ICOM®

INSTRUCTION MANUAL

VHF/UHF DIGITAL TRANSCEIVER

ID-800H

Icom Inc.

FOREWORD

Thank you for purchasing this Icom product. The ID-800H VHF/UHF DIGITAL TRANSCEIVER is designed and built with Icom's state of the art technology and craftsmanship. With proper care, this product should provide you with years of trouble-free operation.

We want to take a couple of moments of your time to thank you for making your ID-800H your radio of choice, and hope you agree with Icom's philosophy of "technology first." Many hours of research and development went into the design of your ID-800H.

◇ *FEATURES*

- ❍ *Switchable VHF and UHF transceiver*
- ❍ *Selectable backlit color from amber, green and yellow*
- ❍ *Detachable controller for flexible installation*
- ❍ *55 W* of high transmit output power*
  *VHF band; 50 W for UHF band
- ❍ *Remote control microphone standard*
- ❍ *New DMS (Dynamic Memory Scan) system*

IMPORTANT

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL— This instruction manual contains important operating instructions for the ID-800H.

EXPLICIT DEFINITIONS

WORD	DEFINITION
⚠ **WARNING!**	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	Recommended for optimum use. No risk of personal injury, fire or electric shock.

PRECAUTION

⚠**WARNING RF EXPOSURE!** This device emits Radio Frequency (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** operate the transceiver while driving a vehicle. Safe driving requires your full attention—anything less may result in an accident.

NEVER connect the transceiver to a power source of more than 16 V DC. This will damage the transceiver.

NEVER connect the transceiver to a power source using reverse polarity. This will damage the transceiver.

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.

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

NEVER operate or touch the transceiver with wet hands. This may result in an electric shock or damage the transceiver.

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

NEVER let objects impede the operation of the cooling fan on the rear panel.

DO NOT push the PTT when not actually desiring to transmit.

DO NOT allow children to play with any radio equipment containing a transmitter.

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.

AVOID using or placing the transceiver in direct sunlight or in areas with temperatures below –10°C (+14°F) or above +60°C (+140°F).

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

AVOID setting the transceiver in a place without adequate ventilation. Heat dissipation may be affected, and the transceiver may be damaged.

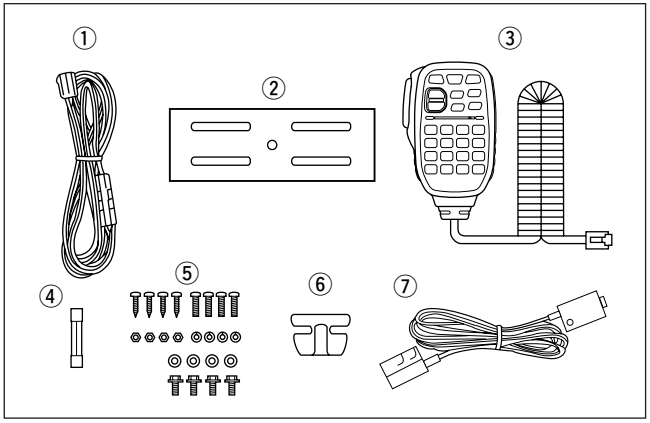
AVOID the use of chemical agents such as benzine or alcohol when cleaning, as they can damage the transceiver's surfaces.

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

For U.S.A. only

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

SUPPLIED ACCESSORIES



① DC power cable (3 m) 1
② Mobile mounting bracket 1
③ Microphone (HM-133)* 1
④ Fuse (20 A) 1
⑤ Mounting screws, nuts and washers .....1 set
⑥ Microphone hanger 1
⑦ Separation cable† (3.5 m; 11.5 ft) 1

*HM-118N HAND MICROPHONE or HM-118TN/TAN DTMF MICROPHONE supplied versions are also available.

†A ferrite core is adapted for the USA version.

TABLE OF CONTENTS

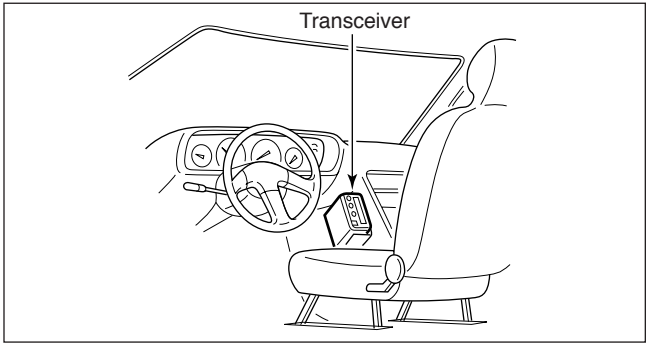
FOREWORD i
IMPORTANT i
EXPLICIT DEFINITIONS i
PRECAUTION ii
SUPPLIED ACCESSORIES iii
TABLE OF CONTENTS iii
QUICK REFERENCE GUIDE ..... I–X
■ Installation I
■ Your first contact VII
■ Repeater operation IX
■ Programming memory channels X
1 PANEL DESCRIPTION 1–10
■ Front panel— controller 1
■ Function display 3
■ Rear panel 5
■ Microphone (HM-133) 7
■ Microphone keypad 8
■ Optional microphones (HM-118N/TN/TAN) 10
2 SETTING A FREQUENCY 11–14
■ Preparation 11
■ Using the tuning dial 12
■ Using the [▲]/[▼] keys 12
■ Using the keypad 12
■ Tuning step selection 13
■ Lock functions 14
3 BASIC OPERATION 15–18
■ Receiving 15
■ Monitor function 15
■ Squelch attenuator 16
■ Transmitting 17
■ Selecting output power 17

■ One-touch PTT function 18
■ Audio mute function 18
4 REPEATER OPERATION 19–25
■ General 19
■ Accessing a repeater 20
■ Subaudible tones 22
■ Offset frequency 24
■ Auto repeater (USA version only) 25
5 MEMORY OPERATION 26–37
■ General description 26
■ Memory channel selection 26
■ Programming a memory channel 27
■ Copying memory contents 29
■ Programming channel names 31
■ Memory clearing 34
■ Memory bank selection 35
■ Memory bank setting 36
■ Transferring bank contents 37
6 CALL CHANNEL OPERATION 38–39
■ Call channel selection 38
■ Call channel transferring 38
■ Programming a call channel 39
7 SCAN OPERATION 40–45
■ Scan types 40
■ Scan start/stop 41
■ Scan edges programming 42
■ Skip channel setting 44
■ Scan resume condition 45
8 PRIORITY WATCH 46–47
■ Priority watch types 46
■ Priority watch operation 47
9 DTMF MEMORY ENCODER 48–51
■ Programming a DTMF code 48
■ Transmitting a DTMF code 50
■ DTMF speed 51
10 POCKET BEEP AND TONE SQUELCH 52–55
■ Pocket beep operation 52
■ Tone/DTCS squelch operation 54
■ Tone scan 55
11 OTHER FUNCTIONS 56–74
■ Set mode 56
■ Initial set mode 61
■ AM/FM narrow mode 65
■ Weather channel operation (USA version only) 66
■ Microphone keys 67
■ Partial reset 68
■ All reset 68
■ Data cloning 69
■ Packet operation 71
12 DIGITAL MODE OPERATION 75–87
■ Digital mode operation 75
■ Call sign programming 75
■ Digital voice mode operation 77
■ When receiving a Digital call 79
■ Break-in communication 79
■ EMR communication 80
■ Digital code/Call sign squelch operation 80
■ Slow data communication 81
■ Other setting items 82
■ GPS operation 87

■ Installation

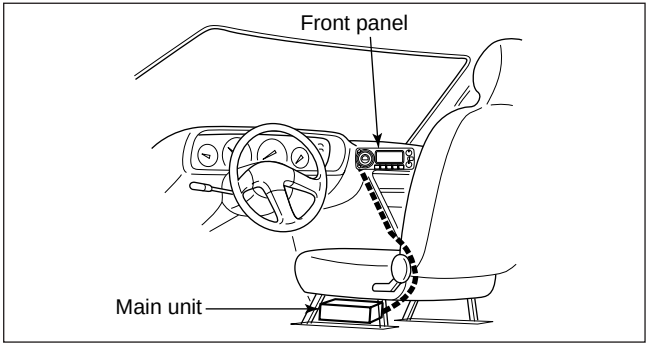
◇ Installation methods

• Single body installation



• The supplied mounting bracket (or optional MB-17A) can be used for the main unit installation.

• Remote installation



• The supplied OPC-600/R SEPARATION CABLE can be used for remote installation.
• Optional OPC-601/R SEPARATION CABLE (7 m; 23 ft) is available for extend installation.
• Optional MB-58 REMOTE CONTROLLER BRACKET and MB-65 MOUNTING BASE are available for increasing front panel mounting possibilities.
• Optional OPC-440 MICROPHONE CABLE (5.0 m; 16.4 ft) and OPC-647 (2.5 m; 8.2 ft) are available to extend the microphone cable.
• Optional OPC-441 SPEAKER CABLE (5.0 m; 16.4 ft) is available to extend the speaker cable.

◇ Location

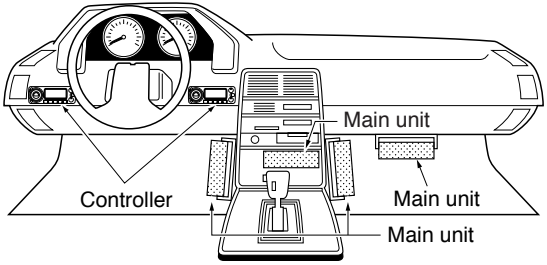
Select a location which can support the weight of the transceiver and does not interfere with driving. We recommend the locations shown in the diagram below.

NEVER place the transceiver or remote controller where normal operation of the vehicle may be hindered or where it could cause bodily injury.

NEVER place the transceiver or remote controller where air bag deployment may be obstructed.

DO NOT place the transceiver or remote controller where hot or cold air blows directly onto it.

AVOID placing the transceiver or remote controller in direct sunlight.

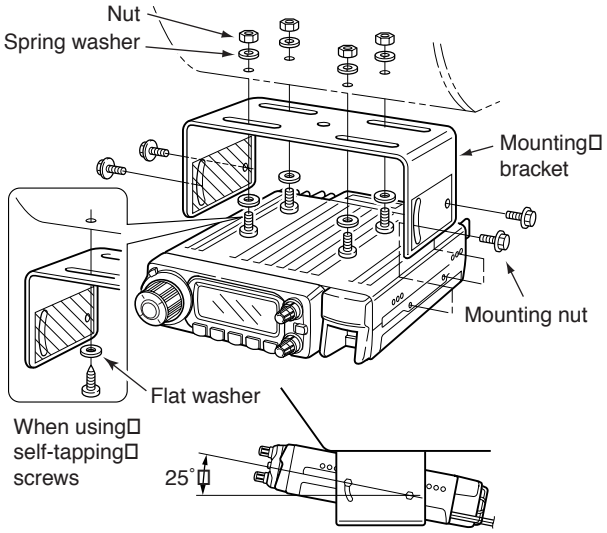


◇ Using the mounting bracket

① Drill 4 holes where the mounting bracket is to be installed.
- Approx. 5.5–6 mm (¼″) when using nuts; approx. 2–3 mm (⅛″) when using self-tapping screws.

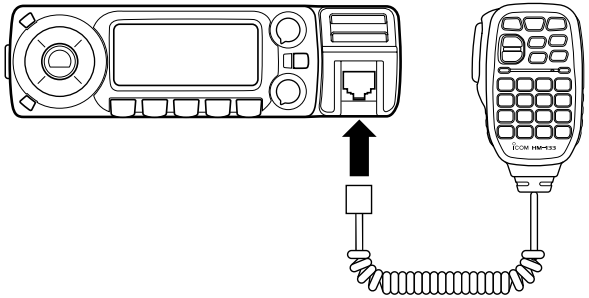
② Insert the supplied screws, nuts and washers through the mounting bracket and tighten.

③ Adjust the angle for your suitable position.



◇ Microphone connection

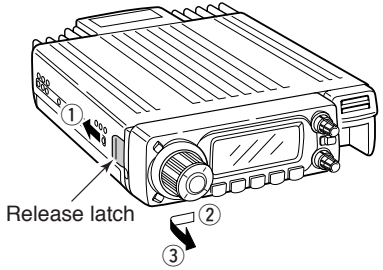
Connect the supplied microphone as illustrated below.



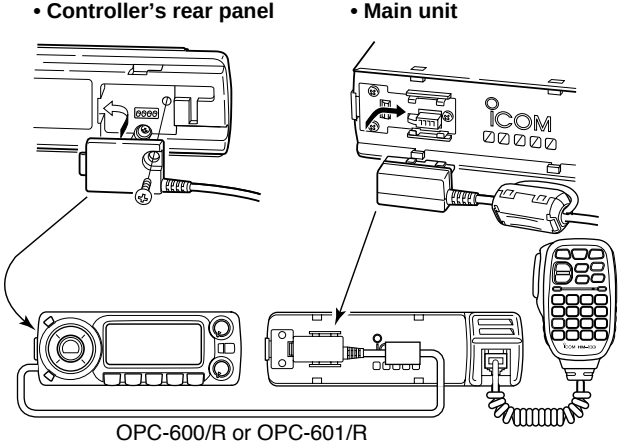
◇ Separation cable connection

Using the supplied separation cable (3.5 m; 11.5 ft) or the optional separation cable (7 m; 23 ft) the controller can be separated from the main unit, doubling as a remote controller.

①Detach the controller as below.



②Connect a separation cable between the controller and main unit using the supplied screws as illustrated below.

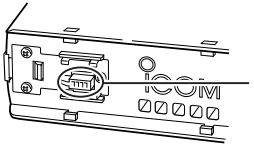


OPC-600/R or OPC-601/R

A ferrite core is adapted for the USA version.

CAUTION!

NEVER short the terminals of the separation connector. The 13.8 V power line is available in the connector, so the transceiver may damage when short circuited.



