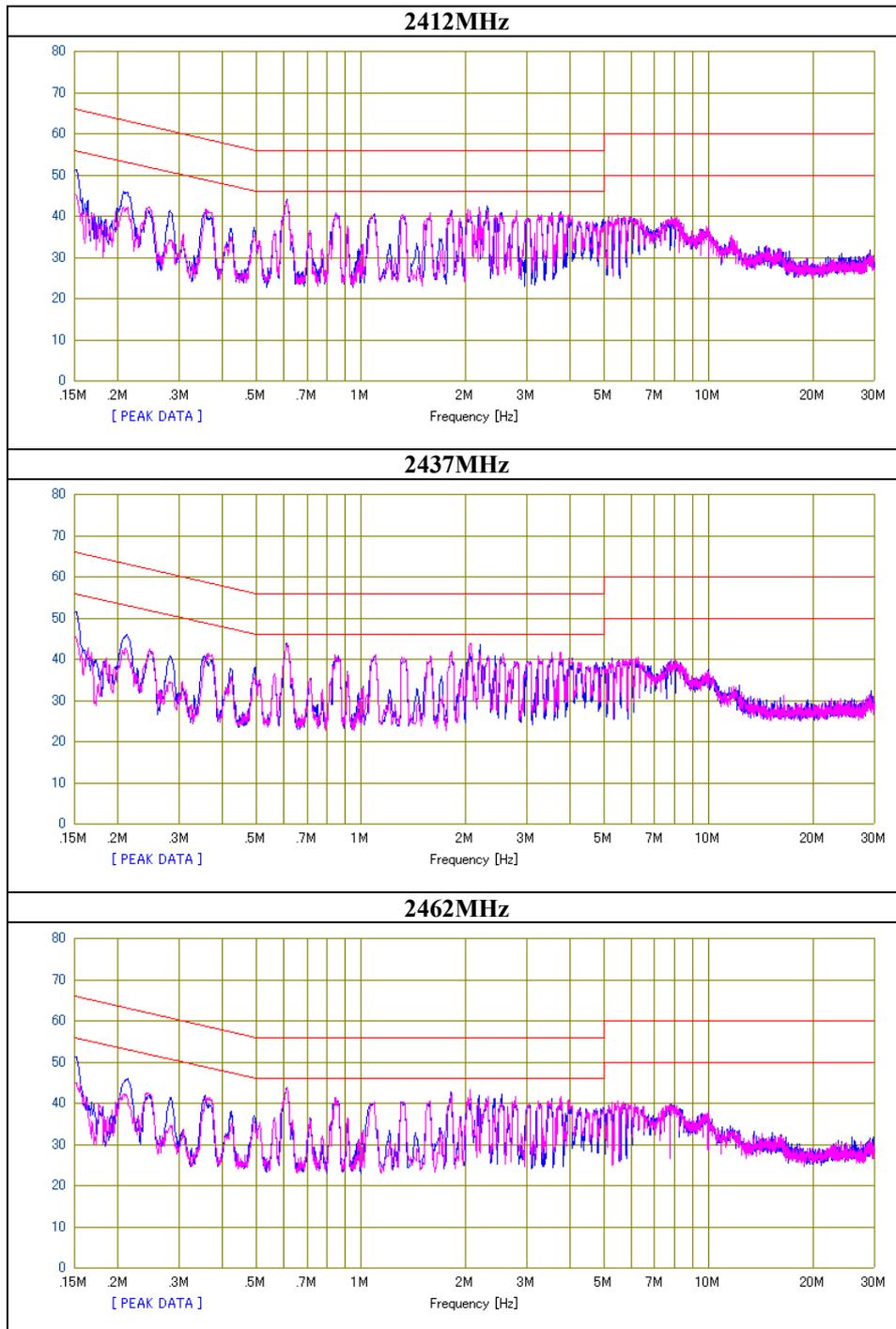


**APPENDIX 2: Data of EMI test**

**Conducted Emission**

**Ant: 0, 11b, Tx**

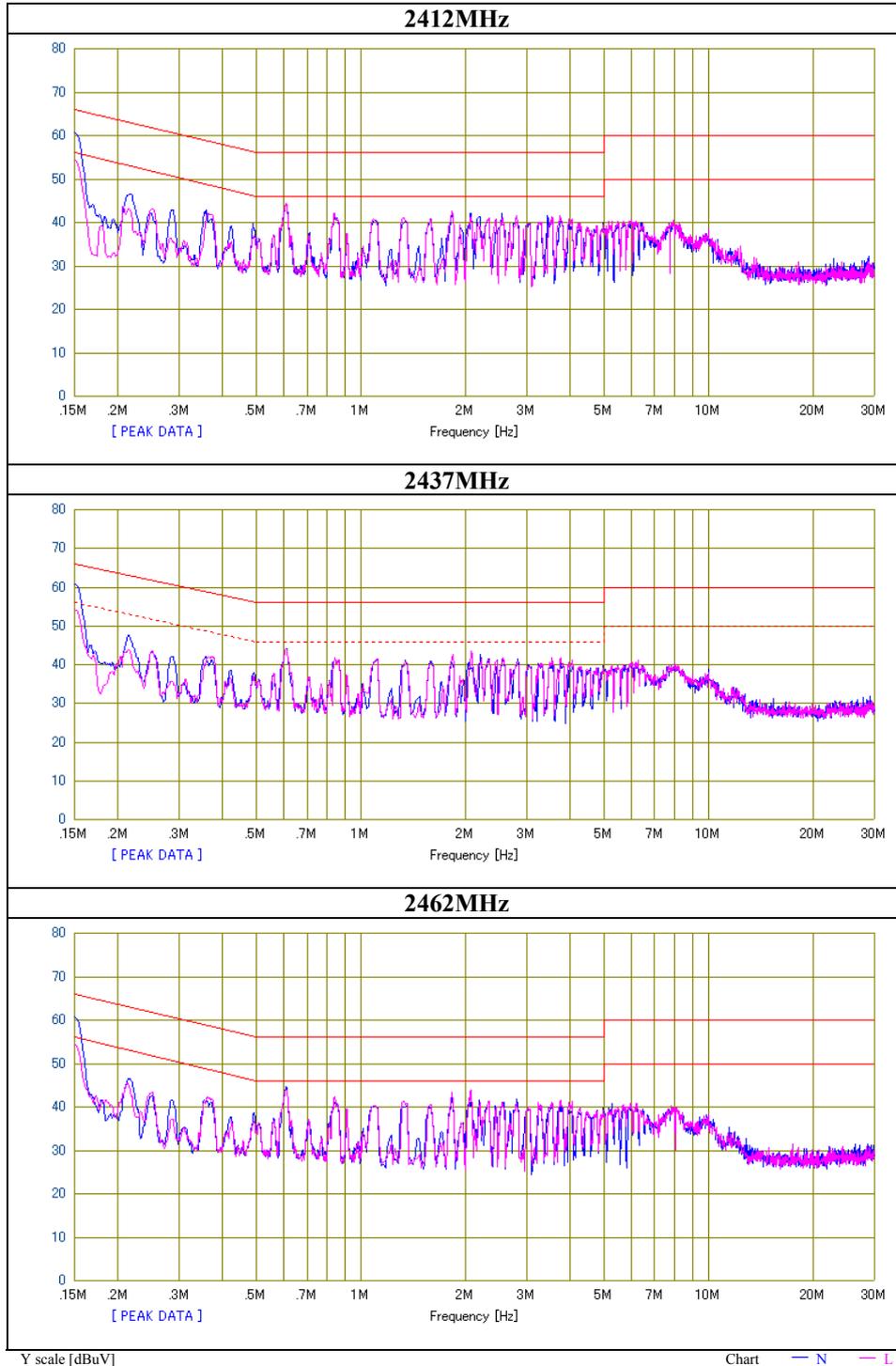
Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0279-HO-01
Date	05/19/2010
Temperature/ Humidity	24 deg.C./ 57%
Engineer	Katsunori Okai
Mode	11b Tx



### Conducted Emission

#### Ant: 1, 11b, Tx

Test place	Head Office EMC Lab. No.2 Semi Anechoic Chamber
Report No.	30IE0279-HO-01
Date	05/13/2010
Temperature/ Humidity	21 deg.C./ 38%
Engineer	Hiroshi Kukita
Mode	11b Tx



**Conducted Emission**  
**Ant: 1, 11b, Tx, Ch: Mid**

**DATA OF CONDUCTED EMISSION TEST**

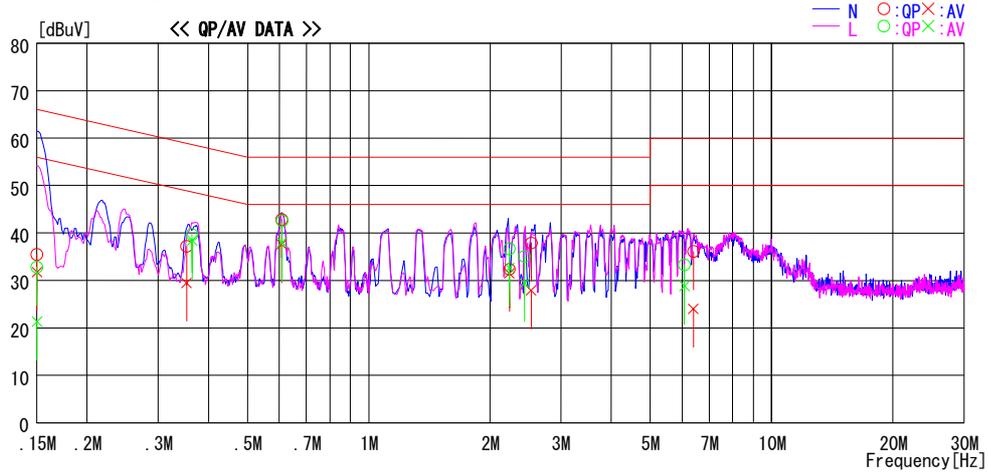
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Date : 2010/05/13

