

Thank you for purchasing the IC-2300H FM TRANSCEIVER with Icom's state of the art technology.

Please read all instructions carefully before using the IC-2300H.

This instruction sheet describes only basic operations. For more detailed instructions, go to our web site (URL: <http://www.icom.co.jp/world/index.html>) to view or download the IC-2300H full instruction manual. In the instruction manual, some options or some functions may not be available for this version. Please ask your dealer for details.

■ Precautions

⚠ WARNING RF EXPOSURE! This device emits RadioFrequency (RF) energy. Extreme caution should be observed when operating this device. If you have any questions regarding RF exposure and safety standards, please refer to the Federal Communications Commission Office of Engineering and Technology's report on Evaluating Compliance with FCC Guidelines for Human Radio frequency Electromagnetic Fields (OET Bulletin 65).

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

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

⚠ WARNING! NEVER operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.

⚠ 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 operate or touch the transceiver with wet hands. This may result in an electric shock or damage the transceiver.

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

⚠ WARNING! NEVER let metal, wire or other objects touch any internal part of the transceiver. This may result in an electric shock.

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

DO NOT push the PTT when not actually intending to transmit. **KEEP** the transceiver out of the reach of children.

During mobile operation, **DO NOT** operate the transceiver without running the vehicle's engine. When the transceiver's power is ON and your vehicle's engine is OFF, the vehicle's battery will soon become exhausted.

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

DO NOT set the transceiver in a place without adequate ventilation. Heat dissipation may be affected, and the transceiver may be damaged.

DO NOT use or place the transceiver in direct sunlight or in areas with temperatures below -10°C (+14°F) or above +60°C (+140°F).

DO NOT use harsh solvents such as benzene or alcohol when cleaning, as they will damage the transceiver's surfaces.

USE only Icom microphones (supplied or optional). Other manufacturer's microphones have different pin assignments and may damage the transceiver if attached.

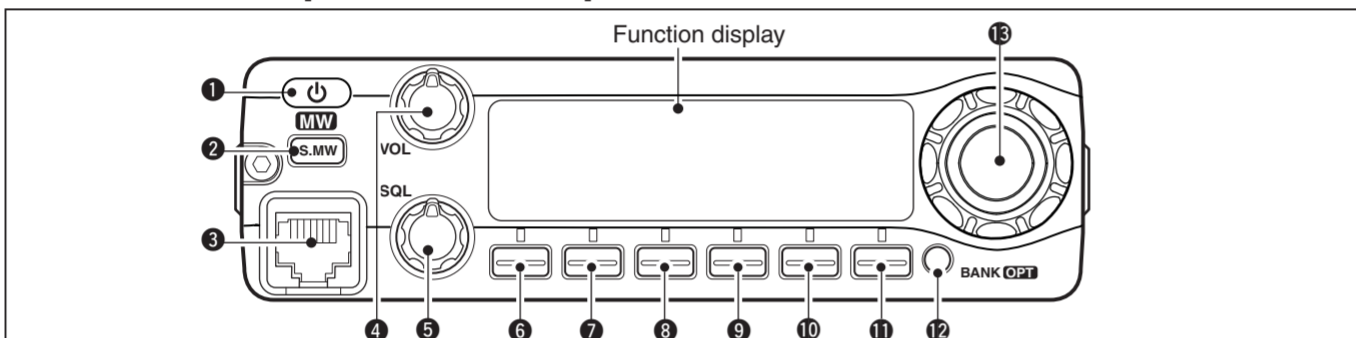
Approved Icom optional equipment is designed for optimal performance when used with an Icom transceiver.

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.

For only U.S.A.

CAUTION: Changes or modifications to this device, not expressly approved by Icom Inc., could void your authority to operate this device under FCC regulations.

