

APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

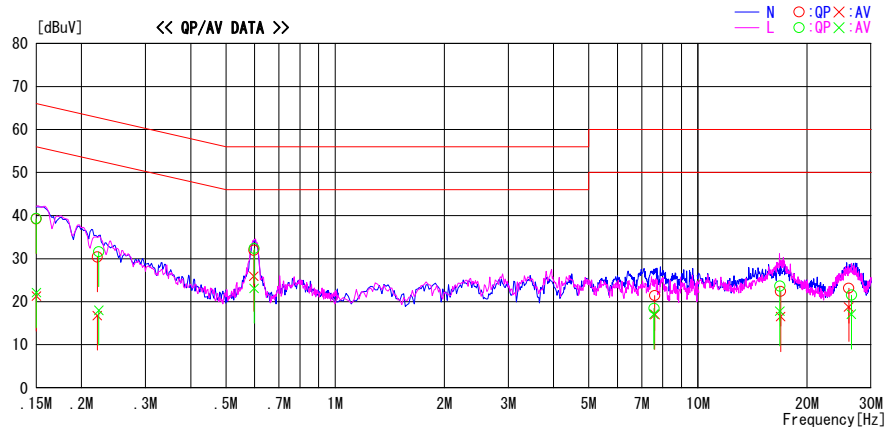
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2011/06/14

Report No. : 31AE0084-HO-02

Temp./Humi. : 24deg. C / 58% RH
Engineer : Takeshi Choda

Mode / Remarks : Tx 11b 2412MHz, Antenna 1

LIMIT : FCC15.207 QP
FCC15.207 AV

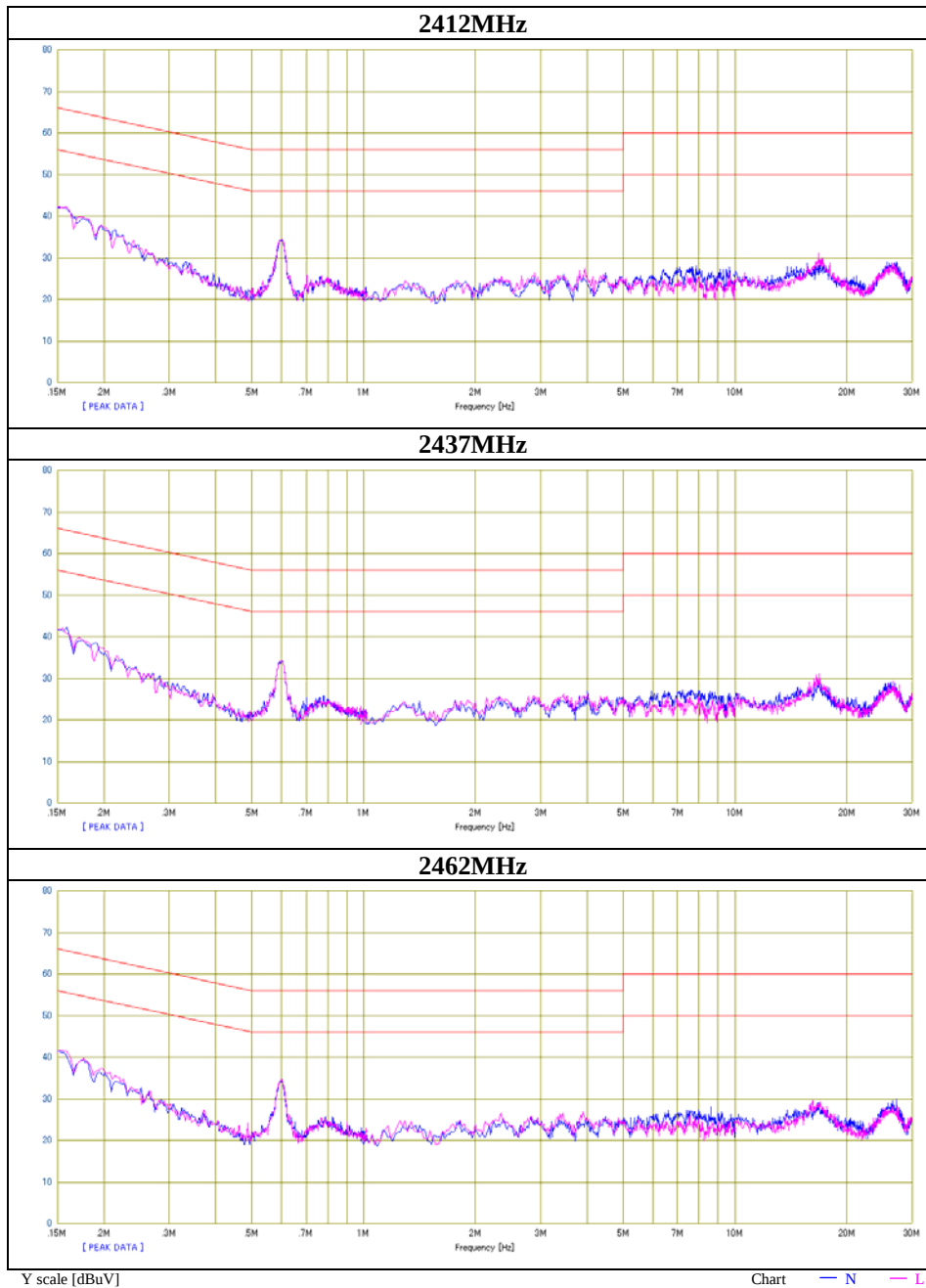


Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	26.0	8.1	13.2	39.2	21.3	66.0	56.0	26.8	34.7	N	
0.22097	17.1	3.5	13.3	30.4	16.8	62.8	52.8	32.4	36.0	N	
0.59633	18.6	12.6	13.3	31.9	25.9	56.0	46.0	24.1	20.1	N	
7.60987	7.5	3.1	13.9	21.4	17.0	60.0	50.0	38.6	33.0	N	
16.89172	7.8	1.9	14.6	22.4	16.5	60.0	50.0	37.6	33.5	N	
26.01425	8.2	3.9	14.9	23.1	18.8	60.0	50.0	36.9	31.2	N	
0.15000	26.1	8.9	13.2	39.3	22.1	66.0	56.0	26.7	33.9	L	
0.22323	18.3	4.7	13.3	31.6	18.0	62.7	52.7	31.1	34.7	L	
0.59808	19.0	9.8	13.3	32.3	23.1	56.0	46.0	23.7	22.9	L	
7.56423	4.5	3.2	13.9	18.4	17.1	60.0	50.0	41.6	32.9	L	
16.82013	9.0	3.2	14.6	23.6	17.8	60.0	50.0	36.4	32.2	L	
26.50425	6.6	2.2	14.9	21.5	17.1	60.0	50.0	38.5	32.9	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.	31AE0084-HO-02
Date	14/06/2011
Temperature/ Humidity	24 deg.C / 58% RH
Engineer	Takeshi Choda
Mode	11b Tx



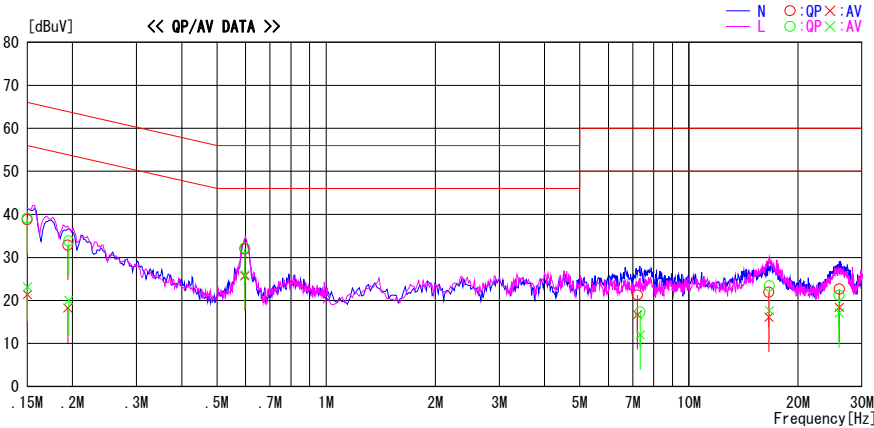
Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2011/06/14

Report No. : 31AE0084-HO-02
Temp./Humi. : 24deg. C / 58% RH
Engineer : Takeshi Choda

Mode / Remarks : Tx 11g 2412MHz, Antenna 1
LIMIT : FCC15.207 QP
FCC15.207 AV

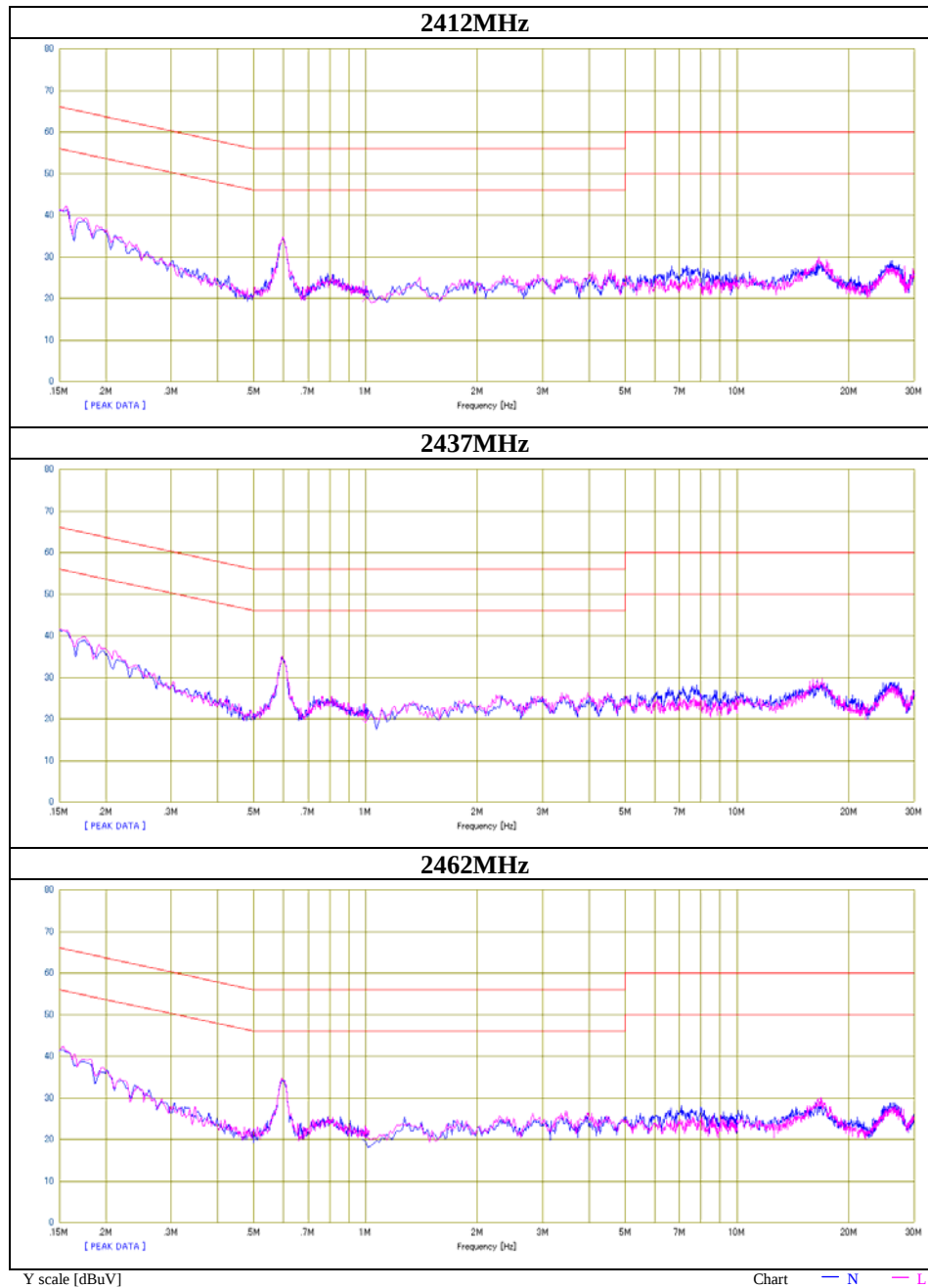


Frequency	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP	AV		QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15000	25.6	8.2	13.2	38.8	21.4	66.0	56.0	27.2	34.6	N	
0.19413	19.6	5.0	13.2	32.8	18.2	63.9	53.9	31.1	35.7	N	
0.59682	18.6	12.4	13.3	31.9	25.7	56.0	46.0	24.1	20.3	N	
7.21158	7.4	2.8	13.9	21.3	16.7	60.0	50.0	38.7	33.3	N	
16.61992	7.4	1.6	14.5	21.9	16.1	60.0	50.0	38.1	33.9	N	
25.98190	7.7	3.5	14.9	22.6	18.4	60.0	50.0	37.4	31.6	N	
0.15000	25.9	10.0	13.2	39.1	23.2	66.0	56.0	26.9	32.8	L	
0.19533	20.6	6.8	13.2	33.8	20.0	63.8	53.8	30.0	33.8	L	
0.59730	18.9	12.7	13.3	32.2	26.0	56.0	46.0	23.8	20.0	L	
7.34176	3.4	-1.9	13.9	17.3	12.0	60.0	50.0	42.7	38.0	L	
16.66010	8.9	3.2	14.5	23.4	17.7	60.0	50.0	36.6	32.3	L	
25.94172	6.3	2.2	14.9	21.2	17.1	60.0	50.0	38.8	32.9	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.	31AE0084-HO-02
Date	14/06/2011
Temperature/ Humidity	24 deg.C / 58% RH
Engineer	Takeshi Choda
Mode	11g Tx



6dB Bandwidth

Test place Head Office EMC Lab. No.6 Measurement
Report No. 31AE0084-HO-02
Date 11/02/2010
Temperature/ Humidity 24 deg.C / 34% RH
Engineer Tomotaka Sasagawa
Mode Tx

11b Antenna 1

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	13.033	>500
2437	13.031	>500
2462	12.279	>500

11g Antenna 1

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	16.464	>500
2437	16.432	>500
2462	16.387	>500

11b Antenna 2

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	12.580	>500
2437	11.163	>500
2462	13.018	>500

11g Antenna 2

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	16.442	>500
2437	16.427	>500
2462	16.440	>500

6dB Bandwidth
Antenna 1



6dB Bandwidth
Antenna 2



Maximum Peak Output Power

Test place	Head Office EMC Lab. No.6 Measurement Room
Report No.	31AE0084-HO-02
Date	10/28/2010
Temperature/ Humidity	23 deg.C / 60% RH
Engineer	Tomotaka Sasagawa
Mode	11b Tx

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
				[dBm]	[mW]	[dBm]	[mW]	
2412	5.64	1.10	10.08	16.82	48.08	30.00	1000	13.18
2437	6.49	1.10	10.08	17.67	58.48	30.00	1000	12.33
2462	6.34	1.11	10.08	17.53	56.62	30.00	1000	12.47

Antenna 2

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
				[dBm]	[mW]	[dBm]	[mW]	
2412	5.62	0.44	10.08	16.14	41.09	30.00	1000	13.86
2437	6.56	0.45	10.08	17.09	51.14	30.00	1000	12.91
2462	6.35	0.50	10.08	16.93	49.34	30.00	1000	13.07

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator

Antenna 1, 2437MHz

Rate [Mbps]	Reading [dBm]	Remark
1	6.49	*
2	6.46	
5.5	6.29	
11	6.48	

Antenna2, 2437MHz

Rate [Mbps]	Reading [dBm]	Remark
1	6.56	*
2	6.41	
5.5	6.43	
11	6.45	

*: Worst Rate

All comparizon were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place : Head Office EMC Lab. No.6 Shielded Room
Report No. : 31AE0084-HO-02
Date : 10/28/2010
Temperature/ Humidity : 23 deg.C / 60%RH
Engineer : Tomotaka Sasagawa
Mode : 11g Tx

Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
				[dBm]	[mW]	[dBm]	[mW]	
2412	10.58	1.10	10.08	21.76	149.97	30.00	1000	8.24
2437	10.81	1.10	10.08	21.99	158.12	30.00	1000	8.01
2462	10.29	1.11	10.08	21.48	140.60	30.00	1000	8.52

Antenna 2

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
				[dBm]	[mW]	[dBm]	[mW]	
2412	10.45	0.44	10.08	20.97	124.94	30.00	1000	9.03
2437	10.95	0.45	10.08	21.48	140.54	30.00	1000	8.52
2462	10.27	0.50	10.08	20.85	121.67	30.00	1000	9.15

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator

Antenna 1, 2437MHz

Rate [Mbps]	Reading [dBm]	Remark
6	10.66	
9	10.54	
12	10.81	*
18	10.48	
24	10.73	
36	10.53	
48	10.47	
54	10.75	

Antenna 2, 2437MHz

Rate [Mbps]	Reading [dBm]	Remark
6	10.84	
9	10.46	
12	10.95	*
18	10.69	
24	10.81	
36	10.69	
48	10.64	
54	10.83	

*: Worst Rate

All comparison were carried out on same frequency and measurement factors.

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber		
Report No.	31AE0084-HO-02		
Date	03/12/2011	03/14/2011	03/31/2011
Temperature/ Humidity	22 deg.C / 33% RH	21 deg.C / 34% RH	20 deg.C / 32% RH
Engineer	Takayuki Shimada (1-10GHz)	Takeshi Choda (above 10GHz)	Takeshi Choda (below 1GHz)
Mode	11b Tx 2412MHz, Antenna 1		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.249	QP	32.8	15.7	7.2	32.2	23.5	40.0	16.5	
Hori	121.500	QP	45.5	12.9	8.4	32.1	34.7	43.5	8.8	
Hori	215.999	QP	47.8	16.9	9.3	32.0	42.0	43.5	1.5	
Hori	310.502	QP	44.8	15.5	10.0	32.0	38.3	46.0	7.7	
Hori	400.502	QP	43.6	17.4	10.6	32.0	39.6	46.0	6.4	
Hori	562.503	QP	40.4	18.9	11.6	31.9	39.0	46.0	7.0	
Hori	1608.000	PK	45.3	27.2	1.9	33.5	40.9	73.9	33.0	
Hori	2390.000	PK	50.3	27.7	2.3	32.5	47.8	73.9	26.1	
Hori	2397.193	PK	60.1	27.7	2.4	32.5	57.7	-	-	See 20dBc Data Sheet
Hori	2400.000	PK	59.9	27.7	2.4	32.5	57.5	-	-	See 20dBc Data Sheet
Hori	3216.000	PK	44.6	29.5	2.8	32.1	44.8	73.9	29.1	
Hori	4824.000	PK	40.9	31.7	4.1	31.8	44.9	73.9	29.0	NS
Hori	7236.000	PK	41.6	36.2	5.0	32.4	50.4	73.9	23.5	NS
Hori	9648.000	PK	41.7	38.0	5.8	32.9	52.6	73.9	21.3	NS
Hori	24120.000	PK	47.3	37.9	-0.9	31.6	52.7	73.9	21.2	NS
Hori	1608.000	AV	34.6	27.2	1.9	33.5	30.2	53.9	23.7	
Hori	2390.000	AV	41.1	27.7	2.3	32.5	38.6	53.9	15.3	
Hori	2397.193	AV	54.7	27.7	2.4	32.5	52.3	-	-	See 20dBc Data Sheet
Hori	2400.000	AV	54.6	27.7	2.4	32.5	52.2	-	-	See 20dBc Data Sheet
Hori	3216.000	AV	37.5	29.5	2.8	32.1	37.7	53.9	16.2	
Hori	4824.000	AV	28.6	31.7	4.1	31.8	32.6	53.9	21.3	NS
Hori	7236.000	AV	29.5	36.2	5.0	32.4	38.3	53.9	15.6	NS
Hori	9648.000	AV	29.7	38.0	5.8	32.9	40.6	53.9	13.3	NS
Hori	24120.000	AV	35.1	37.9	-0.9	31.6	40.5	53.9	13.4	NS
Vert	38.249	QP	47.7	15.7	7.2	32.2	38.4	40.0	1.6	
Vert	121.500	QP	41.9	12.9	8.4	32.1	31.1	43.5	12.4	
Vert	215.999	QP	41.8	16.9	9.3	32.0	36.0	43.5	7.5	
Vert	310.502	QP	33.1	15.5	10.0	32.0	26.6	46.0	19.4	
Vert	400.502	QP	35.8	17.4	10.6	32.0	31.8	46.0	14.2	
Vert	562.503	QP	40.5	18.9	11.6	31.9	39.1	46.0	6.9	
Vert	1608.000	PK	44.4	27.2	1.9	33.5	40.0	73.9	33.9	
Vert	2390.000	PK	46.8	27.7	2.3	32.5	44.3	73.9	29.6	
Vert	2397.193	PK	55.3	27.7	2.4	32.5	52.9	-	-	See 20dBc Data Sheet
Vert	2400.000	PK	56.0	27.7	2.4	32.5	53.6	-	-	See 20dBc Data Sheet
Vert	3216.000	PK	43.7	29.5	2.8	32.1	43.9	73.9	30.0	
Vert	4824.000	PK	41.1	31.7	4.1	31.8	45.1	73.9	28.8	NS
Vert	7236.000	PK	41.6	36.2	5.0	32.4	50.4	73.9	23.5	NS
Vert	9648.000	PK	41.7	38.0	5.8	32.9	52.6	73.9	21.3	NS
Vert	24120.000	PK	47.2	37.9	-0.9	31.6	52.6	73.9	21.3	NS
Vert	1608.000	AV	33.4	27.2	1.9	33.5	29.0	53.9	24.9	
Vert	2390.000	AV	37.1	27.7	2.3	32.5	34.6	53.9	19.3	
Vert	2397.193	AV	51.0	27.7	2.4	32.5	48.6	-	-	See 20dBc Data Sheet
Vert	2400.000	AV	50.0	27.7	2.4	32.5	47.6	-	-	See 20dBc Data Sheet
Vert	3216.000	AV	32.9	29.5	2.8	32.1	33.1	53.9	20.8	
Vert	4824.000	AV	28.6	31.7	4.1	31.8	32.6	53.9	21.3	NS
Vert	7236.000	AV	29.5	36.2	5.0	32.4	38.3	53.9	15.6	NS
Vert	9648.000	AV	29.7	38.0	5.8	32.9	40.6	53.9	13.3	NS
Vert	24120.000	AV	35.1	37.9	-0.9	31.6	40.5	53.9	13.4	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 03/12/2011
Temperature/ Humidity 22 deg.C / 33% RH
Engineer Takayuki Shimada
(1-10GHz)
Mode 11b Tx 2412MHz, Antenna 1

