



INSTRUCTION MANUAL

HF ALL BAND TRANSCEIVER
IC-725



CAUTIONS

- (1) Before using the IC-725, read all instructions carefully and completely.
- (2) **SAVE THIS INSTRUCTION MANUAL** – This instruction manual contains important safety and operating instructions for the IC-725.
- (3) **NEVER** connect the DC power cable to an AC outlet. This will ruin the transceiver.
- (4) **NEVER** apply more than 16 V DC to the DC POWER SOCKET on the transceiver rear panel. Check the power source voltage before connecting the power cable.
- (5) **NEVER** allow children to touch the transceiver during operation.
- (6) **NEVER** expose the transceiver to rain, snow or any liquid.
- (7) **AVOID** using or storing the transceiver in temperatures below -10°C ($+14^{\circ}\text{F}$) or over $+60^{\circ}\text{C}$ ($+150^{\circ}\text{F}$).

OPERATING CAUTIONS

- (1) In any mobile operation, **DO NOT** operate the transceiver without running the vehicle's engine. The vehicle's battery will quickly run out if the transceiver power is ON while your vehicle's engine is OFF.
- (2) In maritime mobile operation, keep interconnection cables as far away as possible from electronic instruments to prevent instrument malfunctions.
- (3) **BE CAREFUL!** If the transceiver is not securely mounted with bolts and nuts, personal injury or transceiver damage could occur due to braking, wave shock, vibrations, etc.
- (4) **AVOID** using the transceiver in excessively dusty environments.
- (5) **AVOID** placing the transceiver in direct sunlight.
- (6) **BE CAREFUL!** The heatsink may become hot when operating the transceiver continuously for long periods.
- (7) Transmitting without an antenna may damage the transceiver.

INTRODUCTION

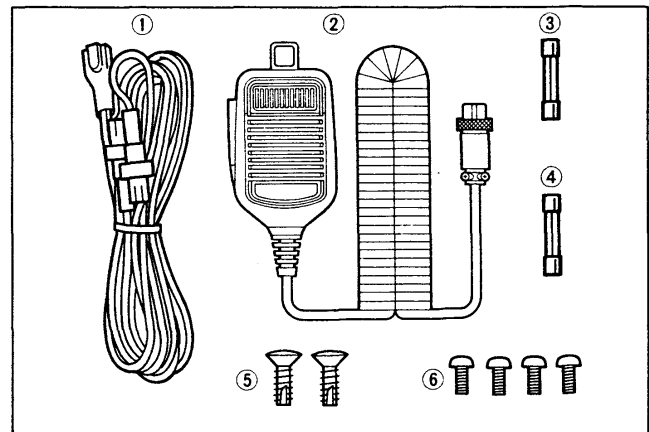
Icom's new IC-725 HF ALL BAND TRANSCEIVER is designed to meet the increasing demand of today's amateur radio users for transceivers with fewer controls and switches, especially for hands-free mobile operation.

The IC-725 has the following advanced features:

- DDS (Direct Digital Synthesizer)
- 26 user-programmable memory channels
- 3 scan types
- Selectable tuning rate in 10, 20 or 50 Hz steps
- Band stacking register capability
- 10 dB preamplifier
- 20 dB attenuator

To thoroughly understand the capabilities of your new IC-725, please read this manual carefully before attempting operation. If you have any questions regarding the operation of the IC-725, feel free to contact your nearest authorized Icom Dealer or Service Center.

