IC-502A

6 METER SSB PORTABLE TRANSCEIVER

INSTRUCTION MANUAL

ICOM

TABLE OF CONTENTS

SECTION I SPECIFICATIONS

General:

Number of Semi-conductors	Transistors 19 FET 8 IC 7 Diodes 36
Frequency Coverage	50MHz ~ 51MHz
Frequency Stability	Less than ±200Hz per hour after switch on 5min at +25°C
Antenna Impedance	50 ohms unbalanced
Power Supply Requirements	DC 13.8V ± 15% Negative Ground 800mA max
Current Drain	Transmitting: A3J Approx. 550mA A1 Approx. 750mA Receiving: At max audio approx. 250mA With no signal approx. 80mA Dial Light: Approx. 40mA
Dimensions	183mm(H) x 61mm (W) x 162mm (D)
Net Weight	2.1kg including batteries

Transmitter:

Emission Mode	A3J (USB) and A1
RF Power Output	A3J 3W (PEP) A1 3W
Carrier Suppression	More than 40dB below peak power
Unwanted Sideband Suppression	More than 40dB down at 1000Hz AF input
Spurious Radiation	More than 60dB below peak power
Microphone	Impedance: 600 ohms Input level: 10mV typical Dynamic or optional Electret condenser microphone
CW Monitor	Built-in. Audio level adjustable by VOL knob.

Receiver:

Receiving System	Single Conversion Superheterodyne
Intermediate Frequency	13.9985MHz
Receiving Mode	A3J (USB) and A1
Spurious Response Rejection Ratio	More than 60dB
Sensitivity	Less than 0.5μV for 10dB S+N/N
Selectivity	±1.2KHz at –6dB ±2.4KHz at –60dB
Audio Output	More than 1W
Audio Output Impedance	8 ohms

Specifications subject to change without notice.

SECTION II DESCRIPTION

Congratulations on the purchase of the IC-502A portable 6 meter SSB transceiver. The IC-502A was designed to be operable anywhere like most portables, but we also included features found in most base sets like a very effective noise blanker, RIT, S&RF meter, CW monitor, and a full 3 watts output on USB. A highly stable VFO allows operation between 50 MHz and 51 MHz.

The aluminum die cast frame provides a very strong yet light housing for the 2 circuit boards, and the aluminum sides snap off easily if service is ever necessary or to change batteries.

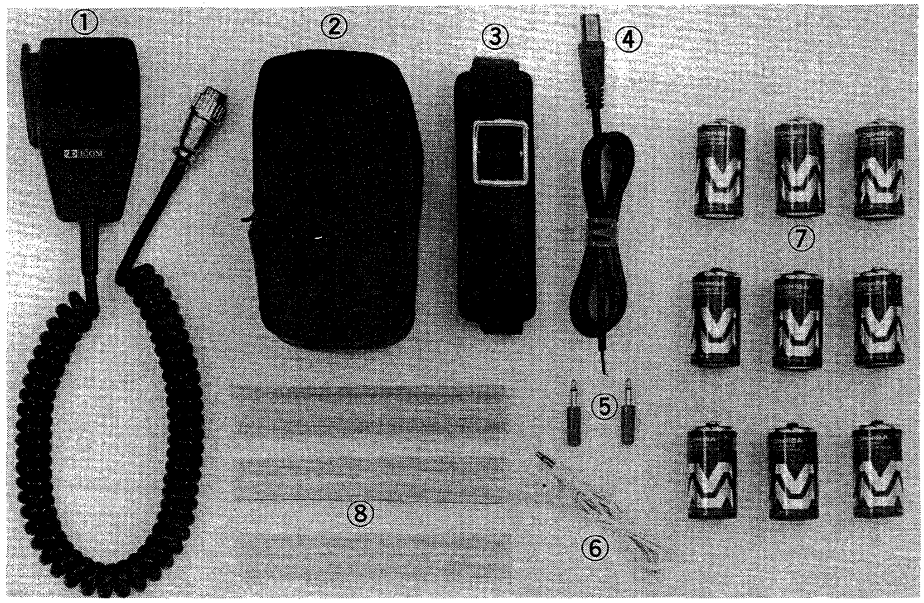
The IC-502A operates on 9 inexpensive C cell batteries, or an external 13.8V DC source. The IC-502A will also operate on nicad batteries, contained in the BC-20/BC-15 nicad battery/charger kit. For AC operation, we recommend the IC-3PS which not only provides power for the IC-502A, but also doubles as a stand and holder for the IC-50L 10 watt linear amplifier.