20dBc Data Sheet

Polarity	Frequency	Detector	Reading	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori	2412.000	99.6	PK	27.7	2.4	32.5	97.2	-	-	Carrier
	2397.193	56.2	PK	27.7	2.4	32.5	53.8	77.2	23.4	
	2400.000	55.4	PK	27.7	2.4	32.5	53.0	77.2	24.2	
Vert	2412.000	95	PK	27.7	2.4	32.5	92.6	-	-	Carrier
	2397.193	50.1	PK	27.7	2.4	32.5	47.7	72.6	24.9	
	2400.000	51.1	PK	27.7	2.4	32.5	48.7	72.6	23.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber		
Report No.	31AE0084-HO-02		
Date	03/12/2011	03/14/2011	03/31/2011
Temperature/ Humidity	22 deg.C / 33% RH	21 deg.C / 34% RH	20 deg.C / 32% RH
Engineer	Takayuki Shimada (1-10GHz)	Takeshi Choda (above 10GHz)	Takeshi Choda (below 1GHz)
Mode	11b Tx 2437MHz, Antenna 1		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.250	QP	32.9	15.7	7.2	32.2	23.6	40.0	16.4	
Hori	121.500	QP	43.3	12.9	8.4	32.1	32.5	43.5	11.0	
Hori	215.999	QP	47.4	16.9	9.3	32.0	41.6	43.5	1.9	
Hori	310.502	QP	44.4	15.5	10.0	32.0	37.9	46.0	8.1	
Hori	400.502	QP	42.8	17.4	10.6	32.0	38.8	46.0	7.2	
Hori	562.503	QP	34.9	18.9	11.6	31.9	33.5	46.0	12.5	
Hori	1624.650	PK	45.5	27.2	2.0	33.5	41.2	73.9	32.7	
Hori	3249.300	PK	44.8	29.5	2.8	32.1	45.0	73.9	28.9	
Hori	4874.000	PK	40.8	31.8	4.2	31.8	45.0	73.9	28.9	NS
Hori	7311.000	PK	41.4	36.2	5.1	32.4	50.3	73.9	23.6	NS
Hori	9748.000	PK	41.4	38.1	5.9	32.9	52.5	73.9	21.4	NS
Hori	24370.000	PK	47.6	37.9	-0.9	31.6	53.0	73.9	20.9	NS
Hori	1624.650	AV	35.0	27.2	2.0	33.5	30.7	53.9	23.2	
Hori	3249.300	AV	37.4	29.5	2.8	32.1	37.6	53.9	16.3	
Hori	4874.000	AV	28.8	31.8	4.2	31.8	33.0	53.9	20.9	NS
Hori	7311.000	AV	29.6	36.2	5.1	32.4	38.5	53.9	15.4	NS
Hori	9748.000	AV	29.7	38.1	5.9	32.9	40.8	53.9	13.1	NS
Hori	24370.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS
Vert	38.250	QP	47.5	15.7	7.2	32.2	38.2	40.0	1.8	
Vert	121.500	QP	41.1	12.9	8.4	32.1	30.3	43.5	13.2	
Vert	215.999	QP	42.3	16.9	9.3	32.0	36.5	43.5	7.0	
Vert	310.502	QP	32.9	15.5	10.0	32.0	26.4	46.0	19.6	
Vert	400.502	QP	35.7	17.4	10.6	32.0	31.7	46.0	14.3	
Vert	562.503	QP	40.0	18.9	11.6	31.9	38.6	46.0	7.4	
Vert	1624.650	PK	44.7	27.2	2.0	33.5	40.4	73.9	33.5	
Vert	3249.300	PK	43.0	29.5	2.8	32.1	43.2	73.9	30.7	
Vert	4874.000	PK	40.7	31.8	4.2	31.8	44.9	73.9	29.0	NS
Vert	7311.000	PK	41.2	36.2	5.1	32.4	50.1	73.9	23.8	NS
Vert	9748.000	PK	41.4	38.1	5.9	32.9	52.5	73.9	21.4	NS
Vert	24370.000	PK	47.1	37.9	-0.9	31.6	52.5	73.9	21.4	NS
Vert	1624.650	AV	34.9	27.2	2.0	33.5	30.6	53.9	23.3	
Vert	3249.300	AV	33.0	29.5	2.8	32.1	33.2	53.9	20.7	
Vert	4874.000	AV	28.8	31.8	4.2	31.8	33.0	53.9	20.9	NS
Vert	7311.000	AV	29.6	36.2	5.1	32.4	38.5	53.9	15.4	NS
Vert	9748.000	AV	29.7	38.1	5.9	32.9	40.8	53.9	13.1	NS
Vert	24370.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 03/12/2011 03/14/2011 03/31/2011
Temperature/ Humidity 22 deg.C / 33% RH 21 deg.C / 34% RH 20 deg.C / 32% RH
Engineer Takayuki Shimada Takeshi Choda Takeshi Choda
(1-10GHz) (above 10GHz) (below 1GHz)
Mode 11b Tx 2462MHz, Antenna 1

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.250	QP	33.0	15.7	7.2	32.2	23.7	40.0	16.3	
Hori	121.500	QP	42.6	12.9	8.4	32.1	31.8	43.5	11.7	
Hori	215.999	QP	47.5	16.9	9.3	32.0	41.7	43.5	1.8	
Hori	310.502	QP	44.7	15.5	10.0	32.0	38.2	46.0	7.8	
Hori	400.502	QP	42.9	17.4	10.6	32.0	38.9	46.0	7.1	
Hori	562.503	QP	35.5	18.9	11.6	31.9	34.1	46.0	11.9	
Hori	1641.300	PK	44.1	27.3	2.0	33.4	40.0	73.9	33.9	
Hori	2483.500	PK	51.3	27.6	2.4	32.4	48.9	73.9	25.0	
Hori	2487.667	PK	54.2	27.6	2.4	32.4	51.8	73.9	22.1	
Hori	3282.600	PK	44.2	29.6	2.8	32.0	44.6	73.9	29.3	
Hori	4924.000	PK	41.0	32.0	4.2	31.8	45.4	73.9	28.5	NS
Hori	7386.000	PK	41.8	36.2	5.1	32.4	50.7	73.9	23.2	NS
Hori	9848.000	PK	41.8	38.1	5.9	32.9	52.9	73.9	21.0	NS
Hori	24620.000	PK	47.8	37.9	-0.9	31.6	53.2	73.9	20.7	NS
Hori	1641.300	AV	34.0	27.3	2.0	33.4	29.9	53.9	24.0	
Hori	2483.500	AV	42.4	27.6	2.4	32.4	40.0	53.9	13.9	
Hori	2487.667	AV	47.3	27.6	2.4	32.4	44.9	53.9	9.0	
Hori	3282.600	AV	35.1	29.6	2.8	32.0	35.5	53.9	18.4	
Hori	4924.000	AV	29.0	32.0	4.2	31.8	33.4	53.9	20.5	NS
Hori	7386.000	AV	29.9	36.2	5.1	32.4	38.8	53.9	15.1	NS
Hori	9848.000	AV	30.0	38.1	5.9	32.9	41.1	53.9	12.8	NS
Hori	24620.000	AV	37.5	37.9	-0.9	31.6	42.9	53.9	11.0	NS
Vert	38.250	QP	47.6	15.7	7.2	32.2	38.3	40.0	1.7	
Vert	121.500	QP	41.0	12.9	8.4	32.1	30.2	43.5	13.3	
Vert	215.999	QP	42.2	16.9	9.3	32.0	36.4	43.5	7.1	
Vert	310.502	QP	32.9	15.5	10.0	32.0	26.4	46.0	19.6	
Vert	400.502	QP	35.2	17.4	10.6	32.0	31.2	46.0	14.8	
Vert	562.503	QP	39.9	18.9	11.6	31.9	38.5	46.0	7.5	
Vert	1641.300	PK	44.9	27.3	2.0	33.4	40.8	73.9	33.1	
Vert	2483.500	PK	47.3	27.6	2.4	32.4	44.9	73.9	29.0	
Vert	2487.667	PK	49.3	27.6	2.4	32.4	46.9	73.9	27.0	
Vert	3282.600	PK	43.5	29.6	2.8	32.0	43.9	73.9	30.0	
Vert	4924.000	PK	41.0	32.0	4.2	31.8	45.4	73.9	28.5	NS
Vert	7386.000	PK	42.1	36.2	5.1	32.4	51.0	73.9	22.9	NS
Vert	9848.000	PK	41.8	38.1	5.9	32.9	52.9	73.9	21.0	NS
Vert	24620.000	PK	48.6	37.9	-0.9	31.6	54.0	73.9	19.9	NS
Vert	1641.300	AV	37.1	27.3	2.0	33.4	33.0	53.9	20.9	
Vert	2483.500	AV	37.5	27.6	2.4	32.4	35.1	53.9	18.8	
Vert	2487.667	AV	42.0	27.6	2.4	32.4	39.6	53.9	14.3	
Vert	3282.600	AV	32.3	29.6	2.8	32.0	32.7	53.9	21.2	
Vert	4924.000	AV	29.0	32.0	4.2	31.8	33.4	53.9	20.5	NS
Vert	7386.000	AV	29.9	36.2	5.1	32.4	38.8	53.9	15.1	NS
Vert	9848.000	AV	30.0	38.1	5.9	32.9	41.1	53.9	12.8	NS
Vert	24620.000	AV	37.5	37.9	-0.9	31.6	42.9	53.9	11.0	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber		
Report No.	31AE0084-HO-02		
Date	03/12/2011	03/14/2011	03/31/2011
Temperature/ Humidity	22 deg.C / 33% RH	21 deg.C / 34% RH	20 deg.C / 32% RH
Engineer	Takayuki Shimada	Takeshi Choda	Takeshi Choda
	(1-10GHz)	(above 10GHz)	(below 1GHz)
Mode	11g Tx 2412MHz, Antenna 1		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.250	QP	32.8	15.7	7.2	32.2	23.5	40.0	16.5	
Hori	121.500	QP	42.1	12.9	8.4	32.1	31.3	43.5	12.2	
Hori	215.999	QP	47.5	16.9	9.3	32.0	41.7	43.5	1.8	
Hori	310.502	QP	44.6	15.5	10.0	32.0	38.1	46.0	7.9	
Hori	400.502	QP	42.8	17.4	10.6	32.0	38.8	46.0	7.2	
Hori	562.503	QP	33.1	18.9	11.6	31.9	31.7	46.0	14.3	
Hori	1607.333	PK	43.2	27.2	1.9	33.5	38.8	73.9	35.1	NS
Hori	2390.000	PK	67.9	27.7	2.3	32.5	65.4	73.9	8.5	
Hori	2399.750	PK	83.8	27.7	2.4	32.5	81.4	-	-	- See 20dBc Data Sheet
Hori	2400.000	PK	84.1	27.7	2.4	32.5	81.7	-	-	- See 20dBc Data Sheet
Hori	3216.000	PK	44.3	29.5	2.8	32.1	44.5	73.9	29.4	
Hori	4824.000	PK	40.9	31.7	4.1	31.8	44.9	73.9	29.0	NS
Hori	7236.000	PK	41.5	36.2	5.0	32.4	50.3	73.9	23.6	NS
Hori	9648.000	PK	41.6	38.0	5.8	32.9	52.5	73.9	21.4	NS
Hori	24120.000	PK	47.2	37.9	-0.9	31.6	52.6	73.9	21.3	NS
Hori	1607.333	AV	30.8	27.2	1.9	33.5	26.4	53.9	27.5	NS
Hori	2390.000	AV	51.3	27.7	2.3	32.5	48.8	53.9	5.1	
Hori	2399.750	AV	65.7	27.7	2.4	32.5	63.3	-	-	- See 20dBc Data Sheet
Hori	2400.000	AV	66.1	27.7	2.4	32.5	63.7	-	-	- See 20dBc Data Sheet
Hori	3216.000	AV	35.7	29.5	2.8	32.1	35.9	53.9	18.0	
Hori	4824.000	AV	28.6	31.7	4.1	31.8	32.6	53.9	21.3	NS
Hori	7236.000	AV	29.5	36.2	5.0	32.4	38.3	53.9	15.6	NS
Hori	9648.000	AV	29.7	38.0	5.8	32.9	40.6	53.9	13.3	NS
Hori	24120.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS
Vert	38.250	QP	47.7	15.7	7.2	32.2	38.4	40.0	1.6	
Vert	121.500	QP	41.0	12.9	8.4	32.1	30.2	43.5	13.3	
Vert	215.999	QP	42.2	16.9	9.3	32.0	36.4	43.5	7.1	
Vert	310.502	QP	32.7	15.5	10.0	32.0	26.2	46.0	19.8	
Vert	400.502	QP	34.9	17.4	10.6	32.0	30.9	46.0	15.1	
Vert	562.503	QP	39.9	18.9	11.6	31.9	38.5	46.0	7.5	
Vert	1607.333	PK	43.3	27.2	1.9	33.5	38.9	73.9	35.0	NS
Vert	2390.000	PK	64.8	27.7	2.3	32.5	62.3	73.9	11.6	
Vert	2399.750	PK	79.6	27.7	2.4	32.5	77.2	-	-	- See 20dBc Data Sheet
Vert	2400.000	PK	79.8	27.7	2.4	32.5	77.4	-	-	- See 20dBc Data Sheet
Vert	3216.000	PK	43.6	29.5	2.8	32.1	43.8	73.9	30.1	
Vert	4824.000	PK	40.9	31.7	4.1	31.8	44.9	73.9	29.0	NS
Vert	7236.000	PK	41.6	36.2	5.0	32.4	50.4	73.9	23.5	NS
Vert	9648.000	PK	41.8	38.0	5.8	32.9	52.7	73.9	21.2	NS
Vert	24120.000	PK	47.4	37.9	-0.9	31.6	52.8	73.9	21.1	NS
Vert	1607.333	AV	30.8	27.2	1.9	33.5	26.4	53.9	27.5	NS
Vert	2390.000	AV	47.7	27.7	2.3	32.5	45.2	53.9	8.7	
Vert	2399.750	AV	61.5	27.7	2.4	32.5	59.1	-	-	- See 20dBc Data Sheet
Vert	2400.000	AV	62.0	27.7	2.4	32.5	59.6	-	-	- See 20dBc Data Sheet
Vert	3216.000	AV	34.9	29.5	2.8	32.1	35.1	53.9	18.8	
Vert	4824.000	AV	28.6	31.7	4.1	31.8	32.6	53.9	21.3	NS
Vert	7236.000	AV	29.5	36.2	5.0	32.4	38.3	53.9	15.6	NS
Vert	9648.000	AV	29.7	38.0	5.8	32.9	40.6	53.9	13.3	NS
Vert	24120.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 03/12/2011
Temperature/ Humidity 22 deg.C / 33% RH
Engineer Takayuki Shimada
 (1-10GHz)
Mode 11g Tx 2412MHz, Antenna 1

20dBc Data Sheet

Polarity	Frequency	Detector	Reading	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori	2412.000	100.6	PK	27.7	2.4	32.5	98.2	-	-	Carrier
	2399.750	70.9	PK	27.7	2.4	32.5	68.5	78.2	9.7	
	2400.000	69.2	PK	27.7	2.4	32.5	66.8	78.2	11.4	
Vert	2412.000	95	PK	27.7	2.4	32.5	92.6	-	-	Carrier
	2399.750	66.8	PK	27.7	2.4	32.5	64.4	72.6	8.2	
	2400.000	65.7	PK	27.7	2.4	32.5	63.3	72.6	9.3	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 03/12/2011 03/14/2011 03/31/2011
Temperature/ Humidity 22 deg.C / 33% RH 21 deg.C / 34% RH 20 deg.C / 32% RH
Engineer Takayuki Shimada Takeshi Choda Takeshi Choda
(1-10GHz) (above 10GHz) (below 1GHz)
Mode 11g Tx 2437MHz, Antenna 1

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.250	QP	33.4	15.7	7.2	32.2	24.1	40.0	15.9	
Hori	121.500	QP	42.1	12.9	8.4	32.1	31.3	43.5	12.2	
Hori	215.999	QP	47.4	16.9	9.3	32.0	41.6	43.5	1.9	
Hori	310.502	QP	44.5	15.5	10.0	32.0	38.0	46.0	8.0	
Hori	400.502	QP	42.5	17.4	10.6	32.0	38.5	46.0	7.5	
Hori	454.502	QP	44.3	17.8	10.9	32.0	41.0	46.0	5.0	
Hori	562.503	QP	32.9	18.9	11.6	31.9	31.5	46.0	14.5	
Hori	1624.650	PK	43.4	27.2	2.0	33.5	39.1	73.9	34.8	NS
Hori	3249.300	PK	44.6	29.5	2.8	32.1	44.8	73.9	29.1	
Hori	4874.000	PK	40.6	31.8	4.2	31.8	44.8	73.9	29.1	NS
Hori	7311.000	PK	41.4	36.2	5.1	32.4	50.3	73.9	23.6	NS
Hori	9748.000	PK	41.3	38.1	5.9	32.9	52.4	73.9	21.5	NS
Hori	24370.000	PK	47.4	37.9	-0.9	31.6	52.8	73.9	21.1	NS
Hori	1624.650	AV	30.8	27.2	2.0	33.5	26.5	53.9	27.4	NS
Hori	3249.300	AV	35.9	29.5	2.8	32.1	36.1	53.9	17.8	
Hori	4874.000	AV	28.8	31.8	4.2	31.8	33.0	53.9	20.9	NS
Hori	7311.000	AV	29.6	36.2	5.1	32.4	38.5	53.9	15.4	NS
Hori	9748.000	AV	29.7	38.1	5.9	32.9	40.8	53.9	13.1	NS
Hori	24370.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS
Vert	38.250	QP	47.8	15.7	7.2	32.2	38.5	40.0	1.5	
Vert	121.500	QP	40.9	12.9	8.4	32.1	30.1	43.5	13.4	
Vert	215.999	QP	42.1	16.9	9.3	32.0	36.3	43.5	7.2	
Vert	310.502	QP	32.7	15.5	10.0	32.0	26.2	46.0	19.8	
Vert	400.502	QP	34.8	17.4	10.6	32.0	30.8	46.0	15.2	
Vert	454.502	QP	38.5	17.8	10.9	32.0	35.2	46.0	10.8	
Vert	562.503	QP	39.7	18.9	11.6	31.9	38.3	46.0	7.7	
Vert	1624.650	PK	43.5	27.2	2.0	33.5	39.2	73.9	34.7	NS
Vert	3249.300	PK	44.2	29.5	2.8	32.1	44.4	73.9	29.5	
Vert	4874.000	PK	40.8	31.8	4.2	31.8	45.0	73.9	28.9	NS
Vert	7311.000	PK	41.2	36.2	5.1	32.4	50.1	73.9	23.8	NS
Vert	9748.000	PK	41.4	38.1	5.9	32.9	52.5	73.9	21.4	NS
Vert	24370.000	PK	47.2	37.9	-0.9	31.6	52.6	73.9	21.3	NS
Vert	1624.650	AV	30.8	27.2	2.0	33.5	26.5	53.9	27.4	NS
Vert	3249.300	AV	33.7	29.5	2.8	32.1	33.9	53.9	20.0	
Vert	4874.000	AV	28.8	31.8	4.2	31.8	33.0	53.9	20.9	NS
Vert	7311.000	AV	29.6	36.2	5.1	32.4	38.5	53.9	15.4	NS
Vert	9748.000	AV	29.7	38.1	5.9	32.9	40.8	53.9	13.1	NS
Vert	24370.000	AV	35.3	37.9	-0.9	31.6	40.7	53.9	13.2	NS

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 $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and No.4 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 03/12/2011 03/14/2011 03/31/2011
Temperature/ Humidity 22 deg.C / 33% RH 21 deg.C / 34% RH 20 deg.C / 32% RH
Engineer Takayuki Shimada Takeshi Choda Takeshi Choda
(1-10GHz) (above 10GHz) (below 1GHz)
Mode 11g Tx 2462MHz, Antenna 1

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	38.250	QP	35.5	15.7	7.2	32.2	26.2	40.0	13.8	
Hori	121.500	QP	41.9	12.9	8.4	32.1	31.1	43.5	12.4	
Hori	215.999	QP	47.5	16.9	9.3	32.0	41.7	43.5	1.8	
Hori	310.502	QP	44.6	15.5	10.0	32.0	38.1	46.0	7.9	
Hori	400.502	QP	42.6	17.4	10.6	32.0	38.6	46.0	7.4	
Hori	454.502	QP	44.3	17.8	10.9	32.0	41.0	46.0	5.0	
Hori	562.503	QP	33.1	18.9	11.6	31.9	31.7	46.0	14.3	
Hori	1641.300	PK	43.4	27.3	2.0	33.4	39.3	73.9	34.6	NS
Hori	2483.500	PK	65.9	27.6	2.4	32.4	63.5	73.9	10.4	
Hori	2483.580	PK	65.8	27.6	2.4	32.4	63.4	73.9	10.5	
Hori	3282.600	PK	44.4	29.6	2.8	32.0	44.8	73.9	29.1	
Hori	4924.000	PK	40.8	32.0	4.2	31.8	45.2	73.9	28.7	NS
Hori	7386.000	PK	42.1	36.2	5.1	32.4	51.0	73.9	22.9	NS
Hori	9848.000	PK	41.8	38.1	5.9	32.9	52.9	73.9	21.0	NS
Hori	24620.000	PK	48.1	37.9	-0.9	31.6	53.5	73.9	20.4	NS
Hori	1641.300	AV	31.0	27.3	2.0	33.4	26.9	53.9	27.0	NS
Hori	2483.500	AV	48.7	27.6	2.4	32.4	46.3	53.9	7.6	
Hori	2483.580	AV	48.7	27.6	2.4	32.4	46.3	53.9	7.6	
Hori	3282.600	AV	35.5	29.6	2.8	32.0	35.9	53.9	18.0	
Hori	4924.000	AV	29.0	32.0	4.2	31.8	33.4	53.9	20.5	NS
Hori	7386.000	AV	29.9	36.2	5.1	32.4	38.8	53.9	15.1	NS
Hori	9848.000	AV	30.0	38.1	5.9	32.9	41.1	53.9	12.8	NS
Hori	24620.000	AV	37.5	37.9	-0.9	31.6	42.9	53.9	11.0	NS
Vert	38.250	QP	47.6	15.7	7.2	32.2	38.3	40.0	1.7	
Vert	121.500	QP	41.0	12.9	8.4	32.1	30.2	43.5	13.3	
Vert	215.999	QP	42.0	16.9	9.3	32.0	36.2	43.5	7.3	
Vert	310.502	QP	33.0	15.5	10.0	32.0	26.5	46.0	19.5	
Vert	400.502	QP	35.7	17.4	10.6	32.0	31.7	46.0	14.3	
Vert	454.502	QP	39.0	17.8	10.9	32.0	35.7	46.0	10.3	
Vert	562.503	QP	39.9	18.9	11.6	31.9	38.5	46.0	7.5	
Vert	1641.300	PK	43.6	27.3	2.0	33.4	39.5	73.9	34.4	NS
Vert	2483.500	PK	61.1	27.6	2.4	32.4	58.7	73.9	15.2	
Vert	2483.580	PK	60.7	27.6	2.4	32.4	58.3	73.9	15.6	
Vert	3282.600	PK	43.7	29.6	2.8	32.0	44.1	73.9	29.8	
Vert	4924.000	PK	41.0	32.0	4.2	31.8	45.4	73.9	28.5	NS
Vert	7386.000	PK	42.1	36.2	5.1	32.4	51.0	73.9	22.9	NS
Vert	9848.000	PK	41.8	38.1	5.9	32.9	52.9	73.9	21.0	NS
Vert	24620.000	PK	48.5	37.9	-0.9	31.6	53.9	73.9	20.0	NS
Vert	1641.300	AV	31.0	27.3	2.0	33.4	26.9	53.9	27.0	NS
Vert	2483.500	AV	43.9	27.6	2.4	32.4	41.5	53.9	12.4	
Vert	2483.580	AV	43.9	27.6	2.4	32.4	41.5	53.9	12.4	
Vert	3282.600	AV	34.3	29.6	2.8	32.0	34.7	53.9	19.2	
Vert	4924.000	AV	29.0	32.0	4.2	31.8	33.4	53.9	20.5	NS
Vert	7386.000	AV	29.9	36.2	5.1	32.4	38.8	53.9	15.1	NS
Vert	9848.000	AV	30.0	38.1	5.9	32.9	41.1	53.9	12.8	NS
Vert	24620.000	AV	37.5	37.9	-0.9	31.6	42.9	53.9	11.0	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 11/02/2010 11/03/2010
Temperature/ Humidity 23 deg.C / 62% RH 22 deg.C / 43% RH
Engineer Takeshi Choda Takeshi Choda
(1-10GHz) (below 1GHz and above 10GHz)
Mode 11b Tx 2412MHz, Antenna 2

