

APPENDIX 2: EMI test data

Frequency Stability

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date 2010/6/18
 Temperature / Humidity 23deg.C. , 53%
 Engineer Akio Hayashi
 Mode Transmitting

Test Condition deg.C	Volts	Test Timing	Measured freq [MHz]	Freq error [MHz]	Result [ppm]	Limit [+/- ppm]	Margin [ppm]
20deg.C	1.44V (Vmin)	Power on	608.012067	-0.000433	-0.71	2.50	1.79
		on 2min.	608.012060	-0.000440	-0.72	2.50	1.78
		on 5min.	608.012054	-0.000446	-0.73	2.50	1.77
		on 10min.	608.012044	-0.000456	-0.75	2.50	1.75
	3V (Vnom)	Power on	608.012162	-0.000338	-0.56	2.50	1.94
		on 2min.	608.012153	-0.000347	-0.57	2.50	1.93
		on 5min.	608.012154	-0.000346	-0.57	2.50	1.93
		on 10min.	608.012154	-0.000346	-0.57	2.50	1.93
	/	Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
50deg.C.	/	Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
40deg.C.	/	Power on	608.011755	-0.000745	-1.23	2.50	1.27
		on 2min.	608.011761	-0.000739	-1.22	2.50	1.28
		on 5min.	608.011760	-0.000740	-1.22	2.50	1.28
		on 10min.	608.011746	-0.000754	-1.24	2.50	1.26
30deg.C.	/	Power on	608.011923	-0.000577	-0.95	2.50	1.55
		on 2min.	608.011925	-0.000575	-0.95	2.50	1.55
		on 5min.	608.011928	-0.000572	-0.94	2.50	1.56
		on 10min.	608.011925	-0.000575	-0.95	2.50	1.55
20deg.C.	3V	Power on	608.012162	-0.000338	-0.56	2.50	1.94
		on 2min.	608.012153	-0.000347	-0.57	2.50	1.93
		on 5min.	608.012154	-0.000346	-0.57	2.50	1.93
		on 10min.	608.012154	-0.000346	-0.57	2.50	1.93
10deg.C.	/	Power on	608.012181	-0.000319	-0.52	2.50	1.98
		on 2min.	608.012188	-0.000312	-0.51	2.50	1.99
		on 5min.	608.012190	-0.000310	-0.51	2.50	1.99
		on 10min.	608.012185	-0.000315	-0.52	2.50	1.98
0deg.C.	/	Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
-10deg.C.	/	Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
-20deg.C	/	Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-

Limit : 608.0125 MHz +/-0.00025 % (+/- 2.5ppm) = +/- 0.001520 MHz

*The test on 50deg.C., 0deg.C., -10deg.C., and -20deg.C. were not apply, since the specification of operating temperature of EUT was 10deg.C to 40deg.C.

Frequency Stability

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date 2010/6/18
 Temperature / Humidity 23deg.C. , 53%
 Engineer Akio Hayashi
 Mode Transmitting

Test Condition deg.C	Test Timing	Measured freq [MHz]	Freq error [MHz]	Result [ppm]	Limit [+/- ppm]	Margin [ppm]	
							Volts
20deg.C	1.44V (Vmin)	Power on	610.999558	-0.000442	-0.72	2.50	1.78
		on 2min.	610.999569	-0.000431	-0.71	2.50	1.79
		on 5min.	610.999574	-0.000426	-0.70	2.50	1.80
		on 10min.	610.999585	-0.000415	-0.68	2.50	1.82
	3V (Vnom)	Power on	610.999638	-0.000362	-0.59	2.50	1.91
		on 2min.	610.999634	-0.000366	-0.60	2.50	1.90
		on 5min.	610.999637	-0.000363	-0.59	2.50	1.91
		on 10min.	610.999645	-0.000355	-0.58	2.50	1.92
		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
50deg.C.	Power on	-	-	-	-	-	
	on 2min.	-	-	-	-	-	
	on 5min.	-	-	-	-	-	
	on 10min.	-	-	-	-	-	
40deg.C.	Power on	610.999231	-0.000769	-1.26	2.50	1.24	
	on 2min.	610.999241	-0.000759	-1.24	2.50	1.26	
	on 5min.	610.999246	-0.000754	-1.23	2.50	1.27	
	on 10min.	610.999223	-0.000777	-1.27	2.50	1.23	
30deg.C.	Power on	610.999462	-0.000538	-0.88	2.50	1.62	
	on 2min.	610.999450	-0.000550	-0.90	2.50	1.60	
	on 5min.	610.999448	-0.000552	-0.90	2.50	1.60	
	on 10min.	610.999437	-0.000563	-0.92	2.50	1.58	
20deg.C.	Power on	610.999638	-0.000362	-0.59	2.50	1.91	
	on 2min.	610.999634	-0.000366	-0.60	2.50	1.90	
	on 5min.	610.999637	-0.000363	-0.59	2.50	1.91	
	on 10min.	610.999645	-0.000355	-0.58	2.50	1.92	
10deg.C.	Power on	610.999648	-0.000352	-0.58	2.50	1.92	
	on 2min.	610.999667	-0.000333	-0.55	2.50	1.95	
	on 5min.	610.999674	-0.000326	-0.53	2.50	1.97	
	on 10min.	610.999676	-0.000324	-0.53	2.50	1.97	
0deg.C.	Power on	-	-	-	-	-	
	on 2min.	-	-	-	-	-	
	on 5min.	-	-	-	-	-	
	on 10min.	-	-	-	-	-	
-10deg.C.	Power on	-	-	-	-	-	
	on 2min.	-	-	-	-	-	
	on 5min.	-	-	-	-	-	
	on 10min.	-	-	-	-	-	
-20deg.C	Power on	-	-	-	-	-	
	on 2min.	-	-	-	-	-	
	on 5min.	-	-	-	-	-	
	on 10min.	-	-	-	-	-	

Limit : 611 MHz +/-0.00025 % (+/- 2.5ppm) = +/- 0.001528 MHz

*The test on 50deg.C., 0deg.C., -10deg.C., and -20deg.C. were not apply, since the specification of operating temperature of EUT was 10deg.C to 40deg.C.