NEVER short the terminals

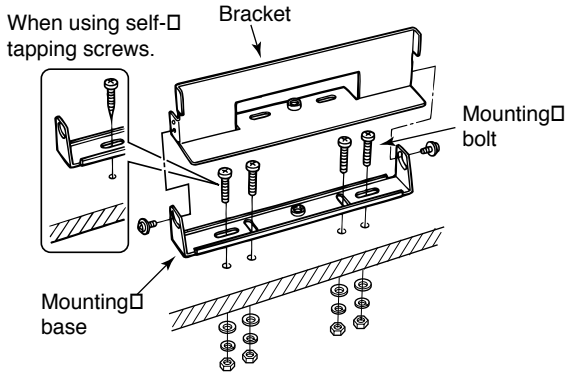
◇ Optional MB-58 installation

The optional MB-58 REMOTE CONTROLLER BRACKET is available for separate installation.

①Drill 2 or 4 holes where the bracket is to be installed.
- Approx. 4 mm (⅛″) when using nuts; approx. 1–2 mm (1⁄16″) when using self-tapping screws.

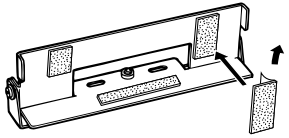
②Insert the supplied screws, bolts and washers through the mounting base and tighten.

③Adjust the angle for the clearest view of the function display and tighten 2 screws when the mounting base is used.

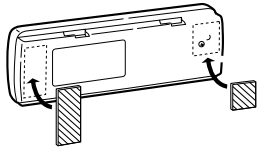


④Attach the supplied Velcro pads (large) to the remote controller and bracket.

⑤Attach the supplied Velcro pads (small) or rubber pad to the bracket as shown below; then attach the remote controller.

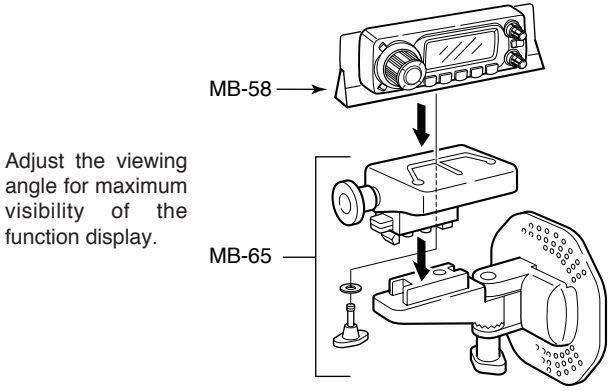


MB-58



ID-800H remote controller

• When using the optional MB-65



◇ Battery connection

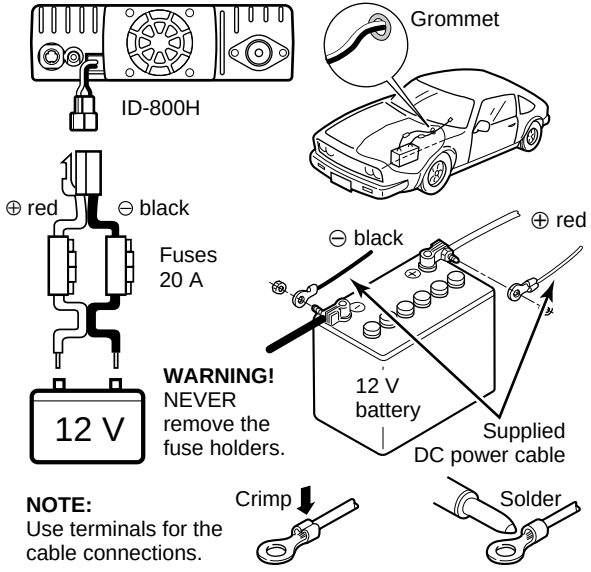
☞ ⚠**WARNING NEVER** remove the fuse holders from the DC power cable.

☞ **NEVER** connect the transceiver directly to a 24 V battery.

☞ **DO NOT** use the cigarette lighter socket for power connections. (See p. 5 for details)

Attach a rubber grommet when passing the DC power cable through a metal plate to prevent a short circuit.

• CONNECTING TO A DC POWER SOURCE

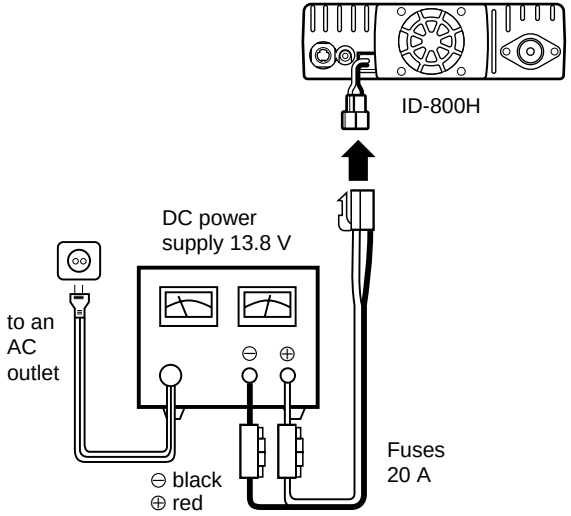


◇ DC power supply connection

Use a 13.8 V DC power supply with at least 15 A capacity.

Make sure the ground terminal of the DC power supply is grounded.

• CONNECTING TO A DC POWER SUPPLY

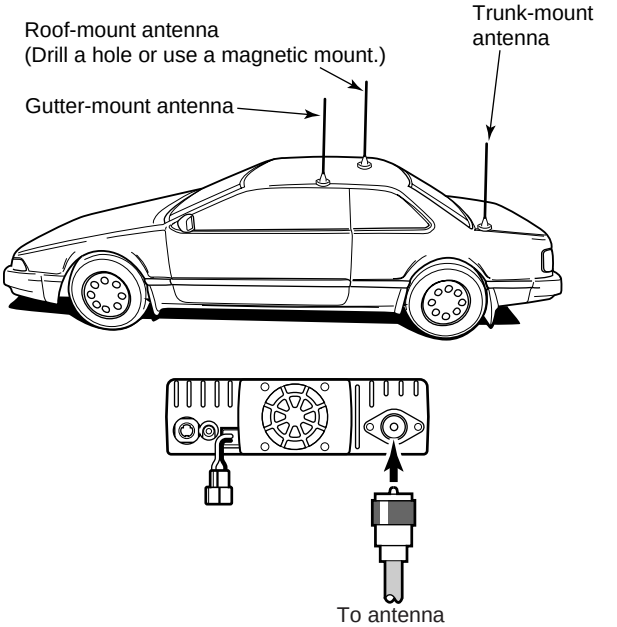


See p. 76 for fuse replacement.

◇ Antenna installation

• Antenna location

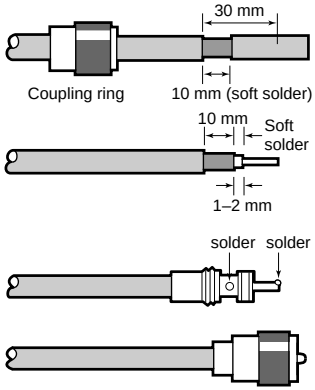
To obtain maximum performance from the transceiver, select a high-quality antenna and mount it in a good location. A non-radial antenna should be used when using a magnetic mount.



• Antenna connector

The antenna uses a PL-259 connector.

• PL-259 CONNECTOR



① Slide the coupling ring down. Strip the cable jacket and soft solder.

② Strip the cable as shown at left. Soft solder the center conductor.

③ Slide the connector body on and solder it.

④ Screw the coupling ring onto the connector body.
(10 mm ≈ 3⁄8 in)

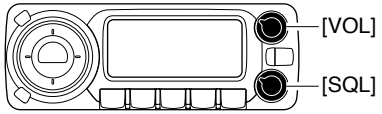
NOTE: There are many publications covering proper antennas and their installation. Check with your local dealer for more information and recommendations.

■ Your first contact

Now that you have your ID-800H installed in your car or shack, you are probably excited to get on the air. We would like to take you through a few basic operation steps to make your first “On The Air” an enjoyable experience.

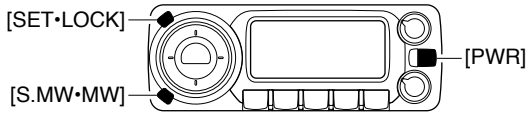
1. Turning ON the transceiver

Before powering up your ID-800H, you may want to make sure the audio volume and squelch level controls are set in 9–10 o’clock positions.



Set [VOL] and [SQL] controls to 9–10 o’clock positions.

Although you have purchased a brand new transceiver, some settings may be changed from the factory defaults because of the QC process. Resetting the CPU is necessary to start from factory default.

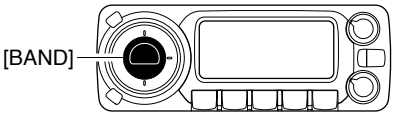


While pushing [SET•LOCK] and [S.MW•MW], turn power ON.

➥ While pushing both [SET•LOCK] and [S.MW•MW], push [PWR] for 1 sec. to reset the CPU.

2. Selecting the operating frequency band

The ID-800H has 2 m and 70 cm transmittable bands.

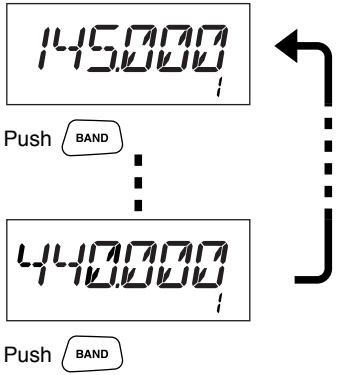


Push [BAND] to select the desired frequency band.

➥ Push [BAND] to select the desired frequency band.

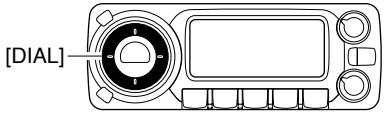
Using the HM-133

You can select the desired frequency band from the HM-133.



3. Tune the frequency

The tuning dial will allow you to dial in the frequency you want to operate. Pages 12 and 13 will instruct you on how to set the tuning speed.



Rotate [DIAL] to tune the frequency.

Using the HM-133

You can directly enter the frequency with the HM-133 keypad for the main band.

[EXAMPLE]: Setting frequency to 145.3625 MHz.

Push VFO/LOCK

Push T-OFF ENT C

Push BANK MONI 1 DTCS HIGH 4 DTCS(↔) MID 5 PTT-M PRIO 3 DTMF LOW 6

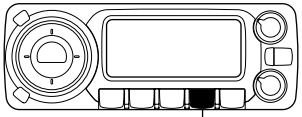
Push T-SCAN SCAN 2

■ Repeater operation

1. Setting duplex

Push [BAND] to select the frequency band.
Push [LOW•DUP] for 1 sec. once or twice to select minus duplex or plus duplex.

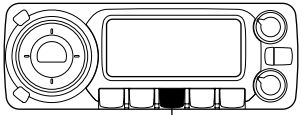
• The USA version has an auto repeater function, therefore, setting duplex is not required.



[LOW•DUP]

2. Repeater tone

Push [TONE•T-SCAN] several times until "T" appears, if the repeater requires a subaudible tone to be accessed.



[TONE•T-SCAN]

Using the HM-133

Plus or minus duplex selection and the repeater tone setting can be made easily via HM-133.
Push [DUP– 7(TONE)] for minus duplex; [DUP+ 8(TSQL((•)))] for plus duplex selection, push [FUNC] then [DUP– 7(TONE)] to turn the repeater tone ON.

Push TONE DUP- 7

Push TSQL((•)) DUP+ 8

Push FUNC, then TONE DUP- 7

■ Programming memory channels

The ID-800H has a total of 512 memory channels (including 10 scan edges and 2 call channels) for storing often used operating frequency, repeater settings, etc.

1. Setting a frequency

In VFO mode, set the desired operating frequency with repeater, tone and tuning steps, etc.

➥ Push [V/MHz•SCAN] to select VFO.

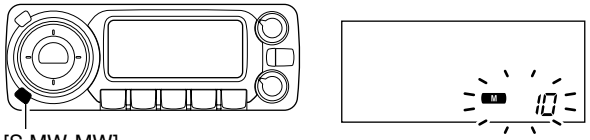
➥ Rotate [DIAL] to set the desired frequency.

• Set other data, such as repeater tone, duplex information, tuning step), if desired.

2. Selecting a memory channel

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

• "M" indicator and memory channel number blink.



3. Writing a memory channel

Push and hold [S.MW•MW] for 1 sec. to program.

• 3 beeps sound

• Return to VFO mode automatically after the program.

• Memory channel number automatically increases when continuing to push [S.MW•MW] after programming.

Using the HM-133

① In VFO mode, set the desired operating frequency, including offset direction, tone settings, etc.

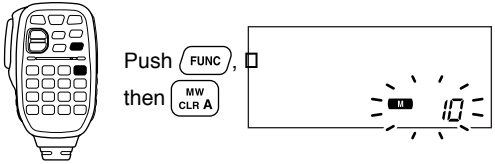
➥ Push [VFO/LOCK] to select VFO.

➥ Push [ENT C(T-OFF)] first, then enter the desired operating frequency via the keypad.

• Set other data, such as repeater tone, duplex information, tuning step, if necessary.

② Push [FUNC] then [CLR A(MW)].

• "M" indicator and memory channel number blink.



③ Push [▲]/[▼] to select the desired memory channel.

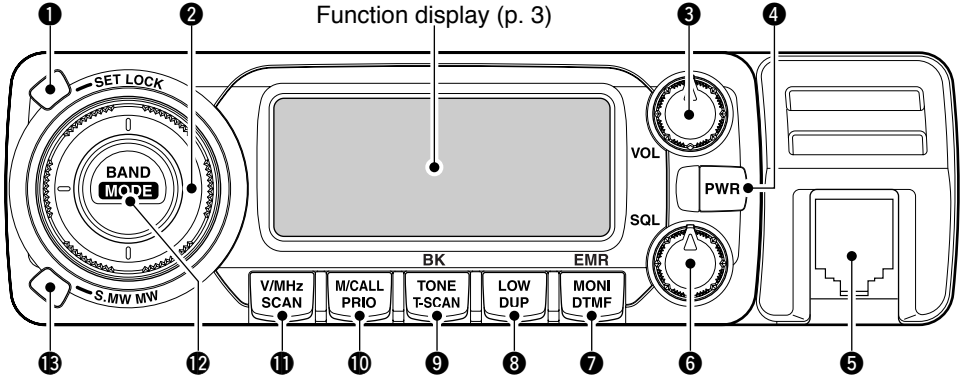
④ Push [FUNC] then push [CLR A(MW)] for 1 sec. to program.

