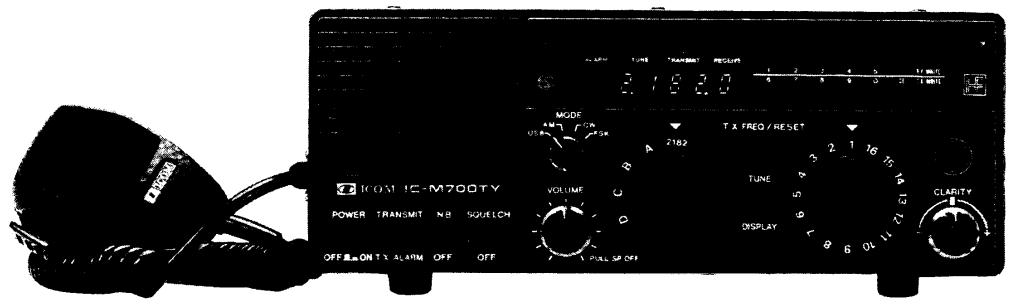


IC-M700TY

HF TRANSCEIVER

INSTRUCTION MANUAL



FOREWORD

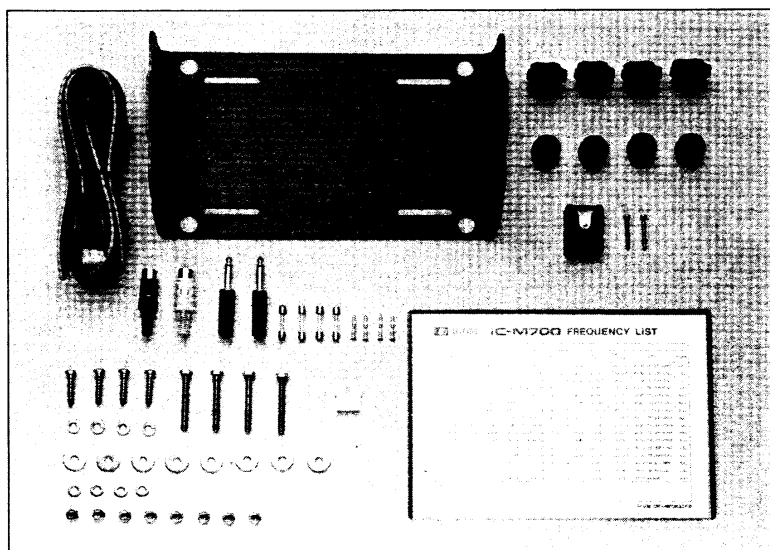
Congratulations for purchasing the ICOM IC-M700TY HF Transceiver.

ICOM uses the most advanced, state-of-the-art engineering concepts coupled with the latest technology when designing its communications products. Please read this instruction manual thoroughly prior to operating your new transceiver to become familiar with each of the features offered in the IC-M700TY.

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IC-M700TY ACCESSORIES SUPPLIED

1. Power cable	1
2. External speaker plug	1
3. Key plug	1
4. Fuses (30A)	2
5. Fuses (5A)	2
6. Antenna tuner connector with 4 connector pins.	1
7. Mounting bracket	1
8. Bracket knobs	4
9. Flat washers (M5)	4
10. Bracket screws (self-tapping)	4
11. Bracket screws (hex head)	4
12. Flat washers (M6)	8
13. Spring washers (M6)	4
14. Bracket nuts (M6)	8
15. Microphone hanger	1
16. Microphone hanger screws	2
17. Frequency chart	1
18. Rubber feet	4
19. Accessory jack DIN connectors	2

SECTION 1 SPECIFICATIONS

GENERAL

Frequency coverage	: Receive : 1.6MHz ~ 23.9999MHz Transmit : 2.0MHz ~ 2.9999MHz 4.0MHz ~ 4.9999MHz 6.0MHz ~ 6.9999MHz 8.0MHz ~ 8.9999MHz 12.0MHz ~ 13.9999MHz 16.0MHz ~ 17.9999MHz 22.0MHz ~ 22.9999MHz
Frequency control	: CPU based 100Hz step digital PLL synthesizer. Independent transmit/receive frequency programmable on any band.
Frequency readout	: 6 digit 100Hz readout
Frequency stability	: Less than ± 10 Hz in the range $-30^{\circ}\text{C} \sim +60^{\circ}\text{C}$
Memory channel capacity	: 64 simplex or semi-duplex channels (owner programmable)
Power supply requirements	: DC 13.6V $\pm 15\%$ (negative ground) Current drain 30A max. AC power supply available for AC operation.
Current Drain	: Receiving Standby : 1.2A Max. audio output : 1.6A Transmitting Maximum : 30A
Antenna impedance	: 50 ohms unbalanced
Weight	: 7.3kg (16.1 lb)
Dimensions	: 287(297)mm(W) x 112(124)mm(H) x 356(376)mm(D) Bracketed values include projections.

