ICOM

INSTRUCTION MANUAL

VHF P25 TRUNKING
MOBILE TRANSCEIVERS
IC-F9511S
IC-F9511T

UHF P25 TRUNKING
MOBILE TRANSCEIVERS
IC-F9521S/T
IC-F9523S/T

This device complies with Part 15 of the FCC
Rules. Operation is subject to the condition that
this device does not cause harmful interference.

The photo shows the 10-key version transceiver.

Icom Inc.

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL — This instruction manual contains important operating instructions for the **IC-F9511S/IC-F9511T VHF P25 TRUNKING MOBILE TRANSCEIVERS** and the **IC-F9521S/IC-F9521T/ IC-F9523S/IC-F9523T UHF P25 TRUNKING MOBILE TRANSCEIVERS**.

✔ **When the optional UT-125** AES/DES ENCRYPTION UNIT **is installed:**
If re-exporting this product and/or AES encryption of this product is activated, you must comply with the export regulations of your country, which can be highly restrictive. YOUR FAILURE TO COMPLY WITH EXPORT REGULATIONS MAY SUBJECT YOU TO FINES OR PENALTIES. AES encryption products including this software fall under the control of the Japanese Government as described in Appendix I: Export Legal Controls and Appendix: Exchange Legal Controls. Please consult with your dealer or sales representative for details.

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All other products or brands are registered trademarks or trademarks of their respective holders.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

See the operating guide for details of Analog and P25 Trunking/Conventional system operations. Consult your Icom dealer or system operator for details concerning your transceivers programming.

✔ **INFORMATION:**
In this instruction manual, the following descriptions are used;
IC-F9511S/IC-F9521S/IC-F9523S : "**Simple type**"
IC-F9511T/IC-F9521T/IC-F9523T : "**10-key type**"

FCC INFORMATION

• FOR CLASS B UNINTENTIONAL RADIATORS:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ABOUT IPR

This device is made under license under one or more of the following U.S. Patents: #4,590,473; #4,636,791; #5,148,482; #5,185,796; #5,271,017; #5,377,229; #4,716,407; #4,972,460; #5,502,767; #5,146,497; #5,164,986; #5,185,795; #5,164,986, #5,185,795, and #5,146,497.

* IPR means 'Intellectual Property Rights.'

VOICE CODING TECHNOLOGY

The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to extract, remove, decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into a human-readable form. U.S. Patent Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

PRECAUTIONS

R**WARNING! NEVER** connect the transceiver to an AC outlet. This may pose a fire hazard or result in an electric shock.

R**WARNING! NEVER** connect the transceiver to a power source of more than 16 V DC such as a 24 V battery. This connection will ruin the transceiver.

R**WARNING! NEVER** cut the DC power cable between the DC plug and fuse holder. If an incorrect connection is made after cutting, the transceiver might be damaged.

R**WARNING! NEVER** place the transceiver where normal operation of the vehicle may be hindered or where it could cause bodily injury.

CAUTION! NEVER allow children to touch the transceiver.

CAUTION! NEVER expose the transceiver to rain, snow or any liquids. The transceiver may be damaged.

USE the specified microphone only. Other microphones have different pin assignments and may damage the transceiver.

DO NOT use or place the transceiver in areas with temperatures below –30°C (–22°F) or above +60°C (+140°F), or in areas subject to direct sunlight, such as the dashboard.

DO NOT place the transceiver in excessively dusty environments.

DO NOT operate the transceiver without running the vehicle's engine. The vehicle's battery will quickly run out if the transceiver transmits while the vehicle's engine OFF.

DO NOT place the transceiver against walls. This will obstruct heat dissipation.

DO NOT use chemical agents such as benzine or alcohol when cleaning, as they damage the transceiver surfaces.

BE CAREFUL! The transceiver will become hot when operating continuously for long periods.

When the optional RMK-2 and the supplied/optional microphone* are attached, the transceiver's front panel meets IP54 requirements for dust-protection and splash resistance. However, once the front panel with the RMK-2 have been dropped, dust-protection and splash resistance cannot be guaranteed because of possible damage to these cases or the waterproof seal.
* The main body of the microphone is not dust-protection and splash resistance.

