

ICOM

INSTRUCTION MANUAL

SSB RADIO TELEPHONE
IC-M700PRO



Icom Inc.

IMPORTANT

READ THIS INSTRUCTION MANUAL CAREFULLY before attempting to operate the transceiver.

SAVE THIS INSTRUCTION MANUAL—This manual contains important safety and operating instructions for the IC-M700PRO SSB RADIO TELEPHONE.

EXPLICIT DEFINITIONS

The explicit definitions described below apply to this instruction manual.

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 directly. This may pose a fire hazard or result in an electric shock.

⚠ WARNING! NEVER mount the transceiver overhead. The weight of the transceiver is approximately 8 kg., but its apparent weight will increase several fold due to wave shocks and vibration. The transceiver must be mounted on a flat hard surface only.

NEVER connect a power source of more than 16 V DC such as a 24 volt battery. This connection will ruin the transceiver.

NEVER allow children to play with equipment containing a radio transmitter.

NEVER expose the transceiver to rain, snow or any liquids.

NEVER install the IC-M700PRO into a plus-grounding ship. Such a connection might blow fuses and is not usable.

DO NOT use chemical agents such as benzene or alcohol when cleaning, as they can damage the transceiver's surfaces.

In maritime mobile operation, **KEEP** the transceiver and microphone as far away as possible (at least 1 m) from the magnetic navigation compass to prevent erroneous indications.

USE an Icom microphone and/or handset only (supplied or optional). Other brands may have different pin assignments and may damage the transceiver.

AVOID using or placing the transceiver in areas with temperatures below -20°C (-4°F) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

AVOID connecting the transceiver to a power source using reverse polarity. This connection will not only blow fuses but may also damage the transceiver.

AVOID placing the transceiver in excessively dusty environments or in direct sunlight.

AVOID placing the transceiver against walls or putting anything on top of the transceiver. This will obstruct heat dissipation.

IN CASE OF EMERGENCY (for maritime operation)

If your vessel requires assistance, contact other vessels and the Coast Guard by sending a distress call on 2182 kHz.

- | | |
|--|--|
| ① Push [2182kHz] to select the emergency frequency. | 1. "MAYDAY, MAYDAY, MAYDAY" |
| ② Push [ALARM] and [TX.FREQ] for 1 sec. to transmit a 2-tone alarm signal for at least 30 sec. <ul style="list-style-type: none">• The transceiver automatically stops the alarm after 50 sec. | 2. "THIS IS " (name of vessel) |
| ③ Push [ALARM] to turn the alarm transmission off, then push and hold the PTT switch on the microphone and send the following information: | 3. "LOCATED AT " (vessel's position) |
| | 4. Give the reason for the distress call. |
| | 5. Explain what assistance you need. |
| | 6. Give additional information: <ul style="list-style-type: none">• Vessel type• Vessel length• Vessel color• Number of people onboard. |

VERSIONS

The following versions are available for the IC-M700PRO.

Version	Description
Marine	2182 kHz 2-tone alarm is built-in. FSK/CW narrow filter is optional. All SSB/FSK channels available.
General	2182 kHz 2-tone alarm is optional. No transmit frequency programming allowed.

TABLE OF CONTENTS

IMPORTANT	ii	5 SET MODE	11-14
EXPLICIT DEFINITIONS	ii	■ Set mode operation	11
PRECAUTIONS	ii	■ Set mode contents	11
IN CASE OF EMERGENCY	iii	6 CONNECTIONS AND INSTALLATION	15-21
VERSIONS	iii	■ Connections on rear panel	15
TABLE OF CONTENTS	iv	■ Unpacking	15
1 OPERATING RULES AND GUIDELINES	1	■ Connector information	16
2 PANEL DESCRIPTION	2-4	■ Ground connection	18
■ Front panel	2	■ Power source	18
■ Display	4	■ Antenna	19
3 SELECTING A CHANNEL/FREQUENCY	5-7	◇ MN-100/MN-101L	19
■ Memory mode/VFO mode	5	◇ AT-130	19
■ Selecting a channel	5	◇ Non-Icom tuner	19
◇ Scan function	6	■ Mounting	20
■ Selecting a frequency	6	◇ Mounting location	20
■ Resetting the CPU	7	◇ Mounting example	20
4 RECEIVE AND TRANSMIT	8-10	◇ Transceiver dimensions	20
■ Basic voice receive and transmit	8	■ Installing internal options	21
■ Functions for transmit	8	◇ Opening the case	21
◇ Transmit frequency check	8	◇ Installing an optional filter and alarm unit	21
■ Functions for receive	9	■ Fuse replacement	21
◇ Squelch function	9	7 TROUBLESHOOTING	22
◇ Noise blanker	9	8 SPECIFICATIONS AND OPTIONS	23
◇ AGC off function	9	■ Specifications	23
◇ Clarity control	9	■ Options	23
■ CW operation	10		
■ FSK operation	10		

