# ICOM

## INSTRUCTION MANUAL

VHF dPMR MOBILE TRANSCEIVER
## IC-F5122D

UHF dPMR MOBILE TRANSCEIVER
## IC-F6122D

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-F5122D VHF dPMR MOBILE TRANSCEIVER** and **IC-F6122D UHF dPMR MOBILE TRANSCEIVER**.

- This instruction manual includes some functions which are usable only when they are preset by your dealer. Ask your dealer for details.
- See the operating guide for details of IDAS™ dPMR™ (digital Private Mobile Radio) system operations. Ask your dealer for details.

# 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. |

# PRECAUTIONS

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

⚠ **WARNING! NEVER** connect the transceiver to a power source of more than 16 V DC or use reverse polarity. This could cause a fire or damage the transceiver.

⚠ **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.

⚠ **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.

**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 –25°C or above +55°C, or in areas subject to direct sunlight, such as the dashboard.

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

**DO NOT** place the transceiver in excessively dusty environments.

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

**DO NOT** use harsh solvents such as benzine or alcohol when cleaning, as they will damage the transceiver surfaces.

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

# VOICE CODING TECHNOLOGY

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# 1 PANEL DESCRIPTION

## ■ Front panel

Function display (p. 2)     ❷     ❸ Speaker
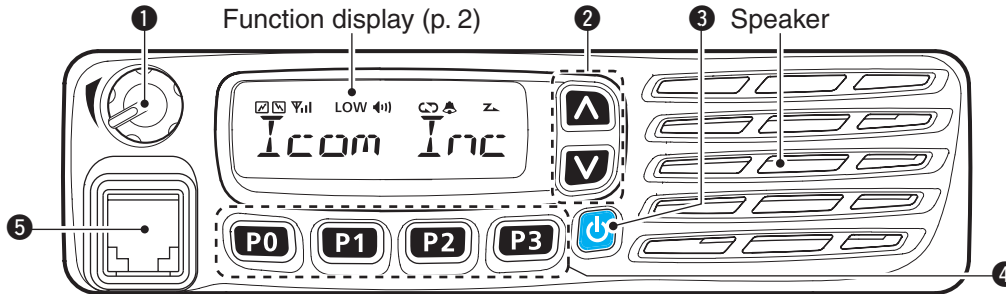


❶ **AF VOLUME CONTROL KNOB [VOL]**
Rotate the knob to adjust the audio output level.
• Minimum audio level is pre-programmed. (p. 12)

❷ **UP/DOWN KEYS [CH Up]/[CH Down]**
Push to select an operating channel, etc.
* The desired function can be assigned by your dealer. (p. 3)

❸ **POWER KEY [ ]**
Push to turn the power ON or OFF.
• The following optional functions are available at power ON:
  - Automatic scan start
  - Password prompt

❹ **DEALER-PROGRAMMABLE KEYS**
Required functions can be independently programmed by
your dealer. (p. 3)

❺ **MICROPHONE CONNECTOR**
Connect the supplied or optional microphone.

*NEVER* connect non-specified microphones. The pin assign-
ments may be different and may damage the transceiver.

◇ **Microphone**
The supplied or optional 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 preprogramming):
    - Automatic scan starts when you put it ON hook.
    - Scan is cancelled when you take it OFF hook.
    - Scan is paused when you take it OFF hook.
    - Automatically selects the Priority channel when you take it OFF
      hook.
    - Sets to the 'Inaudible' mode (mute state) when you put it ON hook.
    - Sets to the 'Audible' mode (unmute state) when you take it OFF
      hook.

**1**

# ■ Function display
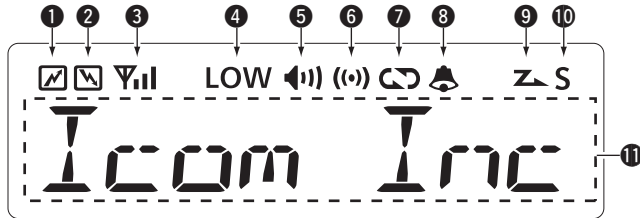


**❶ TRANSMIT ICON**
Appears while transmitting a signal.

**❷ BUSY ICON**
Appears while the channel is busy (receiving).

**❸ SIGNAL STRENGTH ICON**
Shows the relative receive signal strength level.

Weak ⟸ Receive Signal level ⟹ Strong

**❹ LOW POWER ICON**
Appears when low output power is selected.

**❺ AUDIBLE ICON**
➥ Appears when the channel is in the 'Audible' (unmute) mode.
➥ Appears when a matching signal is received.

