Antenna Terminal Disturbance Voltage Measurement

Scanning Receiver

Test Date: January 6, 1999
Temp.: 21 °C ; Humi.: 34 %

Tuning range : 0.030000 MHz - 29.999999 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
0.030000	69.0415000	10.0	< 10.0	50.0	< 20.0	A
	138.0830000	10.0	< 10.0	50.0	< 20.0	A
	207.1245000	10.0	< 10.0	50.0	< 20.0	A
	276.1660000	10.0	< 10.0	50.0	< 20.0	A
	345.2075000	10.0	< 10.0	50.0	< 20.0	A
	414.2490000	10.0	< 10.0	50.0	< 20.0	A
	483.2905000	10.0	< 10.0	50.0	< 20.0	A
	552.3320000	10.0	< 10.0	50.0	< 20.0	A
	621.3735000	10.0	< 10.0	50.0	< 20.0	A
	690.4150000	10.0	< 10.0	50.0	< 20.0	A
	759.4565000	10.0	< 10.0	50.0	< 20.0	A
	828.4980000	10.0	< 10.0	50.0	< 20.0	A
	897.5395000	10.0	< 10.0	50.0	< 20.0	A
	966.5810000	10.0	< 10.0	50.0	< 20.0	A
	1035.6225000	10.0	< 10.0	50.0	< 20.0	B
15.000000	84.0115000	10.0	< 10.0	50.0	< 20.0	A
	168.0230000	10.0	< 10.0	50.0	< 20.0	A
	252.0345000	10.0	< 10.0	50.0	< 20.0	A
	336.0460000	10.0	< 10.0	50.0	< 20.0	A
	420.0575000	10.0	< 10.0	50.0	< 20.0	A
	504.0690000	10.0	< 10.0	50.0	< 20.0	A
	588.0805000	10.0	< 10.0	50.0	< 20.0	A
	672.0920000	10.0	< 10.0	50.0	< 20.0	A
	756.1035000	10.0	< 10.0	50.0	< 20.0	A
	840.1150000	10.0	< 10.0	50.0	< 20.0	A
	924.1265000	10.0	< 10.0	50.0	< 20.0	A
	1008.1380000	10.0	< 10.0	50.0	< 20.0	B
29.999999	99.0114990	10.0	< 10.0	50.0	< 20.0	A
	198.0229980	10.0	< 10.0	50.0	< 20.0	A
	297.0344970	10.0	< 10.0	50.0	< 20.0	A
	396.0459960	10.0	< 10.0	50.0	< 20.0	A
	495.0574950	10.0	< 10.0	50.0	< 20.0	A
	594.0689940	10.0	< 10.0	50.0	< 20.0	A
	693.0804930	10.0	< 10.0	50.0	< 20.0	A
	792.0919920	10.0	< 10.0	50.0	< 20.0	A
	891.1034910	10.0	< 10.0	50.0	< 20.0	A
	990.1149900	10.0	< 10.0	50.0	< 20.0	A

Tuning range : 30.000000 MHz - 59.999999 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
30.000000	99.0115000	10.0	< 10.0	50.0	< 20.0	A
	198.0230000	10.0	< 10.0	50.0	< 20.0	A
	297.0345000	10.0	< 10.0	50.0	< 20.0	A
	396.0460000	10.0	< 10.0	50.0	< 20.0	A
	495.0575000	10.0	< 10.0	50.0	< 20.0	A
	594.0690000	10.0	< 10.0	50.0	< 20.0	A
	693.0805000	10.0	< 10.0	50.0	< 20.0	A
	792.0920000	10.0	< 10.0	50.0	< 20.0	A
	891.1035000	10.0	< 10.0	50.0	< 20.0	A
	990.1150000	10.0	< 10.0	50.0	< 20.0	A
45.000000	114.0115000	10.0	< 10.0	50.0	< 20.0	A
	228.0230000	10.0	< 10.0	50.0	< 20.0	A
	342.0345000	10.0	< 10.0	50.0	< 20.0	A
	456.0460000	10.0	< 10.0	50.0	< 20.0	A
	570.0575000	10.0	< 10.0	50.0	< 20.0	A
	684.0690000	10.0	< 10.0	50.0	< 20.0	A
	798.0805000	10.0	< 10.0	50.0	< 20.0	A
	912.0920000	10.0	< 10.0	50.0	< 20.0	A
	1026.1035000	10.0	< 10.0	50.0	< 20.0	B
59.999999	129.0114990	10.0	< 10.0	50.0	< 20.0	A
	258.0229980	10.0	< 10.0	50.0	< 20.0	A
	387.0344970	10.0	< 10.0	50.0	< 20.0	A
	516.0459960	10.0	< 10.0	50.0	< 20.0	A
	645.0574950	10.0	< 10.0	50.0	< 20.0	A
	774.0689940	10.0	< 10.0	50.0	< 20.0	A
	903.0804930	10.0	< 10.0	50.0	< 20.0	A
	1032.0919920	10.0	< 10.0	50.0	< 20.0	B