• 3 beeps sound

• Memory channel number automatically increases when continuing to push [CLR A(MW)] after programming.

1 PANEL DESCRIPTION

■ Front panel— controller



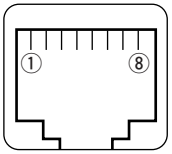
❶SET•LOCK SWITCH [SET•LOCK]
- ➥ Enters set mode when pushed. (p. 56)
- ➥ Switches the lock function ON and OFF when pushed for 1 sec. (p. 14)

❷TUNING DIAL [DIAL]
Selects the operating frequency (p. 12), memory channel (p. 26), the setting of the set mode item and the scanning direction (p. 41).

❸VOLUME CONTROL [VOL] (p. 15)
Adjusts the audio level.

❹POWER SWITCH [PWR]
Turns power ON and OFF when pushed for 1 sec.

❺MICROPHONE CONNECTOR
Connects the supplied or an optional microphone.



① +8 V DC output (Max. 10 mA)
② Channel up/down
③ 8 V control IN
④ PTT
⑤ GND (microphone ground)
⑥ MIC (microphone input)
⑦ GND
⑧ Data IN

❻ SQUELCH CONTROL [SQL]

Varies the squelch level. (p. 15)

- The RF attenuator activates and increases the attenuation when rotated clockwise to the center position and further. (p. 16)

❼ MONITOR•DTMF SWITCH [MONI•DTMF]

➥ Push to switch the monitor function ON and OFF. (p. 15)

➥ Turns DTMF memory encoder ON and OFF when pushed for 1 sec. (p. 48)

❽ OUTPUT POWER•DUPLEX SWITCH [LOW•DUP]

➥ Each push changes the output power selection. (p. 17)

➥ Push for 1 sec. to select DUP–, DUP+ and simplex operation. (p. 20)

❾ TONE•TONE SCAN SWITCH [TONE•T-SCAN]

➥ Each push selects a tone function. (pgs. 20, 52)

- Subaudible tone encoder, pocket beep (CTCSS), tone squelch, pocket beep (DTCS), DTCS squelch or tone function OFF can be selected.

➥ Push for 1 sec. to start the tone scan. (p. 55)

❿ MEMORY/CALL•PRIORITY SWITCH [M/CALL•PRIO]

➥ Push to select and toggle memory, call and weather channel* modes. (pgs. 11, 26, 38, 66)

*Weather channels are available for USA version only.

➥ Starts priority watch when pushed for 1 sec. (p. 47)

⓫ VFO/MHz TUNING•SCAN SWITCH [V/MHz•SCAN]

➥ Selects and toggles VFO mode and 1 MHz (or 10 MHz for some versions) tuning when pushed. (p. 11)

➥ Starts scan when pushed for 1 sec. (p. 41)

- Cancels a scan when pushed during scan.

⓬ BAND SWITCH [BAND/MODE]

➥ While VFO operation, push to select the operating frequency band. (p. 11)

➥ While call channel operation, push to select the call channel 1or 2 during call channel operation. (p. 38)

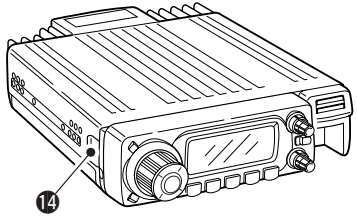
➥ While memory channel operation, push to select memory bank condition. (p. 35)

➥ Push for 1 sec. to select the operating mode. (p. 65)

⓭ MEMORY WRITE SWITCH [S.MW•MW] (pgs. 27, 39, 42)

➥ Selects a memory channel for programming when pushed.

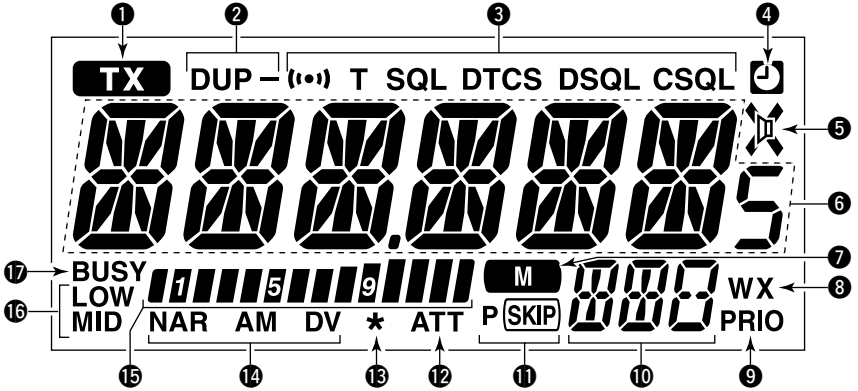
➥ Programs the selected memory channel when pushed for 1 sec.



⓮ CONTROLLER RELEASE LATCH

While pushing this latch, slide the controller to the left to remove it.

■ Function display



❶TRANSMIT INDICATOR
- ➥ Appears while transmitting. (p. 17)
- ➥ Blinks while transmitting with the one-touch PTT function. (p. 18)

❷DUPLEX INDICATORS (p. 20)
"DUP" appears when plus duplex, "DUP –" appears when minus duplex (repeater) operation is selected.

❸TONE/DIGITAL SQUELCH INDICATORS
- ❍ While in the analog (FM/AM) mode operation
  - ➥ "T" appears while the subaudible tone encoder is in use. (p. 20)
  - ➥ "T SQL" appears while the tone squelch function is in use. (p. 52)
  - ➥ "DTCS" appears while the DTCS squelch function is in use. (p. 52)
  - ➥ "((•))" appears with the "T SQL" or "DTCS" indicator while the pocket beep function (with CTCSS or DTCS) is in use. (p. 52)
- ❍ While in the digital mode operation
  - ➥ "DSQL" appears while the call sigh squelch function is in use. (p. 52)
  - ➥ "CSQL" appears while the digital code squelch function is in use. (p. 52)
  - ➥ "((•))" appears with the "DSQL" or "CSQL" indicator while the pocket beep function (with DSQL or CSQL) is in use. (p. 52)

❹ **AUTO POWER-OFF INDICATOR** (p. 62)
Appears while the auto power OFF function is in use.

❺ **AUDIO MUTE INDICATOR** (P. 18)
Appears when the audio mute function is activated.
• The mute can only be switched ON and OFF from the HM-133 only.

❻ **FREQUENCY READOUT**
Shows the operating frequency, channel names, set mode contents, etc.
• Frequency decimal point blinks while scanning. (p. 41)
• "d" appears in place of the 1st digit while the DTMF memory function is in use. (p. 48)

❼ **MEMORY INDICATOR** (pgs. 11, 26)
Appears when memory mode is selected.

❽ **WEATHER ALERT INDICATOR** (p. 66)
Appears when the weather alert function is activated.
• The either alert function is available with the USA version only.

❾ **PRIORITY INDICATOR** (p. 47)
Appears while the priority watch is activated; blinks while the watch is paused.

❿ **MEMORY CHANNEL NUMBER INDICATORS**
➥ Shows the selected memory channel number. (p. 26)
➥ Shows the selected bank initial. (p. 35)
➥ "C" appears when the call channel is selected. (p. 38)
➥ "L" appears when the lock function is activated. (p. 14)

⓫ **SKIP INDICATORS** (p. 44)
➥ "SKIP"appears when the displayed memory channel is specified as a skip channel.
➥ "P SKIP" appears when the displayed frequency is specified as a program skip frequency.

⓬ **SQUELCH ATTENUATOR INDICATOR** (p. 16)
Appears when the squelch attenuator function is activated.
• The attenuator can be switched OFF in initial set mode. (p. 63)

⓭ **DIGITAL MESSAGE INDICATOR** (p. 61)
Appears when a digital message is received.

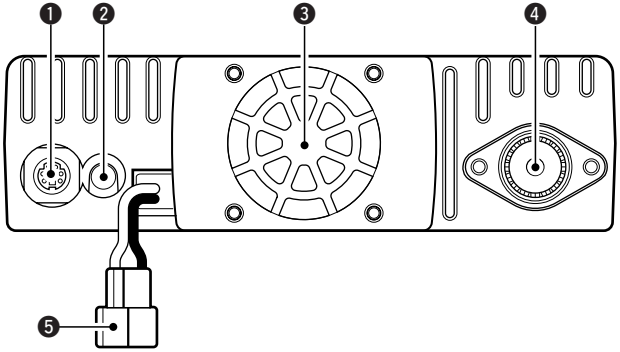
⓮ **MODE INDICATORS**
➥ No indication appears while in the FM mode operation. (p. 65)
➥ "AM" appears while in the AM mode operation. (p. 65)
➥ "NAR" appears while in the FM/AM narrow mode operation. (p. 65)
➥ "DV" appears while in the digital mode operation. (p. ??)
• Blinking all indication indicates the FM mode selection while setting.

⓯ **S/RF INDICATORS**
➥ Shows the relative signal strength while receiving signals. (p. 15)
➥ Shows the output power level while transmitting. (p. 17)

⓰ **OUTPUT POWER INDICATORS**
"LOW" appears when low output power; "MID" appears when middle output power is selected.
No indicator appears when high output power is selected.

⓱ **BUSY INDICATOR**
➥ Appears when a signal is being received or the squelch is open. (p. 15)
➥ Blinks while the monitor function is activated. (p. 15)

■ Rear Panel



❶DATA SOCKET [DATA]
Connects a TNC (Terminal Node Controller), etc. for data communications.
• See p. 6 for connection information.

❷EXTERNAL SPEAKER JACK [SP]
Connects an 8 Ω speaker.
• Audio output power is more than 2.0 W.

❸COOLING FAN
Rotates while transmitting.
Also rotates while receiving depending on the setting in initial set mode. (p. 63)

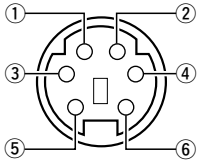
❹ANTENNA CONNECTOR [ANT]
Connects a 50 Ω antenna with a PL-259 connector and a 50 Ω coaxial cable.

ANTENNA INFORMATION
For radio communications, the antenna is of critical importance, to maximize your output power and receiver sensitivity. The transceiver accepts a 50 Ω antenna and less than 1:1.5 of Voltage Standing Wave Ratio (VSWR). High SWR values not only may damage the transceiver but also lead to TVI or BCI problems.

❺POWER RECEPTACLE [DC13.8V]
Accepts 13.8 V DC ±15% with the supplied DC power cable.

☞ **NOTE: DO NOT** use a cigarette lighter socket as a power source when operating in a vehicle. The plug may cause voltage drops and ignition noise may be superimposed onto transmit or receive audio.

◇ DATA JACK PIN ASSIGNMENT



Front panel view

①DATA IN
Input terminal for data transmit. See p. 63 for details on how to toggle data speed between 1200 (AFSK) and 9600 bps (G3RUH, GMSK).

②GND
Common ground for DATA IN, DATA OUT and AF OUT.

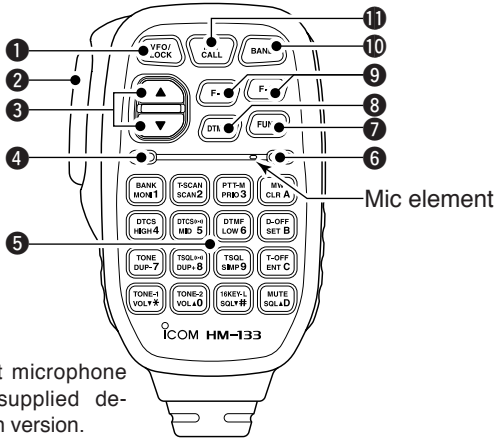
③PTT P
PTT terminal for packet operation only. Connect ground to transmit data.

④DATA OUT
Data out terminal for 9600 bps operation only.

⑤AF OUT
Data out terminal for 1200 bps operation only.

⑥P SQL
Becomes high (+5 V) when the transceiver receives a signal which opens the squelch.
- To avoid unnecessary TNC transmission, connect squelch to the TNC to inhibit transmission when receiving signals.
- Keep audio output at a normal level, otherwise a “P SQL” signal will not be output.

■ Microphone (HM-133*)



*A different microphone may be supplied depending on version.

❶ VFO/LOCK SWITCH [VFO/LOCK]
- ➥ Push to select VFO mode. (p. 11)
- ➥ Push for 1 sec. to switch the lock function ON and OFF. (p. 14)

❷ PTT SWITCH
- ➥ Push and hold to transmit; release to receive.
- ➥ Switches between transmitting and receiving while the one-touch PTT function is in use. (p. 18)

❸ UP/DOWN SWITCHES [▲]/[▼]
- ➥ Push either switch to change operating frequency, memory channel, set mode setting, etc. (pgs. 12, 26, 56)
- ➥ Push either switch for 1 sec. to start scanning. (p. 41)

❹ ACTIVITY INDICATOR
- ➥ Lights red while any key, except [FUNC] and [DTMF-S], is pushed, or while transmitting.
- ➥ Lights green while the one-touch PTT function is in use.

❺ KEYPAD (pgs. 8, 9)

❻ FUNCTION INDICATOR
- ➥ Lights orange while [FUNC] is activated—indicates the secondary function of switches can be accessed.
- ➥ Lights green when [DTMF-S] is activated—DTMF signals can be transmitted with the keypad.

❼ 2nd FUNCTION SWITCH [FUNC]

❽ DTMF SELECT SWITCH [DTMF-S] (p. 50)

❾ FUNCTION SWITCHES [F-1]/[F-2] (p. 67)
Program and recall your desired transceiver conditions.