**❻ GPS ICON**
Appears when the GPS receiver acquires the GPS signal from a satellite.

**❼ SCRAMBLER ICON**
Appears when the voice scrambler function is activated while operating in the digital mode.

**❽ BELL ICON**
Appears/blinks when a matched signal is received, depending on the preprogramming.

**❾ SCAN ICON**
➥ Blinks during a scan.
➥ Appears when a scan channel is selected.

**❿ SCROLL ICON**
Appears when an SDM (Short Data Message), including more than 8 characters, is selected in the received message selection mode.

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

# ■ Programmable function keys

The following functions can be assigned to [UP], [DOWN], [P0], [P1], [P2] and [P3] programmable function keys in the Normal mode and the Shift mode. When [Shift] is assigned, you can toggle between Normal mode and Shift mode, and both key functions, assigned into the Normal mode and the Shift mode, are available.
If [Shift] is not assigned to any key, the Shift mode cannot be selected, and the Shift mode key functions are disabled.
Consult your Icom dealer or system operator for details concerning your transceiver's programming.

### CH UP AND DOWN KEYS
As described in the following topics, after pushing a programmed key, push [CH Up] or [CH Down] to select an option, setting, etc.

### ZONE KEY
Push this key, then select the desired zone using [CH Up]/[CH Down].

╱╱ **What is "zone"?**— Certain channels are grouped together
╱╱ and assigned to a zone, according to their intended to use.
╱╱ For example, 'Staff A' and 'Staff B' are assigned to a "Busi-
╱╱ ness" zone, and 'John' and 'Cindy' are assigned to a "Pri-
╱╱ vate" zone.

### SCAN START/STOP KEY
➡ Push to start and cancel scanning operation.
  • When a scan is started with the Power ON Scan or Automatic scan function, push this key to cancel it. The cancelled scan resumes after the pre-programmed time period.
➡ Hold down this key for 1 second to display a scan group, then push [CH Up] or [CH Down] to select the desired one.

### SCAN ADD/DEL (TAG) KEY
➡ Push to add the channel to, or delete it from, the current scan group.
  1. Push to display the scan group, then push [CH Up] or [CH Down] to select the desired one.
  2. Push to add the channel to, or delete it from, the selected scan group.
  3. Hold down for 1 second to exit the scan list selection mode.
➡ While a scan is paused on a non-priority channel, push this key to delete the selected channel from the scan group.

  ╱╱ Depending on the setting, the cleared channel is added
  ╱╱ to the scan group again after the scan is cancelled.

### PRIO A/B KEYS
➥ Push to select the Priority A or Priority B channel.
➥ Hold down [Prio A (Rewrite)] or [Prio B (Rewrite)] for 1 second to rewrite the operating channel as Priority A or Priority B,

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

### MONI (AUDI) KEY
➥ Push to turn the CTCSS (DTCS) or 2/5-tone squelch mute ON or OFF.
  • Only during LMR (Land Mobile Radio) operation, push to open any squelch, or deactivate any mute functions.
  • Only during PMR (Private Mobile Radio) operation, push to activate one or two of the following functions on each channel (depending on the preprogramming):
    - Hold down to unmute the channel ('Audible' mode).
    - Push to mute the channel ('Inaudible' mode).
    - After the communication is finished, push to send a 'reset code' (only 5-tone operation).

  **NOTE:** The 'Audible' (unmute) mode may automatically return to the 'Inaudible' (mute) mode, after the pre-programmed time period.

### LIGHT KEY
Push to turn ON the backlight for about 5 seconds, when the backlight function is set to "OFF" in the User Set mode.

### LOCK KEY
➥ Hold down this key until "LOCK ON" is displayed to electronically lock all programmable keys except the following:
    [Moni(Audi)], [Lock], [Call] (incl. Call A and Call B), [Emergency], [Surveillance], [Siren], [Lone Worker] and [Light].
➥ When the Key Lock function is ON, hold down this key until "LOCK OFF" is displayed to turn it OFF.