You can use the built-in whip antenna for portable use, or an external antenna can be connected to the antenna connector on the back of the IC-502A.

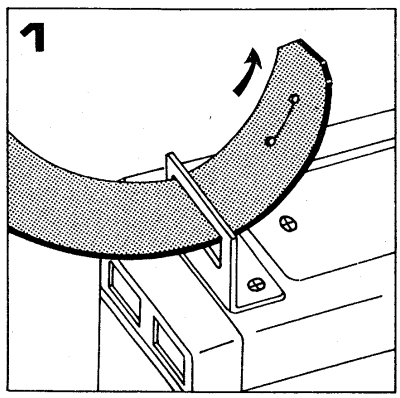
We are sure that you will have years of lasting enjoyment from your IC-502A, manufactured by the leader in communication equipment: ICOM Incorporated.

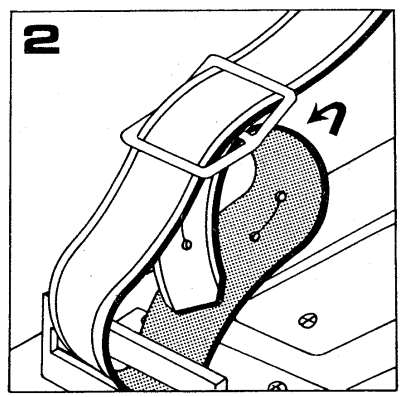
SECTION III ACCESSORIES

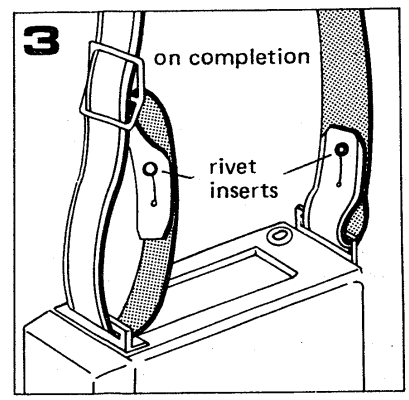
Various accessories are packed with your transceiver. Be sure not to overlook anything. Also it's a good idea to keep packing cartons in case of moving or if return for service is necessary.