■ Panel description— Front panel



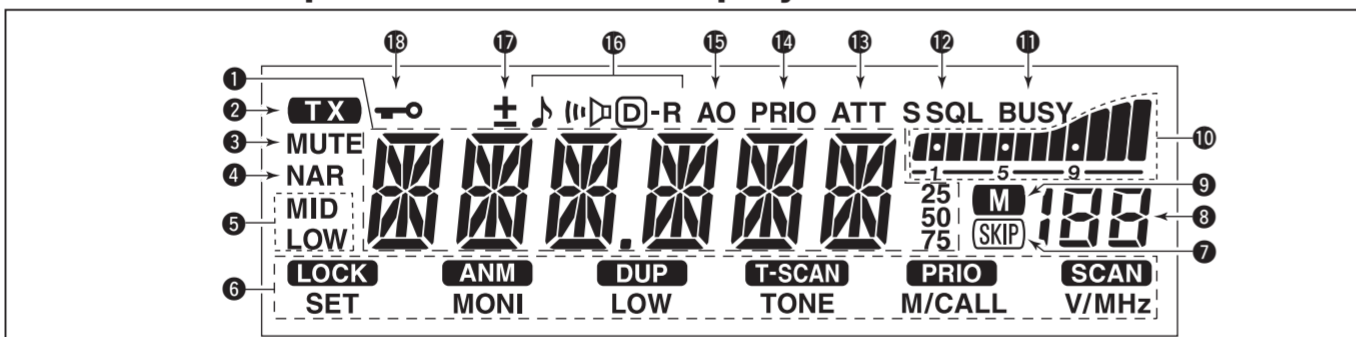
- POWER KEY [⏻]**
Hold down for 1 second to turn power ON or OFF.
- MEMORY WRITE KEY [S.MW MW]**
Push to enter the memory write mode.
Hold down for 1 second to program the selected memory channel.
Continue to hold down the key to automatically increment the memory channels.
- MICROPHONE CONNECTOR**
Connect the supplied microphone here.
- VOLUME CONTROL [VOL]**
Rotate to adjust the audio level.
- SQUELCH CONTROL [SQL]**
Rotate to adjust the squelch level.
The S-meter squelch or attenuator squelch is activated, when you rotate [SQL] clockwise from the center position.
- SET-LOCK KEY [SET LOCK]**
Push to enter to the Set mode.
Hold down for 1 second to turn the Lock function ON or OFF.
- MONITOR-CHANNEL NAME KEY [MONI ANM]**
Push to turn the monitor function ON or OFF.
In the memory or Call channel mode, hold down for 1 second to turn the channel names or number ON or OFF.
- OUTPUT POWER-DUPLEX KEY [LOW DUP]**
Push to select the output power.
Hold down for 1 second to select the minus duplex, plus duplex or simplex mode.

- TONE-TONE SCAN KEY [TONE T-SCAN]**
Push to select the tone function.
Hold down for 1 second to start the Tone Scan.
- MEMORY/CALL-PRIORITY KEY [M/CALL PRIO]**
Push to select and toggle memory, Call and weather channel* modes. *For only USA versions.
Hold down for 1 second to start the priority watch.
- VFO/MHz TUNING-SCAN KEY [V/MHz SCAN]**
Push to select the VFO mode.
In the VFO mode, push to select the tuning step.
Hold down for 1 second to start a scan.
Push to cancel the scan while scanning.
- BANK-OPTION KEY [BANK OPT]**
Push to select the memory bank in the memory mode.
Hold down for 1 second to enter the Option Set mode.
- TUNING DIAL [DIAL]**
Sets the operating frequency, memory channel.
Sets the item in the Set mode.
Changes the scanning direction.

◇ Microphone connector (front panel view)

-
- +8 V DC output (Max. 35 mA)
 - Channel up/down
 - 8 V control IN
 - PTT
 - GND (microphone ground)
 - MIC (microphone input)
 - GND
 - Data IN