□ CALL PROCEDURES

Calls must be properly identified and time limits must be respected.

- ① Give your call sign each time you call another vessel or coast station. If you have no call sign, identify your vessel name and the name of the licensee.
- ② Give your call sign at the end of each transmission that lasts more than 3 min.
- ③ You must break and give your call sign at least once every 15 min. during long ship-to-shore calls.
- ④ Keep your unanswered calls short, less than 30 sec. Do not repeat a call for 2 min.
- ⑤ Unnecessary transmissions are not allowed.

□ PRIORITIES

- ① Read all rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and distress calls take priority over all others.
- ② False or fraudulent distress calls are prohibited and punishable by law.

□ PRIVACY

- ① Information overheard but not intended for you cannot be lawfully used in any way.
- ② Indecent or profane language is prohibited.

□ LOGS

- ① All distress, emergency and safety calls must be recorded in complete detail. Log data activity is usually recorded in 24 hour time. Universal Time (UTC) is frequently used.
- ② Adjustments, repairs, channel frequency changes and authorized modifications affecting electrical operation of the equipment must be kept in the maintenance log; entries must be signed by the authorized licensed technician performing or supervising the work.

□ RADIO LICENSES

(1) SHIP STATION LICENSE

You must have a current radio station license before using the transceiver. It is unlawful to operate a ship station which is not licensed.

Inquire through your dealer or the appropriate government agency for a Ship-Radiotelephone license application. This government-issued license states the call sign which is your craft's identification for radio purposes.

(2) OPERATOR'S LICENSE

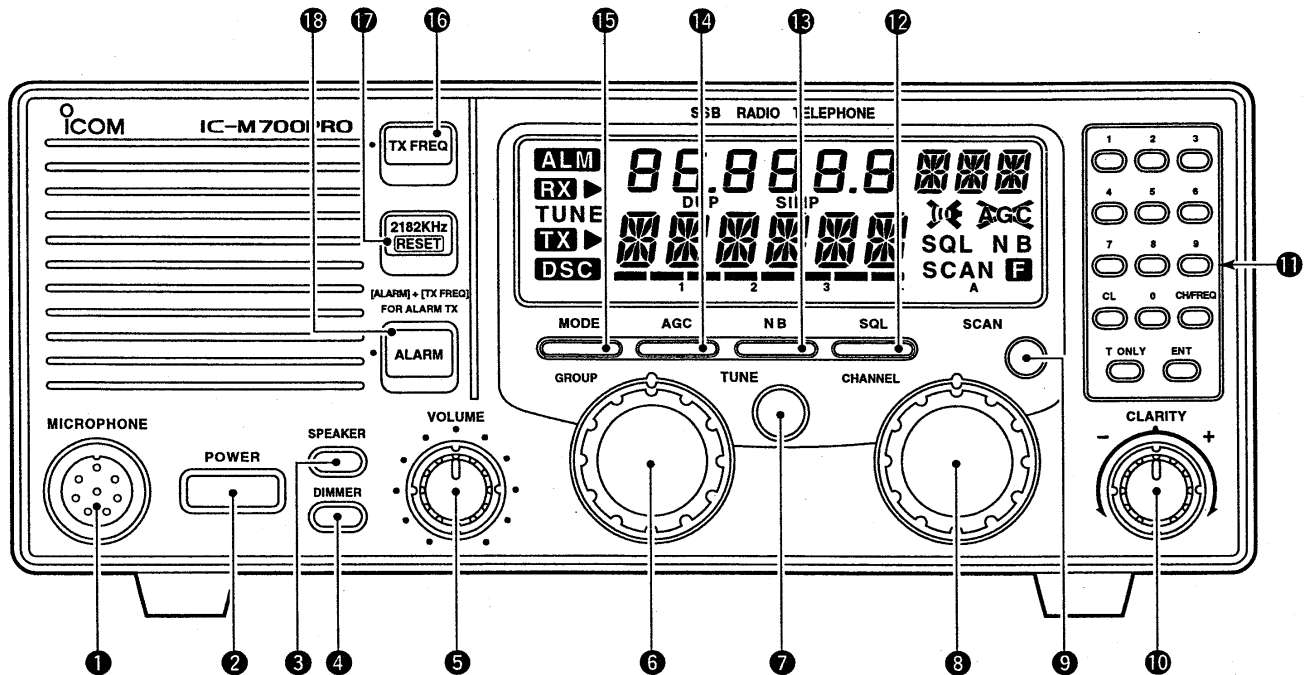
A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators when a radio is not required for safety purposes.

