

IC-475A/E

430MHz ALL MODE TRANSCEIVER

INSTRUCTION MANUAL

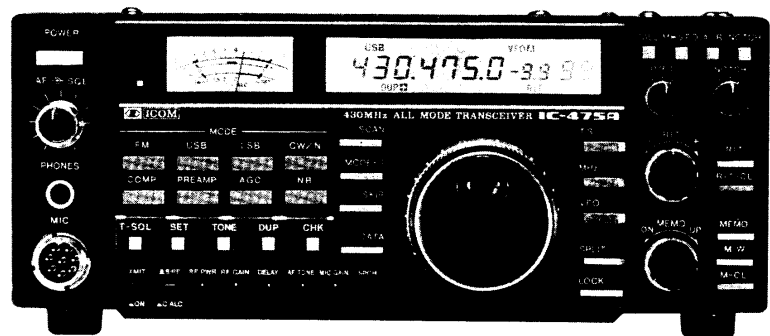


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FOREWORD

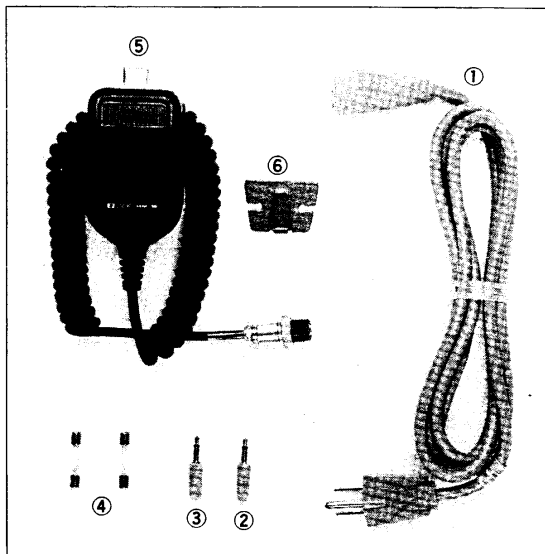
Thank you very much for choosing this ICOM product.

The most sophisticated, 430MHz all mode transceiver on the market today, the **IC-475A/E** is the result of both advanced ICOM engineering and state-of-art computer interface technology from ICOM such as the new CI-V System: a feature that allows for easy and convenient computer control of your **IC-475A/E**. In addition, the **IC-475A/E** is equipped with ICOM's pioneering new DDS (Direct Digital Synthesizer) System, an advanced, computer-developed innovation that eliminates the need for a PLL circuit in the **IC-475A/E**.

This recent engineering development is further evidence of ICOM's continuing commitment to meeting the increasingly sophisticated hi-tech needs of today's Amateur Radio operators by providing a product that operators require.

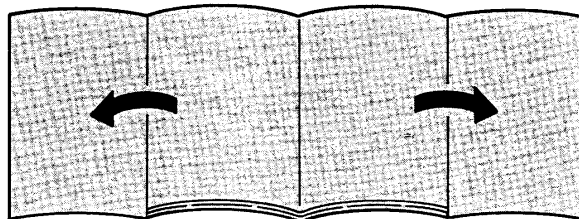
To fully understand and appreciate the uses of your new **IC-475A/E**, please study this instruction manual carefully prior to operation. Feel free to contact any authorized ICOM Dealer or Service Center if you have questions regarding the operation or capabilities of the **IC-475A/E**.

