

ICOM

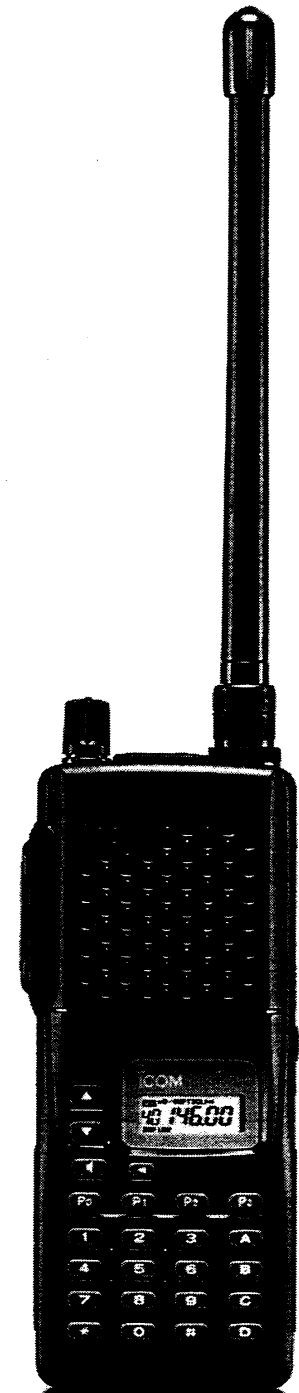
INSTRUCTION MANUAL

144 MHz FM TRANSCEIVERS

IC-T2A IC-T2E

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Icom Inc.



IMPORTANT


READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

SAVE THIS INSTRUCTION MANUAL—This instruction manual contains important operating instructions for the IC-T2A and IC-T2E.

EXPLICIT DEFINITIONS

The explicit definitions below apply to this instruction manual.

WORD	DEFINITION
⚠WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No risk of personal injury, fire or electric shock.

 Versions of the IC-T2E which display the "CE" symbol on the serial number seal, comply with the ETSI specification prEIS300 684 (EMC product standard for Commercially Available Amateur Radio Equipment).

CAUTIONS

⚠WARNING! NEVER hold the transceiver so that the antenna is very close to, or touching exposed parts of the body, especially the face or eyes, while transmitting. The transceiver will perform best if the microphone is 5 to 10 cm (2 to 4 in) away from the lips and the transceiver is vertical.

⚠WARNING! NEVER operate the transceiver with a headset or other audio accessories at high volume levels. Hearing experts advise against continuous high volume operation. If you experience a ringing in your ears, reduce the volume level or discontinue use.

NEVER connect the transceiver to an AC outlet or to a power source of more than 16 V DC. Such a connection will damage the transceiver.

NEVER connect the transceiver to a power source that is DC fused at more than 5 A. Accidental reverse connection will be protected by this fuse, higher fuse values will not give any protection against such accidents and the transceiver will be ruined.

NEVER attempt to charge alkaline or dry cell batteries. Beware that external DC power connections will charge batteries inside the battery case. This will damage not only the battery case but also the transceiver.

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

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

DO NOT operate the transceiver near unshielded electrical blasting caps or in an explosive atmosphere.

AVOID using or placing the transceiver in direct sunlight or in areas with temperatures below -10°C ($+14^{\circ}\text{F}$) or above $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$).

The use of non-Icom battery packs/chargers may impair transceiver performance and invalidate the warranty.

Even when the transceiver power is OFF, a slight current still flows in the circuits. Remove the battery pack or case from the transceiver when not using it for a long time. Otherwise, the battery pack or installed dry cell batteries will become exhausted.

UNPACKING

Accessories included with the transceiver:

	Qty.
① Antenna	1
② Belt clip	1
③ Battery case (BP-194) attached to the transceiver with 8 Ni-Cd (AA) batteries* installed	1
④ Wall charger*	1

*Not supplied with some versions.

