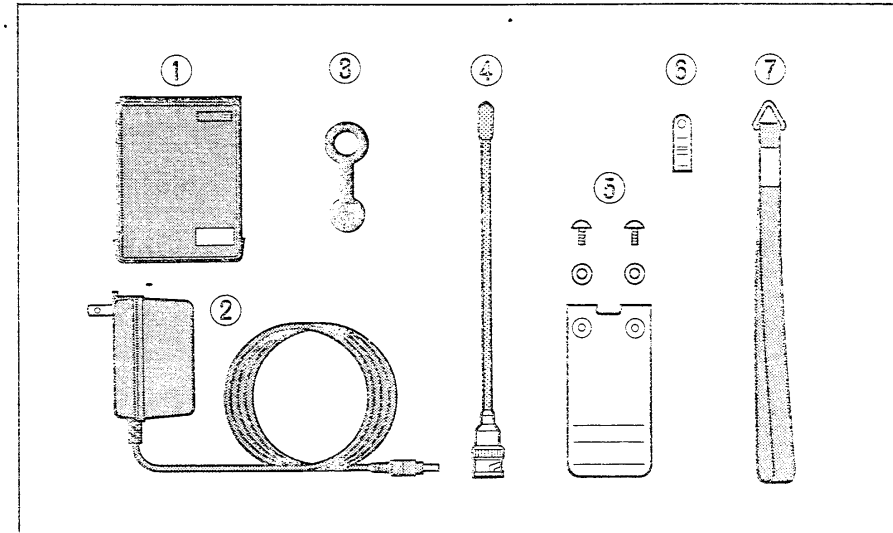
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- 5 W output power
  - 40 operational channels and 12 memory channels
  - Scan and dual watch functions
  - Repeater operation capability
  - 5-Tone capability\*
  - User programmable time-out timer
  - User programmable auto power saver
  - Function display backlight with auto shut off
  - Splash resistant
  - Diecast frame
  - A variety of options
- \* The transceiver accepts the plug-in S1515/01 5-Tone unit from Sigtec. Ask your nearest Icom Dealer for further information.

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# UNPACKING



Accessories included with the IC-40G:	Qty.
① Battery pack (BP-70) .....	1
② Wall charger (BC-18).....	1
③ Antenna rubber cap.....	1
④ Flexible antenna (FA-3).....	1
⑤ Belt clip, screws and washers.....	1 set
⑥ Handstrap clip.....	1
⑦ Handstrap .....	1

# SPECIFICATIONS

## ■ GENERAL

- Frequency coverage : 40 of all UHF C.R.S. channels (476.425~477.400 MHz)
- Mode : FM (16K0F3E)
- Tuning step increment : 25 kHz
- Number of memory channels : 12
- Antenna impedance : 50  $\Omega$  (unbalanced)
- Power supply requirement : Icom battery pack or battery case (See options list.)  
External 7~16 V DC (With the optional AD-12)
- Current drain (at 13.2 V DC) : Transmit High 1.8 A  
Low 1.0 A  
Receive Max. audio 250 mA  
Power saved 12 mA
- Usable temperature range :  $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$
- Frequency stability :  $\pm 10$  ppm ( $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ )
- Dimensions (with BP-70) : 65 (W)  $\times$  151 (H)  $\times$  35 (D) mm (Projections not included)
- Weight (with BP-70) : 486 g

## ■ TRANSMITTER

- Output power (at 13.2 V DC) : High 5 W  
Low 600 mW
- Modulation system : Variable reactance frequency modulation
- Max. frequency deviation :  $\pm 5$  kHz
- Spurious emissions : Less than  $-37$  dB
- Microphone impedance : 2 k $\Omega$

## ■ RECEIVER

- Sensitivity : Less than 0.25  $\mu\text{V}$  for 12 dB SINAD
- Squelch sensitivity : Less than 0.1  $\mu\text{V}$  (threshold)
- Spurious response rejection:  $-60$  dB
- Audio output power : 400 mW with an 8  $\Omega$  load
- Audio output impedance : 8  $\Omega$

## ■ FREQUENCY CHART

Channel number	Frequency (MHz)	Channel number	Frequency (MHz)	Channel number	Frequency (MHz)
1	476.425	15	476.775	29	477.125
2	476.450	16	476.800	30	477.150
3	476.475	17	476.825	31	477.175
4	476.500	18	476.850	32	477.200
5	476.525	19	476.875	33	477.225
6	476.550	20	476.900	34	477.250
7	476.575	21	476.925	35	477.275
8	476.600	22	476.950	36	477.300
9	476.625	23	476.975	37	477.325
10	476.650	24	477.000	38	477.350
11	476.675	25	477.025	39	477.375
12	476.700	26	477.050	40	477.400
13	476.725	27	477.075		
14	476.750	28	477.100		

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

## 1-1 Attaching accessories

### (1) ANTENNA CONNECTION

Insert the supplied flexible antenna onto the antenna connector and twist the connector on the antenna. (Fig. 1)

### (2) HANDSTRAP ATTACHMENT

Insert the handstrap clip.

Slide the handstrap holder through the hole in the handstrap clip. (Fig. 2)

### (3) BELT CLIP ATTACHMENT

Remove the bushings from the two holes on the rear panel.

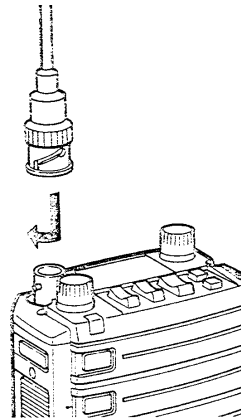
Attach the belt clip to the rear panel using the supplied screws and washers. (Fig. 3)

### (4) BATTERY PACK REMOVAL

Push and hold the battery pack release button upwards, then slide the battery pack to the right with the transceiver facing you.

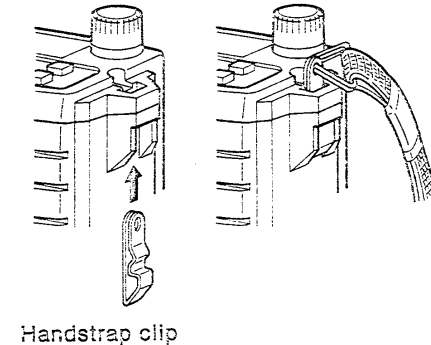
To attach the battery pack, mate the notched ends of the transceiver and the battery pack, and slide until a click sound is heard. (Fig. 4)

#### • ANTENNA



(Fig. 1)

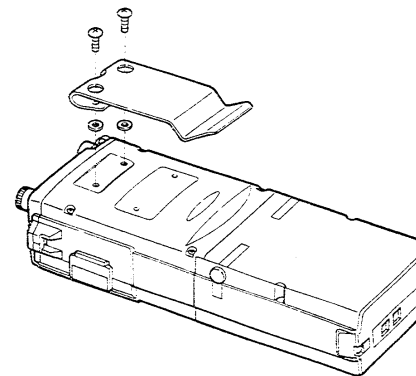
#### • HANDSTRAP



Handstrap clip

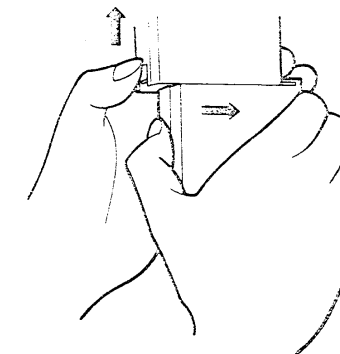
(Fig. 2)

#### • BELT CLIP



(Fig. 3)

#### • BATTERY PACK



(Fig. 4)

## 1-2 Charging a battery pack

The battery pack needs charging under the following conditions:

- When using the battery pack for the first time.
- When the FUNCTION DISPLAY does not illuminate the channel number while transmitting.

