APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

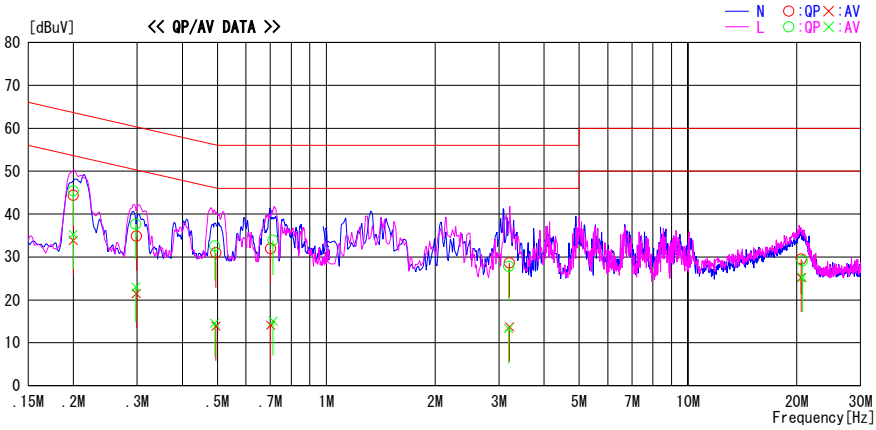
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2010/06/10

Report No. : 30JE0236-HO-01

Temp./Humi. : 23deg.C / 54%
Engineer : Takeshi Choda

Mode / Remarks : WLAN 11b, Tx 2412MHz, 11Mbps

LIMIT : FCC15.207 QP
FCC15.207 AV



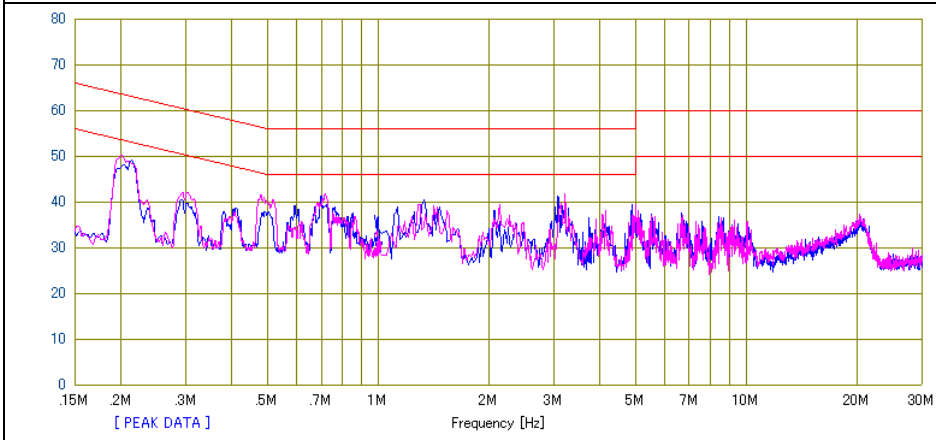
Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.19973	31.1	20.5	13.3	44.4	33.8	63.6	53.6	19.2	19.8	N	
0.29820	21.5	8.2	13.3	34.8	21.5	60.3	50.3	25.5	28.8	N	
0.49512	17.7	0.6	13.3	31.0	13.9	56.1	46.1	25.1	32.2	N	
0.70132	18.6	0.8	13.3	31.9	14.1	56.0	46.0	24.1	31.9	N	
3.21008	15.1	0.2	13.5	28.6	13.7	56.0	46.0	27.4	32.3	N	
20.55886	14.7	10.4	14.8	29.5	25.2	60.0	50.0	30.5	24.8	N	
0.19973	32.1	22.0	13.3	45.4	35.3	63.6	53.6	18.2	18.3	L	
0.29740	24.4	9.7	13.3	37.7	23.0	60.3	50.3	22.6	27.3	L	
0.49140	19.3	1.3	13.3	32.6	14.6	56.1	46.1	23.5	31.5	L	
0.71240	20.6	1.8	13.3	33.9	15.1	56.0	46.0	22.1	30.9	L	
3.19167	14.3	-0.2	13.5	27.8	13.3	56.0	46.0	28.2	32.7	L	
20.67900	14.3	10.5	14.8	29.1	25.3	60.0	50.0	30.9	24.7	L	

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

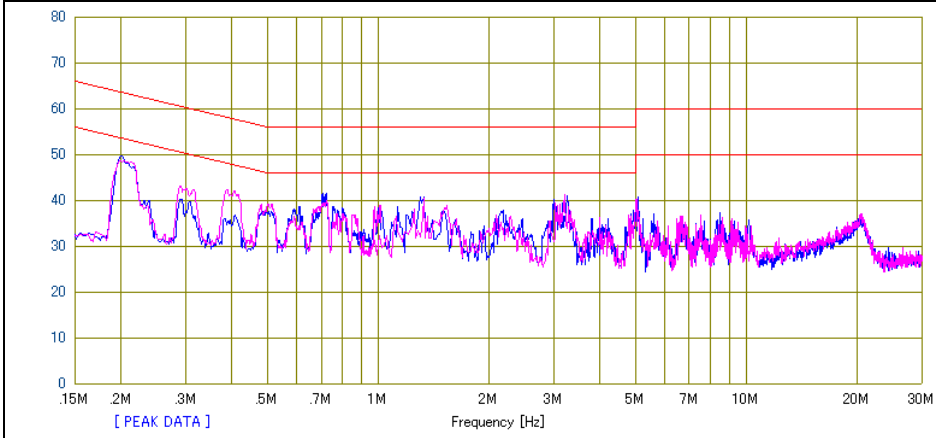
Conducted Emission

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30JE0236-HO-01
Date	06/09/2010
Temperature/ Humidity	23 deg.C./ 54%
Engineer	Takeshi Choda
Mode	11b Tx