Report No. : 30IE0279-HO-01

Temp./Humi. : 21deg.C. / 38%  
Engineer : Hiroshi Kukita

Mode / Remarks : WLAN 11b, Tx 2437MHz, 11Mbps, Ant:1,

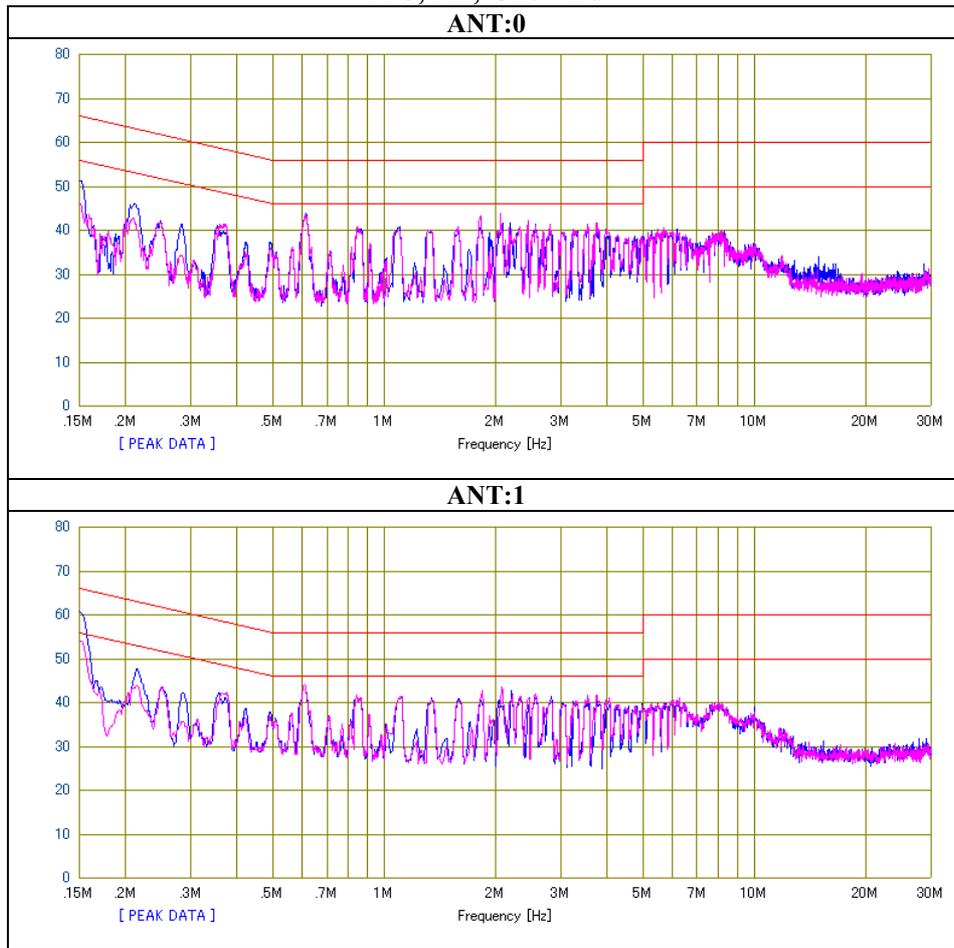
LIMIT : FCC15.207 QP  
FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	22.2	18.4	13.3	35.5	31.7	66.0	56.0	30.5	24.3	N	
0.35281	23.9	16.2	13.3	37.2	29.5	58.9	48.9	21.7	19.4	N	
0.60760	29.5	24.3	13.3	42.8	37.6	56.0	46.0	13.2	8.4	N	
2.23200	18.9	18.1	13.4	32.3	31.5	56.0	46.0	23.7	14.5	N	
2.53180	24.4	14.4	13.5	37.9	27.9	56.0	46.0	18.1	18.1	N	
6.39600	22.2	10.1	13.9	36.1	24.0	60.0	50.0	23.9	26.0	N	
0.15000	19.5	8.0	13.3	32.8	21.3	66.0	56.0	33.2	34.7	L	
0.36432	26.4	25.1	13.3	39.7	38.4	58.6	48.6	18.9	10.2	L	
0.60920	29.3	24.7	13.3	42.6	38.0	56.0	46.0	13.4	8.0	L	
2.23350	23.3	19.2	13.4	36.7	32.6	56.0	46.0	19.3	13.4	L	
2.43670	21.6	15.9	13.5	35.1	29.4	56.0	46.0	20.9	16.6	L	
6.07600	19.4	14.9	13.9	33.3	28.8	60.0	50.0	26.7	21.2	L	

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT[dBuV]=READING[dBuV]+C.F[dB] (L1SN LOSS+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

**Conducted Emission**  
**11b, Rx, Ch: Mid**



**Conducted Emission**  
**Ant: 1, 11b, Rx, Ch: Mid**

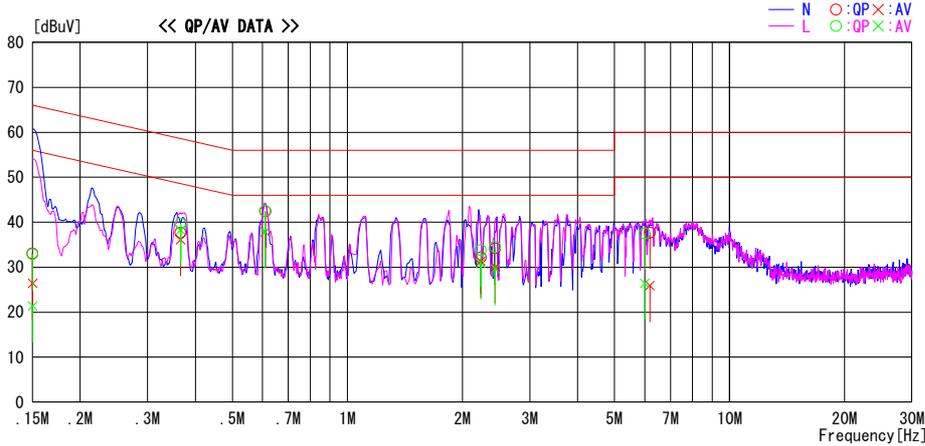
**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber  
Date : 2010/05/14

Report No. : 301E0279-HO-01  
Temp./Humi. : 21deg. C. / 38%  
Engineer : Hiroshi Kukita

Mode / Remarks : WLAN 11b, Rx 2437MHz, 11Mbps, Ant:1,

LIMIT : FCC15.207 QP  
FCC15.207 AV



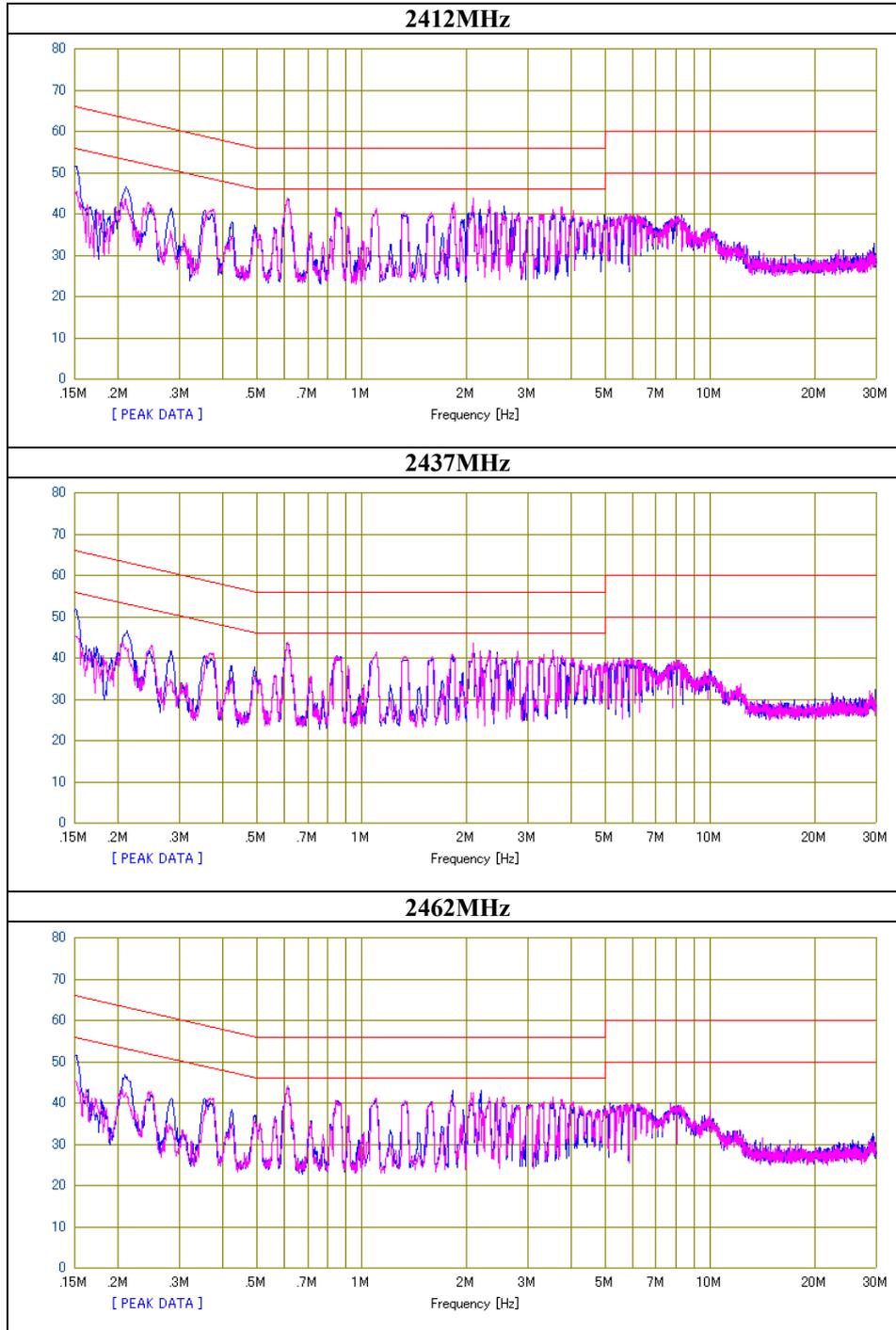
Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.15000	19.8	13.1	13.3	33.1	26.4	66.0	56.0	32.9	29.6	N	
0.36600	24.4	22.8	13.3	37.7	36.1	58.6	48.6	20.9	12.5	N	
0.60970	29.1	24.6	13.3	42.4	37.9	56.0	46.0	13.6	8.1	N	
2.23172	18.8	17.9	13.4	32.2	31.3	56.0	46.0	23.8	14.7	N	
2.43580	20.7	16.5	13.5	34.2	30.0	56.0	46.0	21.8	16.0	N	
6.19008	23.8	12.0	13.9	37.7	25.9	60.0	50.0	22.3	24.1	N	
0.15000	19.6	8.1	13.3	32.9	21.4	66.0	56.0	33.1	34.6	L	
0.36644	26.4	25.0	13.3	39.7	38.3	58.6	48.6	18.9	10.3	L	
0.60852	29.2	24.6	13.3	42.5	37.9	56.0	46.0	13.5	8.1	L	
2.23332	20.4	17.5	13.4	33.8	30.9	56.0	46.0	22.2	15.1	L	
2.43616	21.0	16.1	13.5	34.5	29.6	56.0	46.0	21.5	16.4	L	
6.00000	23.6	12.5	13.9	37.5	26.4	60.0	50.0	22.5	23.6	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