### (1) CHARGING THE SUPPLIED BP-70 BATTERY PACK

Connect the supplied BC-18 WALL CHARGER to the [WALL CHARGER] jack on the side of the battery pack.

- The red battery pack indicator lights up while charging.
- The charging period is about 9 hours.

The optional BC-36 AC BATTERY CHARGER or CP-11 CIGARETTE LIGHTER CABLE WITH NOISE FILTER can also be used for charging.

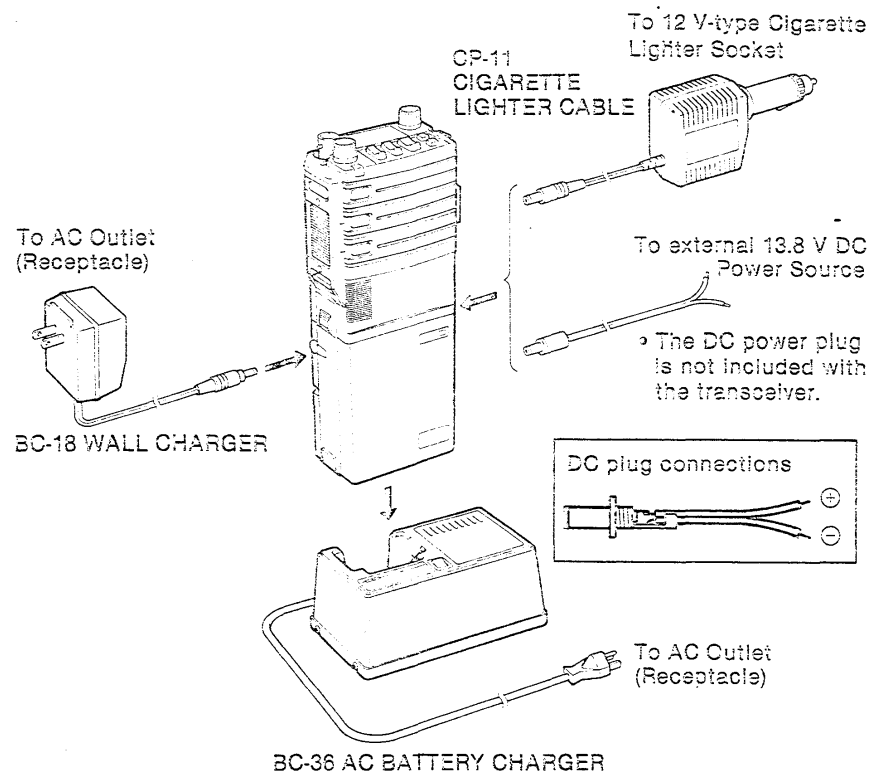
- The charging period is about 9 hours.

### (2) ICOM OPTIONAL BATTERY PACKS

Other Icom battery packs require a wall charger or a cable suitable for the battery packs. See the lists on p. 6 or separate "LIST OF OPTIONS." For further information see the battery pack instruction manual or ask an authorized Icom Dealer or Service Center.

- Charging periods vary depending on the charger type. See separate "LIST OF OPTIONS."

### ◦ CHARGING CONNECTIONS



USE ONLY one charger.

**(3) CHARGING NOTES**

1. NEVER charge dry batteries in the BP-4 battery case.
2. DO NOT charge a battery pack longer than 30 hours.
3. AVOID charging in extreme cold (under +10°C) or extreme heat (over +45°C).
4. Icom rechargeable battery packs can be charged about 300 times. After 300 charges, a new battery pack should be purchased. The internal batteries of the battery pack are not replaceable.
5. The battery pack to be charged should be nearly fully discharged. Frequent charges of a battery pack that is only partially discharged may not result in a full charge.

**◦ BACKUP BATTERY**

The IC-40G has a built-in backup battery for retaining memory information. The usual life of the battery is more than 5 years. If the battery is exhausted, the transceiver operates normally but contents in memory channels are not retained when the battery pack is detached.

Backup battery replacement MUST be done by an authorized Icom Dealer or Service Center.

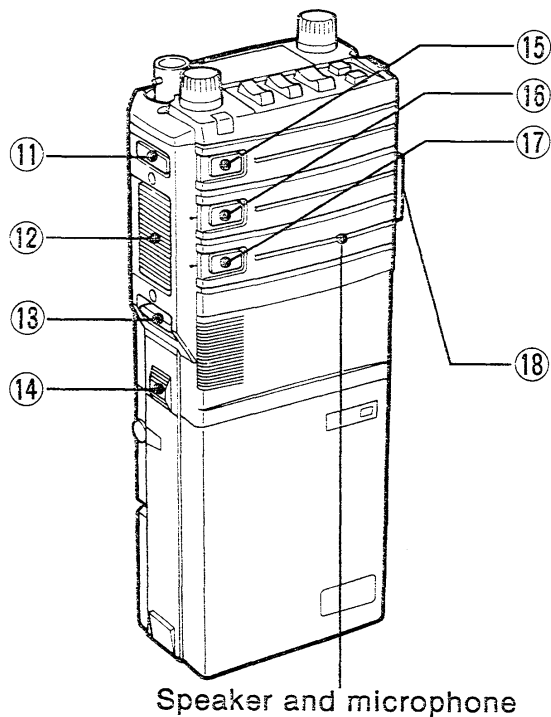
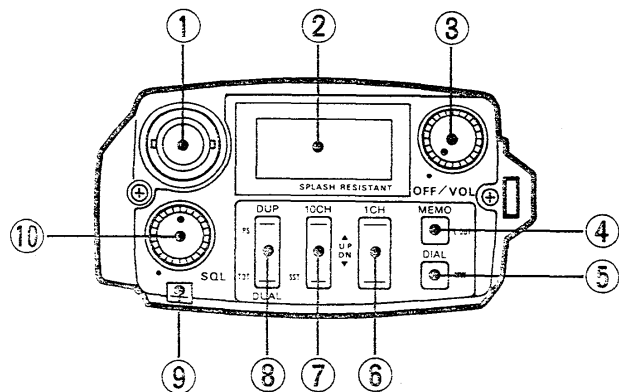
**(4) OPTIONAL BATTERY PACKS AND CHARGERS LIST****◦ BATTERY PACKS AND CASE**