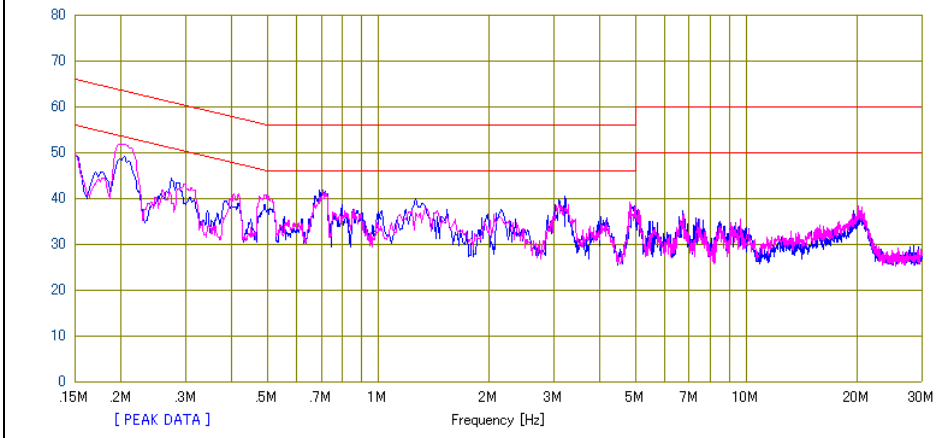
2412MHz



2437MHz



2462MHz



Y scale [dBuV] Chart — N — L

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Conducted Emission

DATA OF CONDUCTED EMISSION TEST

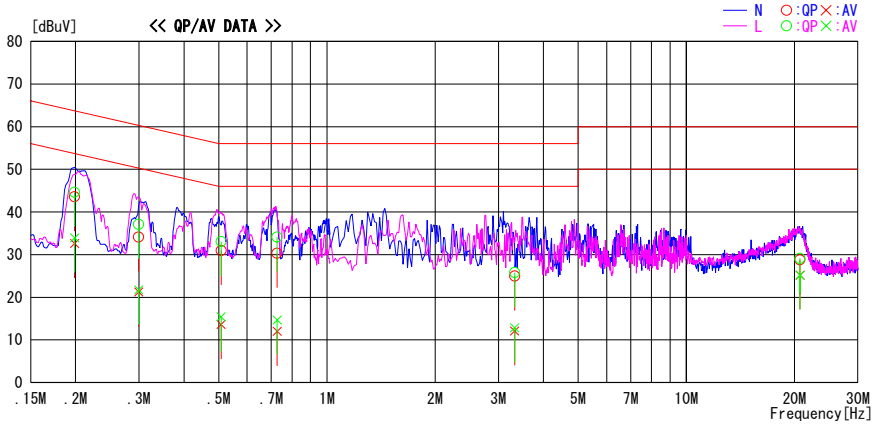
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2010/06/10

Report No. : 30JE0236-HO-01

Temp./Humi. : 23deg.C / 54%
Engineer : Takeshi Choda

Mode / Remarks : WLAN 11b, Rx 2437MHz, 11Mbps

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.19855	30.3	19.3	13.3	43.6	32.6	63.7	53.7	20.1	21.1	N	
0.29935	20.8	7.9	13.3	34.1	21.2	60.3	50.3	26.2	29.1	N	
0.50780	17.7	0.3	13.3	31.0	13.6	56.0	46.0	25.0	32.4	N	
0.72680	17.0	-1.3	13.3	30.3	12.0	56.0	46.0	25.7	34.0	N	
3.32757	11.5	-1.4	13.5	25.0	12.1	56.0	46.0	31.0	33.9	N	
20.72300	14.0	10.4	14.8	28.8	25.2	60.0	50.0	31.2	24.8	N	
0.19855	31.3	20.6	13.3	44.6	33.9	63.7	53.7	19.1	19.8	L	
0.29935	23.8	8.4	13.3	37.1	21.7	60.3	50.3	23.2	28.6	L	
0.50780	19.8	2.1	13.3	33.1	15.4	56.0	46.0	22.9	30.6	L	
0.72680	20.8	1.4	13.3	34.1	14.7	56.0	46.0	21.9	31.3	L	
3.32757	12.3	-0.7	13.5	25.8	12.8	56.0	46.0	30.2	33.2	L	
20.72300	14.3	10.4	14.8	29.1	25.2	60.0	50.0	30.9	24.8	L	

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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6dB Bandwidth

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	30JE0236-HO-01
Date	06/18/2010
Temperature/ Humidity	24 deg.C./ 58%
Engineer	Takumi Shimada
Mode	11b, Tx(Ch L,M,H), 11Mbps

11b

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	9.934	>500
2437	9.956	>500
2462	9.525	>500

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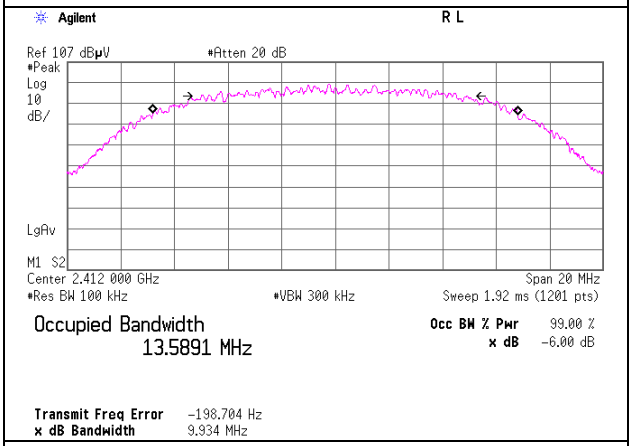
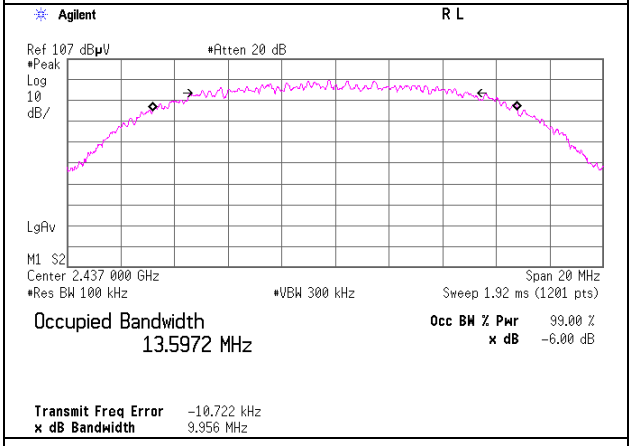
6dB Bandwidth

11b

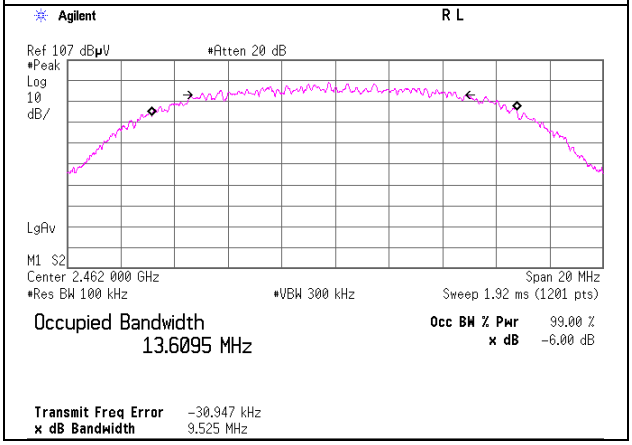
2412MHz



2437MHz



2462MHz



Maximum Peak Output Power

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	30JE0236-HO-01
Date	06/24/2010
Temperature/ Humidity	23 deg.C./ 59%
Engineer	Takumi Shimada
Mode	11b Tx

Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	0.68	0.50	10.00	11.18	13.12	30.00	1000	18.82
2437	1.22	0.50	10.00	11.72	14.86	30.00	1000	18.28
2462	0.56	0.50	10.00	11.06	12.76	30.00	1000	18.94

Sample Calculation:
Result = Reading + Cable Loss (customer supplied) + Attenuator

Antenna 1, 2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
1	1.17	
2	1.09	
5.5	0.61	
11	1.22	*

*: Worst Rate
All comparizon were carried out on same frequency and measurement factors.

Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No. 30JE0236-HO-01
Date 06/09/2010
Temperature/ Humidity 23 deg.C./ 54%
Engineer Takeshi Choda

Mode 11b Tx 2412MHz, 11Mbps

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	64.782	QP	41.0	7.3	7.5	32.0	23.8	40.0	16.2	
Hori	94.382	QP	49.4	9.1	7.9	32.0	34.4	43.5	9.1	
Hori	125.016	QP	42.7	13.6	8.2	32.0	32.5	43.5	11.0	
Hori	431.999	QP	45.4	18.1	10.5	31.9	42.1	46.0	3.9	
Hori	857.713	QP	33.7	23.4	12.7	31.5	38.3	46.0	7.7	
Hori	902.854	QP	32.9	23.7	12.9	31.3	38.2	46.0	7.8	
Hori	2390.000	PK	51.6	26.7	2.9	32.1	49.1	73.9	24.8	
Hori	2400.000	PK	61.1	26.7	2.9	32.1	58.6	73.9	15.3	
Hori	4824.000	PK	41.5	30.9	5.3	31.4	46.3	73.9	27.6	
Hori	7236.000	PK	42.9	35.9	5.7	32.3	52.2	73.9	21.7	
Hori	9648.000	PK	43.2	38.0	6.8	33.0	55.0	73.9	18.9	
Hori	24120.000	PK	49.9	38.2	-1.2	31.6	55.3	73.9	18.6	
Hori	2390.000	AV	39.9	26.7	2.9	32.1	37.4	53.9	16.5	
Hori	2400.000	AV	49.1	26.7	2.9	32.1	46.6	53.9	7.3	
Hori	4824.000	AV	29.0	30.9	5.3	31.4	33.8	53.9	20.1	
Hori	7236.000	AV	30.1	35.9	5.7	32.3	39.4	53.9	14.5	
Hori	9648.000	AV	31.0	38.0	6.8	33.0	42.8	53.9	11.1	
Hori	24120.000	AV	37.3	38.2	-1.2	31.6	42.7	53.9	11.2	
Vert	64.782	QP	49.8	7.3	7.5	32.0	32.6	40.0	7.4	
Vert	94.382	QP	52.8	9.1	7.9	32.0	37.8	43.5	5.7	
Vert	125.016	QP	49.0	13.6	8.2	32.0	38.8	43.5	4.7	
Vert	431.999	QP	41.5	18.1	10.5	31.9	38.2	46.0	7.8	
Vert	857.713	QP	31.0	23.4	12.7	31.5	35.6	46.0	10.4	
Vert	902.854	QP	32.1	23.7	12.9	31.3	37.4	46.0	8.6	
Vert	2390.000	PK	50.8	26.7	2.9	32.1	48.3	73.9	25.6	
Vert	2400.000	PK	59.8	26.7	2.9	32.1	57.3	73.9	16.6	
Vert	4824.000	PK	41.2	30.9	5.3	31.4	46.0	73.9	27.9	
Vert	7236.000	PK	42.5	35.9	5.7	32.3	51.8	73.9	22.1	
Vert	9648.000	PK	43.5	38.0	6.8	33.0	55.3	73.9	18.6	
Vert	24120.000	PK	49.8	38.2	-1.2	31.6	55.2	73.9	18.7	
Vert	2390.000	AV	38.7	26.7	2.9	32.1	36.2	53.9	17.7	
Vert	2400.000	AV	47.8	26.7	2.9	32.1	45.3	53.9	8.6	
Vert	4824.000	AV	28.8	30.9	5.3	31.4	33.6	53.9	20.3	
Vert	7236.000	AV	30.2	35.9	5.7	32.3	39.5	53.9	14.4	
Vert	9648.000	AV	31.0	38.0	6.8	33.0	42.8	53.9	11.1	
Vert	24120.000	AV	37.3	38.2	-1.2	31.6	42.7	53.9	11.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No. 30JE0236-HO-01
Date 06/09/2010
Temperature/ Humidity 23 deg.C./ 54%
Engineer Takeshi Choda

Mode 11b Tx 2437MHz, 11Mbps

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	64.782	QP	40.7	7.3	7.5	32.0	23.5	40.0	16.5	
Hori	94.382	QP	50.3	9.1	7.9	32.0	35.3	43.5	8.2	
Hori	125.016	QP	41.3	13.6	8.2	32.0	31.1	43.5	12.4	
Hori	431.999	QP	45.4	18.1	10.5	31.9	42.1	46.0	3.9	
Hori	857.713	QP	33.5	23.4	12.7	31.5	38.1	46.0	7.9	
Hori	902.854	QP	33.3	23.7	12.9	31.3	38.6	46.0	7.4	
Hori	4874.000	PK	40.9	31.0	5.3	31.4	45.8	73.9	28.1	
Hori	7311.000	PK	42.8	36.1	5.7	32.4	52.2	73.9	21.7	
Hori	9748.000	PK	42.8	38.1	6.9	33.0	54.8	73.9	19.1	
Hori	24370.000	PK	48.9	38.3	-1.1	31.6	54.5	73.9	19.4	
Hori	4874.000	AV	28.8	31.0	5.3	31.4	33.7	53.9	20.2	
Hori	7311.000	AV	30.1	36.1	5.7	32.4	39.5	53.9	14.4	
Hori	9748.000	AV	30.6	38.1	6.9	33.0	42.6	53.9	11.3	
Hori	24370.000	AV	36.4	38.3	-1.1	31.6	42.0	53.9	11.9	
Vert	64.782	QP	50.1	7.3	7.5	32.0	32.9	40.0	7.1	
Vert	94.382	QP	52.9	9.1	7.9	32.0	37.9	43.5	5.6	
Vert	125.016	QP	49.1	13.6	8.2	32.0	38.9	43.5	4.6	
Vert	431.999	QP	33.0	18.1	10.5	31.9	29.7	46.0	16.3	
Vert	857.713	QP	30.7	23.4	12.7	31.5	35.3	46.0	10.7	
Vert	902.854	QP	32.0	23.7	12.9	31.3	37.3	46.0	8.7	
Vert	4874.000	PK	40.8	31.0	5.3	31.4	45.7	73.9	28.2	
Vert	7311.000	PK	42.1	36.1	5.7	32.4	51.5	73.9	22.4	
Vert	9748.000	PK	43.5	38.1	6.9	33.0	55.5	73.9	18.4	
Vert	24370.000	PK	49.1	38.3	-1.1	31.6	54.7	73.9	19.2	
Vert	4874.000	AV	28.9	31.0	5.3	31.4	33.8	53.9	20.1	
Vert	7311.000	AV	30.1	36.1	5.7	32.4	39.5	53.9	14.4	
Vert	9748.000	AV	31.0	38.1	6.9	33.0	43.0	53.9	10.9	
Vert	24370.000	AV	36.4	38.3	-1.1	31.6	42.0	53.9	11.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amprifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No. 30JE0236-HO-01
Date 06/09/2010
Temperature/ Humidity 23 deg.C./ 54%
Engineer Takeshi Choda