**Ant: 0, 11g, Tx**

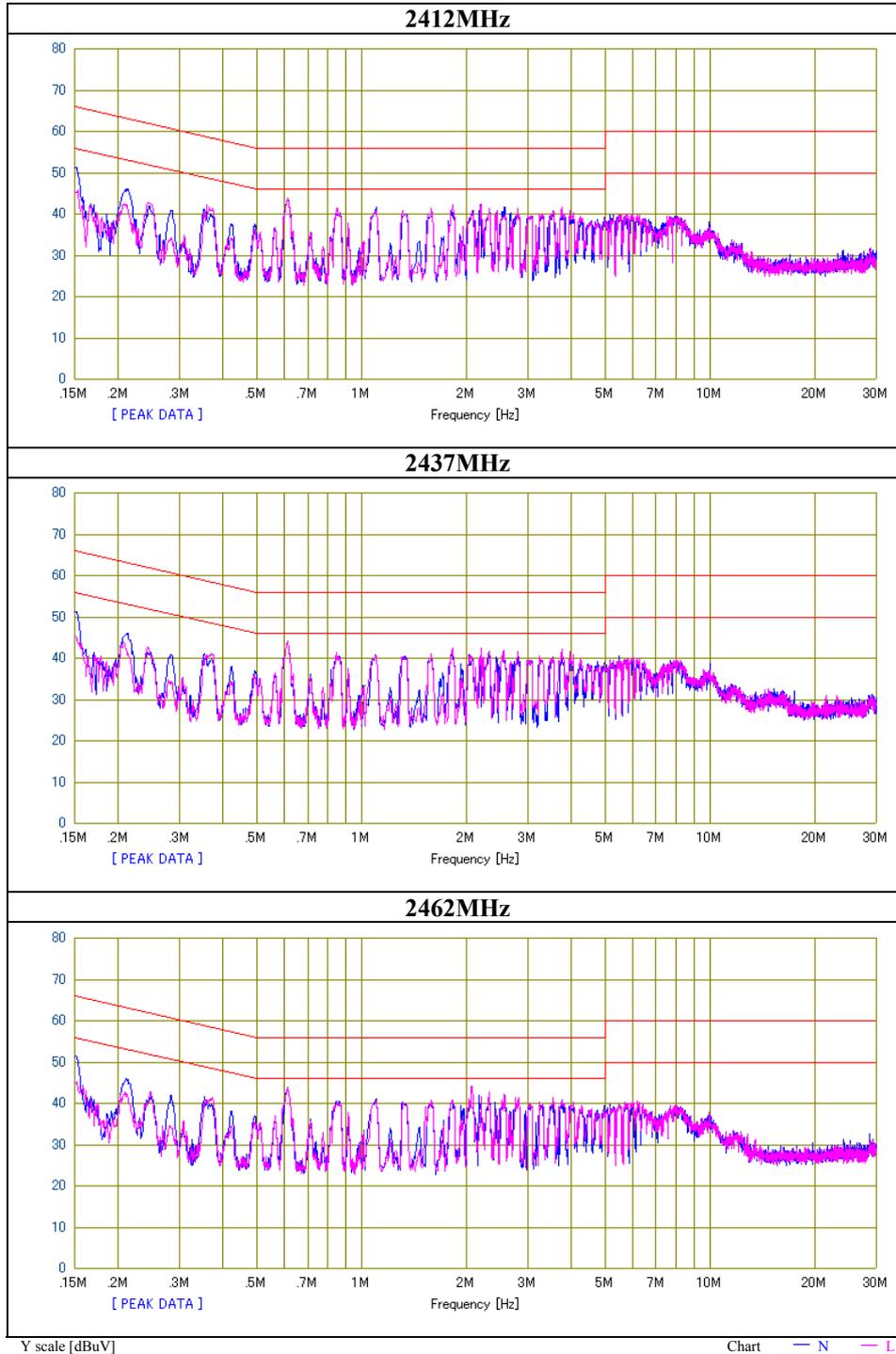
Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0279-HO-01
Date	05/19/2010
Temperature/ Humidity	24 deg.C./ 57%
Engineer	Hiroshi Kukita
Mode	11g Tx



### Conducted Emission

Ant: 1, 11g, Tx, Ch: Mid

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0279-HO-01
Date	05/19/2010
Temperature/ Humidity	24 deg.C./ 57%
Engineer	Hiroshi Kukita
Mode	11g Tx



**Conducted Emission**  
**Ant: 1, 11g, Tx, Ch: Mid**

**DATA OF CONDUCTED EMISSION TEST**

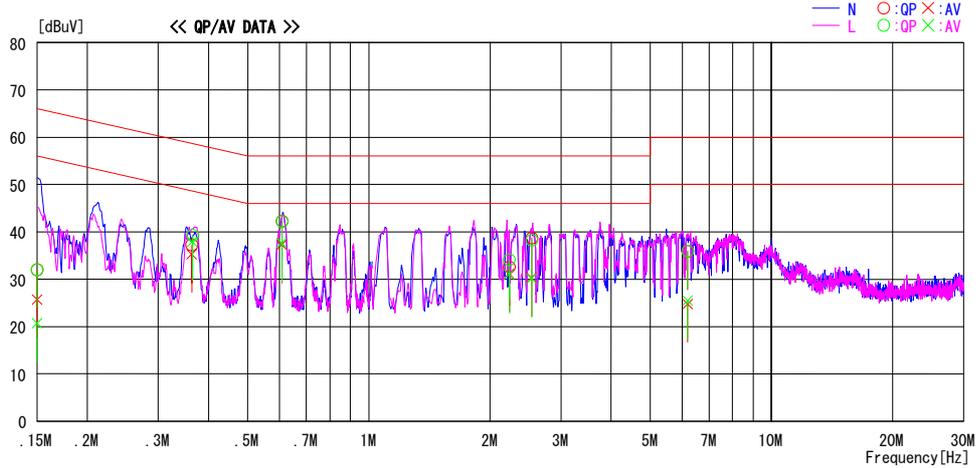
UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber  
Date : 2010/05/19

Report No. : 30IE0279-HO-01

Temp./Humi. : 24deg.C. / 57%  
Engineer : Hiroshi Kukita

Mode / Remarks : WLAN 11g, Tx 2437MHz, 11Mbps, Ant:1,

LIMIT : FCC15.207 QP  
FCC15.207 AV



Frequency	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	18.7	12.4	13.3	32.0	25.7	66.0	56.0	34.0	30.3	N	
0.36312	24.0	22.0	13.3	37.3	35.3	58.7	48.7	21.4	13.4	N	
0.60862	29.0	24.0	13.3	42.3	37.3	56.0	46.0	13.7	8.7	N	
2.23176	19.3	17.9	13.3	32.6	31.2	56.0	46.0	23.4	14.8	N	
2.53665	25.3	16.9	13.4	38.7	30.3	56.0	46.0	17.3	15.7	N	
6.18854	22.2	11.1	13.7	35.9	24.8	60.0	50.0	24.1	25.2	N	
0.15000	18.7	7.4	13.3	32.0	20.7	66.0	56.0	34.0	35.3	L	
0.36467	26.0	24.6	13.3	39.3	37.9	58.6	48.6	19.3	10.7	L	
0.60853	28.9	24.3	13.3	42.2	37.6	56.0	46.0	13.8	8.4	L	
2.23197	20.8	17.7	13.3	34.1	31.0	56.0	46.0	21.9	15.0	L	
2.53597	24.8	16.7	13.4	38.2	30.1	56.0	46.0	17.8	15.9	L	
6.18784	22.3	11.8	13.7	36.0	25.5	60.0	50.0	24.0	24.5	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.