❿ BAND SWITCH [BAND]
- ➥ Push to select the frequency band. (p. 11)
- ➥ Push for 1 sec. to select the operating mode. (p. 65)

⓫ MEMORY/CALL SWITCH [MR/CALL]
- ➥ Push to select memory mode. (p. 11)
- ➥ Push for 1 sec. to select call channel. (p. 38)

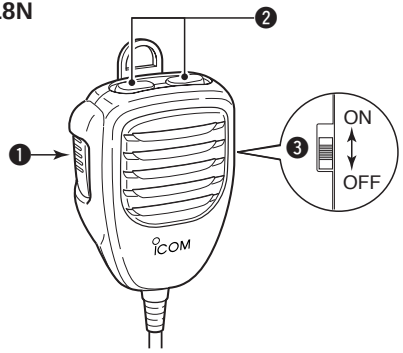
■ Microphone keypad

KEY	FUNCTION	SECONDARY FUNCTION (FUNC +key)	OTHER FUNCTIONS
BANK MONI 1	Switches between opening and closing the squelch. (p. 15)	In memory mode enters bank selecting condition. (p. 35)	After pushing DTMF-S: Transmits the appropriate DTMF code. (pgs. 23, 50) When the DTMF memory encoder is activated, push [0] to [9] to transmit the appropriate DTMF memory contents. (p. 50)
T-SCAN SCAN 2	Starts and stops scanning. (p. 41)	Starts and stops tone scanning. (p. 55)	
PTT-M PRIO 3	Starts and stops priority watch. (p. 47)	Turns the one-touch PTT function ON and OFF. (p. 18)	
DTCS HIGH 4	Selects high output power. (p. 17)	Turns the DTCS squelch ON. (p. 54)	
DTCS((•)) MID 5	Selects mid. output power. (p. 17)	Turns the DTCS pocket beep function ON. (p. 53)	
DTMF LOW 6	Selects low output power (p. 17)	Turns the DTMF memory encoder function ON. (p. 50)	
TONE DUP- 7	Selects minus duplex operation. (p. 21)	Turns the subaudible tone encoder ON. (p. 21)	
TSQL((•)) DUP+ 8	Selects plus duplex operation. (p. 21)	Turns the CTCSS pocket beep function ON. (p. 53)	
TSQL SIMP 9	Selects simplex operation. (p. 21)	Turns the tone squelch function ON. (p. 54)	
TONE-2 VOL▲ 0	Increases audio output level. (p. 15)	Sends a 1750 Hz tone signal while pushing and holding. (p. 23)	

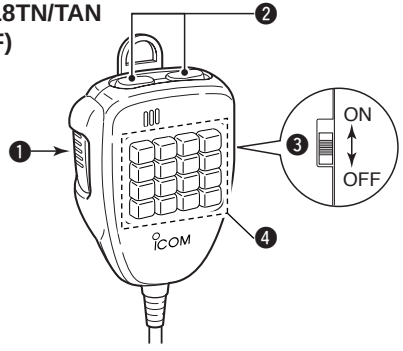
KEY	FUNCTION	SECONDARY FUNCTION (FUNC +key)	OTHER FUNCTIONS
MW CLR A	➥ Cancels frequency entry. (p. 12) ➥ Cancels the scan or priority watch. (pgs. 41, 47) ➥ Exit set mode. (p. 56)	➥ Selects a memory channel for programming. (p. 28) ➥ Advances the memory channel number when continuously pushed after programming is completed. (p. 28)	After pushing DTMF-S: Transmits the appropriate DTMF code. (pgs. 23, 50)
D-OFF SET B	➥ Enters set mode (p. 56) ➥ Advances the set mode selection order after entering set mode. (p. 56)	DTMF memory encoder function OFF. (p. 50)	
T-OFF ENT C	➥ Sets the keypad for numeral input. (p. 12) ➥ Reverses the set mode selection order after entering set mode. (p. 56)	Turns the subaudible tone encoder, pocket beep or CTCSS/DTCS tone squelch OFF. (pgs. 21, 53)	
MUTE SQL▲D	Adjusts the squelch level increments. (p. 15)	Mutes the audio. (p. 18) • Mute function is released when any operation is performed.	
TONE-1 VOL▼∗	Decreases audio output level. (p. 15)	Sends a 1750 Hz tone signal for 0.5 sec. (p. 23)	
16KEY-L SQL▼#	Adjusts the squelch level decrement. (p. 15)	Locks the digit keys on the keypad (including the A to D, # and ∗ keys). (p. 14)	

■ Optional Microphones (HM-118N/TN/TAN)

• **HM-118N**



• **HM-118TN/TAN (DTMF)**



❶PTT SWITCH
Push and hold to transmit; release to receive.

❷UP/DOWN SWITCHES [UP]/[DN]
- ➥ Push either switch to change operating frequency, memory channel, set mode setting, etc. (pgs. 12, 26, 56)
- ➥ Push either switch for 1 sec. to start scanning. (p. 41)

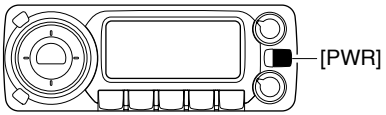
❸UP/DN LOCK SWITCH
Slide to toggle [UP]/[DN] switches function ON and OFF.

❹KEYPAD (HM-118TN/TAN only)
While pushing [PTT], push the desired key to send the DTMF code.

2 SETTING A FREQUENCY

■ Preparation

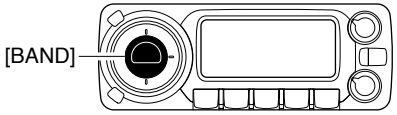
◇ Turning power ON/OFF



➥ Push [PWR] for 1 sec. to turn power ON and OFF.

◇ Operating frequency band selection

The ID-800H has 2 m and 70 cm bands for transmission and reception. In addition, extra frequency bands 127, 220, 350, 500 and 900 MHz bands are available for wide-band receiver capability (except Taiwan and Korean version).



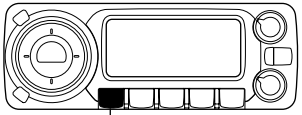
➥ Push [BAND] to select the desired frequency band.

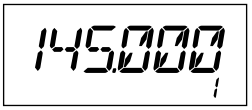
➥ Push [BAND] to select the desired band.

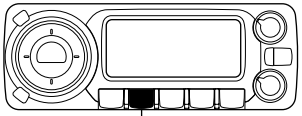
Note that in this manual, sections beginning with a microphone icon (as above), designate operation via the HM-133 microphone.

◇ VFO and memory modes

The transceiver has 2 basic operating modes: VFO mode and memory mode. Select VFO mode first to set an operating frequency.







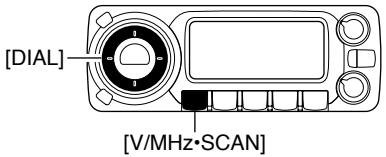
➥ Push [V/MHz•SCAN] to select VFO mode.
- When VFO mode is already selected, the digit below 10 MHz (the digit below 1 MHz or 100 kHz disappear depending on versions) disappear. In this case, push [V/MHz•SCAN] again (or twice or 3 times depending on version).

➥ Push [M/CALL•PRIO] to select memory mode.
- "M" indicator appears when memory mode is selected.

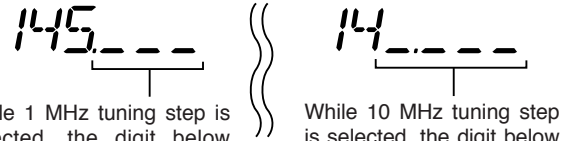
➥ Push [VFO/LOCK] to select VFO mode.
➥ Push [MR/CALL] to select memory mode.

■ Using the tuning dial

① Rotate [DIAL] to set the frequency.
- If VFO mode is not selected, push [V/MHz•SCAN] to select VFO mode.
- The frequency changes in the selected tuning steps. (p. 13)



② To change the frequency in 1 MHz (10 MHz for some versions) steps, push [V/MHz•SCAN], then rotate [DIAL].
- Pushing [V/MHz•SCAN] for 1 sec. starts scan function. If scan starts, push [V/MHz•SCAN] again to cancel it.



■ Using the [▲]/[▼] keys

➥ Push [▲] or [▼] to select the desired frequency.
- Pushing [▲]/[▼] for 1 sec. activates a scan. If scan starts, push [▲]/[▼] or [CLR A(MW)] to cancel it.

■ Using the keypad

The frequency can be directly set via numeral keys on the microphone.

1 Push [VFO/LOCK] to select VFO mode, if necessary.
2 Push [ENT C(T-OFF)] to activate the keypad for digit input.
3 Push 6 keys to input a frequency.
- When a digit is mistakenly input, push [ENT C(T-OFF)] to clear the input, then repeat input from the 1st digit.
- Pushing [CLR A(MW)] clears input digits and retrieves the frequency.

[EXAMPLE]: Setting frequency to 145.3625 MHz.

Push VFO/LOCK — 145.680

Push T-OFF/ENT C — 145.68 .

Push BANK/MON 1, DTCS/HIGH 4, DTCS•••/MID 5, PTT•M/PRIO 3, DTMF/LOW 6 — 145.36

Push T-SCAN/SCAN 2 — 145.3625

■ Tuning step selection

USING *SET MODE*

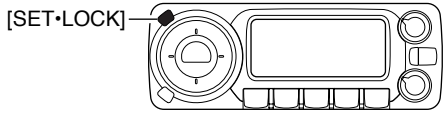
Tuning steps are the minimum frequency change increments when you rotate [DIAL] or push [▲]/[▼] on the microphone. Independent tuning step for each frequency bands can be set for individual tuning convenience. The following tuning steps are available.

- 5 kHz
- 10 kHz
- 12.5 kHz
- 15 kHz
- 20 kHz
- 25 kHz
- 30 kHz
- 50 kHz
- 100 kHz
- 200 kHz

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

① Push [BAND] to select the desired frequency band.
- Push [V/MHz•SCAN] to select VFO mode, if necessary.

②Push [SET•LOCK] to enter set mode.
- Rotate [DIAL] to select "SET," if necessary.



③Push [SET•LOCK] or [S.MW•MW] several times until "TS" appears as shown below.

④Rotate [DIAL] to select the desired tuning step.
⑤Push [V/MHz•SCAN] to exit set mode.

SET B

1 Push [BAND] to select the desired frequency band.
- Push [VFO/LOCK] to VFO mode, if necessary.

2 Push [SET B(D-OFF)] to enter set mode.
- Push [▲] or [▼] to select "SET," if necessary.

3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until "TS" appears.

4 Push [▲] or [▼] to select the desired tuning step.

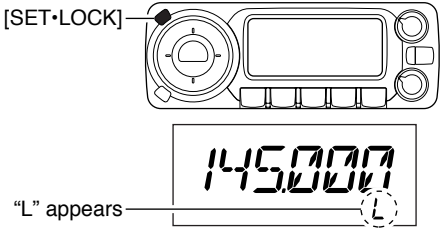
5 Push [CLR A(MW)] to exit set mode.

■ Lock functions

To prevent accidental frequency changes and unnecessary function access, use the lock function. The transceiver has 2 different lock functions.

◇ Frequency lock

This function locks [DIAL] and switches electronically and can be used together with the microphone lock function.



➥ Push [SET•LOCK] for 1 sec. to turn the lock function ON and OFF.

- [PTT], [MONI•DTMF] (monitor function only), [VOL] and [SQL] can be used while the channel lock function is in use. Also, TONE-1, TONE-2, DTMF tones or DTMF memory contents can be transmitted from the microphone.

VFO/LOCK

➥ Push [VFO/LOCK] for 1 sec. to switch the lock function ON and OFF.

◇ Microphone keypad lock

This function locks the microphone keypad.

16KEY-L

➥ Push [FUNC] then [SQL▼ D(16KEY-L)] to switch the microphone keypad lock function ON and OFF.

- [PTT], [VFO/LOCK], [MR/CALL], [BAND], [▲], [▼], [F-1], [F-2] and [FUNC] on the microphone can be used.
- All switches on the transceiver can be used.
- The keypad lock function is released when the power is turned OFF then ON again.

■ Receiving

①Set the audio level.
- ➥ Push [MONI•DTMF] to open the squelch.
- ➥ Rotate [VOL] to adjust the audio level.
- ➥ Push [MONI•DTMF] to close the squelch.

②Set the squelch level.
- ➥ Rotate [SQL] fully counterclockwise in advance, then rotate [SQL] clockwise until the noise just disappears.
  - When interference is received, rotate [SQL] clockwise again for attenuator operation. (p. 16)

③Set the operating frequency. (pgs. 11, 12)

④When receiving a signal on the set frequency, squelch opens and the transceiver emits audio.

Appears when receiving a signal

- "BUSY" appears and the S/RF indicator shows the relative signal strength for the received signal.

✔CONVENIENT!

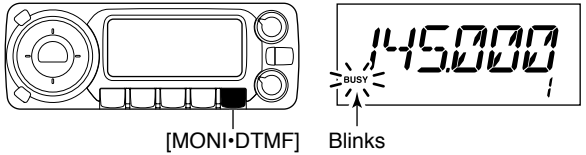
SQL▲/▼ D/#

VOL▲/▼ */0

The audio and squelch level can also be adjusted with [VOL▲(TONE-1)]/[VOL▼ 0(TONE-2)] and [SQL▲ D(MUTE)]/[SQL▼ #(16KEY-L)], respectively.
- "VOL" for audio or "SQL" for squelch appears during set.

■ Monitor function

This function is used to listen to weak signals without disturbing the squelch setting.



➥ Push [MONI•DTMF] to open the squelch.
- "BUSY" blinks.
- Push [MONI•DTMF] again to cancel the function.

MONI 1

➥ Push [MONI 1(BANK)] to open the squelch.
- Push [MONI 1(BANK)] again to cancel the function.

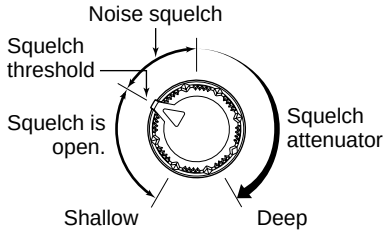
NOTE: When [SQL] adjustment is set too far clockwise, (12–17 o'clock position) the squelch attenuator is activated. To monitor weak signals on the operating frequency, deactivate the squelch attenuator function. See p. 16 for details.

■ Squelch attenuator

The transceiver has an RF attenuator related to the squelch level setting. Approx. 10 dB attenuation is obtained at maximum setting.

The squelch attenuator allows you to set a minimum signal level needed to open the squelch. The attenuator function can be deactivated in initial set mode.

➥ Rotate [SQL] clockwise past the 12 o'clock position to activate the squelch attenuator.
- Attenuation level can be adjusted up to 10 dB (approx.) between 12 o'clock and fully clockwise position.
- When setting the squelch from the microphone, a level greater than '19' activates the squelch attenuator.



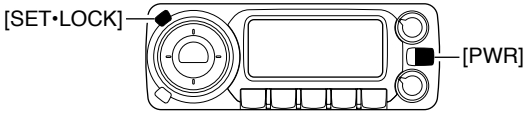
NOTE: The squelch attenuator functions even when the monitor function is in use. Thus set [SQL] control within 10 to 12 o'clock position is recommended when using the monitor function.

