

QST Magazine Product Reviews - Key Measurements Summary - HF-Transceivers or Receivers

Source: Product Review from QST Magazine - Many thanks to ARRL and QST Magazine for their very interesting reviews!

Sorted by 2 kHz 3rd-order dynamic range

			1	2	3	4	5
Subject of measurement	Min	Max	Yaesu FTdx5000D	Elecraft K3	Elecraft K3	Flex-5000A	Kenwood TS-590S
Band: 14 MHz	Scale	Scale	Dec 2010	Jan 2009	Apr 2008	July 2008	May 2011
Receiver							
20 kHz blocking gain compression	70 dB	140 dB	136 dB *	142 dB !	139 dB	123 dB	141 dB !
2 kHz blocking gain compression	70 dB	141 dB	136 dB *	140 dB	139 dB	123 dB	121 dB
20 kHz 3rd-order dynamic range	50 dB	110 dB	114 dB !	106 dB	103 dB	99 dB	106 dB
2 kHz 3 rd -order dynamic range	50 dB	110 dB	114 dB !	103 dB	102 dB	99 dB	97 dB
20 kHz 3rd-order intercept	-40dbm	+35dbm	+41 dBm !	+29 dBm	+26 dBm	+35 dBm	+26 dBm
2 kHz 3 rd -order intercept	-40dbm	+35dbm	+40 dBm !	+28 dBm	+26 dBm	+30 dBm	+22 dBm
Transmitter							
Tx-Rx turnaround time (SSB tx delay)	50 ms	10 ms	37 ms	12 ms	22 ms	29 ms	14 ms
Transmit 3rd-order IMD	-20 dB	-35 dB	-43 dB #!	-29 dB	-27 dB	-34 dB	-29 dB
Transmit 9th-order IMD	-20dB	-70 dB	-72 dB #!	-51 dB	-53 dB	-54 dB	-52 dB

Sorted by 2 kHz 3rd-order dynamic range

			6	7	8	9	10
Subject of measurement	Min	Max	Perseus SDR	Icom IC-7700	TenTec Orion-II	Flex-3000	Icom IC-7600
Band: 14 MHz	Scale	Scale	Dec 2008	Oct 2008	Sept 2006	Oct 2009	Nov 2009
Receiver							
20 kHz blocking gain compression	70 dB	140 dB	117 dB	125 dB	136 dB	112dB	122 dB
2 kHz blocking gain compression	70 dB	141 dB	99 dB	102 dB	136 dB	112 dB	102 dB
20 kHz 3rd-order dynamic range	50 dB	110 dB	100 dB	106 dB	92 dB	97 dB	106 dB
2 kHz 3 rd -order dynamic range	50 dB	110 dB	97 dB	95 dB	95 dB	95 dB	88 dB
20 kHz 3rd-order intercept	-40dbm	+35dbm	+35 dBm	+35 dBm	+20 dBm	+28 dBm	+31 dBm
2 kHz 3 rd -order intercept	-40dbm	+35dbm	+35 dBm	+24 dBm	+21 dBm	+26 dBm	+13 dBm
Transmitter							
Tx-Rx turnaround time (SSB tx delay)	50 ms	10 ms	N/A	15 ms	30 ms	48 ms	13 ms
Transmit 3rd-order IMD	-20 dB	-35 dB	N/A	-28 dB	-28 dB	-30 dB	-31 dB
Transmit 9th-order IMD	-20dB	-70 dB	N/A	-53 dB	-52 dB	-45 dB	-48 dB