### LONE WORKER KEY
Push to turn the Lone Worker function ON or OFF.
• If the Lone Worker function is turned ON, and no operation occurs during the pre-programmed time period, the Emergency function is automatically turned ON.

### HIGH/LOW KEY
Push to select the transmit output power temporarily or permanently, depending on the preprogramming.
• Ask your dealer for the output power level for each selection.

■ Programmable function keys (Continued)

### TONE/CC CHANNEL SELECT KEY
➥ While in the analog mode, push to enter the continuous tone selection mode. Then push [CH Up] or [CH Down] to select the desired tone frequency/code setting. After selecting, push this key again to store the setting.
➥ While in the digital mode, push to enter the CC selection mode. Then push [CH Up] or [CH Down] to select the desired CC. After selecting, push this key again to store the setting.
➥ While in the mixed (digital and analog) mode, push to enter the continuous tone selection mode. Then push [CH Up] or [CH Down] to select the desired tone frequency/code setting. After selecting, push this key to store the setting. After that, the CC selection screen appears. Push [CH Up] or [CH Down] to select the desired CC. After selecting, push this key again to store the setting.

### C.TONE CH ENT KEY
Push to enter the continuous tone channel selection mode. Then, push [CH Up] or [CH Down] to change the tone frequency/code setting. The selected channel remains set as the continuous tone channel until another channel is designated as such.

### TALK AROUND KEY
Push to turn the Talk Around function ON or OFF.
• The Talk Around function equalizes the transmit frequency to the receive frequency for transceiver-to-transceiver communication.

### WIDE/NARROW KEY
Push to toggle the IF bandwidth between Wide, Mid* or Narrow.
* Depending on the presetting, Mid channel width may not be selectable. Ask your dealer for details.

### DTMF AUTODIAL KEY
➥ Push to enter the DTMF channel selection mode, then push [CH Up] or [CH Down] to select the desired DTMF channel.
➥ After selecting the DTMF channel, push again to transmit the selected DTMF code.

### RE-DIAL KEY
Push to transmit the last-transmitted DTMF code.
• TX memories are cleared after turning OFF the transceiver.

### CALL KEYS

Push to transmit a 2/5-tone ID code.
- Tone call transmission may be necessary before you call another station, depending on your signalling system.
- [Call A] and/or [Call B] may be selectable when your system employs selective 'Individual/Group' calls. Ask your dealer which call is assigned to each key.

### EMERGENCY KEY

Hold down for a specified period to transmit an emergency call.
- If you want to cancel the emergency call, hold down the key again, before transmitting it.

### SURVEILLANCE KEY

Push to turn the surveillance function ON or OFF.
When a signal is received, or a key is pushed, while this function is turned ON, the beeps do not sound and the LCD backlight does not light.

### SIREN KEY

Hold down for 1 second to sound the siren.
This function can be used for situations other than an emergency alert, such as a security alarm for example.
- The siren can only be stopped by turning OFF the transceiver power.

### TX CODE ENTER KEY

Push to enter the TX code edit mode, then push [CH Up] or [CH Down] to set a desired digit. (p. 11)

### TX CODE CHANNEL SELECT KEY

➥ Push to enter the TX code channel selection mode, then push [CH Up] or [CH Down] to set a desired channel. (p. 10)
➥ While in the TX code channel selection mode, hold down this key for 1 second to enter the TX code edit mode. Then push [CH Up] or [CH Down] to set a desired digit. (p. 11)

### TX CODE CHANNEL UP/DOWN KEYS

Push to select a TX code channel.

### ID-MR SELECT KEY (PMR operation only)

➥ Push to recall the received ID code.
  - Push this key, then select the ID code using [CH Up]/[CH Down].
  - Up to 5 codes can be memorized.
➥ Hold down this key for 1 second to clear the selected ID code.

# 1 PANEL DESCRIPTION

■ Programmable function keys (Continued)

### SCRAMBLER KEY
While operating in the digital mode, push to turn the voice scrambler function ON or OFF.

### HOOK SCAN
When the Hook Scan function is pre-programmed, push this key to temporarily disable the function. Push this key again to enable the function.

### USER SET MODE KEY
➥ Hold down for 1 second to enter the User Set mode.
   • While in the User Set mode, push this key to select an item that is enabled by your dealer, and change the value or setting by pushing [CH Up] or [CH Down].
➥ Hold down this key for 1 second again to exit the User Set mode.

