

ver. 6/4/19

Test site and measurements made by N0QO

DUT

Icom IC 7610

serial number	12001276
firmware	
Main CPU	1.20
Sub CPU	1.04
Front CPU	1.01
FPGA	1.06

IMD Power 100W

Product

Band	3rd	5th	7th	9th	
6m dBc	-25	-31	-39	-53	dBc
20m dBc	-34	-32	-35	-63	dBc
80m dBc	-33	-32	-45	-61	dBc

IMD Power 50W

Product

Band	3rd	5th	7th	9th	
6m dBc	-28	-40	-53	-58	dBc
20m dBc	-26	-39	-60	-67	dBc
80m dBc	-24	-40	-64	-79	dBc

composite noise

Band 20m	Offset						
	1kHz	2kHz	5kHz	10kHz	20kHz	100kHz	
Power							
30W, dBc/Hz	112	115	119	121	123	123	dBc/Hz
100W, dBc/Hz	119	122	124	126	130	141	dBc/Hz

opposite sideband rejection

Band 20m 100W
Rejection >80dB

Other Transmit performance

Amplifier key line management

Timing of the key line correct relative to RF.

Key line active to RF is delayed by approx. what is called for in radio settings

No RF to key line inactive is delayed.

CW performance

QSK processing time. Approx. 45ms. Slower speed will be required to hear between dot's or dashes

At 27 wpm spacing no audio can be seen between dots on a scope.

CW rise time is approx. what is called for

CW fall time is faster than selected. At 8ms selected it is 5ms. It does change with selected rise time.

CW audio and RF are **NOT** the same duration and are **NOT** correlated in time correlated in time

CW Audio leads rf by approx. 15ms.

At 18wpm called for on radio the RF is 4 ms shorter in duration

Transmit delay

SSB PTT active to RF out approx. 56.2ms

SSB PTT already active audio active to RF out approx. 33.6ms

CW Key active to RF output 15.8ms

CW transmit mode already enabled key to RF output 8.8

ALC Overshoot

There is overshoot present on SSB and little or none on CW

Comments and recommendations to manufacturer

Items that should be fixed on the next software revision

SSB transmit delay is very slow relative to competition. It should be reduced by 20 plus milliseconds.

CW performance in general is strange. At the very least audio and RF should be the same length.

Items that should be improved on future radio iterations

Transmit IMD, an improvement of at least 10dB or more across the board should be strived for.

Composite noise, some radios are 20dB better than the 7610 now this needs to be improved

RF power should be managed with a single control. The drive control should be a thing of the past.

ALC overshoot should not be present in SSB or CW. This should not be tolerated in any modern radio.

QSK performance, the 7300 has a larger listening window than the 7610. This needs improvement.