

IC-125

VHF RADIO TELEPHONE

INSTRUCTION MANUAL

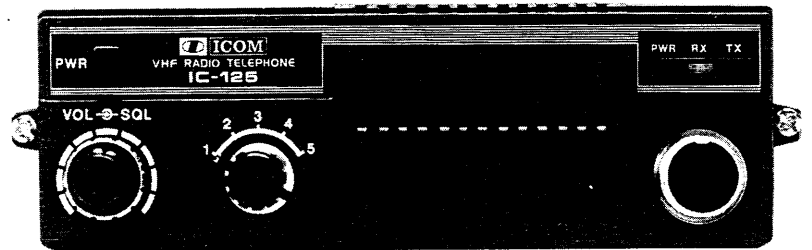


TABLE OF CONTENTS

I. SPECIFICATIONS	1
II. INSTALLATION	2
III. CONTROL FUNCTIONS.....	5
IV. OPERATION	7
V. FREQUENCY PROGRAMMING.....	8

SECTION I SPECIFICATIONS

GENERAL:

Number of Semiconductors	:	Transistors	24
		FET	9
		IC	9
		Diode	30 (not including diodes on the matrix board)
Frequency Coverage	:	One of the following segments	
		150MHz ~ 158MHz	
		155MHz ~ 163MHz	
		161MHz ~ 168MHz	
		166MHz ~ 174MHz	
Operation	:	Simplex/Semi-duplex	
Antenna Impedance	:	50 Ohms unbalanced	
Power Supply Requirements	:	DC 13.8V \pm 15% Negative Ground 6.0A Max.	
Current Drain	:	Transmitting:	Approx. 5.5A
		Receiving: At Max. Audio.	Approx. 1.0A
		Squelched	Approx. 0.3A
Operating Temperature	:	-10°C to +50°C	
Dimensions	:	50mm(H) x 150mm(W) x 180mm(D)	
Net Weight	:	1.5Kg	

TRANSMITTER:

Transmitting Frequency	:	5 Channels
Channel Spread	:	2.5MHz maximum
Channel Spacing	:	25KHz spacing (15KHz or 12.5KHz available)
Frequency Stability	:	\pm 0.0005%
Emission Mode	:	16F ₃
Output Power	:	25W
Max. Frequency Deviation	:	5KHz
Modulation System	:	Variable reactance phase modulation
Spurious Emission	:	More than 70dB below carrier
Microphone	:	Impedance: 600 Ohms
		Input level: 10mV typical
		Dynamic or optional Electret condenser microphone

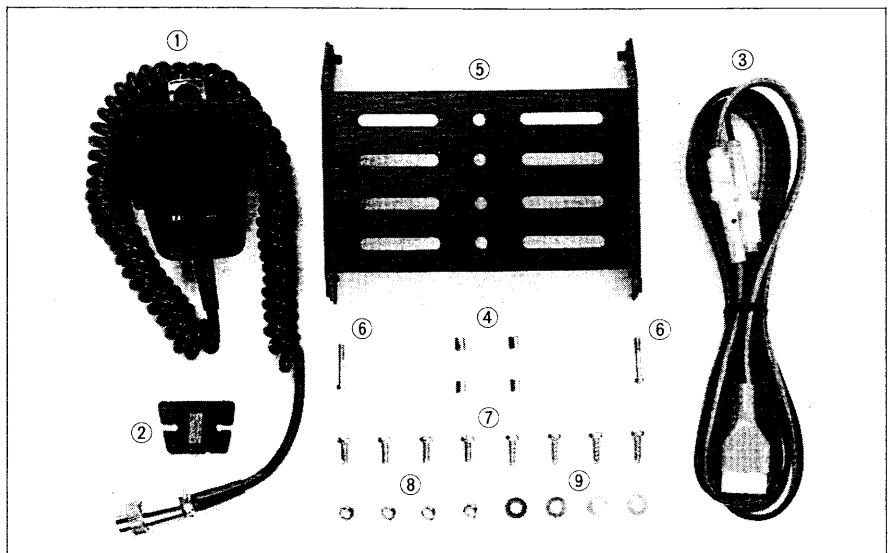
RECEIVER:

Receiving Frequency	:	5 Channels
Channel Spread	:	2.5MHz maximum
Modulation Acceptance	:	16F ₃
Receiving System	:	Double superheterodyne
Intermediate Frequency	:	First IF 21.4MHz
		Second IF 455KHz
Sensitivity	:	Less than 0.3 μ V for 12dB SINAD
Squelch Sensitivity	:	Less than 0.3 μ V
Spurious Response Rejection Ratio	:	More than 80dB
Adjacent Channel Rejection Ratio	:	More than 80dB
Intermodulation Rejection Ratio	:	More than 75dB
Selectivity	:	\pm 6KHz at the -6dB point
		\pm 12.5KHz at the -70dB point
Squelch	:	Dual: Noise compensated squelch
		Continuous Sub-audio Tone squelch option
Audio Output Power	:	More than 2 Watts with less than 10% distortion
Audio Output Impedance	:	4 ~ 8 Ohms