The Restricted Radiotelephone Operator Permit must be posted or be kept with the operator. Only a licensed radio operator may operate a transceiver.

However, non-licensed individuals may talk over a transceiver if a licensed operator starts, supervises, and ends the call, and makes the necessary log entries.

Keep a copy of the current government rules and regulations handy.

■ Front panel



1 MICROPHONE CONNECTOR (p. 16)

Accepts the supplied microphone or an optional handset.

NOTE: No audio is output via the speaker when the microphone or handset is not connected.

2 POWER SWITCH [POWER]

Turns power on and off.

3 SPEAKER SWITCH [SPEAKER]

Turns the built-in speaker on and off.

- "S" appears in the display while the speaker is turned off.
- Any external speaker connected to the rear panel is not turned off.

4 DISPLAY INTENSITY SWITCH [DIMMER]

Turns the display backlighting on and off.

5 VOLUME CONTROL [VOLUME]

Adjusts the audio output level.

- Audio does not come from the speaker when:
 - A microphone is not connected.
 - The [SQL] switch is turned on and no signal is being received.

6 GROUP CHANNEL SELECTOR [GROUP]

- In memory mode, selects 1 of 3 channel groups ("A," "B" or "C"). (p. 5)
 - In VFO mode, no function.
- Selects an item in set mode. (p. 11)

7 ANTENNA TUNE SWITCH [TUNE] (p. 8)

Tunes the connected tuner to the antenna.

- Activates only when an optional antenna tuner such as Icom's AT-130 is connected.

NOTE: When selecting "automatic tuning" in set mode, pushing this switch is not necessary to tune the antenna. (p. 11)

8 CHANNEL SELECTOR [CHANNEL] (p. 5)

- In memory mode, selects an operating channel within the selected channel group.
 - A maximum of 50 channels are available in each channel group depending on set mode setting (pgs. 13, 14).
- In VFO mode, changes the operating frequency in 0.1 kHz steps.
 - Frequencies selected in VFO mode are temporary.

9 SCAN SWITCH [SCAN] (p. 6)

Push to toggle scan on and off.

10 CLARITY CONTROL [CLARITY] (p. 9)

Shifts the receive frequency ± 150 Hz for clear reception of an off frequency signal.

11 KEYPAD

CL No function*.



CH/FREQ Toggles between memory mode and VFO mode. (p. 5)



• This key may be disabled by your dealer.

T ONLY No function*.



ENT No function*.



0 No function*.



to



12 SQUELCH SWITCH [SQL] (p. 9)

Activates the voice squelch function to reject undesired background noise while no signal is being received.

• The squelch opens only when the received signal contains no voice or FSK components.

13 NOISE BLANKER SWITCH [NB] (p. 9)

Turns the noise blanker function on to remove pulse-type noise such as engine ignition noise.

• "NB" appears when the function is turned on.