For U.S.A. only
CAUTION: Changes or modifications to this transceiver, not expressly approved by Icom Inc., could void your authority to operate this transceiver under FCC regulations.
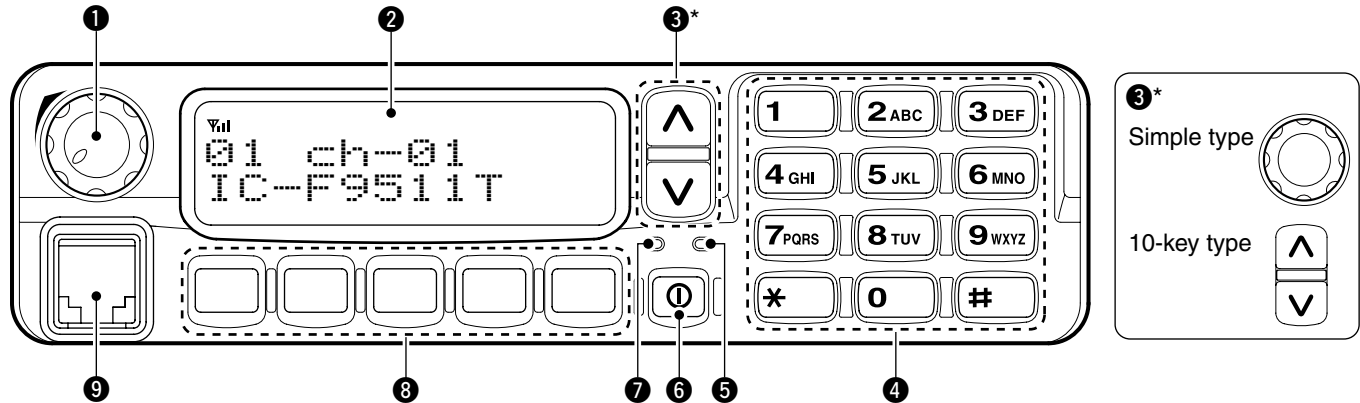
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1 PANEL DESCRIPTION

■ Front panel

❶ AF VOLUME CONTROL KNOB
Rotate the knob to adjust the audio output level.
• Minimum audio level is pre-programmed.

❷ FUNCTION DISPLAY (p. 3)
Displays a variety of information, such as an operating channel number/name, DTMF numbers and audible condition, etc.

❸ DIAL or UP/DOWN KEYS
• Simple type: **DIAL**
Rotate to select an operating channel, etc.
• 10-key type: **UP/DOWN Keys**
Push to select an operating channel, etc.
*The desired function can be assigned by your dealer. (p. 4)

④ **10-KEYPAD** (10-key type only)

The keypad allows you to enter digits to:
• Select memory channels, tone channels and DTMF codes (when in the DTMF code channel selection mode)
• Start up with a password
• Input the Individual ID code for digital operation. (Depending on the pre-setting)

⑤ **BUSY INDICATOR**

Lights green while receiving a signal, or when the squelch is open.

⑥ **POWER SWITCH [POWER]**

Push to turn the power ON and OFF.
• The following functions are available at power ON as options:
 - Automatic scan start
 - Password prompt
 - Set mode

⑦ **TRANSMIT INDICATOR**

Lights red while transmitting.

⑧ **DEALER-PROGRAMMABLE KEYS**

Desired functions can be programmed independently by your dealer. (p. 4)

In this instruction manual, these keys are from the left, called [P0]/[P1]/[P2]/[P3]/[P4].

⑨ **MICROPHONE CONNECTOR**

Connect the supplied or optional microphone.
• When you connect a microphone, be sure to fit the connector cover of the microphone into the connector to maintain the front panel's dust protection and splash resistance*.
 *Only when the optional RMK-2 is attached.

RMK-2

Connector cover
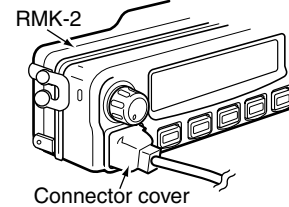
NEVER connect non-specified microphones. The pin assignments may be different and the transceiver may be damaged.

◇ **MICROPHONE**

The supplied microphone has a PTT switch and a hanger hook.
• The following functions are available when the microphone is on or off hook (depending on the setting):
 - Automatic scan starts when it is on hook.
 - Scan is cancelled when it is off hook.
 - Scan is paused when it is off hook.
 - Automatic priority channel selection is available when it is off hook.
 - Sets to 'Inaudible' condition (mute condition) when it is on hook.
 - Sets to 'Audible' condition (unmute condition) when it is off hook.

■ **Function display**
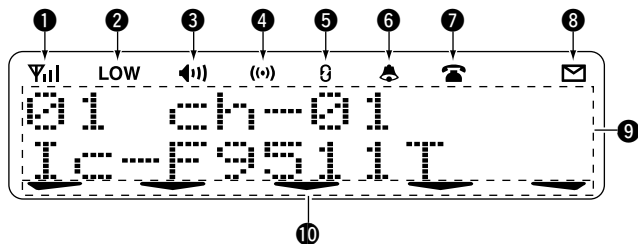
q RECEIVED SIGNAL STRENGTH INDICATOR
Indicates relative signal strength level.

Weak ⇐ Receive Signal level ⇒ Strong

w LOW POWER INDICATOR
Appears when low output power is selected.
• When high output power is selected, no indicator appears.

e AUDIBLE INDICATOR
Appears when the channel is in the 'audible' (unmute) condition.

r COMPANDER INDICATOR
Appears when the compander function* is activated.
* Analog mode operation only

t SCRAMBLER INDICATOR
Appears when the voice scrambler or encryption function is activated.

y BELL INDICATOR
Appears/blinks when the specific page call* is received, depending on how the transceiver has been pre-programmed.
* P25 operation only

u TELEPHONE INDICATOR
Appears when a phone call* is received.
* P25 operation only

i SHORT MESSAGE INDICATOR
Appears when an Status message or Short message is received.

o ALPHANUMERIC DISPLAY
Displays an operating channel number, channel name, Set mode contents, DTMF code, etc.