Frequency Stability

Test place : UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date : 2010/6/18
 Temperature / Humidity : 23deg.C, 53%
 Engineer : Akio Hayashi
 Mode : Transmitting

Test Condition deg.C Volts		Test Timing	Measured freq [MHz]	Freq error [MHz]	Result [ppm]	Limit [+/- ppm]	Margin [ppm]
20deg.C	1.44V (Vmin)	Power on	613.987084	-0.000416	-0.68	2.50	1.82
		on 2min.	613.987083	-0.000417	-0.68	2.50	1.82
		on 5min.	613.987086	-0.000414	-0.67	2.50	1.83
		on 10min.	613.987083	-0.000417	-0.68	2.50	1.82
	3V (Vnom)	Power on	613.987134	-0.000366	-0.60	2.50	1.90
		on 2min.	613.987129	-0.000371	-0.60	2.50	1.90
		on 5min.	613.987127	-0.000373	-0.61	2.50	1.89
		on 10min.	613.987148	-0.000352	-0.57	2.50	1.93
		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
50deg.C.		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
40deg.C.		Power on	613.986747	-0.000753	-1.23	2.50	1.27
		on 2min.	613.986745	-0.000755	-1.23	2.50	1.27
		on 5min.	613.986739	-0.000761	-1.24	2.50	1.26
		on 10min.	613.986735	-0.000765	-1.25	2.50	1.25
30deg.C.		Power on	613.986944	-0.000556	-0.91	2.50	1.59
		on 2min.	613.986946	-0.000554	-0.90	2.50	1.60
		on 5min.	613.986945	-0.000555	-0.90	2.50	1.60
		on 10min.	613.986949	-0.000551	-0.90	2.50	1.60
20deg.C.	3V	Power on	613.987134	-0.000366	-0.60	2.50	1.90
		on 2min.	613.987129	-0.000371	-0.60	2.50	1.90
		on 5min.	613.987127	-0.000373	-0.61	2.50	1.89
		on 10min.	613.987148	-0.000352	-0.57	2.50	1.93
10deg.C.		Power on	613.987184	-0.000316	-0.51	2.50	1.99
		on 2min.	613.987190	-0.000310	-0.50	2.50	2.00
		on 5min.	613.987194	-0.000306	-0.50	2.50	2.00
		on 10min.	613.987170	-0.000330	-0.54	2.50	1.96
0deg.C.		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
-10deg.C.		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-
-20deg.C		Power on	-	-	-	-	-
		on 2min.	-	-	-	-	-
		on 5min.	-	-	-	-	-
		on 10min.	-	-	-	-	-

Limit : 613.9875 MHz +/-0.00025 % (+/- 2.5ppm) = +/- 0.001535 MHz

*The test on 50deg.C., 0deg.C., -10deg.C., and -20deg.C. were not apply, since the specification of operating temperature of EUT was 10deg.C to 40deg.C.

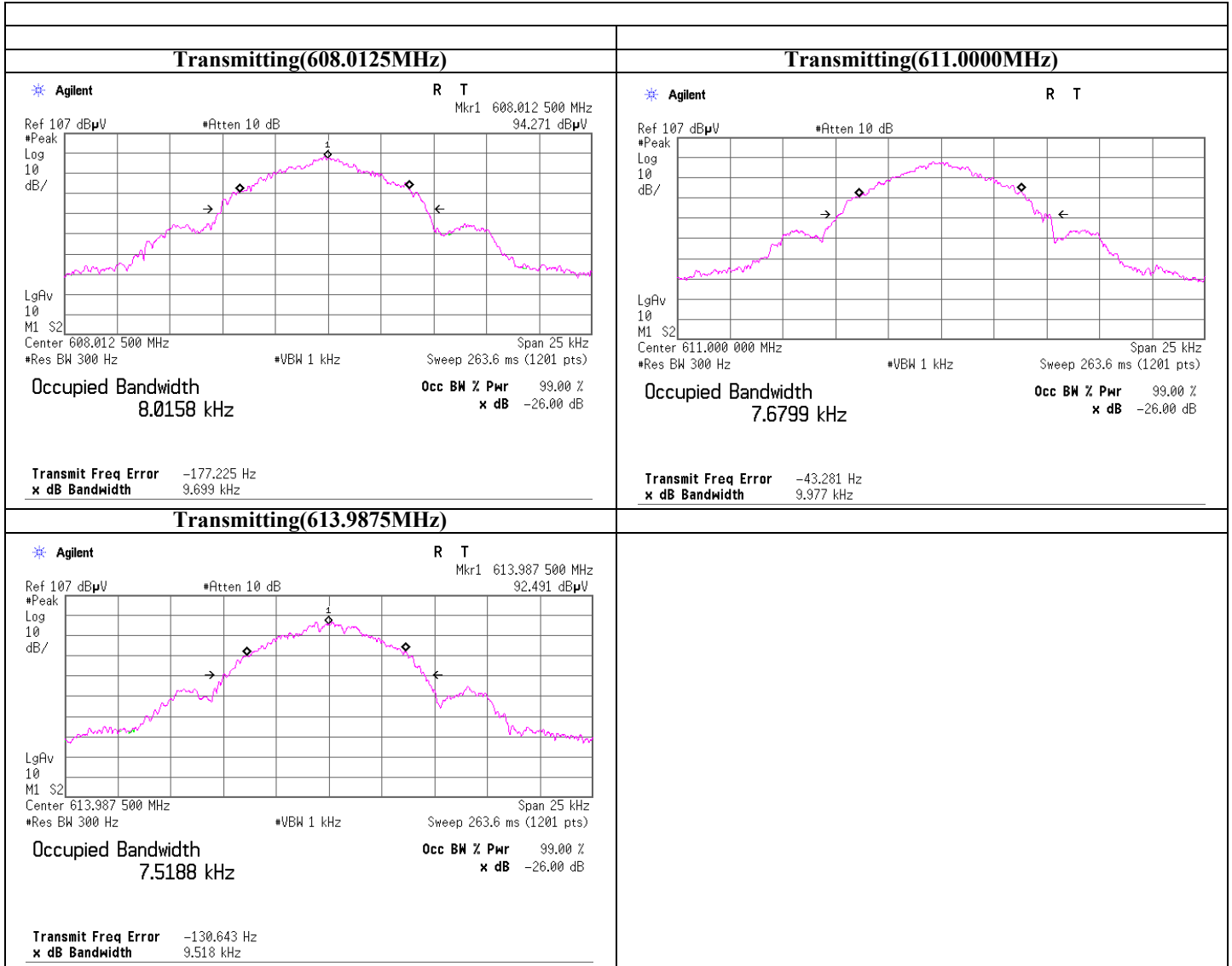
-26dB Bandwidth

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date 2010/6/16
Temperature / Humidity 22deg.C , 57%
Engineer Akio Hayashi
Mode Transmitting

Freq.	-26dB Bandwidth
[MHz]	[kHz]
608.0125	9.699
611.0000	9.977
613.9875	9.518

No limit applies to -26dB Bandwidth.