BATTERY PACK	OUTPUT VOLTAGE	BATTERY CAPACITY
BP-2	7.2 V	450 mAh
BP-3	8.4 V	270 mAh
BP-4	BATTERY CASE (Six AA size batteries)	
BP-5	10.8 V	450 mAh
BP-5A	10.8 V	450 mAh
BP-7	13.2 V	450 mAh
BP-8	8.4 V	800 mAh
BP-70	13.2 V	270 mAh

**◦ AC BATTERY CHARGERS**

CHARGER	SUITABLE BATTERY PACK
BC-18 WALL CHARGER	BP-5A, BP-7, BP-8, BP-70
BC-27 WALL CHARGER	BP-3
BC-38 AC BATTERY CHARGER	BP-2~BP-8, BP-70
CM-60A MULTI-CHARGER	BP-2~BP-8, BP-70

## 2-1 Switches and controls



## ① ANTENNA CONNECTOR

Connect the supplied flexible antenna here. (p. 4)

## ② FUNCTION DISPLAY (p. 9)

## ③ POWER SWITCH/VOLUME CONTROL [OFF/VOL]

Turns power ON and OFF and adjusts the audio level.

## ④ MEMORY SWITCH [MEMO]

Selects MEMORY mode. (p. 13)

- While pushing [FUNCTION]:

Programs the memory channel as the lockout channel when selecting MEMORY mode. (p. 15)

## ⑤ DIAL SWITCH [DIAL]

Selects DIAL mode. (p. 10)

- While pushing [FUNCTION]:

Writes the displayed contents into the memory channel by pushing and holding when selecting DIAL mode. (p. 13)

## ⑥ 1CH UP/DOWN SWITCH [1CH]

Selects channels in sequence.

- While pushing [FUNCTION]:

Starts a scan. (p. 14)



**⑦ 10CH UP/DOWN SWITCH [10CH]**

Selects the channel number in steps of 10.

- While pushing [FUNCTION]:

Selects the scan resume condition (Scan Stop Timer) setting mode when pushed downwards. (p. 15)

**⑧ DUPLEX AND DUAL WATCH SWITCH [DUP/DUAL]**

Selects duplex mode when any of channels 1~8 is selected and the switch is pushed upwards. (p. 12)

Starts dual watch when the switch is pushed downwards. (p. 16)

- While pushing [FUNCTION]:

Selects the power saver setting mode when pushed upwards. (p. 17)

Selects the time-out timer setting mode when pushed downwards. (p. 17)

**⑨ TRANSMIT INDICATOR**

Lights up in red while transmitting.

**⑩ SQUELCH CONTROL [SQL]**

Varies the squelch threshold point for noise mute.

**⑪ FUNCTION SWITCH [FUNCTION]**

While pushing this switch, other switches operate as a secondary function.

**⑫ PTT SWITCH**

Push and hold to transmit; release to receive.

**⑬ LIGHT SWITCH [LIGHT]**

Lights the display backlight for approx. 5 sec. (Auto shut off.)

**⑭ BATTERY PACK RELEASE BUTTON [RELEASE]**

Opens the latch for battery pack removal when pushed upwards. (p. 4)

**⑮ TRANSMIT POWER SWITCH [H/L]**

Selects high or low transmit output power. (p. 9)

**⑯ OPEN SWITCH [✳]**

No function.

**⑰ 5-TONE OPERATION SWITCH [CALL]**

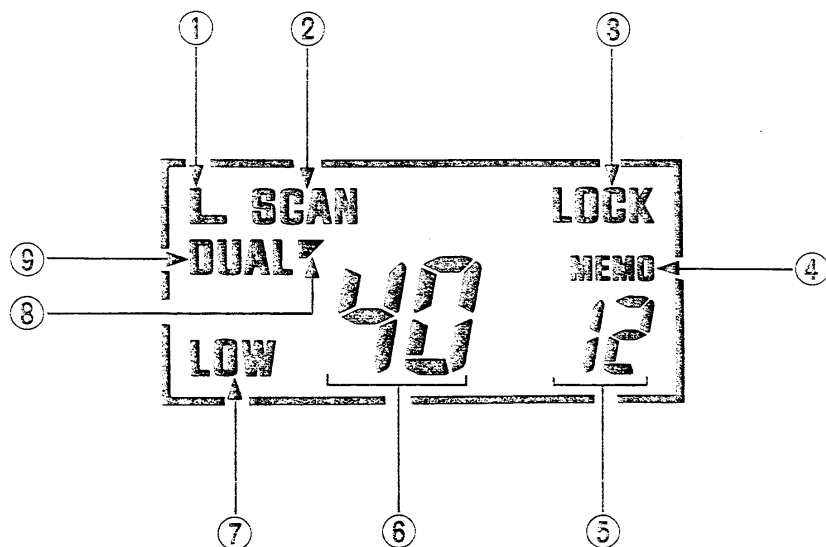
Transmits 5-Tone, and mutes or unmutes signals when an optional 5-Tone unit (S1515/01) is installed.

**⑱ EXTERNAL SPEAKER AND MIC JACKS [EXT SP MIC]**

Connect an optional speaker-microphone or headset, if desired. See separate "LIST OF OPTIONS" for details.

The internal speaker and microphone do not function when either option is connected.

### 2-2 Function display



- ① **DIAL LOCK INDICATOR**  
Indicates that the dial lock function is activated. (p. 10)
- ② **SCAN INDICATOR**  
Indicates that the scan function is operating. (p. 14)
- ③ **LOCKOUT CHANNEL INDICATOR**  
Indicates that the displayed memory channel is locked-out. (p. 15)  
- The memory channel is skipped during memory scanning.
- ④ **MEMORY MODE INDICATOR**  
Indicates that the transceiver is in MEMORY mode. (p. 13)
- ⑤ **MEMORY CHANNEL INDICATOR**  
Indicates the memory channel number.
- ⑥ **CHANNEL NUMBER INDICATOR**  
Indicates the operating channel number.
- ⑦ **TRANSMIT POWER INDICATOR**  
Indicates the operating output power.
  - LOW power: "LOW" appears.
  - HIGH power: No indication.
- ⑧ **DUPLEX INDICATOR**  
Indicates that the duplex mode is activated. (p. 12)
- ⑨ **DUAL WATCH INDICATOR**  
Indicates that the dual watch function is operating. (p. 16)

## 3-1 Receiving

- ① Rotate [OFF/VOL] clockwise to turn power ON.
- ② Rotate [SQL] clockwise until noise disappears.
- ③ Push [DIAL] to select DIAL mode.
- ④ Select the desired channel using [10CH] and [1CH].

When the transceiver receives a signal, audio is emitted from the speaker.