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	40.499	QP	33.9	15.2	7.3	32.2	24.2	40.0	15.8	
Hori	45.000	QP	29.6	14.6	7.4	32.2	19.4	40.0	20.6	
Hori	148.501	QP	37.3	14.8	8.6	32.1	28.6	43.5	14.9	
Hori	238.502	QP	43.7	17.2	9.5	32.0	38.4	46.0	7.6	
Hori	310.502	QP	41.8	15.5	10.1	31.8	35.6	46.0	10.4	
Hori	562.503	QP	40.9	18.9	11.7	32.0	39.5	46.0	6.5	
Hori	803.254	QP	23.8	21.9	12.9	31.4	27.2	46.0	18.8	
Hori	1608.013	PK	44.7	27.2	2.1	33.5	40.5	73.9	33.4	
Hori	2390.000	PK	53.3	27.7	2.6	32.5	51.1	73.9	22.8	
Hori	2397.500	PK	67.4	27.7	2.6	32.5	65.2	-	-	- See 20dBc Data Sheet
Hori	2400.000	PK	64.2	27.7	2.6	32.5	62.0	-	-	- See 20dBc Data Sheet
Hori	3216.000	PK	45.4	29.5	3.1	32.1	45.9	73.9	28.0	
Hori	4824.000	PK	42.1	31.7	5.1	31.8	47.1	73.9	26.8	
Hori	7236.000	PK	42.8	36.2	6.1	32.4	52.7	73.9	21.2	
Hori	9648.000	PK	44.2	38.0	6.8	32.9	56.1	73.9	17.8	
Hori	24120.000	PK	46.3	37.9	-1.3	31.0	51.9	73.9	22.0	NS
Hori	1608.013	AV	34.7	27.2	2.1	33.5	30.5	53.9	23.4	
Hori	2390.000	AV	43.5	27.7	2.6	32.5	41.3	53.9	12.6	
Hori	2397.500	AV	63.7	27.7	2.6	32.5	61.5	-	-	- See 20dBc Data Sheet
Hori	2400.000	AV	58.4	27.7	2.6	32.5	56.2	-	-	- See 20dBc Data Sheet
Hori	3216.000	AV	37.4	29.5	3.1	32.1	37.9	53.9	16.0	
Hori	4824.000	AV	31.3	31.7	5.1	31.8	36.3	53.9	17.6	
Hori	7236.000	AV	30.3	36.2	6.1	32.4	40.2	53.9	13.7	
Hori	9648.000	AV	34.0	38.0	6.8	32.9	45.9	53.9	8.0	
Hori	24120.000	AV	33.6	37.9	-1.3	31.0	39.2	53.9	14.7	NS
Vert	40.500	QP	49.3	15.2	7.3	32.2	39.6	40.0	0.4	
Vert	45.001	QP	44.0	14.6	7.4	32.2	33.8	40.0	6.2	
Vert	148.500	QP	33.1	14.8	8.6	32.1	24.4	43.5	19.1	
Vert	238.501	QP	37.5	17.2	9.5	32.0	32.2	46.0	13.8	
Vert	310.502	QP	31.0	15.5	10.1	31.8	24.8	46.0	21.2	
Vert	562.503	QP	42.2	18.9	11.7	32.0	40.8	46.0	5.2	
Vert	803.254	QP	23.7	21.9	12.9	31.4	27.1	46.0	18.9	
Vert	1607.946	PK	45.2	27.2	2.1	33.5	41.0	73.9	32.9	
Vert	2390.000	PK	50.0	27.7	2.6	32.5	47.8	73.9	26.1	
Vert	2397.500	PK	65.4	27.7	2.6	32.5	63.2	-	-	- See 20dBc Data Sheet
Vert	2400.000	PK	59.5	27.7	2.6	32.5	57.3	-	-	- See 20dBc Data Sheet
Vert	3215.950	PK	45.5	29.5	3.1	32.1	46.0	73.9	27.9	
Vert	4824.000	PK	41.9	31.7	5.1	31.8	46.9	73.9	27.0	
Vert	7236.000	PK	42.6	36.2	6.1	32.4	52.5	73.9	21.4	
Vert	9648.000	PK	44.5	38.0	6.8	32.9	56.4	73.9	17.5	
Vert	24120.000	PK	46.1	37.9	-1.3	31.0	51.7	73.9	22.2	NS
Vert	1607.946	AV	37.7	27.2	2.1	33.5	33.5	53.9	20.4	
Vert	2390.000	AV	39.2	27.7	2.6	32.5	37.0	53.9	16.9	
Vert	2397.500	AV	62.7	27.7	2.6	32.5	60.5	-	-	- See 20dBc Data Sheet
Vert	2400.000	AV	54.1	27.7	2.6	32.5	51.9	-	-	- See 20dBc Data Sheet
Vert	3215.950	AV	38.3	29.5	3.1	32.1	38.8	53.9	15.1	
Vert	4824.000	AV	30.2	31.7	5.1	31.8	35.2	53.9	18.7	
Vert	7236.000	AV	30.3	36.2	6.1	32.4	40.2	53.9	13.7	
Vert	9648.000	AV	35.3	38.0	6.8	32.9	47.2	53.9	6.7	
Vert	24120.000	AV	33.6	37.9	-1.3	31.0	39.2	53.9	14.7	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 11/02/2010
Temperature/ Humidity 23 deg.C / 62%RH
Engineer Takeshi Choda
 (1-10GHz)
Mode 11b Tx 2412MHz, Antenna 2

20dBc Data Sheet

Polarity	Frequency	Detector	Reading	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori	2412.000	PK	101.6	27.7	2.6	32.5	99.4	-	-	Carrier
Hori	2400.000	PK	59.0	27.7	2.6	32.5	56.8	79.4	22.6	
Hori	2397.500	PK	63.7	27.7	2.6	32.5	61.5	79.4	17.9	
Vert	2412.000	PK	99.1	27.7	2.6	32.5	96.9	-	-	Carrier
Vert	2400.000	PK	54.0	27.7	2.6	32.5	51.8	76.9	25.1	
Vert	2397.500	PK	62.2	27.7	2.6	32.5	60.0	76.9	16.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 11/03/2010 11/03/2010
Temperature/ Humidity 24 deg.C / 64%RH 22 deg.C / 43% RH
Engineer Katsunori Okai Takeshi Choda
(1-10GHz) (below 1GHz and above 10GHz)
Mode 11b Tx 2437MHz, Antenna 2

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	40.499	QP	33.9	15.2	7.3	32.2	24.2	40.0	15.8	
Hori	45.000	QP	30.0	14.6	7.4	32.2	19.8	40.0	20.2	
Hori	148.501	QP	34.8	14.8	8.6	32.1	26.1	43.5	17.4	
Hori	238.502	QP	43.7	17.2	9.5	32.0	38.4	46.0	7.6	
Hori	310.502	QP	41.8	15.5	10.1	31.8	35.6	46.0	10.4	
Hori	562.503	QP	42.1	18.9	11.7	32.0	40.7	46.0	5.3	
Hori	810.005	QP	24.0	21.9	12.9	31.4	27.4	46.0	18.6	
Hori	1624.733	PK	46.9	27.2	2.1	33.5	42.7	73.9	31.2	
Hori	3249.243	PK	46.8	29.5	3.1	32.1	47.3	73.9	26.6	
Hori	4874.000	PK	42.6	31.9	5.2	31.8	47.9	73.9	26.0	
Hori	7311.000	PK	44.3	36.2	6.1	32.4	54.2	73.9	19.7	
Hori	9748.000	PK	43.4	38.1	6.8	32.9	55.4	73.9	18.5	
Hori	24370.000	PK	45.3	37.9	-1.2	30.8	51.2	73.9	22.7	NS
Hori	1624.733	AV	39.0	27.2	2.1	33.5	34.8	53.9	19.1	
Hori	3249.243	AV	38.3	29.5	3.1	32.1	38.8	53.9	15.1	
Hori	4874.000	AV	30.5	31.9	5.2	31.8	35.8	53.9	18.1	
Hori	7311.000	AV	31.7	36.2	6.1	32.4	41.6	53.9	12.3	
Hori	9748.000	AV	31.6	38.1	6.8	32.9	43.6	53.9	10.3	
Hori	24370.000	AV	33.4	37.9	-1.2	30.8	39.3	53.9	14.6	NS
Vert	40.500	QP	49.1	15.2	7.3	32.2	39.4	40.0	0.6	
Vert	45.001	QP	44.0	14.6	7.4	32.2	33.8	40.0	6.2	
Vert	148.500	QP	31.2	14.8	8.6	32.1	22.5	43.5	21.0	
Vert	238.501	QP	36.1	17.2	9.5	32.0	30.8	46.0	15.2	
Vert	310.502	QP	30.7	15.5	10.1	31.8	24.5	46.0	21.5	
Vert	562.503	QP	41.4	18.9	11.7	32.0	40.0	46.0	6.0	
Vert	810.005	QP	25.9	21.9	12.9	31.4	29.3	46.0	16.7	
Vert	1624.649	PK	48.6	27.2	2.1	33.5	44.4	73.9	29.5	
Vert	3249.401	PK	45.9	29.5	3.1	32.1	46.4	73.9	27.5	
Vert	4874.000	PK	42.2	31.9	5.2	31.8	47.5	73.9	26.4	
Vert	7311.000	PK	44.1	36.2	6.1	32.4	54.0	73.9	19.9	
Vert	9748.000	PK	43.5	38.1	6.8	32.9	55.5	73.9	18.4	
Vert	24370.000	PK	45.6	37.9	-1.2	30.8	51.5	73.9	22.4	NS
Vert	1624.649	AV	42.7	27.2	2.1	33.5	38.5	53.9	15.4	
Vert	3249.401	AV	40.1	29.5	3.1	32.1	40.6	53.9	13.3	
Vert	4874.000	AV	29.9	31.9	5.2	31.8	35.2	53.9	18.7	
Vert	7311.000	AV	31.7	36.2	6.1	32.4	41.6	53.9	12.3	
Vert	9748.000	AV	31.5	38.1	6.8	32.9	43.5	53.9	10.4	
Vert	24370.000	AV	33.4	37.9	-1.2	30.8	39.3	53.9	14.6	NS

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 $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*NS: No signal detected

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 11/03/2010 11/03/2010
Temperature/ Humidity 24 deg.C / 64% RH 22 deg.C / 43% RH
Engineer Katsunori Okai Takeshi Choda
(1-10GHz) (below 1GHz and above 10GHz)
Mode 11b Tx 2462MHz, Antenna 2

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	40.499	QP	33.3	15.2	7.3	32.2	23.6	40.0	16.4	
Hori	45.000	QP	30.1	14.6	7.4	32.2	19.9	40.0	20.1	
Hori	148.501	QP	36.5	14.8	8.6	32.1	27.8	43.5	15.7	
Hori	238.502	QP	43.8	17.2	9.5	32.0	38.5	46.0	7.5	
Hori	310.502	QP	41.9	15.5	10.1	31.8	35.7	46.0	10.3	
Hori	562.503	QP	41.8	18.9	11.7	32.0	40.4	46.0	5.6	
Hori	820.130	QP	24.3	21.9	13.0	31.3	27.9	46.0	18.1	
Hori	1641.435	PK	45.8	27.3	2.1	33.4	41.8	73.9	32.1	
Hori	2483.500	PK	51.6	27.6	2.7	32.4	49.5	73.9	24.4	
Hori	2487.500	PK	53.8	27.6	2.7	32.4	51.7	73.9	22.2	
Hori	3282.623	PK	44.5	29.6	3.1	32.0	45.2	73.9	28.7	
Hori	4924.000	PK	40.6	32.0	5.2	31.8	46.0	73.9	27.9	
Hori	7386.000	PK	43.6	36.2	6.1	32.4	53.5	73.9	20.4	
Hori	9848.000	PK	43.0	38.2	6.9	32.9	55.2	73.9	18.7	
Hori	24620.000	PK	46.1	37.9	-1.2	30.6	52.2	73.9	21.7	NS
Hori	1641.435	AV	37.9	27.3	2.1	33.4	33.9	53.9	20.0	
Hori	2483.500	AV	42.2	27.6	2.7	32.4	40.1	53.9	13.8	
Hori	2487.500	AV	44.5	27.6	2.7	32.4	42.4	53.9	11.5	
Hori	3282.623	AV	36.8	29.6	3.1	32.0	37.5	53.9	16.4	
Hori	4924.000	AV	30.1	32.0	5.2	31.8	35.5	53.9	18.4	
Hori	7386.000	AV	32.0	36.2	6.1	32.4	41.9	53.9	12.0	
Hori	9848.000	AV	31.7	38.2	6.9	32.9	43.9	53.9	10.0	
Hori	24620.000	AV	34.2	37.9	-1.2	30.6	40.3	53.9	13.6	NS
Vert	40.500	QP	48.5	15.2	7.3	32.2	38.8	40.0	1.2	
Vert	45.001	QP	45.1	14.6	7.4	32.2	34.9	40.0	5.1	
Vert	148.500	QP	31.6	14.8	8.6	32.1	22.9	43.5	20.6	
Vert	238.501	QP	36.3	17.2	9.5	32.0	31.0	46.0	15.0	
Vert	310.502	QP	30.5	15.5	10.1	31.8	24.3	46.0	21.7	
Vert	562.503	QP	40.2	18.9	11.7	32.0	38.8	46.0	7.2	
Vert	820.130	QP	23.7	21.9	13.0	31.3	27.3	46.0	18.7	
Vert	1641.417	PK	49.1	27.3	2.1	33.4	45.1	73.9	28.8	
Vert	2483.500	PK	49.6	27.6	2.7	32.4	47.5	73.9	26.4	
Vert	2487.500	PK	51.8	27.6	2.7	32.4	49.7	73.9	24.2	
Vert	3282.617	PK	46.2	29.6	3.1	32.0	46.9	73.9	27.0	
Vert	4924.000	PK	41.6	32.0	5.2	31.8	47.0	73.9	26.9	
Vert	7386.000	PK	42.3	36.2	6.1	32.4	52.2	73.9	21.7	
Vert	9848.000	PK	42.7	38.2	6.9	32.9	54.9	73.9	19.0	
Vert	24620.000	PK	46.5	37.9	-1.2	30.6	52.6	73.9	21.3	NS
Vert	1641.417	AV	44.1	27.3	2.1	33.4	40.1	53.9	13.8	
Vert	2483.500	AV	40.7	27.6	2.7	32.4	38.6	53.9	15.3	
Vert	2487.500	AV	43.0	27.6	2.7	32.4	40.9	53.9	13.0	
Vert	3282.617	AV	38.5	29.6	3.1	32.0	39.2	53.9	14.7	
Vert	4924.000	AV	29.9	32.0	5.2	31.8	35.3	53.9	18.6	
Vert	7386.000	AV	32.0	36.2	6.1	32.4	41.9	53.9	12.0	
Vert	9848.000	AV	31.7	38.2	6.9	32.9	43.9	53.9	10.0	
Vert	24620.000	AV	34.2	37.9	-1.2	30.6	40.3	53.9	13.6	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber		
Report No.	31AE0084-HO-02		
Date	11/03/2010	11/03/2010	11/04/2010
Temperature/ Humidity	24 deg.C / 64% RH	22 deg.C / 43% RH	25 deg.C / 54% RH
Engineer	Katsunori Okai (1-10GHz)	Takeshi Choda (above 10GHz)	Takeshi Choda (below 1GHz)
Mode	11g Tx 2412MHz, Antenna 2		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	39.198	QP	31.3	14.9	7.1	32.0	21.3	40.0	18.7	
Hori	75.376	QP	39.4	6.6	7.6	32.1	21.5	40.0	18.5	
Hori	148.500	QP	39.4	15.0	8.5	31.9	31.0	43.5	12.5	
Hori	238.501	QP	44.6	17.2	9.2	31.9	39.1	46.0	6.9	
Hori	310.502	QP	40.5	15.9	9.7	31.9	34.2	46.0	11.8	
Hori	562.503	QP	40.5	19.7	11.2	32.1	39.3	46.0	6.7	
Hori	810.006	QP	25.0	23.1	12.5	31.7	28.9	46.0	17.1	
Hori	1607.333	PK	45.3	27.2	2.1	33.5	41.1	73.9	32.8	
Hori	2390.000	PK	70.0	27.7	2.6	32.5	67.8	73.9	6.1	
Hori	2399.750	PK	84.1	27.7	2.6	32.5	81.9	-	-	- See 20dBc Data Sheet
Hori	2400.000	PK	85.1	27.7	2.6	32.5	82.9	-	-	- See 20dBc Data Sheet
Hori	3216.001	PK	49.6	29.5	3.1	32.1	50.1	73.9	23.8	
Hori	4824.000	PK	42.1	31.7	5.1	31.8	47.1	73.9	26.8	
Hori	7236.000	PK	43.5	36.2	6.1	32.4	53.4	73.9	20.5	
Hori	9648.000	PK	43.4	38.0	6.8	32.9	55.3	73.9	18.6	
Hori	24120.000	PK	45.8	37.9	-1.3	31.0	51.4	73.9	22.5	NS
Hori	1607.333	AV	33.1	27.2	2.1	33.5	28.9	53.9	25.0	
Hori	2390.000	AV	52.4	27.7	2.6	32.5	50.2	53.9	3.7	
Hori	2399.750	AV	65.8	27.7	2.6	32.5	63.6	-	-	- See 20dBc Data Sheet
Hori	2400.000	AV	66.1	27.7	2.6	32.5	63.9	-	-	- See 20dBc Data Sheet
Hori	3216.001	AV	41.1	29.5	3.1	32.1	41.6	53.9	12.3	
Hori	4824.000	AV	29.9	31.7	5.1	31.8	34.9	53.9	19.0	
Hori	7236.000	AV	31.8	36.2	6.1	32.4	41.7	53.9	12.2	
Hori	9648.000	AV	31.8	38.0	6.8	32.9	43.7	53.9	10.2	
Hori	24120.000	AV	33.6	37.9	-1.3	31.0	39.2	53.9	14.7	NS
Vert	39.375	QP	44.4	14.8	7.1	32.0	34.3	40.0	5.7	
Vert	75.376	QP	48.4	6.6	7.6	32.1	30.5	40.0	9.5	
Vert	148.500	QP	33.2	15.0	8.5	31.9	24.8	43.5	18.7	
Vert	238.502	QP	34.1	17.2	9.2	31.9	28.6	46.0	17.4	
Vert	310.502	QP	30.3	15.9	9.7	31.9	24.0	46.0	22.0	
Vert	562.503	QP	40.0	19.7	11.2	32.1	38.8	46.0	7.2	
Vert	810.006	QP	24.8	23.1	12.5	31.7	28.7	46.0	17.3	
Vert	1608.213	PK	51.2	27.2	2.1	33.5	47.0	73.9	26.9	
Vert	2390.000	PK	70.2	27.7	2.6	32.5	68.0	73.9	5.9	
Vert	2399.750	PK	85.5	27.7	2.6	32.5	83.3	-	-	- See 20dBc Data Sheet
Vert	2400.000	PK	86.0	27.7	2.6	32.5	83.8	-	-	- See 20dBc Data Sheet
Vert	3216.008	PK	48.5	29.5	3.1	32.1	49.0	73.9	24.9	
Vert	4824.000	PK	41.7	31.7	5.1	31.8	46.7	73.9	27.2	
Vert	7236.000	PK	44.1	36.2	6.1	32.4	54.0	73.9	19.9	
Vert	9648.000	PK	43.1	38.0	6.8	32.9	55.0	73.9	18.9	
Vert	24120.000	PK	45.9	37.9	-1.3	31.0	51.5	73.9	22.4	NS
Vert	1608.213	AV	35.5	27.2	2.1	33.5	31.3	53.9	22.6	
Vert	2390.000	AV	52.6	27.7	2.6	32.5	50.4	53.9	3.5	
Vert	2399.750	AV	67.0	27.7	2.6	32.5	64.8	-	-	- See 20dBc Data Sheet
Vert	2400.000	AV	67.4	27.7	2.6	32.5	65.2	-	-	- See 20dBc Data Sheet
Vert	3216.008	AV	42.6	29.5	3.1	32.1	43.1	53.9	10.8	
Vert	4824.000	AV	29.8	31.7	5.1	31.8	34.8	53.9	19.1	
Vert	7236.000	AV	31.8	36.2	6.1	32.4	41.7	53.9	12.2	
Vert	9648.000	AV	31.8	38.0	6.8	32.9	43.7	53.9	10.2	
Vert	24120.000	AV	33.5	37.9	-1.3	31.0	39.1	53.9	14.8	NS

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

*NS: No signal detected

Radiated Spurious Emission

Test place : Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. : 31AE0084-HO-02
Date : 11/03/2010
Temperature/ Humidity : 24 deg.C / 64% RH
Engineer : Katsunori Okai
Mode : 11g Tx 2412MHz, Antenna 2

20dBc Data Sheet

Polarity	Frequency	Detector	Reading	Ant Factor	Loss	Gain	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori	2412.000	PK	98.7	27.7	2.6	32.5	96.5	-	-	Carrier
Hori	2399.750	PK	69.7	27.7	2.6	32.5	67.5	76.5	9.0	
Hori	2400.000	PK	67.3	27.7	2.6	32.5	65.1	76.5	11.4	
Vert	2412.000	PK	97.2	27.7	2.6	32.5	95.0	-	-	Carrier
Vert	2399.750	PK	69.3	27.7	2.6	32.5	67.1	75.0	7.9	
Vert	2400.000	PK	68.1	27.7	2.6	32.5	65.9	75.0	9.1	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

Radiated Spurious Emission

Test place Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber
Report No. 31AE0084-HO-02
Date 11/03/2010 11/03/2010 11/04/2010
Temperature/ Humidity 24 deg.C / 64% RH 22 deg.C / 43% RH 25 deg.C / 54% RH
Engineer Katsunori Okai Takeshi Choda Takeshi Choda
(1-10GHz) (above 10GHz) (below 1GHz)
Mode 11g Tx 2437MHz, Antenna 2

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	39.373	QP	30.9	14.8	7.1	32.0	20.8	40.0	19.2	
Hori	76.501	QP	41.4	6.6	7.7	32.1	23.6	40.0	16.4	
Hori	148.500	QP	34.3	15.0	8.5	31.9	25.9	43.5	17.6	
Hori	238.501	QP	44.2	17.2	9.2	31.9	38.7	46.0	7.3	
Hori	310.502	QP	40.7	15.9	9.7	31.9	34.4	46.0	11.6	
Hori	562.503	QP	40.6	19.7	11.2	32.1	39.4	46.0	6.6	
Hori	814.505	QP	25.5	23.2	12.5	31.7	29.5	46.0	16.5	
Hori	1626.967	PK	47.1	27.3	2.1	33.5	43.0	73.9	30.9	
Hori	3249.297	PK	48.5	29.5	3.1	32.1	49.0	73.9	24.9	
Hori	4874.000	PK	42.4	31.9	5.2	31.8	47.7	73.9	26.2	
Hori	7311.000	PK	43.6	36.2	6.1	32.4	53.5	73.9	20.4	
Hori	9748.000	PK	43.3	38.1	6.8	32.9	55.3	73.9	18.6	
Hori	24370.000	PK	45.5	37.9	-1.2	30.8	51.4	73.9	22.5	NS
Hori	1626.967	AV	34.6	27.3	2.1	33.5	30.5	53.9	23.4	
Hori	3249.297	AV	42.6	29.5	3.1	32.1	43.1	53.9	10.8	
Hori	4874.000	AV	29.9	31.9	5.2	31.8	35.2	53.9	18.7	
Hori	7311.000	AV	31.7	36.2	6.1	32.4	41.6	53.9	12.3	
Hori	9748.000	AV	31.6	38.1	6.8	32.9	43.6	53.9	10.3	
Hori	24370.000	AV	32.9	37.9	-1.2	30.8	38.8	53.9	15.1	NS
Vert	39.375	QP	44.1	14.8	7.1	32.0	34.0	40.0	6.0	
Vert	76.501	QP	49.5	6.6	7.7	32.1	31.7	40.0	8.3	
Vert	148.500	QP	31.8	15.0	8.5	31.9	23.4	43.5	20.1	
Vert	238.502	QP	35.6	17.2	9.2	31.9	30.1	46.0	15.9	
Vert	310.502	QP	31.2	15.9	9.7	31.9	24.9	46.0	21.1	
Vert	562.503	QP	40.7	19.7	11.2	32.1	39.5	46.0	6.5	
Vert	814.505	QP	24.5	23.2	12.5	31.7	28.5	46.0	17.5	
Vert	1626.295	PK	49.3	27.3	2.1	33.5	45.2	73.9	28.7	
Vert	3249.303	PK	48.8	29.5	3.1	32.1	49.3	73.9	24.6	
Vert	4874.000	PK	42.4	31.9	5.2	31.8	47.7	73.9	26.2	
Vert	7311.000	PK	44.1	36.2	6.1	32.4	54.0	73.9	19.9	
Vert	9748.000	PK	43.8	38.1	6.8	32.9	55.8	73.9	18.1	
Vert	24370.000	PK	45.3	37.9	-1.2	30.8	51.2	73.9	22.7	NS
Vert	1626.295	AV	37.0	27.3	2.1	33.5	32.9	53.9	21.0	
Vert	3249.303	AV	45.2	29.5	3.1	32.1	45.7	53.9	8.2	
Vert	4874.000	AV	29.8	31.9	5.2	31.8	35.1	53.9	18.8	
Vert	7311.000	AV	31.7	36.2	6.1	32.4	41.6	53.9	12.3	
Vert	9748.000	AV	31.6	38.1	6.8	32.9	43.6	53.9	10.3	
Vert	24370.000	AV	33.0	37.9	-1.2	30.8	38.9	53.9	15.0	NS

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 $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

26.5GHz-40GHz $20\log(3.0\text{m}/0.5\text{m})=15.6\text{dB}$

*NS: No signal detected

Radiated Spurious Emission

Test place	Head Office EMC Lab. No.3 and 4 Semi Anechoic Chamber		
Report No.	31AE0084-HO-02		
Date	11/03/2010	11/03/2010	11/04/2010
Temperature/ Humidity	24 deg.C / 64% RH	22 deg.C / 43% RH	25 deg.C / 54% RH
Engineer	Katsunori Okai (1-10GHz)	Takeshi Choda (above 10GHz)	Takeshi Choda (below 1GHz)
Mode	11g Tx 2462MHz, Antenna 2		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	39.375	QP	30.8	14.8	7.1	32.0	20.7	40.0	19.3	
Hori	76.501	QP	40.6	6.6	7.7	32.1	22.8	40.0	17.2	
Hori	148.500	QP	32.8	15.0	8.5	31.9	24.4	43.5	19.1	
Hori	238.501	QP	44.2	17.2	9.2	31.9	38.7	46.0	7.3	
Hori	310.502	QP	40.5	15.9	9.7	31.9	34.2	46.0	11.8	
Hori	562.503	QP	39.9	19.7	11.2	32.1	38.7	46.0	7.3	
Hori	820.129	QP	23.6	23.2	12.5	31.7	27.6	46.0	18.4	
Hori	1643.255	PK	44.6	27.3	2.1	33.4	40.6	73.9	33.3	
Hori	2483.500	PK	68.4	27.6	2.7	32.4	66.3	73.9	7.6	
Hori	2484.170	PK	67.4	27.6	2.7	32.4	65.3	73.9	8.6	
Hori	3282.633	PK	46.9	29.6	3.1	32.0	47.6	73.9	26.3	
Hori	4924.000	PK	42.5	32.0	5.2	31.8	47.9	73.9	26.0	
Hori	7386.000	PK	43.7	36.2	6.1	32.4	53.6	73.9	20.3	
Hori	9848.000	PK	43.3	38.2	6.9	32.9	55.5	73.9	18.4	
Hori	24620.000	PK	47.2	37.9	-1.2	30.6	53.3	73.9	20.6	NS
Hori	1643.255	AV	33.4	27.3	2.1	33.4	29.4	53.9	24.5	
Hori	2483.500	AV	50.0	27.6	2.7	32.4	47.9	53.9	6.0	
Hori	2484.170	AV	48.9	27.6	2.7	32.4	46.8	53.9	7.1	
Hori	3282.633	AV	42.2	29.6	3.1	32.0	42.9	53.9	11.0	
Hori	4924.000	AV	29.9	32.0	5.2	31.8	35.3	53.9	18.6	
Hori	7386.000	AV	31.9	36.2	6.1	32.4	41.8	53.9	12.1	
Hori	9848.000	AV	31.6	38.2	6.9	32.9	43.8	53.9	10.1	
Hori	24620.000	AV	34.1	37.9	-1.2	30.6	40.2	53.9	13.7	NS
Vert	39.375	QP	44.5	14.8	7.1	32.0	34.4	40.0	5.6	
Vert	76.501	QP	49.6	6.6	7.7	32.1	31.8	40.0	8.2	
Vert	148.500	QP	32.6	15.0	8.5	31.9	24.2	43.5	19.3	
Vert	238.502	QP	35.7	17.2	9.2	31.9	30.2	46.0	15.8	
Vert	310.502	QP	30.2	15.9	9.7	31.9	23.9	46.0	22.1	
Vert	562.503	QP	41.2	19.7	11.2	32.1	40.0	46.0	6.0	
Vert	820.129	QP	22.5	23.2	12.5	31.7	26.5	46.0	19.5	
Vert	1643.251	PK	49.4	27.3	2.1	33.4	45.4	73.9	28.5	
Vert	2483.500	PK	67.6	27.6	2.7	32.4	65.5	73.9	8.4	
Vert	2484.170	PK	65.6	27.6	2.7	32.4	63.5	73.9	10.4	
Vert	3282.625	PK	50.9	29.6	3.1	32.0	51.6	73.9	22.3	
Vert	4924.000	PK	41.7	32.0	5.2	31.8	47.1	73.9	26.8	
Vert	7386.000	PK	43.9	36.2	6.1	32.4	53.8	73.9	20.1	
Vert	9848.000	PK	43.2	38.2	6.9	32.9	55.4	73.9	18.5	
Vert	24620.000	PK	46.4	37.9	-1.2	30.6	52.5	73.9	21.4	NS
Vert	1643.251	AV	36.2	27.3	2.1	33.4	32.2	53.9	21.7	
Vert	2483.500	AV	48.4	27.6	2.7	32.4	46.3	53.9	7.6	
Vert	2484.170	AV	47.5	27.6	2.7	32.4	45.4	53.9	8.5	
Vert	3282.625	AV	46.7	29.6	3.1	32.0	47.4	53.9	6.5	
Vert	4924.000	AV	29.8	32.0	5.2	31.8	35.2	53.9	18.7	
Vert	7386.000	AV	31.9	36.2	6.1	32.4	41.8	53.9	12.1	
Vert	9848.000	AV	31.7	38.2	6.9	32.9	43.9	53.9	10.0	
Vert	24620.000	AV	34.1	37.9	-1.2	30.6	40.2	53.9	13.7	NS

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).