### Ext. CH Sel Mode KEY
Push to turn the Ext. CH Select function ON or OFF.
When the function is turned ON, memory channels can be selected with only and external input.
When the function is turned OFF, memory channels can be selected by pushing [CH Up] or [CH Down], and cannot be externally controlled.
• This function is available when the external unit, such as a dimmer control is connected to the transceiver with an optional OPC-1939 or OPC-2078 cable (p. 17).
• Ask your dealer for more details on external input operation.

### GPS DISPLAY KEYS
Push to switch the display mode between the stand-by and GPS position data.

### POWER OFF EMERGENCY
While holding down this key, turn OFF the transceiver to activate the Power OFF Emergency function. This function makes the transceiver transmit emergency calls, even though it appears to be powered OFF. (p. 14)

### SHIFT KEY
Push to switch the Normal mode key functions and the Shift mode key functions.
• When the Shift mode is selected, the display briefly shows "SHIFT ON." When the Normal mode is selected, the display briefly shows "SHIFT OFF."

## ■ Turning ON the power

① Push [⏻] to turn ON the power.
② If the transceiver is programmed for a start up password, input the digit codes as directed by your dealer.
   • The keys shown below can be used for password input:
    The transceiver detects numbers in the same block as identical. Therefore "01234" and "56789" are the same.

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

③ If the "PASSWORD" indication does not clear after inputting 6 digits, the input code number may be incorrect. Turn OFF the power and re-enter your password.

## ■ Channel selection

Several types of channel selections are available. Methods may differ, depending on the presetting.

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

***ZONE TYPE:***
To select the desired operating channel:
Push [Zone], then push [CH Up] or [CH Down].

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

◇ **Voting operation** (for zone selection)
The transceiver automatically starts scanning when a zone, specified for the voting operation, is selected.
The voting scan detects the signal of the repeater and automatically selects the strongest station.

# ■ Call procedure

When your system employs tone signaling (excluding CTCSS and DTCS), a call procedure may be necessary prior to voice transmission. The tone signalling employed may be a selective calling system which allows you to call only specific station(s), and prevents unwanted stations from contacting you.

① Select the desired TX code channel or 2/5-tone code, according to your System Operator's instructions.
　　• This may not be necessary, depending on the preprogramming.
　　• Refer to pages 10 and 11 for selection.
② Push [Call] (assigned to one of the dealer programmable keys).
③ After transmitting, the remainder of your communication can be carried out in the normal fashion.

*Selective calling*　　　　　*Non-selective calling*
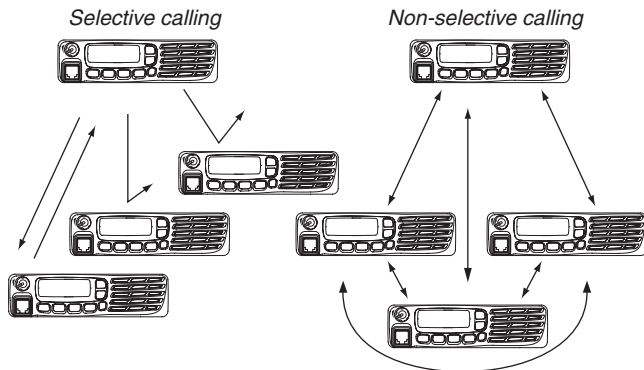


# ■ Receiving and transmitting

### *Receiving:*
① Hold down **[⏻]** for 1 second to turn ON the power.
② Push [CH Up] or [CH Down] to select a channel.
③ When receiving a call, rotate [VOL] to adjust the audio output level to a comfortable listening level.

**NOTE:** Depending on the preprogramming, the transceiver automatically transmits the microphone audio for the specified time period*, when a matched RX code signal is received.
• HM-148G or HM-152 HAND MICROPHONE is required.
* Depending on the preprogramming. Ask your dealer for details.

### *Transmitting:*
Wait for the channel to become clear to avoid interference.
① Take the microphone OFF hook.
　　• The 'Audible' mode is selected.
　　• A priority channel may be automatically selected.
② Wait for the channel to become clear.
　　• The channel is busy when the BUSY icon appears on the LCD.
③ While holding down [PTT], speak into the microphone at your normal voice level.
④ Release [PTT] to return 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 normal voice level.