### 6dB Bandwidth

Test place Head Office EMC Lab. No.7 Shielded Room  
Report No. 30IE0279-HO-01  
Date 05/14/2010  
Temperature/ Humidity 23 deg.C./ 33%  
Engineer Takumi Shimada  
Mode 11b, Tx, 11Mbps, Ant:1 / 11g, Tx, 54Mbps, Ant:1

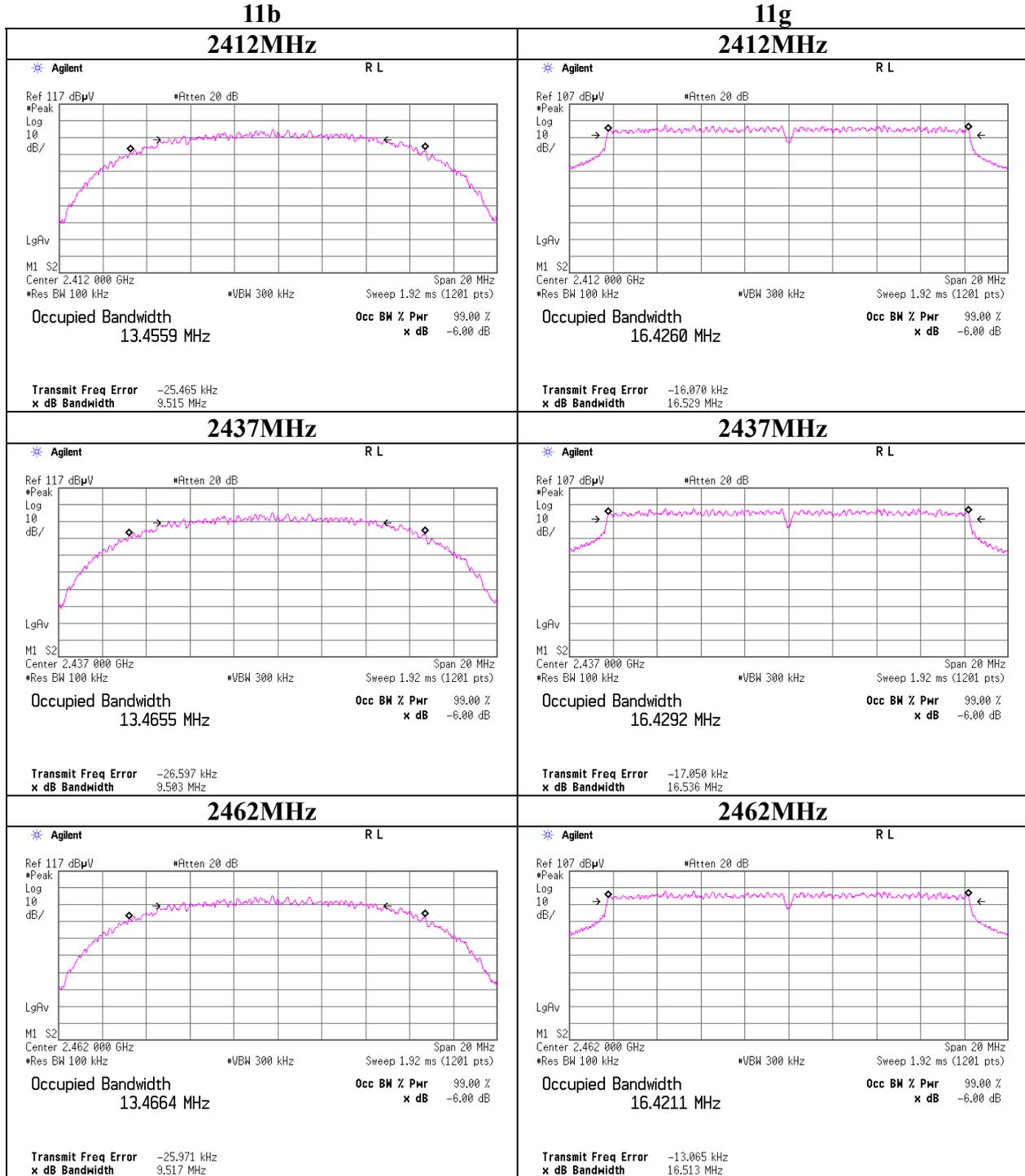
11b

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	9.515	>500
2437	9.503	>500
2462	9.517	>500

11g

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	16.529	>500
2437	16.536	>500
2462	16.513	>500

**6dB Bandwidth**









**Radiated Spurious Emission**  
**(20dBc Data Sheet)**

Test place                      Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Report No.                      30HE0279-HO-01  
Date                              05/10/2010  
Temperature/ Humidity        25 deg.C./ 53%  
Engineer                        Takeshi Choda  
                                      (1-10GHz)  
Mode                              11b Tx 2412MHz, Ant: 1

**20dBc Data Sheet**

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	106.6	26.8	2.9	32.1	104.2	-	-	Carrier
Hori	2400.000	PK	56.2	26.7	2.9	32.1	53.7	84.2	30.5	
Vert	2412.000	PK	104.2	26.8	2.9	32.1	101.8	-	-	Carrier
Vert	2400.000	PK	55.5	26.7	2.9	32.1	53.0	81.8	28.8	

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



## Radiated Spurious Emission

Test place Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Report No. 30HE0279-HO-01  
Date 05/10/2010 05/12/2010 05/12/2010  
Temperature/ Humidity 25 deg.C./ 53% 21 deg.C./ 41% 23 deg.C./ 41%  
Engineer Takeshi Choda Tomotaka Sasagawa Hiroshi Kukita  
(1-10GHz) (10-26.5GHz)3 (Below 1GHz)  
Mode 11b Tx 2462MHz, Ant: 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	36.019	QP	30.5	16.2	7.1	32.0	21.8	40.0	18.2	
Hori	76.830	QP	53.6	6.5	7.7	32.1	35.7	40.0	4.3	
Hori	250.000	QP	42.5	17.4	9.3	31.9	37.3	46.0	8.7	
Hori	309.808	QP	40.1	14.4	9.7	31.9	32.3	46.0	13.7	
Hori	498.152	QP	38.1	18.2	10.9	32.0	35.2	46.0	10.8	
Hori	959.998	QP	30.9	22.5	13.2	31.1	35.5	46.0	10.5	
Hori	1593.330	PK	55.8	25.4	2.5	33.1	50.6	73.9	23.3	
Hori	1621.417	PK	59.2	25.5	2.5	33.1	54.1	73.9	19.8	
Hori	1947.267	PK	64.9	25.9	2.7	32.4	61.1	73.9	12.8	
Hori	2483.500	PK	56.5	26.9	2.9	32.1	54.2	73.9	19.7	
Hori	3192.033	PK	51.9	28.5	3.3	31.8	51.9	73.9	22.0	
Hori	4924.000	PK	44.4	31.2	5.4	31.4	49.6	73.9	24.3	
Hori	6373.875	PK	45.8	34.0	5.7	31.9	53.6	73.9	20.3	
Hori	7386.000	PK	42.3	36.2	5.7	32.4	51.8	73.9	22.1	
Hori	9848.000	PK	42.5	38.2	6.9	33.0	54.6	73.9	19.3	
Hori	24620.000	PK	47.5	38.4	-1.1	31.5	53.3	73.9	20.6	
Hori	1593.330	AV	40.0	25.4	2.5	33.1	34.8	53.9	19.1	
Hori	1621.417	AV	32.9	25.5	2.5	33.1	27.8	53.9	26.1	
Hori	1947.267	AV	33.7	25.9	2.7	32.4	29.9	73.9	44.0	
Hori	2483.500	AV	44.5	26.9	2.9	32.1	42.2	53.9	11.7	
Hori	3192.033	AV	34.8	28.5	3.3	31.8	34.8	53.9	19.1	
Hori	4924.000	AV	31.1	31.2	5.4	31.4	36.3	53.9	17.6	
Hori	6373.875	AV	30.3	34.0	5.7	31.9	38.1	53.9	15.8	
Hori	7386.000	AV	30.1	36.2	5.7	32.4	39.6	53.9	14.3	
Hori	9848.000	AV	30.2	38.2	6.9	33.0	42.3	53.9	11.6	
Hori	24620.000	AV	34.8	38.4	-1.1	31.5	40.6	53.9	13.3	
Vert	36.014	QP	41.5	16.2	7.1	32.0	32.8	40.0	7.2	
Vert	80.407	QP	46.9	6.6	7.7	32.1	29.1	40.0	10.9	
Vert	250.003	QP	38.9	17.4	9.3	31.9	33.7	46.0	12.3	
Vert	309.821	QP	42.7	14.4	9.7	31.9	34.9	46.0	11.1	
Vert	498.210	QP	40.9	18.2	10.9	32.0	38.0	46.0	8.0	
Vert	959.001	QP	31.0	22.5	13.2	31.1	35.6	46.0	10.4	
Vert	1593.330	PK	59.5	25.4	2.5	33.1	54.3	73.9	19.6	
Vert	1621.417	PK	62.6	25.5	2.5	33.1	57.5	73.9	16.4	
Vert	1947.267	PK	63.8	25.9	2.7	32.4	60.0	73.9	13.9	
Vert	2483.500	PK	57.2	26.9	2.9	32.1	54.9	73.9	19.0	
Vert	3192.033	PK	54.9	28.5	3.3	31.8	54.9	73.9	19.0	
Vert	4924.000	PK	46.8	31.2	5.4	31.4	52.0	73.9	21.9	
Vert	6373.875	PK	50.2	34.0	5.7	31.9	58.0	73.9	15.9	
Vert	7386.000	PK	42.7	36.2	5.7	32.4	52.2	73.9	21.7	
Vert	9848.000	PK	42.3	38.2	6.9	33.0	54.4	73.9	19.5	
Vert	24620.000	PK	48.1	38.4	-1.1	31.5	53.9	73.9	20.0	
Vert	1593.330	AV	42.6	25.4	2.5	33.1	37.4	53.9	16.5	
Vert	1621.417	AV	34.4	25.5	2.5	33.1	29.3	53.9	24.6	
Vert	1947.267	AV	33.0	25.9	2.7	32.4	29.2	53.9	24.7	
Vert	2483.500	AV	45.0	26.9	2.9	32.1	42.7	53.9	11.2	
Vert	3192.033	AV	38.8	28.5	3.3	31.8	38.8	53.9	15.1	
Vert	4924.000	AV	33.9	31.2	5.4	31.4	39.1	53.9	14.8	
Vert	6373.875	AV	31.3	34.0	5.7	31.9	39.1	53.9	14.8	
Vert	7386.000	AV	30.6	36.2	5.7	32.4	40.1	53.9	13.8	
Vert	9848.000	AV	30.3	38.2	6.9	33.0	42.4	53.9	11.5	
Vert	24620.000	AV	34.5	38.4	-1.1	31.5	40.3	53.9	13.6	

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.