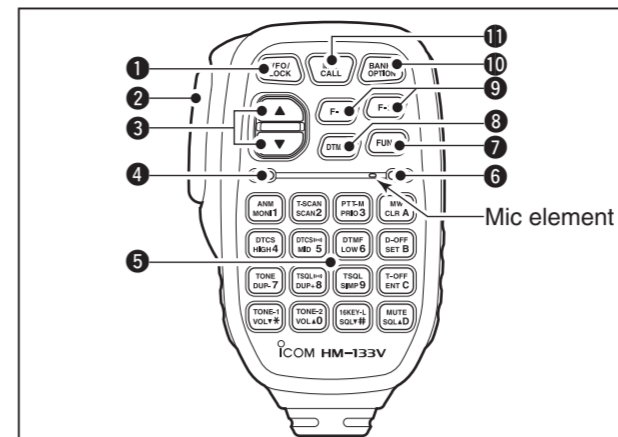
■ Panel description— Function display



- FREQUENCY READOUT**
Shows the operating frequency, channel name, Set mode contents, and so on.
The frequency decimal point blinks during a scan.
While the DTMF memory function is in use, "d" appears in the 100 MHz digit.
- TRANSMIT ICON**
Appears while transmitting.
Blinks while transmitting with the One-Touch PTT function.
- AUDIO MUTE ICON**
Appears when the Audio Mute function is activated.
- NARROW MODE ICON**
Appears when the narrow FM mode is selected.
- OUTPUT POWER ICONS**
Displays the selected transmit output power level.
- KEY ICONS**
Displays the function(s) of the front panel keys directly below the function display.
- SKIP ICON**
Appears when the selected memory channel is set as a skip channel.
- MEMORY CHANNEL NUMBER READOUT**
Displays the selected memory channel number.
"C" appears when the Call channel is selected.
- MEMORY ICON**
Appears when the Memory mode is selected.
- S/R/F INDICATOR**
Shows the relative signal strength, while receiving signals.
Shows the output power level, while transmitting.

- BUSY ICON**
Appears when receiving a signal, or the squelch is open.
Blinks while the monitor function is turned ON.
- S-METER SQUELCH ICON**
Appears while the S-meter Squelch function is turned ON.
- SQUELCH ATTENUATOR ICON**
Appears while the Squelch Attenuator function is turned ON.
- PRIORITY WATCH ICON**
Appears during Priority Watch.
- AUTO POWER OFF ICON**
Appears when the Auto Power OFF function is turned ON.
- TONE ICONS**
The "J" icon appears while the subaudible tone encoder is in use.
The "M" and "D" icons appear while the DTCS encoder is in use.
The "R" icon appears while the Reverse Tone Squelch (CTCSS) function is in use.
The "D" and "R" icons appear while the Reverse Tone Squelch (CTCSS) function is in use.
The "D" icon appears while the Tone Squelch (DTCS) function is in use.
The "D" and "R" icons appear while the Reverse Tone Squelch (DTCS) function is in use.
The "M" icon appears with the "D" or "R" icon, while the pocket beep function (CTCSS or DTCS) is in use.
- DUPLEX ICONS**
The "+" icon appears in the plus duplex mode, and the "-" icon appears in the minus duplex mode.
- LOCK ICON**
Appears while the Lock function is turned ON.

■ Microphone (HM-133V)



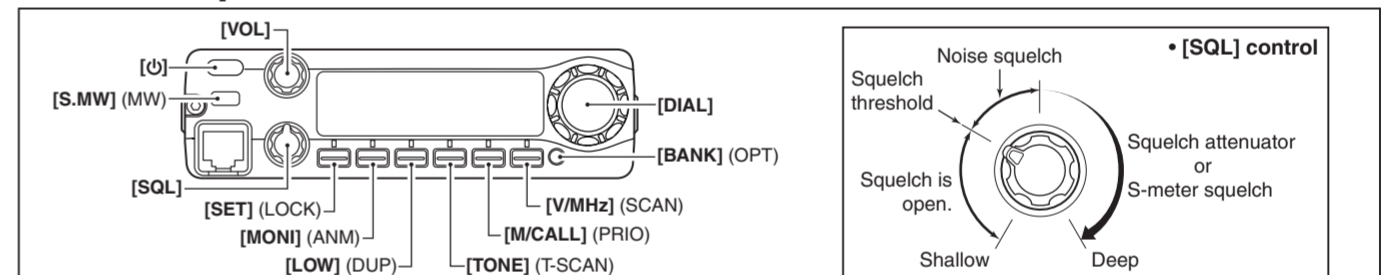
- VFO/LOCK KEY [VFO/LOCK]**
Push to select the VFO mode.
Hold down for 1 second to turn the Lock function ON or OFF.
- PTT SWITCH**
Hold down to transmit; release to receive.
Toggles between transmitting and receiving while the One-Touch PTT function is in use.
- UP/DOWN KEYS [▲] or [▼]**
Push either key to change the operating frequency, memory channel, mode setting, and so on.
Hold down either key for 1 second to start scanning.

- ACTIVITY INDICATOR**
Lights red while any key other than [FUNC] (FUNC) and [DTMF-S] (DTMF-S), is pushed, or while transmitting.
Lights orange while the Microphone Keypad Lock function is activated.
Lights green while the One-Touch PTT function is in use.
- KEYPAD**
Push to activate various functions.
- FUNCTION INDICATOR**
Lights orange while [FUNC] (FUNC) is activated—indicating the secondary function of keys can be accessed.
Lights green when [DTMF-S] (DTMF-S) is activated—DTMF signals can be transmitted using the keypad.
- FUNCTION KEY [FUNC]**
- DTMF MEMORY SELECT KEY [DTMF-S]**
- FUNCTION KEYS [F-1] or [F-2]**
Program and re-call your desired transceiver setting.
- BANK/OPTION KEY [BANK/OPTION]**
Push to select the memory bank option, when in the memory mode.
Hold down for 1 second to enter the Option Set mode.
- MEMORY/CALL KEY [MR/CALL]**
Push to select the memory mode.
Hold down for 1 second to select the Call channel.

