IC-2A/AT/E

144MHz FM TRANSCEIVER

INSTRUCTION MANUAL

ICOM

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SECTION I INTRODUCTION

SYNTHESIZED HANDIE TALKIE

Small, light, and 800 channels capability,* a handy for use any time, whether outdoors, in a car, or at home, 800 channels for use on any 2 meter frequency, or any repeater.

DUAL POWER LEVEL

Transmitter output can be switched easily to either of two levels; 1.5W output HIGH for long distances, and 0.15W LOW for short distances. Battery consumption is minimized in the Low Power Mode. IC-BP5, Battery Pack as option, gives 2.3W output.

VARIOUS POWER PACKS AVAILABLE

The Power Pack is slipped on the bottom of the radio very easily, and various power packs are available to suit your needs, for minimum size, longer use, or higher power.

*	IC-2A	800 channels
	IC-2AT	800 channels with Touch Tone Encoder
	IC-2EDL	400 channels with Independent Tone Type
	IC-2EI	800 channels with Independent Tone Type
	IC-2EG	400 channels with Auto Tone Type

SECTION II SPECIFICATIONS

GENERAL

Number of Semi-conductors	Transistors 43 (42) <41> FET 3 IC 5 [6] (6) Diodes 21 (20)
Frequency Coverage	144.000 ~ 147.995MHz: IC-2A, IC-2AT, IC-2EI 144.000 ~ 145.995MHz: IC-2EDL, IC-2EG
Frequency resolution	5KHz steps 800 channels or 400 channels
Frequency Control	Digital PLL synthesizer, with thumb wheel switch
Frequency stability	Within ±1.5KHz
Usable Temperature	−10°C ~ 60°C (14°F ~ 140°F)
Antenna impedance	50 ohms unbalanced
Power supply requirement	DC 8.4V; with attendant battery pack IC-BP3, DC 6 ~ 16V negative ground is acceptable
Current drain at 8.4V	Transmitting HIGH : 1.5W Approx. 550mA LOW : 0.15W Approx. 220mA Receiving At max audio output Approx. 130mA Squelched Approx. 20mA
Dimensions	116.5mm (H) x 65mm (W) x 35mm (D) Without battery pack Attendant battery pack, IC-BP3 49mm (H) x 65mm (W) x 35mm (D)
Weight	470g [490g] including battery pack, IC-BP3 and flexible antenna

TRANSMITTER

Output power	HIGH: 1.5W, LOW: 0.15W at 8.4V
Emission mode	$16F_3$
Modulation system	Variable reactance frequency modulation
Max. frequency deviation	±5KHz
Spurious emission	More than 60dB below carrier
Microphone	Built-in Electret comdenser microphone
	Optional Speaker-microphone can be used (IC-HM9)
Operating mode	Simplex
	Duplex ±600KHz from receive frequency