UNPACKING



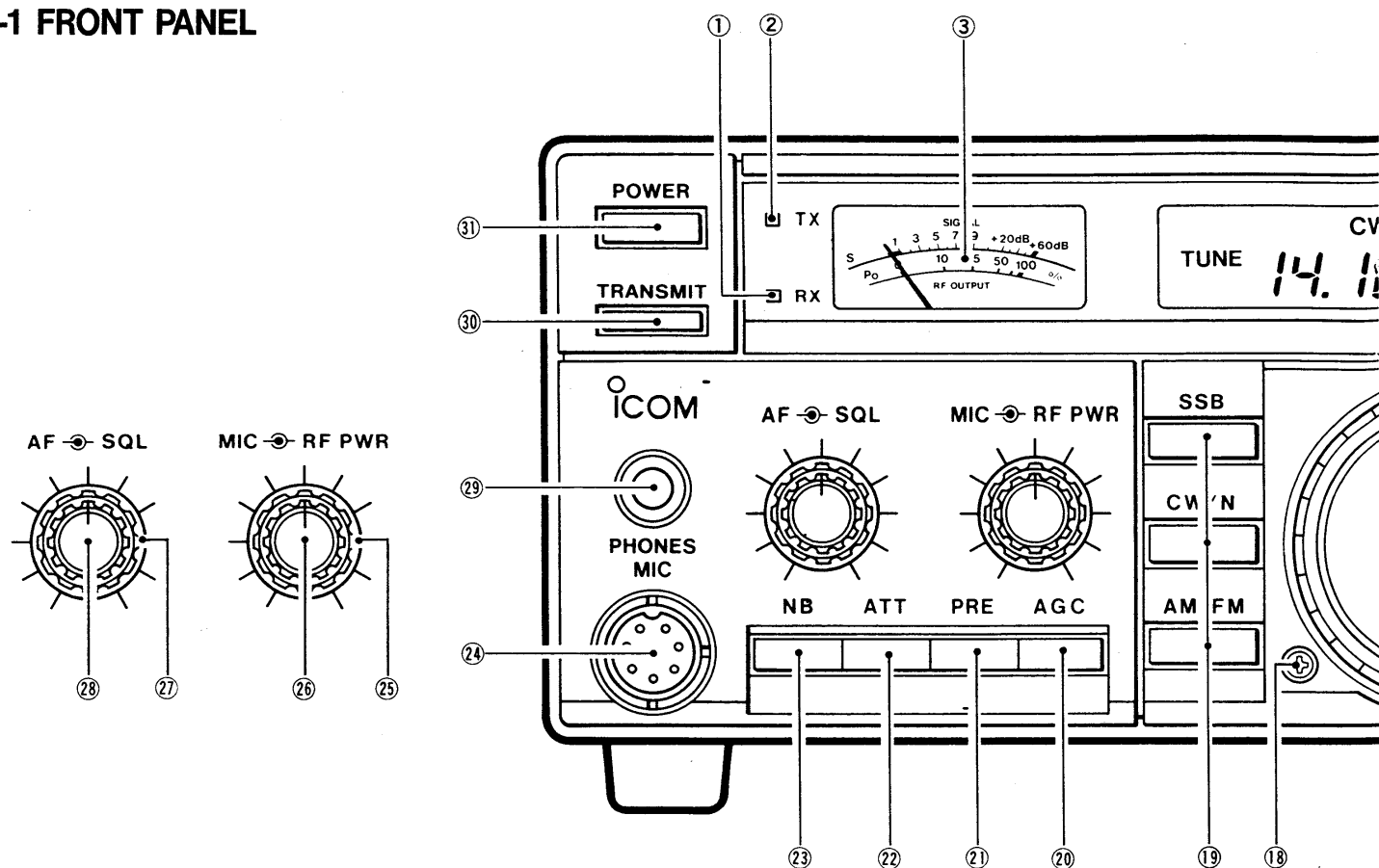
Accessories included with the IC-725:

	Qty.
① DC power cable (OPC-025A)	1
② Hand microphone (HM-12)	1
③ Spare fuse (20 A)	1
④ Spare fuse (4 A)	1
⑤ Screws B1 4 x 12 CR (for optional MB-23 installation)	2
⑥ Screws C0 3 x 6 (for optional MB-23 installation)	4