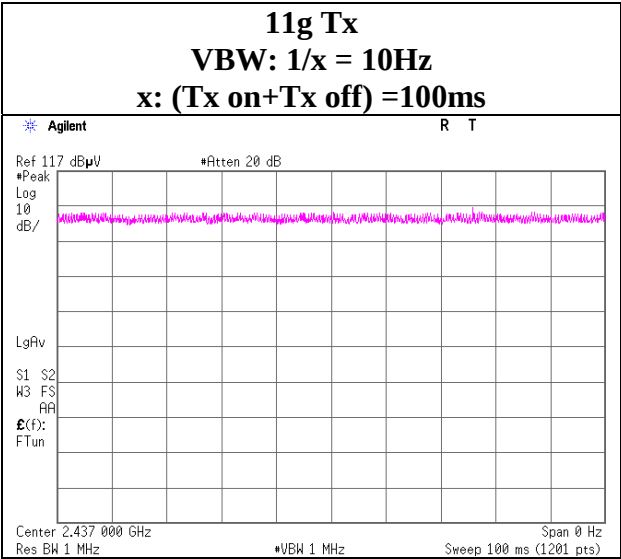
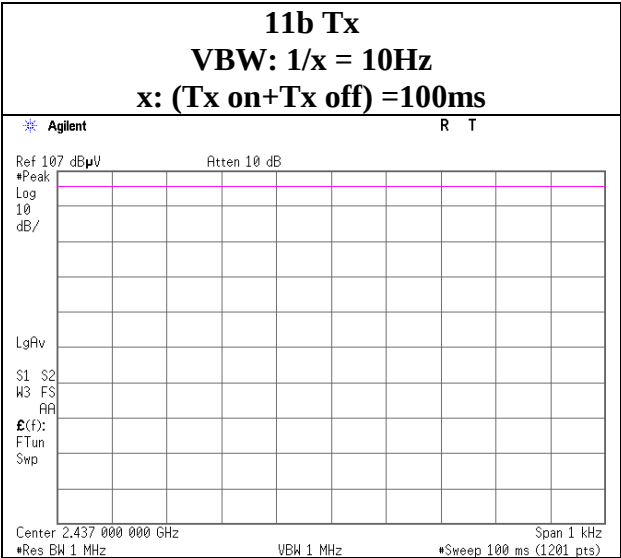
*The 10th harmonic was not seen so the result was its base noise level.

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

26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB

*NS: No signal detected

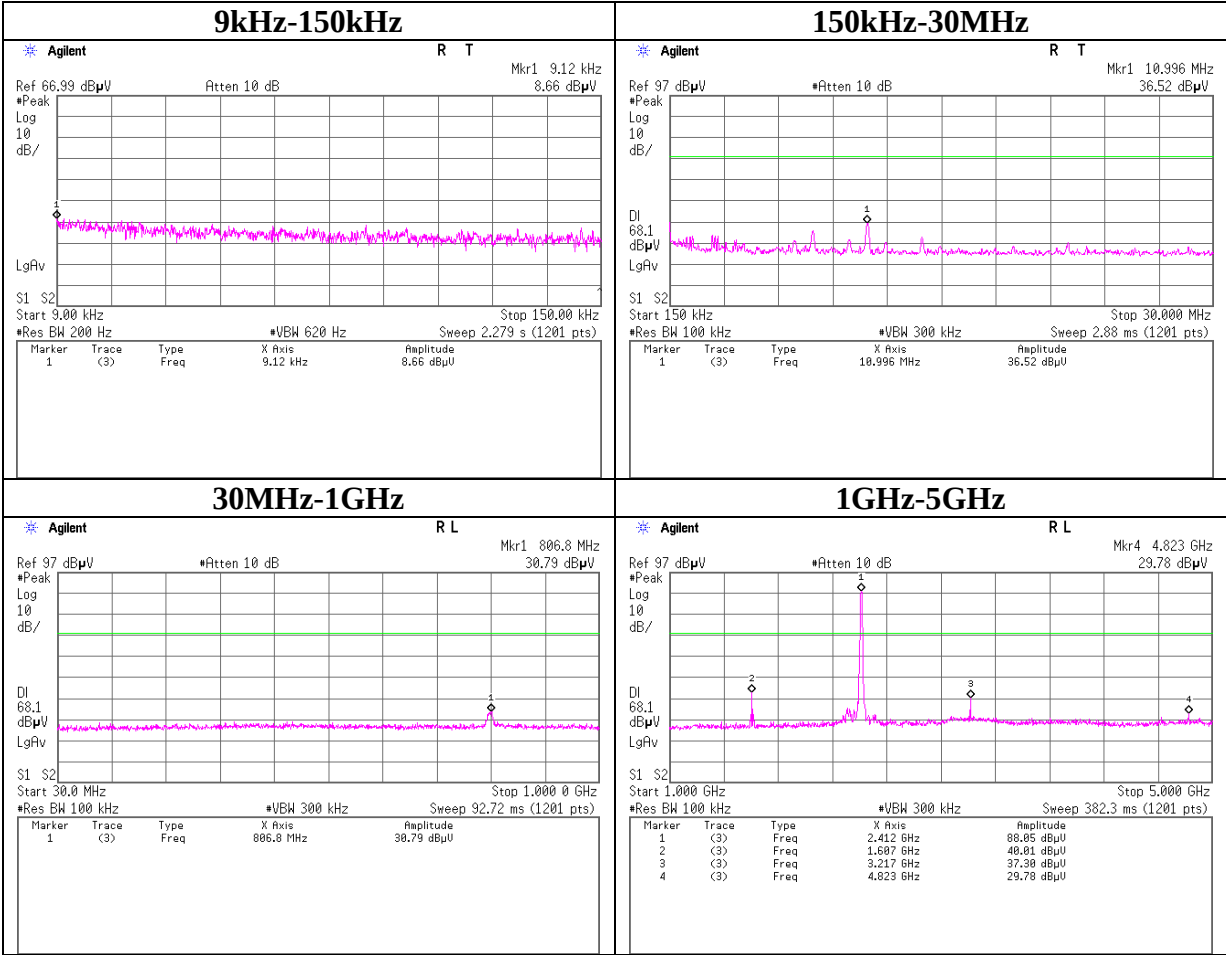
VBW (AV) Calculation



Conducted Spurious Emission

Antenna 1

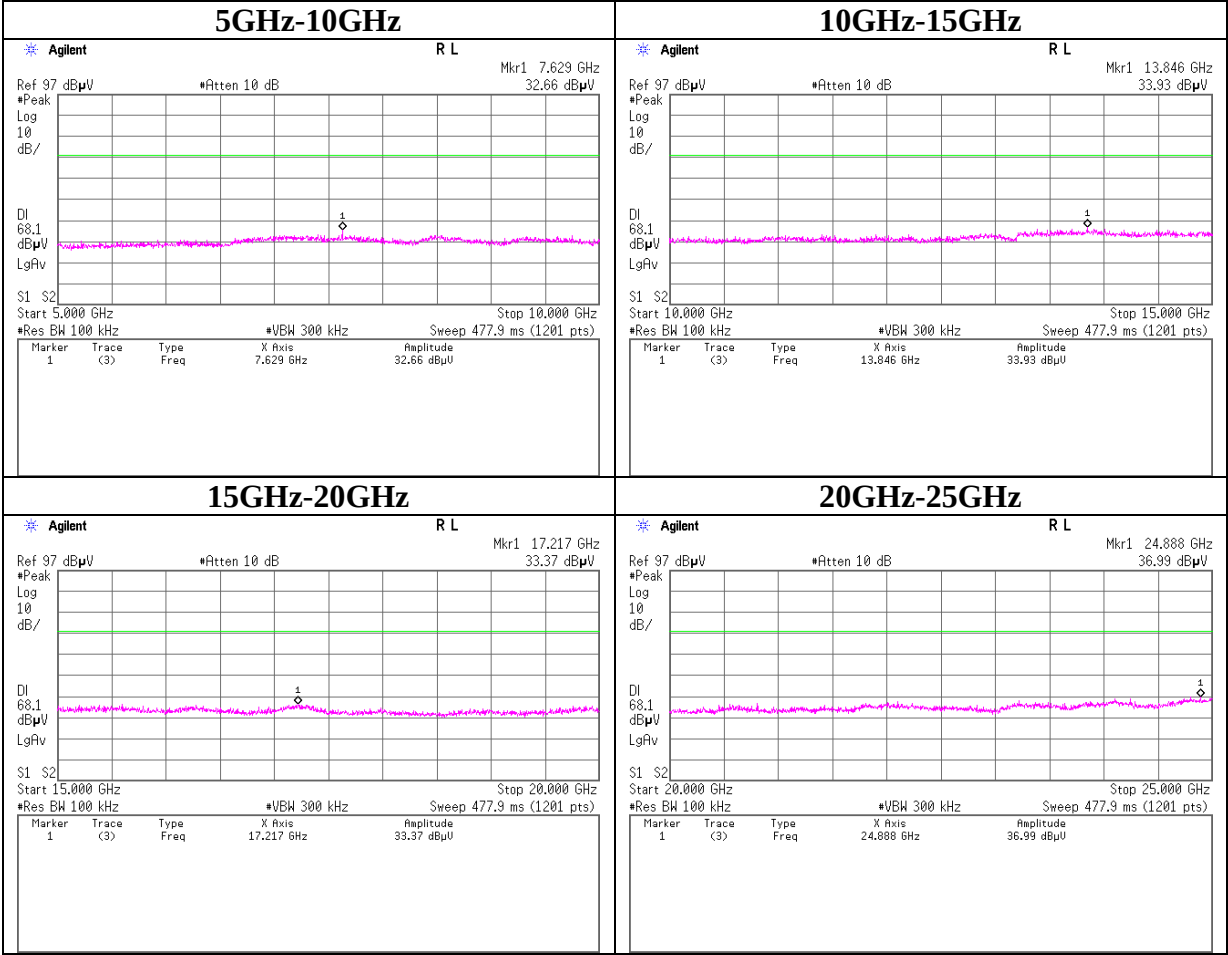
11b Tx 2412MHz



Conducted Spurious Emission

Antenna 1

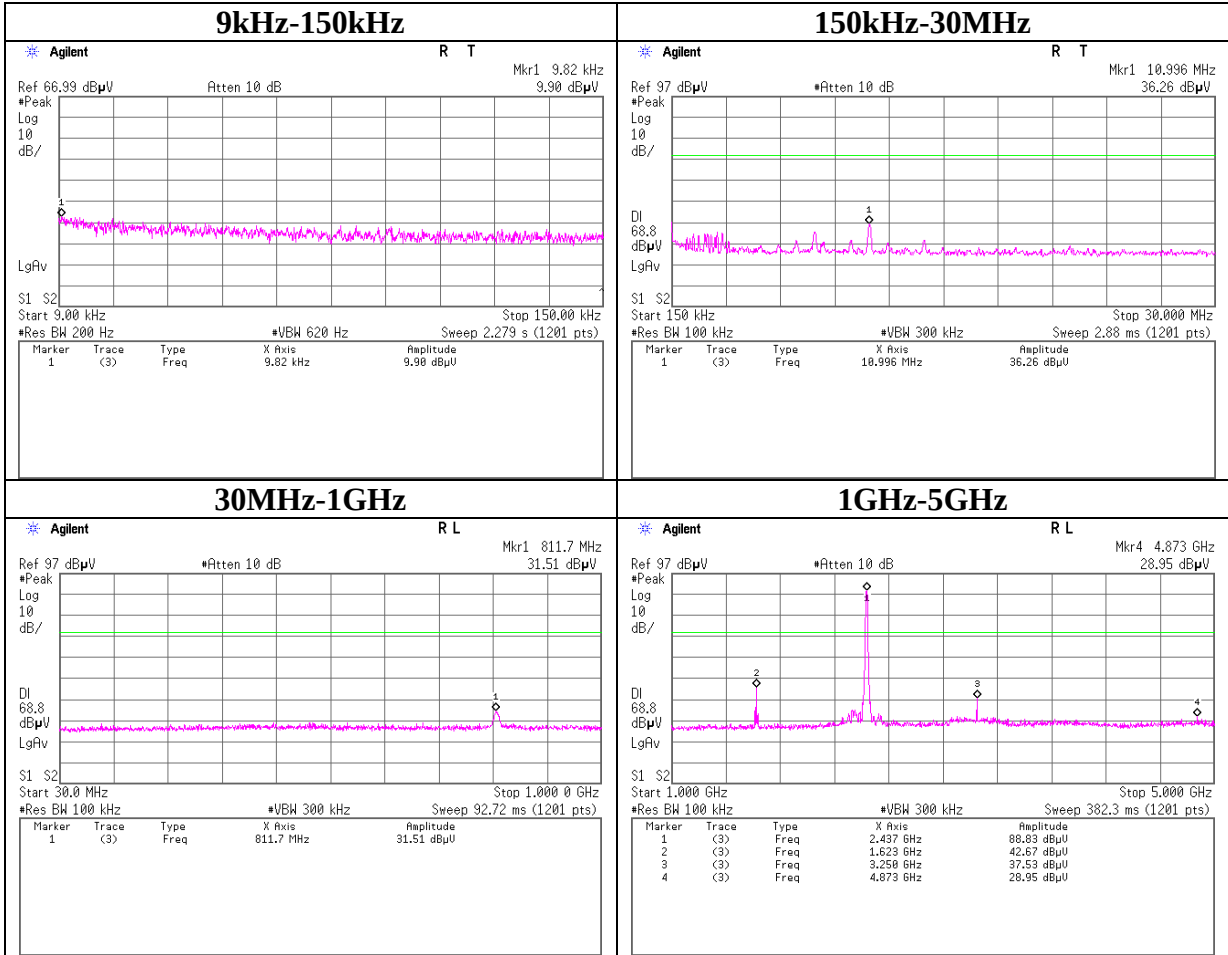
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Conducted Spurious Emission