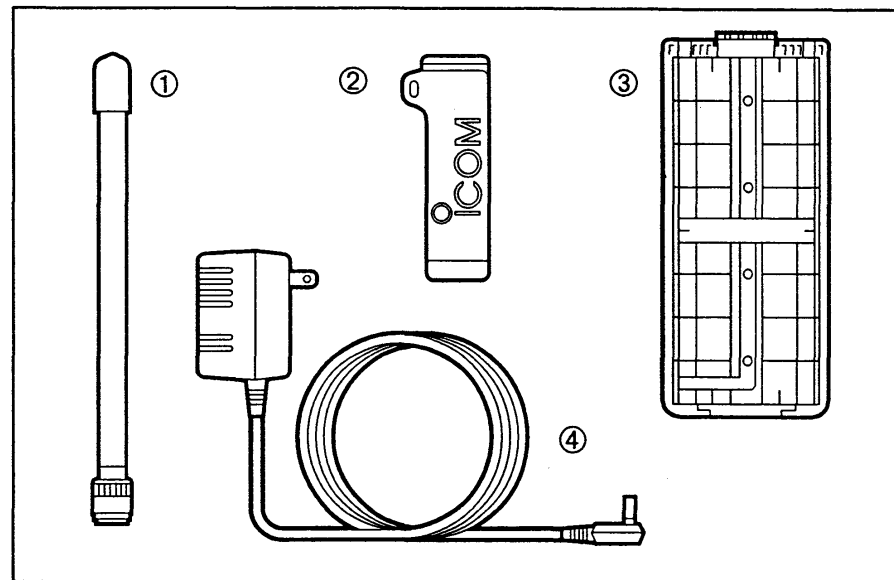
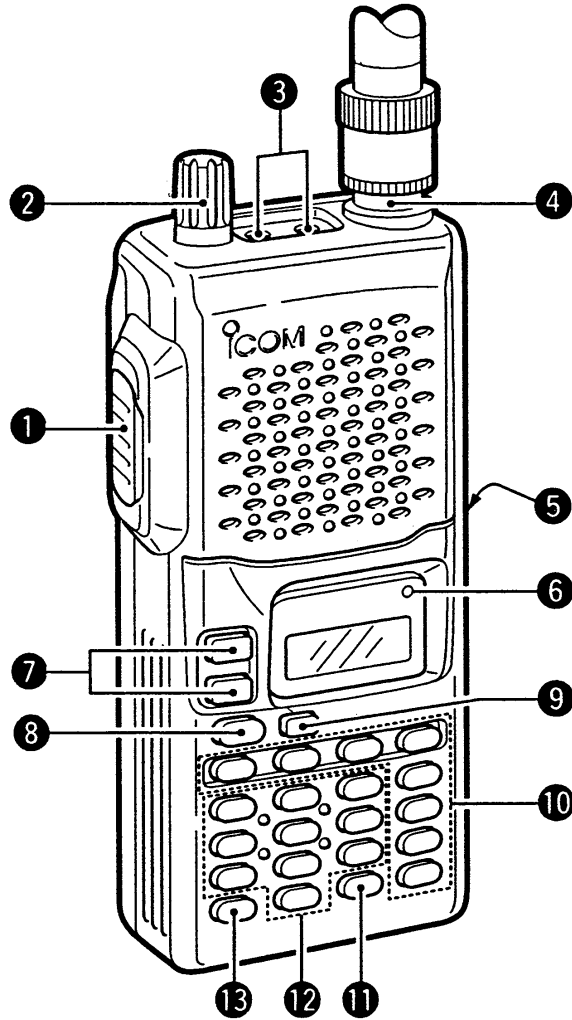


TABLE OF CONTENTS

IMPORTANT	i	■ Programming a memory channel	17
EXPLICIT DEFINITIONS	i	■ Programming the call channel	18
CAUTIONS	i	■ Memory editing	19
UNPACKING	ii	6 DTMF MEMORY	20 – 21
TABLE OF CONTENTS	iii	■ Programming a DTMF code	20
1 PANEL DESCRIPTION	1 – 5	■ Transmitting a DTMF code	20
■ Switches, controls, keys and connectors	1	■ DTMF transmission speed	21
■ Function display	4	7 SCAN OPERATION	22 – 23
2 BATTERY PACKS AND ACCESSORIES	6 – 9	■ Scan types	22
■ Battery pack charging	6	■ Programmed scan	23
■ Charging precautions	6	■ Memory (skip) scan	23
■ About battery packs	6	8 SUBAUDIBLE TONE OPERATION	24 – 25
■ Charging connections	7	■ Tone squelch	24
■ Installing batteries in the battery case	8	■ Tone scan	25
■ Accessory attachment	9	■ Pocket beep operation	25
3 BASIC OPERATION	10 – 13	9 OTHER FUNCTIONS	26 – 30
■ Power ON	10	■ Initial set mode	26
■ Guide function	10	■ Key customize mode	29
■ Notes for set mode	10	■ Resetting the CPU	30
■ Setting a frequency	11	■ ANI mode ON	30
■ Setting tuning steps	11	10 ANI OPERATION	31 – 33
■ Dial select function	12	■ General	31
■ Selecting a memory channel	12	■ Operation	32
■ Lock function	12	11 CLONING	34
■ Receive and transmit	13	12 TROUBLESHOOTING	35
4 REPEATER OPERATION	14 – 16	13 SPECIFICATIONS	36
■ General	14	14 OPTIONS	37
■ Subaudible tones	15	15 MODE ARRANGEMENT	38 – 39
■ Offset frequency	15		
■ Auto repeater function	16		
5 MEMORY/CALL PROGRAMMING	17 – 19		
■ General	17		