-26dB Bandwidth



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Field Strength(Electric Field Strength of Fundamental Emission , Spurious Emission and Band Edge Compliance)

Test place : UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2010/6/13
 Temperature / Humidity : 21deg.C , 58%
 Engineer : Shinichi Takano
 Mode : Tx, 608.0125 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	124.683	QP	38.1	13.7	7.4	32.1	27.1	46.0	18.9	162	114	EUT:Y , ANT:X
Hori.	150.536	QP	43.2	15.0	7.6	32.0	33.8	46.0	12.2	215	359	EUT:Y , ANT:X
Hori.	349.875	QP	32.8	15.2	8.7	31.9	24.8	46.0	21.2	100	313	EUT:Z , ANT:X
Hori.	608.000	QP	93.0	19.1	9.7	31.9	89.9	-	-	141	240	BandEdge(Reference) , EUT:Z , ANT:X
Hori.	608.013	QP	93.6	19.1	9.7	31.9	90.5	106.0	15.5	141	240	Carrier , EUT:Z , ANT:X
Hori.	1216.025	AV	58.1	24.3	2.4	40.0	44.8	53.9	9.2	110	199	EUT:Hor_Z , ANT:Y
Hori.	1824.037	AV	50.6	25.9	2.9	40.3	39.1	53.9	14.9	103	203	EUT:Hor_Z , ANT:Y
Hori.	2432.050	AV	49.7	27.7	3.3	40.2	40.5	53.9	13.5	122	229	EUT:Hor_Z , ANT:Y
Hori.	3040.063	AV	45.9	28.5	3.8	40.9	37.3	53.9	16.7	113	22	EUT:Hor_Z , ANT:Y
Hori.	3648.075	AV	47.8	29.0	4.2	41.1	39.9	53.9	14.1	110	244	EUT:Hor_Z , ANT:Y
Hori.	4256.088	AV	53.1	29.4	4.5	40.6	46.4	53.9	7.6	105	155	EUT:Hor_Z , ANT:Y
Hori.	6080.125	AV	34.2	33.3	5.5	39.2	33.8	53.9	20.2	100	0	EUT:Hor_Z , ANT:Y
Vert.	87.050	QP	43.2	7.7	7.1	32.1	25.9	46.0	20.1	100	359	EUT:Y , ANT:Y
Vert.	113.417	QP	42.3	12.3	7.3	32.1	29.8	46.0	16.2	100	359	EUT:Y , ANT:Y
Vert.	349.875	QP	23.3	15.2	8.7	31.9	15.3	46.0	30.7	100	0	EUT:Z , ANT:X
Vert.	608.000	QP	90.0	19.1	9.7	31.9	86.9	-	-	142	279	BandEdge(Reference) , EUT:Z , ANT:X
Vert.	608.013	QP	90.7	19.1	9.7	31.9	87.6	106.0	18.4	142	279	Carrier , EUT:Z , ANT:X
Vert.	1216.025	AV	60.6	24.3	2.4	40.0	47.3	53.9	6.7	141	207	EUT:Hor_Y , ANT:X
Vert.	1824.037	AV	52.2	25.9	2.9	40.3	40.7	53.9	13.3	138	241	EUT:Hor_Y , ANT:X
Vert.	2432.050	AV	51.1	27.7	3.3	40.2	41.9	53.9	12.1	110	317	EUT:Hor_Y , ANT:X
Vert.	3040.063	AV	46.1	28.5	3.8	40.9	37.5	53.9	16.5	100	6	EUT:Hor_Y , ANT:X
Vert.	3648.075	AV	43.4	29.0	4.2	41.1	35.5	53.9	18.5	100	359	EUT:Hor_Y , ANT:X
Vert.	4256.088	AV	47.6	29.4	4.5	40.6	40.9	53.9	13.1	100	182	EUT:Hor_Y , ANT:X
Vert.	6080.125	AV	33.6	33.3	5.5	39.2	33.2	53.9	20.8	100	0	EUT:Hor_Y , ANT:X

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 10th harmonic was not seen so the result was its base noise level.

* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 598.412MHz, 617.612MHz)

Marker Delta Method(Test distance 3meters)

	Polarity	Hor.		Ver.		
		[dBuV]	[dBuV/m]	[dBuV]	[dBuV/m]	
	RBW VBW	Reading	Result	Reading	Result	
Step1	Fundamental(608.0125MHz)	QP	93.6	90.5	90.7	87.6
	Fundamental(608.0125MHz)	1k/3k	93.1	90.0	90.2	87.1
Step2	Band-edge(608MHz)	1k/3k	43.6	40.5	42.4	39.3
	Amplitude delta	-	-	49.5	-	47.8
Step3	Field strength of band-edge	-	-	41.0	-	39.8
	Limit	-	-	46.0	-	46.0
	Margin	-	-	5.0	-	6.2

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*1 Amplitude delta = Fundamental(RBW:1kHz,VBW:3kHz) - Band-edge(RBW:1kHz,VBW:3kHz)

*2 Field strength of band-edge = Fundamental(QP) - Amplitude delta

Field Strength(Electric Field Strength of Fundamental Emission , Spurious Emission and Band Edge Compliance)