**2**

### ◊ Transmitting notes

#### •Transmit inhibit function

The transceiver has several inhibit functions which restrict transmission under the following conditions:

- The channel is in the 'Inaudible' (mute) mode; "◀))" (Audible icon) does not appear.
- The channel is busy. However, depending on the pre-programmed settings, you can transmit when the call includes an unmatching (or matching) CTCSS (DTCS), CC, or Individual or Talkgroup ID.
- The selected channel is a 'receive only' channel.

#### •Time-out timer

If continuous transmission exceeds the pre-programmed time-out timer limit, the transmission is cut off.

#### •Penalty timer

After the transmission is cut off by the time-out timer, transmission is further inhibited for the pre-programmed penalty timer period.

#### •PTTID call

The transceiver automatically sends the 5-tone, DTMF, BIIS or digital ANI ID code when [PTT] is pushed (at the beginning of the transmission), and/or when it is released (at the end of transmission), depending on the preprogramming.

### ◊ TX code channel selection

If the transceiver has a key assigned to [TX Code CH Select], the display can be toggled between the operating channel number (or name) and TX code channel number (or name). When the TX code channel number (or name) is displayed, [CH Up] or [CH Down] selects the TX code channel.

#### *USING [TX CODE CH SELECT] KEY:*

① Push [TX Code CH Select]— a TX code channel number (or name) appears.
② Push [CH Up] or [CH Down] to select the desired TX code channel.
③ After selecting, push [TX Code CH Select] to set.
  • Return to the stand-by mode.
④ Push [Call] to transmit the selected TX code.

#### *USING [TX CODE CH UP]/[TX CODE CH DOWN] KEY:*

If the transceiver has a key assigned to [TX Code CH Up] or [TX Code CH Down], the programmed TX code channel can be directly selected when pushed.

■ Receiving and transmitting (Continued)

◇ **TX code number edit**

If the transceiver has a key assigned to [TX Code CH Select] or [TX Code Enter], TX code contents can be edited within the allowable digits.

*USING [TX CODE CH SELECT] KEY:*

① Push [TX Code CH Select] to enter the TX code channel selection mode.
  • Select the desired channel before entering the TX code channel selection mode, if necessary.
② Hold down [TX Code CH Select] for 1 second to enter the TX code edit mode.
  • The digit to be edited blinks.
③ Push [TX Code CH Select] to select the desired digit to be edited.
④ Push [CH Up] or [CH Down] to select the desired digit.
⑤ Push [TX Code CH Select] to set. The digit to the right will automatically blink.
⑥ Repeat ④ and ⑤ to edit all allowable digits.
⑦ After editing, push [TX Code CH Select] to set.
  • Return to the stand-by mode.
⑧ Push [Call] to transmit.

*USING [TX CODE ENTER] KEY:*

① Push [TX Code Enter] to enter the TX code edit mode.
  • The digit to be edited blinks.
② Push [TX Code Enter] to select the desired digit to be edited.
③ Push [CH Up] or [CH Down] to select the desired digit.
④ Push [TX Code Enter] to set. The digit to the right will automatically blink.
⑤ Repeat ③ and ④ to edit all allowable digits.
⑥ After editing, push [TX Code Enter] to set.
  • Return to the stand-by mode.
⑦ Push [Call] to transmit.

◇ **DTMF transmission**

If the transceiver has a key assigned to [DTMF Autodial], the automatic DTMF transmission function is available. Up to 8 DTMF channels are selectable.

① Push [DTMF Autodial]— a DTMF channel appears.
② Push [CH Up] or [CH Down] to select the desired DTMF channel.
③ Push [DTMF Autodial] to transmit the DTMF code.

## ■ User Set mode

The User Set mode allows you to set seldom-changed set-tings, and you can "customize" the transceiver operation to suit your preferences and operating style.

░NOTE: While in the User Set mode, [Up], [Down] and [P0] ░activate regardless of the assigned key functions.

***Entering the User Set mode:***
① Hold down [SET] for 1 second to enter the User Set mode.
② Push [SET] several times to select the appropriate item. Then push [CH Up] or [CH Down] to set the desired level or option.
  • In the User Set mode, the selectable items are preset by your dealer. The presetable items are **Backlight**, **Beep ON/OFF**, **Beep Level, Ringer Level, SQL Level**, **AF Min Level**, **Mic Gain**, **Battery Voltage, Horn**, **Signal Moni**, **Lone Worker** and **System Info**.
③ Hold down [SET] for 1 second again to exit the User Set mode.