Antenna 1

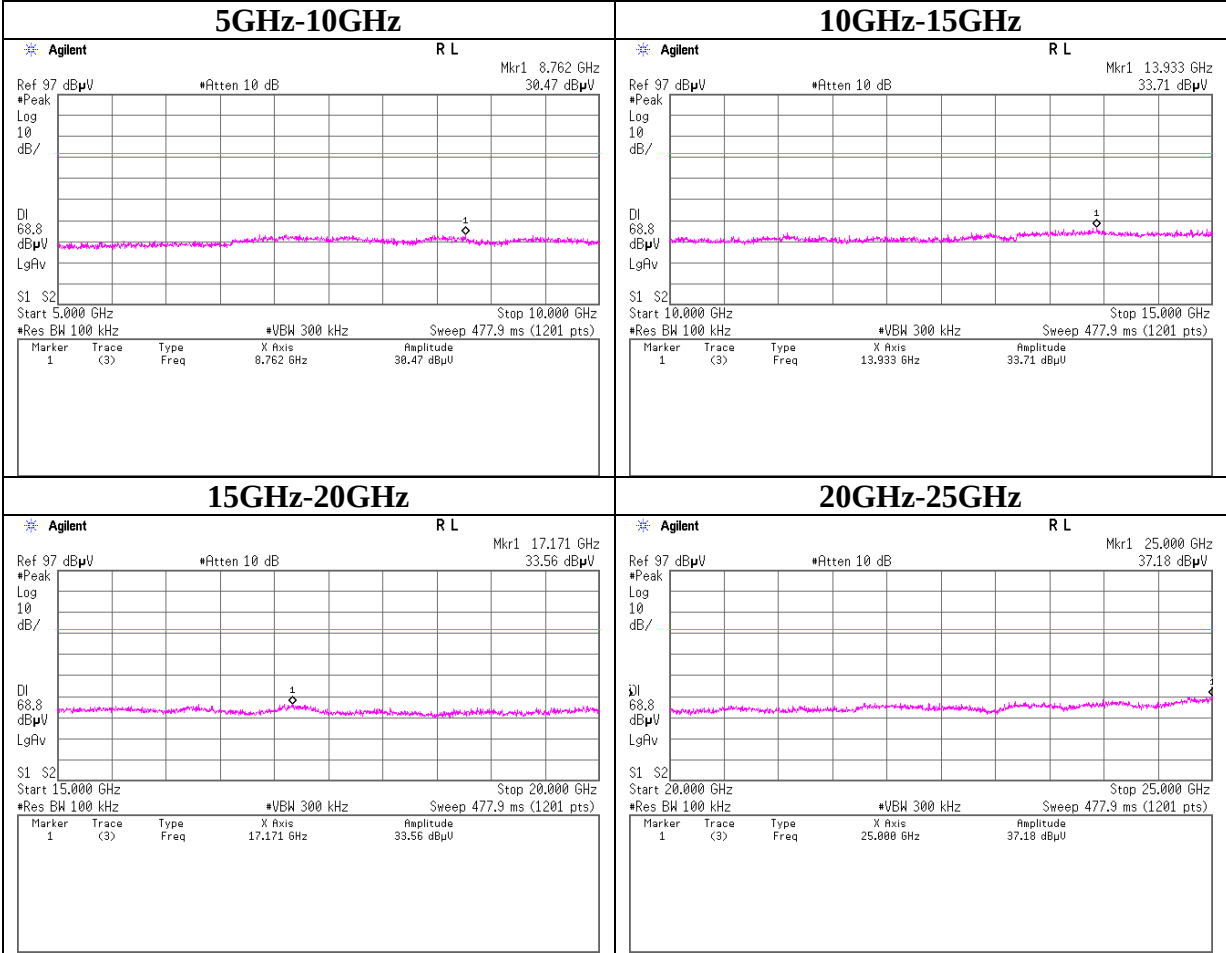
11b Tx 2437MHz



Conducted Spurious Emission

Antenna 1

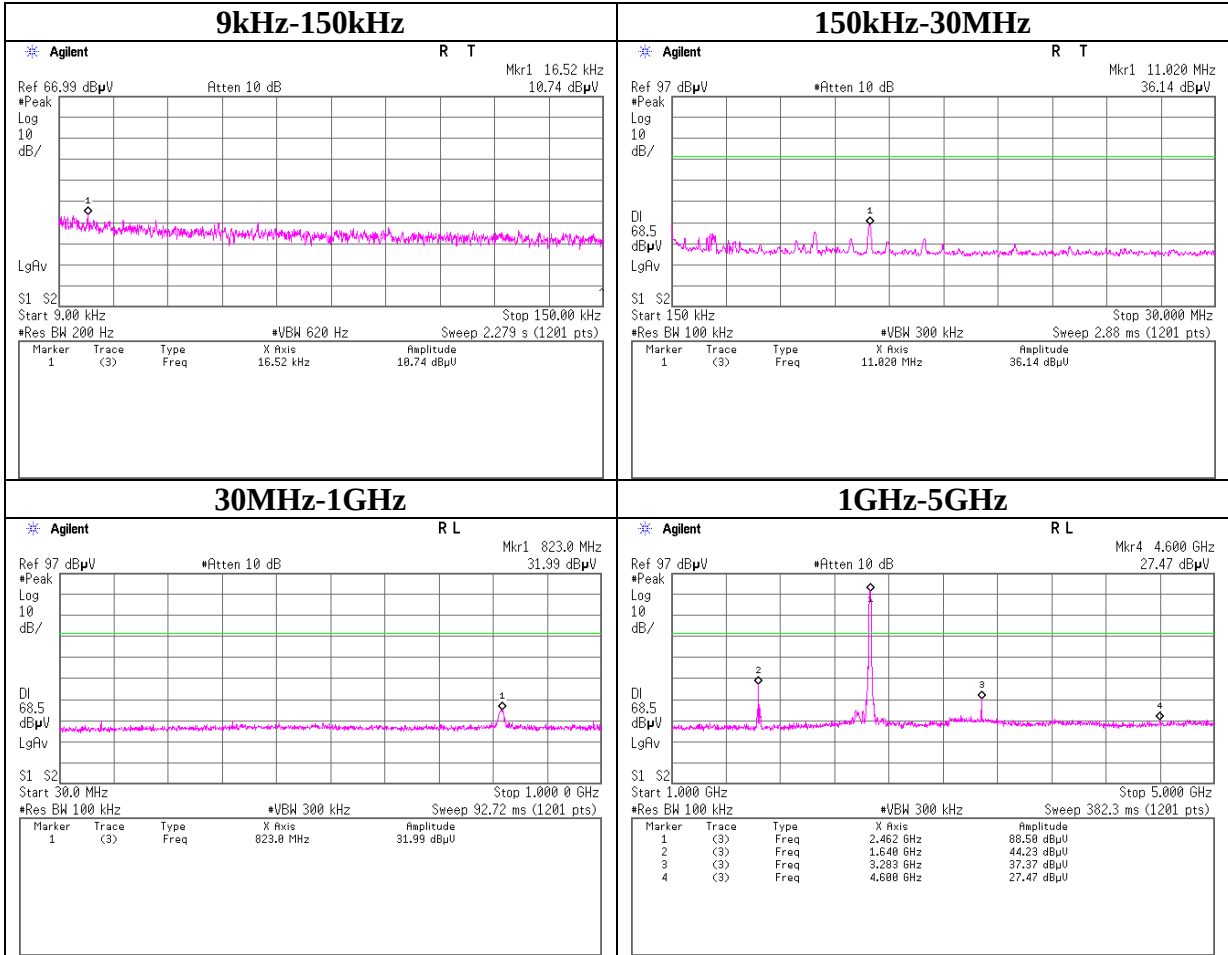
11b Tx 2437MHz



Conducted Spurious Emission

Antenna 1

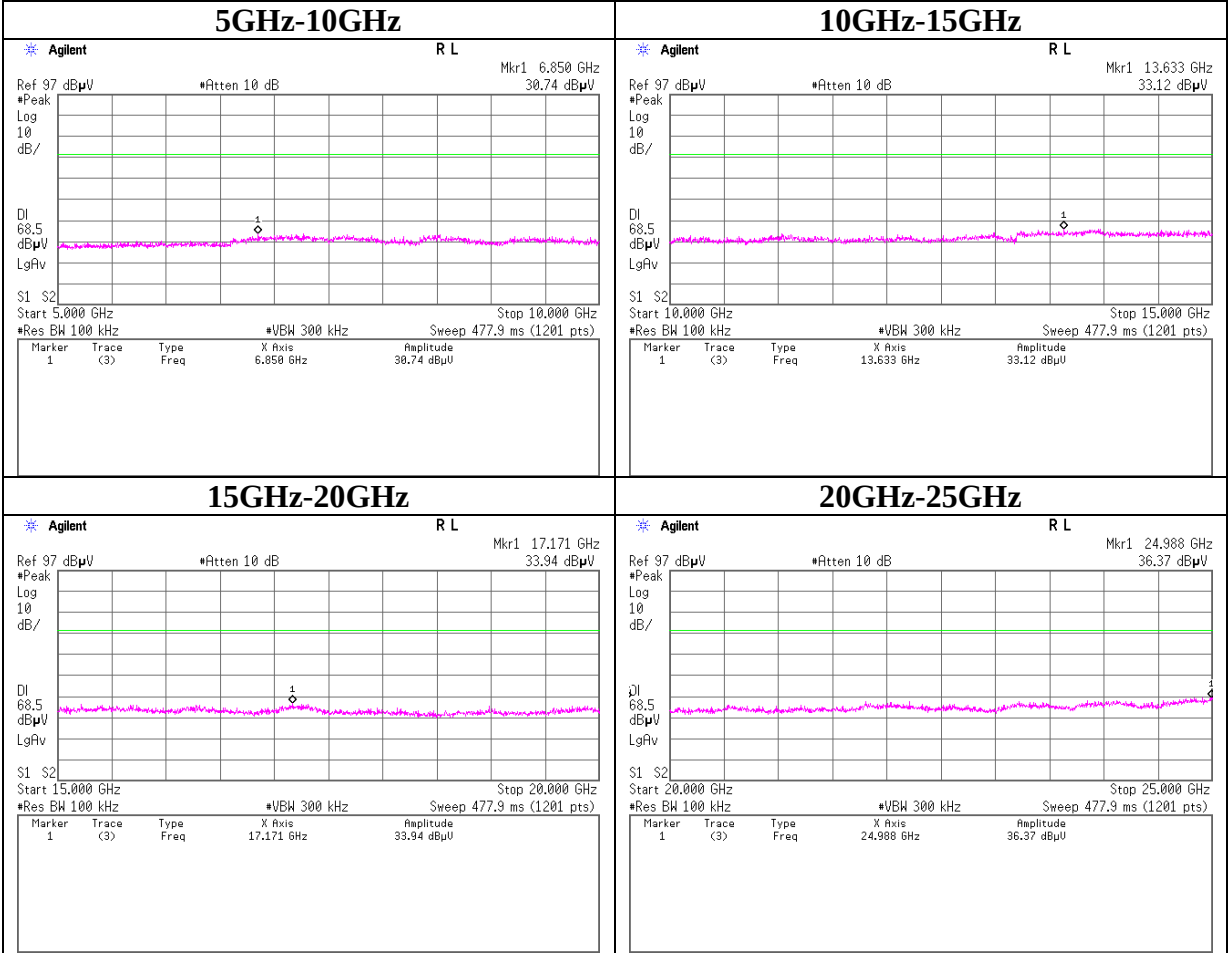
11b Tx 2462MHz



Conducted Spurious Emission

Antenna 1

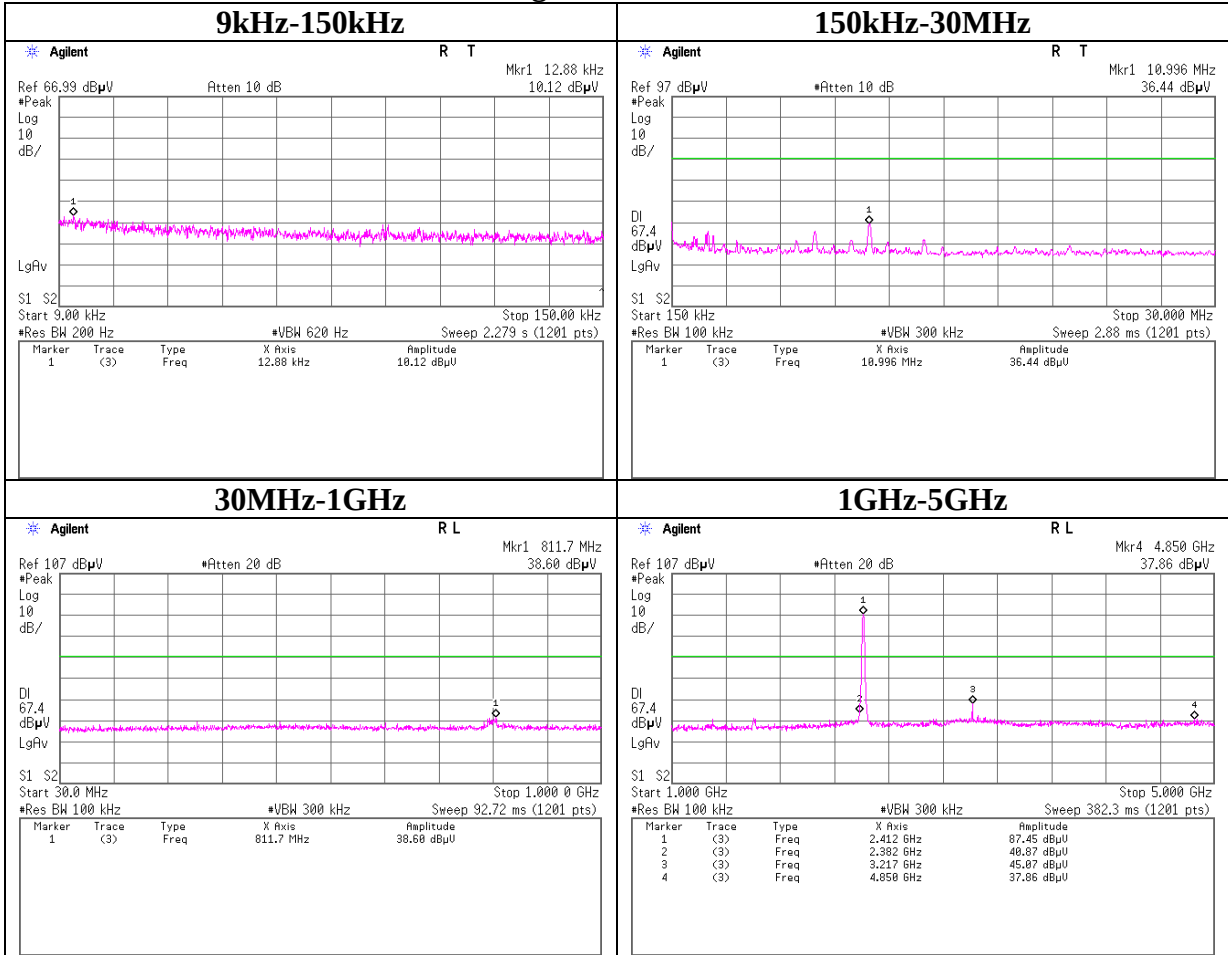
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Conducted Spurious Emission

Antenna 1

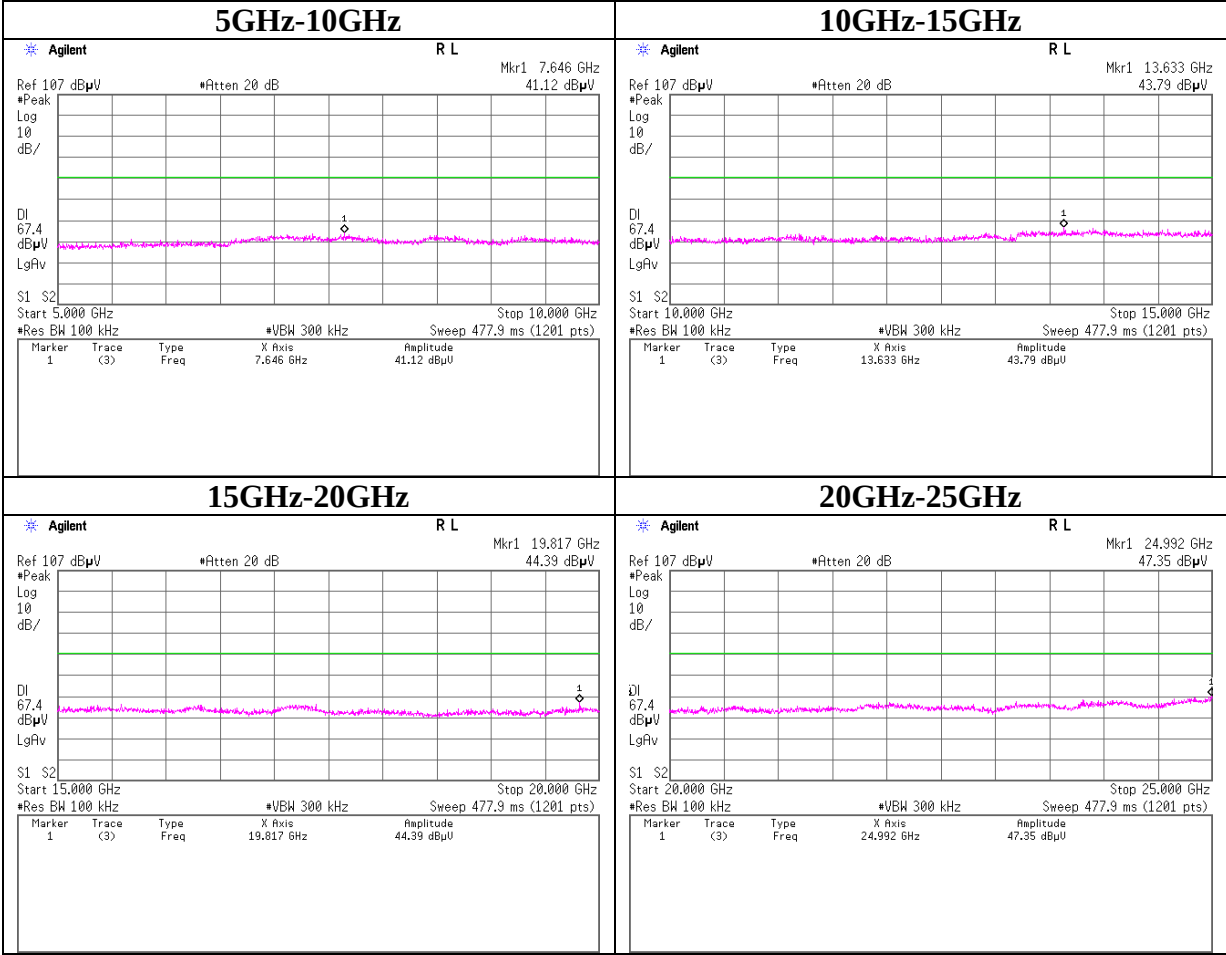
11g Tx 2412MHz



Conducted Spurious Emission

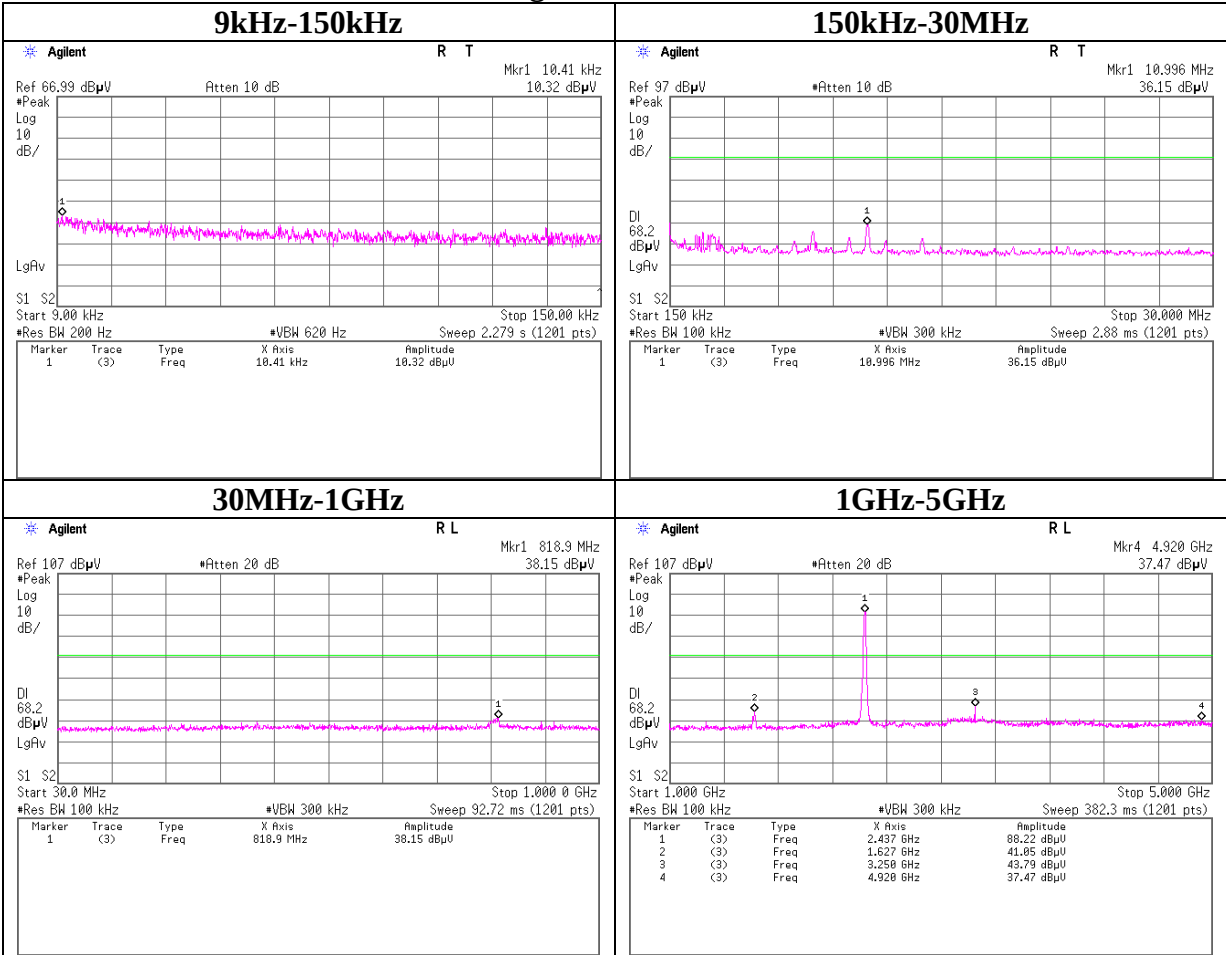
Antenna 1

11g Tx 2412MHz



Conducted Spurious Emission
Antenna 1

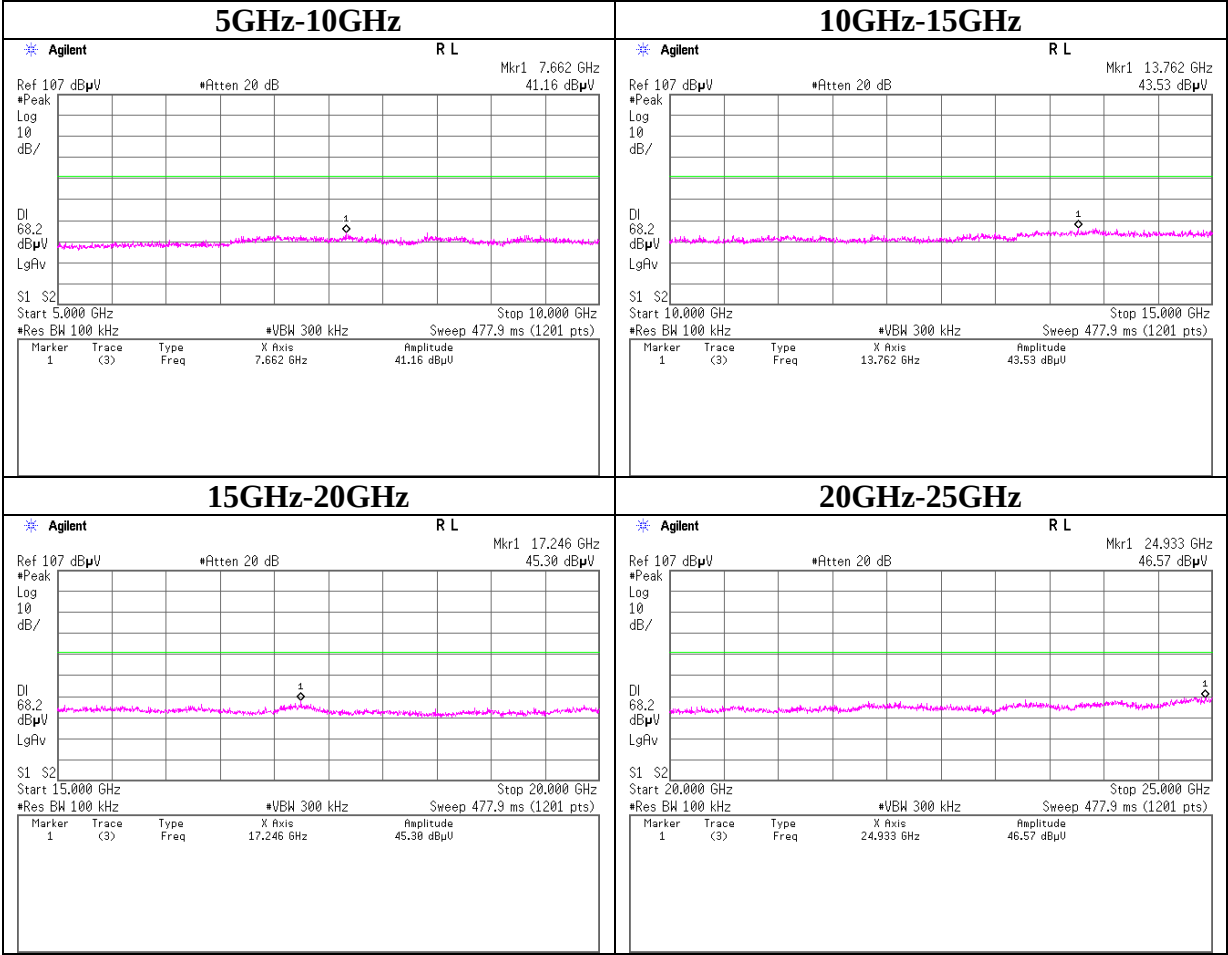
11g Tx 2437MHz



Conducted Spurious Emission

Antenna 1

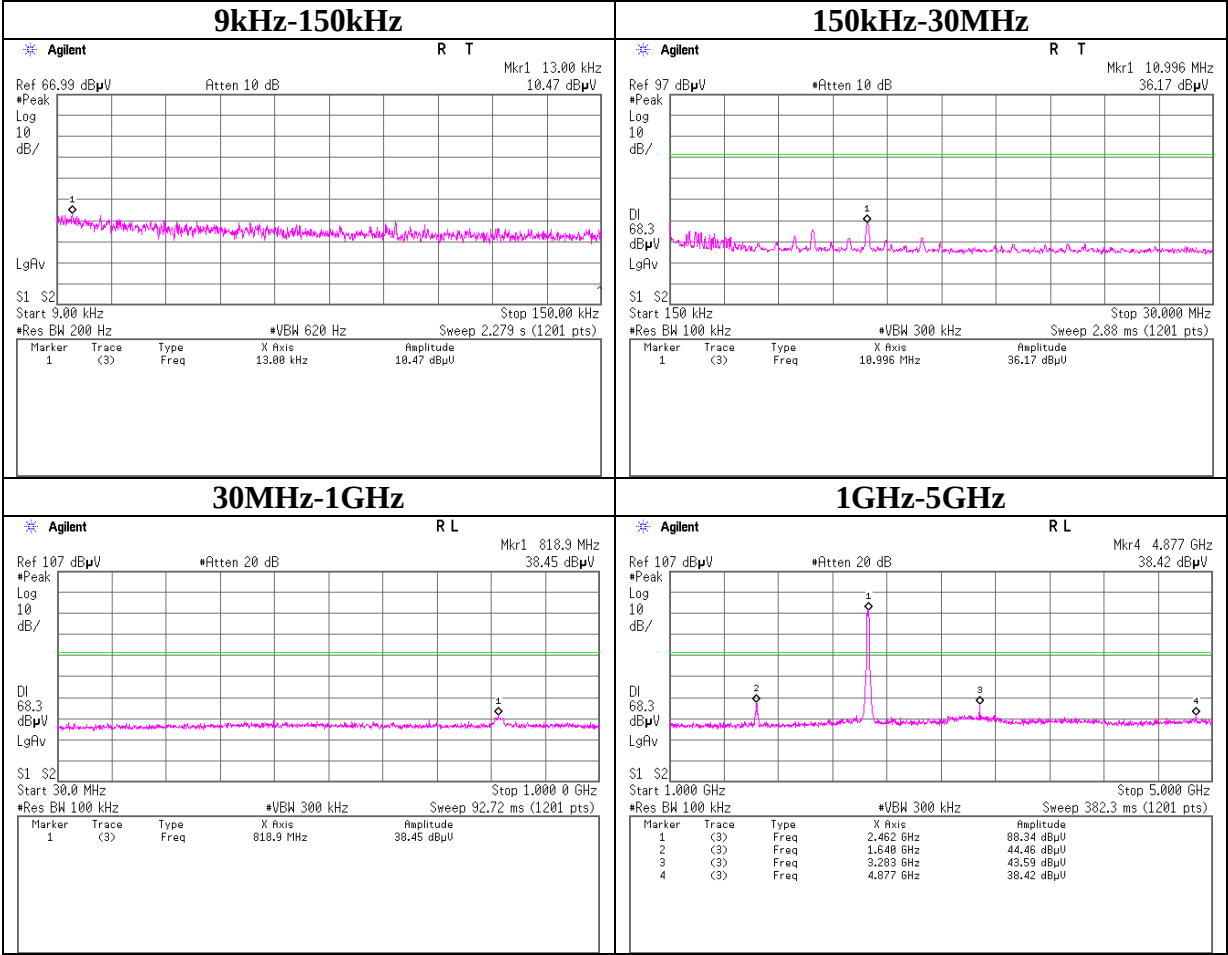
11g Tx 2437MHz



Conducted Spurious Emission

Antenna 1

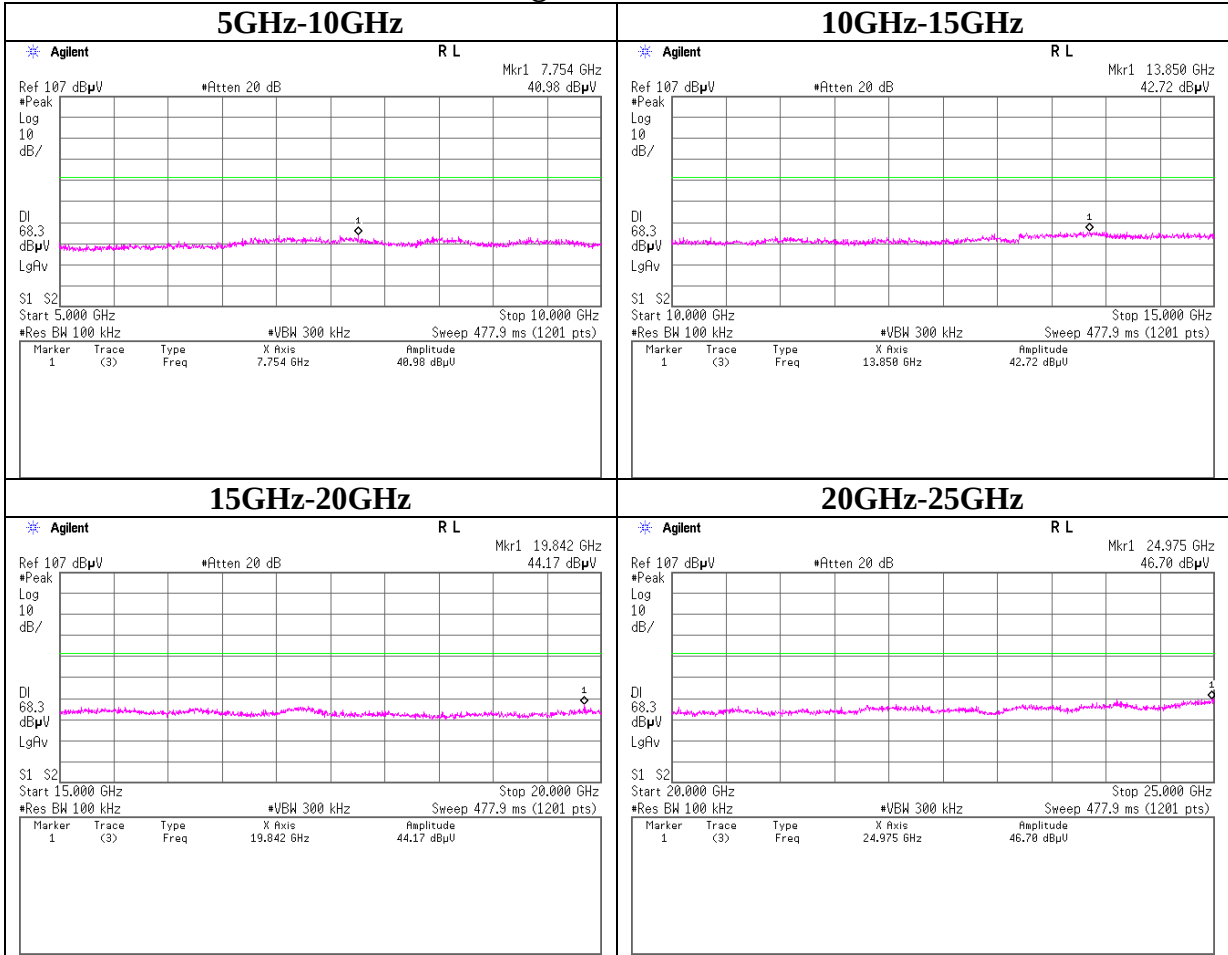
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Conducted Spurious Emission

