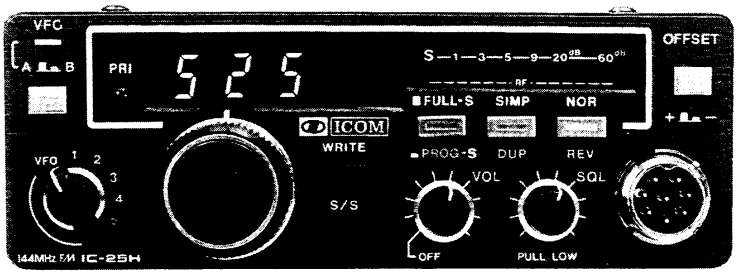
IC-25H

144MHz FM TRANSCEIVER

INSTRUCTION MANUAL



ICOM

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SECTION I SPECIFICATIONS

GENERAL

Numbers of semiconductors	:	Transistor	49	
		FET	4	
		IC	21	
		Diode	92	
Frequency coverage	:	143.8 ~ 148.2MHz (144.0 ~ 146.0MHz version or 144.0 ~ 148.0MHz version available)		
Frequency resolution	:	5KHz/15KHz steps (5KHz/25KHz version available)		
Frequency control	:	Microcomputer based 5KHz step Digital PLL synthesizer Independent Dual VFO Capability.		
Frequency stability	:	Within ±1.5KHz		
Memory channels	:	5 channels with any in-band frequency programmable		
Usable conditions	:	Temperature: −10°C ~ 60°C (14°F ~ 140°F) Operational time: Continuous		
Antenna impedance	:	50 ohms unbalanced		
Power supply requirement	:	13.8V DC ±15% (negative ground) 10A Max.		
Current drain (at 13.8V DC)	:	Transmitting	HIGH (45W)	Approx. 9.5A
			LOW (2W)	Approx. 2.7A
		Receiving	At max audio output	Approx. 0.75A
			Squelched	Approx. 0.6A
Dimensions	:	50mm(H) x 140mm(W) x 222mm(D)		
Weight	:	Approx. 1.9kg		

TRANSMITTER

Output power	:	45W (HIGH), 2W (LOW)
Emission mode	:	$16F_3$
Modulation system	:	Variable reactance frequency modulation
Max. frequency deviation	:	±5KHz
Spurious emission	:	More than 60dB below carrier
Microphone	:	600 ohm electret condenser microphone with push-to-talk switch, scanning buttons and 16 key dual tone pad (or 1750Hz tone-burst unit)
Operating mode	:	Simplex, Duplex (Any in-band 100KHz steps frequency separation programmable)

RECEIVER

Receiving system	:	Double-conversion superheterodyne
Modulation acceptance	:	$16F_3$
Intermediate frequency	:	1st: 16.9MHz 2nd: 455KHz
Sensitivity	:	More than 30dB S+N+D/N+D at 1μV Less than 0.6μV for 20dB Noise quieting
Squelch sensitivity	:	Less than 0.4μV
Spurious response rejection ratio	:	More than 60dB
Selectivity	:	More than ±7.5KHz at −6dB point Less than ±15KHz at −60dB point
Audio output power	:	More than 2.0W
Audio output impedance	:	4 ~ 8 ohms

SECTION II DESCRIPTION

144MHz FM TRANSCEIVER INCORPORATING A MICROCOMPUTER

CPU control with ICOM's original programs provide various operating capabilities. No-backlash dial controlled by ICOM's unique rotary encoder circuit. The band-edge detector and Endless System provides out-of-band protection. There are no variable capacitors or dial gear, ensuring problem-free use. The IC-25H can accomodate FM, coverage in the 143.8 ~ 148.2MHz frequency range.

MULTI-PURPOSE SCANNING

The Memory Scan allows you to monitor five different memory channels and two VFO frequencies, and the Program Scan provides scanning between two programmed frequencies. The scanning speed is adjustable, and the auto-stop terminates scanning when a signal is received or a channel is empty.

DUAL VFO'S

Two separate VFO's can be used independently either for simplex operation or for duplex operation, and any desired frequency can be split in duplex operation.

CONTINUOUS TUNING SYSTEM

ICOM's new continuous tuning system features an LED display that follows the tuning knob movement and provides an extremely accurate readout. Frequencies are displayed in 4 LED digits representing 5KHz digits.