## Radiated Spurious Emission

Test place                    Head Office EMC Lab. No.4 Semi Anechoic Chamber  
Report No.                    30HE0279-HO-01  
Date                            05/18/2010                    05/19/2010  
Temperature/ Humidity    23 deg.C./ 49%              24 deg.C./ 57%  
Engineer                      Takumi Shimada               Katsunori Okai  
(Above 1GHz)                (Below 1GHz)  
Mode                            11g Tx 2412MHz, Ant: 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	36.013	QP	27.6	16.2	7.1	32.0	18.9	40.0	21.1	
Hori	82.333	QP	46.9	6.9	7.7	32.1	29.4	40.0	10.6	
Hori	249.999	QP	38.1	17.4	9.3	31.9	32.9	46.0	13.1	
Hori	374.999	QP	36.9	17.2	10.2	31.9	32.4	46.0	13.6	
Hori	799.999	QP	32.1	23.1	12.5	31.8	35.9	46.0	10.1	
Hori	959.999	QP	29.3	25.7	13.2	31.1	37.1	46.0	8.9	
Hori	1597.158	PK	56.4	25.4	2.5	33.1	51.2	73.9	22.7	
Hori	1621.852	PK	57.2	25.5	2.5	33.1	52.1	73.9	21.8	
Hori	1943.017	PK	63.2	25.9	2.7	32.4	59.4	73.9	14.6	
Hori	2390.000	PK	56.6	26.7	2.9	32.1	54.1	73.9	19.8	
Hori	2400.000	PK	75.1	26.7	2.9	32.1	72.6	-	-	See 20dBc Data Sheet
Hori	3189.183	PK	50.8	28.5	3.3	31.8	50.8	73.9	23.1	
Hori	4824.000	PK	41.3	30.9	5.3	31.4	46.1	73.9	27.8	
Hori	6383.408	PK	44.2	34.0	5.7	31.9	52.0	73.9	21.9	
Hori	7236.000	PK	42.4	35.9	5.7	32.3	51.7	73.9	22.3	
Hori	9648.000	PK	43.4	38.0	6.8	33.0	55.2	73.9	18.7	
Hori	24120.000	PK	47.9	38.2	-1.2	31.6	53.3	73.9	20.6	
Hori	1597.158	AV	42.0	25.4	2.5	33.1	36.8	53.9	17.2	
Hori	1621.852	AV	35.4	25.5	2.5	33.1	30.3	53.9	23.6	
Hori	1943.017	AV	32.6	25.9	2.7	32.4	28.8	53.9	25.1	
Hori	2390.000	AV	41.1	26.7	2.9	32.1	38.6	53.9	15.3	
Hori	2400.000	AV	57.3	26.7	2.9	32.1	54.8	-	-	See 20dBc Data Sheet
Hori	3189.183	AV	33.8	28.5	3.3	31.8	33.8	53.9	20.1	
Hori	4824.000	AV	28.6	30.9	5.3	31.4	33.4	53.9	20.6	
Hori	6383.408	AV	30.1	34.0	5.7	31.9	37.9	53.9	16.0	
Hori	7236.000	AV	30.3	35.9	5.7	32.3	39.6	53.9	14.3	
Hori	9648.000	AV	30.3	38.0	6.8	33.0	42.1	53.9	11.8	
Hori	24120.000	AV	35.1	38.2	-1.2	31.6	40.5	53.9	13.4	
Vert	36.012	QP	38.1	16.2	7.1	32.0	29.4	40.0	10.6	
Vert	82.348	QP	47.1	6.9	7.7	32.1	29.6	40.0	10.4	
Vert	250.001	QP	39.1	17.4	9.3	31.9	33.9	46.0	12.1	
Vert	375.001	QP	35.2	17.2	10.2	31.9	30.7	46.0	15.3	
Vert	800.001	QP	34.0	23.1	12.5	31.8	37.8	46.0	8.2	
Vert	959.995	QP	28.4	25.7	13.2	31.1	36.2	46.0	9.8	
Vert	1593.183	PK	55.5	25.4	2.5	33.1	50.3	73.9	23.6	
Vert	1622.850	PK	58.5	25.5	2.5	33.1	53.4	73.9	20.5	
Vert	1942.453	PK	67.5	25.9	2.7	32.4	63.7	73.9	10.2	
Vert	2390.000	PK	56.6	26.7	2.9	32.1	54.1	73.9	19.8	
Vert	2400.000	PK	76.0	26.7	2.9	32.1	73.5	-	-	See 20dBc Data Sheet
Vert	3194.267	PK	50.8	28.5	3.3	31.8	50.8	73.9	23.1	
Vert	4824.000	PK	41.0	30.9	5.3	31.4	45.8	73.9	28.1	
Vert	6390.433	PK	44.2	34.0	5.7	31.9	52.0	73.9	21.9	
Vert	7236.000	PK	42.7	35.9	5.7	32.3	52.0	73.9	22.0	
Vert	9648.000	PK	42.4	38.0	6.8	33.0	54.2	73.9	19.7	
Vert	24120.000	PK	47.8	38.2	-1.2	31.6	53.2	73.9	20.7	
Vert	1593.183	AV	39.9	25.4	2.5	33.1	34.7	53.9	19.2	
Vert	1622.850	AV	31.9	25.5	2.5	33.1	26.8	53.9	27.1	
Vert	1942.453	AV	34.6	25.9	2.7	32.4	30.8	53.9	23.1	
Vert	2390.000	AV	40.9	26.7	2.9	32.1	38.4	53.9	15.5	
Vert	2400.000	AV	58.6	26.7	2.9	32.1	56.1	-	-	See 20dBc Data Sheet
Vert	3194.267	AV	34.6	28.5	3.3	31.8	34.6	53.9	19.3	
Vert	4824.000	AV	28.7	30.9	5.3	31.4	33.5	53.9	20.4	
Vert	6390.433	AV	30.1	34.0	5.7	31.9	37.9	53.9	16.0	
Vert	7236.000	AV	30.1	35.9	5.7	32.3	39.4	53.9	14.5	
Vert	9648.000	AV	30.3	38.0	6.8	33.0	42.1	53.9	11.8	
Vert	24120.000	AV	34.9	38.2	-1.2	31.6	40.3	53.9	13.6	