Tuning range : 60.000000 MHz - 128.999999 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
60.000000	64.5057500	10.0	< 10.0	50.0	< 20.0	A
	129.0115000	10.0	< 10.0	50.0	< 20.0	A
	193.5172500	10.0	< 10.0	50.0	< 20.0	A
	258.0230000	10.0	< 10.0	50.0	< 20.0	A
	322.5287500	10.0	< 10.0	50.0	< 20.0	A
	387.0345000	10.0	< 10.0	50.0	< 20.0	A
	451.5402500	10.0	< 10.0	50.0	< 20.0	A
	516.0460000	10.0	< 10.0	50.0	< 20.0	A
	580.5517500	10.0	< 10.0	50.0	< 20.0	A
	645.0575000	10.0	< 10.0	50.0	< 20.0	A
	709.5632500	10.0	< 10.0	50.0	< 20.0	A
	774.0690000	10.0	< 10.0	50.0	< 20.0	A
	838.5747500	10.0	< 10.0	50.0	< 20.0	A
	903.0805000	10.0	< 10.0	50.0	< 20.0	A
	967.5862500	10.0	< 10.0	50.0	< 20.0	A
	1032.0920000	10.0	< 10.0	50.0	< 20.0	B
94.500000	81.7557500	10.0	< 10.0	50.0	< 20.0	A
	163.5115000	10.0	< 10.0	50.0	< 20.0	A
	245.2672500	10.0	< 10.0	50.0	< 20.0	A
	327.0230000	10.0	< 10.0	50.0	< 20.0	A
	408.7787500	10.0	< 10.0	50.0	< 20.0	A
	490.5345000	10.0	< 10.0	50.0	< 20.0	A
	572.2902500	10.0	< 10.0	50.0	< 20.0	A
	654.0460000	10.0	< 10.0	50.0	< 20.0	A
	735.8017500	10.0	< 10.0	50.0	< 20.0	A
	817.5575000	10.0	< 10.0	50.0	< 20.0	A
	899.3132500	10.0	< 10.0	50.0	< 20.0	A
	981.0690000	10.0	< 10.0	50.0	< 20.0	A
	1062.8247500	10.0	< 10.0	50.0	< 20.0	B
128.999999	99.0057495	10.0	< 10.0	50.0	< 20.0	A
	198.0114990	10.0	13.0	50.0	23.0	A
	297.0172485	10.0	< 10.0	50.0	< 20.0	A
	396.0229980	10.0	< 10.0	50.0	< 20.0	A
	495.0287475	10.0	< 10.0	50.0	< 20.0	A
	594.0344970	10.0	< 10.0	50.0	< 20.0	A
	693.0402465	10.0	< 10.0	50.0	< 20.0	A
	792.0459960	10.0	< 10.0	50.0	< 20.0	A
	891.0517455	10.0	< 10.0	50.0	< 20.0	A
	990.0574950	10.0	< 10.0	50.0	< 20.0	A