TABLE OF CONTENTS

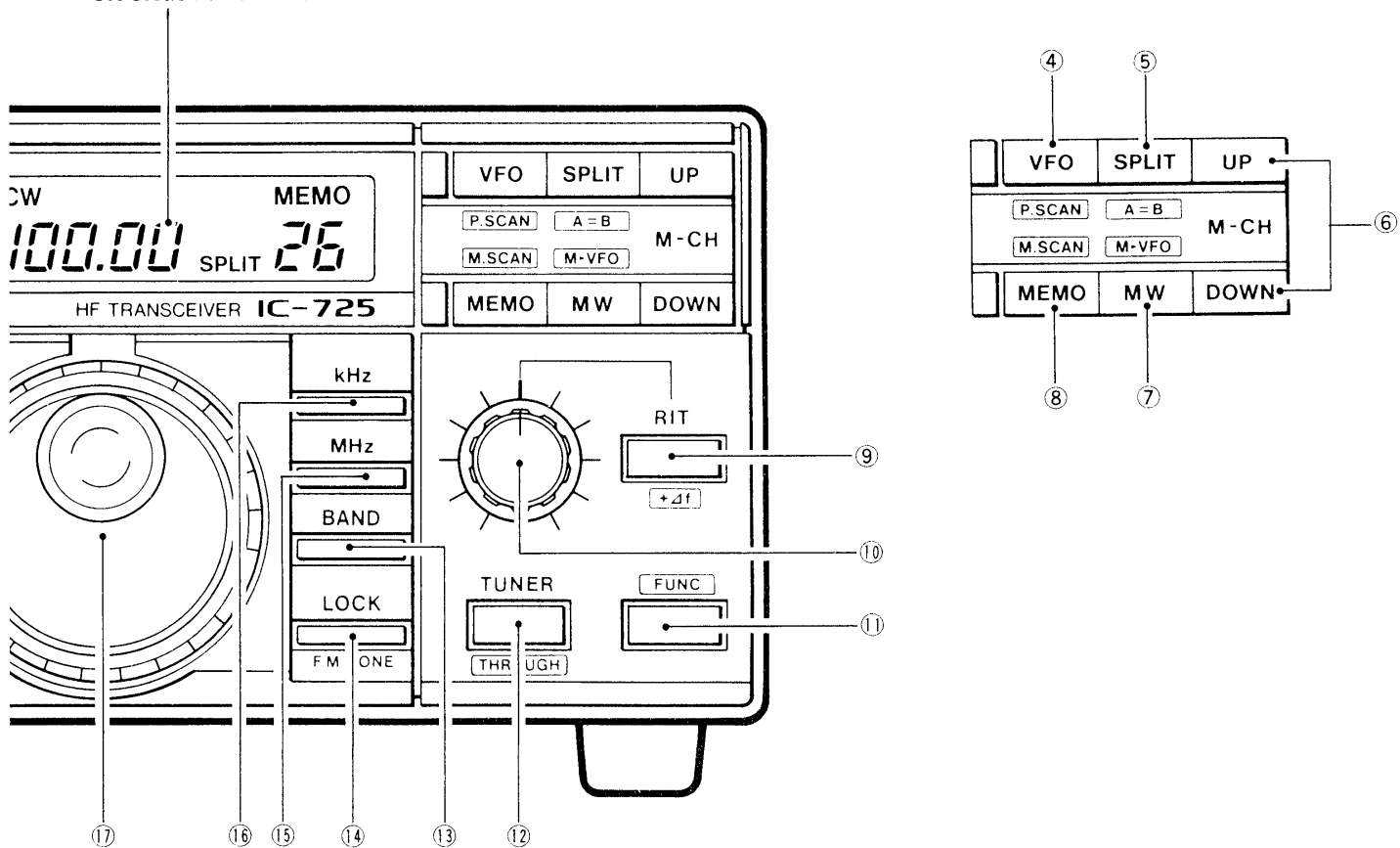
CAUTIONS.....	i	6. MEMORY CHANNEL OPERATION	22
OPERATING CAUTIONS.....	i	6-1 VFO AND MEMORY MODE SELECTION	22
INTRODUCTION.....	i	6-2 MEMORY CHANNEL SELECTION....	22
UNPACKING	i	6-3 MEMORY WRITING	22
TABLE OF CONTENTS.....	ii	6-4 FREQUENCY TRANSFERRING [M ► VFO].....	22
1. CONTROL FUNCTIONS.....	1 ~ 4	7. SCANNING OPERATION.....	23
1-1 FRONT PANEL.....	1	7-1 SCAN TYPES	23
1-2 REAR PANEL.....	3	7-2 PROGRAMMED SCAN.....	23
1-3 MICROPHONE (HM-12).....	3	7-3 MEMORY SCAN.....	23
1-4 FUNCTION DISPLAY	4	7-4 SELECTED MODE MEMORY SCAN... 23	
2. INSTALLATION	5 ~ 6	7-5 SUPPLEMENTAL SCAN SETTINGS ... 23	
2-1 UNPACKING.....	5	8. MAINTENANCE AND ADJUSTMENT.....	24 ~ 28
2-2 MOUNTING THE TRANSCEIVER.....	5	8-1 DISASSEMBLING THE TRANSCEIVER.....	24
2-3 ANTENNA	5	8-2 FUSE REPLACEMENT.....	25
2-4 GROUNDING	5	8-3 CPU RESETTING	25
2-5 WIRING THE DC POWER CABLE....	5	8-4 CPU BACKUP BATTERY.....	25
2-6 REAR PANEL CONNECTIONS.....	6	8-5 CLEANING.....	25
3. SYSTEM INTERCONNECTIONS	7 ~ 12	8-6 TROUBLESHOOTING.....	26
3-1 POWER SUPPLY CONNECTIONS.....	7	8-7 ADJUSTMENTS.....	27
3-2 LINEAR AMPLIFIER CONNECTIONS..	8	9. INSTALLATION OF OPTIONS....	29 ~ 30
3-3 ANTENNA TUNER CONNECTIONS... 9		9-1 UI-7 AM · FM UNIT	29
3-4 AH-3 OPERATING PROCEDURES 10		9-2 UT-30 PROGRAMMABLE TONE ENCODER UNIT.....	29
3-5 AFSK TERMINAL UNIT CONNECTION.....	10	9-3 CW NARROW FILTERS.....	29
3-6 MIC CONNECTOR INFORMATION... 10		9-4 CR-64 HIGH-STABILITY CRYSTAL UNIT	30
3-7 ACC SOCKET INFORMATION.....	11	9-5 MB-23 CARRYING HANDLE.....	30
3-8 REMOTE JACK (CI-V) INFORMATION.....	12	10. INSIDE VIEWS	31 ~ 32
4. PRE-OPERATION	13 ~ 16	10-1 MAIN UNIT	31
4-1 INITIAL SETTINGS.....	13	10-2 PLL UNIT.....	32
4-2 FREQUENCY SELECTION.....	13	11. BLOCK DIAGRAM	33
4-3 VFO A AND VFO B SELECTION.... 14		12. SPECIFICATIONS	34
4-4 RECEIVER CONTROLS AND SWITCHES.....	15	13. OPTIONS	35 ~ 36
4-5 TRANSMITTER CONTROLS AND SWITCH.....	16	SCHMATIC DIAGRAM.....	SEPARATE
5. BASIC OPERATION	17 ~ 21		
5-1 SSB OPERATION	17		
5-2 CW OPERATION.....	18		
5-3 AM OPERATION.....	19		
5-4 FM OPERATION.....	20		
5-5 RIT/Δf FUNCTION.....	21		
5-6 SPLIT OPERATION.....	21		