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
 Date 2010/6/13
 Temperature / Humidity 21deg.C , 58%
 Engineer Shinichi Takano
 Mode Tx, 611.0000 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	124.574	QP	37.8	13.7	7.4	32.1	26.8	46.0	19.2	164	162	EUT:Y , ANT:X
Hori.	150.462	QP	42.1	15.0	7.6	32.0	32.7	46.0	13.3	194	1	EUT:Y , ANT:X
Hori.	347.500	QP	32.2	15.1	8.6	31.9	24.0	46.0	22.0	100	311	EUT:Z , ANT:X
Hori.	611.000	QP	95.9	19.1	9.7	31.9	92.8	106.0	13.2	156	302	Carrier , EUT:Z , ANT:X
Hori.	1222.000	AV	58.9	24.3	2.4	40.0	45.6	53.9	8.4	110	200	EUT:Z , ANT:Y
Hori.	1833.000	AV	51.7	25.9	2.9	40.3	40.2	53.9	13.8	103	212	EUT:Z , ANT:Y
Hori.	2444.000	AV	50.1	27.8	3.3	40.2	41.0	53.9	13.0	123	233	EUT:Z , ANT:Y
Hori.	3055.000	AV	46.3	28.6	3.8	40.9	37.8	53.9	16.2	113	19	EUT:Z , ANT:Y
Hori.	3666.000	AV	47.6	29.0	4.2	41.1	39.7	53.9	14.3	109	250	EUT:Z , ANT:Y
Hori.	4277.000	AV	52.5	29.4	4.5	40.5	45.9	53.9	8.1	105	162	EUT:Z , ANT:Y
Hori.	6110.000	AV	34.4	33.4	5.5	39.2	34.1	53.9	19.9	100	0	EUT:Z , ANT:Y
Vert.	87.054	QP	43.9	7.7	7.1	32.1	26.6	46.0	19.4	100	359	EUT:Y , ANT:Y
Vert.	113.422	QP	41.7	12.3	7.3	32.1	29.2	46.0	16.8	100	359	EUT:Y , ANT:Y
Vert.	347.500	QP	23.6	15.1	8.6	31.9	15.4	46.0	30.6	100	0	EUT:Z , ANT:X
Vert.	611.000	QP	93.7	19.1	9.7	31.9	90.6	106.0	15.4	154	275	Carrier , EUT:Z , ANT:X
Vert.	1222.000	AV	59.3	24.3	2.4	40.0	46.0	53.9	8.0	140	207	EUT:Y , ANT:X
Vert.	1833.000	AV	51.9	25.9	2.9	40.3	40.4	53.9	13.6	138	237	EUT:Y , ANT:X
Vert.	2444.000	AV	49.9	27.8	3.3	40.2	40.8	53.9	13.2	165	334	EUT:Y , ANT:X
Vert.	3055.000	AV	45.4	28.6	3.8	40.9	36.9	53.9	17.1	100	8	EUT:Y , ANT:X
Vert.	3666.000	AV	44.1	29.0	4.2	41.1	36.2	53.9	17.8	100	3	EUT:Y , ANT:X
Vert.	4277.000	AV	47.6	29.4	4.5	40.5	41.0	53.9	13.0	100	180	EUT:Y , ANT:X
Vert.	6110.000	AV	33.8	33.4	5.5	39.2	33.5	53.9	20.5	100	0	EUT:Y , ANT:X

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 10th harmonic was not seen so the result was its base noise level.

* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 601.400MHz, 620.600MHz)

Field Strength(Electric Field Strength of Fundamental Emission , Spurious Emission and Band Edge Compliance)

Test place : UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2010/6/13
 Temperature / Humidity : 21deg.C , 58%
 Engineer : Shinichi Takano
 Mode : Tx, 613.9875 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	124.724	QP	37.3	13.5	7.4	32.1	26.1	46.0	19.9	163	167	EUT:Y , ANT:X
Hori.	150.324	QP	43.6	15.0	7.6	32.0	34.2	46.0	11.8	213	2	EUT:Y , ANT:X
Hori.	349.900	QP	32.3	15.2	8.7	31.9	24.3	46.0	21.7	100	308	EUT:Z , ANT:X
Hori.	613.988	QP	93.4	19.2	9.7	31.9	90.4	106.0	15.6	141	299	Carrier , EUT:Z , ANT:X
Hori.	614.000	QP	93.5	19.2	9.7	31.9	90.5	-	-	141	299	BandEdge(Reference) , EUT:Z , ANT:X
Hori.	1227.975	AV	59.4	24.3	2.4	40.0	46.1	53.9	7.9	108	199	EUT:Z , ANT:Y
Hori.	1841.963	AV	51.9	25.9	2.9	40.3	40.4	53.9	13.6	102	208	EUT:Z , ANT:Y
Hori.	2455.950	AV	51.4	27.8	3.4	40.2	42.4	53.9	11.6	122	229	EUT:Z , ANT:Y
Hori.	3069.938	AV	45.7	28.6	3.8	41.0	37.1	53.9	16.9	110	19	EUT:Z , ANT:Y
Hori.	3683.925	AV	48.7	29.0	4.2	41.1	40.8	53.9	13.2	110	243	EUT:Z , ANT:Y
Hori.	4297.913	AV	51.7	29.5	4.6	40.5	45.3	53.9	8.7	104	156	EUT:Z , ANT:Y
Hori.	6139.875	AV	34.5	33.4	5.5	39.1	34.3	53.9	19.7	100	0	EUT:Z , ANT:Y
Vert.	87.045	QP	43.7	7.7	7.1	32.1	26.4	46.0	19.6	100	359	EUT:Y , ANT:Y
Vert.	113.032	QP	42.5	12.3	7.3	32.1	30.0	46.0	16.0	100	359	EUT:Y , ANT:Y
Vert.	349.900	QP	23.8	15.2	8.7	31.9	15.8	46.0	30.2	100	0	EUT:Z , ANT:X
Vert.	613.988	QP	90.0	19.2	9.7	31.9	87.0	106.0	19.0	138	276	Carrier , EUT:Z , ANT:X
Vert.	614.000	QP	90.1	19.2	9.7	31.9	87.1	-	-	138	276	BandEdge(Reference) , EUT:Z , ANT:X
Vert.	1227.975	AV	61.2	24.3	2.4	40.0	47.9	53.9	6.1	107	99	EUT:Y , ANT:X
Vert.	1841.963	AV	53.2	25.9	2.9	40.3	41.7	53.9	12.3	137	231	EUT:Y , ANT:X
Vert.	2455.950	AV	51.2	27.8	3.4	40.2	42.2	53.9	11.8	197	333	EUT:Y , ANT:X
Vert.	3069.938	AV	48.5	28.6	3.8	41.0	39.9	53.9	14.1	112	346	EUT:Y , ANT:X
Vert.	3683.925	AV	43.3	29.0	4.2	41.1	35.4	53.9	18.6	100	359	EUT:Y , ANT:X
Vert.	4297.913	AV	47.2	29.5	4.6	40.5	40.8	53.9	13.2	100	181	EUT:Y , ANT:X
Vert.	6139.875	AV	34.0	33.4	5.5	39.1	33.8	53.9	20.2	100	0	EUT:Y , ANT:X

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

*The 10th harmonic was not seen so the result was its base noise level.

* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 604.388MHz, 623.583MHz)

Marker Delta Method(Test distance 3meters)

	Polarity	Hor.		Ver.		
		[dBuV]	[dBuV/m]	[dBuV]	[dBuV/m]	
Step1	Fundamental(613.9875MHz)	QP	93.4	90.4	90.0	87.0
Step2	Fundamental(613.9875MHz)	1k/3k	93.1	90.1	89.6	86.6
	Band-edge(614MHz)	1k/3k	41.3	38.3	39.3	36.3
Step3	Amplitude delta	-	-	51.8	-	50.3
	Field strength of band-edge	-	-	38.6	-	36.7
	Limit	-	-	46.0	-	46.0
	Margin	-	-	7.4	-	9.3

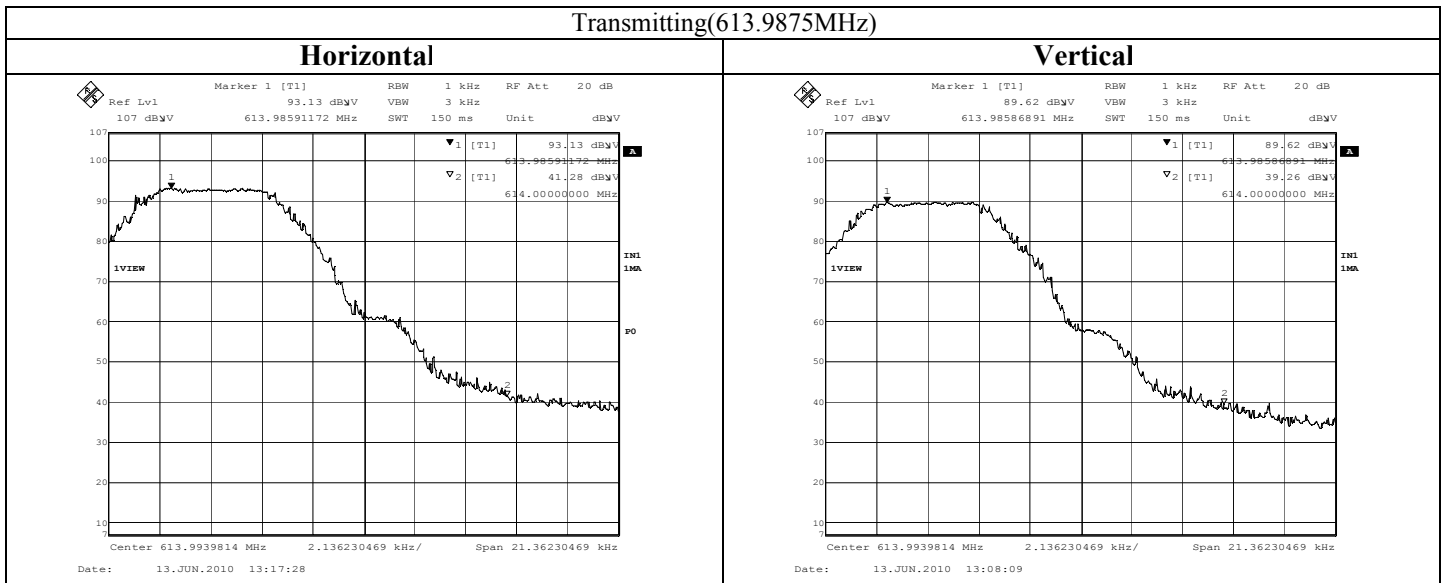
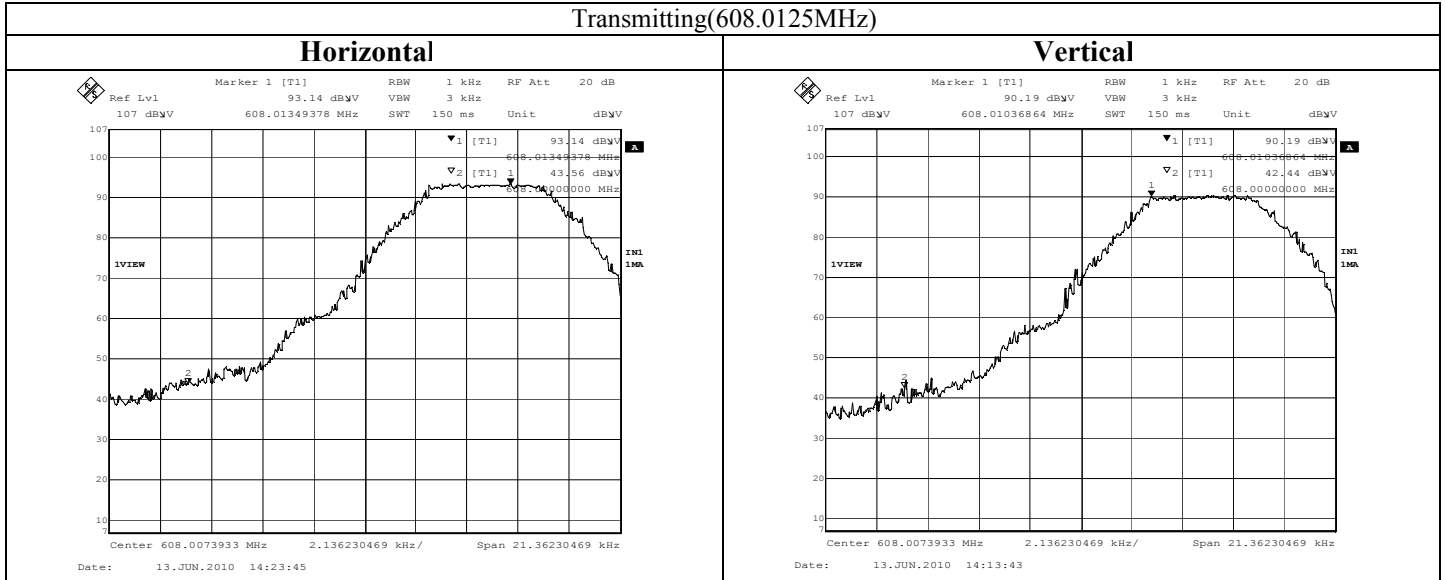
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

*1 Amplitude delta = Fundamental(RBW:1kHz,VBW:3kHz) - Band-edge(RBW:1kHz,VBW:3kHz)