Tuning range : 129.000000 MHz - 143.999999 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
129.000000	99.0057500	10.0	< 10.0	50.0	< 20.0	A
	198.0115000	10.0	< 10.0	50.0	< 20.0	A
	297.0172500	10.0	< 10.0	50.0	< 20.0	A
	396.0230000	10.0	< 10.0	50.0	< 20.0	A
	495.0287500	10.0	< 10.0	50.0	< 20.0	A
	594.0345000	10.0	< 10.0	50.0	< 20.0	A
	693.0402500	10.0	< 10.0	50.0	< 20.0	A
	792.0460000	10.0	< 10.0	50.0	< 20.0	A
	891.0517500	10.0	< 10.0	50.0	< 20.0	A
	990.0575000	10.0	< 10.0	50.0	< 20.0	A
136.500000	102.7557500	10.0	< 10.0	50.0	< 20.0	A
	205.5115000	10.0	< 10.0	50.0	< 20.0	A
	308.2672500	10.0	< 10.0	50.0	< 20.0	A
	411.0230000	10.0	< 10.0	50.0	< 20.0	A
	513.7787500	10.0	< 10.0	50.0	< 20.0	A
	616.5345000	10.0	< 10.0	50.0	< 20.0	A
	719.2902500	10.0	< 10.0	50.0	< 20.0	A
	822.0460000	10.0	< 10.0	50.0	< 20.0	A
	924.8017500	10.0	< 10.0	50.0	< 20.0	A
	1027.5575000	10.0	< 10.0	50.0	< 20.0	B
143.999999	106.5057495	10.0	< 10.0	50.0	< 20.0	A
	213.0114990	10.0	< 10.0	50.0	< 20.0	A
	319.5172485	10.0	< 10.0	50.0	< 20.0	A
	426.0229980	10.0	< 10.0	50.0	< 20.0	A
	532.5287475	10.0	< 10.0	50.0	< 20.0	A
	639.0344970	10.0	< 10.0	50.0	< 20.0	A
	745.5402465	10.0	< 10.0	50.0	< 20.0	A
	852.0459960	10.0	< 10.0	50.0	< 20.0	A
	958.5517455	10.0	< 10.0	50.0	< 20.0	A
	1065.0574950	10.0	< 10.0	50.0	< 20.0	B

Tuning range : 144.000000 MHz - 148.000000 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
144.000000	106.5057500	10.0	< 10.0	50.0	< 20.0	A
	213.0115000	10.0	< 10.0	50.0	< 20.0	A
	319.5172500	10.0	< 10.0	50.0	< 20.0	A
	426.0230000	10.0	< 10.0	50.0	< 20.0	A
	532.5287500	10.0	< 10.0	50.0	< 20.0	A
	639.0345000	10.0	< 10.0	50.0	< 20.0	A
	745.5402500	10.0	< 10.0	50.0	< 20.0	A
	852.0460000	10.0	< 10.0	50.0	< 20.0	A
	958.5517500	10.0	< 10.0	50.0	< 20.0	A
	1065.0575000	10.0	< 10.0	50.0	< 20.0	B
146.000000	107.5057500	10.0	< 10.0	50.0	< 20.0	A
	215.0115000	10.0	< 10.0	50.0	< 20.0	A
	322.5172500	10.0	< 10.0	50.0	< 20.0	A
	430.0230000	10.0	< 10.0	50.0	< 20.0	A
	537.5287500	10.0	< 10.0	50.0	< 20.0	A
	645.0345000	10.0	< 10.0	50.0	< 20.0	A
	752.5402500	10.0	< 10.0	50.0	< 20.0	A
	860.0460000	10.0	< 10.0	50.0	< 20.0	A
	967.5517500	10.0	< 10.0	50.0	< 20.0	A
	1075.0575000	10.0	< 10.0	50.0	< 20.0	B
148.000000	108.5057500	10.0	< 10.0	50.0	< 20.0	A
	217.0115000	10.0	< 10.0	50.0	< 20.0	A
	325.5172500	10.0	< 10.0	50.0	< 20.0	A
	434.0230000	10.0	< 10.0	50.0	< 20.0	A
	542.5287500	10.0	< 10.0	50.0	< 20.0	A
	651.0345000	10.0	< 10.0	50.0	< 20.0	A
	759.5402500	10.0	< 10.0	50.0	< 20.0	A
	868.0460000	10.0	< 10.0	50.0	< 20.0	A
	976.5517500	10.0	< 10.0	50.0	< 20.0	A

Tuning range : 148.000001 MHz - 199.999999 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
148.000001	108.5057505	10.0	< 10.0	50.0	< 20.0	A
	217.0115010	10.0	< 10.0	50.0	< 20.0	A
	325.5172515	10.0	< 10.0	50.0	< 20.0	A
	434.0230020	10.0	< 10.0	50.0	< 20.0	A
	542.5287525	10.0	< 10.0	50.0	< 20.0	A
	651.0345030	10.0	< 10.0	50.0	< 20.0	A
	759.5402535	10.0	< 10.0	50.0	< 20.0	A
	868.0460040	10.0	< 10.0	50.0	< 20.0	A
	976.5517545	10.0	< 10.0	50.0	< 20.0	A
174.000000	121.5057500	10.0	< 10.0	50.0	< 20.0	A
	243.0115000	10.0	12.0	50.0	22.0	A
	364.5172500	10.0	< 10.0	50.0	< 20.0	A
	486.0230000	10.0	< 10.0	50.0	< 20.0	A
	607.5287500	10.0	< 10.0	50.0	< 20.0	A
	729.0345000	10.0	< 10.0	50.0	< 20.0	A
	850.5402500	10.0	< 10.0	50.0	< 20.0	A
	972.0460000	10.0	< 10.0	50.0	< 20.0	A
199.999999	134.5057495	10.0	< 10.0	50.0	< 20.0	A
	269.0114990	10.0	13.0	50.0	23.0	A
	403.5172485	10.0	< 10.0	50.0	< 20.0	A
	538.0229980	10.0	< 10.0	50.0	< 20.0	A
	672.5287475	10.0	< 10.0	50.0	< 20.0	A
	807.0344970	10.0	< 10.0	50.0	< 20.0	A
	941.5402465	10.0	< 10.0	50.0	< 20.0	A
	1076.0459960	10.0	< 10.0	50.0	< 20.0	B