!0 ACTIVATED KEY INDICATOR
Appears above the key assigned as [Scan Add/Del (Tag)] key when that key has been activated.

See the operating guide for details of Analog and P25 Trunking/Conventional system operations. Consult your Icom dealer or system operator for details concerning your transceiver's programming.

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■ **Programmable function keys**

The following functions can be assigned to **[DIAL]***, **[UP]**, **[DOWN]**, **[P0]**, **[P1]**, **[P2]**, **[P3]** and **[P4]** programmable function keys.

Consult your Icom dealer or system operator for details concerning your transceivers programming.

If the programmable function names are bracketed in the following explanations, the specific key is used to activate the function depends on the programming.

*The functions you can assign to [DIAL] are limited.
 (Only functions marked with ☆ can be assigned.)

☆ *CH UP AND DOWN KEYS*
➥ Push (or Rotate)* to select an operating channel.
➥ Push (or Rotate)* to select a scan group after pushing and holding [Scan A Start/Stop]/[Scan B Start/Stop].
*Rotate when this function is assigned to [DIAL].

☆ *ZONE UP AND DOWN KEY* (This function is for [DIAL] only)
Rotate to select the desired zone.

ZONE KEY
Push this key, then push [CH Up] or [CH Down] or rotate [CH Up/Down]* to select the desired zone.

What is "zone"?—The desired channels are assigned into a zone according to the intended use for grouping. For example, 'Staff A' and 'Staff B' are assigned into a "Business" zone, and 'John' and 'Cindy' are assigned into a "Private" zone.

SCAN A START/STOP KEY
➥ Push to start and cancel scanning operation.
 • When Power ON Scan function is activated, push to pause the scanning operation. And the paused scan resumes after the specified time period has passed.
➥ Push and hold this key for 1 sec. to indicate the scan list, then push [CH Up] or [CH Down] or rotate [CH Up/Down]* to select the desired list. (Available depending on the pre-setting.)

SCAN B START/STOP KEY
➥ Push to start and cancel scanning operation.
 The scan restarts after the specified time period has passed when the scan (started with this key) is cancelled by except for this key operation.
➥ Push and hold this key for 1 sec. to indicate the scan list, then push [CH Up] or [CH Down] or rotate [CH Up/Down]* to select the desired list.

*Simple type only

1 PANEL DESCRIPTION

SCAN ADD/DEL (TAG) KEY
Push to add or delete the selected channel to/from the scan list.
1. Push to indicate the scan list, then push [CH Up] or [CH Down] or rotate [CH Up/Down]* to select the desired list.
2. Push to add or delete the channel to/from the selected scan list.
3. Push and hold for 1 sec. to exit the scan list selection mode.

PRIO A/B KEYS
➡ Push to select Priority A or Priority B channel.
➡ Push and hold [Prio A (Rewrite)] or [Prio B (Rewrite)] for 1 sec. to rewrite the operating channel as the Priority A or Priority B channel.

MR-CH 1/2/3/4 KEYS
Push to select the memory channel 1 to 4 directly.

MONI KEY
Mute and release the CTCSS (DTCS), NAC or Talkgroup ID squelch mute. Open any squelch/deactivate any mute while pushing this key.

TALK AROUND KEY (Conventional operation only)
Turn the talk around function ON and OFF.
• The talk around function equalizes the transmit frequency to the receive frequency for transceiver-to-transceiver communication.

*Simple type only

PUBLIC ADDRESS KEY
Push to activate the Public Address (PA) function for voice amplification. When the PA function is activated, the audio output can be controlled from the transceiver separately with [CH Up] or [CH Down] or rotate [CH Up/Down]*.
• This function is available when the external unit, such as a audio amplifier, speaker, etc. is additionally connected. (p. 14)
• Push this key, then speak into the microphone while pushing and holding [PTT].

RX SPEAKER KEY
Push to turn the RX speaker function ON or OFF.
When the RX speaker function is turned ON, the received audio can be heard via the external speaker that is connected to the D-Sub 25-pin.
• This function is available when the external speaker is additionally connected. (p. 14)
• This function is useful when you are out of the vehicle.
• The audio output level is linked to the transceiver's volume control.

LOCK KEY
Push and hold to electronically lock all programmable keys except the following:
[Moni], [Light], [Lock], [Emergency Single], [Emergency Repeat], [Surveillance] and [OPT 1/2/3].

LIGHT KEY
Push to turn the transceiver's backlight ON for about 5 sec. when the backlight function is turned OFF in user set mode. (p. 12)

HIGH/LOW KEY

Push to select the transmit output power temporarily or permanently, depending on the pre-setting.

• Ask your dealer for the output power level for each selection.

SURVEILLANCE KEY

Push to turn the surveillance function ON or OFF.

When this function is turned ON, the beep is not emitted and the LCD backlight does not light when a signal is received or a key is pushed, etc.