*2 Field strength of band-edge = Fundamental(QP) - Amplitude delta

**Field Strength(Electric Field Strength of Fundamental Emission ,
 Spurious Emission and Band Edge Compliance)**

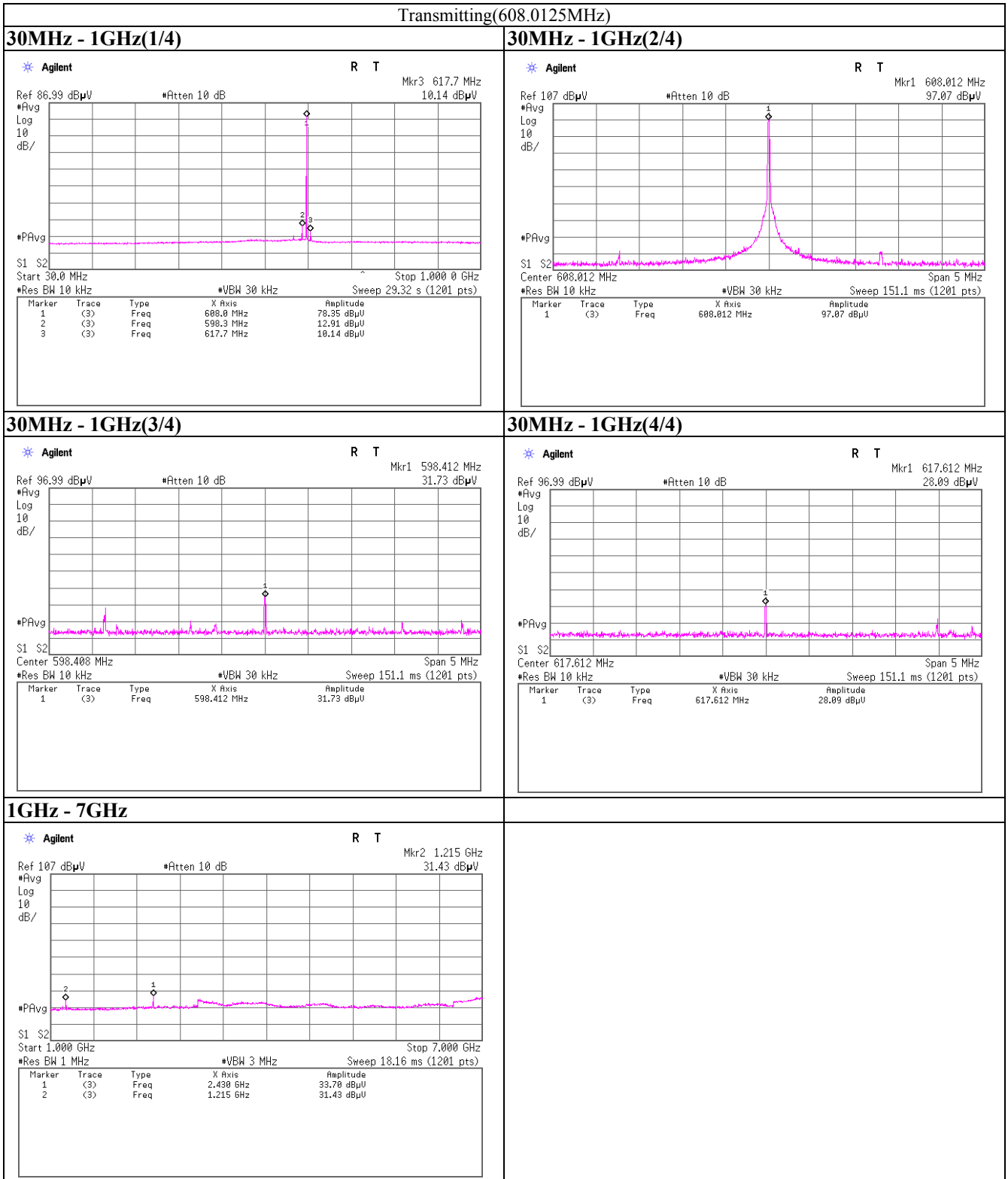
Band Edge compliance(for Marker Delta Method)



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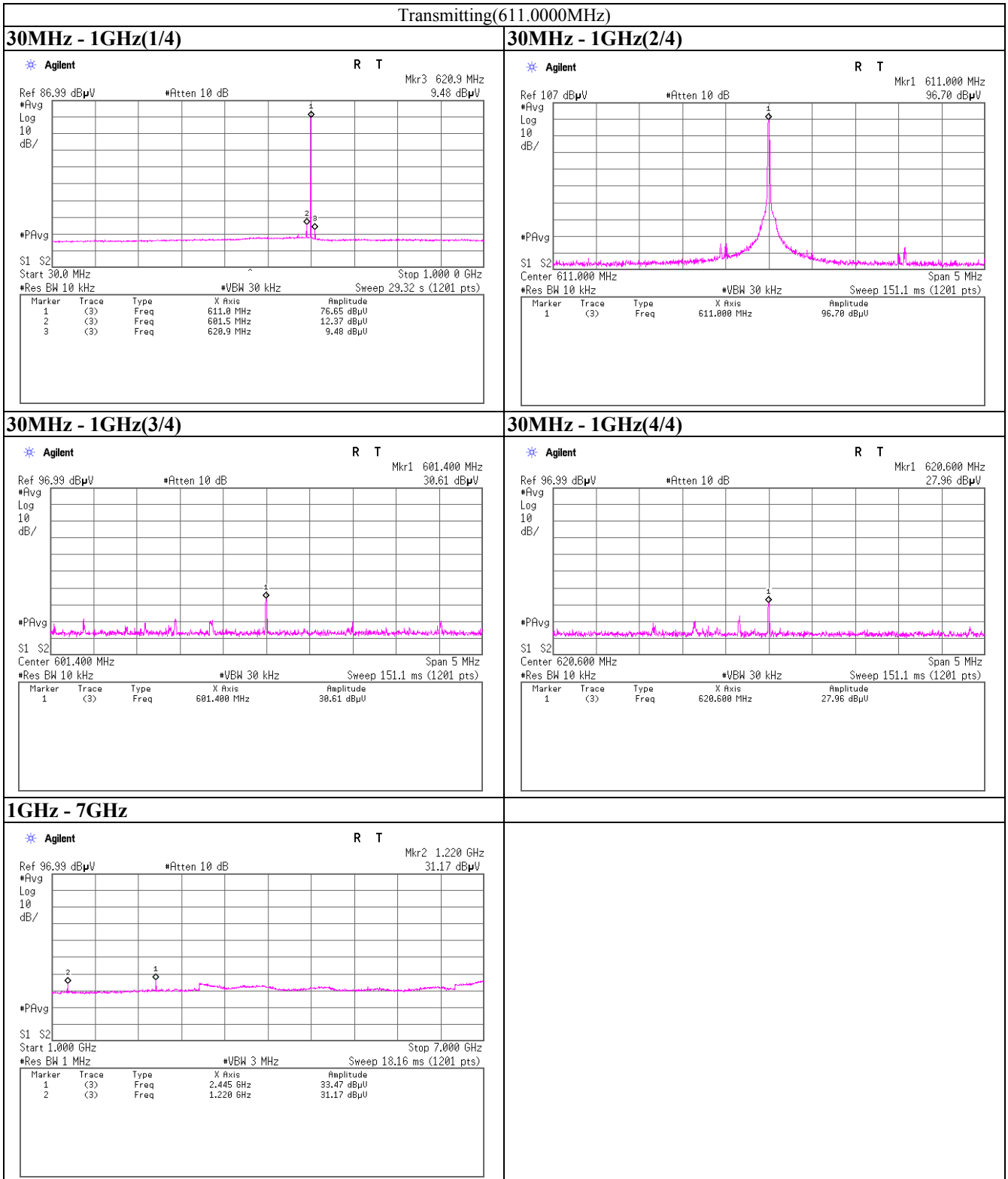
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
 Telephone : +81 463 50 6400
 Facsimile : +81 463 50 6401