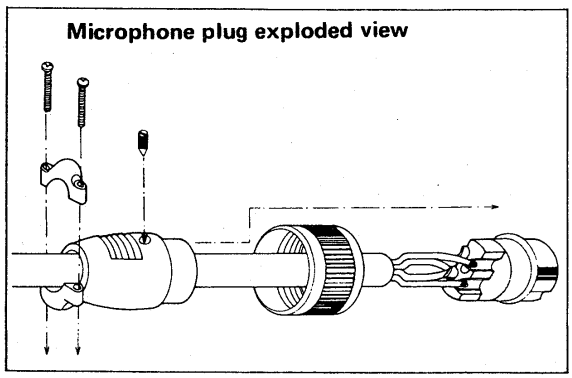


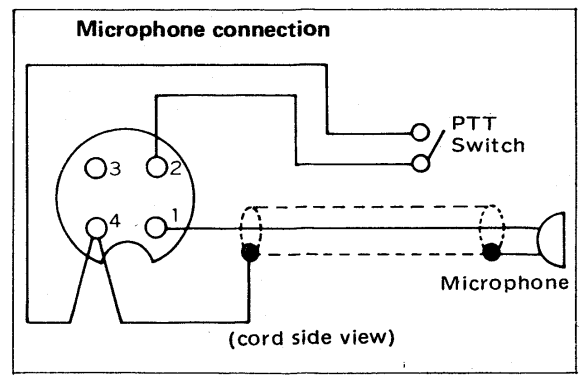
1.	Dynamic Microphone	1	5.	Ext. Speaker Plug, Key Plug	2
2.	Microphone Case	1	6.	Earphone	1
3.	Shoulder Strap	1	7.	Dry Cells Type "C"	9
4.	Power Cord	1	8.	Battery Tubes	3











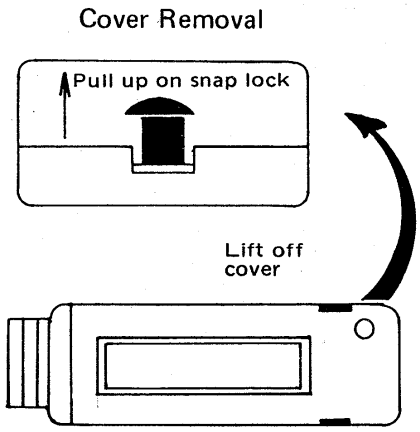
SECTION IV PRE-OPERATION

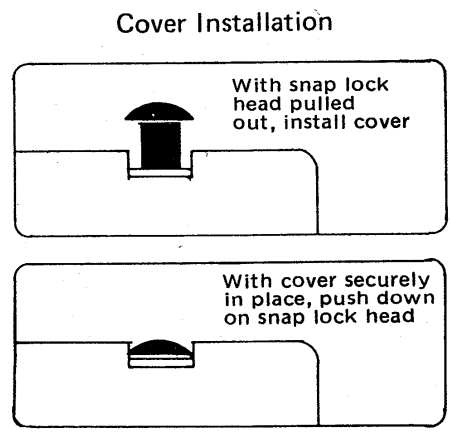
BATTERY INSTALLATION

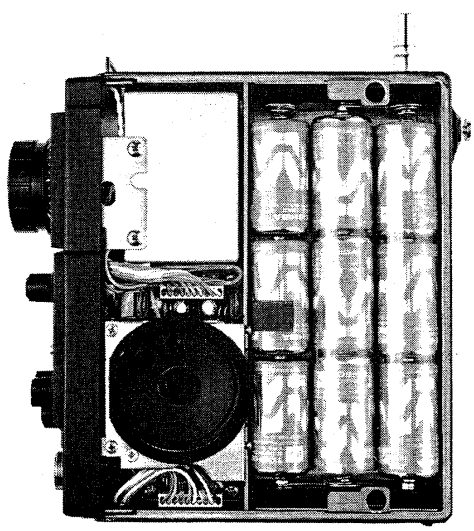
Dry Batteries:

Place the mode switch in the OFF position. Remove the side that covers the battery case and speaker. Install the batteries into the battery tubes (three in each) taking care to observe the same direction (polarity).

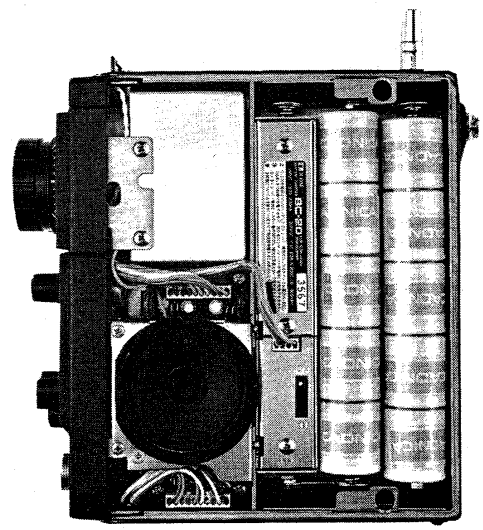
Carefully install the battery tubes in the manner shown in photograph 1, placing the last three batteries in the inner column. Again take care to observe polarity, and place the battery tubes on top of the ribbon so when the batteries need to be removed, a simple pull on the ribbon will make removal easier. With the batteries properly in place, carefully replace the side cover.