■ HM-133V keypad

KEY	FUNCTION	SECONDARY FUNCTION (FUNC)+key	OTHER FUNCTION
ANM (MONI)	Opens and closes the squelch.	Turns the channel names or number display ON or OFF, in the memory mode.	After pushing (DTMF-S), transmits the appropriate DTMF code. When the DTMF memory encoder is activated, push [A] to [D], [*], [#], [0] to [9] to transmit the appropriate DTMF memory contents.
TSCAN (SCAN)	Starts and stops scanning.	Starts and stops tone scanning.	
PTT (PTT)	Starts and stops priority watch.	Turns the One-Touch PTT function ON or OFF.	
DTCS (HIGH)	Selects high output power.	Turns ON the DTCS squelch.	
DTCS (MID)	Selects mid output power.	Turns ON the DTCS pocket beep function.	
DTMF (LOW)	Selects low output power.	Turns ON the DTMF memory encoder function.	
TONE (DUP-)	Selects the minus duplex mode.	Turns ON the subaudible tone encoder.	
TONE (DUP+)	Selects the plus duplex mode.	Turns ON the CTCSS pocket beep function.	
SQL (SMP)	Selects the simplex mode.	Turns ON the tone squelch function.	
TONE (VOL)	Adjusts the audio level.	Sends a 1750 Hz tone signal while held down.	
MW (CLR A)	<ul style="list-style-type: none"> Cancels frequency entry. Cancels the scan or priority watch. Exit the Set mode. 	<ul style="list-style-type: none"> Selects a memory channel programming mode. Advances the memory channel number when continuously pushed after programming is completed. 	
SET (SET B)	<ul style="list-style-type: none"> Enters the Set mode. Selects the next item in the Set mode. 	Turns OFF the DTMF memory mode.	
T-ENT (ENT C)	<ul style="list-style-type: none"> Sets the keypad for numeral input. Selects the previous item in the Set mode. 	Turns OFF the subaudible tone encoder, pocket beep or CTCSS/DTCS tone squelch.	
MUTE (SQL)	Adjusts the squelch level.	Mutes the audio. The Mute function is released when any operation is performed.	
TONE (VOL+)	Adjusts the audio level.	Sends a 1750 Hz tone signal for 1 second.	
1KEY (SQL#)	Adjusts the squelch level.	Locks the digit keys on the keypad (including the [A] to [D], [#] and [*] keys). The activity indicator lights orange while the Microphone Keypad Lock function is activated.	

■ Basic operation



- Turning power ON/OFF**
Hold down [⏻] for 1 second to turn the power ON or OFF.
- VFO mode selection**
The IC-2300H has 2 basic operating modes; VFO mode and memory mode.
Push [V/MHz] to select the VFO mode.
Push [M/CALL] to select the memory mode.

- Setting a frequency**
1 If necessary, push [V/MHz] to select the VFO mode.
2 Rotate [DIAL] to set the frequency.
The frequency changes according to the selected tuning step.
Push [V/MHz] one or more times, to toggle the frequency step between 1 MHz and 10 MHz, if desired.

- Tuning step selection**
The tuning step is the smallest selectable frequency increment you can set the operating frequency. The following tuning steps are selectable.
5 kHz • 6.25 kHz • 10 kHz • 12.5 kHz • 15 kHz
20 kHz • 25 kHz • 30 kHz • 50 kHz

NOTE: For convenience, select the tuning step that matches the frequency intervals of the repeaters in your area.

- If necessary, push [V/MHz] to select the VFO mode.
- Push [SET] to enter the Set mode.
- Push [SET] or [MONI] one or more times, until "TS" appears.
- Rotate [DIAL] to select the desired tuning step.
- Push any key, other than [SET] or [MONI], to save the entry and exit the Set mode.

- Call channel selection**
Push [M/CALL] once or twice to select the Call channel.
"C" appears instead of a memory channel number.
Push [M/CALL] to return to the memory mode, or push [V/MHz] to select the VFO mode.

- Lock function**
Use the Lock function to prevent accidental channel changes and unnecessary function access.
Hold down [LOCK] (SET) for 1 second to turn the Lock function ON or OFF.
[PTT], [MONI], [VOL] and [SQL] can be used, even while the Frequency Lock function is ON.