UNPACKING



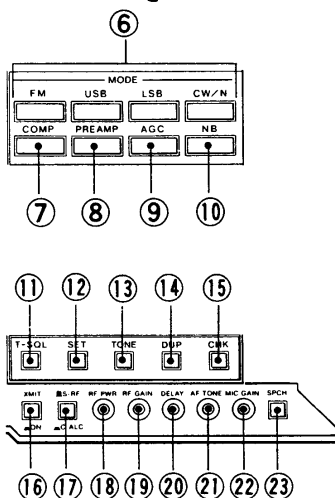
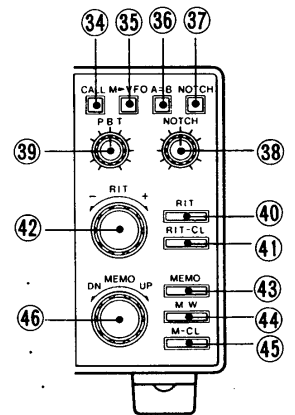
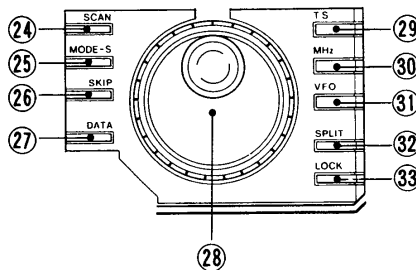
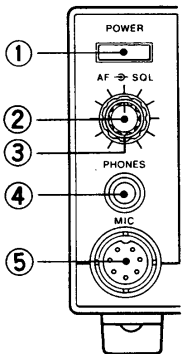
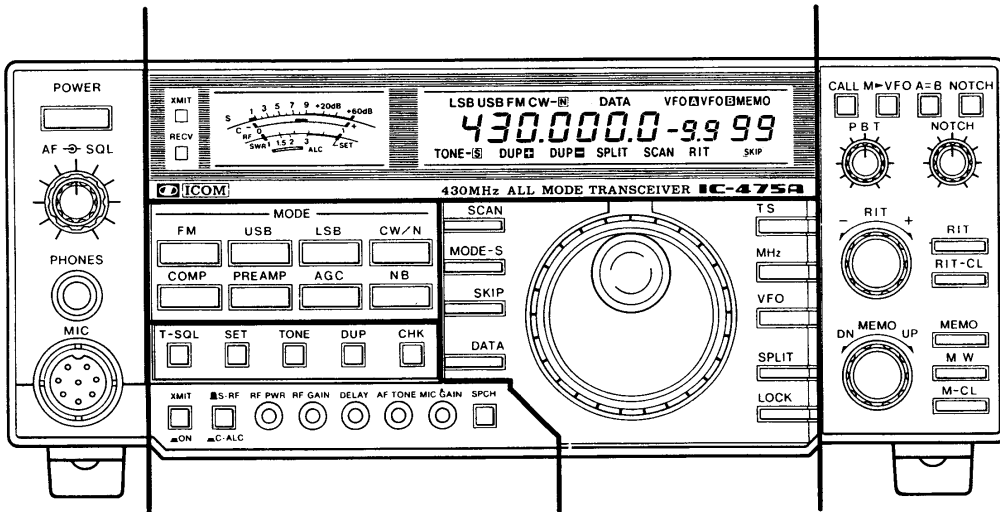
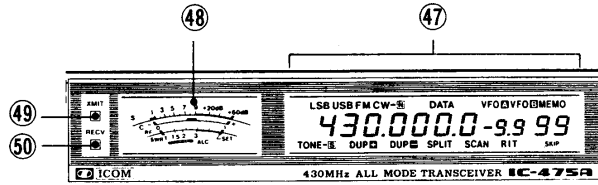
Accessories	Qty.
1. AC power Cable	1
2. External Speaker Plug	1
3. Key Plug	1
4. Spare Fuses	2
5. Microphone	1
6. Microphone Hanger	1

- Please open the front and back covers of this instruction manual in the following way for reference assistance when using the IC-475A/E:



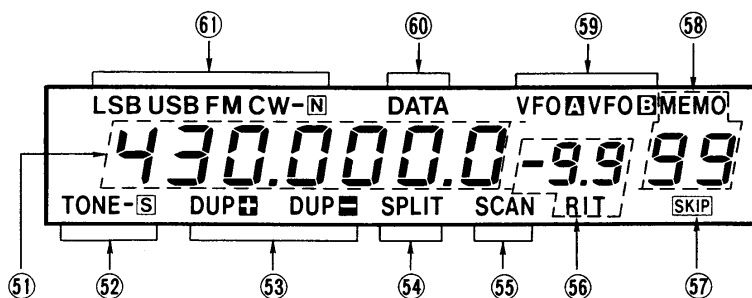
FRONT PANEL

See the back page for the FREQUENCY DISPLAY.