Photograph 1
Dry Batteries Installation



Photograph 2
Nickel-Cadmium Batteries and Charger (BC-20) Installation

Nickel-Cadmium Batteries and Charger: BC-20

First, install the charger in the battery case (the speaker side) of the transceiver housing as shown in photograph 2. The polarity of the switch end of the charger must be positive and on the case side, negative. Accordingly, the negative polarity must be connected to the spring side of the battery case.

Next, install five nickel-cadmium batteries in the battery tubes in the same direction. Make certain the (–) minus side is next to the spring. After installation of the charger and batteries in the case, connect the connector from the transceiver housing to the socket of the charger. Make sure the switch of the charger is ON, then install the side cover as before.

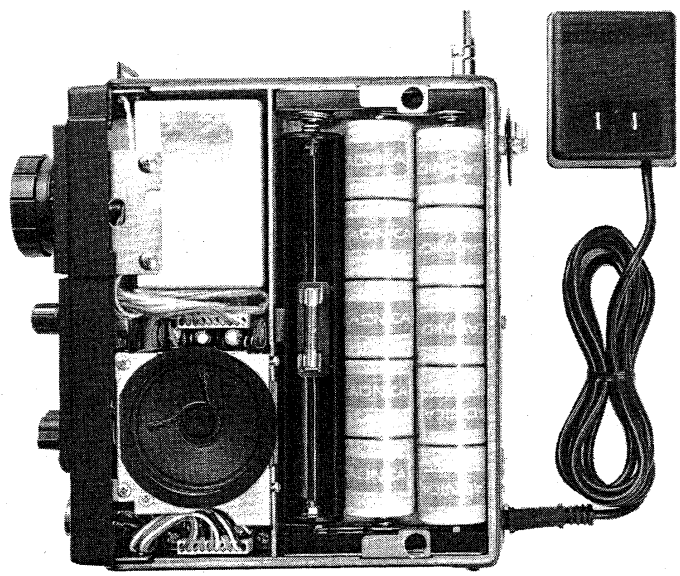
AC BATTERY CHARGER: BC-15

The BC-15 consists of an 117/220 Volt AC charger, 10 900mAh nickel-cadmium batteries, and a fuse box.

To install the BC-15 in the IC-502A, first put the Fuse Box into position, and then install the nickel-cadmium batteries in accordance with Photograph 3. After installation is completed, connect the output plug of the AC Adaptor to the External Power Supply Jack on the back of the IC-502A. For recharging, refer to the manual instructions for the AC adaptor.

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 Power Indicator LED of the transceiver goes out, be sure to immediately stop using it, and charge the batteries again.

For use of the other sections, please refer to the charger instruction manual.



Photograph 3
Nickel-Cadmium Batteries
and Charger (BC-15) Installation

WHEN TO REPLACE BATTERRIES

When the Power Indicator LED does not light up with the power switch ON, or when it lights up during reception and goes out 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, threfore, 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.

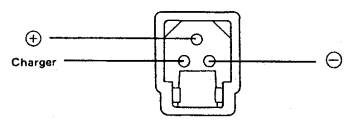
More working hours are available if high-performance batteries such as Alkaline type are used.

EXTERNAL POWER PLUG CONNECTION

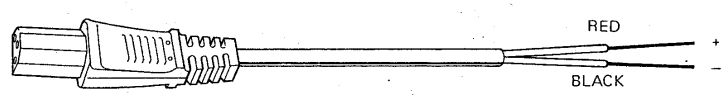
External Power Source

For use at home or in the car, use an external power source which assures you of stable communication without concern about battery consumption.

