

Hi all,

As previously mentioned on this group, the FT1000mp Mk V was reviewed in the October 2000 RadCom. I asked the editorial staff for permission to quote figures and make comparisons with the original review of the FT1000mp in the January 1996 RadCom on this reflector (it's a copyrighted publication). Permission was granted. You will need to view this on a fixed width font to make everything line up properly.

I was asked to state that the figures were taken from "an independent review by Peter Hart, G3SJX, in the RSGB members' journal, RadCom".

Peter Hart has been doing these reviews in RadCom for quite a number of years and always gives the figures in the same format so it is easy to make direct comparisons. It's interesting to lift the May 1986 RadCom and compare the FT1000mp with the TS930, the old benchmark rig. It's surprising how far the FT1000mp is ahead of the TS930 in some critical areas, but we'll leave that for another time ;-)

Below, direct comparisons have been made between the older FT1000mp and the new FT1000mp Mk V.

SENSITIVITY SSB 10dB s+n/n (using tuned/flat front ends as appropriate)

FREQ	FT1000MP	FT1000MP MK V
	=====	=====
1.8	0.32uV	0.40uV
3.5	0.40uV	0.45uV
7	0.32uV	0.35uV
10	0.18uV	0.18uV
14	0.20uV	0.20uV
18	0.16uV	0.16uV
24	0.13uV	0.11uV
28	0.13uV	0.11uV

FT1000MP INTERMODULATION (50kHz Tone Spacing)

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	3rd Order Intercept		2 tone dynamic range	
	PREAMP IN	PREAMP OUT	PREAMP IN	PREAMP OUT
1.8	+13dBm	+15dBm	93dB	93dB
3.5	+18dBm	+19dBm	95dB	97dB
7	+19dBm	+20dBm	97dB	97dB
14	+19dBm	+29dBm	99dB	102dB
21	+14dBm	+19dBm	97dB	96dB
28	- 4dBm	+ 6dBm	87dB	86dB

FT1000MP MK V INTERMODULATION (50kHz Tone Spacing)

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FREQ	3rd Order Intercept			Two-Tone Dynamic Range		
	Flat Amp	Tuned Amp	Amp Out	Flat Amp	Tuned Amp	Amp Out
1.8	- 5dBm	+10dBm	+22dBm	84dB	90dB	97dB
3.5	+ 6dBm	+16dBm	+21dBm	91dB	93dB	95dB

7	+13dBm	+16dBm	+18dBm	95dB	95dB	95dB
14	+12dBm	-	+24dBm	95dB	-	99dB
21	+11dBm	-	+13dBm	95dB	-	91dB
28	+ 2dBm	- 9dBm	+ 2dBm	88dB	85dB	82dB

CLOSE-IN INTERMODULATION ON 7MHz BAND - PRE-AMP OUT (IPO)

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FT1000MP

Spacing	3rd Order Intercept	Two Tone Dynamic Range	Blocking	Reciprocal Mixing For 3dB noise
3kHz	- 8dBm	78dB	-25dBm	80dB
5kHz	- 2dBm	82dB	-25dBm	86dB
7kHz	+ 1dBm	84dB	-18dBm	94dB
10kHz	+13dBm	92dB	-10dBm	99dB
15kHz	+29dBm	103dB	- 6dBm	103dB
20kHz	+24dBm	99dB	- 4dBm	108dB
30kHz	+22dBm	98dB	0dBm	115dB
40kHz	+21dBm	97dB	0dBm	121dB
50kHz	+20dBm	97dB	0dBm	124dB
100kHz	<-----not measured----->			
200kHz	<-----not measured----->			

FT1000MP MK V

Spacing	3rd Order Intercept	Two Tone Dynamic Range	Blocking	Reciprocal Mixing For 3dB noise
3kHz	- 9dBm	77dB	-14dBm	82dB
5kHz	-14dBm	73dB	-14dBm	87dB
7kHz	-12dBm	75dB	- 8dBm	91dB
10kHz	- 5dBm	79dB	0dBm	95dB
15kHz	+10dBm	89dB	>+6dBm	100dB
20kHz	+18dBm	95dB	>+6dBm	104dB
30kHz	+18dBm	95dB	>+6dBm	109dB
40kHz	+18dBm	95dB	>+6dBm	112dB
50kHz	+18dBm	95dB	>+6dBm	114dB
100kHz	+18dBm	95dB	>+6dBm	120dB
200kHz	+18dBm	95dB	>+6dBm	123dB

Some other miscellaneous figures

AM sensitivity (28MHz)

FT1000MP = 0.7uV for 10dB s+n/n at 30% mod depth

FT1000MP MK V = 0.8uV for 10dB s+n/n at 30% mod depth

FM sensitivity (28MHz)

FT1000MP = 0.13uV for 12dB SINAD 3kHz pk deviation

FT1000MP MK V = 0.13uV for 12dB SINAD 3kHz pk deviation

AGC threshold

FT1000MP = 2.5uV

FT1000MP MK V = 2.5uV

FT1000MP = 100dB above AGC threshold for +2.0dB audio output

FT1000MP MK V = 100dB above AGC threshold for +1.5dB audio output

AGC attack time

FT1000MP = 5ms(fast) 2ms(slow)  
FT1000MP MK V = 3ms(fast) 2ms(slow)

AGC decay time

FT1000MP = 0.2-0.5s(fast) 2-3s(slow)  
FT1000MP MK V = 0.2-0.3s(fast) 2s(slow)

Carrier suppression

FT1000MP = >80dB  
FT1000MP MK V = >70dB

Sideband suppression

FT1000MP = >80dB @ 1kHz  
FT1000MP MK V = >80dB @ 1kHz

Transmitter AF distortion

FT1000MP = 0.5%  
FT1000MP MK V = <1%

SSB T/R switch speed

	mute-TX	TX-mute	mute-RX	RX-mute
FT1000MP	= 12ms	5ms	24ms	2ms
FT1000MP MK V	= 10ms	5ms	24ms	2ms

Here are some transmitter figures that I omitted from my previous post. As the Class A PA is one of the selling points of this rig, I guess I should have included this earlier. As before, these figures were taken, with permission, from "an independent review by Peter Hart, G3SJX, in the RSGB members' journal, RadCom".

SSB(PEP) POWER OUTPUT  
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FREQ	FT1000MP	FT1000MP MKV
1.8	104W	220W
3.5	103W	195W
7	101W	215W
10	101W	212W
14	102W	213W
18	101W	211W
21	101W	210W
24	102W	212W
28	102W	222W

INTERMODULATION PRODUCTS  
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FREQ	3rd Order			5th Order		
	FT1000MP	FT1000MP MKV		FT1000MP	FT1000MP MKV	
		CLASS AB	CLASS A		CLASS AB	CLASS A
1.8	-26dB	-30dB	-35dB	-40dB	-36dB	-50dB

3.5	-26dB	-28dB	-34dB	-40dB	-36dB	-50dB
7	-25dB	-25dB	-48dB	-44dB	-36dB	-54dB
10	-26dB	-32dB	-50dB	-44dB	-38dB	-54dB
14	-24dB	-30dB	-46dB	-40dB	-44dB	-54dB
18	-24dB	-22dB	-46dB	-40dB	-48dB	-54dB
21	-22dB	-22dB	-43dB	-40dB	-44dB	-52dB
24	-20dB	-23dB	-46dB	-37dB	-38dB	-54dB
28	-25dB	-25dB	-42dB	-35dB	-40dB	-54dB

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