HOOK SCAN KEY

When the on hook scan function is activated, push this key to stop scanning temporarily. Push this key again to re-start scanning.

USER SET MODE KEY

➡ Push and hold to enter user set mode.
  • During in the user set mode, push this key to select an item that is enabled by your dealer, and change the value or condition by pushing [CH Up] or [CH Down] or rotating [CH Up/Down]*.
➡ Push and hold this key again to exit user set mode.

User set mode is also available via the 'Power ON function.' Refer to p. 12 also.

OPT 1/2/3 KEYS

Push to control the output signal level from the optional unit connector.

CLOCK KEY

➡ Push to indicate the current time on the LCD. (p. 9)
  • While the current time is indicated, push and hold this key for 1 sec. to enter the time data edit mode.
➡ Push and hold for 1 sec. to enter the clock set mode. (pgs. 10, 11)
  • During in the clock set mode, push this key to select an item, and change the value or condition by pushing [CH Up] or [CH Down] or rotating [CH Up/Down]*.

*Simple type only

2 BASIC OPERATION

■ Turning power ON

When you use the transceiver for the first time, or after the transceiver has sat unused for a long time, make sure to check the date and time indication after turning the power ON. If the time and date are not correct, reset them. (p.10)

① Push [⏻] to turn the power ON.
② If the transceiver is programmed for a start up password, input the digit codes as directed by your dealer.
  • 10-keypad* can be used for password input.
    *10-key type only:
  • The keys as below can be used for password input:
  The transceiver detects numbers in the same block as identical. Therefore "01234" and "56789" are the same.
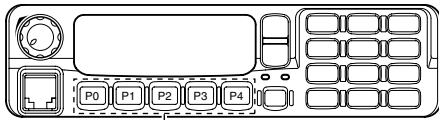
*In this instruction manual, these keys are from the left, called [P0]/[P1]/[P2]/[P3]/[P4].

KEY	P0	P1	P2	P3	P4
NUMBER	0 5	1 6	2 7	3 8	4 9

③ When the "PASSWORD" indication does not clear after inputting 6 digits, the input code number may be incorrect. Turn the power off and start over in this case.

■ Channel selection

Several types of channel selections are available. Methods may differ according to your system set up.

NON-ZONE TYPE:
To select the desired operating channel:
• Push [CH Up] or [CH Down].
• Rotate [CH Up/Down]*.
• Push one of [MR-CH 1] to [MR-CH 4].

ZONE TYPE:
To select the desired zone:
• Push [Zone], then push [CH Up] or [CH Down].
• Rotate [Zone Up/Down]*.

AUTOMATIC SCAN TYPE:
Channel setting is not necessary for this type. When turning power ON, the transceiver automatically starts scanning. Scanning stops when receiving a call.

*Simple type only

■ Receiving and transmitting

Receiving:

① Push [**①**] to turn the power ON.
② Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to select a channel, in sequence.
③ While receiving a call, adjust the audio output level to a comfortable listening level.
*Simple type only

Transmitting:

Wait for the channel to become clear to avoid interference.
① Take the microphone off hook.
  • The 'audible' condition is selected and BUSY indicator lights green.
  • A priority channel may be selected automatically.
② Wait for the channel to become clear.
  • The channel is busy when BUSY indicator lights green.
③ While pushing and holding [PTT], speak into the micro- phone at your normal voice level.
④ Release [PTT] to receive.

IMPORTANT: To maximize the readability of your signal;
1. Pause briefly after pushing [PTT].
2. Hold the microphone 5 to 10 cm (2 to 4 inches) from your mouth, then speak into the microphone at a nor- mal voice level.

◇ Transmitting notes

• Transmit inhibit function

The transceiver has several inhibit functions which restrict transmission under the following conditions:
  - The channel is in mute condition ('Inaudible' condition; "◀ᴵᴵ)" does not appear.)
  - The channel is busy.
  - Un-matched (or matched) CTCSS is received.
   (Depending on the pre-setting)
  - Un-matched (or matched) NAC is received.*
   (Depending on the pre-setting)
  - The selected channel is a 'receive only' channel.
  *Digital mode operation only.

• Time-out timer

After continuous transmission for the pre-programmed time period, the time-out timer is activated, causing the trans- ceiver to stop transmitting.

• Penalty timer

Once the time-out timer is activated, transmission is further inhibited for a period determined by the penalty timer.

■ Clock function

The transceiver indicates the current time and date when [Clock] is pushed. And you can change the indication format and time/date settings.

///// When you use the transceiver for the first time, or after the transceiver has sat unused for a long time, make sure to check the date and time indication after turning the power ON. If the time and date are not correct, reset them. (p.10)

◇ Time and date indication
① Push [Clock] to indicate the current time and date on the LCD.
  • When the indication format is set to 12-hour, "AM" or "PM" is indicated.
  • The LCD indication returns to the stand-by mode after 30 sec. has passed with no operation.