Tuning range : 400.000000 MHz - 470.000000 MHz

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
400.000000	234.5057500	10.0	< 10.0	50.0	< 20.0	A
	469.0115000	10.0	16.0	50.0	26.0	A
	703.5172500	10.0	< 10.0	50.0	< 20.0	A
	938.0230000	10.0	< 10.0	50.0	< 20.0	A
435.000000	252.0057500	10.0	< 10.0	50.0	< 20.0	A
	504.0115000	10.0	23.0	50.0	33.0	A
	756.0172500	10.0	< 10.0	50.0	< 20.0	A
	1008.0230000	10.0	< 10.0	50.0	< 20.0	B
470.000000	269.5057500	10.0	< 10.0	50.0	< 20.0	A
	539.0115000	10.0	19.0	50.0	29.0	A
	808.5172500	10.0	< 10.0	50.0	< 20.0	A
	1078.0230000	10.0	< 10.0	50.0	< 20.0	B

Other frequency (include 2nd/3rd local frequency)

Frequency to which tuned [MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]	Limits at 50Ω [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
470.000000	30.0000	10.0	< 10.0	50.0	< 20.0	A
	37.8660	10.0	< 10.0	50.0	< 20.0	A
	39.3216	10.0	< 10.0	50.0	< 20.0	A
	56.7990	10.0	< 10.0	50.0	< 20.0	A
	60.0000	10.0	< 10.0	50.0	< 20.0	A
	90.0000	10.0	< 10.0	50.0	< 20.0	A
	120.0000	10.0	< 10.0	50.0	< 20.0	A
	147.4560	10.0	< 10.0	50.0	< 20.0	A
	240.0000	10.0	< 10.0	50.0	< 20.0	A
	398.1312	10.0	< 10.0	50.0	< 20.0	A
	427.6224	10.0	< 10.0	50.0	< 20.0	A
	457.1136	10.0	< 10.0	50.0	< 20.0	A
	486.6048	10.0	< 10.0	50.0	< 20.0	A
	501.3504	10.0	< 10.0	50.0	< 20.0	A

Sample of calculated result at 504.0115000 MHz (Tuning frequency 435.000000 MHz),
as the Minimum Margin point:

Correction Factor	=	10.0 dB
+)Meter Reading	=	23.0 dB(μV)
Result	=	33.0 dB(μV)

Minimum Margin : 50.0 - 33.0 = 17.0(dB)
The point shown on "___ " is the Minimum Margin Point.

Conversion of applied limits (refer to § 15.111(a))
50.0 [dB(μV)] = 20log{$\sqrt{2}$[nW]×10^{-9} ×50[Ω]×10^{6}}

Note 1:
1)The highest frequency generated or used in the EUT: 539.0115000 MHz
2)The upper frequency of measurement range : 1078.0230000 MHz
3)The spectrum was scanned 30 MHz to 1080 MHz and all emissions not reported were more than 20dB below the applied limits.
4)Correction Factor = 10dB Pad Attenuator (dB)

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 KHz

Note 2	Detector Function	RES. B.W	V.B.W	Sweep T	Span
B	Peak (SP)	1 MHz	1 MHz	20 msec	0 Hz
C	Peak (SP)	100 kHz	100 kHz	20 msec	0 Hz
*) D	Average (ESV)	1 MHz (3 MHz)	3 MHz	20 msec	0 Hz

( ):Setting of spectrum analyzer
*)For the average measurement method, it is made measurement using a test receiver, a step attenuater and a spectrum analyzer.

Tester Signature : A. Hosoda

Type Name : Akio Hosoda