Automatic recycling restarts tuning at the top of the band, i.e., at 148.195MHz when the dial goes below 143.800MHz. Recycling changes 148.195MHz to 143.800MHz as well. Quick tuning in 15KHz steps is available with VFO "B", and is also provided for trouble free QSO.

OUTSTANDING PERFORMANCE

The RF amplifier using a MOS FET and the first mixer using a doubly balanced mixer, and other circuits provide excellent cross modulation and two-signal selectivity characteristics. The IC-25H has excellent sensitivity demanded especially for mobile operation, high stability, and with a pair of high quality monolithic crystal filters and ceramic filters facilitates very stable receiving and excellent durability.

The transmitter uses the doubly balanced mixer (the same one for receiver) in a single conversion system, a band-pass filter and a high-performance low-pass filter. This system provides distortion-free signals with a minimum spurious radiation level.

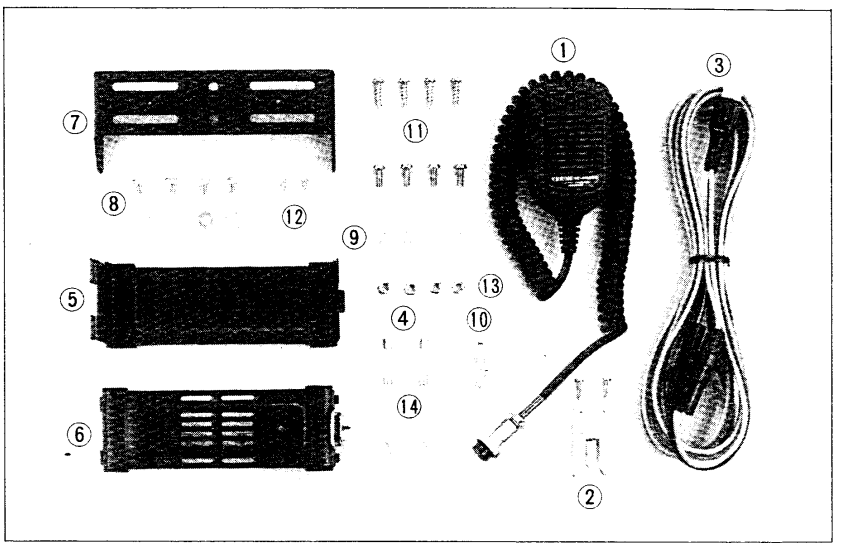
The transmitter provides powerful 45 watts output. This is achieved by a power module and an efficient heatsink, newly developed.

The IC-25H has everything you need to truely enjoy VHF FM operation, in an extremely compact, rugged transceiver, designed to ensure high quality, long term use.

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.