Spurious emissions at antenna terminals



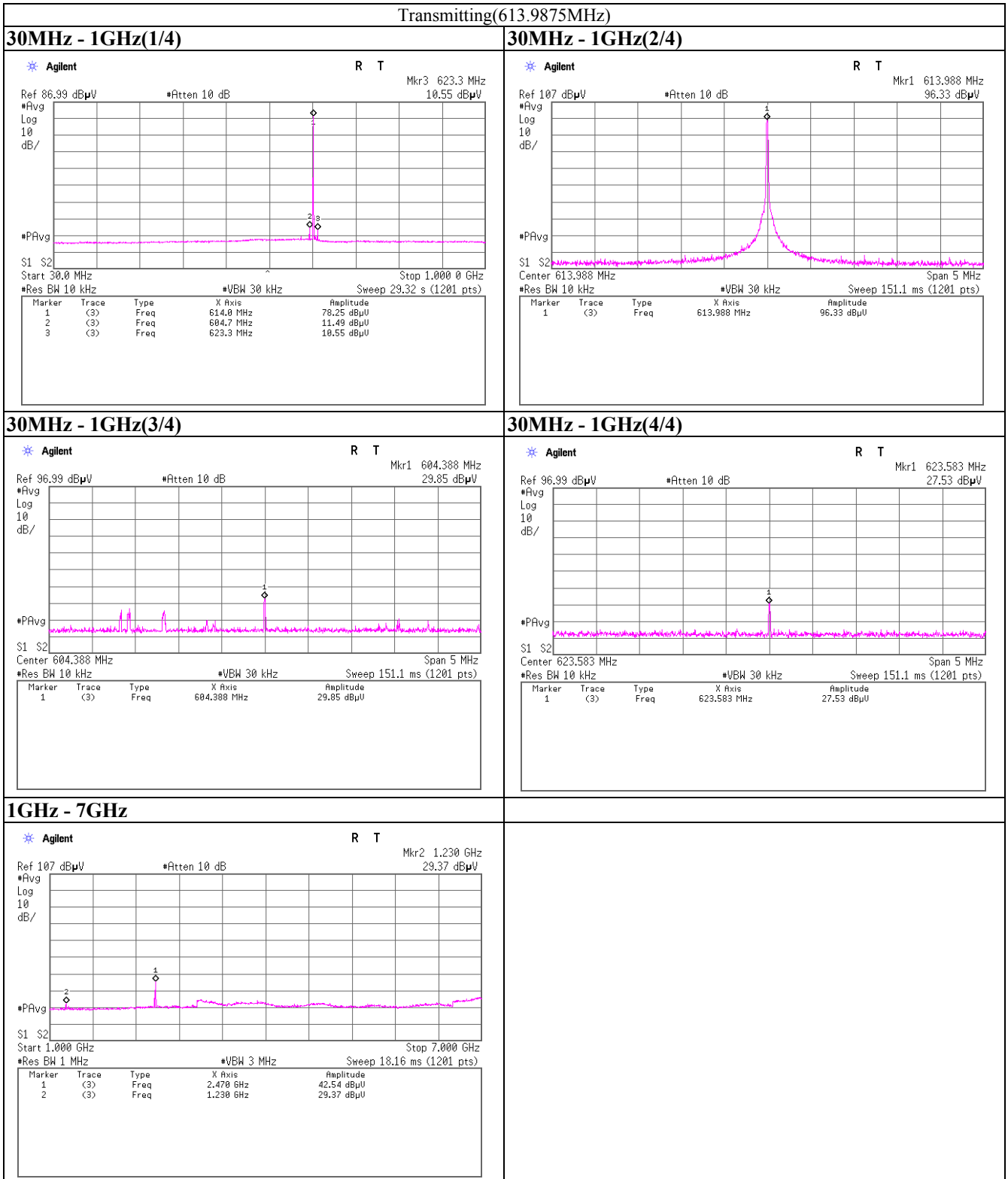
* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 598.412MHz, 617.612MHz)

Spurious emissions at antenna terminals



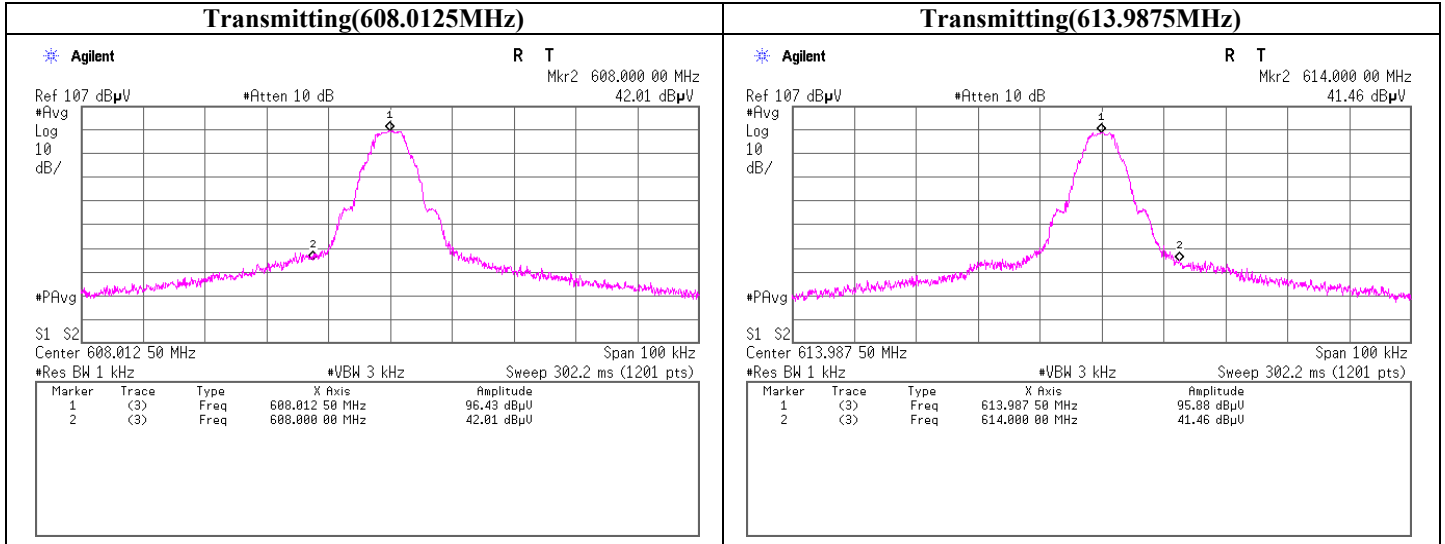
* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 601.400MHz, 620.600MHz)

