

IC-211

144MHz SSB FM CW TRANSCEIVER

INSTRUCTION MANUAL

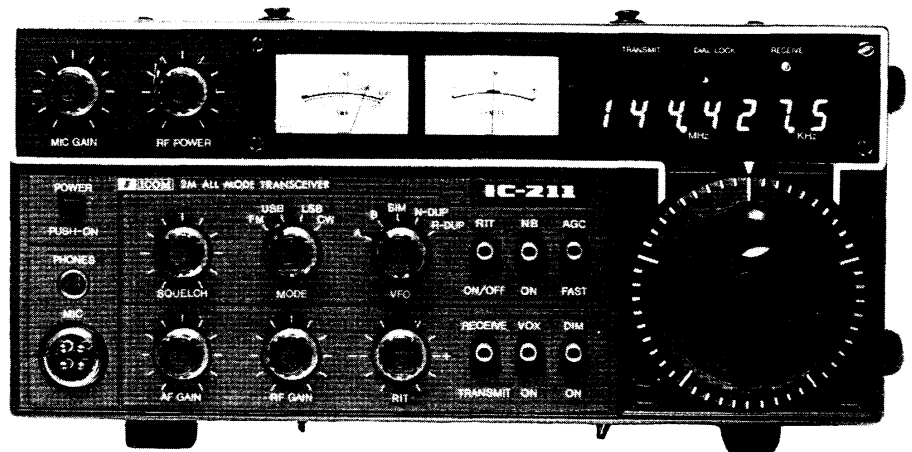


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SECTION I SPECIFICATIONS

GENERAL

Number of semi-conductors	: Transistors	92
	FET	15
	IC	32
	Diode	92
Frequency coverage	: 144.000 ~ 147.995MHz	
Frequency resolution	: 144.0000 ~ 145.9999MHz	: SSB, CW 100Hz steps
		FM 5KHz steps
	146.000 ~ 147.995MHz	: 5KHz steps
Frequency Control	: LSI based 100Hz step Digital PLL synthesizer.	
	Independent Transmit-Receive Frequency Capability	
Frequency Readout	: 7 digit LED 100Hz readout.	
Frequency stability	: Within ± 1.5 KHz under temperature range of $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$	
Antenna impedance	: 50 ohms unbalanced	
Power supply requirement	: 13.8V DC $\pm 15\%$ (negative ground) or 117V AC 50/60Hz $\pm 10\%$	
Current drain (at 13.8V DC)	: Transmitting	
	SSB (PEP 10W)	Approx. 3.0A
	CW, FM (10W)	Approx. 3.3A
	FM (1W)	Approx. 1.8A
	Receiving	
	At max audio output	Approx. 1.1A
	Squelched	Approx. 0.9A
Dimensions	: 111mm (H) x 241mm (W) x 264mm (D)	
Weight	: Approx. 6.1Kgs	

TRANSMITTER

Output power	: SSB 10W (PEP)	
	CW 10W	
	FM 1W ~ 10W	
Emission mode	: SSB (A3J, USB/LSB), CW (A1), FM (F3)	
Modulation system	: SSB Balanced modulation	
	FM Variable reactance frequency modulation	
Max. frequency deviation	: ± 5 KHz	
Spurious emission	: More than 60dB below peak power output	
Carrier Suppression	: More than 40dB below peak power output	
Unwanted Sideband	: More than 40dB down at 1000Hz AF input	
Microphone	: Impedance 600 ohms	
	Input Level 10 millivolts typical	
	Dynamic or Electret Condenser Microphone	

RECEIVER

Receiving system	:	SSB, CW	Single conversion superheterodyne
		FM	Double conversion superheterodyne
Receiving Mode	:	SSB (A3J, USB/LSB), CW (A1), FM (F3)	
Intermediate Frequency	:	SSB, CW	10.7MHz
		FM	10.7MHz, 455KHz
Sensitivity	:	SSB, CW	Less than 0.5 microvolts for 10dB S+N/N
		FM	More than 30dB S+N+D/N+D at 1 microvolt
			Less than 0.6 microvolts for 20dB Noise quieting
Squelch sensitivity (FM only)	:	Less than 0.4 microvolts	
Spurious response rejection ratio	:	More than 60dB	
Selectivity	:	SSB, CW	More than ± 1.2 KHz at -6 dB point
			Less than ± 2.4 KHz at -60 dB point
		FM	More than ± 7.5 KHz at -6 dB point
			Less than ± 15 KHz at -60 dB point
Audio output power	:	More than 1.5W	
Audio output impedance	:	8 ohms	



SECTION II DESCRIPTION

MULTI-MODE 2 METER TRANSCEIVER

The IC-211 provides FM, USB, LSB, CW coverage in the 144 ~ 148MHz frequency range. Thus the IC-211 can be used for DX, local calls, and satellite work.

COMPUTER COMPATIBLE TUNING SYSTEM

The local oscillator circuit (VFO) employs a C-MOS LSI for the PLL that has been custom-made on the basis of ICOM's advanced digital technology. The VFO circuit is a digital PLL circuit that controls frequency determination by pulses produced by the tuning control. Unlike conventional PLLs, it controls the VCO by combining and dividing crystal oscillator frequencies. Therefore, its stability is much higher than conventional VFOs. In addition, the pulse control system makes it possible to set and change frequencies with external digital signals.

With a computer programmed and connected to the rear accessory socket, you can easily control frequencies, memorize, and scan, on the IC-211. This system will give you the maximum of performance and versatility.

DUAL VFO'S

Two separate VFO's can be used either independently or together for simplex operation, and any desired frequency 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 7 LED digits representing 100MHz to 100Hz digits.

Automatic recycling restarts tuning at the top of the band, ie., 147.995MHz when the dial goes below 144.000MHz. Recycling changes 147.995MHz to 144.000MHz as well. Quick tuning in 5KHz steps is available, and fine tuning in 100Hz steps is provided for trouble free QSO.

OUTSTANDING PERFORMANCE

The RF amplifier and first mixer circuits using MOS FETs, and other circuits provide excellent Cross Modulation and Two-Signal Selectivity characteristics. The IC-211 has excellent sensitivity demanded especially for mobile operation, high stability, and with two Crystal Filters having high shape factors, exceptional selectivity.

The transmitter uses a balanced mixer 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.

ADDITIONAL CIRCUITS

The IC-211 has a built-in Noise Blanker, VOX, a Dimmer switch for control of the readout and meter illumination, CW Monitor, APC, SWR detector, and many other circuits for your convenience.

The IC-211 has everything you need to really enjoy VHF operation, in an extremely compact, rugged transceiver.



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