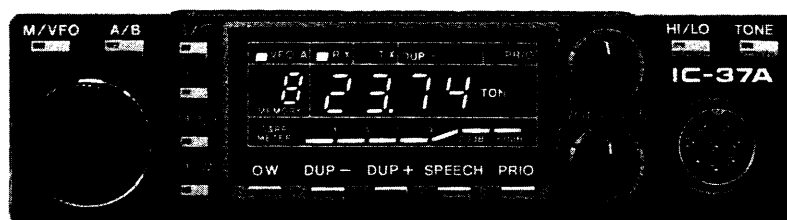


# IC-37A

## 220MHz FM TRANSCEIVER

### INSTRUCTION MANUAL



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## SECTION I SPECIFICATIONS

### GENERAL

Numbers of semiconductors	: Transistor	50	
	FET	7	
	IC	24	
	Diode	97	
Frequency coverage	: 220MHz ~ 225MHz		
Frequency resolution	: 5KHz/10KHz steps		
Frequency control	: Microcomputer based 5KHz step Digital PLL synthesizer		
	Independent Dual VFO Capability.		
Frequency stability	: Within $\pm 0.001\%$		
Memory channels	: 9 channels with any inband frequency programmable		
Usable conditions	: Temperature: $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ ( $14^{\circ}\text{F} \sim 140^{\circ}\text{F}$ )		
	Operational time: Continuous		
Antenna impedance	: 50 ohms unbalanced		
Power supply requirement	: 13.8V DC $\pm 15\%$ (negative ground)		
	7A Max.		
Current drain (at 13.8V DC)	: Transmitting; High (25W)	Approx.	6.5A
	Low (5W)	Approx.	3.0A
	Receiving; At max audio output	Approx.	0.7A
	Squelched	Approx.	0.5A
Dimensions	: 38(41)mm(H) x 140mm(W) x 177(191)mm (D)		
	( ): Shows the dimensions including projections		
Weight	: Approx. 1.2kg		

### TRANSMITTER

Output power	: HIGH 25W LOW 5W
Emission mode	: 16F <sub>3</sub> (F3E 16K0)
Modulation system	: Variable reactance frequency modulation
Max. frequency deviation	: $\pm 5\text{KHz}$
Spurious emission	: More than 60dB below carrier
Microphone	: 600 ohm electret condenser microphone with push-to-talk and frequency UP/DOWN switches, and 16 key dual tone pad.
Operating mode	: Simplex, Duplex (Any offset in-band in 100KHz increments programmable)

### RECEIVER

Receiving system	: Double-conversion superheterodyne
Modulation acceptance	: 16F <sub>3</sub> (F3E 16K0)
Intermediate frequencies	: 1st: 21.800MHz
	2nd: 455KHz
Sensitivity	: Less than $0.2\mu\text{V}$ for 12dB SINAD
	Less than $0.4\mu\text{V}$ for 20dB Noise quieting
Squelch sensitivity	: Less than $0.15\mu\text{V}$
Spurious response rejection ratio	: More than 60dB
Selectivity	: More than 15KHz at $-6\text{dB}$ point
	Less than 30KHz at $-60\text{dB}$ point
Audio output power	: More than 2.0W
Audio output impedance	: 4 ~ 8 ohms

## **SECTION II DESCRIPTION**

### **THE MOST COMPACT 220MHz MOBILE**

The smallest 220MHz mobile available, the IC-37A measures only 38 millimeters high by 140 millimeters wide. As an added bonus, the IC-37A, through ICOM engineering, is able to contain an internal speaker to provide ease of mounting and make the unit one small compact complete package.

### **HIGH OUTPUT POWER**

In such incredibly small package, the IC-37A is able to provide 25 watts of output power. And even though the IC-37A is the smallest available 220MHz mobile unit, it has sacrificed none of the features found in fully featured VHF mobiles.

### **9 MEMORIES**

The IC-37A has nine memories available to store receive frequency, transmit offset, offset direction, and subaudible tone.

Memories are backed up by a lithium backup battery, which will store memories for up to seven years.

### **32 SUBAUDIBLE TONE ENCODER**

The IC-37A comes complete with 32 standard subaudible tone encoder ready to go and controlled from the front panel knob. Each subaudible tone may be selected by the main tuning knob and stored into memory for easy access along with the frequency.

### **MULTI-PURPOSE SCANNING**

The Memory Scan allows you to monitor nine different memory channels, the Programmed Scan provides scanning between two programmed frequencies, and Full range Scan scans the entire band. The scanning speed is switchable, and the auto-stop terminates scanning when a signal is received or a channel is free.

### **PRIORITY SCANNING**

Priority may be selected to be either a memory channel or a VFO channel. By using sampling techniques, the operator can determine if a frequency he is interested in using is free or busy.