14 AGC OFF SWITCH [AGC] (p. 9)

Deactivates the AGC function to receive weak signals blocked by strong adjacent signals.

• "~~AGC~~" appears when the [AGC] switch is turned on (stands for AGC deactivated).

15 MODE SWITCH [MODE]

Selects an operating mode temporarily. Available modes differ with version.

• USB, AM, J2B (AFSK), FSK, R3E and CW modes are available.

• The temporary mode is cleared and the previous mode appears when changing a channel.

16 TRANSMIT FREQUENCY SWITCH [TX FREQ]

(p. 8)

Displays the transmit frequency and opens the squelch to check and monitor the transmit frequency.

17 2182 kHz SELECTION SWITCH

[2182kHz • RESET] (p. iii)

➔ Selects channel 0 (2182 kHz; distress call frequency).

• The channel selector does not function when selecting channel 0.

➔ Ignores external control and gives the front panel control priority when an external controller (NMEA format) is connected.

18 ALARM SWITCH [ALARM] (p. iii)

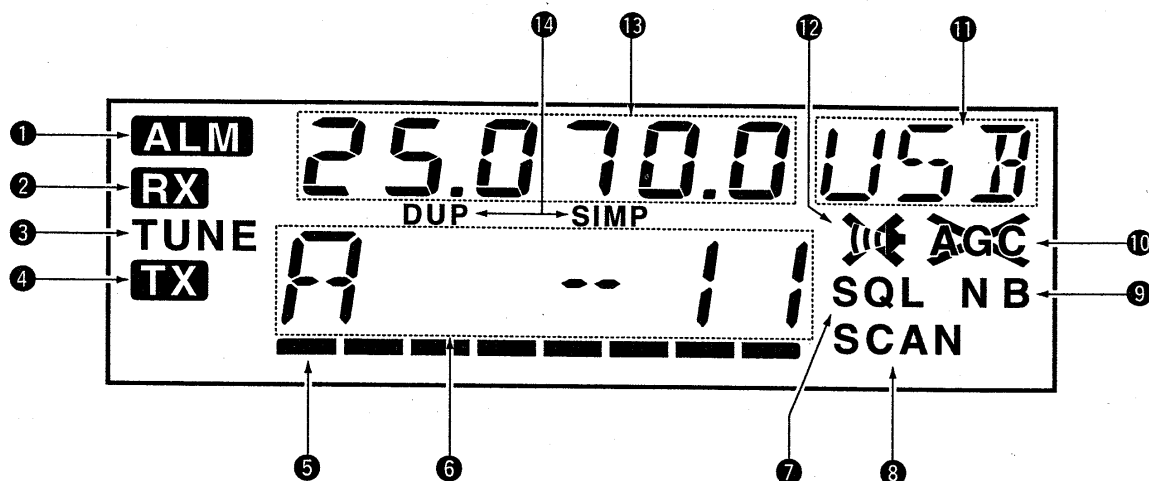
➔ Emits a distress alarm signal from the speaker.

➔ Transmits a distress alarm or alarm testing signal when pushed together with the [TX FREQ] switch.

🗨 **NOTE:** General versions are not equipped with this [ALARM] switch.

*These keys function in some versions. See the separate *KEYPAD OPERATION* and *CHANNEL LIST* instruction sheet for operating details.

■ Display



① ALARM INDICATOR (p. iii)

Appears when the alarm function is activated such as for an alarm test or distress alarm transmission.

- Not available in General version.

② RECEIVE INDICATOR

Appears while receiving and when the squelch is open.

③ TUNE INDICATOR (p. 8)

Flashes while the connected antenna tuner, such as Icom's AT-130, is being tuned.

- Tuning starts when transmitting on a new frequency or pushing the [TUNE] switch.

④ TRANSMIT INDICATOR

Appears when transmitting.

⑤ S/RF METER

- ➔ Shows the relative received signal strength while receiving.
- ➔ Shows output power while transmitting.

⑥ CHANNEL/VFO INDICATOR (p. 5)

- ➔ Shows the selected group and channel in memory mode.
- ➔ "FREQ" appears in VFO mode.