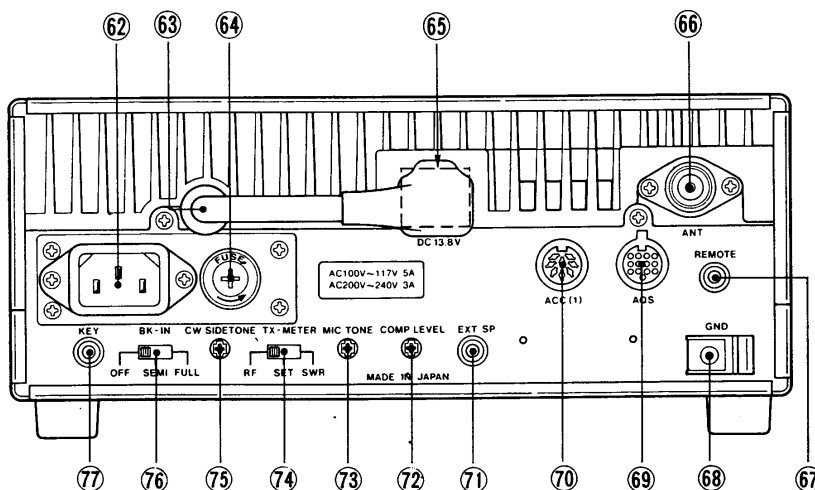
- ① POWER SWITCH
- ② AF GAIN CONTROL
- ③ SQUELCH CONTROL
- ④ PHONES JACK
- ⑤ MIC CONNECTOR
- ⑥ MODE SELECTOR SWITCHES
- ⑦ SPEECH COMPRESSOR SWITCH
- ⑧ PREAMP SWITCH
- ⑨ AGC SWITCH
- ⑩ NOISE BLANKER SWITCH
- ⑪ TONE SQUELCH SWITCH
- ⑫ TONE SET SWITCH
- ⑬ SUBAUDIBLE TONE FREQUENCY/TONE CALL (IC-475E) SWITCH
- ⑭ DUPLEX SWITCH
- ⑮ DUPLEX CHECK SWITCH
- ⑯ TRANSMIT/RECEIVE SWITCH
- ⑰ METER SWITCH
- ⑱ RF POWER CONTROL
- ⑲ RF GAIN CONTROL
- ⑳ CW DELAY CONTROL
- ㉑ AF TONE CONTROL
- ㉒ MIC GAIN CONTROL
- ㉓ SPEECH SWITCH
- ㉔ SCAN START/STOP SWITCH
- ㉕ SELECTED MODE MEMORY SCAN SWITCH
- ⑳ SKIP SCAN SWITCH
- ㉖ DATA SWITCH
- ㉗ TUNING CONTROL
- ㉘ TUNING STEP SELECTOR SWITCH
- ㉙ MHz TUNING STEP SWITCH
- ㉚ VFO SWITCH
- ㉛ SPLIT SWITCH
- ㉜ DIAL LOCK SWITCH
- ㉝ CALL CHANNEL SWITCH
- ㉞ FREQUENCY TRANSFER SWITCH
- ㉟ VFO EQUALIZING SWITCH
- ㊱ NOTCH FILTER SWITCH
- ㊲ NOTCH FILTER CONTROL
- ㊳ PASSBAND TUNING CONTROL
- ㊴ RIT SWITCH
- ㊵ RIT CLEAR SWITCH
- ㊶ INCREMENTAL TUNING CONTROL
- ㊷ MEMORY READ SWITCH
- ㊸ MEMORY WRITE SWITCH
- ㊹ MEMORY CLEAR SWITCH
- ㊺ MEMORY CHANNEL SELECTOR CONTROL
- ㊻ FREQUENCY DISPLAY
- ㊼ METER
- ㊽ TRANSMIT INDICATOR
- ㊾ RECEIVE INDICATOR