### MODE TYPES

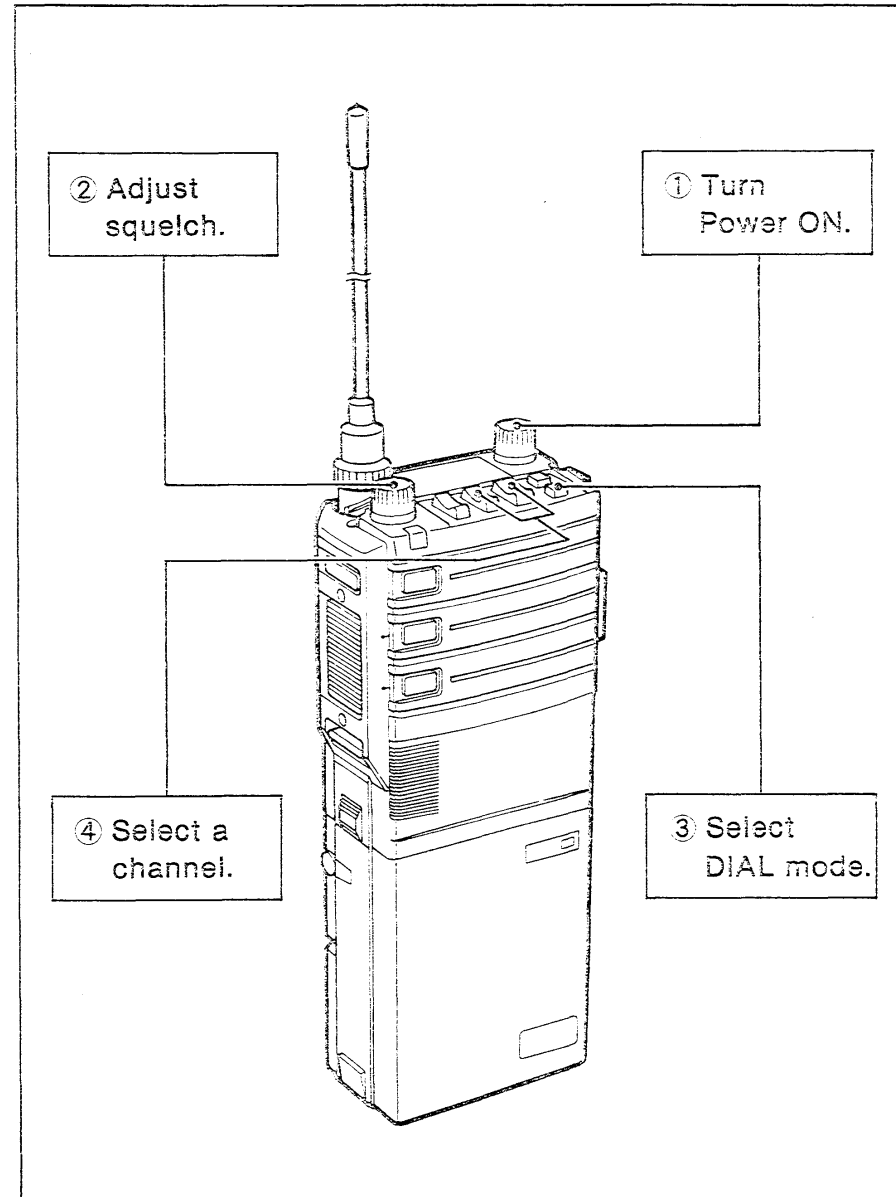
The transceiver has 2 different modes.

- DIAL mode;  
Accepts all UHF C.R.S. channels.
- MEMORY mode;  
Accepts user-programmed memory channels. (p. 13)

### DIAL LOCK FUNCTION

The dial lock function electronically locks switches on the top panel to prevent the operating channel and function from changing accidentally.

- ① While pushing [FUNCTION], push [H/L] (LOCK) to turn ON the dial lock function.
  - "L" appears.
- ② To cancel the function, repeat step 1.

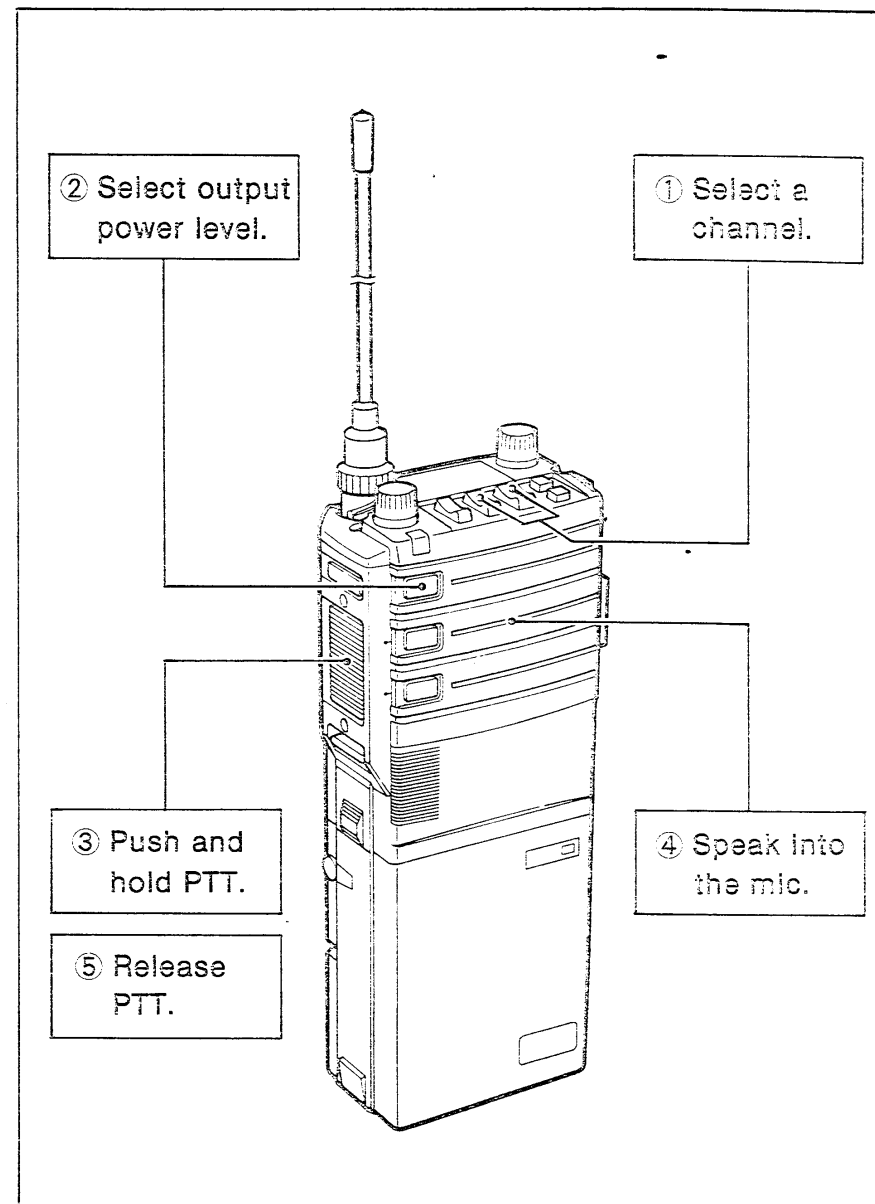


## 3-2 Transmitting

**CAUTION:** Transmitting without an antenna may damage the transceiver.

Be sure to confirm that the channel is clear before transmitting. If the channel is busy, wait until the channel becomes clear.