The time indication format (12-hour/24-hour)

```
Y▼ll  LOW
12HR  12:00PM ←——Time
YMD  08-04-01 ←——Date
```
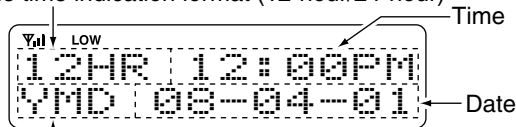
Date indication format (Y: Year, M: Month, D: Day)

② Push [Clock] again to return to the stand-by mode.

◇ Time and date settings
① Push [Clock] to indicate the current time and date on the LCD.

```
Y▼ll  LOW
12HR  12:00PM
YMD  08-04-01
```
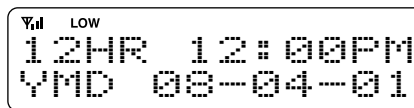
② Push and hold [Clock] for 1 sec. to enter the time and date setting mode.
  • The time indication format, "24HR" or "12HR" blinks.

```
▼ll  LOW
12HR  12:00PM
YMD  08-04-01
```
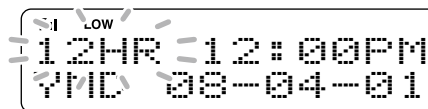
③ Push [Clock] to select the desired item to be changed.
④ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to set the selected item.
  *Simple type only

```
Y▼ll  LOW
12HR  03:00PM
YMD  03-04-01
```

2
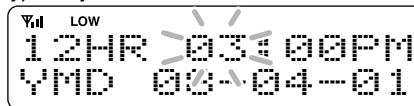
⑤ Push [Clock] to set.
  • The next item blinks.

```
 ▼ıl  LOW
12HR 03:00PM
YMD 08-04-01
```

⑥ Repeat steps ③ to ⑤ to set items.
⑦ After setting, push and hold [Clock] for 1 sec. to program.
  • Return to the time and date setting mode.
⑧ Push [Clock] to return to the stand-by mode.

■ Wake up function

The wake up function allows the transceiver to be automatically turned ON according to the wake up time setting.
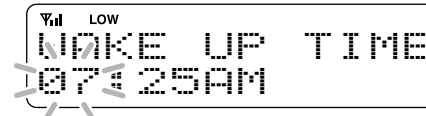
① Push and hold [Clock] for 1 sec. to enter the clock set mode.
 • "WAKE UP" is indicated.

```
 ▼ıl  LOW
WAKE UP
OFF
```

② Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to turn the wake up function ON.
③ Push [Clock] to set, and select "WAKE UP TIME."

```
 ▼ıl  LOW
WAKE UP TIME
07:25AM
```

④ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to enter the wake up time edit mode.
  • The 'hour' data blinks.

```
 ▼ıl  LOW
WAKE UP TIME
07:25AM
```

⑤ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to input the 'hour' data for wake up time. After inputting, push [Clock] to set.
• The 'minutes' data blinks.

```
 Yₐₗ  LOW
WAKE UP TIME
09:25AM
```

⑥ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to Input the 'minutes' data for wake up time. After inputting, push [Clock] to set.

```
 Yₐₗ  LOW
WAKE UP TIME
09:30AM
```
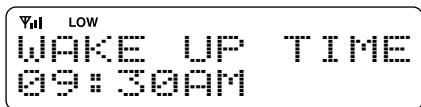
⑦ Push and hold [Clock] for 1 sec. to exit the clock set mode.
• Return to the stand-by mode.

*Simple type only

■ Sleep function

The sleep function allows the transceiver to be automatically turned OFF according to the sleep time setting.

① Push and hold [Clock] for 1 sec. to enter the clock set mode.
• "WAKE UP" is indicated.
② Push [Clock] several times to select "SLEEP."

```
 Yₐₗ  LOW
SLEEP
ON
```

③ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to turn the sleep function ON.
④ Push [Clock] to set, and select "SLEEP TIME."

```
 Yₐₗ  LOW
SLEEP TIME
05:35PM
```

⑤ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to enter the sleep time edit mode.
• The 'hour' data blinks.

```
 Yₐₗ  LOW
SLEEP TIME
05:35PM
```
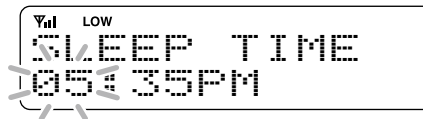
⑥ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to Input the 'hour' data for sleep time. After inputting, push [Clock] to set.
• The 'minutes' data blinks.

```
Y.ıl   LOW
SLEEP TIME
08:35PM
```
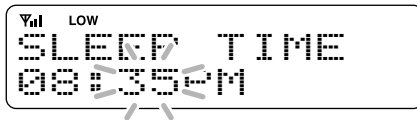
⑦ Push [CH Up] or [CH Down], or rotate [CH Up/Down]* to Input the 'minutes' data for sleep time. After inputting, push [Clock] to set.

```
Y.ıl   LOW
SLEEP TIME
08:00PM
```

⑧ Push and hold [Clock] for 1 sec. to exit the clock set mode.
• Return to the stand-by mode.