Mode 11b Tx 2462MHz, 11Mbps

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	64.782	QP	39.7	7.3	7.5	32.0	22.5	40.0	17.5	
Hori	94.382	QP	49.9	9.1	7.9	32.0	34.9	43.5	8.6	
Hori	125.016	QP	39.0	13.6	8.2	32.0	28.8	43.5	14.7	
Hori	431.999	QP	43.0	18.1	10.5	31.9	39.7	46.0	6.3	
Hori	857.713	QP	34.5	23.4	12.7	31.5	39.1	46.0	6.9	
Hori	902.854	QP	33.3	23.7	12.9	31.3	38.6	46.0	7.4	
Hori	2483.500	PK	50.3	26.9	2.9	32.1	48.0	73.9	25.9	
Hori	4924.000	PK	41.0	31.2	5.4	31.4	46.2	73.9	27.7	
Hori	7386.000	PK	42.2	36.2	5.7	32.4	51.7	73.9	22.2	
Hori	9848.000	PK	43.8	38.2	6.9	33.0	55.9	73.9	18.0	
Hori	24620.000	PK	46.8	38.4	-1.1	31.5	52.6	73.9	21.3	
Hori	2483.500	AV	38.6	26.9	2.9	32.1	36.3	53.9	17.6	
Hori	4924.000	AV	28.8	31.2	5.4	31.4	34.0	53.9	19.9	
Hori	7386.000	AV	30.3	36.2	5.7	32.4	39.8	53.9	14.1	
Hori	9848.000	AV	31.5	38.2	6.9	33.0	43.6	53.9	10.3	
Hori	24620.000	AV	34.3	38.4	-1.1	31.5	40.1	53.9	13.8	
Vert	64.782	QP	49.9	7.3	7.5	32.0	32.7	40.0	7.3	
Vert	94.382	QP	53.0	9.1	7.9	32.0	38.0	43.5	5.5	
Vert	125.016	QP	48.9	13.6	8.2	32.0	38.7	43.5	4.8	
Vert	431.999	QP	40.7	18.1	10.5	31.9	37.4	46.0	8.6	
Vert	857.713	QP	30.8	23.4	12.7	31.5	35.4	46.0	10.6	
Vert	902.854	QP	32.2	23.7	12.9	31.3	37.5	46.0	8.5	
Vert	2483.500	PK	48.5	26.9	2.9	32.1	46.2	73.9	27.7	
Vert	4924.000	PK	41.0	31.2	5.4	31.4	46.2	73.9	27.7	
Vert	7386.000	PK	42.3	36.2	5.7	32.4	51.8	73.9	22.1	
Vert	9848.000	PK	43.7	38.2	6.9	33.0	55.8	73.9	18.1	
Vert	24620.000	PK	46.8	38.4	-1.1	31.5	52.6	73.9	21.3	
Vert	2483.500	AV	36.2	26.9	2.9	32.1	33.9	53.9	20.0	
Vert	4924.000	AV	28.8	31.2	5.4	31.4	34.0	53.9	19.9	
Vert	7386.000	AV	30.2	36.2	5.7	32.4	39.7	53.9	14.2	
Vert	9848.000	AV	32.0	38.2	6.9	33.0	44.1	53.9	9.8	
Vert	24620.000	AV	34.3	38.4	-1.1	31.5	40.1	53.9	13.8	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
*The 10th harmonic was not seen so the result was its base noise level.
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No. 30JE0236-HO-01
Date 06/09/2010
Temperature/ Humidity 23 deg.C./ 54%
Engineer Takeshi Choda

Mode 11b Rx 2437MHz

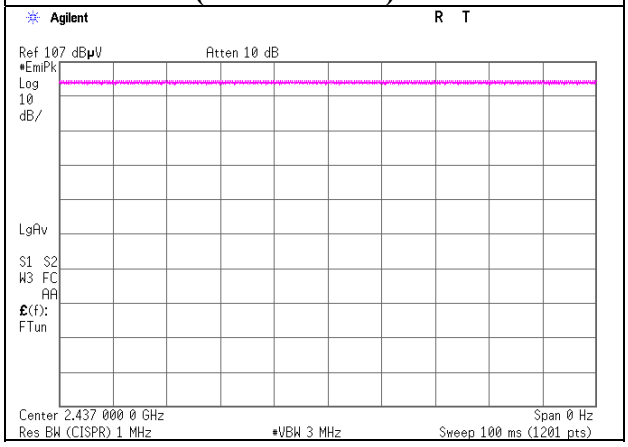
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	64.782	QP	40.8	7.3	7.5	32.0	23.6	40.0	16.4	
Hori	94.382	QP	49.5	9.1	7.9	32.0	34.5	43.5	9.0	
Hori	125.016	QP	42.7	13.6	8.2	32.0	32.5	43.5	11.0	
Hori	431.999	QP	45.2	18.1	10.5	31.9	41.9	46.0	4.1	
Hori	857.713	QP	34.9	23.4	12.7	31.5	39.5	46.0	6.5	
Hori	902.854	QP	32.6	23.7	12.9	31.3	37.9	46.0	8.1	
Hori	1329.833	PK	48.9	24.7	2.3	33.7	42.2	73.9	31.7	
Hori	2437.000	PK	42.3	26.8	2.9	32.1	39.9	73.9	34.0	
Hori	4874.000	PK	41.0	31.0	3.9	31.4	44.5	73.9	29.4	
Hori	7311.000	PK	42.3	36.1	4.3	32.4	50.3	73.9	23.6	
Hori	9748.000	PK	43.5	38.1	5.1	33.0	53.7	73.9	20.2	
Hori	1329.833	AV	34.8	24.7	2.3	33.7	28.1	53.9	25.8	
Hori	2437.000	AV	30.1	26.8	2.9	32.1	27.7	53.9	26.2	
Hori	4874.000	AV	28.8	31.0	3.9	31.4	32.3	53.9	21.6	
Hori	7311.000	AV	30.2	36.1	4.3	32.4	38.2	53.9	15.7	
Hori	9748.000	AV	32.6	38.1	5.1	33.0	42.8	53.9	11.1	
Vert	64.782	QP	49.7	7.3	7.5	32.0	32.5	40.0	7.5	
Vert	94.382	QP	52.9	9.1	7.9	32.0	37.9	43.5	5.6	
Vert	125.016	QP	49.3	13.6	8.2	32.0	39.1	43.5	4.4	
Vert	431.999	QP	42.0	18.1	10.5	31.9	38.7	46.0	7.3	
Vert	857.713	QP	31.2	23.4	12.7	31.5	35.8	46.0	10.2	
Vert	902.854	QP	32.2	23.7	12.9	31.3	37.5	46.0	8.5	
Vert	1329.335	PK	49.2	24.7	2.3	33.8	42.4	53.9	11.5	
Vert	2437.000	PK	42.4	26.8	2.9	32.1	40.0	73.9	33.9	
Vert	4874.000	PK	41.9	31.0	3.9	31.4	45.4	73.9	28.5	
Vert	7311.000	PK	42.3	36.1	4.3	32.4	50.3	73.9	23.6	
Vert	9748.000	PK	43.0	38.1	5.1	33.0	53.2	73.9	20.7	
Vert	1329.335	AV	34.7	24.7	2.3	33.8	27.9	53.9	26.0	
Vert	2437.000	AV	30.1	26.8	2.9	32.1	27.7	53.9	26.2	
Vert	4874.000	AV	28.9	31.0	5.3	31.4	33.8	53.9	20.1	
Vert	7311.000	AV	30.1	36.1	4.3	32.4	38.1	53.9	15.8	
Vert	9748.000	AV	31.5	38.1	5.1	33.0	41.7	53.9	12.2	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

