

ver. 6/7/19

Test site and measurements made by N0QO

DUT

Icom IC-7300

serial number 02001408

firmware

Main	1.30
Front CPU	1.01
DSP Program	1.07
DSP Data	1.00
FPGA	1.13

Power 100W

Product

Band	3rd	5th	7th	9th	
6m dBc	-23	-34	-35	-43	dBc
20m dBc	-33	-32	-40	-49	dBc
80m dBc	-41	-34	-41	-51	dBc

Power 50W

Product

Band	3rd	5th	7th	9th	
6m dBc	-30	-34	-48	-52	dBc
20m dBc	-29	-37	-49	-52	dBc
80m dBc	-44	-34	-41	-51	dBc

IC7300 Transmit composite noise

Band 20m

Offset

Power	1kHz	2kHz	5kHz	10kHz	20kHz	100kHz	
30W, dBc/Hz	-111	-112	-114	-112	-111	-121	dBc/Hz
100W, dBc/Hz	-122	-124	-128	-127	-126	-131	dBc/Hz

IC7300 opposite sideband rejection

Band 20m

Rejection -63dBc

Other Transmit performance

Amplifier key line management

Timing of the key line is **NOT** 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 **NOT** delayed. Potential amplifier damage can occur

CW performance

QSK processing time. Approx. 38ms. Slower speed will be required to hear between dot's or dashes

At 31 wpm spacing no audio can be seen between dots on a scope.

CW rise time is faster than what is selected in the radio. First character 2.8ms measured vs 6ms selected

Second character 4.2ms vs 6ms selected

CW fall time is approx. 2.6ms regardless of rise time selected

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

Transmit delay

- SSB PTT active to RF out approx. 18.3ms
- SSB PTT already active audio active to RF out approx. 3.5ms
- CW Key active to RF output 16.5ms
- CW transmit mode already enabled key to RF output 7.3

ALC Overshoot

There is overshoot present on SSB and to a much lesser degree on CW

Comments and recommendations to manufacturer

Items that should be fixed on the next software revision

THE AMP KEY LINE, no excuses, no debate just FIX IT.

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

- THE AMP KEY LINE, This should never happen again. You have a responsibility to do this correctly
- 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 7300 now this needs to be improved.
- AIC overshoot should not be present in SSB or CW. This should not be tolerated in any modern radio.
- Relay noise, there are ways to make the t/r relays much quieter please do so or switch to solid state.