- Monitor function**
This function is used to listen to weak signals without disturbing the squelch setting, or to open the squelch manually, even when the tone squelch is in use.
Push [MONI] to open the squelch.
The "BUSY" icon blinks.
Push [MONI] again to cancel the function.

- Squelch attenuator**
The transceiver has an RF attenuator related to the squelch level setting. Approximately 20 dB of attenuation is obtained at the maximum setting.

- Turn ON the Squelch Attenuator function:**
1 Push [⏻] to turn OFF the power.
2 While holding down [LOCK] (SET), hold down [⏻] for 1 second to turn ON the power and enter the Initial Set mode.
3 Push [SET] or [MONI] one or more times, to select the "SQL" item.
4 Rotate [DIAL] to select "AT" (Attenuator).
5 Push [⏻] to exit the Initial Set mode.
6 Rotate [SQL] clockwise further than the 12 o'clock position, to activate the squelch attenuator.
The attenuation level can be adjusted up to 20 dB (approximately), between the 12 o'clock and fully clockwise positions.
When setting the squelch from the microphone, the level greater than '17' activates the squelch attenuator.

NOTE: When using with the Monitor function.
The squelch attenuator functions even when the Monitor function is in use. It is recommended to set [SQL] between 10 and 12 o'clock (7 to 17 level when it is set using the HM-133V).

- S-meter squelch**
The transceiver has an S-meter squelch. The S-meter squelch allows you to set minimum signal level needed to open the squelch.

- Turn ON the S-meter squelch function:**
1 Push [⏻] to turn OFF the power.
2 While holding down [LOCK] (SET), hold down [⏻] for 1 second to turn ON the power and enter the Initial Set mode.
3 Push [SET] or [MONI] one or more times, to select the "SQL" item.
4 Rotate [DIAL] to select "SS" (S-meter squelch).
5 Push [⏻] to exit the Initial Set mode.
6 Rotate [SQL] clockwise further than the 12 o'clock position, to activate the S-meter squelch.

- Selecting output power**
Set the output power level to suit your operating requirements. Lower output powers during short-distance communications may reduce the possibility of interference to other stations and will reduce current consumption.
Push [LOW] one or more times to select the output power.
The output power can be changed even while transmitting.

■ Scan start/stop

◇ Preparation

If desired, set the scan resume option, program the scan edges, program 2 or more memory channels, set the skip channels.

◇ Operation

① Select the mode or bank.

For full/programmed scan:

➔ Push [V/MHz] to select the VFO mode.

For memory scan:

➔ Push [M/CALL] to select the memory mode.

For bank scan:

➔ Push [BANK], and then rotate [DIAL] to select the desired bank.

② Set the squelch to the point where the noise is just muted.

③ Hold down [SCAN] (V/MHz) for 1 second to start the scan.

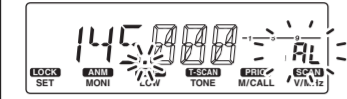
• Rotate [DIAL] to change the scanning direction.

• The scan type blinks in the memory channel readout:

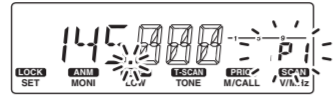
④ Push [SET] to switch between a full scan and a programmed scan (P1, P2 and P3).

• Push [V/MHz] to cancel the scan.

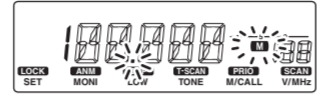
• During a full scan



• During a programmed scan



• During a memory or bank scan



■ Memory channels

The IC-2300H has a total of 207 memory channels for storing often used operating frequencies, repeater settings, and so on. Memories include 6 scan edges and 1 Call channel.

◇ PROGRAMMING MEMORY CHANNELS

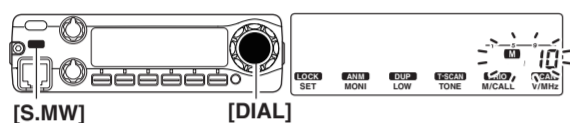
1. Setting the frequency

In the VFO mode, set the desired operating frequency, repeater, tone and tuning steps, and so on.

2. Selecting the memory channel

Push [S.MW], and then rotate [DIAL] to select the desired memory channel.

• The "M" icon and memory channel number blink.



3. Writing a memory channel

Hold down [MW] (S.MW) for 1 second to program.