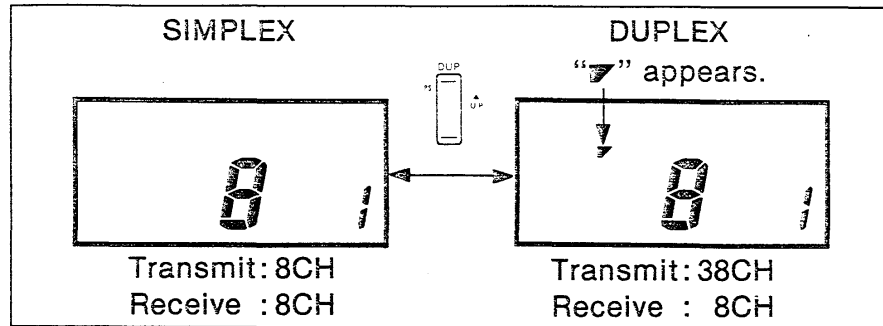
- ① Select the desired channel. (p. 10)
- ② Push [H/L] to select the output power.
  - "LOW" appears when selecting low output power and disappears when selecting high output power.
- ③ Push and hold the PTT SWITCH to transmit.
  - The TRANSMIT INDICATOR lights up in red.
  - If the FUNCTION DISPLAY goes out, battery charging is necessary.
- ④ Speak into the microphone using your normal voice level.
  - **DO NOT** hold the transceiver too closely to your mouth or speak too loudly as this may distort the signal.
- ⑤ Release the PTT SWITCH to receive.



### 3-3 Operating through a repeater

Repeaters allow you to communicate over greater distances with improved reliability.

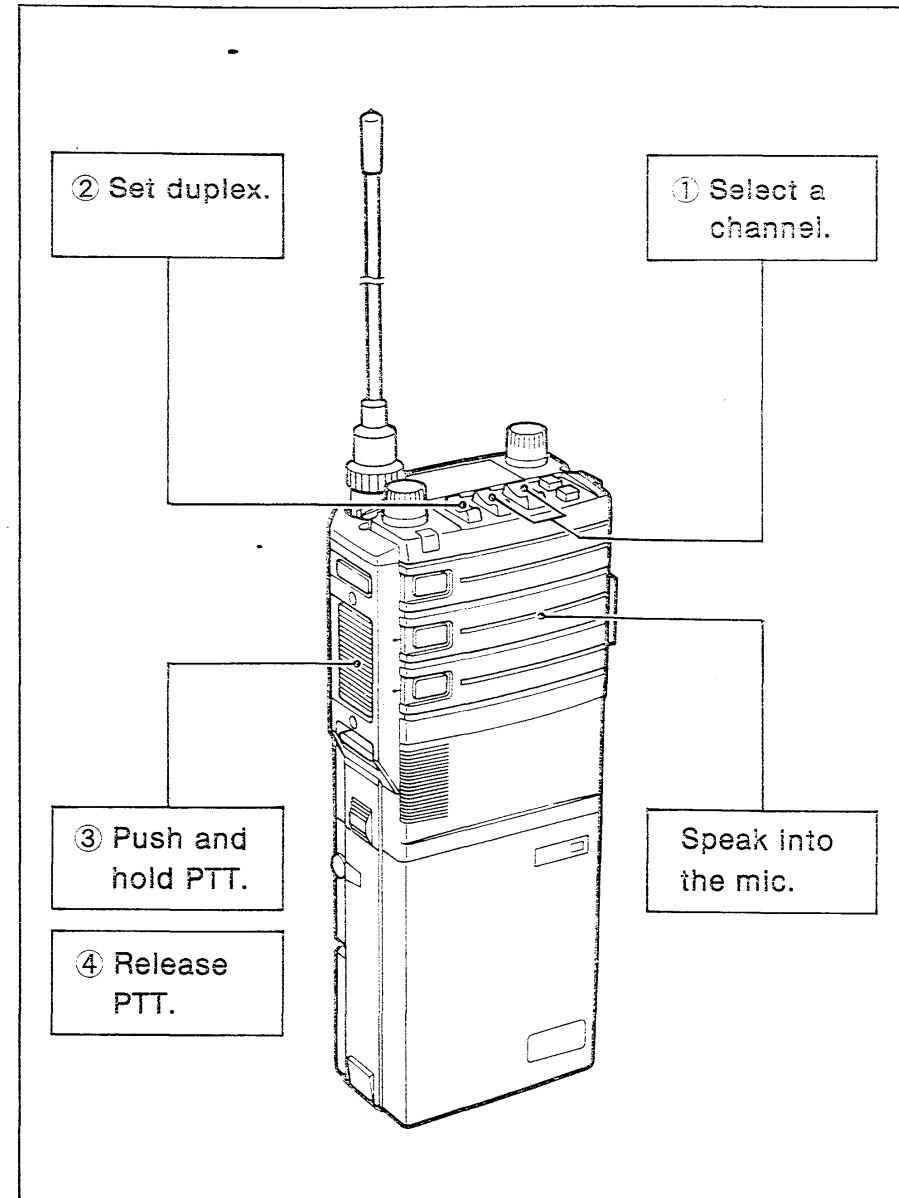
- ① Select the desired channel (CH 1~CH 8).
- ② Push [DUP/DUAL] upwards to set duplex.
  - "▼" appears.
- ③ Push and hold the PTT SWITCH to transmit and speak into the microphone.
- ④ Release the PTT SWITCH to receive.
- ⑤ To return to simplex mode, push [DUP/DUAL] upwards again.
  - "▼" disappears.



#### ■ DUPLEX CHANNEL INFORMATION

Channel number	1	2	3	4	5	6	7	8
Transmit channel	31	32	33	34	35	36	37	38
Receive channel	1	2	3	4	5	6	7	8

Duplex cannot be set on CH9~CH40.



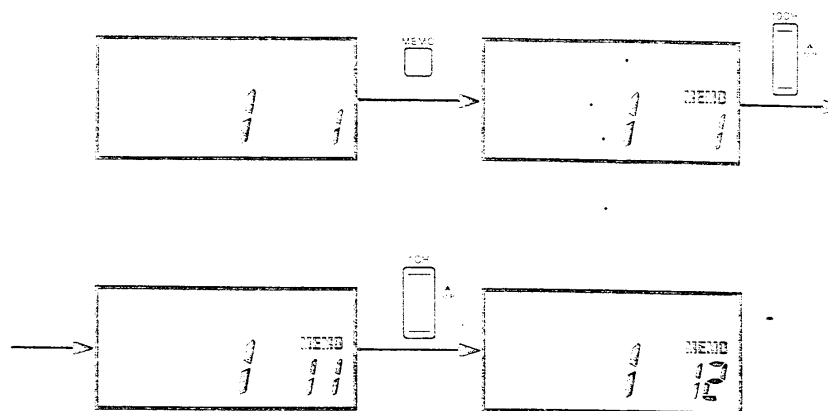
## 4-1 Selecting a memory channel

The transceiver is equipped with 12 memory channels. You can program often-used channels into memory channels for quick important-channel selection.