■ Switches, controls, keys and connectors



- ① PTT SWITCH [PTT]
- ② POWER/VOLUME CONTROL [PWR/VOL]
- ③ EXTERNAL SPEAKER AND MICROPHONE JACKS [SP/MIC]
- ④ ANTENNA CONNECTOR
- ⑤ EXTERNAL DC POWER JACK [CHARGE]
- ⑥ TX INDICATOR [TX]
- ⑦ UP/DOWN SWITCHES [▲]/[▼]
- ⑧ MONITOR SWITCH [◀(MONI)]
- ⑨ DIAL SELECT SWITCH [◀]
- ⑩ CUSTOMIZABLE KEYS [P₀]/[P₁]/[P₂]/[P₃]/[A]/[B]/[C]/[D]
- ⑪ GUIDE KEY [#]
- ⑫ DIGIT KEYS
- ⑬ MHz KEY [*]

1 PANEL DESCRIPTION

① PTT SWITCH [PTT] (p. 13)

Push and hold to transmit; release to receive.

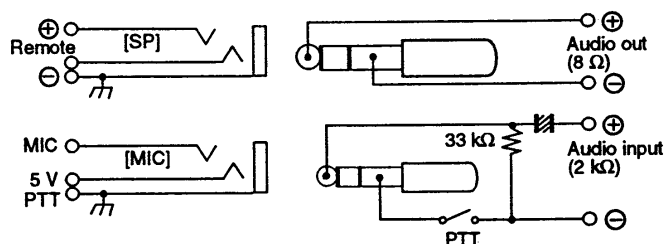
② POWER/VOLUME CONTROL [PWR/VOL]

- ➔ Rotate to turn power ON and OFF.
- ➔ Rotate clockwise to increase volume and counterclockwise to decrease volume.

③ EXTERNAL SPEAKER AND MICROPHONE JACKS [SP/MIC]

Connect an optional speaker-microphone or headset, if desired. The internal microphone and speaker will not function when either is connected. (See p. 37 for options.)

◇ External connection



This connection does not apply when a condenser microphone is connected.

/// **NOTE:** When connecting or disconnecting an external speaker-microphone, first turn OFF power to the transceiver.

④ ANTENNA CONNECTOR (p. 9)

Connects the supplied antenna.

⑤ EXTERNAL DC POWER JACK [CHARGE]

Connect a 13.5 to 16 V DC power source using optional cables, CP-12L or OPC-254L, to charge the transceiver; or connect the BC-110A/D/V wall charger for charging.

/// **CAUTION:** This connection is for charging ONLY. Power to the transceiver must be turned OFF during charging.

⑥ TX INDICATOR [TX] (p. 13)

Lights red while transmitting.

⑦ UP/DOWN SWITCHES [▲]/[▼]

- ➔ In VFO mode, increment or decrement the displayed frequency according to the set tuning steps. (p. 11)
- ➔ In memory mode, increment or decrement the selected memory channel. (p. 12)
- ➔ In initial set mode, select item conditions. (p. 26)

⑧ MONITOR SWITCH [MONI] (p. 13)

- ➔ Push and hold this switch to force the squelch open; release to close it again.
- ➔ Push twice to keep the squelch open; push again to close it.
- ➔ While pushing [PTT], push this switch to transmit a 1750 Hz tone signal. (EUR version only)

9 DIAL SELECT SWITCH [◀] (p. 12)

Push this switch one or more times to select the dial select step for frequency tuning.

10 CUSTOMIZABLE KEYS [P₀]/[P₁]/[P₂]/[P₃]/[A]/[B]/[C]/[D] (p. 29)

These keys can be assigned a variety of functions (see p. 29 for a list of available functions). Following are their default settings:

- [P₀] Squelch level ([SQL])
- [P₁] Scan start/stop ([SCAN])
- [P₂] Duplex setting ([DUP])
- [P₃] Power output ([HI/LO])
- [A] VFO/memory toggle ([V/m])
- [B] Memory write ([SmW])
- [C] Tone setting ([TONE])
- [D] Lock function ([LOCK])

11 GUIDE KEY [#] (p. 10)

- Activates the guide function.
- Transmits an “F” for DTMF operation while pushing [PTT].

12 DIGIT KEYS

- Input the specified digit during frequency input, memory channel selection, etc.
- Transmit the DTMF code of the specified digit while pushing [PTT].

13 MHz KEY [*] (p. 11)

- Used as a short cut for inputting frequencies.
- Transmits an “E” for DTMF operation while pushing [PTT].