Antenna 1

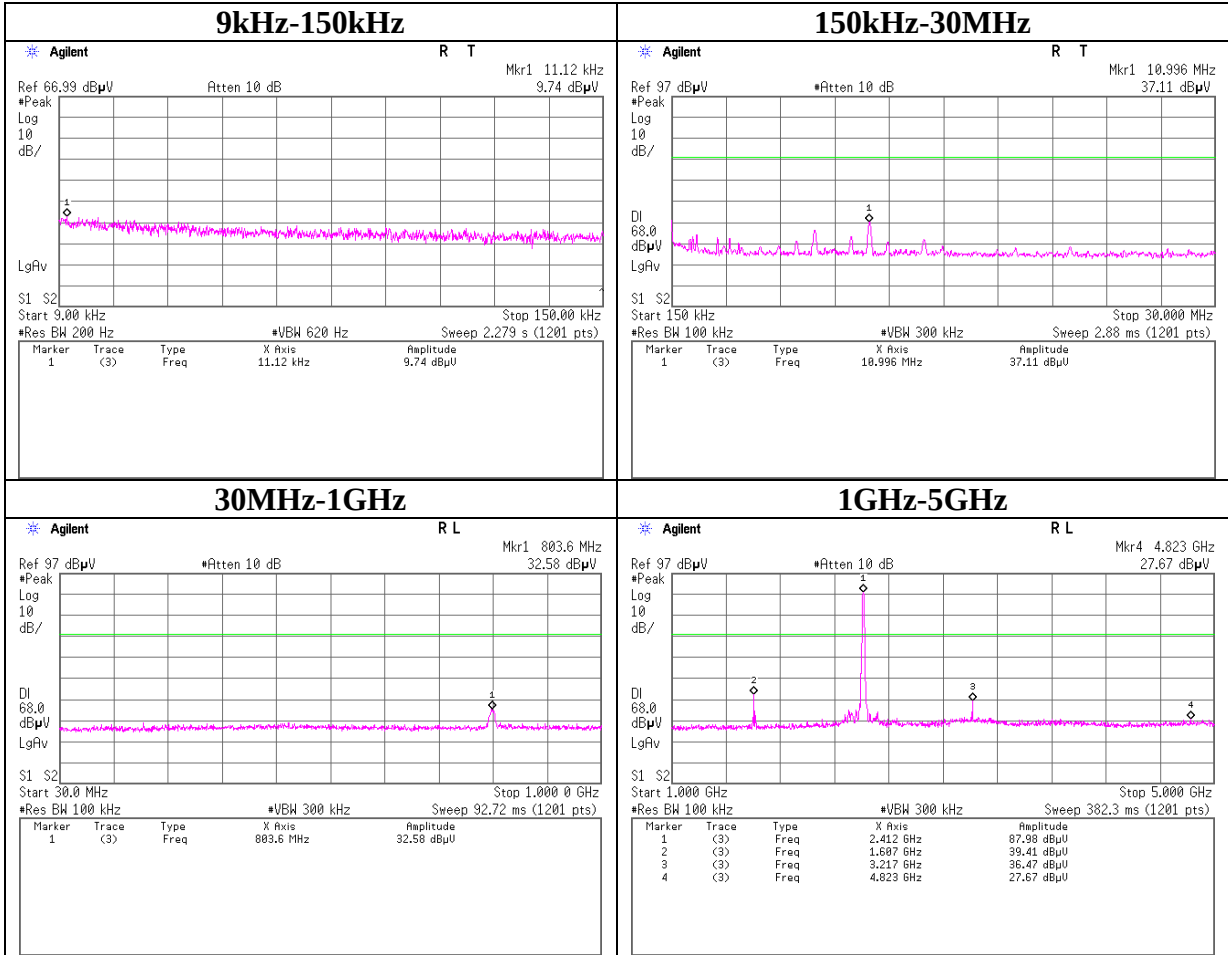
11g Tx 2462MHz



Conducted Spurious Emission

Antenna 2

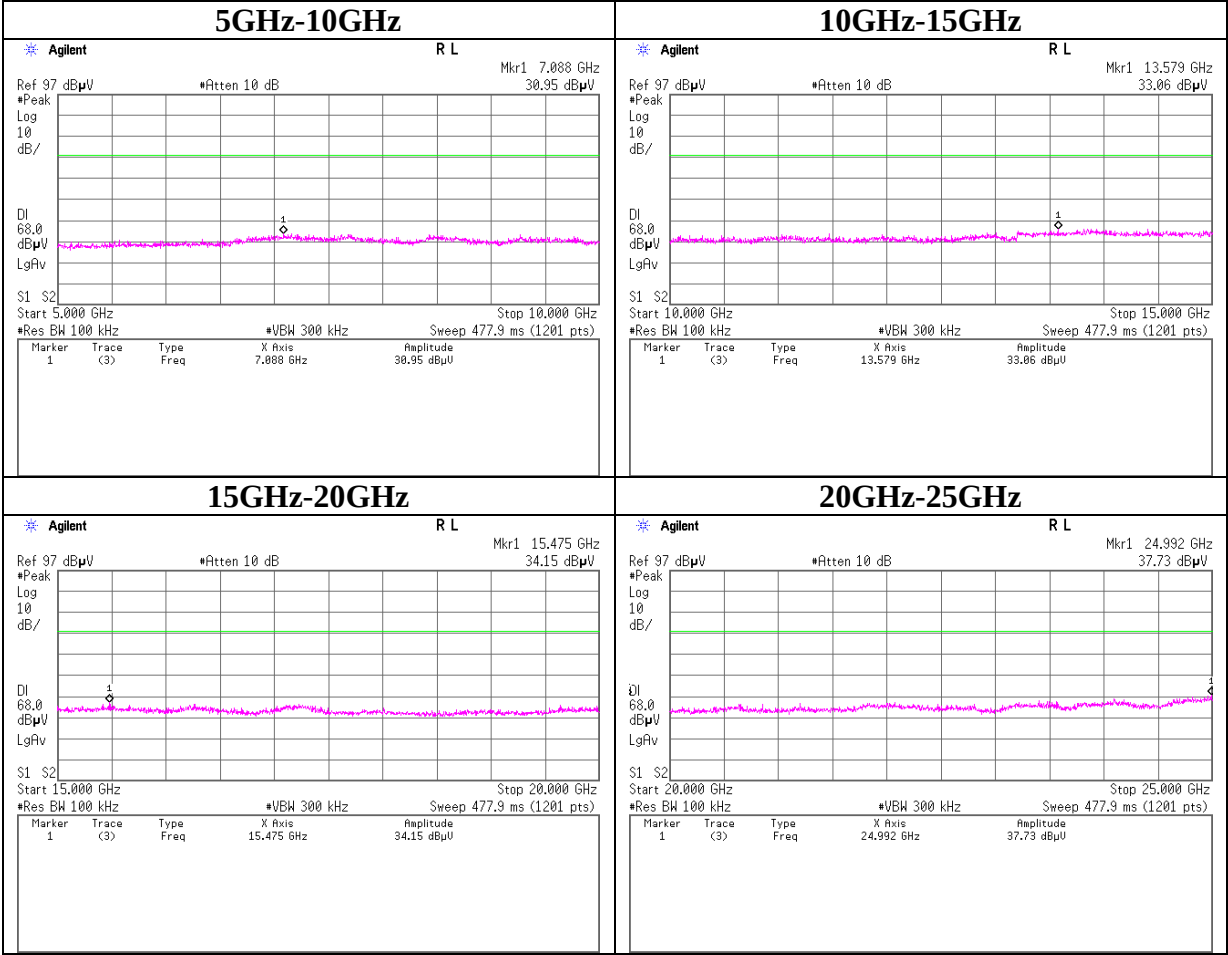
11b Tx 2412MHz



Conducted Spurious Emission

Antenna 2

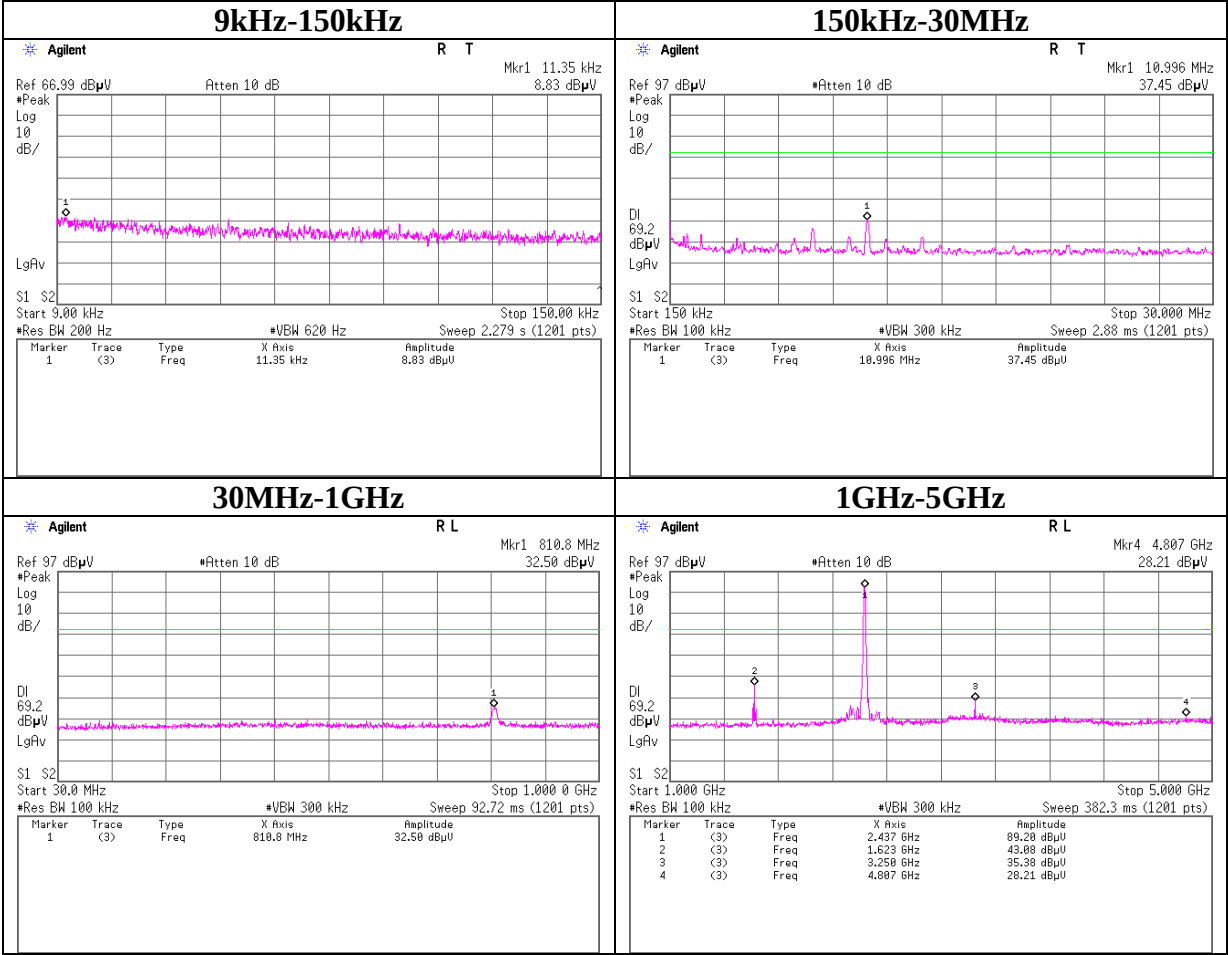
11b Tx 2412MHz



Conducted Spurious Emission

Antenna 2

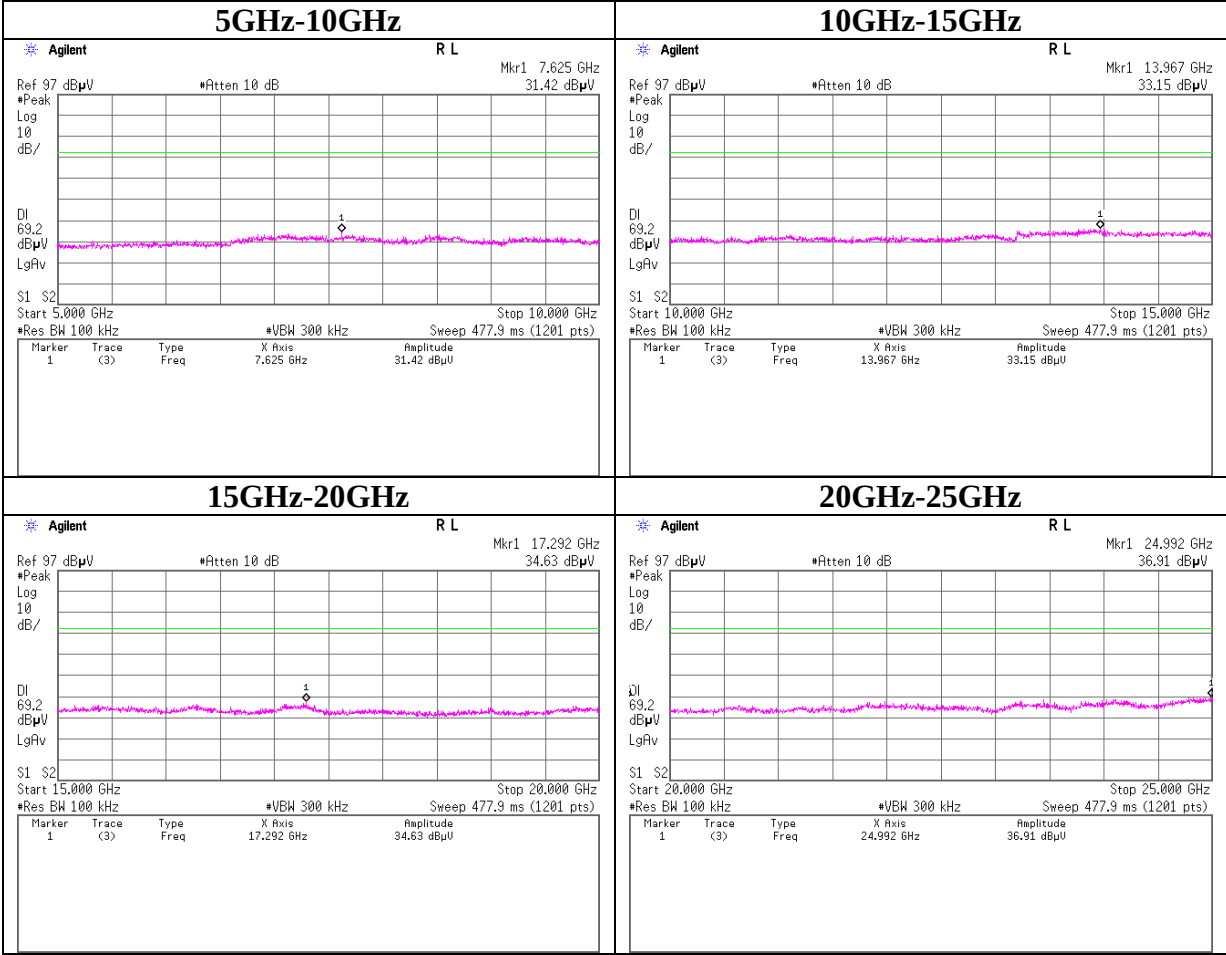
11b Tx 2437MHz



Conducted Spurious Emission

Antenna 2

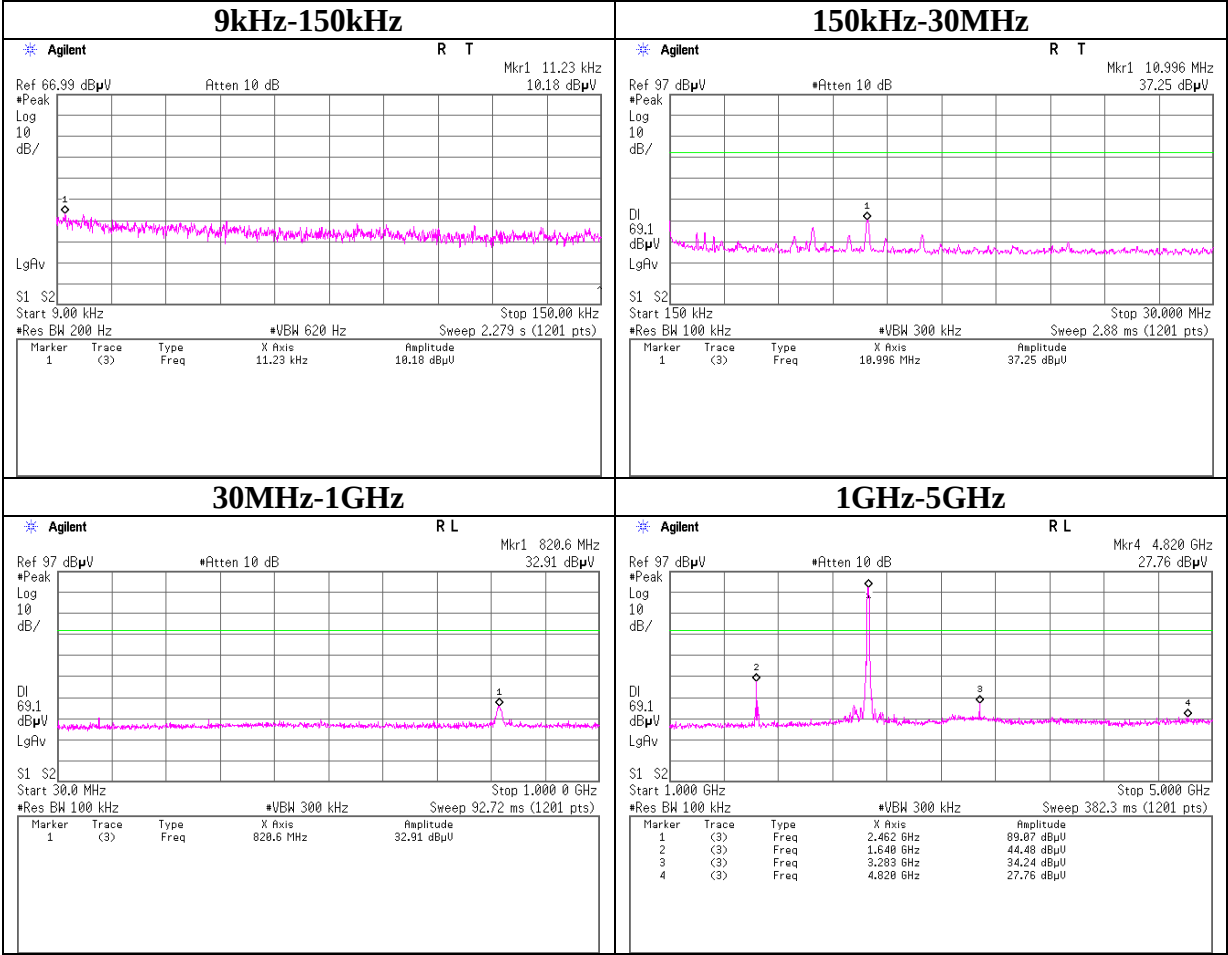
11b Tx 2437MHz



Conducted Spurious Emission

Antenna 2

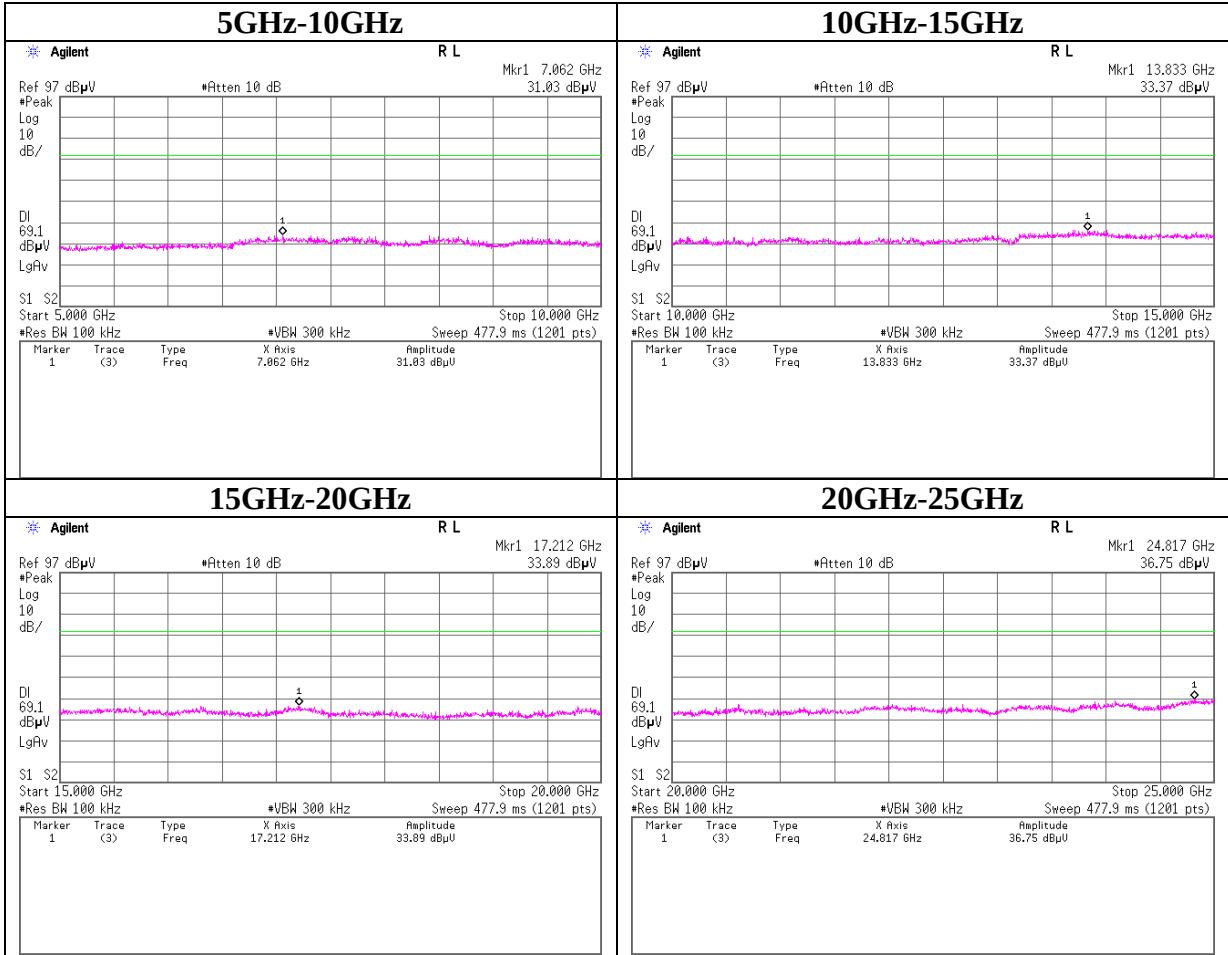
11b Tx 2462MHz



Conducted Spurious Emission

Antenna 2

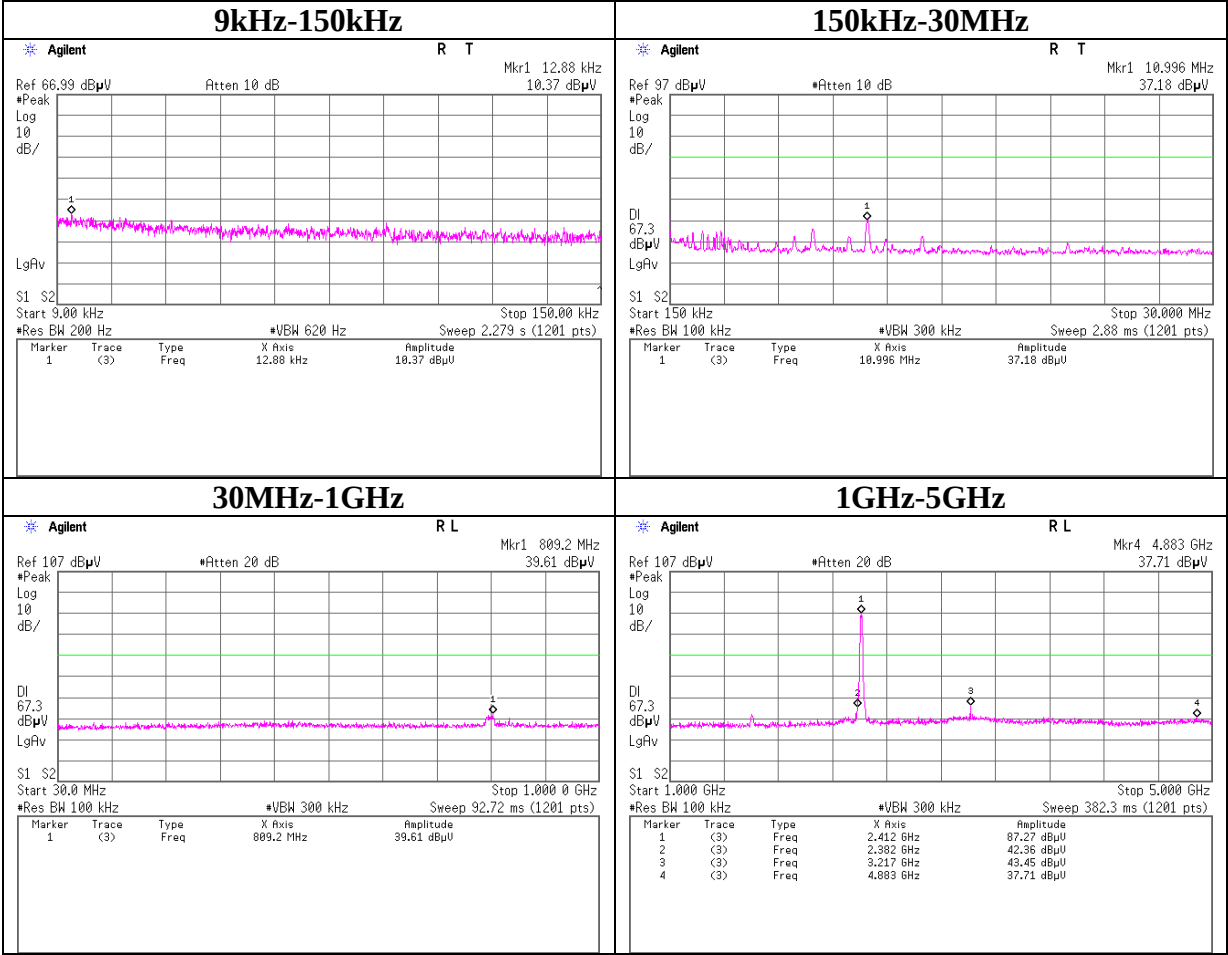
11b Tx 2462MHz



Conducted Spurious Emission

Antenna 2

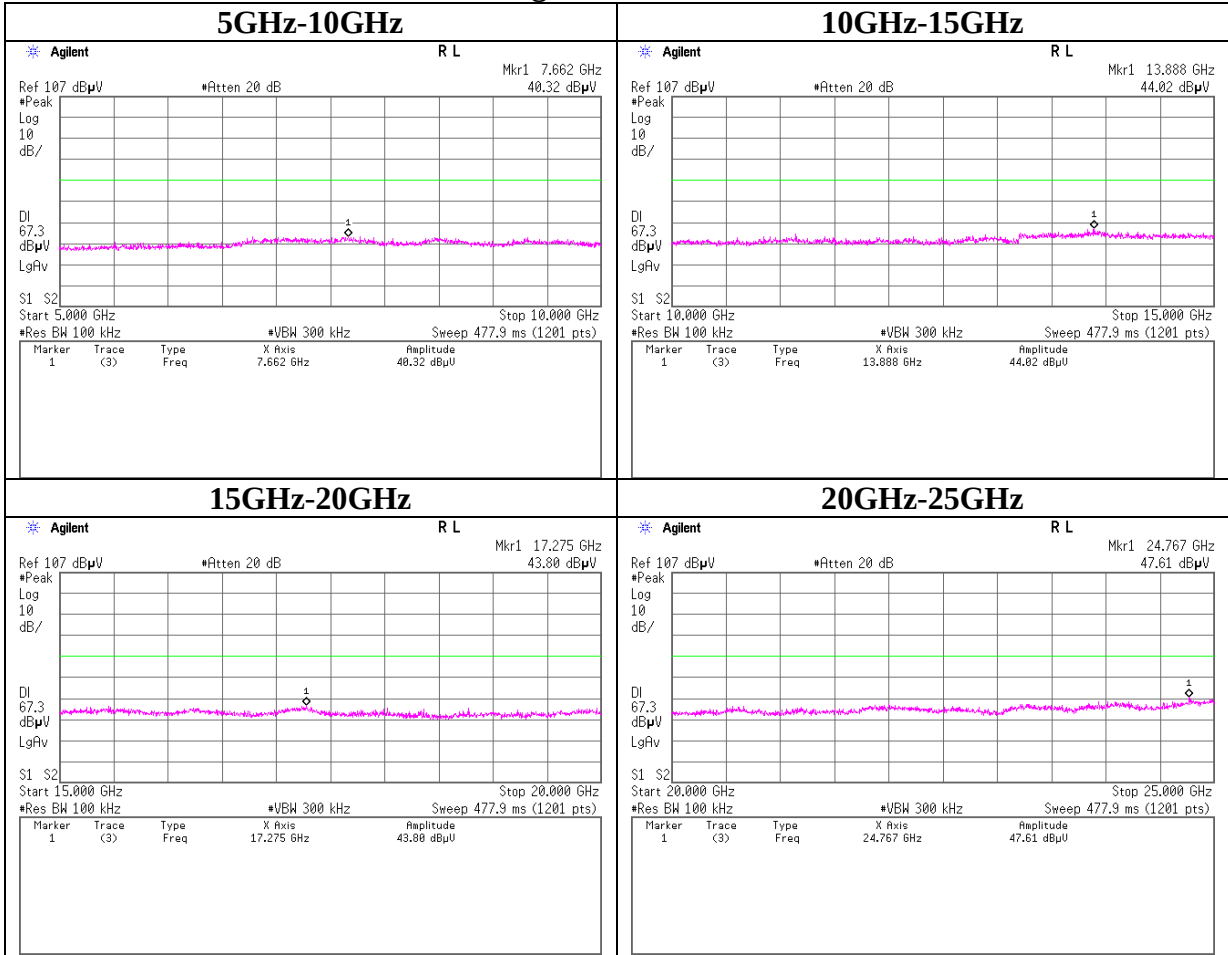
11g Tx 2412MHz



Conducted Spurious Emission

Antenna 2

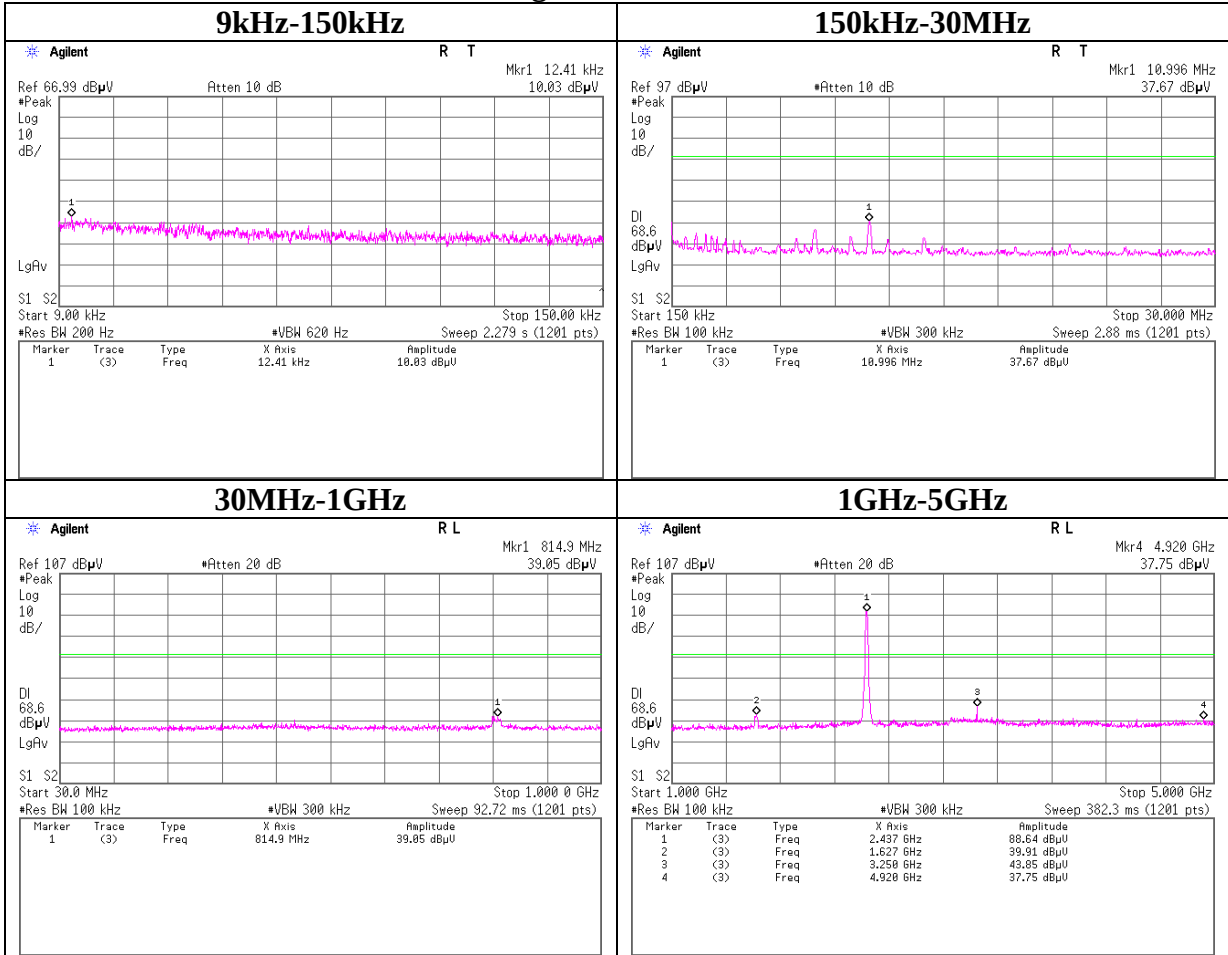
11g Tx 2412MHz



Conducted Spurious Emission

Antenna 2

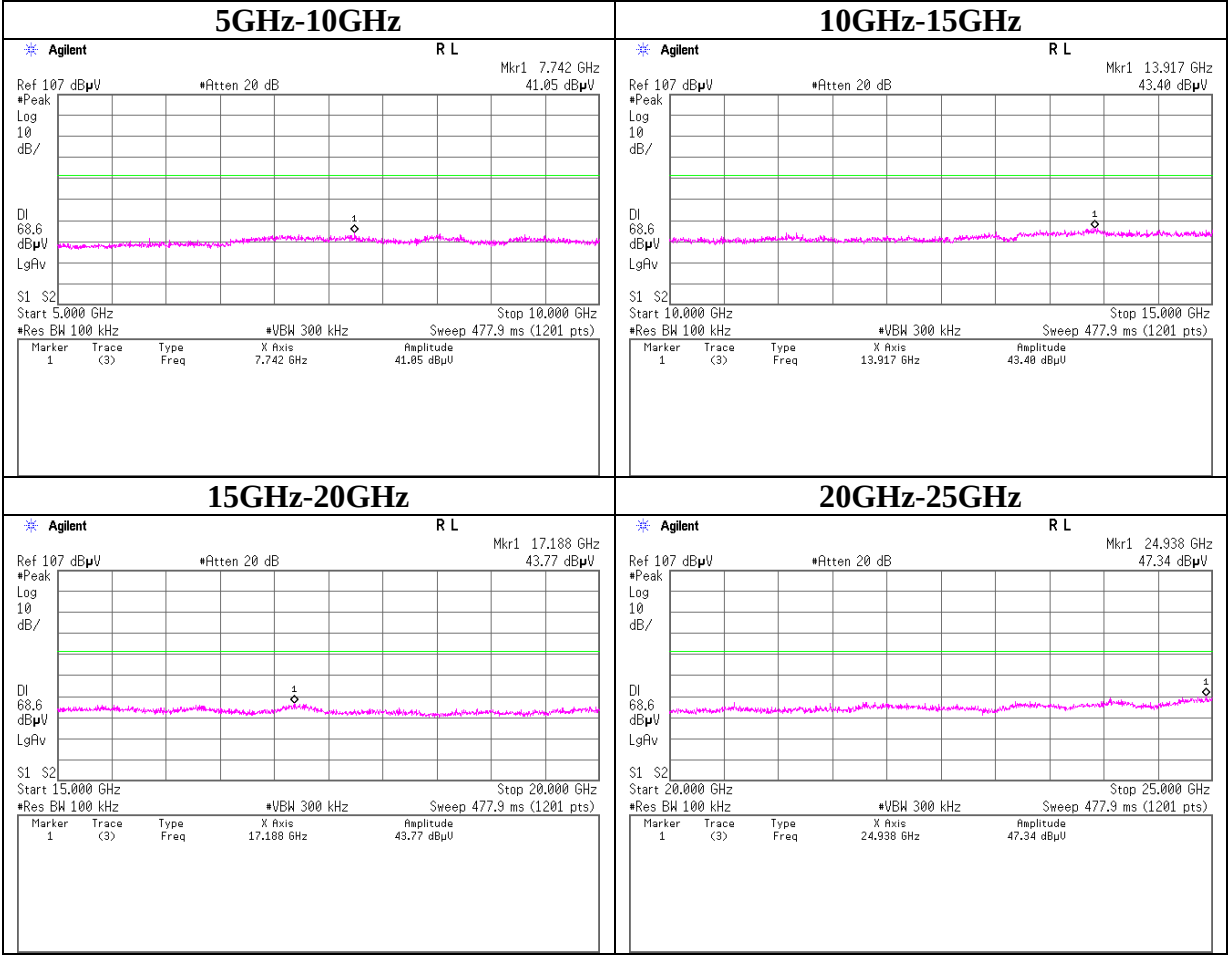
11g Tx 2437MHz



Conducted Spurious Emission

Antenna 2

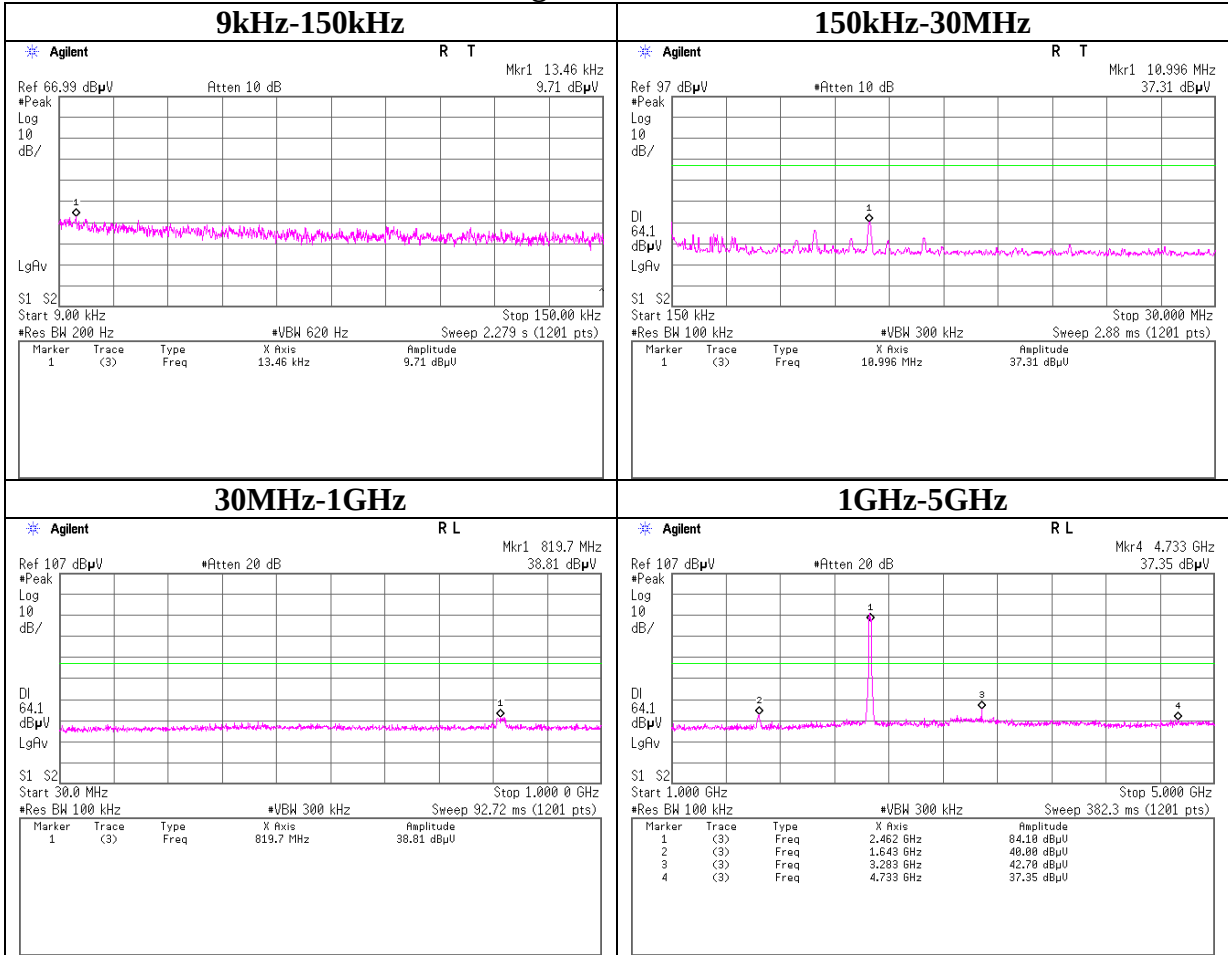
11g Tx 2437MHz



Conducted Spurious Emission

Antenna 2

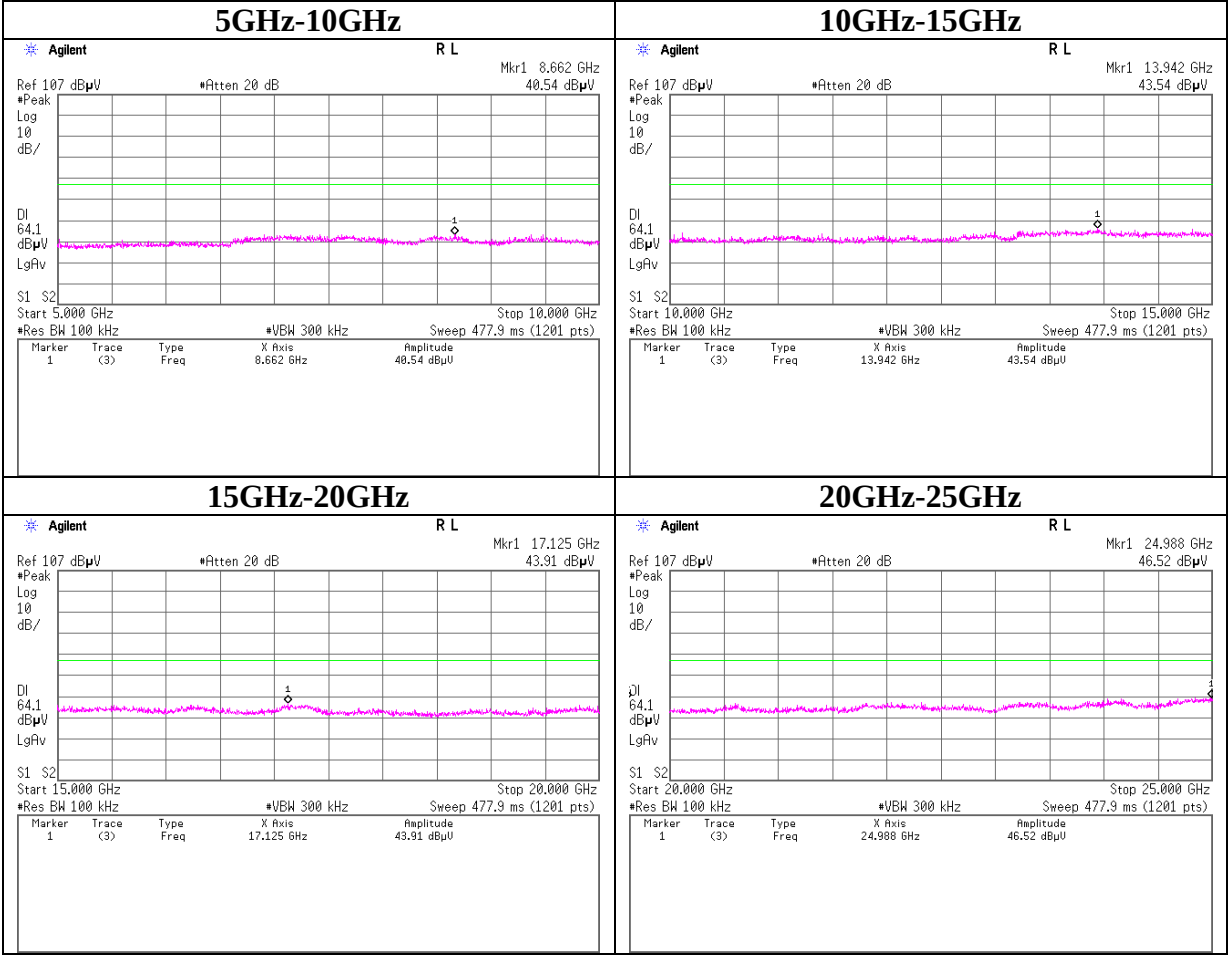
11g Tx 2462MHz



Conducted Spurious Emission

Antenna 2

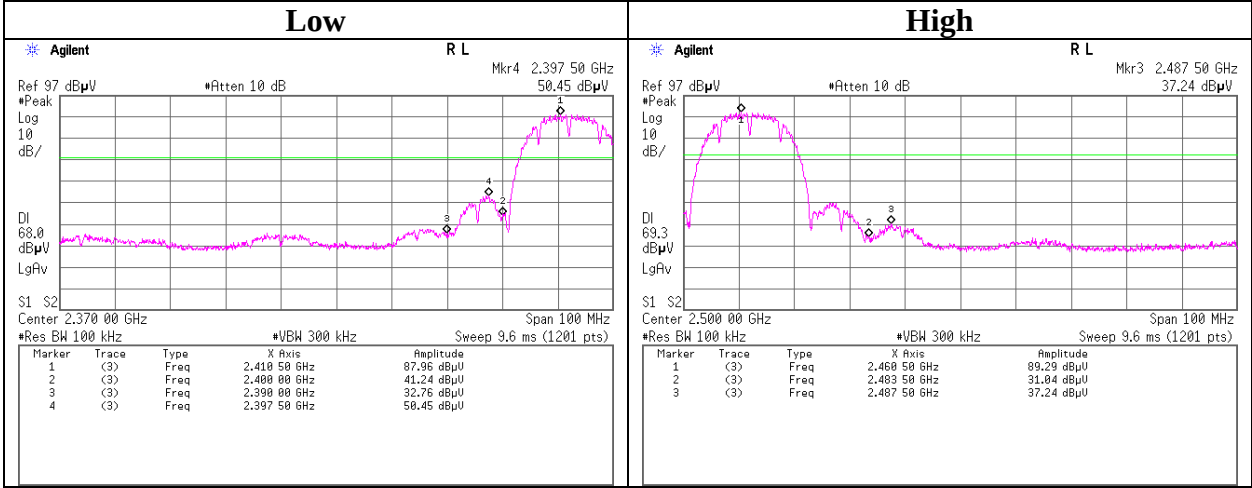
11g Tx 2462MHz



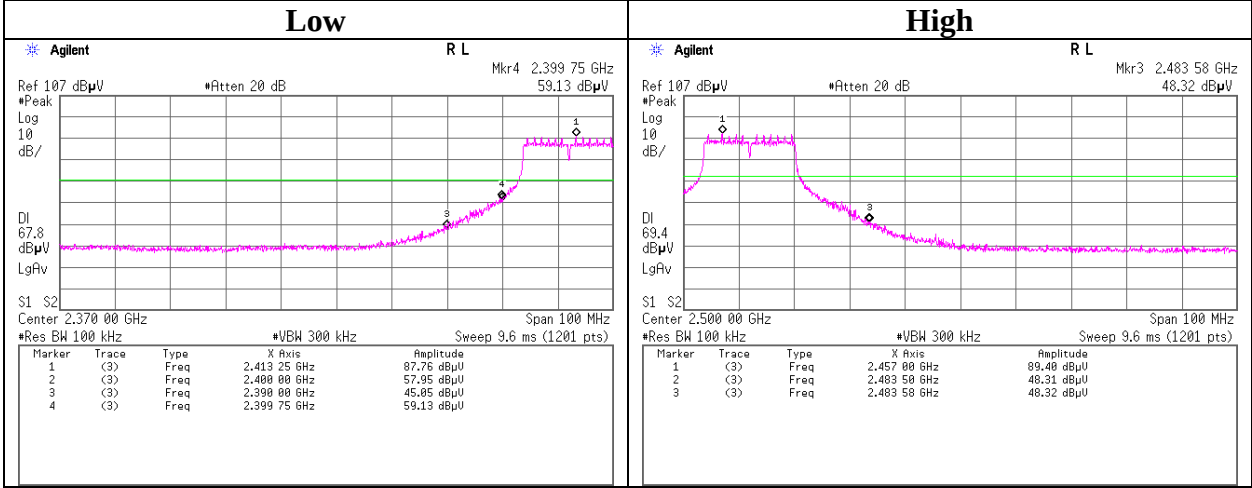
Conducted Emission Band Edge compliance

Antenna 1

11b Tx

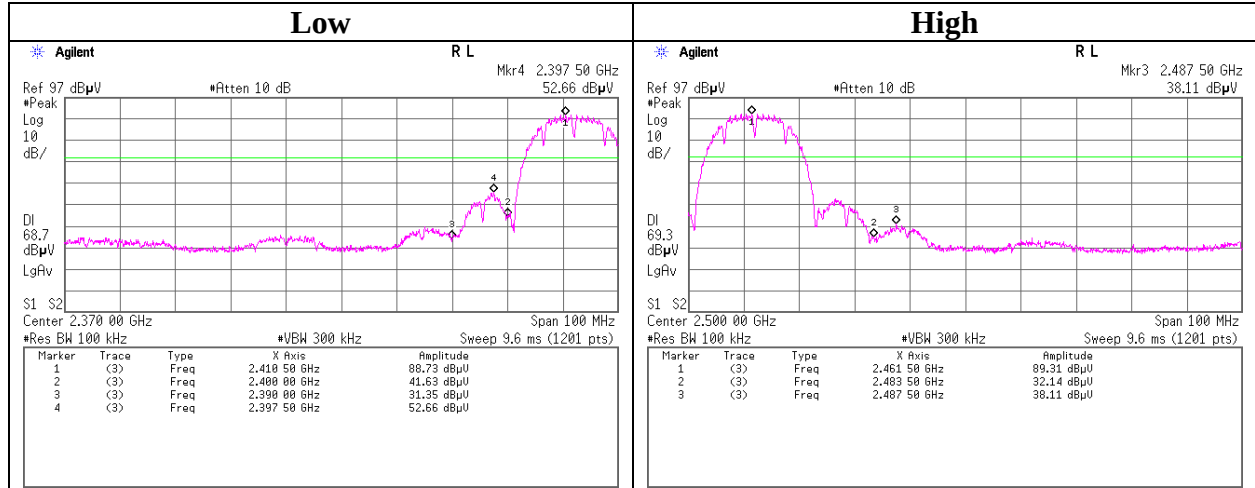


11g Tx

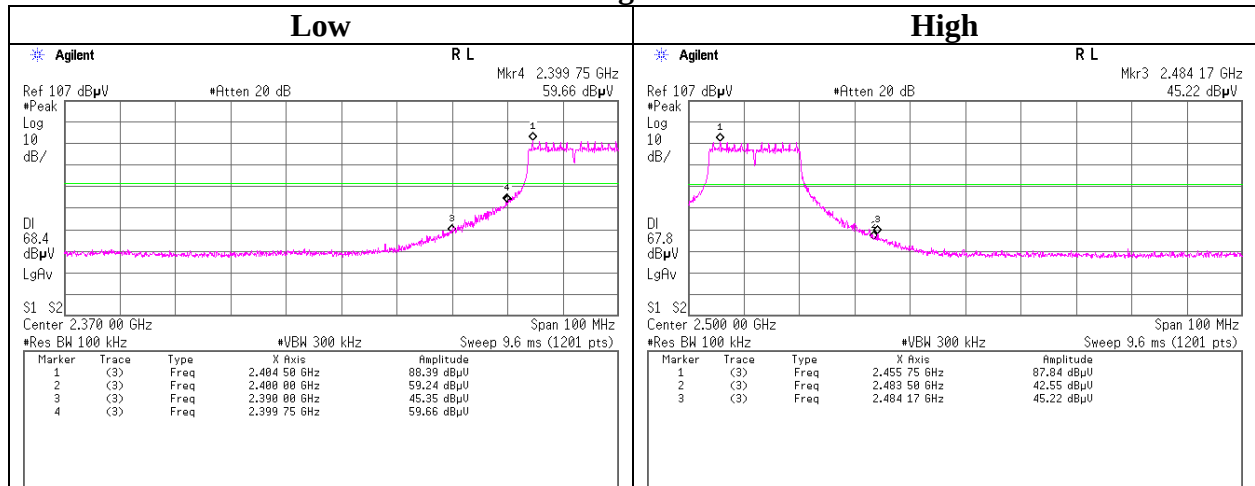


Conducted Emission Band Edge compliance
Antenna 2

11b Tx



11g Tx



Power Density

Test place Head Office EMC Lab. No.6 Measurement
Report No. 31AE0084-HO-02
Date 11/02/2010
Temperature/ Humidity 24 deg. C / 34% RH
Engineer Tomotaka Sasagawa
Mode Tx

11b Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2412.72	-23.47	0.98	19.52	-2.97	8.00	10.97
2436.25	-22.85	0.98	19.52	-2.35	8.00	10.35
2462.74	-22.57	0.98	19.52	-2.07	8.00	10.07

11g Antenna 1

Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2406.98	-23.36	0.98	19.52	-2.86	8.00	10.86
2431.98	-22.21	0.98	19.52	-1.71	8.00	9.71
2456.98	-21.70	0.98	19.52	-1.20	8.00	9.20

11b Antenna 2

Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2410.25	-23.46	0.98	19.52	-2.96	8.00	10.96
2436.25	-22.28	0.98	19.52	-1.78	8.00	9.78