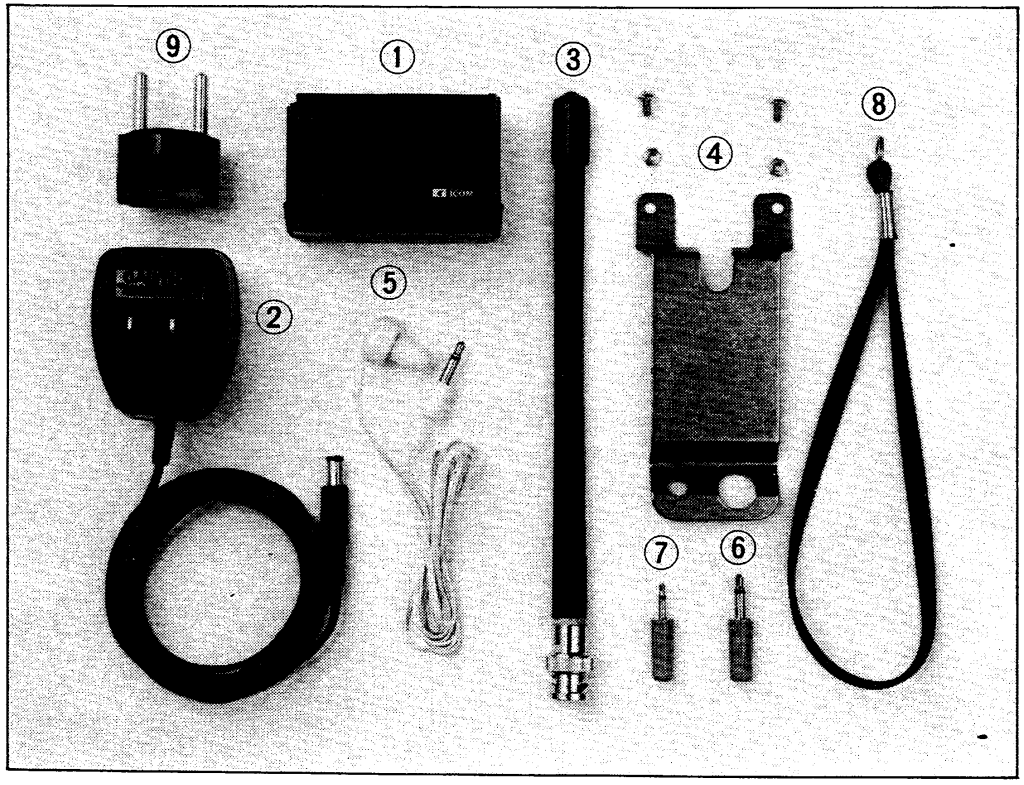
RECEIVER

Receiving system	Double-conversion superheterodyne
Modulation acceptance	$16F_3$
Intermediate frequency	1st: 10.695MHz
	2nd: 455KHz
Sensitivity	More than 26dB S+N+D/N+D at 1μV
	Less than 0.5μV for 20dB Noise quieting
Squelch sensitivity	Less than 0.4μV
Spurious response rejection ratio	More than 60dB
Selectivity	More than ±7.5KHz at –6dB point
	Less than ±15KHz at –60dB point
Audio output power	More than 300mW
Audio output impedance	8 ohms

Note: [ ] Values for IC-2AT ( ) Values for IC-2EG < > Values for IC-2EDL and IC-2EI
Specifications are approximate and are subject to change without notice or obligation.

SECTION III ACCESSORIES

Carefully remove your transceiver from the packing carton and examine it for signs of shipping damage. Should any be apparent, notify the delivering carrier or dealer immediately, stating the full extent of the damage. It is recommended you keep the shipping cartons. In the event storage, moving, or reshipment becomes necessary, they come in handy. Various accessories are packed with the transceiver. Make sure you have not overlooked anything.