## ■ Scrambler function

The voice scrambler function provides private communication between stations while operating in the digital mode.

➡ Push [Scrambler] to toggle the scrambler function ON or OFF.
  • "❨❩" (Scrambler icon) appears when the function is ON.

## ■ Stun function

The dispatcher can send a signal that will stun, kill or revive your transceiver.
When the Stun command is received, the transceiver be-comes unusable. In that case, receiving a Revive command or inputting the password* (p. 8) is necessary to operate the transceiver again.
When a Kill command is received, the transceiver becomes unusable (the transceiver switches to the cloning required condition). In that case, cloning the transceiver is necessary to operate the transceiver again.
* Depending on the pre-programmed settings.

░See the operating guide for details of the Stun function ░with the dPMR system operations. Ask your dealer for de-░tails.

# ■ Emergency transmission

When [Emergency] is pushed for the specified time period, an emergency signal is transmitted once, or repeatedly, on the specified emergency channel, depending on the presetting.

A repeat emergency signal is automatically transmitted until the transceiver receives an acknowledgement signal, or you turn OFF the transceiver power.
When no emergency channel is specified, the signal is transmitted on the previously selected channel.

If you want to cancel the emergency call, hold down [Emergency] again before transmitting it.

If your transceiver is preset for Silent operation, you can transmit an Emergency call without the beep sounding and the LCD indication change.

**IMPORTANT:** It is recommended to set a separate emergency channel to provide reliable emergency calls.

◇ **NOTES**
Depending on the preprogramming, the following functions are automatically activated. Ask your dealer for details.

• **Auto TX function**
After the emergency call transmission, audio from the microphone is automatically transmitted for a specified time period.*
• The HM-148G or HM-152 hand microphone is required.

• **Auto RX function**
After the emergency call transmission, the transceiver stands by in the audible mode for the specified time period.*

## ■ Power OFF Emergency function

When the transceiver has a key assigned to Power OFF Emergency, you can use the function.
This function makes the transceiver transmit emergency calls, even though it appears to be powered OFF.

To activate the Power OFF Emergency function, turn OFF the power while holding down [Power OFF Emergency].
When the function is activated, any key operation, the ON/OFF Hook and Lone Worker functions become invalid. The beep, display and speaker are turned OFF as well.
On the other hand, the transceiver can transmit emergency calls according to the pre-programmed emergency settings.
Depending on the pre-programmed settings, the Remote Monitor function can also be used (dPMR operation only).
To cancel the Power OFF Emergency function and restore the transceiver, turn the power ON.

## ■ Priority A channel selection

When one of the following operations is performed, the transceiver automatically selects the Priority A channel.