• 3 beeps sound

• The memory channel number automatically increases when continuing to hold down [MW] (S.MW) after programming.

◇ Selecting Memory channel

① Push [M/CALL] one or more times to select the memory mode.

• The "M" icon appears.

② Rotate [DIAL] to select the desired memory channel.

• Only programmed memory channels can be selected.

■ Set mode

• Set mode operation

① Push [SET] to enter the Set mode.

② Push [SET] or [MONI] to select the desired item.

③ Rotate [DIAL] to set the option or value.

④ Push any key other than [SET] or [MONI], to exit the Set mode.

Set mode items

↑: [MONI]

↓: [SET]

• Repeater tone frequency

88.5 Select the subaudible tone needed to access the repeater.

• Tone squelch frequency

88.5 Select the CTCSS tone frequency for the tone squelch function.

• DTCS code

023 Set the DTCS code for DTCS squelch operation.

• DTCS polarity

DTX-NN Set the Transmit and Receive DTCS polarity.

• Frequency offset

0.600 Set the duplex frequency offset.

• Reverse mode

REV-OF Turn the Reverse Duplex function ON or OFF

• Tuning step

T5-5 Set the VFO tuning step.

• Scan stop timer

SCP-10 Select the scan pause timer option.

• Scan resume timer

SCR-2 Select the scan resume options of a pause.

• Display dimmer

DIM-4 Set the backlight brightness.

• Auto dimmer

ATD-OF Set the Auto Dimmer brightness.

• Display color

COL-AM Select the display backlight color.

• Display contrast

CON-2 Adjust the LCD contrast.

• Transmit permission

TX-ON Turns the TX inhibit function ON or OFF. (Select "OFF" to inhibit transmitting.)

• Channel skip setting¹

CHS-OF Turns the Skip function ON or OFF.

• Bank setting¹

BANK Assign the desired memory and scan edge channels.

• Bank link function¹

BLK-OF Assign the desired banks for a continuous banks scan.

• Wide/Narrow

W/N-W Set both the transmission and reception passband.

• Weather alert (For only USA version.)

ALT-OF Turn the Weather Alert function ON or OFF.

• MIC gain

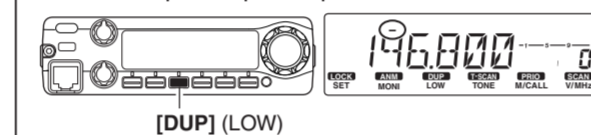
MIC-HI Set the microphone sensitivity.

¹Appears only when accessing the Set mode from the memory mode.

■ Repeater operation

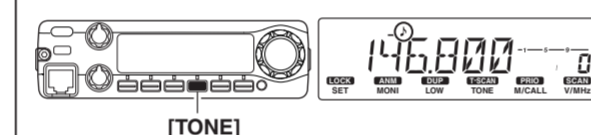
1. Setting duplex

Hold down [DUP] (LOW) for 1 second once or twice to select minus duplex or plus duplex.



2. Repeater tone

If accessing the repeater, requires a subaudible tone, push [TONE] one or more times until "T" appears.



■ Initial Set mode

The initial Set mode is accessed at power ON, and allows you to set seldom-changed settings. In this way, you can "customize" the transceiver to suit your preference and operating style.

• Initial Set mode operation

① While holding down [SET], hold down [ψ] for 1 second to enter the Initial Set mode.

② Push [SET] or [MONI] to select the desired item.

③ Rotate [DIAL] to set the option or value.

④ Push [ψ] to exit the initial Set mode.

Initial Set mode items

↑: [MONI]

↓: [SET]

• Key-touch beep

KEP-ON Turn the confirmation beeps ON (default) or OFF.

• Time-out timer

TOT-OF Inhibit continuous transmissions longer than the set time period.

• Auto repeater (For only USA version.)

RPT-RI Turns the Auto Repeater function ON or OFF.

• Auto power OFF

POF-OF Automatically turns the transceiver's power OFF.

• Repeater lockout

RLO-OF Set the transmission lockout capability.

• Squelch delay

SQT-5 Set the squelch delay to Short or Long.

• Squelch type

SQL-OF Set the squelch type to OFF (Noise squelch), S-meter Squelch or Squelch Attenuator.)

• Tone burst

TB-OF Turn the Tone Burst function ON or OFF.

• DTMF speed

DT-1 Set the DTMF sending rate.

• Display type

DIS-FF Set the display type for memory mode operation.

• Voltage display

VLT-ON Turn the Voltage Display function ON or OFF.