VBW (AV) Calculation

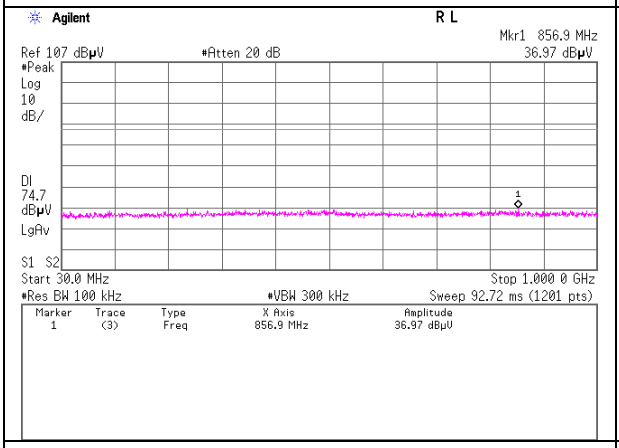
VBW: 1/x = 10Hz
x: (Tx on+Tx off) =100



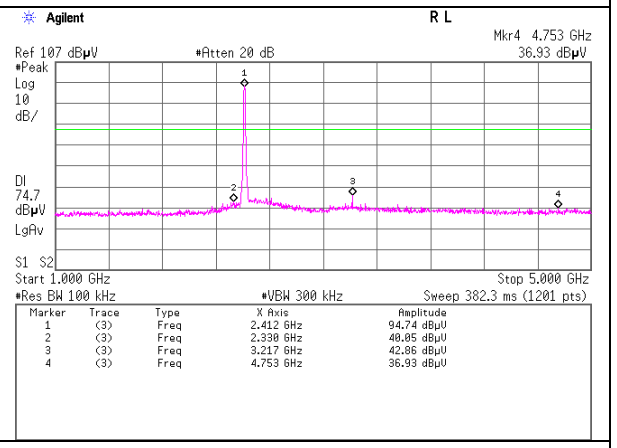
Conducted Spurious Emission

11b Tx 2412MHz

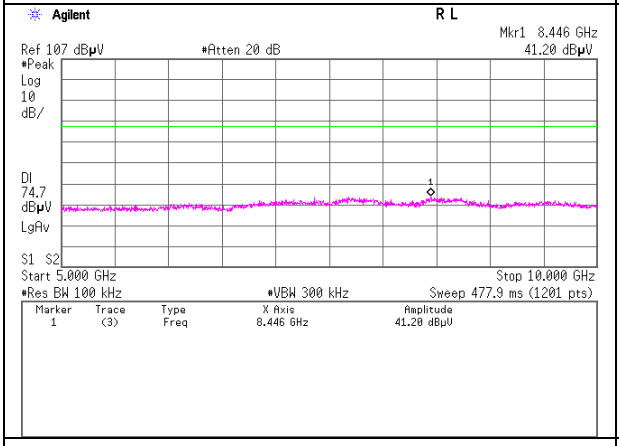
30MHz-1GHz



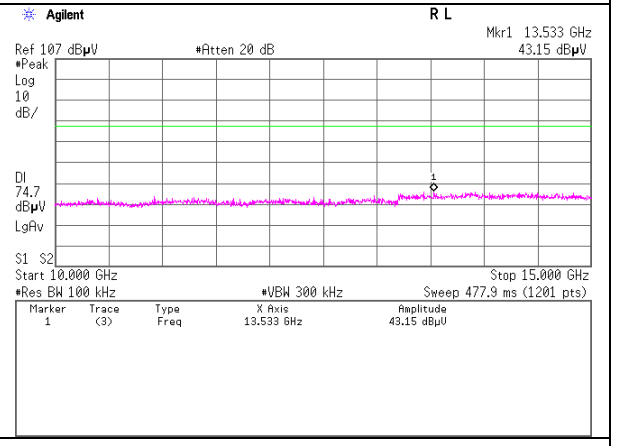
1GHz-5GHz



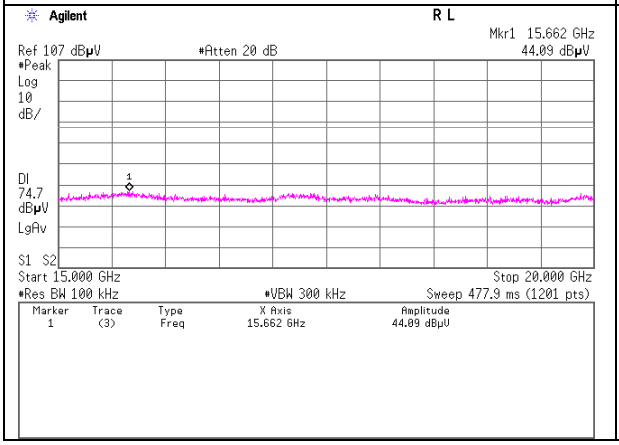
5GHz-10GHz



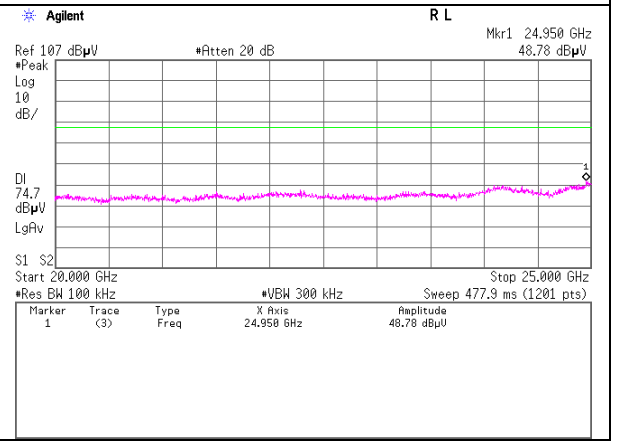
10GHz-15GHz



15GHz-20GHz



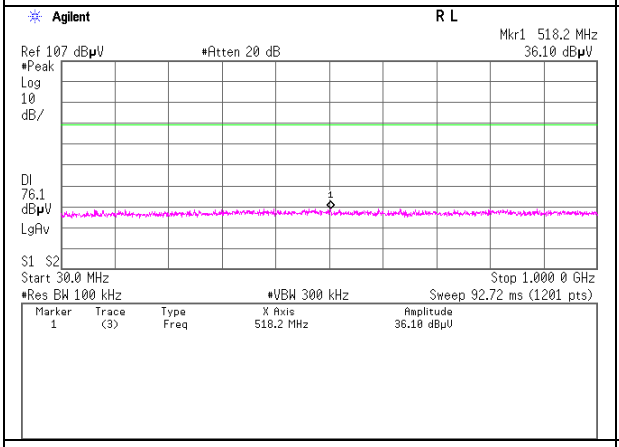
20GHz-25GHz



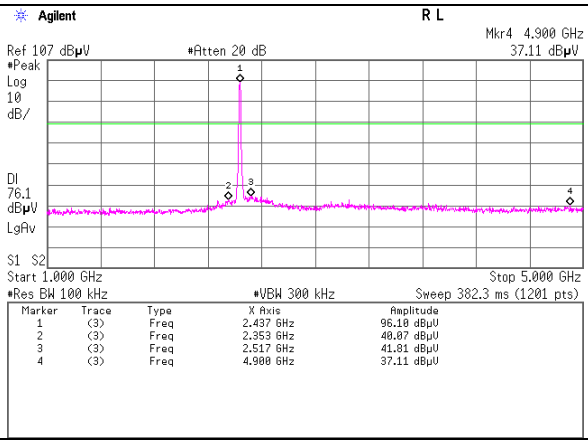
Conducted Spurious Emission

11b Tx 2437MHz

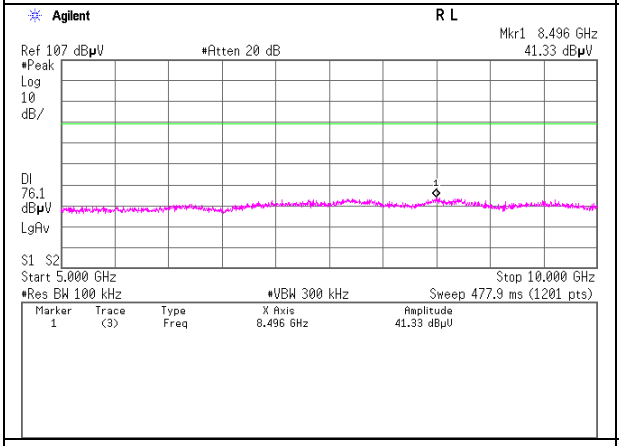
30MHz-1GHz