1. Use either a regulated power supply or car battery of 13.8V DC and of over 1A current capability. (Though this transceiver may work at 11 to 15V DC, use it preferably at the rated voltage.)
2. Correctly connect the external supply as shown in the figure. If polarity is reversed, source power is cut off by the protection circuit and the unit will not operate.
3. When the transceiver is kept out of use for a prolonged period, the unit is operated for extended periods by external power only, or when the batteries are exhausted, etc., remove the batteries to protect the unit from possible damage by battery leakage.



External Power Supply Jack Connection



Power Cord Connection

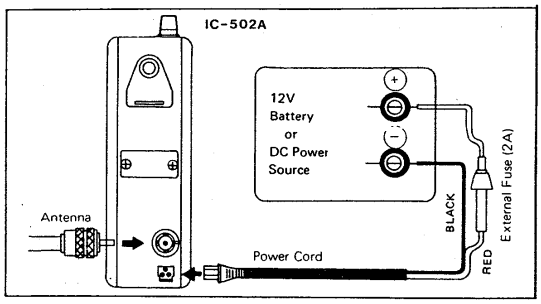
FOR OUTDOOR USE

1. Insert the supplied batteries. (Refer to "BATTERY INSTALLATION")
2. Attach the supplied shoulder strap through the fixture of the body (as shown in the drawings on page 3).
3. Fully extend the whip antenna for operation. Keep the collapsible antenna depressed when the set is not in use so that it will not be damaged.

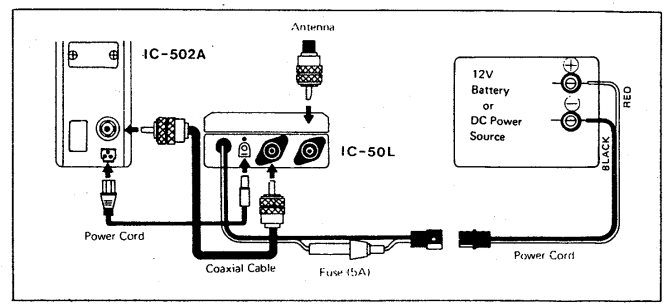
FOR USE IN THE CAR

1. Avoid using the unit near the outlet of heaters, air-conditioners, etc.
2. Install the unit in a convenient place to avoid disrupting safe driving.
3. For the best power source, connect to the car battery through a fuse (1A-2A).
4. Firmly ground to the car body a mobile antenna (e.g. whip antenna), this is required.