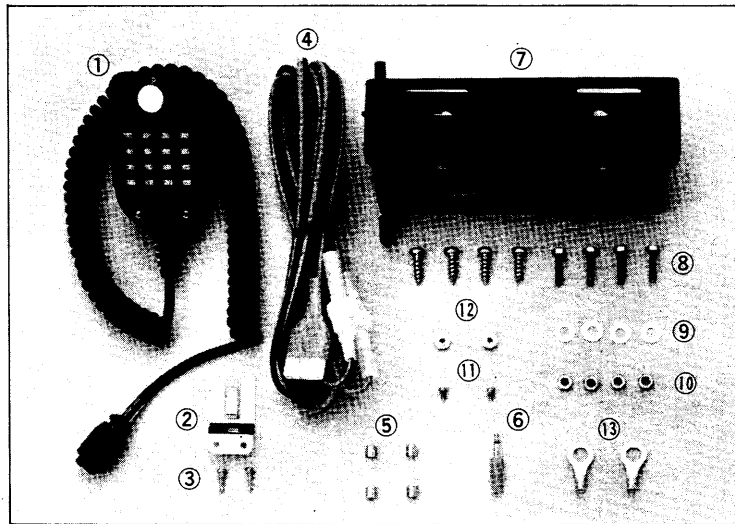
### **SPEECH SYNTHESIZER**

As an added plus, the IC-37A features an optional speech synthesizer to verbally announce the receiver frequency of the transceiver through the simple push of a button. This allows the operator to hear what frequency he is operating on without looking at the frequency display.

## SECTION III INSTALLATION

### 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 reshipment becomes necessary, they come in handy. Accessory hardware, cables, etc., are packed with the transceiver. Make sure you have not overlooked anything.

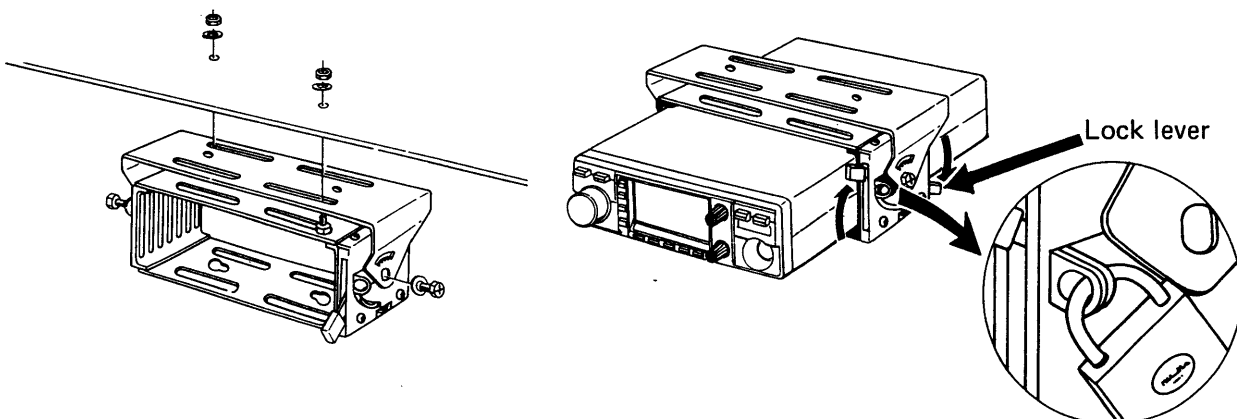


- |   |   |   |   |
|---|---|---|---|
| 1. Microphone (electret type) . . . . .       | 1 | 8. Mounting screws . . . . .                | 8 |
| 2. Microphone hook . . . . .                  | 1 | 9. Flat washers . . . . .                   | 4 |
| 3. Microphone hook retaining screws . . . . . | 2 | 10. Mounting screw's nuts . . . . .         | 4 |
| 4. Power cord . . . . .                       | 1 | 11. Screws for additional bracket . . . . . | 2 |
| 5. Spare fuses . . . . .                      | 2 | 12. Nuts for additional bracket . . . . .   | 2 |
| 6. Plug for speaker . . . . .                 | 1 | 13. Battery terminal lugs . . . . .         | 2 |
| 7. Mobile Mounting Bracket . . . . .          | 1 |   |   |

### LOCATION

Where you place the transceiver in your automobile is not critical and should be governed by convenience and accessibility. Since the unit is so compact, many mobile possibilities present themselves. In general, the mobile mounting bracket will provide you with some guide as to placement. Any place where it can be mounted with metal screws, bolts, or pop-rivets will work. For fixed station use, a power supply should be designed to produce 7 amps for the transceiver.