⑦ SQUELCH INDICATOR (p. 9)

Appears when the squelch is on.

⑧ SCAN INDICATOR (p. 6)

Appears when the scan function is in use.

- The scan function is not available on some versions.
- Pushing [SCAN] starts and stops scan.

⑨ NOISE BLANKER INDICATOR (p. 9)

Appears when the [NB] switch is turned on.

⑩ AGC OFF INDICATOR (p. 9)

Appears when the [AGC] switch is pushed to indicate the AGC function is deactivated.

⑪ MODE READOUT

Shows the selected operating mode (type of emission).

⑫ SPEAKER OFF INDICATOR

Appears when the [SPEAKER] switch is pushed to indicate the front panel speaker is deactivated.

⑬ FREQUENCY READOUT

- ➔ Shows the selected frequency whether in memory mode or VFO mode. (p. 5)
- ➔ Shows the transmit frequency (for duplex channels) when transmitting or when pushing [TX FREQ]. (p. 8)

⑭ SIMPLEX/DUPLEX INDICATORS

These appear to show whether the selected channel is simplex or duplex.

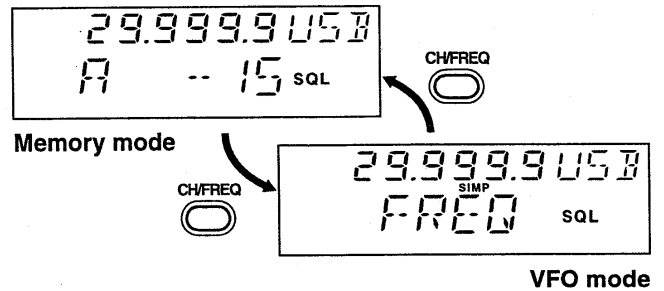
- In VFO mode, only simplex channels are available.
- No indicator means that there is no transmit frequency programmed.

Memory mode/VFO mode

The transceiver has 2 operating modes: *memory mode* and *VFO mode*. Memory mode is used to select pre-programmed marine channels in one of the 3 channel groups; VFO mode is used to select frequencies around preprogrammed channels.

Push [CH/FREQ] to toggle between memory and VFO modes.

- "FREQ" appears when in VFO mode.
- In VFO mode only simplex operation is possible.

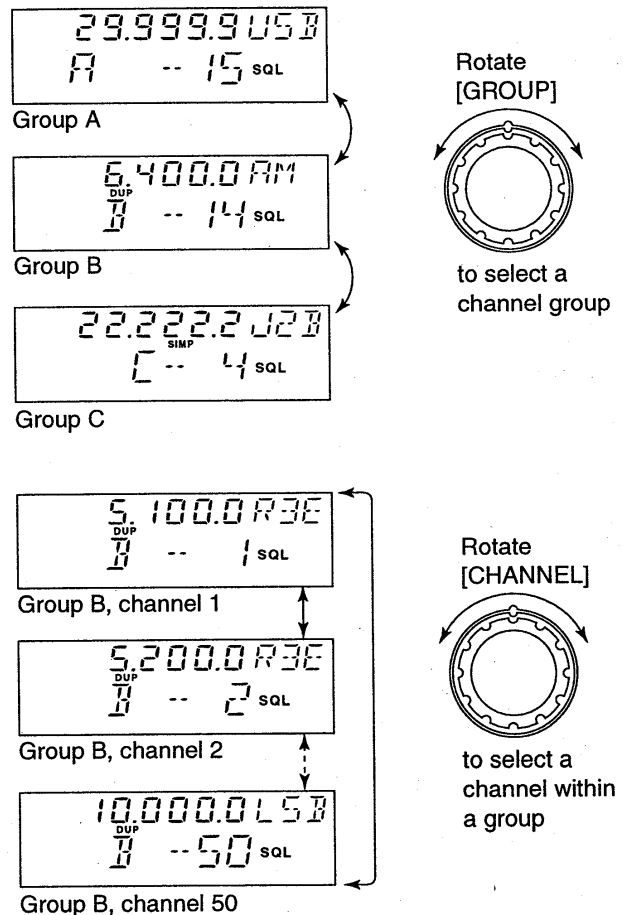


Selecting a channel

The transceiver has 150 channels divided into 3 groups of 50 (max.) channels. However, the number of channels in each group can be restricted in set mode (pgs. 13, 14) depending on your needs.

