

ver. 6/7/19

Test site and measurements made by N0QO

DUT

Yaesu FTdx101D

serial number 9F010008

firmware

Main 1-02

Display 1-00

Main DSP 1-01

Sub DSP 1-01

Main SDR 1-10

Sub SDR 1-10

AF DSP 1-00

IMD Power 100W

Product

Band	3rd	5th	7th	9th	
6m dBc	-25	-29	-37	-48	dBc
20m dBc	-33	-32	-41	-53	dBc
80m dBc	-37	-38	-41	-44	dBc

IMD Power 50W

Product

Band	3rd	5th	7th	9th	
6m dBc	-26	-37	-51	-61	dBc
20m dBc	-26	-35	-49	-55	dBc
80m dBc	-34	-35	-40	-48	dBc

FTdx101D composite noise

Band 20m

Offset

Power	1kHz	2kHz	5kHz	10kHz	20kHz	100kHz	
30W, dBc/Hz	-128	-129	-132	-134	-135	-137	dBc/Hz
100W, dBc/Hz	-131	-133	-134	-137	-138	-141	dBc/Hz

FTdx101D opposite sideband rejection

Band 20m

Rejection -74dB

Other Transmit performance

Amplifier key line management

Timing of the key line is correct relative to RF but no adjustment can be found.

Key line active to RF is approx. 14ms, No RF to key line inactive, No RF to key line inactive is approx. 4 ms

For amps with slower T/R switching key line active to RF could be too fast

CW performance

QSK processing time. Approx. 50ms. Slower speed will be required to hear between dot's or dashes the number above 24 wpm no audio can be seen between dots on a scope.

CW rise time 2.4ms measured first character and 2.8 second with 6ms selected.

CW fall time 3.4ms on first and second character with 6ms selected.

CW audio and RF are the same duration but not correlated in time

Transmit delay

SSB PTT active to RF out approx. 23ms

SSB PTT already active audio active to RF out approx. 7ms

CW no measurements made

ALC Overshoot

Significant overshoot was observed it was as much as 7.5 dB in power at 30W SSB

CW overshoot was present but not as bad as SSB

The ALC adjustment does not have enough resolution to adjust properly

There is a supposed factory fix for this that is untested. It requires a hardware change

Comments and recommendations to manufacturer

Items that should be fixed on the next software revision

Fix ALC so small adjustments in gain and comp. don't cause a small change to peg ALC

CW rise and fall time should be what is selected, not significantly faster!

Add an adjustable amp key line so slower delays can prevent slower amps from hot switching

Items that should be improved on future radio iterations

Composite noise, the 101 is greatly improved over other Yaesu radios. Please continue the trend!

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

QSK performance, the 101 has a very short listening window. Please improve by at least 15 ms.