1-1 FRONT PANEL



- ① **RECEIVE INDICATOR**
Indicates that the squelch is open.
- ② **TRANSMIT/ALC INDICATOR** (p. 16)
Lights when the transceiver is transmitting.
- ③ **METER**
Shows the strength of a received signal and relative output power while transmitting.
- ④ **VFO SWITCH [VFO]** (pgs. 14, 22)
Selects VFO A or VFO B for tuning purposes.
- ⑤ **SPLIT SWITCH [SPLIT]** (p. 21)
Selects split operation.
- ⑥ **MEMORY CHANNEL UP/DOWN SWITCHES [UP] [DOWN]** (p. 22)
Changes memory channels.
- ⑦ **MEMORY WRITE SWITCH [MW]** (p. 22)
Stores the displayed frequency and mode into the displayed memory channel.
- ⑧ **MEMORY READ SWITCH [MEMO]** (p. 22)
Selects MEMORY CHANNEL mode.
- ⑨ **RIT SWITCH [RIT]** (pgs. 15, 21)
Turns ON and OFF the RIT circuit.
- ⑩ **RIT CONTROL** (pgs. 15, 21)
Shifts the receive frequency when the RIT function is ON.
- ⑪ **FUNCTION SWITCH [FUNC]**
Activates the secondary switch functions.
- | SWITCH | FUNCTION |
|--------------------------|--|
| [FUNC] + [VFO] | Activates programmed scan. (p. 23) |
| [FUNC] + [SPLIT] | Equalizes the frequency and mode of operation of the two VFOs. |
| [FUNC] + [MEMO] | Activates memory scan. (p. 23) |
| [FUNC] + [MW] | Activates the frequency transfer function. (p. 22) |
| [FUNC] + [RIT] | Adds the RIT shift frequency to the displayed frequency. (p. 21) |
| [FUNC] + [TUNER] | Bypasses the AH-3 HF AUTOMATIC ANTENNA TUNER (optional). (p. 10) |
| [FUNC] + [kHz] | Changes the tuning step. (p. 14) |
| [FUNC] + [BAND] | Turns ON and OFF the 10 Hz digit on the frequency display. (p. 14) |
| [FUNC] + [LOCK] + [MEMO] | Activates the mode selected memory scan. (p. 23) |
- ⑫ **ANTENNA TUNER SWITCH [TUNER]** (p. 10)
Tunes the AH-3 HF AUTOMATIC ANTENNA TUNER (optional).
- ⑬ **BAND SWITCH [BAND]** (p. 13)
Allows the MAIN DIAL to select bands only.