Spurious emissions at antenna terminals



* Some frequencies detected spurious emission by conducted measurement on the antenna terminal, but the spurious emission of the frequencies were not detected by radiated emission measurement. Therefore, it did not display in the table as data. (ex. 604.388MHz, 623.583MHz)

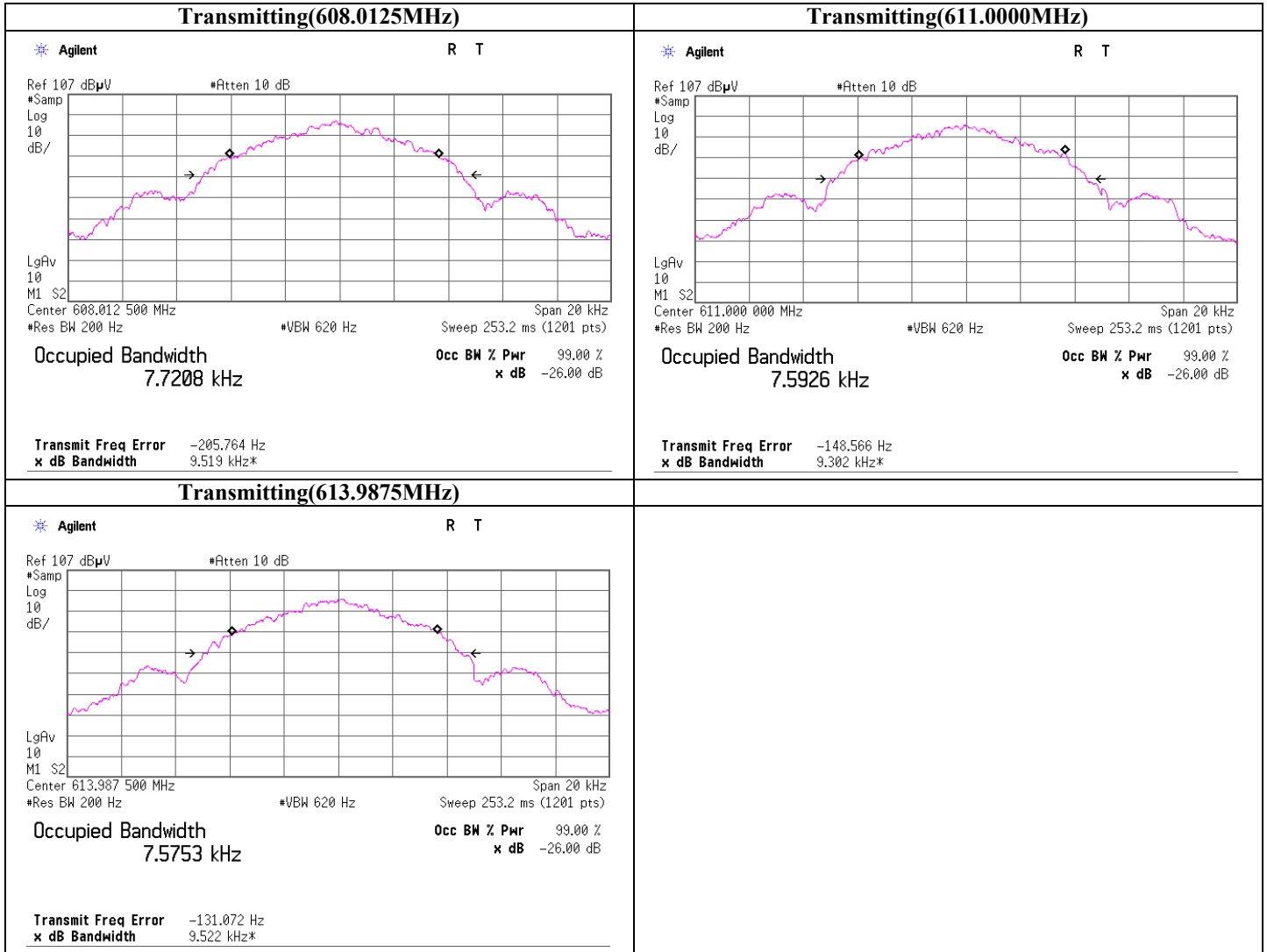
Spurious emissions at antenna terminals
 Band Edge compliance



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99% Occupied Bandwidth



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Test Report No :30JE0023-YK-01

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2010/02/06 * 12
SAT6-03	Attenuator	JFW	50HF-006N	-	RE	2010/02/06 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2010/03/22 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE	2010/04/02 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A0901	RE	2010/03/22 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2010/02/09 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE	2010/04/12 * 24
SJM-07	Measure	PROMART	SEN1935	-	RE	-
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/09/18 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE	-
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2010/03/09 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2010/04/16 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2010/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2009/08/23 * 12
SFL-01	Highpass Filter	MICRO-TRONICS	HPM50115	001	RE	2009/12/04 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2010/02/17 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	AT	2009/06/09 * 12
SAT10-08	Attenuator	Weinschel	W54-10	-	AT	2010/03/05 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	AT	2010/03/09 * 12
SFC-01	Microwave Counter	Agilent	53151A	US40511493	AT	2010/02/18 * 12
SCH-01	Temperature and Humidity Chamber	Espec	PL-1KT	14020837	AT	2010/04/24 * 12

The expiration date of the calibration is the end of the expired month .

As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .

All equipment is calibrated with traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

RE: Radiated emission,

AT: Antenna terminal disturbance voltage