Duplex can be written in a memory channel. It is not necessary to set duplex every time with a memory channel.

- ① Push [MEMO] to select MEMORY mode.
  - "MEMO" appears.
- ② Select the desired memory channel using [10CH] and [1CH].

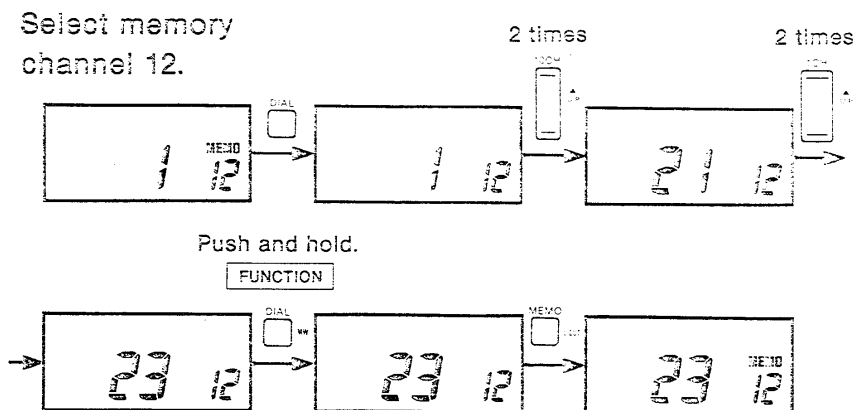
◦ EXAMPLE: Selecting memory channel 12.



## 4-2 Writing a memory

- ① Select the desired memory channel (see above).
- ② Push [DIAL] to select DIAL mode.
- ③ Set a channel to be programmed using [10CH] and [1CH].
  - Duplex (repeater) information can be set with CH1~CH8 when required.
- ④ While pushing [FUNCTION], push and hold [DIAL] (MW) until the transceiver emits 3 beeps.
- ⑤ The channel has been written into the memory channel.
  - To check the contents, push [MEMO].

◦ EXAMPLE: Writing 23CH into memory channel 12.

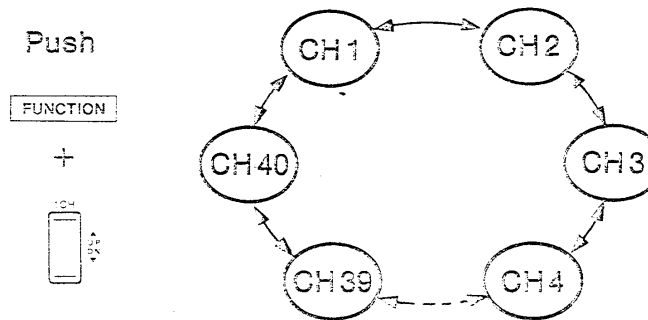


Scan function searches for busy channels. The transceiver is equipped with 2 separate scan functions as follows:

- FULL SCAN : Repeatedly scans all 40 channels.
- MEMORY SCAN: Repeatedly scans memory channels except lockout channels.

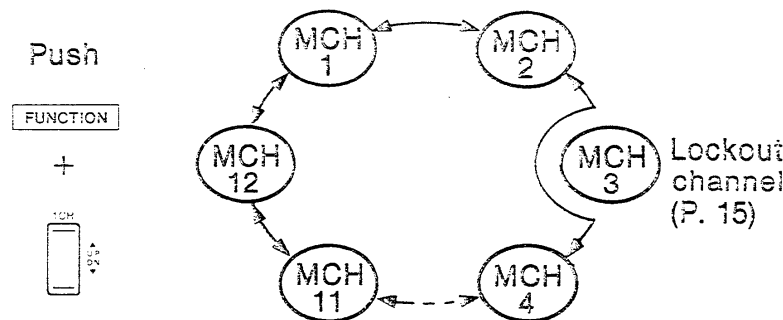
- ① Set the starting condition of the desired scan.
  - For starting the full scan, push [DIAL] to select DIAL mode.
  - For starting the memory scan, push [MEMO] to select MEMORY mode.
- ② Set [SQUELCH] at the threshold point.
- ③ While pushing [FUNCTION], push [1CH] upwards or downwards to start the scan.
  - "SCAN" appears.
  - If the transceiver receives a signal, the scan pauses. The resume condition can be changed. (p. 15)
- ④ To stop the scan, push any of the switches on the top panel.

## ◦ FULL SCAN; Starts from DIAL mode.



Repeatedly scans all 40 channels.

## ◦ MEMORY SCAN; Starts from MEMORY mode.



Repeatedly scans all memory channels except lockout channels.

## 5 SCAN OPERATION

### ■ LOCKOUT CHANNEL

Unwanted memory channels can be skipped during the memory scan operation. The lockout channel function is only available in the memory scan operation.

- ① Push [MEMO] to select MEMORY mode.  
• "MEMO" appears.
- ② Select a memory channel to be locked out.
- ③ While pushing [FUNCTION], push [MEMO] (L-OUT).  
• "LOCK" appears.
- ④ To cancel, repeat step 3.

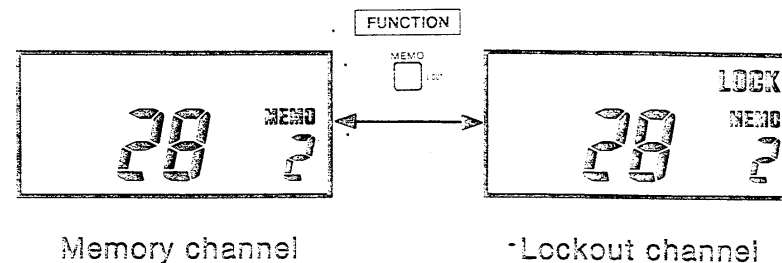
### ■ RESUME CONDITION (Scan Stop Timer)

The resume conditions of scan and dual watch can be changed.

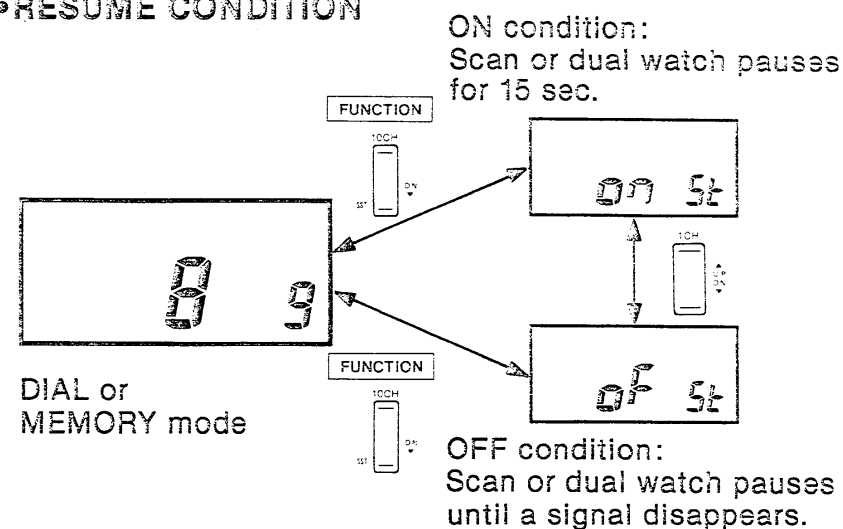
- ① To change the condition, while pushing [FUNCTION], push [10CH] (SST) downwards.  
• "St" appears, then blinks.
- ② Push [1CH] upwards or downwards to set the resume condition ON or OFF.
- ③ Repeat step 1 to return to previous mode.