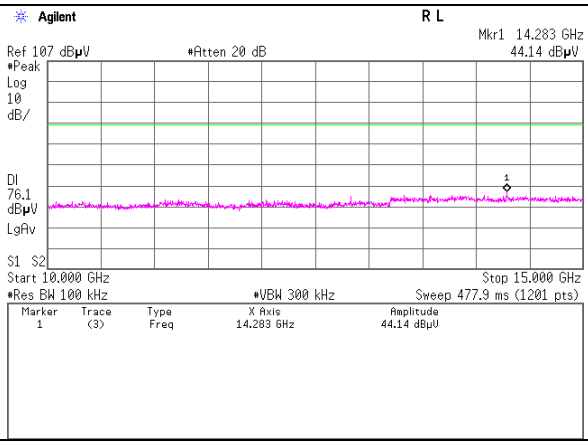
1GHz-5GHz



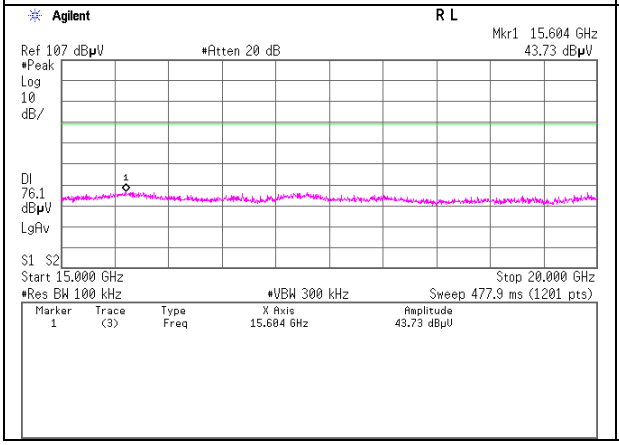
5GHz-10GHz



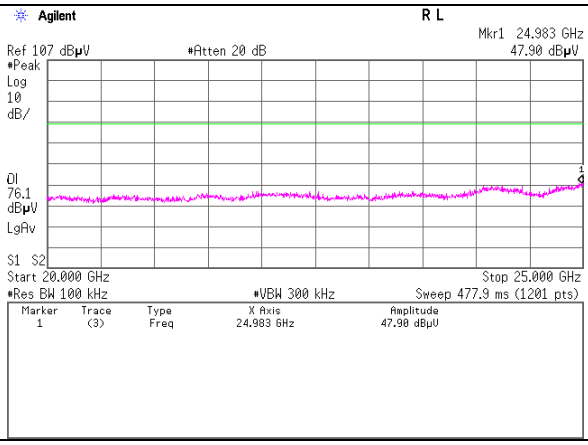
10GHz-15GHz



15GHz-20GHz



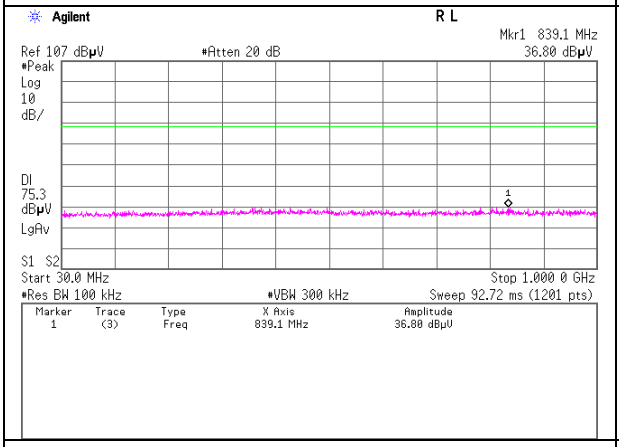
20GHz-25GHz



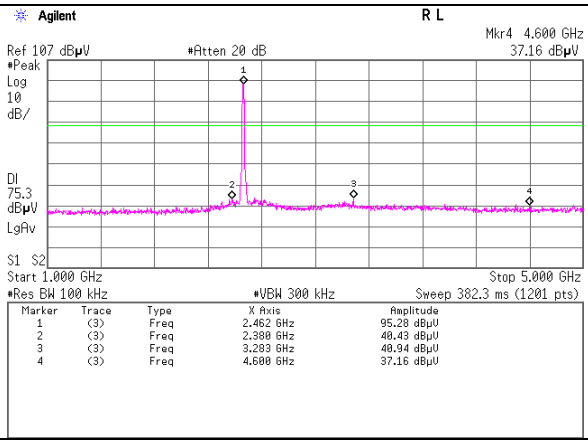
Conducted Spurious Emission

11b Tx 2462MHz

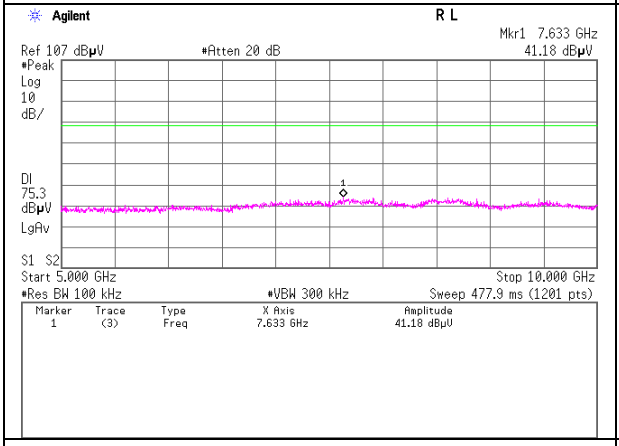
30MHz-1GHz



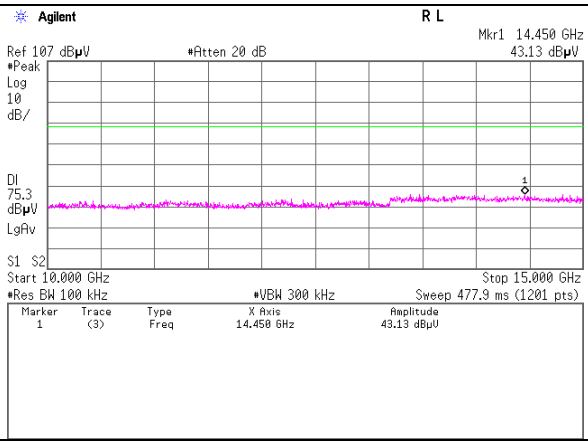
1GHz-5GHz



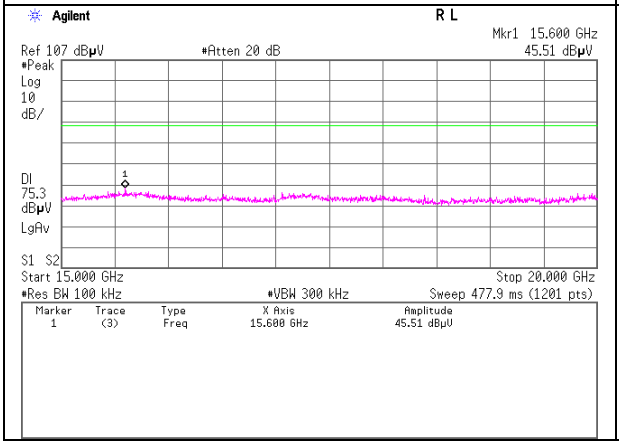
5GHz-10GHz



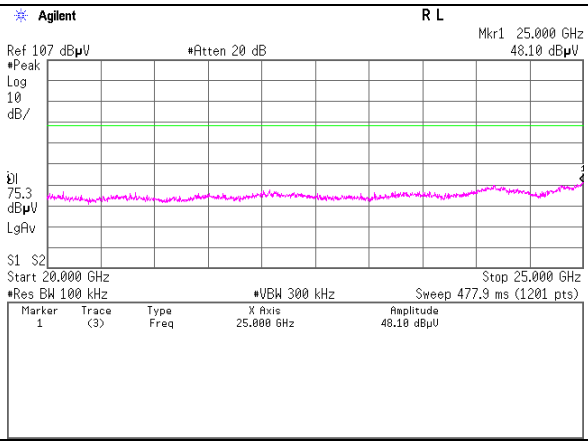
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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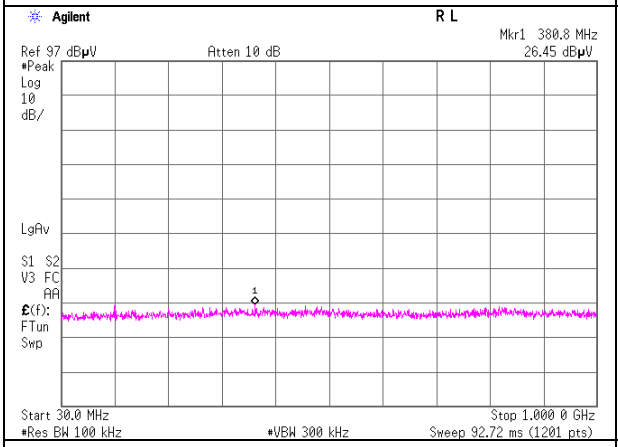