FREQUENCY DISPLAY



- ⑤① FREQUENCY READOUT
- ⑤② TONE SQUELCH INDICATOR
- ⑤③ DUPLEX INDICATOR
- ⑤④ SPLIT INDICATOR
- ⑤⑤ SCAN INDICATOR
- ⑤⑥ RIT/SHIFT FREQUENCY INDICATOR
- ⑤⑦ SKIP CHANNEL INDICATOR
- ⑤⑧ MEMORY MODE/MEMORY CHANNEL INDICATOR
- ⑤⑨ VFO INDICATOR
- ⑥① DATA INDICATOR
- ⑥① MODE INDICATOR

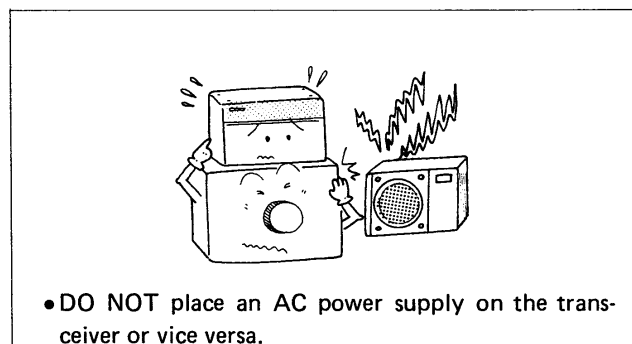
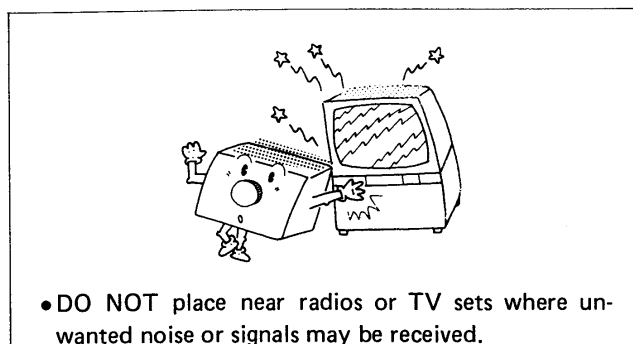
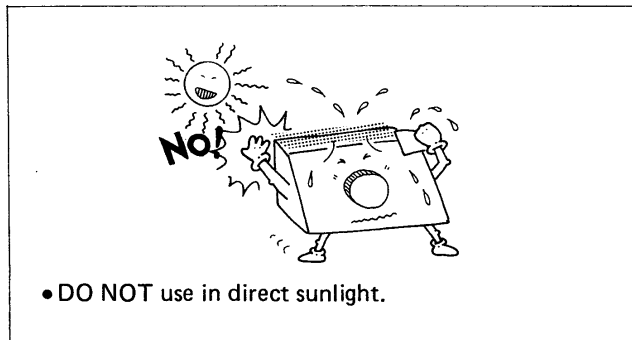
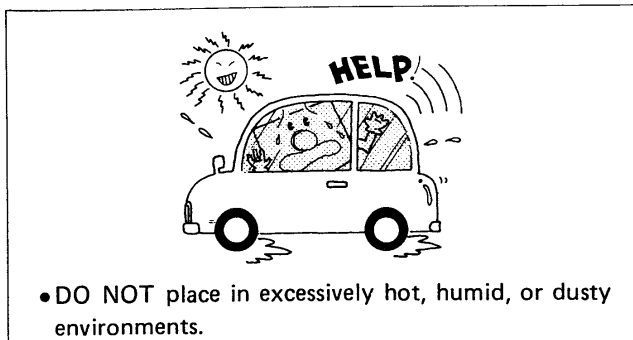
REAR PANEL