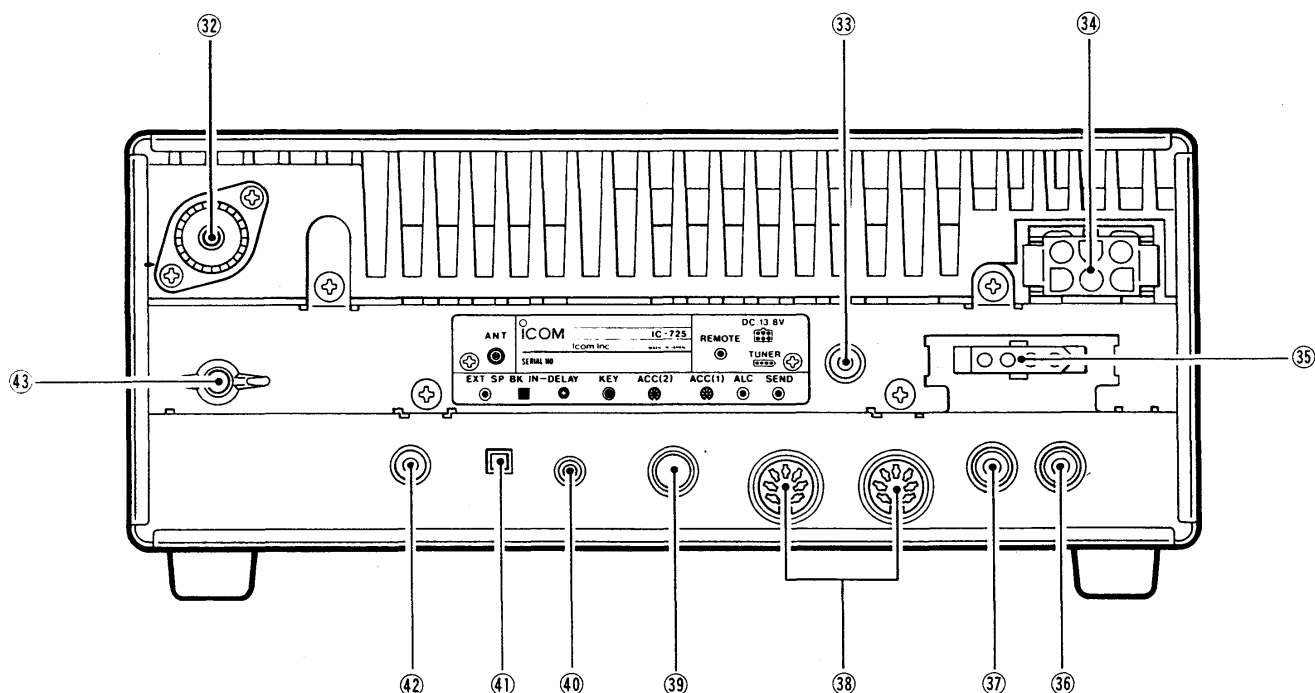
See Section 1 - 4 FUNCTION DISPLAY



- ⑭ **DIAL LOCK SWITCH [LOCK]**
Deactivates the MAIN DIAL and transmits a subaudible tone signal in FM mode.
- ⑮ **MHz TUNING RATE SWITCH [MHz] (p. 14)**
Sets the tuning steps at 1 MHz.
- ⑯ **kHz TUNING RATE SWITCH [kHz] (p. 14)**
Sets the tuning rate for 1 kHz steps.
- ⑰ **MAIN DIAL**
Changes the displayed frequency.
- ⑱ **BRAKE ADJUSTMENT SCREW (p. 27)**
Adjusts MAIN DIAL tension.
- ⑲ **MODE SWITCHES (pgs. 17 ~ 20)**
Selects the desired operating mode.
- ⑳ **AGC SWITCH [AGC] (p. 15)**
Changes the time constant of the AGC circuit.
- ㉑ **PREAMP SWITCH [PRE] (p. 15)**
Activates the built-in 10 dB gain RF preamplifier.
- ㉒ **ATTENUATOR SWITCH [ATT] (p. 15)**
Activates the 20 dB attenuator to prevent front end overload.
- ㉓ **NOISE BLANKER SWITCH [NB] (p. 15)**
Activates the noise blanker circuit.
- ㉔ **MIC CONNECTOR [MIC] (p. 10)**
Accepts Icom hand or desk microphones. Refer to Section 13 OPTIONS.
- ㉕ **RF POWER CONTROL [RF PWR] (p. 16)**
Adjusts RF output power.
- ㉖ **MIC GAIN CONTROL [MIC] (p. 16)**
Adjusts microphone input gain.
- ㉗ **SQUELCH CONTROL [SQL] (p. 15)**
Adjusts the squelch threshold level.
- ㉘ **AF GAIN CONTROL [AF] (p. 15)**
Adjusts audio output level.
- ㉙ **HEADPHONES JACK [PHONE]**
Accepts a standard 1/4 inch plug from 4 ~ 16 Ω mono or stereo headphones.
- ㉚ **TRANSMIT/RECEIVE SWITCH [TRANSMIT]**
Selects transmit or receive.
- ㉛ **POWER SWITCH [POWER]**
Turns the power ON and OFF.

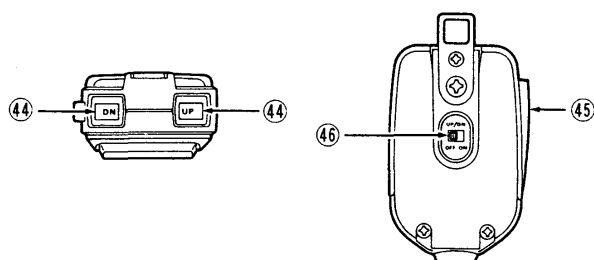
1 CONTROL FUNCTIONS

1-2 REAR PANEL



- ③② **ANTENNA CONNECTOR** (pgs. 5, 6)
Connects a 50 Ω antenna with a PL-259 plug.