NOTE: When channel 0 and/or 2182 kHz is selected with the [2182KHz] switch, channel selection is NOT possible. In such cases, push [2182KHz] in advance.

- ① Push [CH/FREQ] to select memory mode, if necessary.
- ② Rotate the [GROUP] selector to select the desired channel group; then rotate the [CHANNEL] selector to select the desired channel.

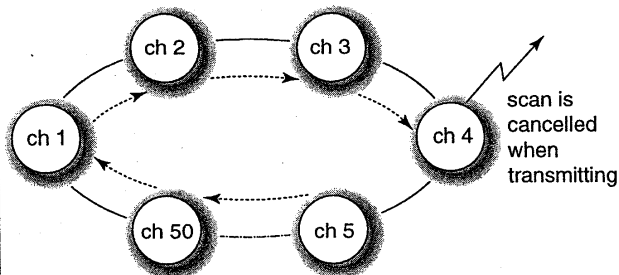


3 SELECTING A CHANNEL

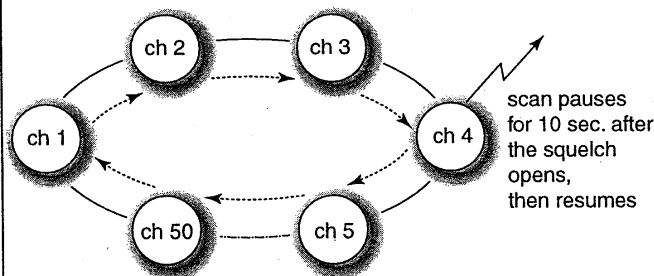
◇ Scan function

The scan function allows you to automatically search channels within a group for signals. There are 2 scan types (selectable in set mode) as follows:

Channel scan



Channel resume scan



Scan operation

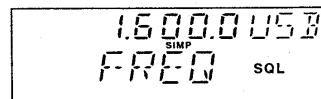
- ① Rotate the [GROUP] selector to select the group you wish to scan.
- ② Push [SQL] to close the squelch if necessary.
 - "SQL" appears.
- ③ Push [SCAN] to start scanning.
 - "SCAN" appears.
- ④ Push [SCAN] again to stop scanning.
 - "SCAN" disappears.

■ Selecting a frequency

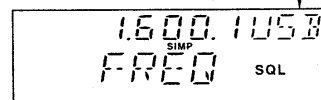
The transceiver has 0.5 to 30.0 MHz general coverage receive capability with 100 Hz resolution. Use VFO mode to select frequencies around the preprogrammed channels in memory mode.

NOTE: Frequencies selected in VFO mode are for temporary use and are not stored in memory.

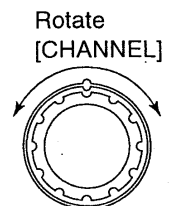
- ① While in memory mode, rotate the [GROUP] and [CHANNEL] selectors to select the channel nearest the frequency you want.
- ② Push [CH/FREQ] to select VFO mode.
 - "FREQ" appears.
- ③ Rotate the [CHANNEL] selector to select the desired frequency.
 - Frequency changes in 100 Hz steps.



1.6 MHz selected



1.6001 MHz selected



to select a frequency in 0.1 kHz steps

■ Resetting the CPU

Under some circumstances the transceiver's internal CPU may cause erroneous indications on the display. If this happens, reset the CPU as follows:

While pushing [ENT] + [0], push [POWER] to turn power on.

- The CPU is reset and the display at right appears.

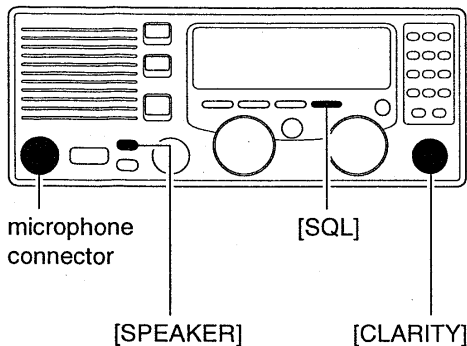
CAUTION: Resetting the CPU returns set mode contents to their default values.