◇ Squelch attenuator setting

USING INITIAL SET MODE

①Turn the transceiver power OFF.

②While pushing [SET•LOCK], turn the power ON to enter initial set mode.



③Push [SET•LOCK] or [S.MW•MW] to select "ATT" (squelch attenuator) item.

④Rotate [DIAL] to toggle the function ON and OFF.
- Select "OF" to deactivate the squelch attenuator function.

⑤Push [PWR] to exit initial set mode.

■ Transmitting

CAUTION: Transmitting without an antenna will damage the transceiver.

☞ **NOTE:** To prevent interference, listen on the channel before transmitting by pushing [MONI•DTMF] on the front panel or [MONI 1(BANK)] on the microphone.

①Select the frequency band. (p. 11)
②Set the operating frequency. (pgs. 11, 12)
• Select output power if desired. See section at right for details.
③Push and hold [PTT] to transmit.
• "TX" appears.
• The S/RF indicator shows the output power selection.
• A one-touch PTT function is available. See p. 18 for details.
④Speak into the microphone using your normal voice level.
• DO NOT hold the microphone too close to your mouth or speak too loudly. This may distort the signal.
⑤Release [PTT] to return to receive.

***IMPORTANT!** (for 55/50 W transmission):*
The ID-800H is equipped with protection circuit to protect the power amplifier circuit from high SWR (Standing Wave Ratio) and temperature. When a high SWR antenna or no antenna is connected, or when the transceiver temperature becomes extremely high, the transceiver reduces transmit output power to 15 W (approx.) automatically.

■ Selecting output power

The transceiver has 3 output power levels to suit your operating requirements. Low output powers during short-distance communications may reduce the possibility of interference to other stations and will reduce current consumption.

➥ Push [LOW•DUP] once or twice to select the output power.

S/RF INDICATOR	POWER OUTPUT	
	VHF	UHF
High: ▮▮▮▮▮	55 W	50 W
Mid: ▮▮▮▮	15 W*	15 W*
Low: ▮▮▮	5 W*	5 W*

*approx

• The output power can be changed while transmitting.

The microphone can also be used to select output power.

➥ Push [HIGH 4(DTCS)] for high output power; [MID 5(DTCS ((•)))] for middle output power; and [LOW 6(DTMF)] for low output power.
• The output power can be changed via the microphone during receive only.

■ One-touch PTT function

The PTT switch can be operated as a one-touch PTT switch (each push toggles between transmit/receive). Using this function you can transmit without pushing and holding the PTT switch.

To prevent accidental, continuous transmission with this function, the transceiver has a time-out timer. See p. 62 for details.

PTT-M

1 Push [FUNC] then [PRIO 3(PTT-M)] to turn the one-touch PTT function ON.
- The activity indicator lights green.

2 Push [PTT] to transmit and push again to receive.
- A beep sounds when transmission is started and a long beep sounds when returning to receive.
- "TX" blinks when transmitting with the one-touch PTT function.

TX indicator blnks

3 Push [FUNC] then [PRIO 3(PTT-M)] to turn the one-touch PTT function OFF.
- The activity indicator goes out.

■ Audio mute function

This function temporarily mutes the audio without disturbing the volume setting.

MUTE

➥ Push [FUNC] then [SQL▲ D(MUTE)] to mute audio signals.
- The audio mute indicator, "🔇" appears.
- Push [CLR A(MW)] (or any other key) to cancel the function.

Appears

4 REPEATER OPERATION

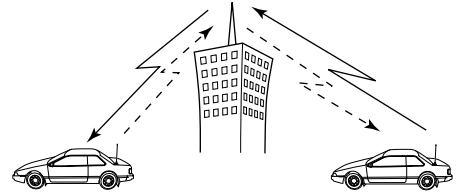
■ General

Repeaters allow you to extend the operational range of your radio because a repeater has much higher output power than the typical transceiver.

Normally, a repeater has independent frequencies for each receiver and transmitter.
A subaudible tone may also be required to access a repeater.

Reference amateur radio hand books and local ham magazines for details of local repeaters such as repeater input/output frequencies and locations.

Repeater example;
Receives the 444.540 MHz signal and the detected audio signals are transmitted on 449.540 MHz simultaneously.



Station A:
Tx: 444.540 MHz
Rx: 449.540 MHz

Station B:
Tx: 444.540 MHz
Rx: 449.540 MHz

• Repeater operation flow chart

Step 1:
Set the desired band to operate the repeater.

↓

Step 2:
Set the desired receive frequency (repeater output frequency).

↓

Step 3:
Set the duplex (shifting) direction (– duplex or +duplex).
- Set the offset frequency (shifting value), if required.

↓

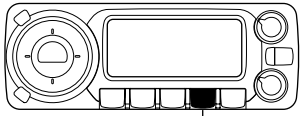
Step 4:
Set the subaudible tone (repeater tone) encoder function ON.
- Set the subaudible tone frequency, if required.

• The ID-800H USA version has the auto repeater function. Thus the steps 3 and 4 may not be necessary, depending on the setting.
• Repeater settings can be stored into a memory channel.

■ Accessing a repeater

① Set the receive frequency (repeater output frequency). (pgs. 11, 12)

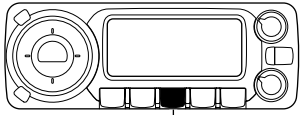
② Push [LOW•DUP] for 1 sec. one or two times, to select minus duplex or plus duplex.
- "DUP–" or "DUP" appears to indicate the transmit frequency for minus shift or plus shift, respectively.
- When the auto repeater function is turned ON (available for the USA version only), steps ② and ③ are not necessary. (p. 25)



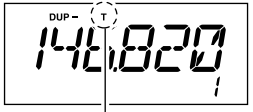
[LOW•DUP]

"DUP–" or "DUP" appears

③ Push [TONE•T-SCAN] several times to turn ON the subaudible tone encoder, according to repeater requirements.
- "T" appears
- 88.5 Hz is set as the default; refer to p. 22 for tone frequency settings.
- When the repeater requires a different tone system, see p. 23.



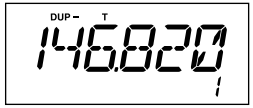
[TONE•T-SCAN]



"T" appears

④ Push and hold [PTT] to transmit.
- The displayed frequency automatically changes to the transmit frequency (repeater input frequency).
- If "OFF" appears, confirm that the offset frequency (p. 24) is set correctly.

⑤ Release [PTT] to receive.



While receiving

While transmitting

⑥ Push [MONI•DTMF] to check whether the other station's transmit signal can be received directly.

⑦ To return to simplex operation, push [LOW•DUP] once or twice, to clear the "DUP–" or "DUP" indicator.

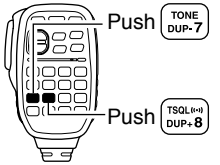
⑧ To turn OFF the subaudible tone encoder, push [TONE•T-SCAN] several times until no tone indicators appear.

DUP– 7

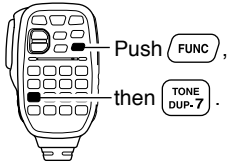
DUP+ 8

1 Set the receive frequency (repeater output frequency). (pgs. 11, 12)

2 Push [DUP– 7(TONE)] to select minus duplex; push [DUP+ 8(TSQL((•)))] to select plus duplex.



3 Push [FUNC] then [DUP– 7(TONE)] to turn ON the subaudible tone encoder according to repeater requirements.
- Refer to p. 22 for the tone frequency setting.
- When the repeater requires a different tone system, see p. 23.



4 Push and hold [PTT] to transmit.

5 Release [PTT] to receive.

6 Push [MONI 1(BANK)] to check whether the other station's transmit signal can be received directly.

SIMP 9

7 Push [SIMP 9(TSQL)] to return to simplex operation.
- "DUP" or "DUP–" indicator disappears.

8 To turn OFF the subaudible tone encoder, push [FUNC] then [ENT C(T-OFF)].

■ Subaudible tones

USING *SET MODE*

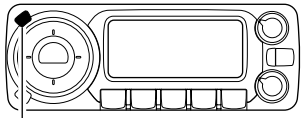
(Encoder function)

◇ Subaudible tones

① Select the frequency band, mode/channel you wish to set the subaudible tones, such as VFO mode or memory/call channel.

② Push [SET•LOCK] to enter set mode.
- Rotate [DIAL] to select "SET," if necessary.

③ Push [SET•LOCK] or [DUP•MONI] several times until "T" and "rT" appear; or until "T SQL" and "CT" appear for tone squelch or pocket beep use.
- When "d" is displayed in place of the 100 MHz digit, cancel the DTMF memory encoder in advance. (p. 50)



[SET•LOCK]

"T" and "rT" appears

④ Rotate [DIAL] to select and set the desired subaudible frequency.

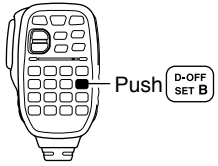
⑤ Push [V/MHz•SCAN] to exit set mode.

☞**NOTE:** The subaudible tone encoder frequency can be set in a memory/call channel temporarily. However, the set frequency is cleared once another memory channel or VFO mode is selected. To store the tone frequency permanently, overwrite the channel information.

1 Set the frequency band, mode/channel you wish to set the subaudible tones, such as VFO mode or memory/call channel.
- The subaudible tone frequency is independently programmed into each mode or channel.

2 Push [SET B(D-OFF)] to enter set mode.
- Push [▲] or [▼] to select "SET," if necessary.

3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until "T" and "rT" appears; or until "T SQL" and "CT" appears for tone squelch or pocket beep use.
- When "d" is displayed in place of the 100 MHz digit, cancel the DTMF memory encoder in advance. (p. 50)



4 Push [▲] or [▼] to select and set the desired subaudible tone frequency.
- Push and hold [▲]/[▼] to change the above tones continuously.

5 Push [CLR A(MW)] to exit set mode.

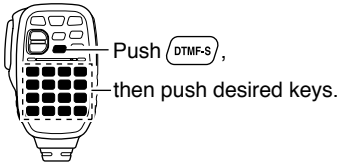
• Subaudible tone frequency list (unit: Hz)

67.0	79.7	94.8	110.9	131.8	156.7	171.3	186.2	203.5	229.1
69.3	82.5	97.4	114.8	136.5	159.8	173.8	189.9	206.5	233.6
71.9	85.4	100.0	118.8	141.3	162.2	177.3	192.8	210.7	241.8
74.4	88.5	103.5	123.0	146.2	165.5	179.9	196.6	218.1	250.3
77.0	91.5	107.2	127.3	151.4	167.9	183.5	199.5	225.7	254.1

◇ DTMF tones

DTMF-S

➥ Push [DTMF-S], then push the keys of the desired DTMF digits.
- The function indicator lights green.
- 0–9, A–D, ∗(E) and #(F) are available.
- When "d" is displayed in place of the 100 MHz digit, cancel the DTMF memory encoder in advance. (p. 50)
- Push [DTMF-S] again to return the keypad to normal function control.



✔For your convenient!

The transceiver has 16 DTMF memory channels for autopatch operation. See p. 48 for details.

◇ 1750 Hz tone

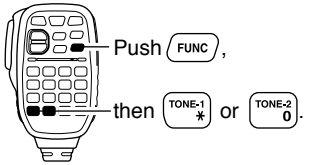
The microphone has 1750 Hz tone capability, used for ring tone when calling, etc.

TONE-1

TONE-2

1 Push [FUNC].
- The function indicator lights orange.

2 Push [∗(TONE-1)] to transmit a 1750 Hz tone call signal for 0.5 sec.; push and hold [0(TONE-2)] to transmit a 1750 Hz tone call signal for an arbitrary period.
- The function indicator goes out automatically.

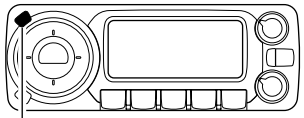


■ Offset frequency

USING *SET MODE*

When communicating through a repeater, the transmit frequency is shifted from the receive frequency by an amount determined by the offset frequency.
Independent offset frequencies can be set for each operating frequency.

① Push [BAND] to select the desired frequency band.
② Select the desired mode/channel you wish to set the offset frequency, such as VFO mode or memory/call channel.
• The offset frequency can be independently programmed into each mode or channel.
③ Push [SET•LOCK] to enter set mode.
• Rotate [DIAL] to select "SET," if necessary.
④ Push [SET•LOCK] or [S.MW•MW] until "DUP" and offset frequency appear.



[SET•LOCK]

"DUP" and offset frequency appear

⑤ Rotate [DIAL] to set the desired offset frequency.
⑥ Push [V/MHz•SCAN] to exit set mode.

SET B

1 Push [BAND] to select the desired frequency band.
• Enter the desired frequency via the keypad if necessary.
2 Select the desired mode/channel you wish to set the offset frequency, such as VFO mode or memory/call channel.
• The offset frequency can be independently programmed into each mode or channel.
3 Push [SET B(D-OFF)] to enter set mode.
• Push [▲] or [▼] to select "SET," if necessary.
4 Push [SET B(D-OFF)] or [ENT C(T-OFF)] until "DUP" and offset frequency appear.

5 Push [▲] or [▼] to set the desired offset.
• Direct frequency entry from the keypad is not possible.
6 Push [CLR A(MW)] to exit set mode.

☞**NOTE:** The offset frequency can be set in a memory/call channel temporarily. However, the set frequency is cleared once another memory channel or VFO mode is selected. To store the offset frequency permanently, overwrite the channel information.

■ Auto repeater
USING *INITIAL SET MODE*

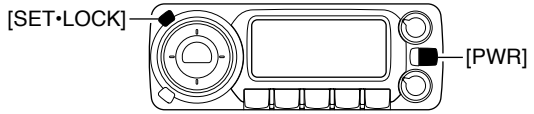
(U.S.A. version only)

The USA version automatically activates the repeater settings (DUP– or DUP+ and tone encoder ON/OFF) when the operating frequency falls within the general repeater output frequency range and inactivate them when outside of the range.

◇ Setting the auto repeater function ON/OFF

① Push [PWR] to turn power OFF.

② While pushing [SET•LOCK], turn power ON to enter initial set mode.