• **Turning ON the power**
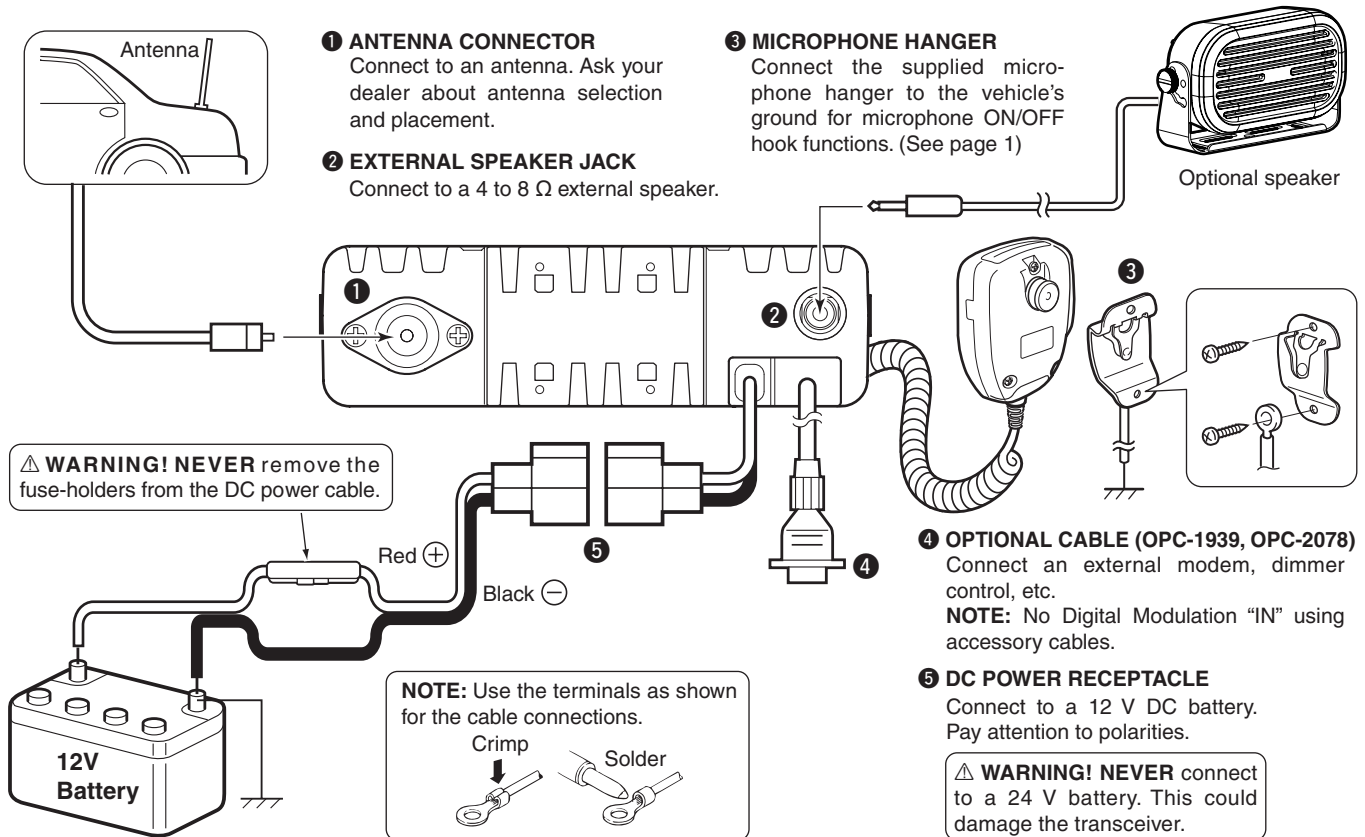  The Priority A channel is selected each time the transceiver power is turned ON.

• **Auto Reset**
  The Priority A channel is selected when the Auto Reset timer ends.
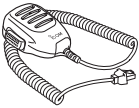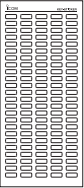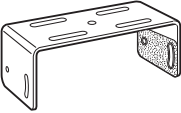
• **OFF hook**
  The Priority A channel is selected when you take the microphone OFF hook.
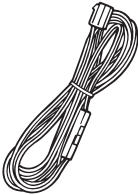
# CONNECTION AND MAINTENANCE

## ■ Rear panel connection

Antenna

**❶ ANTENNA CONNECTOR**
Connect to an antenna. Ask your dealer about antenna selection and placement.

**❷ EXTERNAL SPEAKER JACK**
Connect to a 4 to 8 Ω external speaker.

**❸ MICROPHONE HANGER**
Connect the supplied microphone hanger to the vehicle's ground for microphone ON/OFF hook functions. (See page 1)

Optional speaker

❶
❷
❸

⚠ **WARNING! NEVER** remove the fuse-holders from the DC power cable.

Red ⊕
Black ⊖
❺
❹

12V Battery

**NOTE:** Use the terminals as shown for the cable connections.
Crimp      Solder

**❹ OPTIONAL CABLE (OPC-1939, OPC-2078)**
Connect an external modem, dimmer control, etc.
**NOTE:** No Digital Modulation "IN" using accessory cables.

**❺ DC POWER RECEPTACLE**
Connect to a 12 V DC battery. Pay attention to polarities.

⚠ **WARNING! NEVER** connect to a 24 V battery. This could damage the transceiver.

**3**

## ■ Supplied Accessories

| Microphone | Microphone hanger and screw set | Microphone hanger cable |
|---|---|---|
| DC power cable | Function name stickers* | Mounting bracket |
| Flat washers | Nuts | Mounting screws (5×12) |
| Spring washers | Bracket bolts | Self-tapping screws (5×20) |

*Used for labelling the programmable function keys according to their assinged functions.