The scan resume condition and the dual watch resume condition cannot be set separately.

#### • LOCKOUT CHANNEL



#### • RESUME CONDITION





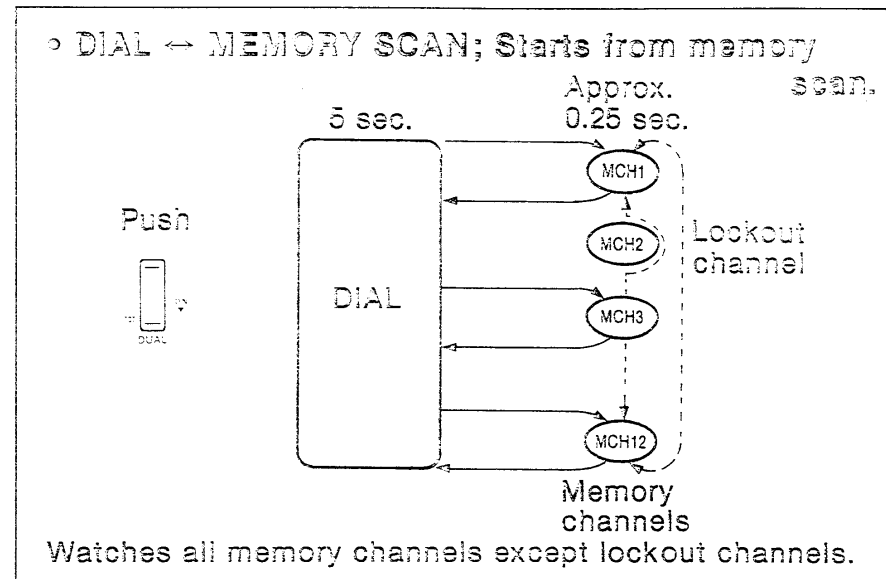
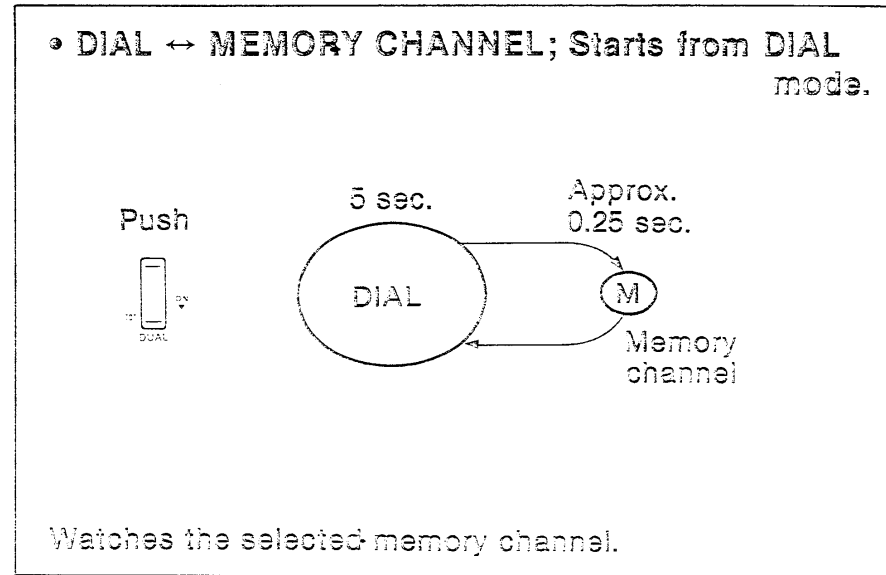
The dual watch function is convenient when you want to watch 2 channels at the same time. If you use this function, you can wait for a call on the desired memory channel while in DIAL mode operation.

The dual watch function checks the selected memory channel for 0.25 sec. every 5 sec. while receiving a channel. In the case where dual watch is combined with memory scan, the dual watch function checks memory channels in order.

2 types of dual watch functions are available.

- DIAL ↔ MEMORY CHANNEL
- DIAL ↔ MEMORY SCAN

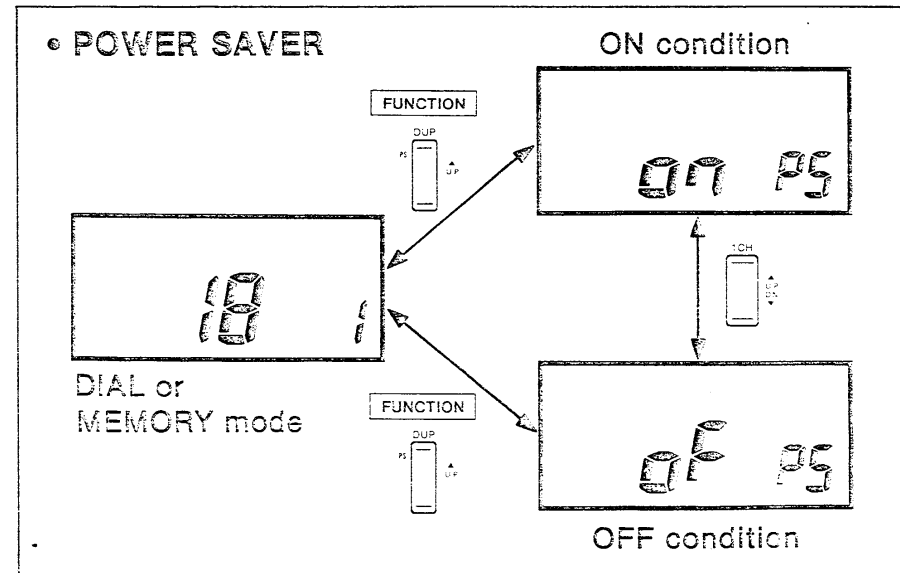
- ① Set the starting condition of the desired dual watch.
  - For starting the DIAL ↔ MEMORY CHANNEL dual watch, set the memory channel to be watched, then push [DIAL] to select DIAL mode.
  - For starting the DIAL ↔ MEMORY SCAN dual watch, start memory scan in MEMORY mode. (p. 14)
- ② Push [DUP/DUAL] downwards to start dual watch.
  - "DUAL" appears.
  - If the transceiver receives a signal on the memory channel, dual watch pauses and "DUAL" blinks. The resume condition can be changed. (p. 15)
- ③ Push [DUP/DUAL] downwards again to stop dual watch.



## 7-1 Power saver

This function reduces the receive current drain by 75%. The receiving circuit ON/OFF is repeatedly performed automatically. It is effective for preserving the battery power.