③ Push [SET•LOCK] or [S.MW•MW] several times until the "RPT" display appears as shown above right.

④ Rotate [DIAL] to select the auto repeater function from "R1," "R2" or OFF.

Auto DUP: ON□
Auto tone set: OFF

Auto DUP: ON□
Auto tone set: ON

- "R1": auto repeater is ON, tone encoder is OFF.
- "R2": auto repeater is ON, tone encoder is ON.

⑤ Push [PWR] to exit initial set mode.

◇ Frequency range and offset direction

Frequency range	Duplex direction
145.200–145.495 MHz 146.610–146.995 MHz	"DUP–" appears
147.000–147.395 MHz	"DUP" appears
442.000–444.995 MHz	"DUP" appears
447.000–449.995 MHz	"DUP–" appears

■ General description

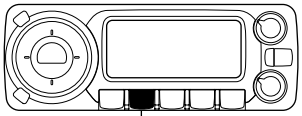
The transceiver has 512 memory channels including 10 scan edge memory channels (5 pairs), and 2 call channels. Each of these channels can be individually programmed with operating frequency (pgs. 11, 12), duplex direction (p. 21) and offset (p. 24), subaudible tone encoder or tone squelch and its tone frequency (pgs. 20, 22, 52, 53) and skip information* (p. 44).
In addition, a total of 10 memory banks, A to J, are available for usage by group, etc.

*except for scan edge memory channels.

■ Memory channel selection

◇ Using the tuning dial

① Push [M/CALL•PRIO] several times to select memory mode.
• "M" indicator appears

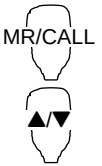


[M/CALL•PRIO]

"M" appears

② Rotate [DIAL] to select the desired memory channel.
• Programmed memory channels only can be selected.

◇ Using the [▲]/[▼] keys



1 Push [MR/CALL] to select memory mode.
2 Push [▲] or [▼] to select and set the desired memory channel.
• Pushing [▲]/[▼] for 1 sec. activates a scan.
• If scan is activated, push [▲]/[▼] again or push [CLR A(MW)] to stop it.

◇ Using the keypad

1 Push [MR/CALL] to select memory mode.
2 Push [ENT C(T-OFF)] to activate the keypad for numeral input.
3 Push 3 appropriate digit keys to input a channel number.
• Blank channel can be selected.
• Push only 1 appropriate digit key, [MONI 1(BANK)], [SCAN 2(T-SCAN)], [PRIO 3(PTT-M)], [HIGH 4(DTCS)] or [MID 5(DTCS((•)))] then push [✱(TONE-1)] or [SQL▼ #(16KEY-L)] to select scan edge channels. "✱" and "#" can be used for "A" and "b" respectively.

■ Programming a memory channel

VFO settings, including the set mode contents such as sub-audible tone frequency or offset, can be programmed into a memory channel.

①Set the desired frequency.
- ➥ Push [V/MHz•SCAN] to select VFO mode.
- ➥ Set the frequency using [DIAL].
- ➥ Set other data (e.g. tone frequency, duplex information, etc.) if required.

②Push [S.MW•MW].
- "M" indicator and the memory channel number blink.

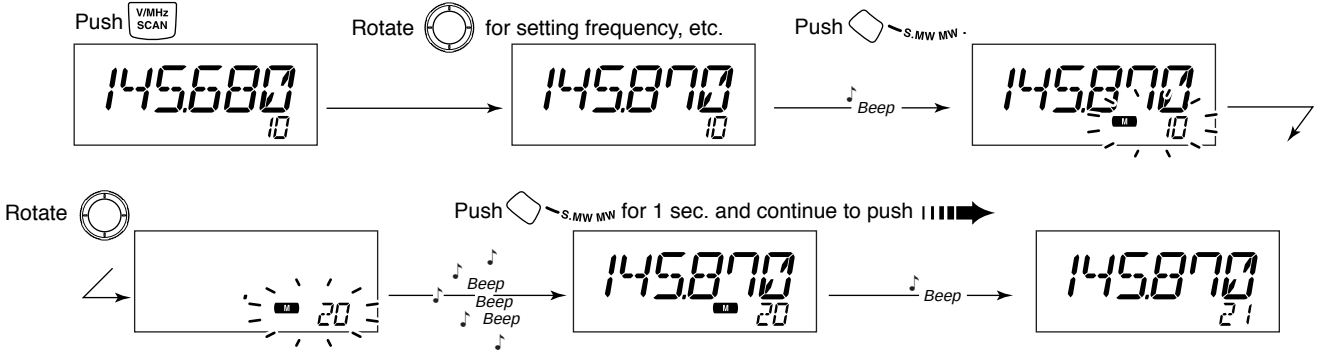
③Rotate [DIAL] to select the memory channel to be programmed.
- Memory channels not yet programmed are blank.

④Push [S.MW•MW] for 1 sec. to program.
- 3 beeps sound
- Memory channel number automatically increases when continuing to push [S.MW•MW] after programming.

✔CONVENIENT

Memory programming can be performed in versatile ways e.g. memory channel to the same (or different) memory channel, memory channel to the call channel, etc.

[EXAMPLE]: Programming 145.870 MHz into memory channel 20 (blank channel) via the controller.



◇ Programming a memory channel via the microphone

MW

The microphone can also be used to program memory channels.

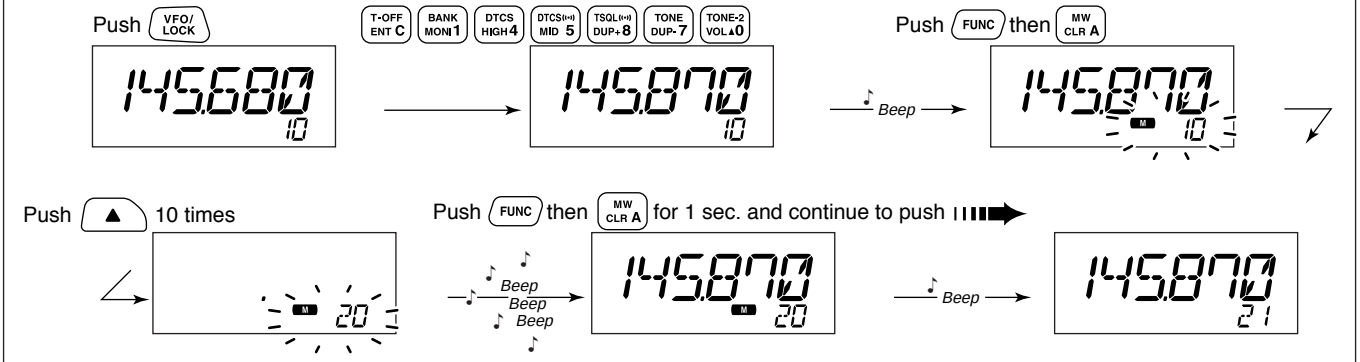
1 Set the desired frequency in VFO mode.
- ➥ Push [VFO/LOCK] to select VFO mode.
- ➥ Set the frequency using the keypad.
- ➥ Set other data (e.g. offset frequency, duplex direction, subaudible tone encoder ON/OFF and its frequency), if necessary.

2 Push [FUNC] then [CLR A(MW)] momentarily.

3 Push [▲] or [▼] to select the memory channel.
- Direct numeral input cannot be used.

4 Push [FUNC] then [CLR A(MW)] for 1 sec. to program.
- ➥ 3 beeps may sound and the VFO contents (including the subaudible tone frequency, etc.) are programmed.
- ➥ Memory channel number increases when continuing to push [CLR A(MW)] after programming.

[EXAMPLE]: Programming 145.870 MHz into memory channel 20 (blank channel) via the microphone.

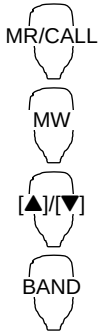


■ Copying memory contents

This function copies a memory channel's contents to VFO (or another memory/call channel). This is useful when searching for signals around a memory channel frequency and for recalling the offset frequency, subaudible tone frequency etc.

◇ Memory/call⇨VFO

① Select the desired memory or call channel.
  ➥ Push [M/CALL•PRIO] several times to select memory mode or call channel, then rotate [DIAL] or push [BAND] to select the desired memory or call channel respectively.
② Push [S.MW•MW] for 1 sec. to transfer the selected memory/call channel contents to the VFO.
  • VFO mode is selected automatically.



1 Select the memory/call channel to be transferred.
  ➥ Push [MR/CALL] to select memory mode, then select the desired memory channel via [▲]/[▼] or keypad.
  ➥ Push [MR/CALL] for 1 sec. then push [BAND] to select the desired call channel.
2 Push [FUNC], then [CLR A(MW)] for 1 sec. to transfer the selected memory/call channel contents to the VFO.
  • VFO mode is selected automatically.

[EXAMPLE]: Transferring memory channel 30 contents to VFO.

Front panel operation:

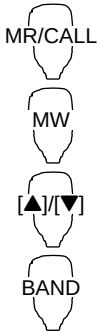
Push [M/CALL PRIO] to select memory mode. Rotate for selecting memory channel. Push [S.MW MW] for 1 sec.

HM-133 operation:

Push [MR/CALL] to select memory mode. Push [▲]/[▼] to select memory channel. Push [FUNC] then push [MW CLR A] for 1 sec.

◇ Memory/call➪memory/call

① Select the memory/call channel to be transferred.
➥ Push [M/CALL•PRIO] several times to select memory mode or call channel, then rotate [DIAL] or push [BAND] to select the desired memory or call channel respectively.
② Push [S.MW•MW] momentarily.
• "M" indicator and "-- -- --" indication blink, and shows VFO conditions.
③ Rotate [DIAL] to select the target memory channel.
• "C1" or "C2" blinks when the call channel is selected.
• Scan edge channels, 1A/1B, 2A/2B, 3A/3B, 4A/4B, 5A/5B can also be selected.
④ Push [S.MW•MW] for 1 sec. to transfer the selected memory/call channel contents to the target memory.
• The targeted memory and transferred contents are indicated.

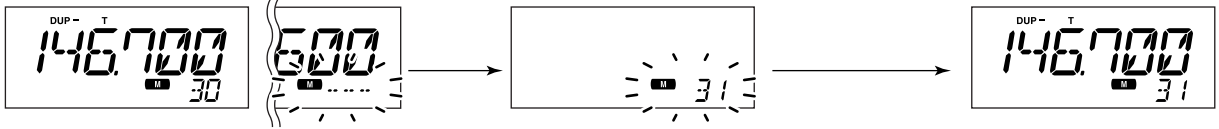


1 Select the memory/call channel to be transferred.
➥ Push [MR/CALL] to select memory mode, then select the desired memory channel via [▲]/[▼] or keypad.
➥ Push [MR/CALL] for 1 sec. then push [BAND] to select the desired call channel.
2 Push [FUNC], then [CLR A(MW)] momentarily.
• "M" indicator and "-- -- --" indication blink, and shows VFO conditions.
3 Push [▲]/[▼] to select the target memory channel.
• "C1" or "C2" blinks when the call channel is selected.
• Scan edge channels can also be selected.
• The keypad cannot be used for the selection.
4 Push [FUNC] then push [CLR A(MW)] for 1 sec. to transfer the selected memory/call channel contents to the target channel.
• The targeted channel and transferred contents are indicated.

[EXAMPLE]: Transferring memory channel 30 contents to channel 31.

Front panel operation:

Select the memory channel, then push S.MW MW. Select the target channel. Push S.MW MW for 1 sec.



HM-133 operation:

Select the memory channel, push FUNC then push MW CLR A. Push FUNC then push MW CLR A for 1 sec.

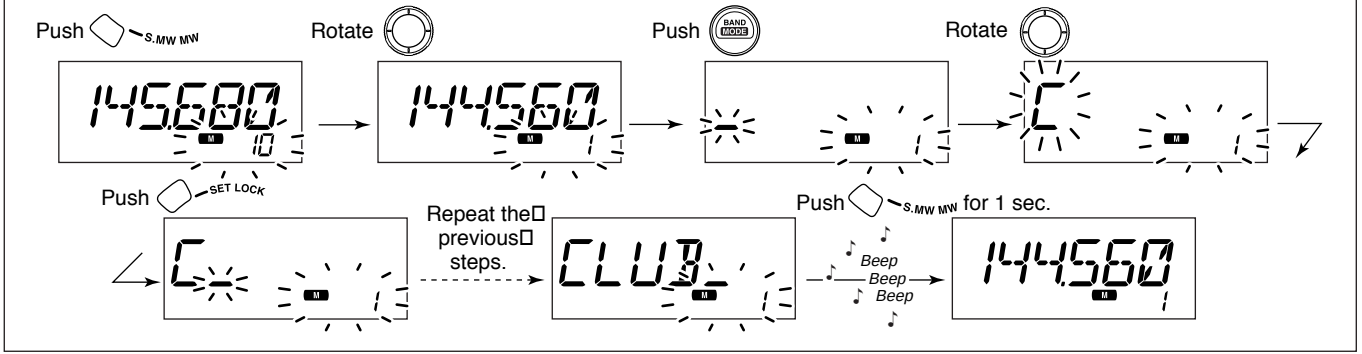
■ Programming channel names

Each memory channel and the call channel can be programmed with an alphanumeric channel name for easy recognition and can be indicated independently by channel. Names can be a maximum of 6 characters— see the table below for available characters.

(space)	+ (+)	- (–)	= (=)	* (*)	/ (/)	(( )	) ( )	I (I)	0 (0)
1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	A (A)
B (B)	C (C)	D (D)	E (E)	F (F)	G (G)	H (H)	I (I)	J (J)	K (K)
L (L)	M (M)	N (N)	O (O)	P (P)	Q (Q)	R (R)	S (S)	T (T)	U (U)
V (V)	W (W)	X (X)	Y (Y)	Z (Z)					

① Push [S.MW•MW] momentarily.
  • "M" and memory channel number blink.
② Rotate the tuning dial to select the desired memory or call channel.
③ Push [BAND] to select the memory name programming condition.
  • Frequency readouts disappear and a cursor blinks.
④ Rotate the tuning dial to select the desired character.
  • The selected character blinks.
⑤ Push [SET•LOCK] to move the cursor to the right.
⑥ Repeat steps ④ and ⑤ until the desired channel names are displayed.
⑦ Push [S.MW•MW] for 1 sec. to program the name and exit the channel name programming condition.