- ⑥② AC POWER SOCKET
- ⑥③ DC OUTPUT POWER CABLE
- ⑥④ FUSE HOLDER
- ⑥⑤ DC POWER SOCKET
- ⑥⑥ ANTENNA CONNECTOR
- ⑥⑦ REMOTE CONTROL JACK
- ⑥⑧ GROUND TERMINAL
- ⑥⑨ AQS SOCKET
- ⑦① ACC (1) SOCKET
- ⑦① EXTERNAL SPEAKER JACK
- ⑦② SPEECH COMPRESSOR LEVEL CONTROL
- ⑦③ MIC TONE CONTROL
- ⑦④ TX-METER SWITCH
- ⑦⑤ CW SIDETONE LEVEL CONTROL
- ⑦⑥ CW BREAK-IN SWITCH
- ⑦⑦ KEY JACK

SECTION 1 PRECAUTIONS AND PREPARATIONS

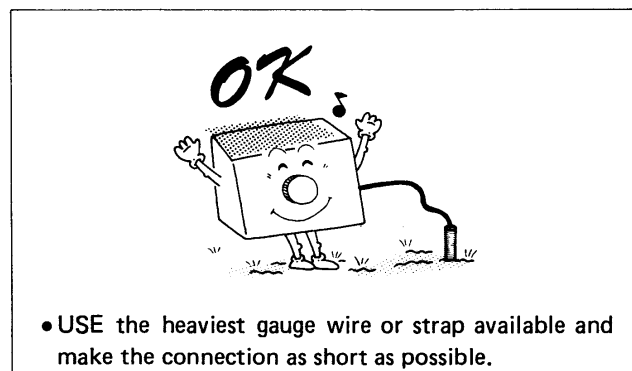
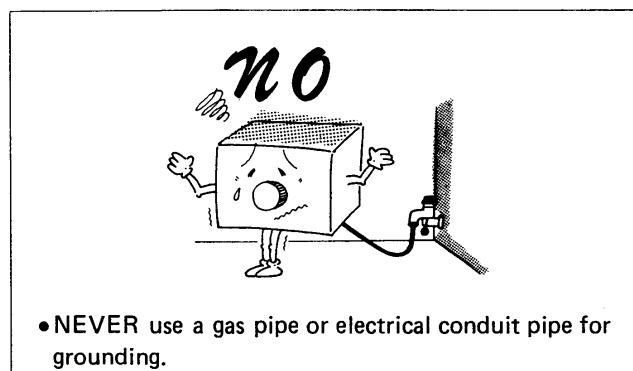
■ INSTALLATION LOCATIONS



■ GROUNDING

To prevent electrical shocks, TVI, BCI and other problems, be sure to ground the transceiver through the **GROUND TERMINAL**. For best results, use the heaviest gauge wire or strap available and make the connection as short as possible.

ONLY use a city water pipe as a good earth point if the pipe is well grounded and made of metal. **NEVER** use a gas pipe or electrical conduit pipe for grounding.



■ POWER SUPPLY

WARNING: Voltages greater than 15V DC may damage this transceiver. Check the source voltage before connecting the power cable when using this transceiver with non-ICOM AC power supplies.

■ ICOM'S NEWLY DEVELOPED STATE-OF-THE-ART FREQUENCY SYNTHESIZER

- 5msec lockup time.

ICOM proudly announces its recent technological breakthrough in developing a new frequency synthesizer system: the ICOM DDS (Direct Digital Synthesizer) unit. Operating in just 5 milliseconds, this new system provides one of the fastest transceiver lockup times available on the market today, and is ideal for use with the popular PACKET and AMTOR communications systems. ICOM engineering has achieved this through the design of a sophisticated PLL UNIT which mixes, in split second time, DDS generated source frequencies in an advanced double phase-locked loop system.

■ NEWLY DEVELOPED ICOM CPU INSTALLED

- Built-in 99-channel large memory capacity.

Ninety-nine programmable memories are provided in the IC-475A/E to store frequency, mode, subaudible tone frequency, subaudible tone function ON/OFF, duplex direction, and offset frequency information. These memories are backed up by a lithium backup battery for up to five years.

- Advanced remote control system.

Full communications using a personal computer equipped with an RS-232C jack are possible by using the serial port mounted on the rear panel of the IC-475A/E. The computer controls frequency, mode, VFO A/B selection, and memories when an appropriate interface is used. The serial port uses a standard 1200 baud data rate.