TRANSMITTER

Emission modes	: J3E (A3J) USB, LSB H3E (A3H) AM A1A (A1) CW F1A (F1) FSK
RF output power	: 150W
Spurious emissions	: 65dB below peak power output.
Carrier suppression	: 50dB
Unwanted sideband	: -55 dB with 1000Hz AF input.
Microphone	: 600 ohm, noise cancelling microphone with push-to-talk switch.

RECEIVER

Receive system	: Double conversion superheterodyne
Receive modes	: J3E (A3J) USB, LSB A3E (A3) AM A1A (A1) CW F1A (F1) FSK
Intermediate frequencies	: SSB, CW, FSK 1st 2nd AM 70.4515MHz 9011.5kHz 70.4500MHz 9010.0kHz
Sensitivity	: SSB, CW, FSK 0.5 μ V for 12dB SINAD AM 2.0 μ V for 12dB SINAD
Selectivity	: SSB 2.3kHz/ -6 dB, 4.2kHz/ -60 dB AM 6.0kHz/ -6 dB, 20.0kHz/ -60 dB CW, FSK* 0.5kHz/ -6 dB, 1.6kHz/ -60 dB
Spurious and image rejection	: 70dB
Clarity control range	: ± 150 Hz
Audio output	: 5W into 4 ohms with 10% distortion
AF output impedance	: 2 ~ 8 ohms

*Bandwidth for 170Hz shift FSK operation. Internal switches available for 425Hz and 850Hz shift FSK operation.
See SECTION 3 - 11 FSK SETTINGS.

SECTION 2 FEATURES

■ 64 MEMORY CHANNELS

The IC-M700TY can be operated simplex or semi-duplex on all channels. And, independent transmit and receive frequency programming in 100Hz steps provides complete flexibility.

Memories are fully programmable from the front panel keyboard, therefore programming can be done even in the field.

■ STABLE OPERATION

A quartz-locked, rock-solid, synthesized tuning system provides superb stability without ever having to purchase expensive crystals or PROMs. Frequency drift is minimal over the broad temperature range of -30°C to $+60^{\circ}\text{C}$ (-22°F to 140°F).

■ ALL MODES

Communication is possible using either SSB, AM, CW or FSK.

When operating CW, both full break-in and manual transmit/receive switching are available. SITOR operation is also possible due to the transceiver's rapid transmit/receive changeover time. Also, the IC-M700TY FSK mode can be set for 170Hz, 425Hz or 850Hz shift by means of internal switches.

■ FULL COVERAGE

The IC-M700TY features access to all HF channels in the range of 1.6MHz through 23.9999MHz as well as general coverage reception of UPI/AP news broadcasts, weather reports, WWV/CHU time signals, FAX weather charts and foreign broadcasts.

■ 100% DUTY CYCLE

A large, brushless DC fan provides ample cooling to allow the IC-M700TY to operate continuously with full output power.

■ EMERGENCY ALARM CIRCUIT

The IC-M700TY includes as standard equipment a circuit for transmitting the internationally recognized safety signal on 2182kHz during times of distress.

■ EXTRA FEATURES

Additional features include a wide-range clarifier, voice activated squelch (SSB, AM), carrier activated squelch (CW, FSK), noise blanker effective for both narrow and wide pulse noise, digital frequency readout, noise-cancelling microphone PLUS a heavy-duty mounting bracket. The IC-M700TY is also compatible with most existing antenna tuners by using the internal polarity switch and tuning power adjustment.

■ CONVENIENT OPTIONS

- AT-120 Automatic Antenna Tuner for rapid, easy matching of your transceiver to antenna for the most efficient operating conditions.

- Telephone-style handset for conversations requiring extra privacy.



SECTION 3 INSTALLATION

3-1 UNPACKING

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 reshipping becomes necessary, they will be handy. Accessory cables, plugs, etc. are packed with the transceiver. Make sure you have not overlooked anything.