[EXAMPLE]: Programming "CLUB" into memory channel 1.



Channel names can also be programmed via the microphone.

1 Push [FUNC] then [CLR A(MW)] momentarily.
- "M" and memory channel number blink.

2 Push [▲]/[▼] to select the memory/call channel to be assigned memory names.

3 Push [BAND].
- Frequency readouts disappear and a cursor blinks.

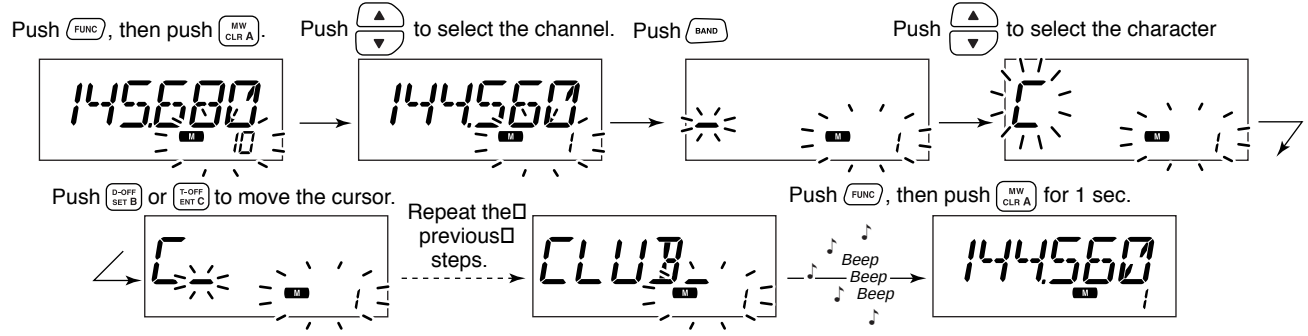
4 Push [▲]/[▼] to select the desired character.
- The selected character blinks.

5 Push [SET B(D-OFF)] or [ENT C(T-OFF)] to move the cursor to left or right, respectively.

6 Repeat steps 4 and 5 until the desired channel names are displayed.

7 Push [FUNC] then [CLR A(MW)] for 1 sec. to program the name and exit the channel name programming condition.

[EXAMPLE]: Programming "CLUB" into memory channel 1.

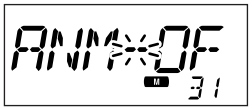


◇ To indicate the channel name

USING SET MODE

The channel name indication can be set for independent memory channels.

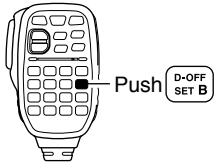
① Push [M/CALL•PRIO] to select the memory mode.
② Rotate [DIAL] to select the desired memory channel to be indicated the channel name.
③ Push [SET•LOCK] to enter set mode.
 • Rotate [DIAL] to select "SET," if necessary.
④ Push [SET•LOCK] or [S.MW•MW] several times to select "ANM" item.
⑤ Rotate [DIAL] to turn the memory name indication ON.



⑥ Push [V/MHz•SCAN] to exit set mode.

NOTE: When no memory name is programmed, the stored frequency is displayed.

1 Push [MR/CALL] to select the memory mode.
2 Push [▲] or [▼] to select the desired memory channel to be indicated the channel name.
3 Push [SET B(D-OFF)] to enter set mode.
 • Push [▲] or [▼] to select "SET," if necessary.
4 Push [SET B(D-OFF)] or [ENT C(T-OFF)] until "ANM" appear.



5 Push [▲] or [▼] to set the memory name indication ON and OFF.
6 Push [CLR A(MW)] to exit set mode.

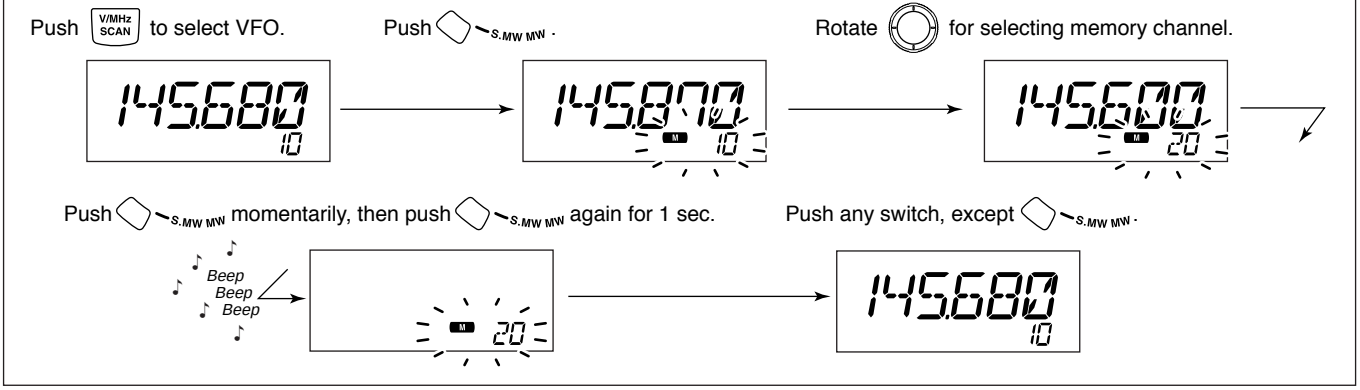
■ Memory clearing

Contents of programmed memories can be cleared (blanked), if desired.

① Push [V/MHz•SCAN] to select VFO mode.
② Push [S.MW•MW] momentarily.
• "M" indicator and the memory channel number blink.
③ Rotate [DIAL] to select the memory channel to be cleared.
• Memory channels not yet programmed are blank.
④ Push [S.MW•MW] momentarily, then push [S.MW•MW] again for 1 sec.
☞ **This operation must be performed within 1.5 sec.**
• 3 beeps sound, then the frequency is cleared.
• "M" indicator and the channel number blink continuously.
• When clearing the call channel, the current VFO conditions are re-programmed into the call channel automatically.
⑤ Push [V/MHz•SCAN] to return to VFO mode.

☞**NOTE:** Be careful!— the contents of cleared memories CANNOT be recalled.

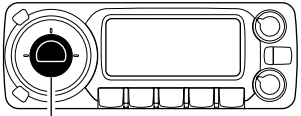
[EXAMPLE]: Clearing memory channel 20.



■ Memory bank selection

The ID-800H has a total of 10 banks (A to J). Regular memory channels, 1 to 500, are assigned into the desired bank for easy memory management.

① Push [M/CALL•PRIO] several times to select memory mode, if desired.
② Push [BAND] to select memory bank condition.
• Bank's initial blinks


[BAND]

Bank initial blinks

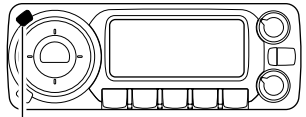
③ Rotate [DIAL] to select the desired bank, A to J.
• Banks that have no programmed contents are skipped.
④ Push [BAND] to set the bank.
• Bank's initial stops blinking.
⑤ Rotate [DIAL] to select the contents in the bank.
• No channel numbers are displayed for memory bank operation.
⑥ To return to regular memory condition, push [BAND] twice.

1 Push [MR/CALL] to select memory mode, if desired.
2 Push [FUNC] then [MONI 1(BANK)] to select memory bank condition.
• Bank's initial blinks
3 Push [▲]/[▼] to select the desired bank, A to J.
• Only programmed memory bank can be selected.
4 Push [CLR A(MW)] to set the bank.
• Bank's initial stops blinking.
5 Push [▲]/[▼] to select the desired contents in the bank.
• No channel numbers are displayed for memory bank operation.
6 To return to regular memory condition, push [FUNC], [MONI 1(BANK)] then push [CLR A(MW)].

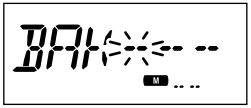
■ Memory bank setting

USING *SET MODE*

① Push [M/CALL•PRIO] several times to select memory mode, then select the desired memory channel via [DIAL].
② Push [SET•LOCK] to enter set mode.
• Rotate [DIAL] to select “SET,” if necessary.
③ Push [SET•LOCK] or [S.MW•MW] several times until “BAK” appears.

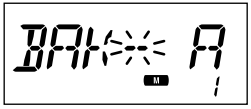


[SET•LOCK]



Bank’s initial blinks

④ Rotate [DIAL] to select the desired bank to be set.



⑤ Push [V/MHz•SCAN] to exit set mode.

1 Push [MR/CALL] then select the desired memory channel via [▲]/[▼] or keypad.
2 Push [SET B(D-OFF)] to enter set mode.
• Push [▲] or [▼] to select “SET,” if necessary.
3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until “BAK” appears.
4 Push [▲]/[▼] to select the desired bank to be set.
5 Push [CLR A(MW)] to set the channel into the bank and exit set mode.

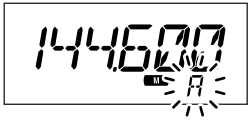
■ Transferring bank contents

USING *SET MODE*

Contents of programmed memory banks can be cleared or transferred to another bank.

INFORMATION: Even if the memory bank contents are cleared, the memory channel contents still remain programmed.

① Select the desired bank contents to be transferred or erased.
- ➥ Push [M/CALL•PRIO] several times to select memory mode.
- ➥ Push [BAND] then rotate [DIAL] to select the desired memory bank.
  - • Bank's initial blinks.



- ➥ Push [BAND] to select the bank then rotate [DIAL] to select the desired contents.
  - • Bank's initial stops blinking.

② Push [SET•LOCK] to enter set mode.
- • Rotate [DIAL] to select "SET," if necessary.

③ Push [SET•LOCK] or [S.MW•MW] several times until "BAK" appears.
- • The bank's initial for the selected memory channel is displayed.

④ Rotate [DIAL] to select the desired bank initial to transfer or erase.
- • Select "-- --" indication when erasing the contents from the bank.

⑤ Push [V/MHz•PRIO] to set the bank and exit set mode.

⑥ Repeat steps ① to ④ for transferring or erasing an another banks contents.

BANK

SET

[▲]/[▼]

1 Select the desired bank contents to be transferred or erased.
- ➥ Push [MR/CALL] to select memory mode.
- ➥ Push [FUNC], [MONI 1(BANK)] then select the desired memory bank via [▲]/[▼].
- ➥ Push [CLR A(MW)] to select the bank then select the desired contents via [▲]/[▼].

2 Push [SET B(D-OFF)] to enter set mode.
- • Push [▲] or [▼] to select "SET," if necessary.

3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until "BAK" appears.

4 Push [▲]/[▼] to select the desired bank initial to transfer or erase.
- • Select "-- --" indication when erasing the contents from the bank.

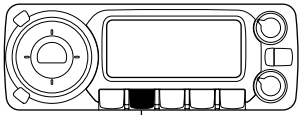
5 Push [CLR A(MW)] to set the bank and exit set mode.

6 Repeat steps 1 to 5 for transferring or erasing an another banks contents.

■ Call channel selection

Call channel is pre-programmed memory channel that can be accessed by simply pushing call channel button.

➥ Push [M/CALL•PRIO] several times to select the call channel mode then push [BAND] to select the desired call channel.
- "C1" or "C2" appears instead of memory channel number indication.
- Push [M/CALL•PRIO] several times to select memory mode, or push [V/MHz•SCAN] to select VFO mode.

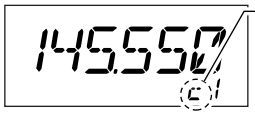


[M/CALL•PRIO]

"C1" or "C2" appears

➥ Push [MR/CALL] for 1 sec. to select the call channel mode then push [▲]/[▼] to select the desired call channel in the main band.
- Push [MR/CALL] to select memory mode, or push [VFO/LOCK] to select VFO mode.

✔INFORMATION



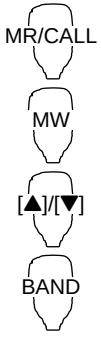
When the VFO mode is selected from the call channel, a small "c" appears instead of memory channel number.

■ Call channel transferring

① Push [M/CALL•PRIO] several times then push [BAND] to select the desired call channel.
- "C1" or "C2" appears.

② Push [S.MW•MW] then rotate [DIAL] to select the memory channel to transfer the contents.
- "M" indicator and memory channel number blink.
- To transfer to the VFO, select "-- -- --" with [DIAL] then push.

③ Push [M/CALL•MW] for 1 sec. to transfer the contents.



1 Push [MR/CALL] for 1 sec. then push [BAND] to select the desired call channel.

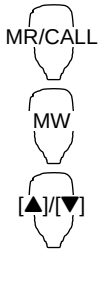
2 Push [FUNC], [CLR A(MW)] momentarily, then push [▲]/[▼] to select the memory channel to transfer the contents.
- To transfer to the VFO, push [▲]/[▼] to select "-- -- --".

3 Push [FUNC], then [CLR A(MW)] for 1 sec. to transfer the contents.

■ Programming a call channel

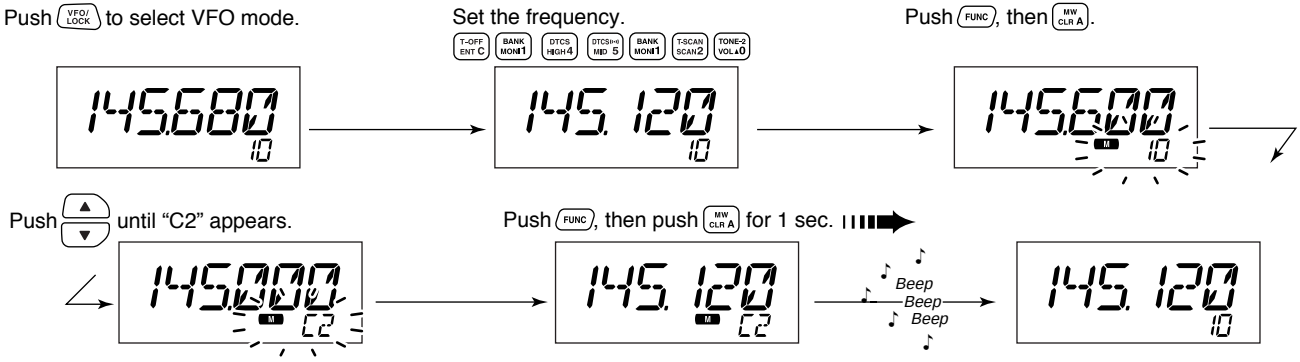
Operating frequency, duplex information, subaudible tone information (tone encoder or tone squelch ON/OFF and its frequency) can be programmed into the call channel.