## ■ Mounting the transceiver

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

Flat washer

Felt*

Spring washer
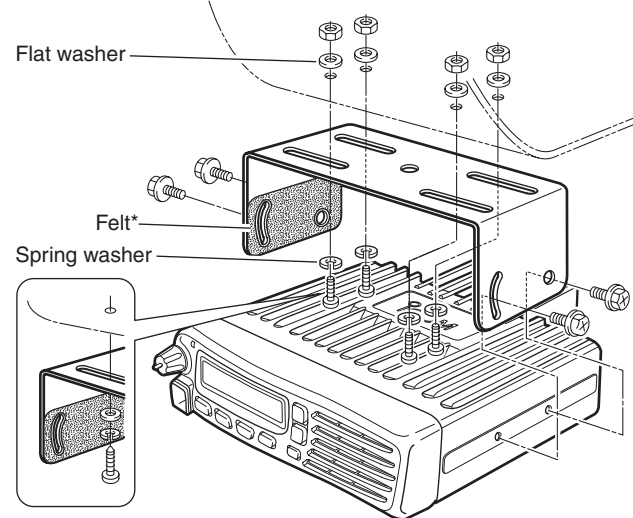
When using self-tapping screws

*Felt reduces the effects of vibration.

## ■ Antenna

A key element in the performance of any communication systems is its antenna. Contact your dealer for more information regarding antennas and how to install them.

## ■ Fuse replacement

If a fuse blows or the transceiver stops functioning, track down the source of the problem if possible, repair it and then replace the damaged fuse with a new rated one.
❑ Fuse rating: 10 A
   **USE** the applicable fuse only.
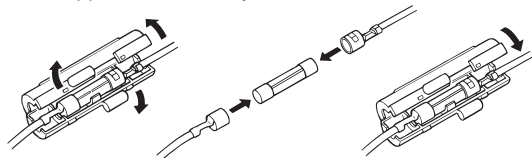


## ■ Cleaning

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



**DO NOT** use harsh solvents such as benzine or alcohol, as they will damage the transceiver surfaces.

## ■ Options

• **OPC-1939/OPC-2078** ACC CABLE
  Allows you to connect to an external terminal.
  OPC-1939: D-sub 15-pin, OPC-2078: D-sub 25-pin
  **NOTE:** No Digital Modulation "IN" using accessory cables.

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

• **SM-26** DESKTOP MICROPHONE

• **SP-22/SP-30/SP-35** EXTERNAL SPEAKER
  Input impedance   : 4 Ω
  SP-22/SP-35 : Rated input; 5 W, Max. input; 7 W
  SP-30         : Rated input; 20 W, Max. input; 30 W

Approved Icom optional equipment is designed for optimal performance when used with an Icom transceiver.

Icom is not responsible for the destruction or damage to an Icom transceiver in the event the Icom transceiver is used with equipment that is not manufactured or approved by Icom.

# COUNTRY CODE LIST

• **ISO 3166-1**

| | Country | Codes | | Country | Codes |
|---|---|---|---|---|---|
| 1 | Austria | AT | 18 | Liechtenstein | LI |
| 2 | Belgium | BE | 19 | Lithuania | LT |
| 3 | Bulgaria | BG | 20 | Luxembourg | LU |
| 4 | Croatia | HR | 21 | Malta | MT |
| 5 | Czech Republic | CZ | 22 | Netherlands | NL |
| 6 | Cyprus | CY | 23 | Norway | NO |
| 7 | Denmark | DK | 24 | Poland | PL |
| 8 | Estonia | EE | 25 | Portugal | PT |
| 9 | Finland | FI | 26 | Romania | RO |
| 10 | France | FR | 27 | Slovakia | SK |
| 11 | Germany | DE | 28 | Slovenia | SI |
| 12 | Greece | GR | 29 | Spain | ES |
| 13 | Hungary | HU | 30 | Sweden | SE |
| 14 | Iceland | IS | 31 | Switzerland | CH |
| 15 | Ireland | IE | 32 | Turkey | TR |
| 16 | Italy | IT | 33 | United Kingdom | GB |
| 17 | Latvia | LV | | | |

**About e-marking:** Detailed installation notes for Icom mobile transceivers to be fitted into vehicles are available. Please contact your Icom dealer or distributor.

**Count on us!**

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