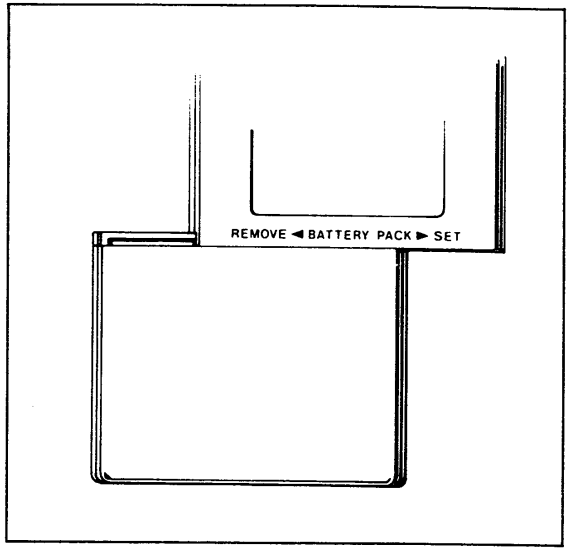


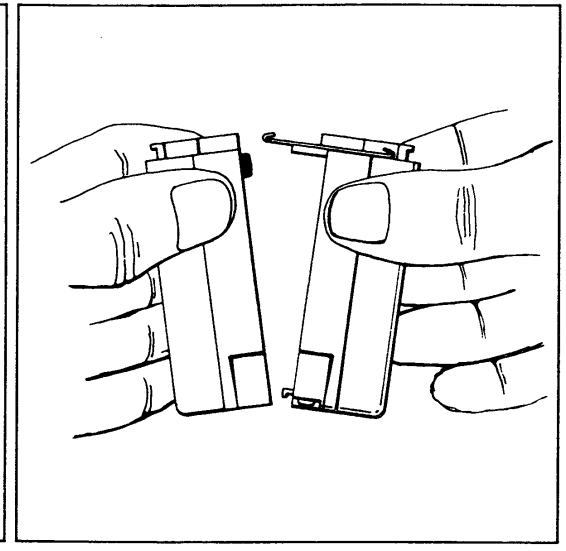
1. Battery pack IC-BP3 1
2. Wall charger BC-25U/E* 1
3. Flexible antenna 1
4. Belt clip. 1
5. Earphone. 1
6. Earphone plug 1
7. Microphone plug 1
8. Hand-strap 1
9. AC conversion plug (Universal type) 1
   * BC-25U for 117V
   * BC-25E for 240V

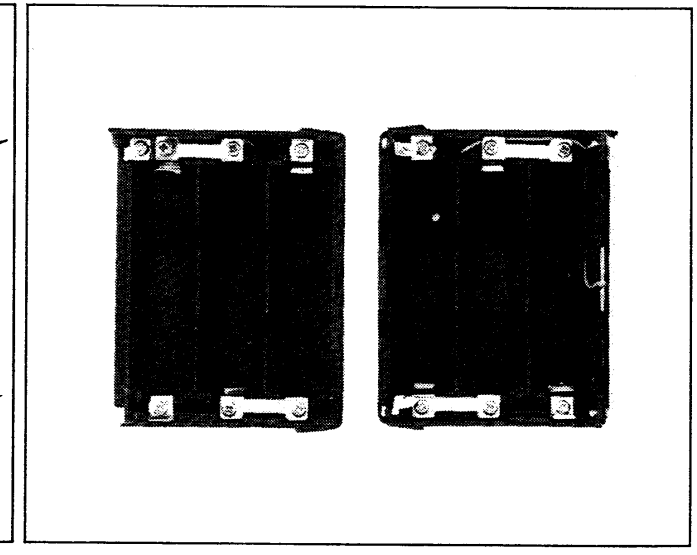
SECTION IV PRE-OPERATION

BATTERY INSTALLATION

When using alkaline battery pack IC-BP4:
Place the power switch in the OFF position. Remove the battery pack from bottom of the set by pushing the pack in the indicated direction. Separate the pack into two parts (case) as follows:







Each case holds three AA type batteries. Install batteries into each case, according to indicated polarity. With the batteries properly in place, carefully replace the pack and slip it onto the set with the reverse procedure.
Also, AA type Nickel-Cadmium, rechargeable, batteries can be used. But the charger for them should be the optional BC-30 charger.

WHEN TO REPLACE BATTERIES (When using alkaline batteries).

When the Transmit Indicator LED does not light up during transmission, the batteries are exhausted. Use batteries of the same type, for mixed types might cause leakage. Replace worn batteries with a complete new set. If used with old batteries, the life of new ones might be shortened. Battery life is shortened more by transmitting than by receiving, since several times more current is drawn in transmit. To prolong battery life, therefore, practice as follows:

* Try to minimize the transmit period.
* Reduce volume during reception.
* Be sure to cut off power source when set is not used.

More working hours are available if high-performance batteries are employed.

When using Nickel-Cadmium battery pack IC-BP3:
The IC-BP3 is a rechargeable Nickel-Cadmium battery pack, and it can be slipped onto or off of the set very easily. It has a connector for a charger charge-current control circuit, reverse polarity protection circuit and charge indicator LED in its own pack. You can use the supplied BC-25U/E wall charger or similar simple wall charger, or a car battery by using optional cable IC-CP1 for recharging. Before use, the battery pack should be charged about 15 hours, because the battery may have discharged. (Refer "How to charge" on page 7.)

After charging is completed, the batteries can be used in the same manner as dry cells. However, the voltage of Nickel-Cadmium batteries drops rapidly just before they are exhausted, so when the Transmit Indicator LED of the transceiver goes out, be sure to immediately stop using it, and charge the batteries again.

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