#### Mounting bracket installation

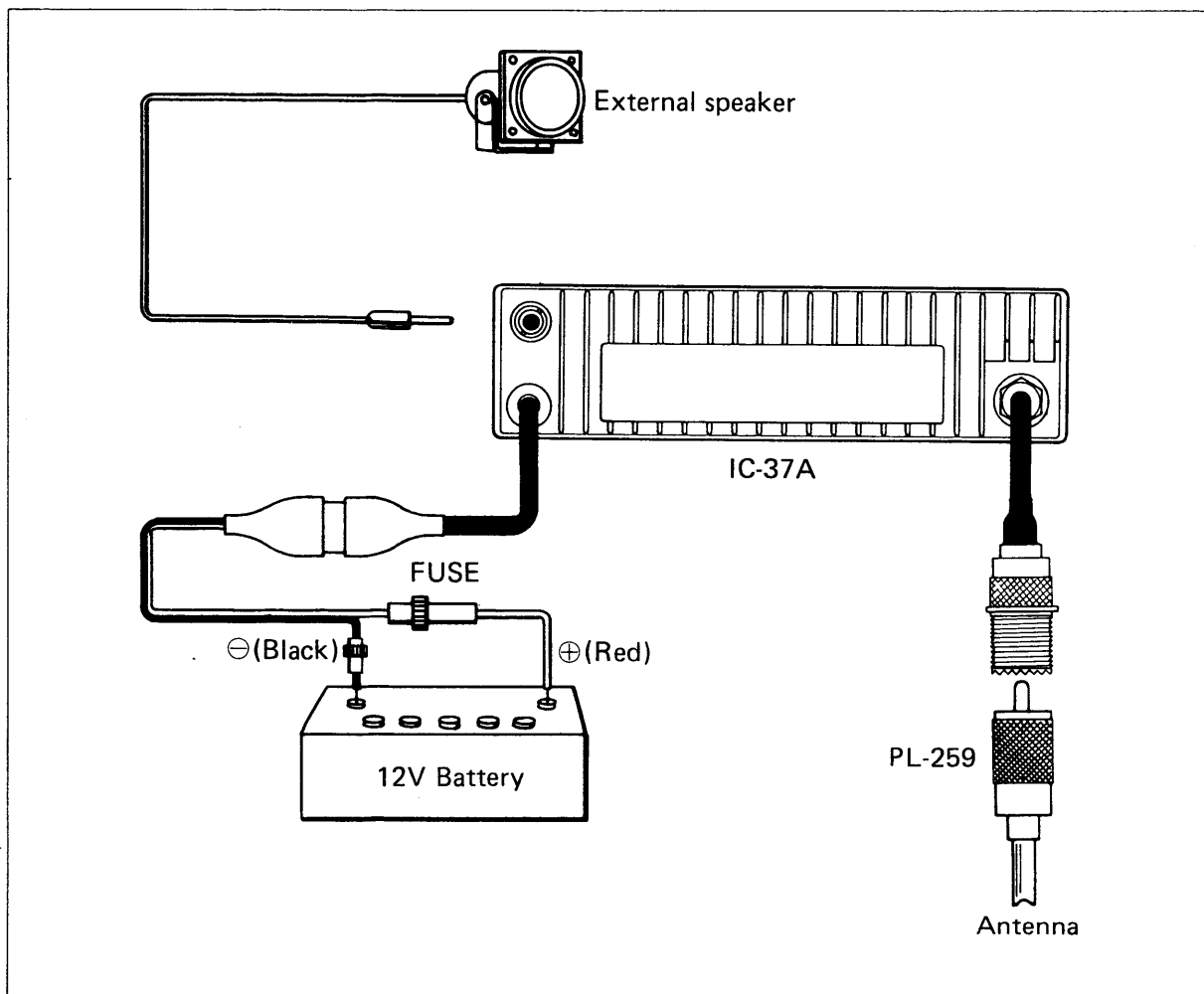


## POWER REQUIREMENTS

The transceiver is supplied ready to operate from any regulated 13.8V DC, 7 ampere negative ground source. An automobile 12 volt, negative ground, system is usually more than adequate. Some note must be taken, however, of the condition of the vehicle's electrical system. Items such as low battery, worn generator/alternator, poor voltage regulator, etc., will impair operation of your transceiver as well as the vehicle. High noise generation or low voltage delivery can be traced to these deficiencies. If an AC power supply is used with your transceiver, make certain it is adequately regulated for both voltage and current. Low voltage while under load will not produce satisfactory results from your transceiver. Receiver gain and transmitter output will be greatly impaired. Caution against catastrophic failure of the power supply should be observed.

**CAUTION:** Excessive voltage (above 15V DC) will cause damage to your transceiver. Be sure to check voltage before plugging in the power cord.

Included with your transceiver is a DC power cable with plug attached. The Red Wire is positive (+), the Black, negative (—). If your mobile installation permits, it is best to connect these directly to the battery terminals. This arrangement eliminates random noise and transient spikes sometimes found springing from automotive accessory wiring. If such an arrangement is not possible, then any convenient B+ lead in the interior of the vehicle and the negative frame can be utilized. Remember, the unit operates on a negative ground system only; it cannot be used in a positive ground automobile. After making your connections, simply insert the plug into your transceiver.





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