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. 30HE0279-HO-01  
Date 05/18/2010 05/19/2010  
Temperature/ Humidity 23 deg.C./ 49% 24 deg.C./ 57%  
Engineer Takumi Shimada Katsunori Okai  
(Above 1GHz) (Below 1GHz)  
Mode 11g Tx 2462MHz, Ant: 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	36.013	QP	27.8	16.2	7.1	32.0	19.1	40.0	20.9	
Hori	82.348	QP	47.5	6.9	7.7	32.1	30.0	40.0	10.0	
Hori	250.000	QP	37.9	17.4	9.3	31.9	32.7	46.0	13.3	
Hori	307.641	QP	41.2	16.1	9.7	31.9	35.1	46.0	10.9	
Hori	374.998	QP	36.6	17.2	10.2	31.9	32.1	46.0	13.9	
Hori	800.000	QP	31.1	23.1	12.5	31.8	34.9	46.0	11.1	
Hori	960.000	QP	29.6	25.7	13.2	31.1	37.4	46.0	8.6	
Hori	1593.441	PK	56.6	25.4	2.5	33.1	51.4	73.9	22.5	
Hori	1622.035	PK	56.7	25.5	2.5	33.1	51.6	73.9	22.4	
Hori	1947.117	PK	61.0	25.9	2.7	32.4	57.2	73.9	16.8	
Hori	2483.500	PK	57.8	26.9	2.9	32.1	55.5	73.9	18.4	
Hori	3194.700	PK	51.0	28.5	3.3	31.8	51.0	73.9	23.0	
Hori	4924.000	PK	41.6	31.2	5.4	31.4	46.8	73.9	27.1	
Hori	6386.717	PK	44.5	34.0	5.7	31.9	52.3	73.9	21.6	
Hori	7386.000	PK	43.1	36.2	5.7	32.4	52.6	73.9	21.3	
Hori	9848.000	PK	43.1	38.2	6.9	33.0	55.2	73.9	18.7	
Hori	24620.000	PK	47.0	38.4	-1.1	31.5	52.8	73.9	21.1	
Hori	1593.441	AV	41.2	25.4	2.5	33.1	36.0	53.9	17.9	
Hori	1622.035	AV	33.8	25.5	2.5	33.1	28.7	53.9	25.2	
Hori	1947.117	AV	31.4	25.9	2.7	32.4	27.6	53.9	26.4	
Hori	2483.500	AV	41.0	26.9	2.9	32.1	38.7	53.9	15.2	
Hori	3194.700	AV	35.2	28.5	3.3	31.8	35.2	53.9	18.7	
Hori	4924.000	AV	28.4	31.2	5.4	31.4	33.6	53.9	20.3	
Hori	6386.717	AV	30.2	34.0	5.7	31.9	38.0	53.9	15.9	
Hori	7386.000	AV	30.1	36.2	5.7	32.4	39.6	53.9	14.3	
Hori	9848.000	AV	30.0	38.2	6.9	33.0	42.1	53.9	11.9	
Hori	24620.000	AV	34.1	38.4	-1.1	31.5	39.9	53.9	14.1	
Vert	36.011	QP	38.1	16.2	7.1	32.0	29.4	40.0	10.6	
Vert	82.348	QP	47.5	6.9	7.7	32.1	30.0	40.0	10.0	
Vert	250.001	QP	38.6	17.4	9.3	31.9	33.4	46.0	12.6	
Vert	307.636	QP	42.1	16.1	9.7	31.9	36.0	46.0	10.0	
Vert	374.999	QP	35.5	17.2	10.2	31.9	31.0	46.0	15.0	
Vert	800.001	QP	33.6	23.1	12.5	31.8	37.4	46.0	8.6	
Vert	960.000	QP	29.5	25.7	13.2	31.1	37.3	46.0	8.7	
Vert	1594.393	PK	55.4	25.4	2.5	33.1	50.2	73.9	23.7	
Vert	1622.733	PK	58.3	25.5	2.5	33.1	53.2	73.9	20.7	
Vert	1944.003	PK	67.2	25.9	2.7	32.4	63.4	73.9	10.6	
Vert	2483.500	PK	61.0	26.9	2.9	32.1	58.7	73.9	15.2	
Vert	3194.993	PK	51.4	28.5	3.3	31.8	51.4	73.9	22.5	
Vert	4924.000	PK	41.0	31.2	5.4	31.4	46.2	73.9	27.7	
Vert	6384.067	PK	43.8	34.0	5.7	31.9	51.6	73.9	22.4	
Vert	7386.000	PK	42.2	36.2	5.7	32.4	51.7	73.9	22.2	
Vert	9848.000	PK	42.4	38.2	6.9	33.0	54.5	73.9	19.4	
Vert	24620.000	PK	46.3	38.4	-1.1	31.5	52.1	73.9	21.8	
Vert	1594.393	AV	42.8	25.4	2.5	33.1	37.6	53.9	16.3	
Vert	1622.733	AV	33.1	25.5	2.5	33.1	28.0	53.9	25.9	
Vert	1944.003	AV	36.3	25.9	2.7	32.4	32.5	53.9	21.4	
Vert	2483.500	AV	43.0	26.9	2.9	32.1	40.7	53.9	13.2	
Vert	3194.993	AV	37.0	28.5	3.3	31.8	37.0	53.9	16.9	
Vert	4924.000	AV	28.5	31.2	5.4	31.4	33.7	53.9	20.2	
Vert	6384.067	AV	30.1	34.0	5.7	31.9	37.9	53.9	16.0	
Vert	7386.000	AV	30.1	36.2	5.7	32.4	39.6	53.9	14.3	
Vert	9848.000	AV	30.1	38.2	6.9	33.0	42.2	53.9	11.7	
Vert	24620.000	AV	34.0	38.4	-1.1	31.5	39.8	53.9	14.1	

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.

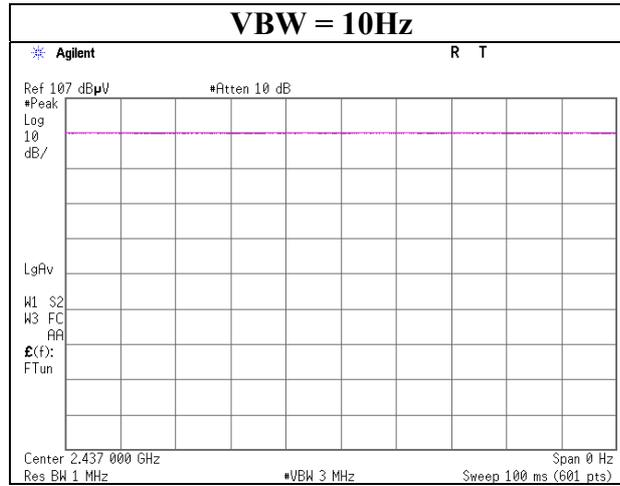
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB  
26.5GHz-40GHz 20log(3.0m/0.5m)=15.6dB