See the photo and description on the TABLE OF CONTENTS page at the front of this manual for accessory equipment included with the IC-M700TY.

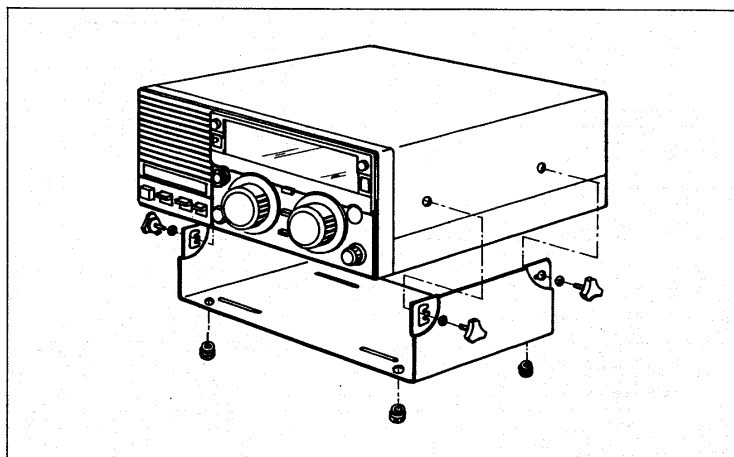
3-2 PLANNING

Select a location for your transceiver which allows free access to the front controls, good air circulation and rear clearance for access to the cable connectors.

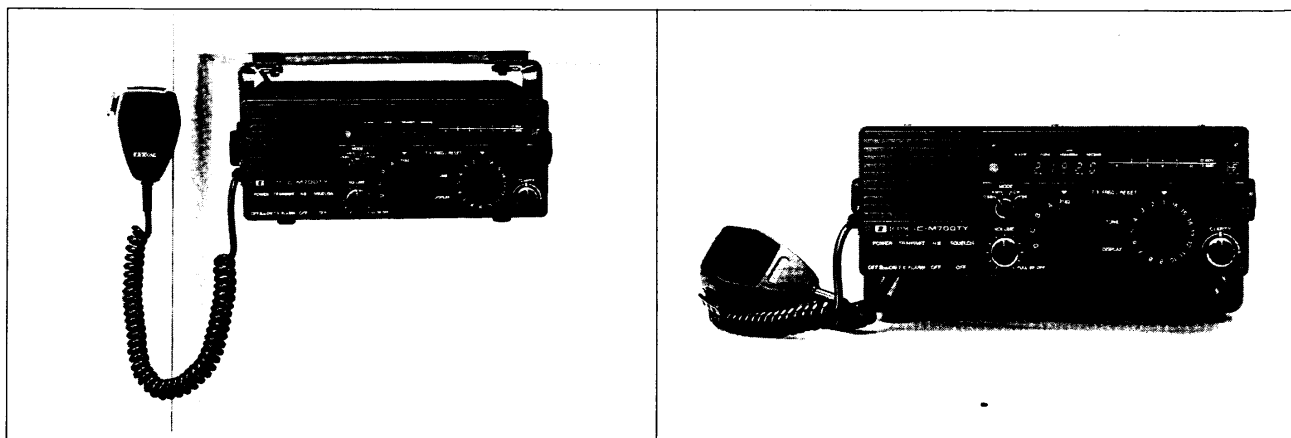
Avoid long cable runs to the antenna and power source. At the same time, keep power and antenna cables as far as possible from electrical sources, i.e. generators, alternators, electrical pumps, etc. Do not run the cables near magnetic compasses or electronic instruments.

3-3 MOUNTING THE TRANSCEIVER

Your IC-M700TY is supplied with a universal bracket which allows "over" or "under" mounting. Install the bracket to provide sufficient support for the transceiver.