2462.72	-21.84	0.98	19.52	-1.34	8.00	9.34

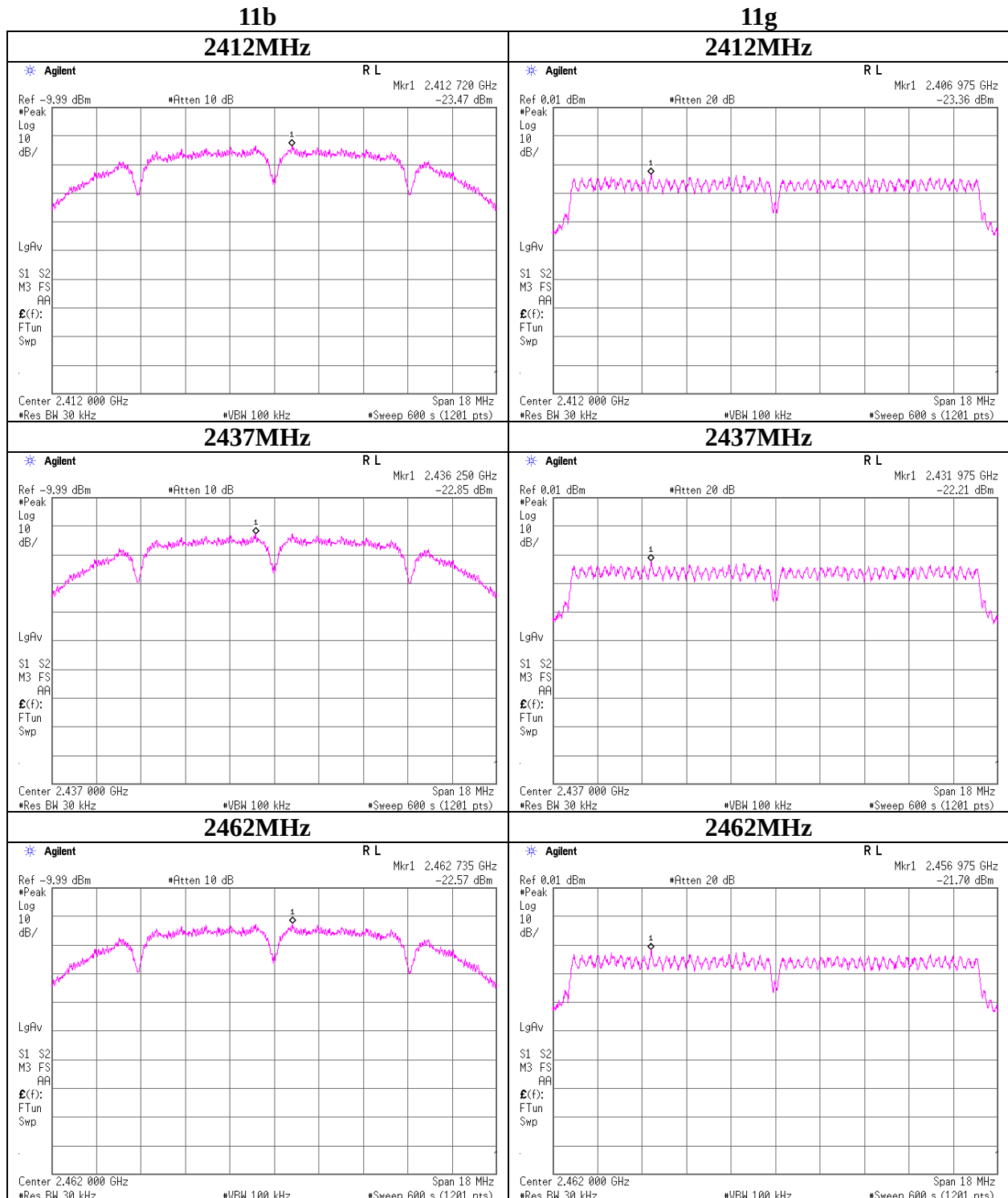
11g Antenna 2

Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2406.98	-22.78	0.98	19.52	-2.28	8.00	10.28
2431.98	-21.46	0.98	19.52	-0.96	8.00	8.96
2456.98	-23.38	0.98	19.52	-2.88	8.00	10.88

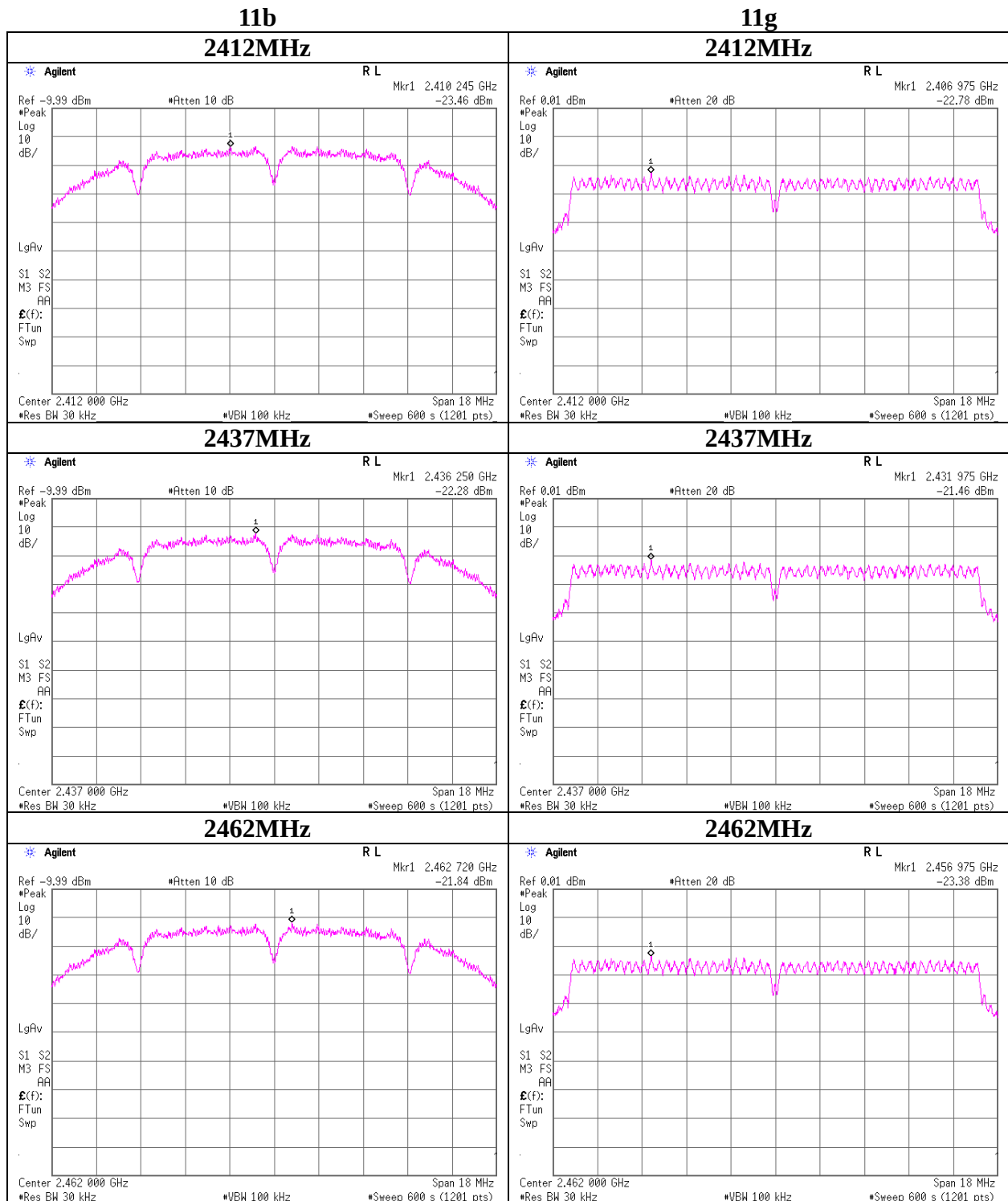
Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator

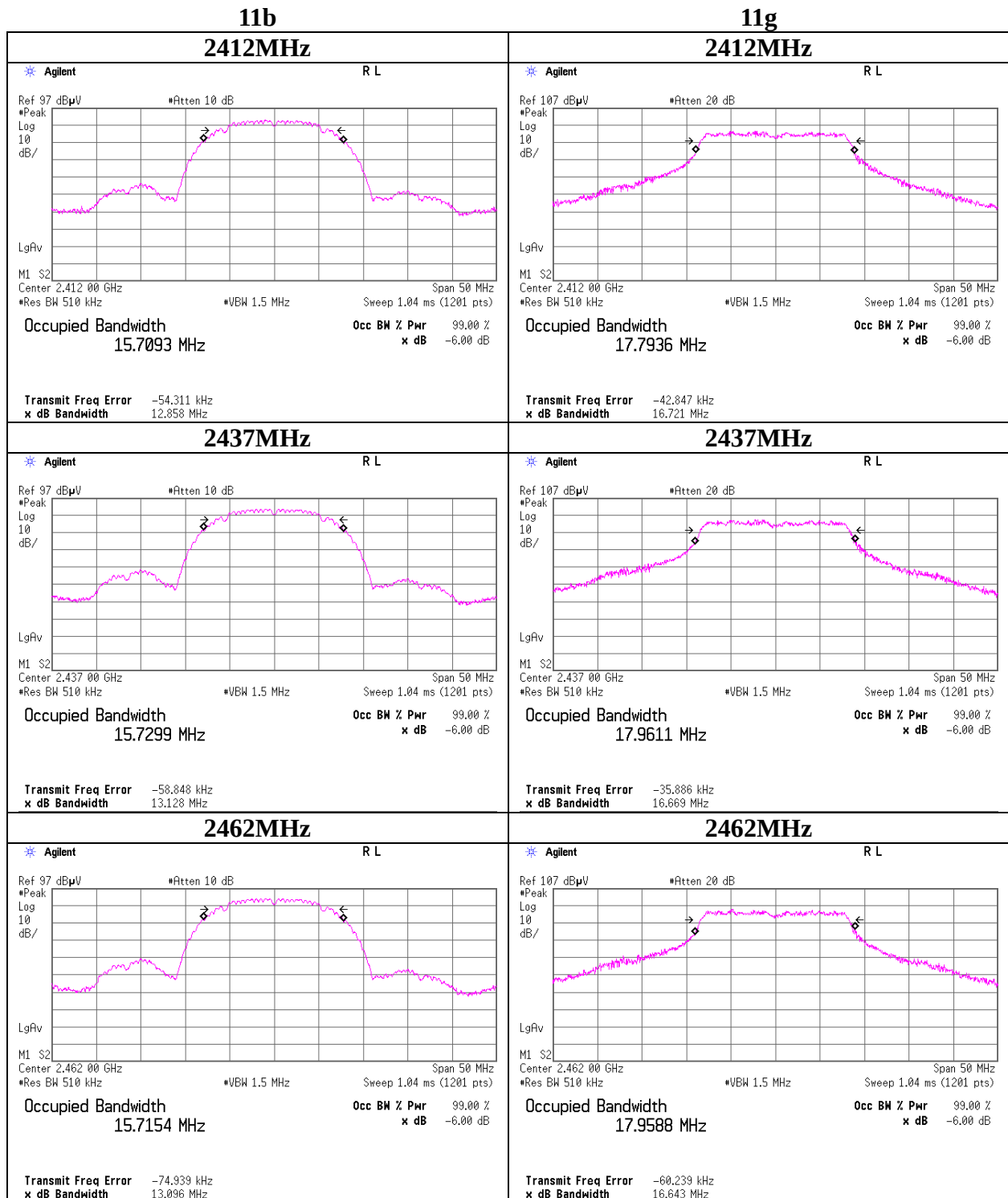
Power Density
Antenna 1



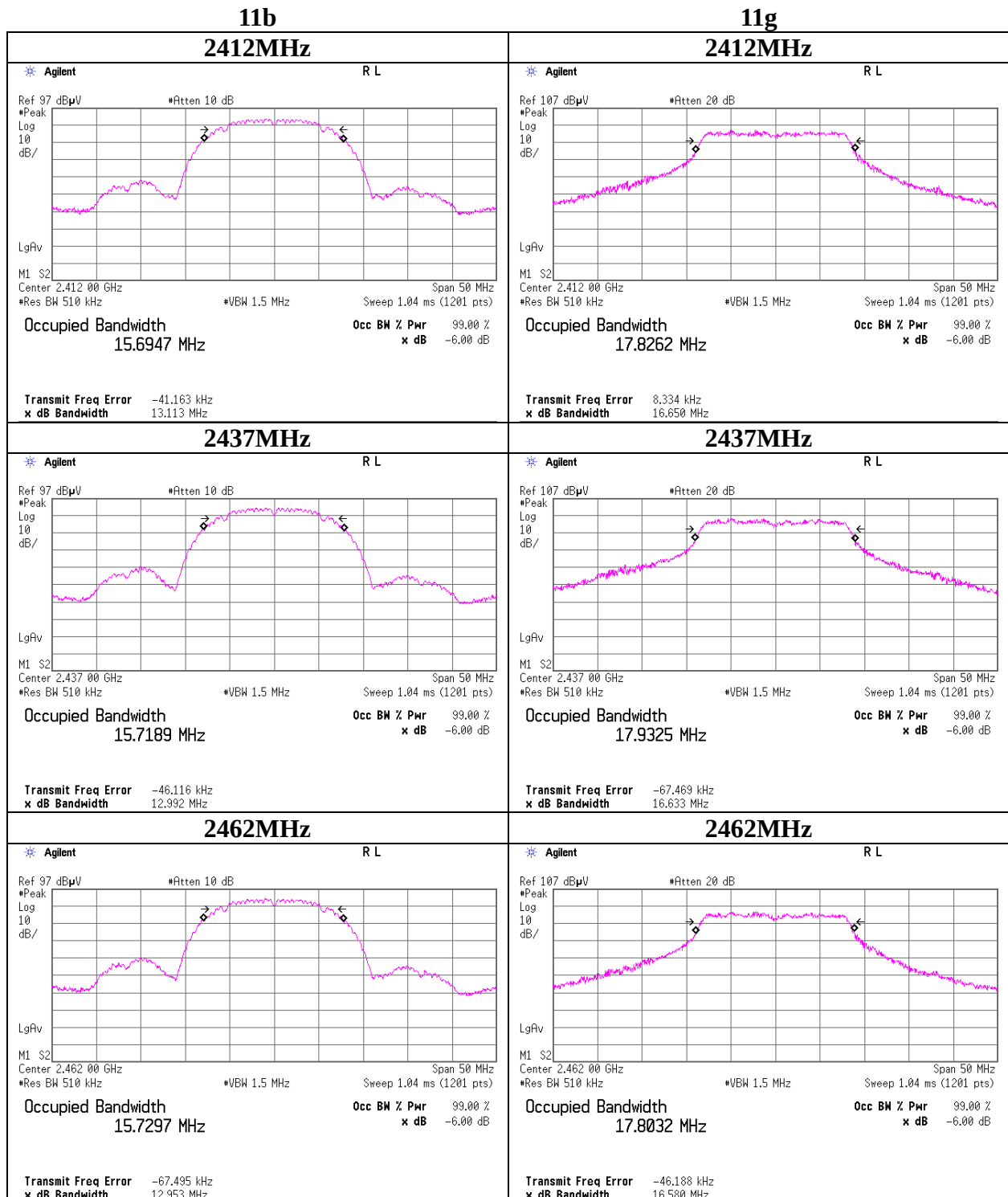
Power Density
Antenna 2



99% Occupied Bandwidth
Antenna 1



99% Occupied Bandwidth
Antenna 2



APPENDIX 3: Test instruments

EMI test equipment (1/2)

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	CE/RE	2011/03/01 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	CE/RE	2011/02/23 * 12
MJM-07	Measure	PROMART	SEN1955	-	CE/RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	CE/RE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	CE/RE	2010/11/18 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	CE	2010/10/27 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE	2011/02/20 * 12
MAT-67	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2011/02/22 * 12
MCC-113	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(5m)/421-010(1m)/suciform141-PE(1m)/RFM-E121(Switcher)	-/04178	CE	2010/07/21 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	RE	2010/11/18 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2010/08/23 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2010/10/11 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2010/10/11 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2010/07/06 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2010/11/05 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2011/03/04 * 12
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	AT	2010/12/13 * 12
MCC-107	Microwave Cable	Hirose Electric	W.FL-2LP-04N1-A-(200)	-	AT	2010/06/08 * 12
MCC-116	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290221/4	AT	2010/08/05 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2011/02/22 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE	2011/02/23 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE/AT	2010/11/30 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2010/05/07 * 12 *1)