Sorted by 2 kHz 3rd-order dynamic range

			11	12	13	14	15
Subject of measurement	Min	Max	Icom IC-7800 V2	Yaesu FTdx9000	TenTec Omni-VII	Icom IC-R9500	Yaesu FTdx9000
Band: 14 MHz	Scale	Scale	Mar 2007	July 2010	July 2007	Jan 2008	Mar 2006
Receiver							
20 kHz blocking gain compression	70 dB	140 dB	144 dB	137 dB	137 dB	144 dB !	128 dB
2 kHz blocking gain compression	70 dB	141 dB	117 dB	102 dB	134 dB	109 dB	97 dB
20 kHz 3rd-order dynamic range	50 dB	110 dB	108 dB	99 dB	91 dB	5kHz/92 dB	101 dB
2 kHz 3rd-order dynamic range	50 dB	110 dB	86 dB	85 dB	82 dB	81 dB	78 dB
20 kHz 3rd-order intercept	-40dbm	+35dbm	+38 dBm !	+28 dBm	+11 dBm	+32 dBm	+35 dBm
2 kHz 3rd-order intercept	-40dbm	+35dbm	+22 dBm	+7 dBm	+6.5 dBm	-4dBm	+1 dBm
Transmitter							
Tx-Rx turnaround time (SSB TX delay)	50 ms	10 ms	15 ms	32 ms	20 ms	N/A	35 ms
Transmit 3rd-order IMD	-20 dB	-35 dB	-32 dB	-37 dB #!	-27 dB	N/A	-34 dB #
Transmit 9th-order IMD	-20dB	-70 dB	-52 dB	>-75 dB #!	-55 dB	N/A	-80 dB #!

Sorted by 2 kHz 3rd-order dynamic range

			16	17	18	19	20
Subject of measurement	Min Scale	Max Scale	Yaesu FT-950 March 2008	Yaesu FT-2000D Oct 2007	Yaesu FT-450 Dec 2007	Icom IC-7200 June 2009	Yaesu FT-2000 Feb 2007
Receiver							
20 kHz blocking gain compression	70 dB	140 dB	128 dB	136 dB	134 dB	140 dB	126 dB
2 kHz blocking gain compression	70 dB	141 dB	98 dB	87 dB	90 dB	83 dB	92 dB
20 kHz 3rd-order dynamic range	50 dB	110 dB	95 dB	98 dB	97 dB	99 dB	95 dB
2 kHz 3rd-order dynamic range	50 dB	110 dB	71 dB	69 dB	67 dB	67 dB	64 dB
20 kHz 3rd-order intercept	-40dbm	+35dbm	+21 dBm	+26 dBm	+13 dBm	+23 dBm	+16 dBm
2 kHz 3rd-order intercept	-40dbm	+35dbm	-4 dBm	-16 dBm	-31 dBm	-11 dBm	-22 dBm
Transmitter							
Tx-Rx turnaround time (SSB TX delay)	50 ms	10 ms	25 ms	37 ms	40 ms	30 ms	27 ms
Transmit 3rd-order IMD	-20 dB	-35 dB	-35 dB	-41 dB #!	-30 dB	-32 dB	-32 dB
Transmit 9th-order IMD	-20dB	-70 dB	-56 dB	-65 dB #	-48 dB	-58 dB	-60 dB

Sorted by 2 kHz 3rd-order dynamic range

			21
Subject of measurement	Min Scale	Max Scale	Icom IC-7000 May 2006
Receiver			
20 kHz blocking gain compression	70 dB	140 dB	112 dB
2 kHz blocking gain compression	70 dB	141 dB	86 dB
20 kHz 3rd-order dynamic range	50 dB	110 dB	89 dB
2 kHz 3rd-order dynamic range	50 dB	110 dB	63 dB
20 kHz 3rd-order intercept	-40dbm	+35dbm	+6 dBm
2 kHz 3rd-order intercept	-40dbm	+35dbm	-27 dBm
Transmitter			
Tx-Rx turnaround time (SSB TX delay)	50 ms	10 ms	12 ms
Transmit 3rd-order IMD	-20 dB	-35 dB	-33 dB
Transmit 9th-order IMD	-20dB	-70 dB	-58 dB

* = Blocking exceeded the levels indicated

= Class A operation

! = below/above measurable levels

Please take into account that there might be a difference in the numbers when comparing the older product reviews to the later reviews due to changes and/or improvements in the measurement equipment employed.

Green = excellent
Light green = good
Yellow = average
Orange = moderate
Red = poor

v 24.MAR.2011

V5: K6JRF

Please send me an e-mail (hans@pa1hr.nl) if you have corrections or remarks, etc.