SECTION II INSTALLATION

UNPACKING

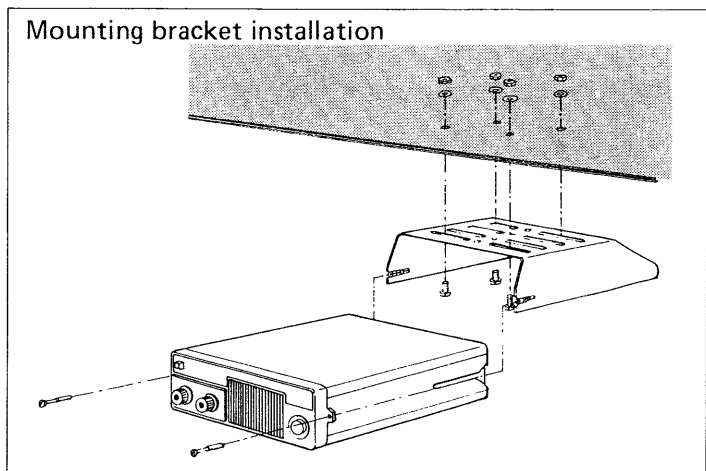
Carefully remove your transceiver from the packing carton and examine it for signs of shipping damage. Should any be apparent, notify the delivering carrier or dealer immediately, stating the full extent of the damage. It is recommended you keep the shipping cartons. In the event storage, moving, or 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 (dynamic type) | 1 | 6. Mounting bracket retaining screws | 2 |
| 2. Microphone hook | 1 | 7. Mounting screws | 8 |
| 3. Power cord. | 1 | 8. Mounting screw's nuts | 4 |
| 4. Spare fuses. | 2 | 9. Flat washers. | 4 |
| 5. 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 6 amps for the transceiver.

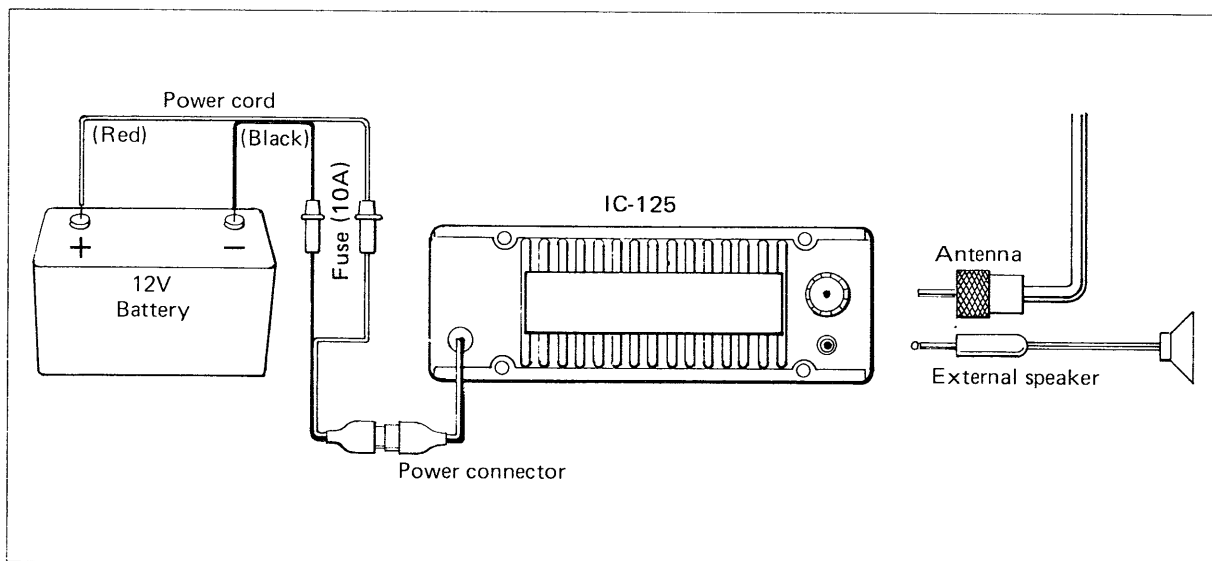


POWER REQUIREMENTS

The transceiver is supplied ready to operate from any regulated 13.8V DC, 6 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 source 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.



ANTENNA

The most important single item that will influence the performance of any communication system is the antenna. For that reason, a good, high-quality, gain antenna of 50 ohms impedance is recommended, fixed or mobile. In VHF as well as the low bands, every watt of ERP makes some difference. Therefore, 25 watts average output plus 3dB of gain antenna equals 50 watts ERP, presuming low VSWR of course. The few extra dollars invested in a gain type antenna is well worth it. When adjusting your antenna, whether mobile or fixed, by all means follow the manufacturer's instructions. There are some pitfalls to be aware of. For example, do not attempt to adjust an antenna for lowest VSWR when using a diode VSWR meter not engineered for VHF applications. Such readings will invariably have an error of 40% or more. Instead, use an in line watt meter similar to the Bird Model 43 or Sierra Model 164B with a cartridge for the operating frequency range. Furthermore, when adjusting a mobile antenna, do so with the motor running preferably above normal idling speed. This will insure proper voltage level to the transceiver.



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