① Set the desired frequency in VFO mode.
  ➥ Push [V/MHz•SCAN] to select VFO mode.
  ➥ Set the frequency using [DIAL].
  ➥ Set other data as desired.
② Push [S.MW•MW] momentarily.
③ Rotate [DIAL] to select the desired call channel.
  • "M" indicator and "C1" or "C2" blink.
④ Push [S.MW•MW] for 1 sec. to program.
  • 3 beeps sound and the unit returns to VFO mode automatically.



1 Set the desired frequency in VFO mode.
  ➥ Push [VFO/LOCK] to select VFO mode.
  ➥ Set the frequency.
  ➥ Set other data as desired.
2 Push [FUNC], then [CLR A(MW)] momentarily.
3 Select the call channel via [▲] or [▼].
4 Push [FUNC] then [CLR A(MW)] for 1 sec. to program.
  • 3 beeps sound and the unit returns to VFO mode automatically.

[EXAMPLE]: Programming 145.120 MHz into the call channel 2 via the microphone.

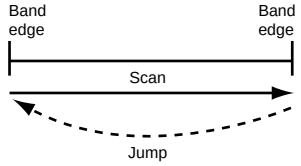


■ Scan types

Scanning searches for signals automatically and makes it easier to locate new stations for contact or listening purposes.

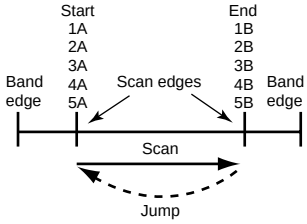
There are 3 scan types and 4 resume conditions to suit your operating needs.

BAND SCAN (p. 41)



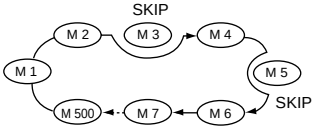
Repeatedly scans all frequencies over the entire band. Used as the simplest scan without any preliminary settings necessary.

PROGRAMMED SCAN (p. 41)



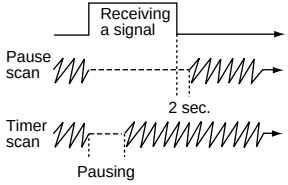
Repeatedly scans between two user-programmed frequencies. Used for checking for frequencies within a specified range such as repeater output frequencies, etc.
5 pairs of scan edges are available and scans 1A–1B (P1), 2A–2B (P2), 3A–3B (P3), 4A–4B (P4), 5A–5B (P5).

MEMORY SCAN (p. 41)



Repeatedly scans memory channels except those set as skip channels. Used for often-called channels and for bypassing normally busy channels such as repeater frequencies.

SCAN RESUME CONDITION (p. 45)



4 resume conditions are available: 3 timer scans and pause scan. When receiving a signal, pause scan pauses until the signal disappears; timer scans pause for 5, 10 or 15 sec.

■ Scan start/stop

◇ Preparation

Scan resume condition (p. 45); program the scan edges (pgs. 42, 43); program 2 or more memory channels (pgs. 27, 28); set skip settings (p. 44), if desired.

◇ Operation

① Select VFO mode for full/programmed scan with [V/MHz•SCAN]; or memory mode for memory scan with [M/CALL•PRIO].
- Select the desired bank for bank scan.

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

③ Push [V/MHz•SCAN] for 1 sec. to start the scan.
- To change the scanning direction, rotate [DIAL].
- The memory channel readout blinks the scan type as follows:

④ Push [SET•LOCK] to switch full and programmed scan (P1, P2, P3, P4 and P5), if VFO is selected in step ①.

⑤ To stop the scan, push [V/MHz•SCAN].

SCAN 2

SET B

1 Push [VFO/LOCK] to select VFO mode for full/programmed scan; push [MR/CALL] to select memory mode for memory scan.
- Push [FUNC] then [MONI 1(BANK)] to select a bank for bank scan.

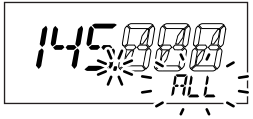
2 Push [SQL▲ D(MUTE)] or [SQL▼ #(16KEY-L)] to set the squelch to the point where noise is just muted.

3 Push [SCAN 2(T-SCAN)] to start the scan.
- Push [▲] or [▼] for 1 sec. also starts the scan.

4 Push [SET B(D-OFF)] to switch full and programmed scan (P1, P2, P3, P4 and P5), if VFO is selected in step 1.

5 To stop the scan push [SCAN 2(T-SCAN)] or [CLR A(MW)].

• During full scan

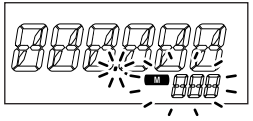


Push [SET•LOCK] to select "ALL" (full) or programmed scan (P1, P2, P3, P4 and P5) in sequence.

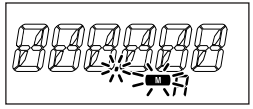
• During programmed scan

Indicates scan edge channels.
- P1 stands for 1A/1B
- P1 to P5 are available when they are programmed, and switches with [SET•LOCK].

• During memory scan



• During bank scan



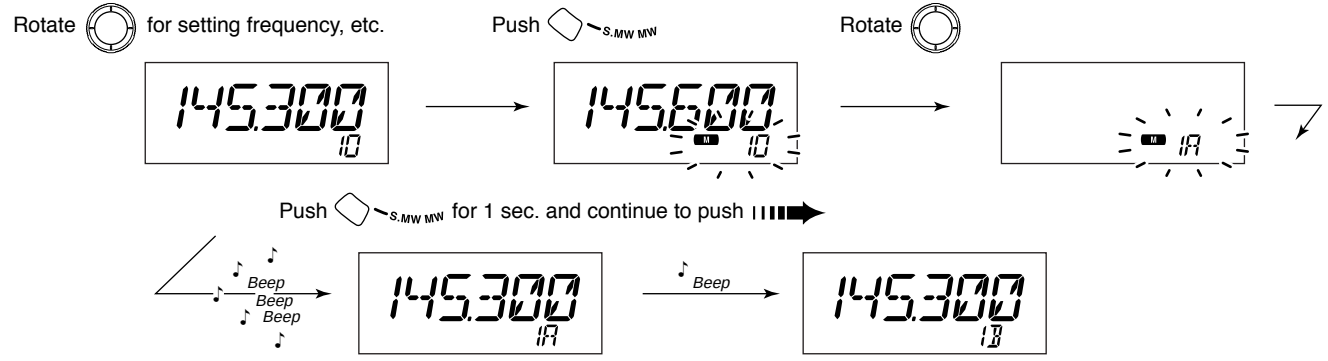
Indicates bank initial.

■ Scan edges programming

Scan edges can be programmed in the same manner as memory channels. Scan edges are programmed into scan edges, 1A/1B to 5A/5B, in memory channels.

① Set the edge frequency of the desired frequency range in VFO mode:
  ➥ Set the frequency using [DIAL].
  ➥ Set other data (e.g. repeater settings, etc.) if desired.
② Push [S.MW•MW].
  • "M" indicator and channel number blink.
③ Rotate [DIAL] to select one of scan edge channel, 1A, 2A, 3A, 4A or 5A.
④ Push [S.MW•MW] for 1 sec. to program.
  • 3 beeps sound and VFO is automatically selected.
  • Scan edge 1B, 2B, 3B, 4B or 5B is automatically selected when continuing to push [S.MW•MW] after programming.
⑤ To program a frequency for the other pair of scan edges, 1B, 2B, 3B, 4B or 5B, repeat steps ① to ④.
  • If the same frequency is programmed into a pair of scan edges, programmed scan will not function.

[EXAMPLE]: Programming 145.300 MHz into scan edges 1A.

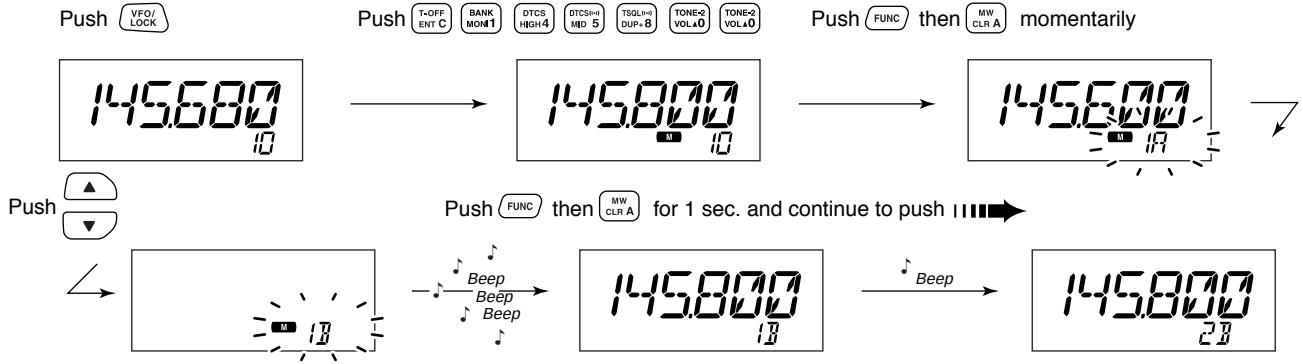


◇ Programming scan edges via microphone

MW

1 Set the desired frequency in VFO mode.
   ➥ Push [VFO/LOCK] to select VFO mode.
   ➥ Set the frequency via the keypad or [▲]/[▼].
2 Push [FUNC] then [CLR A(MW)] momentarily.
3 Push [▲] or [▼] to select scan edge channels, 1A, 2A, 3A, 4A or 5A.
4 Push [FUNC], then push [CLR A(MW)] for 1 sec. to program.
   • 3 beeps sound and VFO is automatically selected.
   • Memory channel number advances to the next scan edge channel, 1B, 2B, 3B, 4B or 5B when continuing to push [CLR A(MW)] after programming.
5 To program a frequency for the other scan edge channels, repeat steps 1 to 4.

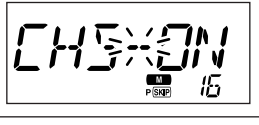
[EXAMPLE]: Programming 145.800 MHz into scan edge 1B.



■ Skip channel setting

USING *SET MODE*

The memory skip function speeds up scanning by checking only those memory channels not set as skip channels. Set skip channels as follows.



The display shows that memory channel 1 is set as a skip channel.

① Select a memory channel:
- ➥ Push [M/CALL•PRIO] to select memory mode.
- ➥ Rotate [DIAL] to select the desired channel to be a skip channel.

② Push [SET•LOCK] to enter set mode.
- • Rotate [DIAL] to select "SET," if necessary.

③ Push [SET•LOCK] or [S.MW•MW] several times until "CHS" appears as shown above.

④ Rotate [DIAL] to turn the skip function ON or OFF for the selected channel.
- • "SKIP" appears : The channel is skipped during scan. (CHS-ON)
- • "P SKIP" appears : The channel is skipped during scan and the programmed frequency is skipped during VFO scan, such as programmed scan. (CHS-ON)
- • "SKIP" disappears : The channel is scanned during scan. (CHS-OF)

⑤ Push [MONI•DTMF] to exit set mode.

SET B

1 Select a memory channel.
- ➥ Select memory mode by pushing [MR/CALL].
- ➥ Push [▲] or [▼] to select the desired channel to be a skip channel.
  - • Direct memory channel selection is also available.

2 Push [SET B(D-OFF)] to enter set mode.
- • Push [▲] or [▼] to select "SET," if necessary.

3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until "CHS" appears as shown at left.

4 Push [▲] or [▼] to set or cancel the skip setting.
- • See item ④ at left for skip indicator details.

5 Push [CLR A(MW)] to exit set mode.

■ Scan resume condition

USING *SET MODE*

The scan resume condition can be selected as timer or pause scan. The selected resume condition is also used for priority watch. (p. 47)

The display shows that the scan will resume 15 sec. after it stops.

① Push [SET•LOCK] to enter set mode.
- Rotate [DIAL] to select "SET," if necessary.

② Push [SET•LOCK] or [S.MW•MW] several times until "SCT" or "SCP" appears as shown above.
- When "d" is displayed in place of the 100 MHz digit, cancel the DTMF memory encoder in advance. (p. 50)

③ Rotate [DIAL] to set the desired timer:
- "SCT-15" : Scan pauses 15 sec. while receiving a signal.
- "SCT-10" : Scan pauses 10 sec. while receiving a signal.
- "SCT-5" : Scan pauses 5 sec. while receiving a signal.
- "SCP-2" : Scan pauses until the signal disappears and then resumes 2 sec. later.

④ Push [MONI•DTMF] to exit set mode.

SET B

1 Push [BAND] to select the desired band.
2 Push [SET B(D-OFF)] to enter set mode.
- Push [▲] or [▼] to select "SET," if necessary.

3 Push [SET B(D-OFF)] or [ENT C(T-OFF)] several times until "SCT" or "SCP" appears as shown at left.
4 Push [▲] or [▼] to select the scan resume condition.
- See item ③ at left for scan resume condition details.

5 Push [CLR A(MW)] to exit set mode.

■ Priority watch types

Priority watch checks for signals on a VFO frequency every 5 sec. while operating in memory mode. The transceiver has 3 priority watch types to suit your needs. You can also transmit on the VFO frequency while the priority watch operates.

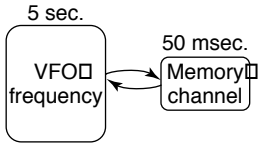
The watch resumes according to the selected scan resume condition. See previous page for details.

☞ **NOTES:**

- If the pocket beep function is activated, the transceiver automatically selects the tone squelch function when priority watch starts.

MEMORY CHANNEL WATCH

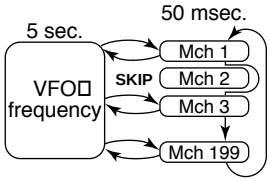
While operating on a VFO frequency, priority watch checks for a signal on the selected memory channel every 5 sec.



MEMORY SCAN WATCH

While operating on a VFO frequency, priority watch checks for signals on each memory channel in sequence.

- The memory skip function is useful to speed up the scan.



CALL CHANNEL WATCH

While operating on a VFO frequency, priority watch checks for signals on the call channel every 5 sec.