*Simple type only

■ User set mode

The user set mode is accessed with [User Set Mode] and allows you to set seldom-changed settings. In this case you can "customize" the transceiver operation to suit your preferences and operating style.

Entering the user set mode:
① While pushing and holding [P1] and [P2], push [⏻] to turn the power ON.
• Turn power OFF in advance.
• You should hold [P1] and [P2] until "SET MODE" appears on the display.

[P1] [P2]   [⏻]
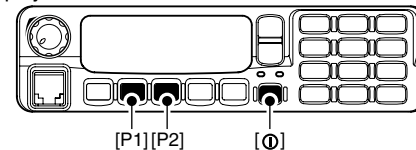
② Push and hold [P0] to enter user set mode.

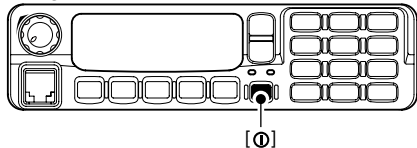[P0]
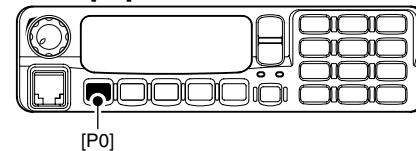
③ Push [P0] several times to select the appropriate item. Then, push [Up] or [Down] or rotate [DIAL] to set the desired level/condition.

- Available set mode functions are **Backlight**, **LCD Contrast**, **Beep**, **Beep Level**, **Ringer Level**, **SQL Level**, **AF Min. Level**, **Mic Gain, Horn**, **Battery Voltage**, **Signal Moni** and **System Information**.

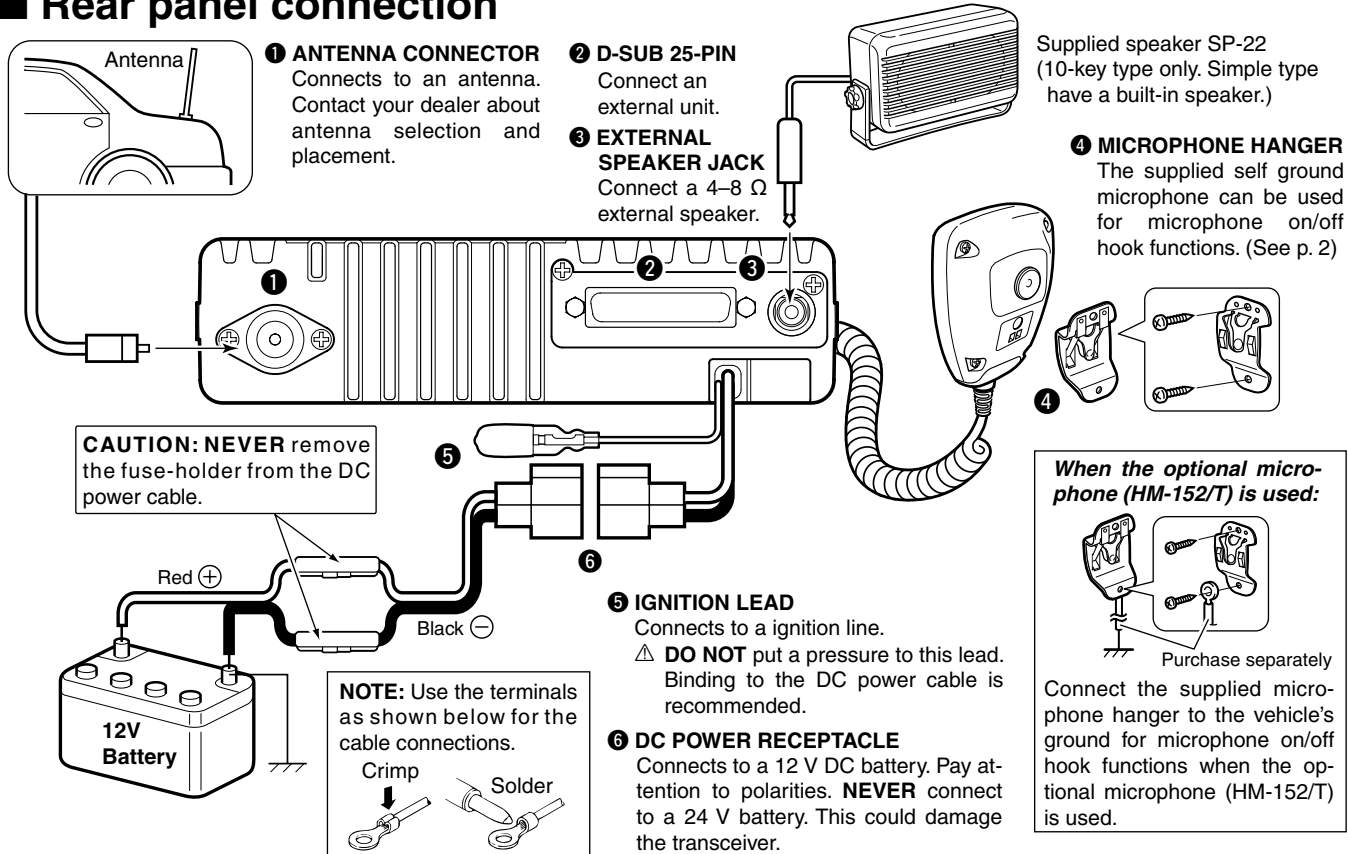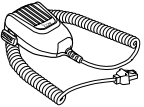[P0]   [Up]/[Down] or [DIAL]
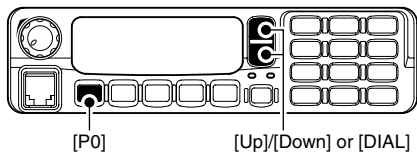
④ Push [⏻] again to exit set mode.