### VBW (AV) Calculation

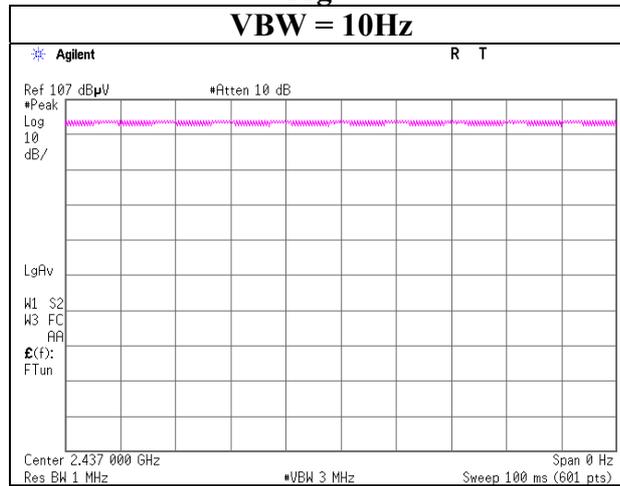
11b

VBW = 10Hz



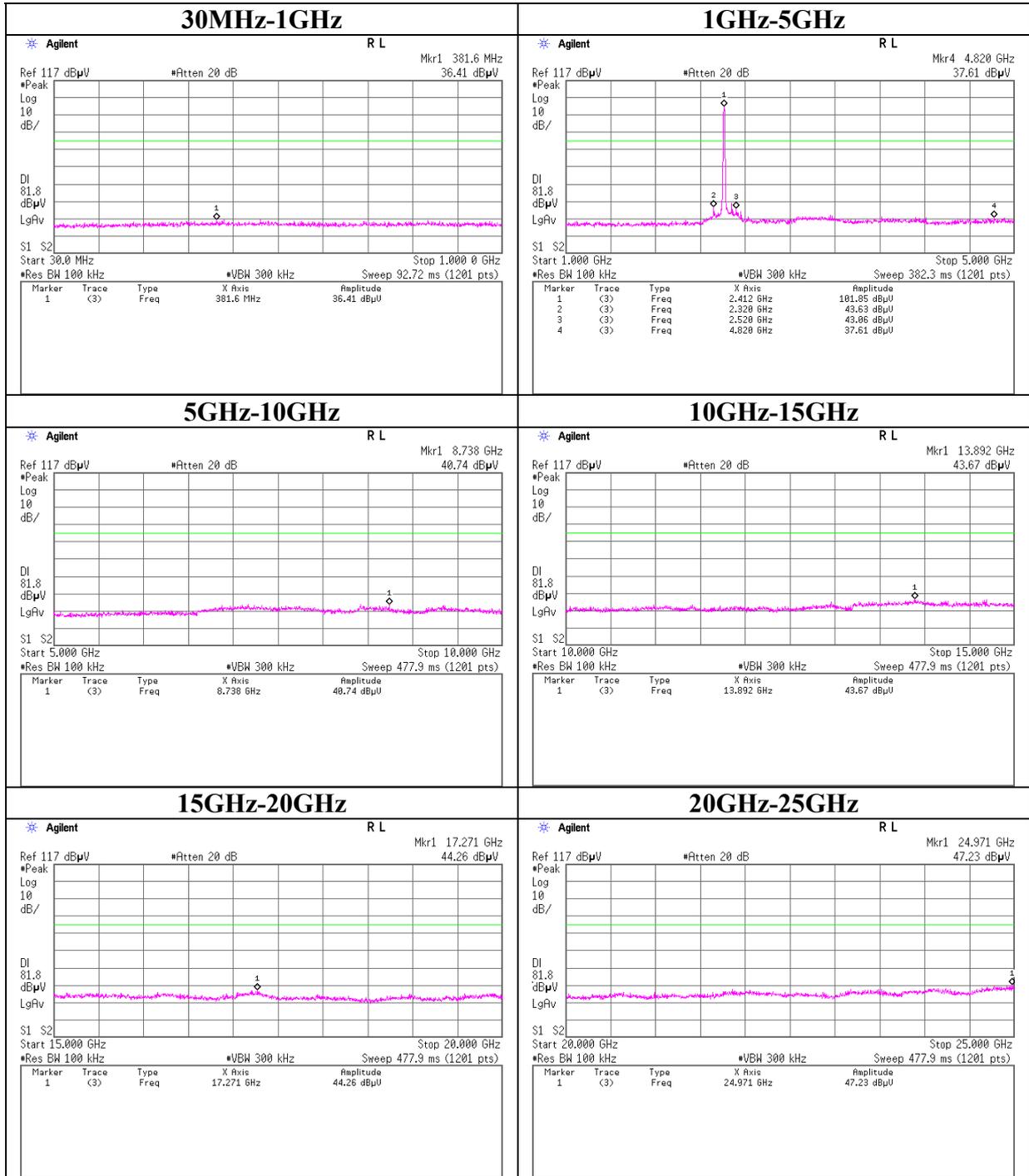
11g

VBW = 10Hz



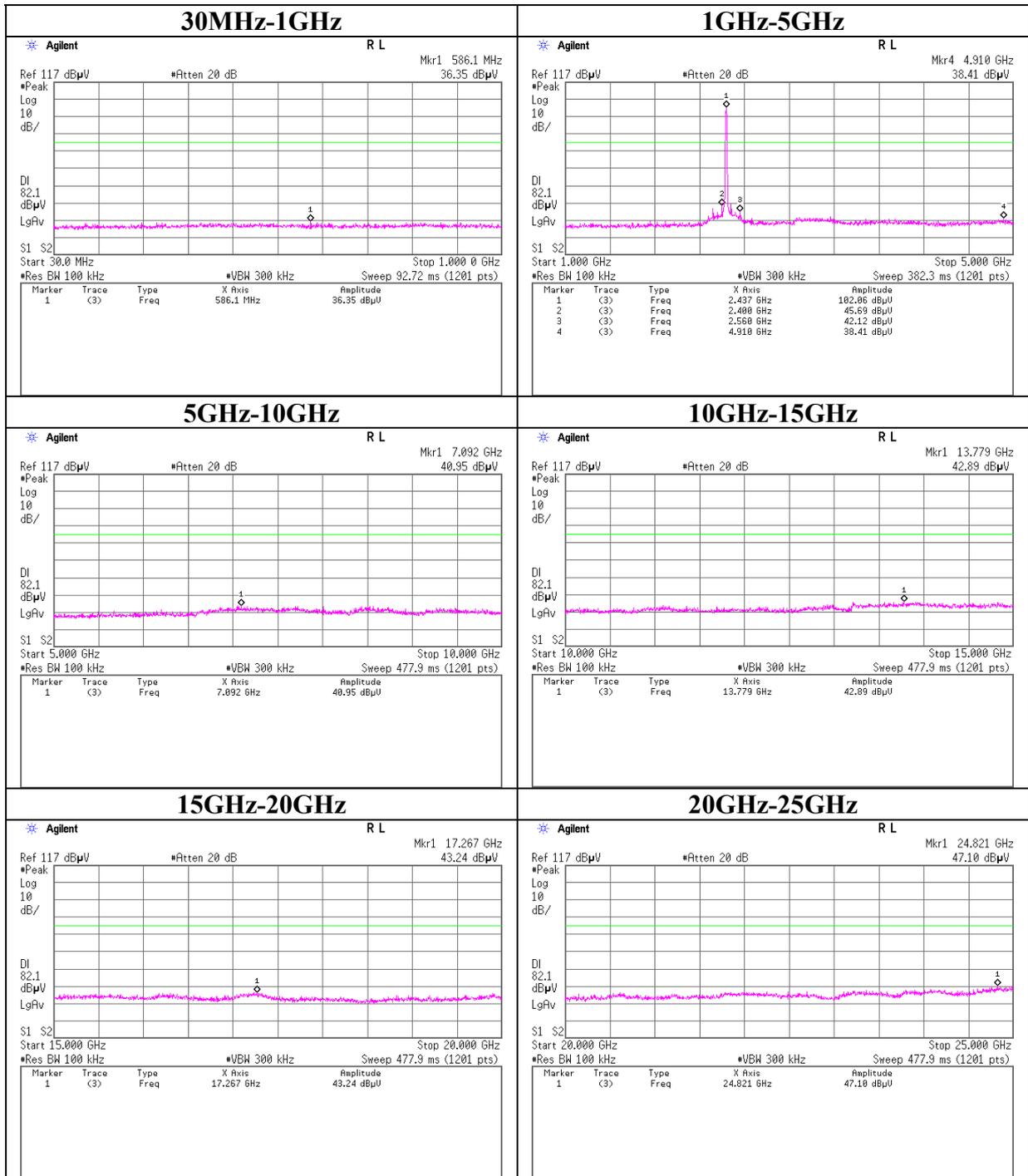
## Conducted Spurious Emission

### 11b Tx 2412MHz



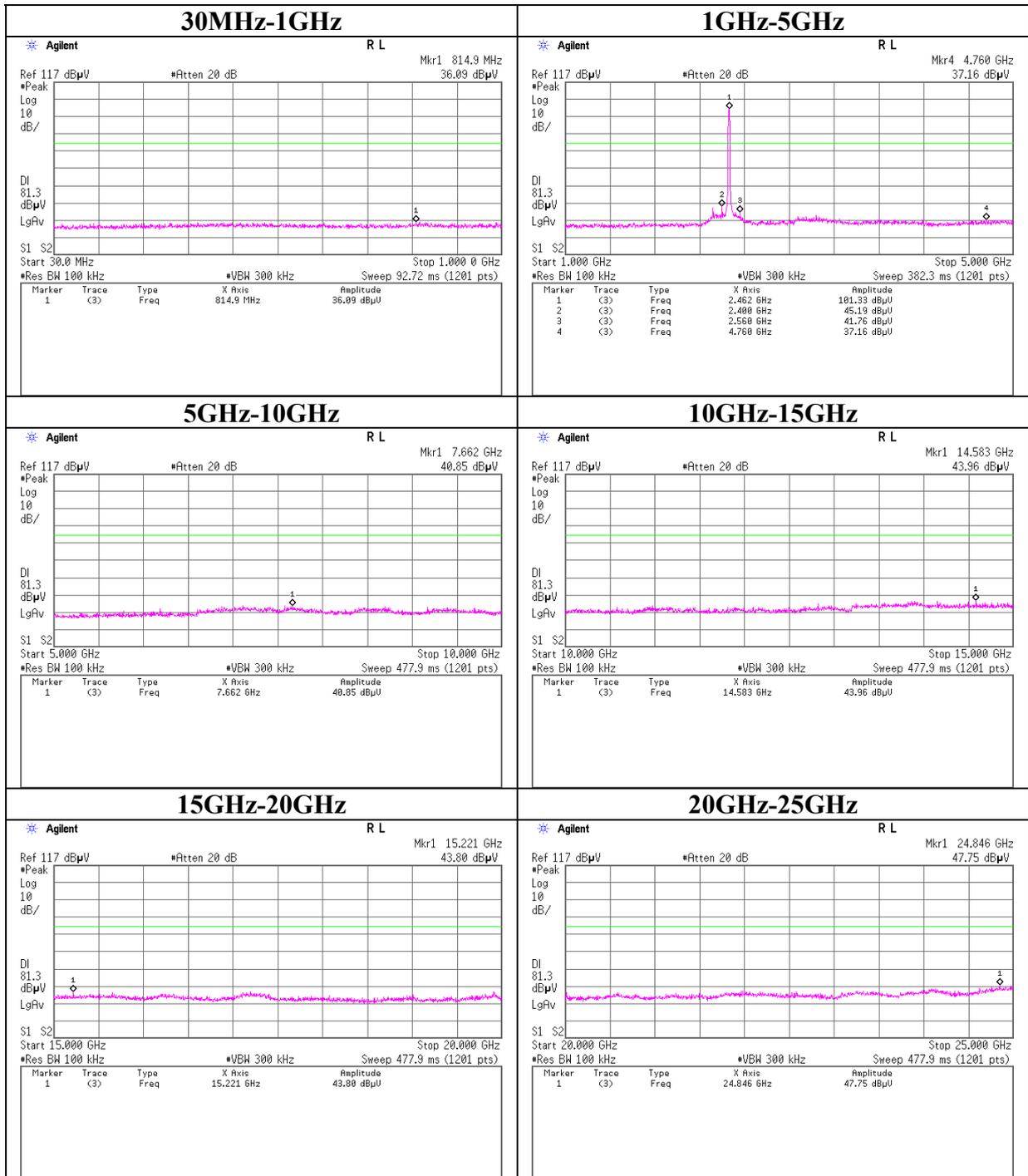