- Easy-to-read display.

A LCD (Liquid Crystal Display) in the IC-475A/E uses a soft orange illumination for easy visibility when operating on bright days. This display indicates the VFO in use, operating mode, memory channel, split mode, scan mode and other information.

- Scanning versatility.

The IC-475A/E incorporates a total of four separate scanning functions for easy access to a wide range of frequencies.

- **MEMORY SCAN** repeatedly scans the entire 99-channel memory in sequence.
- **PROGRAMMED SCAN** offers detailed coverage of a specific frequency range through repeated scanning.
- **SELECTED MODE MEMORY SCAN** automatically monitors all memories which contain programmed frequencies with a similar mode.
- **SKIP SCAN** allows you to continuously scan your favorite programmed memory channels.

■ OUTSTANDING RECEIVER PERFORMANCE

- PBT and NOTCH control.

ICOM's Passband Tuning and Notch Filter systems have been incorporated in the past as standard high class features in ICOM HF transceivers, but now these convenient features can also be enjoyed in a UHF transceiver: the IC-475A/E. Passband Tuning allows continuous center frequency adjustment of the IF passband, while the IF Notch Filter provides clear operating reception even in the presence of strong interference.

- High sensitivity, high dynamic range.

■ COMPLETE UHF TRANSCEIVER

- Compact size.

- PACKET, AMTOR operations.

- Full break-in function.

■ OPTIONS AVAILABLE

IC-AG1 PREAMPLIFIER UNIT

UT-36 VOICE SYNTHESIZER UNIT

UT-34 TONE SQUELCH UNIT

CT-16 SATELLITE INTERFACE UNIT

CT-15 *AQS ADAPTER

FL-83 CW NARROW FILTER

CR-64 HIGH-STABILITY CRYSTAL UNIT

The IC-475A/E RF amplifier uses a low noise figure, high gain, disk-type GaAs-FET (3SK121) for UHF applications. Also, high sensitivity and a very high dynamic range are ensured since it uses a balanced-type mixer in the mixer stage. This mixer incorporates a UHF applicable transistor (2SC2026) with 2GHz frequency characteristics.

The IC-475A/E's compact size - only 241mm(9.5'')(W) x 95mm (3.7'')(H) x 239mm(9.4'')(D) - simplifies installation in most mobile and portable situations: in automobiles, airplanes, boats or even in suitcases.

The rear panel of the IC-475A/E has an easy-to-access terminal socket for AFSK (Audio Frequency Shift Keying) operation. Use the [DATA] SWITCH to rapidly switch between receive and transmit operations. This convenient function is made possible in the IC-475A/E by ICOM's exclusive new DDS (Direct Digital Synthesizer) System.

For CW operators, both semi break-in and full break-in are provided for smooth, fast, and natural CW conversations.

Mast-mounted-type 430MHz preamplifier.

Announces the displayed frequency.

Provides you with interference-free communications.

Satellite communication interface unit with IC-275A/E.

See the functions listed below.

±250Hz at -6dB point.

0.5ppm (-30°C ~ +60°C).

* **AQS** refers to "Amateur Quinmatic System" which includes the five functions listed below. Digital communication is possible with the IC-475A/E by using the CT-15 AQS ADAPTER.

(1) EMPTY CHANNEL ACCESSING:

The transceiver searches an empty channel in the band, moving to the channel automatically.

(2) CALL SIGN SQUELCH OPERATION:

The squelch opens only when a received station's call sign is matched with the same programmed call sign.

(3) DIGITAL CODE SQUELCH OPERATION:

The squelch opens only when a received five digit code is matched with the same programmed code.

(4) MESSAGE TRANSFERRING OPERATION:

14 characters in a message can be transferred for visual communications. The messages are displayed by an optional message processor.

(5) DIGITAL CODE STORAGE FUNCTION:

Up to eight kinds of digital codes for access can be stored.



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A-0874
Printed in Japan