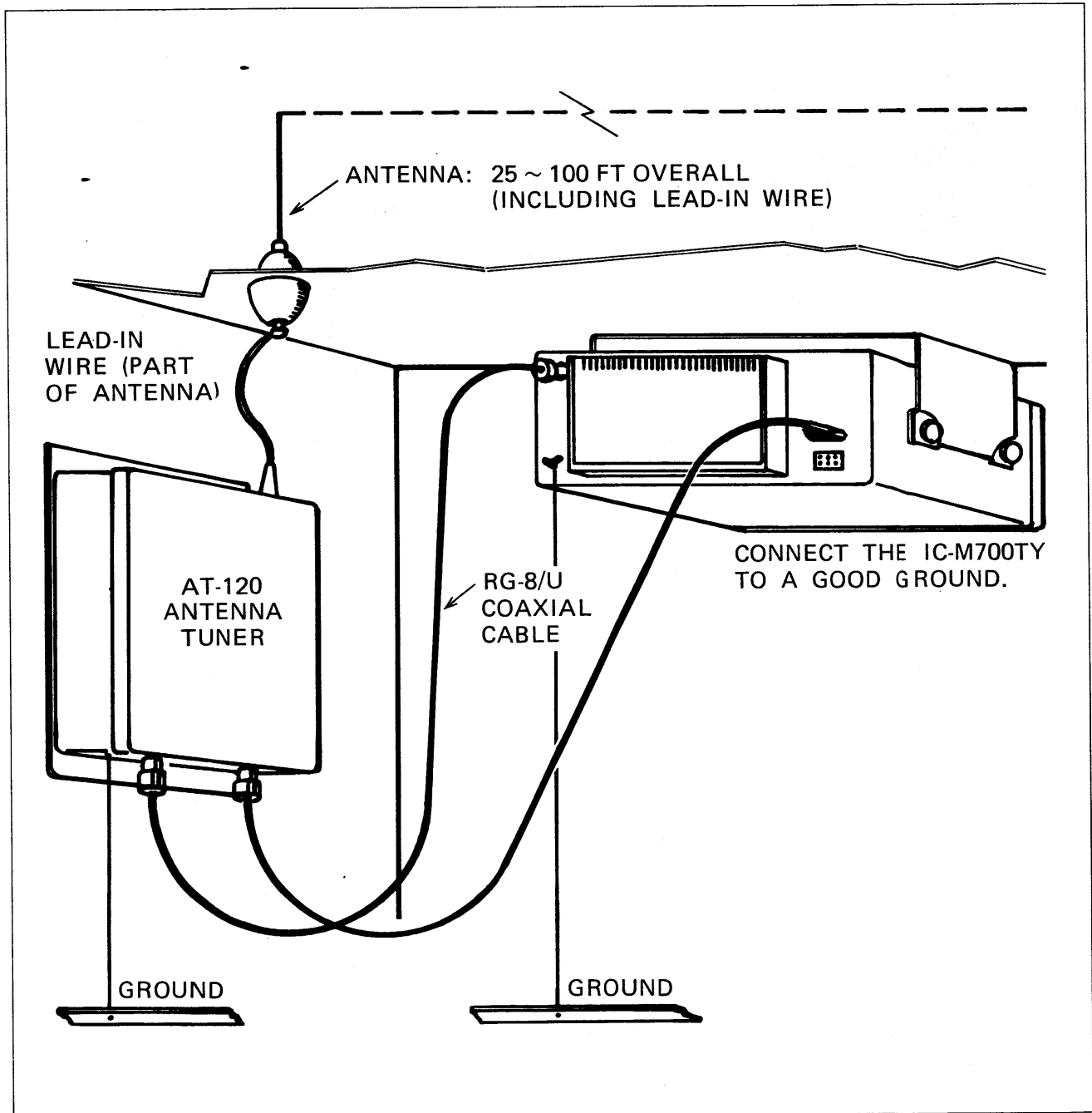
The mounting hardware supplied satisfies most installation requirements. If extra hardware is obtained, use only high quality material. Avoid drilling new mounting holes in the bracket as the transceiver balance may be affected.



3-4 TYPICAL INSTALLATION

The diagram shows a typical installation. Any radio system operating with a whip antenna or single wire antenna must have an adequate ground connection otherwise the overall efficiency of the radio installation is degraded, especially at lower frequencies.

Using an antenna tuner in conjunction with a whip or long wire antenna provides an efficient installation suitable for all HF bands. The transceiver was designed to easily interface with most existing antenna tuners.



3-5 PRIMARY POWER

CAUTION: When using a power cable other than the cable supplied, always install a FUSE as close to the power source as possible.

If possible, do not use a power cable longer than 10 feet. For cable runs between 10 and 20 feet, use larger diameter #6 cable. Route the cable directly to the power source. Connect the RED lead to the positive terminal and the BLACK lead to the negative terminal of the DC power source. Solder all connections and ensure they are clean, tight and moisture-free.

Be sure to leave a service margin in the power cable for easy removal of the transceiver without straining the cable.



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