



# ICOM

RADIO PRODUCTS -  
TRANSCEIVER

## IC-7700 HF/50MHz Transceiver

The Pattern of Perfection Continues



### **110dB dynamic range and +40dBm 3rd order Intercept Point (IP3)**

The IP3 performance of a radio can be improved by sacrificing sensitivity, but Icom considers this a poor choice. To achieve REAL high-performance, Icom reviewed all of the analog receiver circuitry. The IC-7700 employs mechanical relay BPF switching, a digitally tuned pre-selector, and three Hi-spec 1st IF filters (roofing filter) in a Dynamic range characteristics (in 14MHz band) clean and simple double-conversion superheterodyne design. By balancing the analog and DSP functions, the IC-7700 provides superior sensitivity simultaneously with a superb dynamic range of 110dB, and +40 dBm IP3 (even in USB mode with 2.4 kHz filter bandwidth).

### **Pre-amplifiers**

The IC-7700 has a total of 4 pre-amplifiers, two for the HF bands and two for the 50MHz band. The purpose of pre-amplifiers is to improve receiver sensitivity for the pursuit of higher gain and a better noise figure. The IC-7700 employs a noiseless feedback design with push-pull amplifiers. Using feedback transformers, the pre-amplifiers provide a high IP3 while keeping a low noise figure.

### **1st mixer**

The 1st mixer stage is driven with a signal from the high-drive Local Oscillator with excellent C/N. A 16V p-p of high-level LO signal is applied to the mixer to improve intermodulation characteristics while avoiding a parasitic oscillation or noise.

### **Three Hi-Spec 1st IF filters (Roofing Filter)\*1**

The IC-7700 employs three Hi-Spec 1st IF filters (roofing filters) of 15kHz, 6kHz and 3kHz before the 1st IF amplifier. Icom ordered special customized high specification devices to improve IMD and achieve better impedance characteristics. As a result, the 3kHz 1st IF filter provides approximately 134dB\*2 of blocking dynamic range and allows you to pull out a weak signal in the presence of strong adjacent signals.

\*1 Icom calls the roofing filters “Hi-spec 1st IF filters”, because their performance is much better than regular IF filters.

\*2 At 14.1MHz receive, with 5kHz separation of interference signal.

### **Other features**

[Antenna line]

BNC type RX IN/OUT connectors for receiver antenna or external attenuator

[Receiver]

General coverage receiver covers from 30kHz to 60MHz

(\* Some frequency bands are not guaranteed, depending on version)

4-step attenuator (6/12/18dB and OFF)

Twin peak audio filter for RTTY operation

[Transmitter]

Low distortion RF speech compressor

Tx monitor

50 CTCSS tone encoder and decoder

All mode power control

VOX capability (Voice operated transmission)

[CW]

Multi-function electronic keyer with adjustable keying speed, dot-dash ratio and paddle polarity and bug key function

DSP controlled CW keying waveform shaping

Frequency lock function for split operation

The normal (default) CW carrier point is selectable from USB and LSB

APF (audio peak filter) function with soft/sharp filter shape

Double key jack system

Full break-in function

CW pitch control from 300 to 900Hz

CW/AM auto tuning function

[Operation]

Set mode function for flexible and speedy setting

Memory pad stores up to 10 (or 5) operating frequencies

Quick split function enables split operation with a single action

SSB/CW synchronous tuning

Single knob control from squelch volume to RF gain

RIT and  $\partial$ Tx variable up to  $\pm 9.999$ kHz

Quick RIT/ $\partial$ TX clear function

UTC/Local Clock and timer function

1Hz pitch tuning and 1Hz indication

101 memory channels with 10-character comment

Built-in voice synthesizer announces operating frequency, mode and receiving signal strength

Programmed scan, memory scan, select memory scan, VSC scan and  $\partial$ F scan

Auto tuning step function

Band edge beep

Main dial tension control and dial lock

CI-V interface capability and RS-232C connector for PC connection

BNC type Transverter connector

Triple band stacking register

FFT scope wave averaging function

Screen saver function