[⏻]
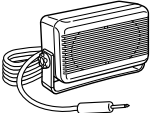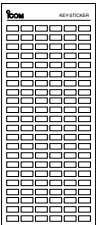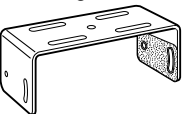
User set mode is also available via a programmable key. Please refer to p. 6 [User Set Mode] section.

■ Rear panel connection

Antenna

① ANTENNA CONNECTOR
Connects to an antenna. Contact your dealer about antenna selection and placement.

② D-SUB 25-PIN
Connect an external unit.

③ EXTERNAL SPEAKER JACK
Connect a 4–8 Ω external speaker.

Supplied speaker SP-22
(10-key type only. Simple type have a built-in speaker.)

④ MICROPHONE HANGER
The supplied self ground microphone can be used for microphone on/off hook functions. (See p. 2)

CAUTION: NEVER remove the fuse-holder from the DC power cable.

Red ⊕

Black ⊖

12V Battery

NOTE: Use the terminals as shown below for the cable connections.

Crimp   Solder

⑤ IGNITION LEAD
Connects to a ignition line.
⚠ **DO NOT** put a pressure to this lead. Binding to the DC power cable is recommended.

⑥ DC POWER RECEPTACLE
Connects to a 12 V DC battery. Pay attention to polarities. **NEVER** connect to a 24 V battery. This could damage the transceiver.

When the optional microphone (HM-152/T) is used:

Purchase separately

Connect the supplied microphone hanger to the vehicle's ground for microphone on/off hook functions when the optional microphone (HM-152/T) is used.

■ Supplied Accessories

Microphone	Microphone hanger and screw set	Microphone hanger cable

DC power cable	Speaker*1	Function name stickers*2

Key caps

Mounting bracket	Flat washers	Bracket bolts

Spring washers

Mounting screws (M5×12)

Nuts

Self-tapping screws (M5×16)

*1 10-key type only
*2 Used for labelling the program-mable function keys according to their assinged functions.

• **Function name stickers**
There are no names on the programmable function keys since the functions can be freely assigned to these keys.
Attach the supplied function name stickers as below to the appropriate keys for easy recognition of that key's assigned function.
Then, protect the attached stickers from unsticking with the supplied key cap as below.

Function name sticker
Key cap
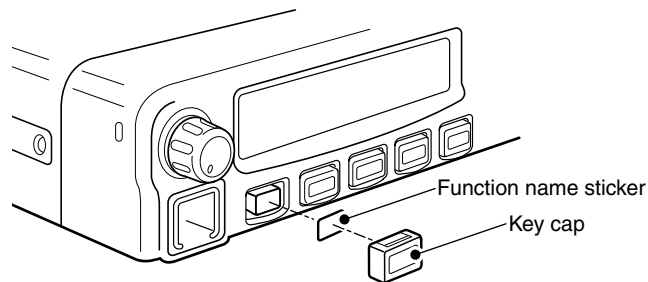
■ Mounting the transceiver

The universal mounting bracket supplied with your transceiver allows overhead mounting.
• Mount the transceiver securely with the 4 supplied screws to a thick surface which can support more than 1.5 kg.

Nut
Flat washer
Felt*
Spring washer
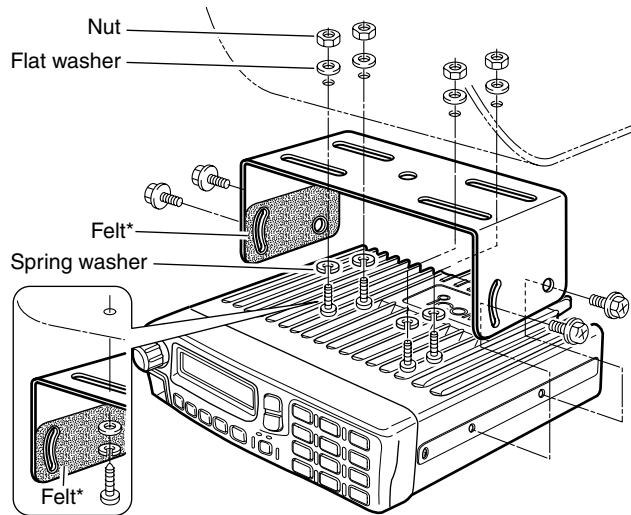
Felt*

When using
self-tapping screws

*Felts reduce the vibration effects.