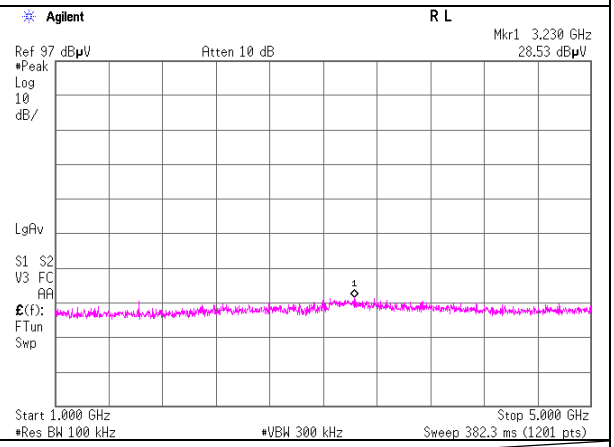
Conducted Spurious Emission

11b Rx 2437MHz

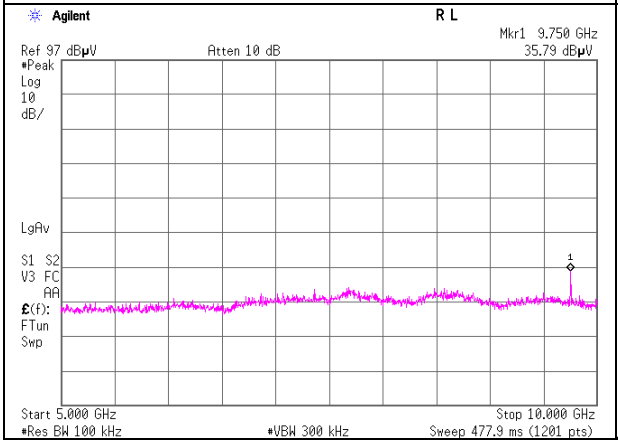
30MHz-1GHz



1GHz-5GHz



5GHz-10GHz



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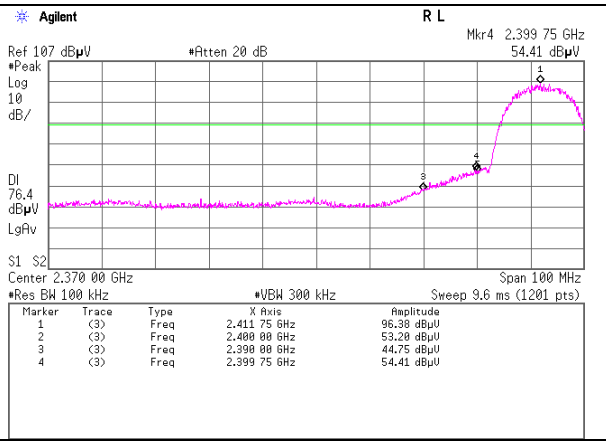
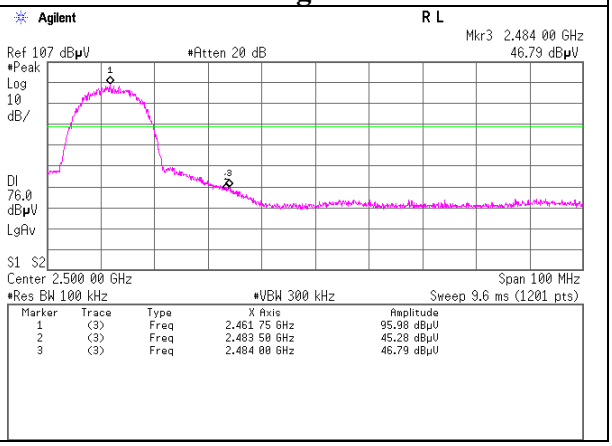
Conducted Emission Band Edge compliance

11b Tx

Low



High



Power Density

Test place	Head Office EMC Lab. No.7 Shielded Room
Report No.	30JE0236-HO-01
Date	06/18/2010
Temperature/ Humidity	24 deg.C./ 58%
Engineer	Takumi Shimada
Mode	11b, Tx(Ch L,M,H), 11Mbps