Cable Connection



Connection using IC-50L



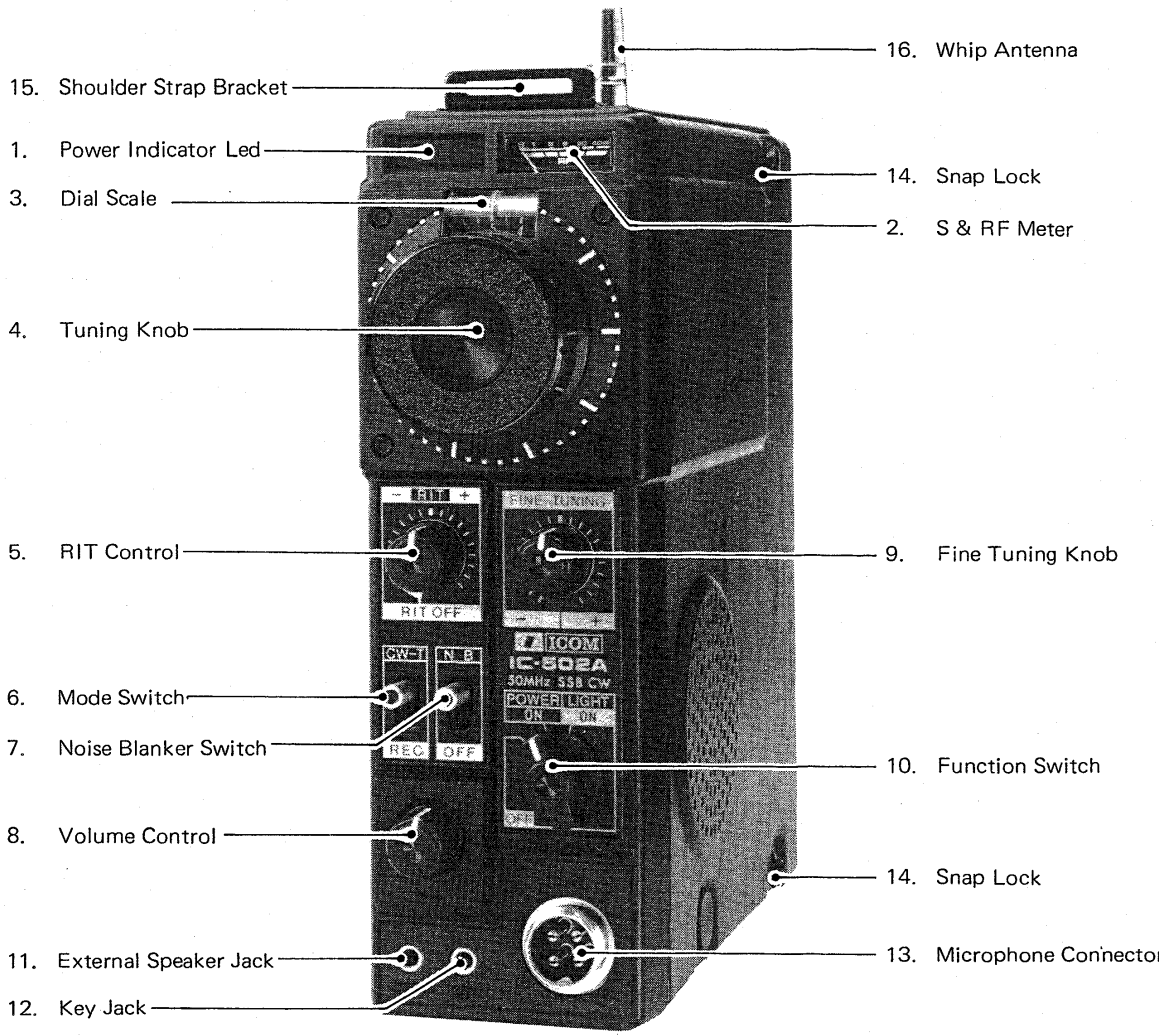
FOR FIXED USE

1. Avoid installing the unit in places exposed to rain, water splash, direct sunshine, dust, vibration, or heat.
2. An external antenna should be used for indoor operation. The use of the whip antenna indoors may cause TVI, BCI, Hi-Fi interference, malfunction of stabilized DC power supply, etc. When using an external antenna, be sure to collapse the telescoping antenna into the body.
3. For fixed use, an external power supply is more economical than batteries.
4. Use of the linear amplifier IC-50L, and AC power supply IC-3PS, give excellent performance for fixed use.

HOW TO USE EXTERNAL ANTENNA

Select a high performance antenna (a multi-element beam or gain antenna) and set it up in the highest possible position. Tightly connect the antenna so that performance will not be affected by weather or vibration. The matching impedance is designed to be 50 ohms.

SECTION V CONTROL FUNCTIONS



1. POWER INDICATOR LED

Shows when power is applied to the IC-502A and also indicates battery condition. When this LED is not illuminated with the power ON, the battery voltage is approximately 9.5V, or less.

2. S & RF METER

Indicates the relative signal strength of incoming signals and output power of transmitted signals.

3. DIAL SCALE

The dial is divided into 50 KHz increments with a total coverage of 1 MHz. The operating frequency is read on the dial.

ICOM INCORPORATED

1-6-19, Kami Kuratsukuri, Hirano-ku,
Osaka, Japan

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