■ Antenna

A key element in the performance of any communication system is an antenna. Contact your dealer about antennas and the best places to mount them.

■ Fuse replacement

A fuse is installed in the supplied DC power cable. If a fuse blows or the transceiver stops functioning, track down the source of the problem if possible, and replace the damaged fuse with a new rated one.
❑ Fuse rating: 20 A
 USE the 20 A fuse only.
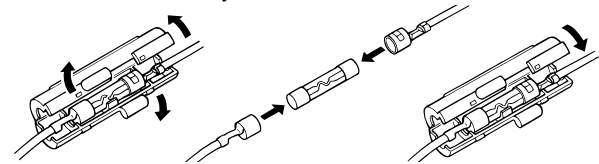
■ Cleaning

If the transceiver becomes dusty or dirty, wipe it clean with a soft, dry cloth.

AVOID the use of solvents such as benzene or alcohol, as they may damage the transceiver surfaces.

4 OPTIONS

• **RMK-2** SEPARATION KIT +
OPC-607/OPC-608/OPC-609/OPC-726 SEPARATION CABLE
Allows you to install the transceiver front panel separately from the main unit for operating convenience.

• **SP-5/SP-10/SP-22** EXTERNAL SPEAKERS
Input impedance : 4 Ω
Max. input power : 5 W
SP-5 : Large speaker for good audio quality.
SP-10 : For all-round mobile operation.
SP-22 : Compact and easy-to-install.

• **HM-152/HM-152T/HM-148G/HM-148T** HAND MICROPHONES
HM-152 : Hand microphone
HM-152T : DTMF microphone
HM-148G: Self ground heavy duty microphone
HM-148T : Self ground heavy duty DTMF microphone

• **SM-25** DESKTOP MICROPHONE

• **OPC-1132A/OPC-347** DC POWER CABLES
OPC-1132A : 3 m (9.8 ft)
OPC-347 : 7 m (23 ft)

• **OPC-1532/OPC-1871** ZONE COPY CABLES
OPC-1532 : Mobile to mobile zone copy cable.
OPC-1871 : Mobile to handy zone copy cable.

• **MB-77** WALL MOUNT BRACKET

• **UT-125** AES/DES ENCRYPTION UNIT

Icom optional equipment is designed for optimal performance when used with this transceiver. We are not responsible for the transceiver being damaged or any accident caused when using non-Icom optional equipment.

Some options may not available in some countries. Please ask your dealer for details.

WARNING

Your Icom radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as "Occupational Use Only", meaning it must be used only during the course of employment by individuals aware of the hazards, and the ways to minimize such hazards. This radio is NOT intended for use by the "General Population" in an uncontrolled environment.

For compliance with FCC and Industry Canada RF Exposure Requirements, the transmitter antenna installation shall comply with the following two conditions:
1. The transmitter antenna gain shall not exceed 0 dBi.
2. IC-F9511S/T:
   The antenna is required to be located outside of a vehicle and kept at a distance of 48 cm or more between the transmitting antenna of this device and any persons during operation. For small vehicle as worst case, the antenna shall be located on the roof top at any place on the centre line along the vehicle in order to achieve 48 cm separation distance. In order to ensure this distance is met, the installation of the antenna must be mounted at least 48 cm away from the nearest edge of the vehicle in order to protect against exposure to bystanders.
   IC-F9521S/T:
   The antenna is required to be located outside of a vehicle and kept at a distance of 38.6 cm or more between the transmitting antenna of this device and any persons during operation. For small vehicle as worst case, the antenna shall be located on the roof top at any place on the centre line along the vehicle in order to achieve 38.6 cm separation distance. In order to ensure this distance is met, the installation of the antenna must be mounted at least 38.6 cm away from the nearest edge of the vehicle in order to protect against exposure to bystanders.
3. IC-F9511S/T:
   Transmit only when people outside the vehicle are at least the recommended minimum distance of 100 cm away from the properly installed antenna. This separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements in the applicable RF exposure compliance standards.

IC-F9521S/T:
Transmit only when people outside the vehicle are at least the recommended minimum distance of 86.4 cm away from the properly installed antenna. This separation distance will ensure that there is sufficient distance from a properly installed externally-mounted antenna to satisfy the RF exposure requirements in the applicable RF exposure compliance standards.

CAUTION

To ensure that your exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

• **DO NOT** operate the radio without a proper antenna attached, as this may damage the radio and may also cause you to exceed FCC RF exposure limits. A proper antenna is the antenna supplied with this radio by the manufacturer or an antenna specifically authorized by the manufacturer for use with this radio.
• **DO NOT** transmit for more than 50% of total radio use time ("50% duty cycle"). "50% duty cycle" is also applicable to PSTN (Public Switched Telephone Network) mode. Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the "TX indicator" lights red. You can cause the radio to transmit by pressing the "PTT" switch.

Electromagnetic Interference/Compatibility
During transmissions, your Icom radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio in areas where signs are posted to do so. **DO NOT** operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

Count on us!

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