MCC-58	Microwave Cable	Suhner	SUCOFLEX104	246770(1m) / 250655(5m)	RE	2011/03/02 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2011/03/10 * 12
MHF-06	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	RE	2010/05/19 * 12 *1)
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2010/08/08 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	270875/4(1m) /284655(5m)	RE	2011/03/02 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2011/03/10 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2010/06/29 * 12
MHF-20	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCC	607	RE	2010/09/21 * 12
MCC-76	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278967/4	RE	2010/12/03 * 12

UL Japan, Inc.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAT-20	Attenuator(10dB)(above1G Hz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	AT	2010/01/26 * 12 *1)
MCC-104	Microwave Cable	Hirose Electric	U.FL-2LP-066J1-A(200)	-	AT	2010/06/04 * 12
MPM-08	Power Meter	Anritsu	ML2495A	6K00003338	AT	2010/09/10 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	011737	AT	2010/09/10 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	-	AT	2010/05/19 * 12 *1)
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2010/02/03 * 12 *1)
MCC-77	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278942/4	RE	2009/12/19 * 12 *1)
MHF-19	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	602	RE	2010/09/21 * 12
MHF-22	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	602	RE	2010/01/26 * 12 *1)
MAT-40	Attenuator(20dB)1-40GHz	Weinschel	54A-20	S8132	AT	2010/10/06 * 12
MCC-114	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290212/4	AT	2010/08/05 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/10/11 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2010/10/11 * 12
MCC-50	Coaxial cable	UL Japan	-	-	RE	2010/03/18 * 12 *1)
MAT-51	Attenuator(6dB)	Weinschel	2	AS3557	RE	2010/01/20 * 12 *1)
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2010/03/05 * 12 *1)

*1) This test equipment was used for the tests before the expiration date of the calibration.

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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