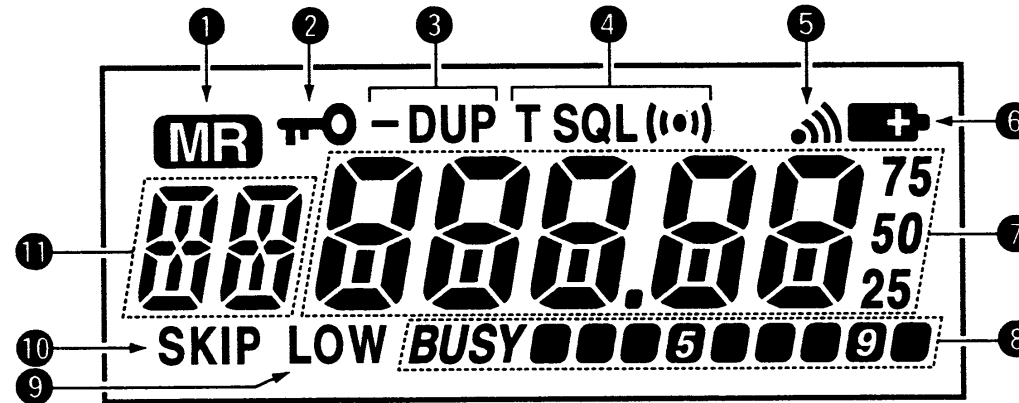
NOTE: In this manual, the customizable keys are represented by the [★] icon. Operations which require a customizable key observe the following style—

Push [★ (FUNCTION)]

where “★” indicates the key is customizable and “FUNCTION” indicates the assigned function e.g. TONE, etc.

1 PANEL DESCRIPTION

■ Function display



1 MEMORY MODE INDICATOR (p. 12)

Appears while in memory mode.

2 LOCK INDICATOR (p. 12)

Appears while the lock function is activated.

3 DUPLEX INDICATORS (p. 14)

Appear during semi-duplex operation.

- “- DUP” appears for minus duplex; “DUP” only appears for plus duplex.

4 TONE INDICATORS

“T” appears when the subaudible tone encoder (p. 14) is in use, “T SQL ((.))” appears during pocket beep operation (p. 25) and “T SQL” appears when the tone squelch function (p. 24) is activated.

5 ANI INDICATOR (p. 31)

Appears when the transceiver is set to ANI (Automatic Number Identification) operation mode.

6 LOW BATTERY INDICATOR

- Appears when the battery is nearing exhaustion.
- Appears and flashes when battery replacement is necessary.

7 FREQUENCY READOUT

- In frequency indication mode, indicates the operating frequency. (p. 11)
- The smaller “75,” “50” and “25” to the right of the readout indicates 7.5, 5.0 and 2.5 kHz, respectively.

- ↳ In channel indication mode, indicates the selected channel. (p. 10)
- ↳ In set mode, initial set mode, indicates the selected item, condition, etc.

⑧ BUSY AND S/RF INDICATORS (p. 13)

- ↳ "BUSY" appears when receiving a signal or when the squelch is open
- ↳ The S/RF indicators show the relative signal strength while receiving and the output power when transmitting (2 segments appear for low power and all segments appear for high power).

⑨ LOW POWER INDICATOR (p. 13)

Appears when low output power is set.

⑩ SKIP INDICATOR (p. 23)

Appears when the selected channel is set as a "skip" channel.

⑪ MEMORY CHANNEL INDICATOR (p. 17)

Indicates the selected memory channel and other items such as the call channel.

■ Battery pack charging

The supplied BP-194 BATTERY CASE includes rechargeable Ni-Cd batteries* and can be charged approx. 300 times. Charge the batteries before first operating the transceiver or when they become exhausted.

If you want to be able to charge the batteries more than 300 times, the following points should be observed:

1. Avoid overcharging. The charging period should be less than 48 hours.
2. Use the batteries until they become almost completely exhausted under normal conditions. We recommend battery charging just after transmitting becomes impossible.

*Not supplied with some versions.

■ Charging precautions

NEVER attempt to charge dry cell batteries. This will cause internal liquid leakage and damage the battery case and transceiver.

NEVER connect two or more chargers at the same time.

Charging may not occur under temperatures of 10°C (50°F) or over temperatures of 40°C (104°F).

■ About battery packs

◇ Operating period

Depending on installed battery pack (batteries), the operating period of the transceiver varies. Refer to p. 37 for operating period details.

◇ Battery life

If your batteries seems to have no capacity even after being fully charged, completely discharge them by leaving the power ON overnight. Then, fully charge them again.

If the batteries still do not retain a charge (or very little), new batteries must be purchased.

Recycling information (U.S.A. only)



The product that you purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Call 1-800-8-BATTERY for battery recycling options in your area or contact your dealer.

Count on us!



A-5422Y-1EX-②
Printed in Japan
Copyright © 1996 by Icom Inc.

Icom Inc.
6-9-16 Kamihigashi, Hirano-ku, Osaka 547 Japan