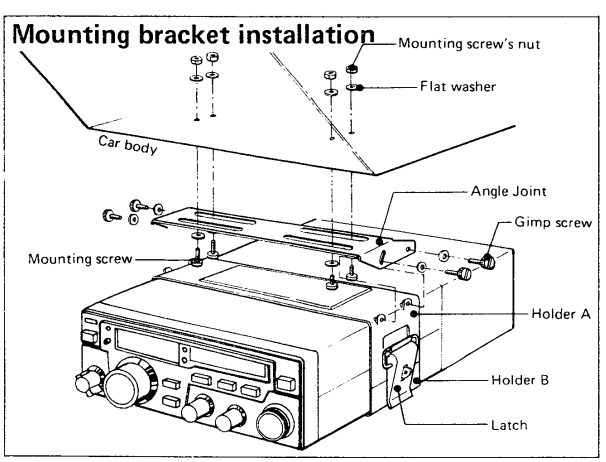


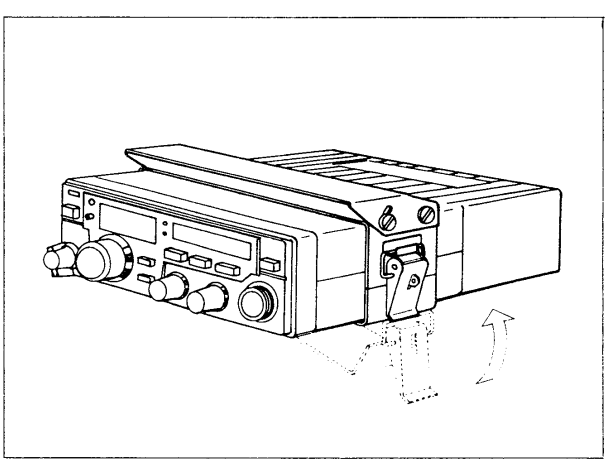
1. Microphone (with dual tone pad IC-HM14) 1
2. Microphone hook 1
3. Power cord. 1
4. Spare fuses (15A) 2
5. Installing holder A. 1
6. Installing holder B 1
7. Installing angle joint. 1
8. Gimp screws. 4
9. Flat washers 8
10. Plug for speaker 1
11. Mounting screws 8
12. Screws for additional bracket. 2
13. Mounting screw's nuts 4
14. Battery terminal lugs 2

Note: Some version supplies IC-HM15 (tone burst encoder mic) instead of IC-HM14.

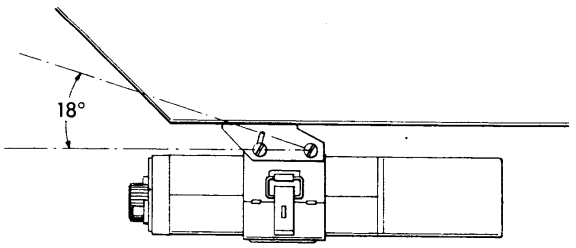
LOCATION

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 10 amps for the transceiver.

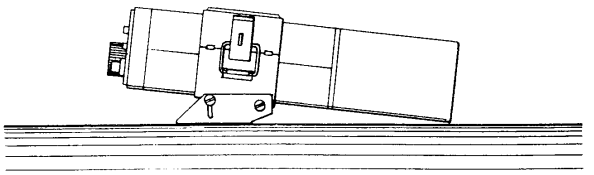




Angle adjustment



Optional installation

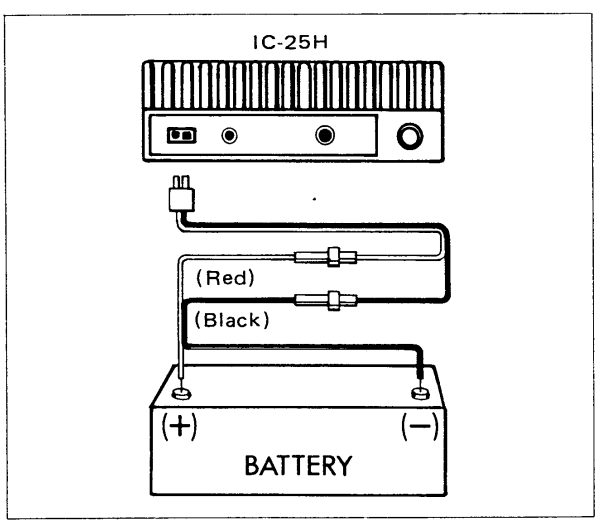


POWER REQUIREMENTS

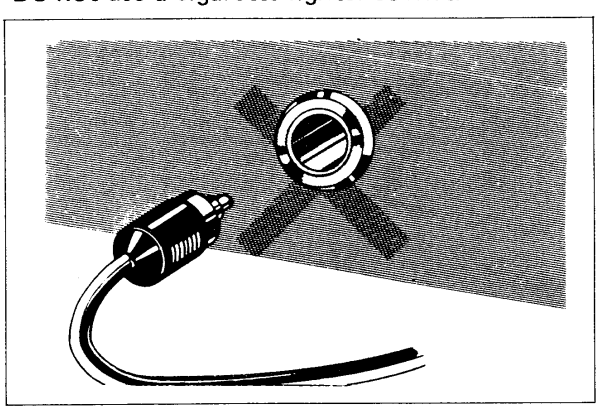
The transceiver is supplied ready to operate from any regulated 13.8V DC, 10 ampere negative ground source. An automobile 12 volt, negative ground, system is usually more than adequate. Some note must be taken, however, of the condition of the vehicle's electrical system. Items such as low battery, worn 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 (—). Connect these directly to the battery terminals. This arrangement eliminates random noise and transient spikes sometimes found springing from automotive accessory wiring. 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.



Do not use a cigarette lighter socket.



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