- ③③ **CI-V REMOTE CONTROL JACK** (p. 12)
Designed for use with a personal computer for remote operation of transceiver functions.
- ③④ **DC POWER SOCKET** (p. 7)
Accepts 13.8 V DC using the supplied DC cable.
- ③⑤ **TUNER CONTROL SOCKET** (p. 9)
Accepts the optional AH-3 HF AUTOMATIC ANTENNA TUNER control cable.
- ③⑥ **SEND CONTROL JACK** (p. 8)
Goes to ground when transmitting to control an external unit.
- ③⑦ **ALC INPUT JACK** (p. 8)
Connects to the ALC output jack of a non-Icom linear amplifier.
- ③⑧ **ACCESSORY SOCKETS** (p. 11)
Input and output connections for external equipment.
- ③⑨ **CW KEY JACK** (pgs. 6, 18)
Accepts a straight key or electronic keyer with a standard 1/4 inch 3-conductor plug.
- ④① **CW SEMI BREAK-IN SWITCH** (p. 18)
Turns ON and OFF the CW semi break-in operation.
- ④② **EXTERNAL SPEAKER JACK** (p. 6)
Connect a 4 ~ 16 Ω speaker here, if required.
- ④③ **GROUND TERMINAL** (pgs. 5, 6)
To prevent electrical shocks, TVI, BCI and other problems, connect this terminal to ground.
- ④④ **UP/DOWN SWITCHES**
Changes the operating frequency or memory channel. Push and hold either of these switches to change the frequency or memory channel continuously.
- ④⑤ **PTT SWITCH**
Push to transmit.
- ④⑥ **UP/DOWN ON/OFF SWITCH**
Prevents accidental changes of the [UP] and [DN] switches.

1-3 MICROPHONE (HM-12)



- ④④ **UP/DOWN SWITCHES**
Changes the operating frequency or memory channel. Push and hold either of these switches to change the frequency or memory channel continuously.
- ④⑤ **PTT SWITCH**
Push to transmit.
- ④⑥ **UP/DOWN ON/OFF SWITCH**
Prevents accidental changes of the [UP] and [DN] switches.

Count on us!