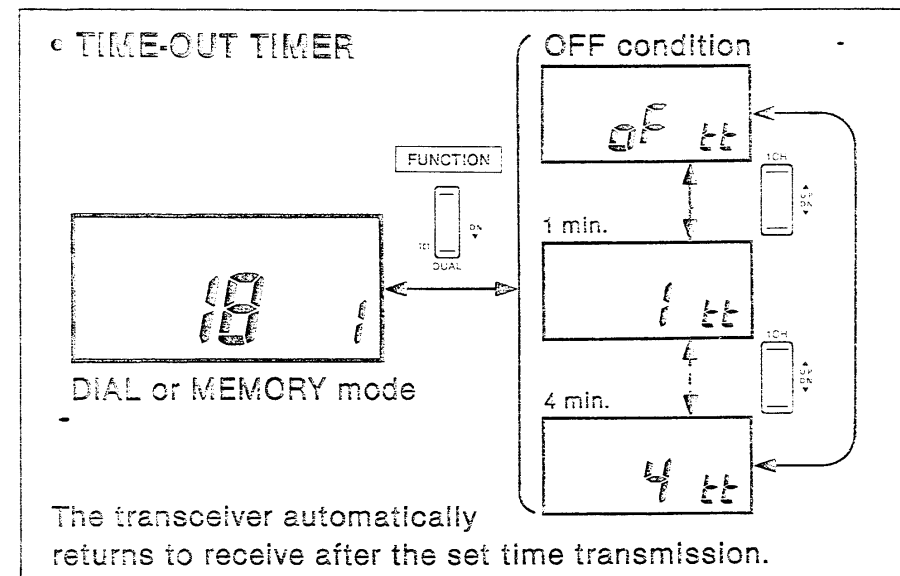
- ① While pushing [FUNCTION], push [DUP/DUAL] (PS) upwards.
  - "PS" appears, then blinks.
- ② Push [1CH] upwards or downwards to set power saver ON or OFF.
- ③ To return to the previous mode, repeat step 1.



## 7-2 Time-out timer

The built-in time-out timer limits battery power consumption during periods of long transmissions. Time-out times of 1 min., 2 min., 3 min., 4 min. and the off condition can be set.

- ① While pushing [FUNCTION], push [DUP/DUAL] (TOT) downwards.
  - "tt" appears, then blinks.
- ② Push [1CH] upwards or downwards until the desired setting time appears.
- ③ To return to the previous mode, repeat step 1.



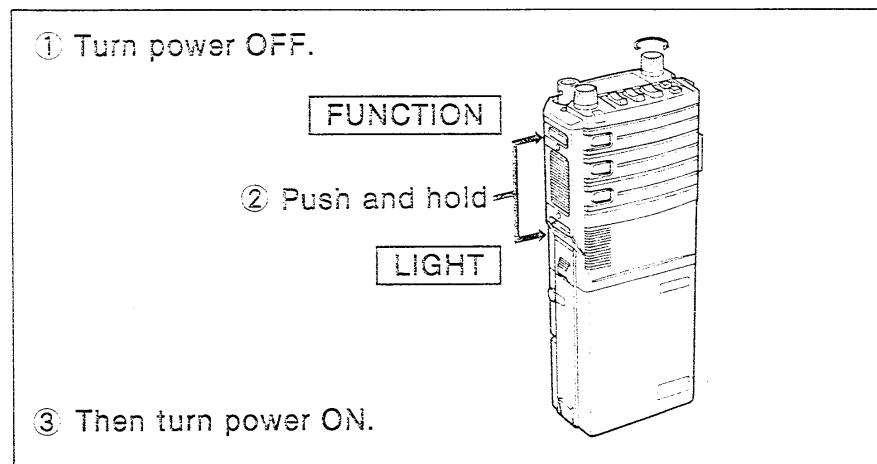
PROBLEM	POSSIBLE CAUSE	SOLUTION	REF.
No power comes on.	• The battery pack is discharged.	• Charge the battery pack.	p. 5
No sounds comes from the speaker.	• [SQL] is turned too far clockwise. • The battery pack is discharged.	• Rotate [SQL] counterclockwise. • Charge the battery pack.	p. 8 p. 5
No transmitting possible or only low power can be used.	• The battery pack is discharged. • Low power is selected.	• Charge the battery pack. • Select High output power.	p. 5 p. 8
Channel cannot be set.	• The dial lock function is activated.	• Turn OFF the dial lock function.	p. 10
Scan or dual watch does not operate.	• [SQL] is not set correctly. • The dial lock function is activated.	• Set [SQL] at the threshold point. • Turn OFF the dial lock function.	p. 8 p. 10
Repeater cannot be accessed.	• CH9~CH40 is selected. • Duplex is not activated.	• Select CH1~CH8. • Push [DUP] upwards.	p. 12 p. 12
No contact possible with another station.	• Duplex is set.	• Push [DUP] upwards to return to simplex.	p. 12

## ■ RESETTING THE CPU

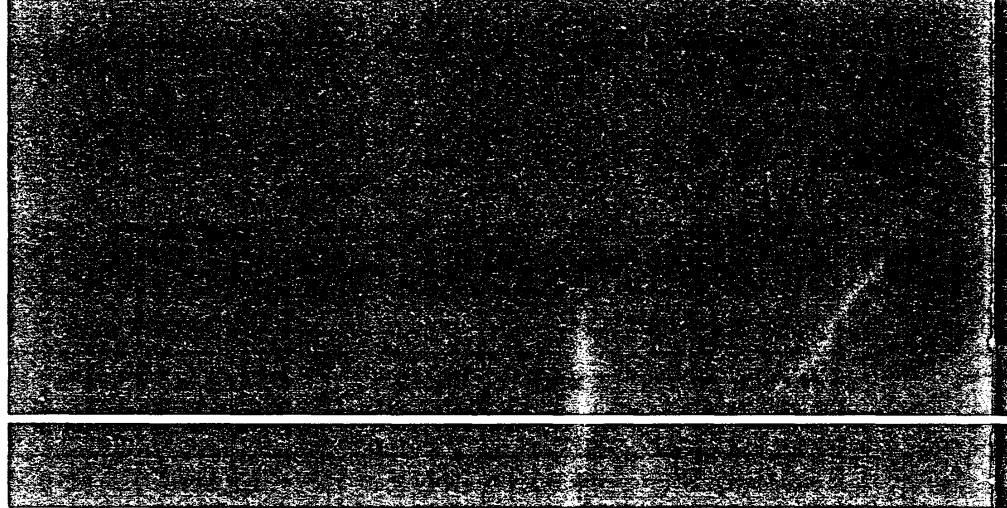
When the FUNCTION DISPLAY displays erroneous information, the CPU should be reset before sending the transceiver to an Icom Dealer or Service Center.

**NOTE:** After resetting the CPU, all information you have programmed into memory channels will be erased.

- ① Turn power OFF.
- ② While pushing [FUNCTION] and [LIGHT], turn power ON.
- ③ Release the switches after the display shows "1 1".



Count on us!



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