Group A, channel 1 is selected after resetting the CPU.

Basic voice receive and transmit

- ① Check the following in advance:
- Microphone is connected.
 - [SPEAKER] switch is turned off.
 - [SQL] switch is turned off.
 - [CLARITY] control is set to the center position.
 - Memory mode is selected.
 - Push [CH/FREQ] to select memory mode, if necessary.



- ② Select the desired channel to be received with the [GROUP] and [CHANNEL] selectors.
- When receiving a signal, the S-meter shows the signal strength.
- ③ Adjust [VOLUME] to the desired audio level when receiving a signal.
- ④ Push [MODE] to select the desired operating mode, if the received signal is in a different mode.
- ⑤ Push [TUNE] to tune the antenna tuner, if connected.
- This operation is not necessary when "automatic tuning" is selected in set mode (p. 11).
- ⑥ To transmit on the channel, push and hold the PTT switch on the microphone.
- "TUNE" flashes for 1 to 2 sec. for the first transmission on a channel when an antenna tuner is connected.
- ⑦ After the flashing stops, speak into the microphone at your normal voice level.
- The RF meter shows the output power according to your voice level.
- ⑧ Release the PTT switch to return to receive.

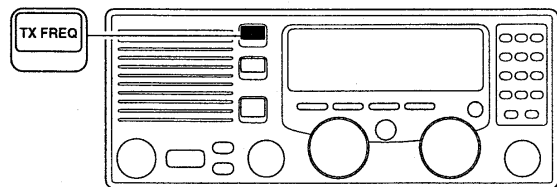
Functions for transmit

◇ Transmit frequency check

When "DUP" appears on the display such as for a ship-to-shore channel, the transmit frequency differs from the receive frequency.

In such cases, the transmit frequency should be monitored before transmitting to prevent interference to other stations.

Push and hold [TX FREQ] to monitor the transmit frequency.



- The display shows the transmit frequency.

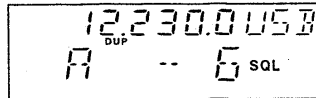
■ Functions for receive

◇ Squelch function

The squelch function detects signals with voice components and squelches (mutes) unwanted signals such as unmodulated beat signals. This provides quiet standby.

When you need to receive weak signals, the squelch should be turned off.

Push [SQL] to toggle the function on and off.



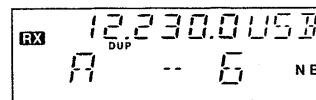
- "SQL" appears when the squelch function is turned on.

◇ Noise blanker

The noise blanker function reduces pulse type noise such as that coming from engine ignitions.

The noise blanker may distort reception of strong signals. In such cases, the noise blanker should be turned off.

Push [NB] to toggle the function on and off.



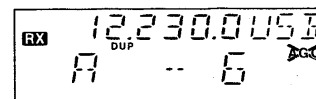
- "NB" appears when the noise blanker function is turned on.

◇ AGC off function

The receiver gain is automatically adjusted according to received signal strength with the AGC (Automatic Gain Control) function to prevent distortion from strong signals and to obtain a constant output level.

When receiving weak signals with adjacent strong signals or noise, the AGC function may reduce the sensitivity. In this situation, the AGC function should be deactivated.

Push [AGC] to toggle the function on and off.

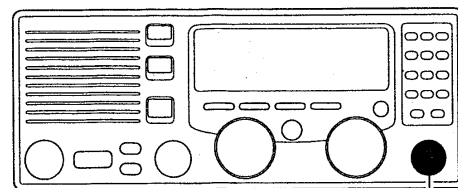


- "AGC" appears when the AGC function is deactivated.

◇ Clarity control

Voice signals received from other stations may be difficult to receive. This may sometimes happen if a station is transmitting slightly off frequency. In such cases, compensate the receive frequency only, using the [CLARITY] control.

Adjust [CLARITY] to improve the audio signal.



[CLARITY]

Count on us!