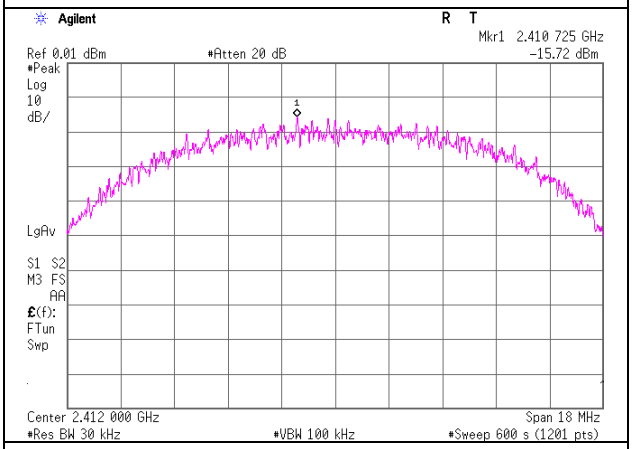
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2410.73	-15.72	0.50	10.00	-5.22	8.00	13.22
2435.73	-15.29	0.50	10.00	-4.79	8.00	12.79
2460.73	-16.11	0.50	10.00	-5.61	8.00	13.61

Sample Calculation:
Result = Reading + Cable Loss (customer supplied) + Attenuator

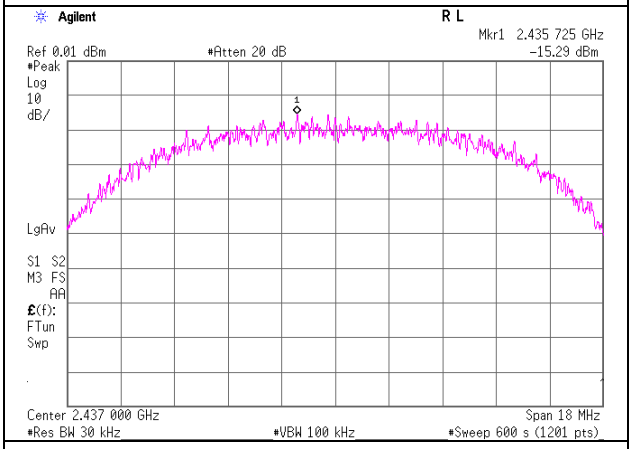
Power Density

11b

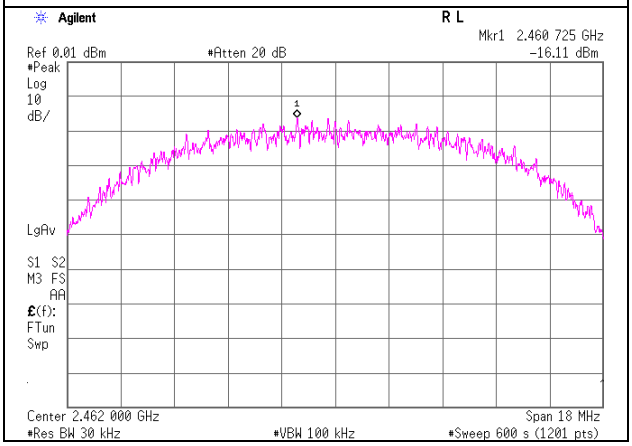
2412MHz



2437MHz



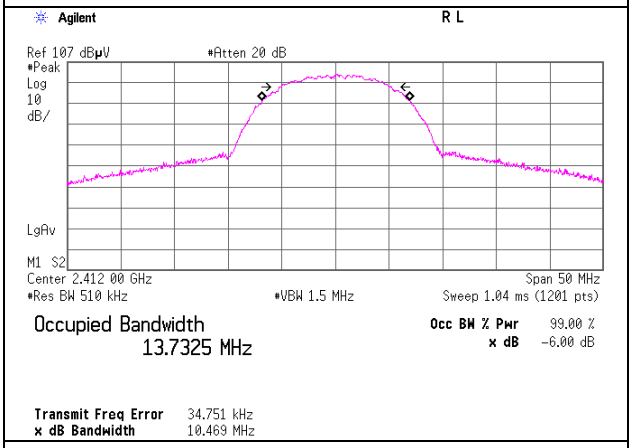
2462MHz



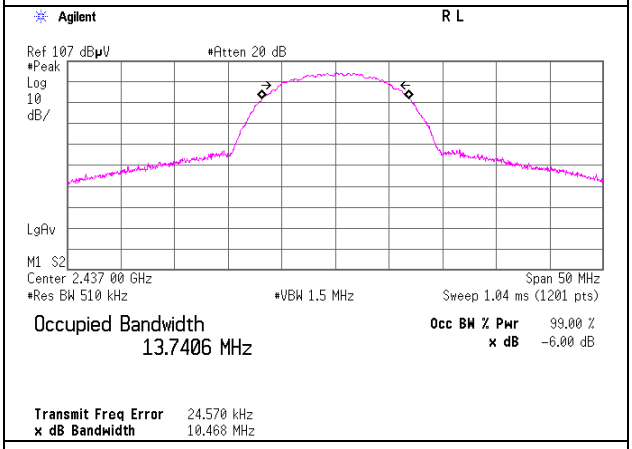
99%Occupied Bandwidth

11b

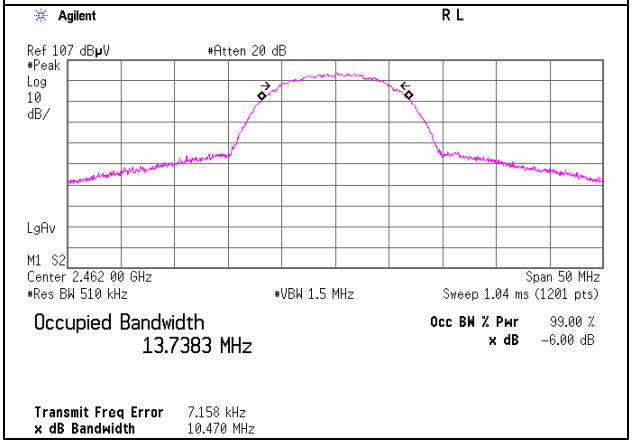
2412MHz



2437MHz



2462MHz



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APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE/CE	2010/02/02 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2010/02/09 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE/AT	2009/08/25 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2009/08/10 * 12
MCC-57	Microwave Cable	Suhner	SUCOFLEX104	246769(1m) / 292411(5m)	RE	2009/11/17 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2010/03/16 * 12
MCC-79	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278923/4	RE	2009/12/19 * 12
MHF-20	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCC	607	RE	2009/12/19 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2009/06/18 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE/CE	2009/10/23 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/03/22 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2010/01/23 * 12
MCC-50	Coaxial cable	UL Japan	-	-	RE	2010/03/18 * 12
MAT-51	Attenuator(6dB)	Weinschel	2	AS3557	RE	2010/01/20 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2010/03/05 * 12
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	CE	2009/12/15 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2010/02/04 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2010/02/05 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2010/01/20 * 12
MAT-67	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2010/02/04 * 12
MCC-113	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(5m)/421-010(1m)/sucoform141-PE(1m)/RFM-E121(Switcher)	-/04178	CE	2009/07/01 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2010/03/01 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	MOS04	AT	2010/02/09 * 12
MPM-12	Power Meter	Anritsu	ML2495A	0825002	AT	2009/08/26 * 12
MPSE-17	Power Sensor	Anritsu	MA2411B	0738285	AT	2009/08/26 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item: CE: Conducted Emission
RE: Radiated Emission
AT: Antenna Terminal Conducted test

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