## Conducted Spurious Emission

### 11b Tx 2437MHz



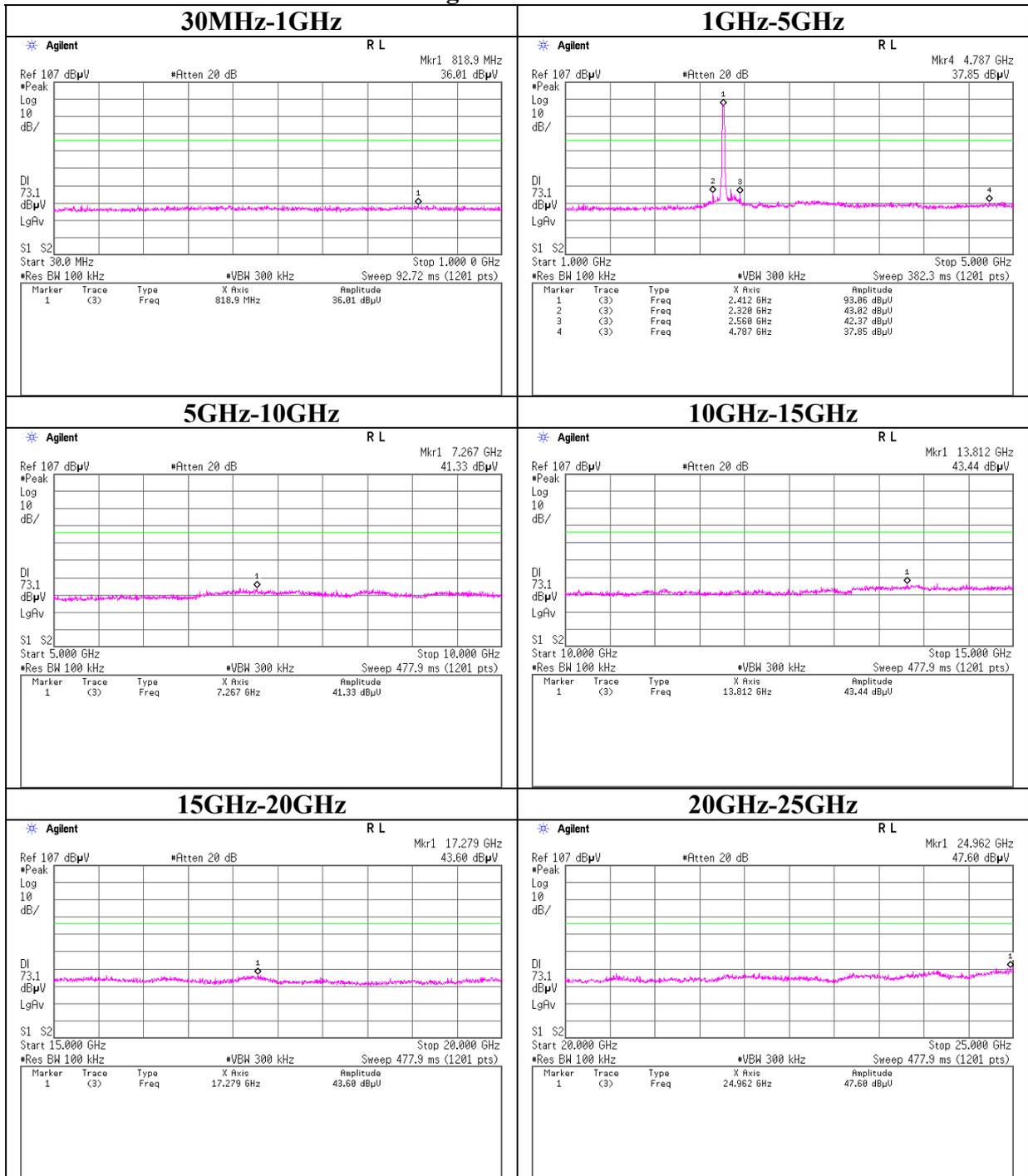
## Conducted Spurious Emission

### 11b Tx 2462MHz



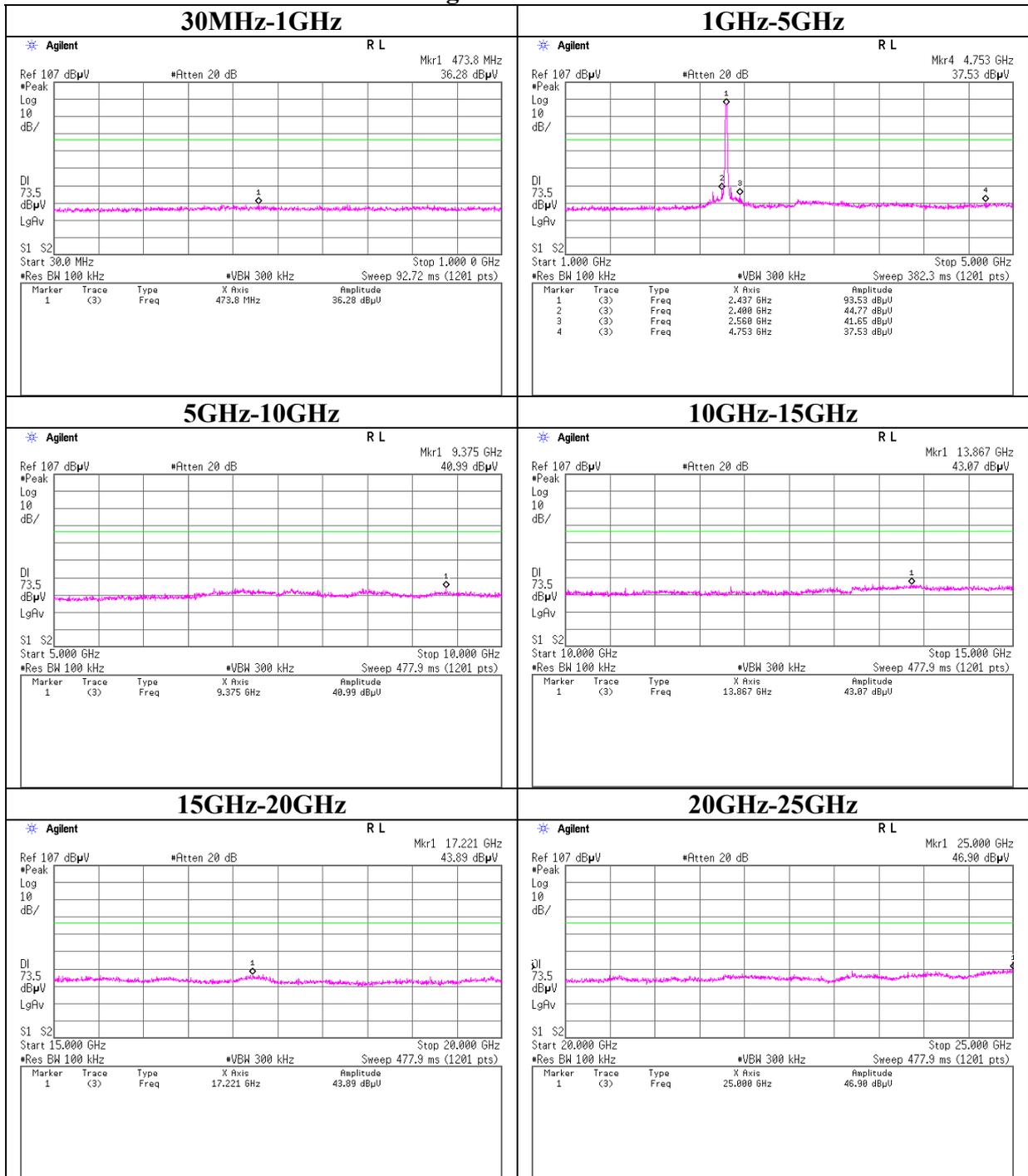
## Conducted Spurious Emission

### 11g Tx 2412MHz



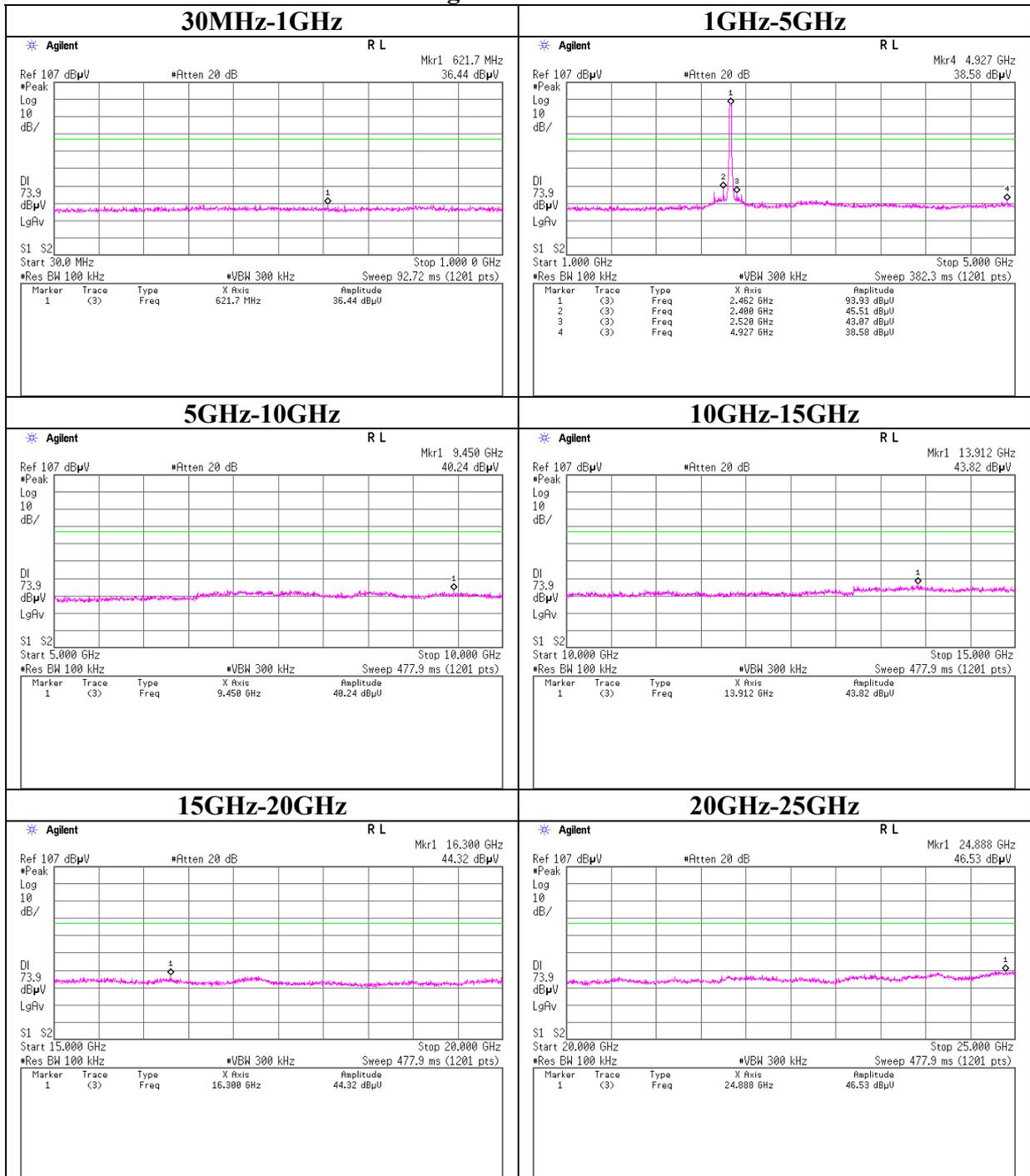
## Conducted Spurious Emission

### 11g Tx 2437MHz



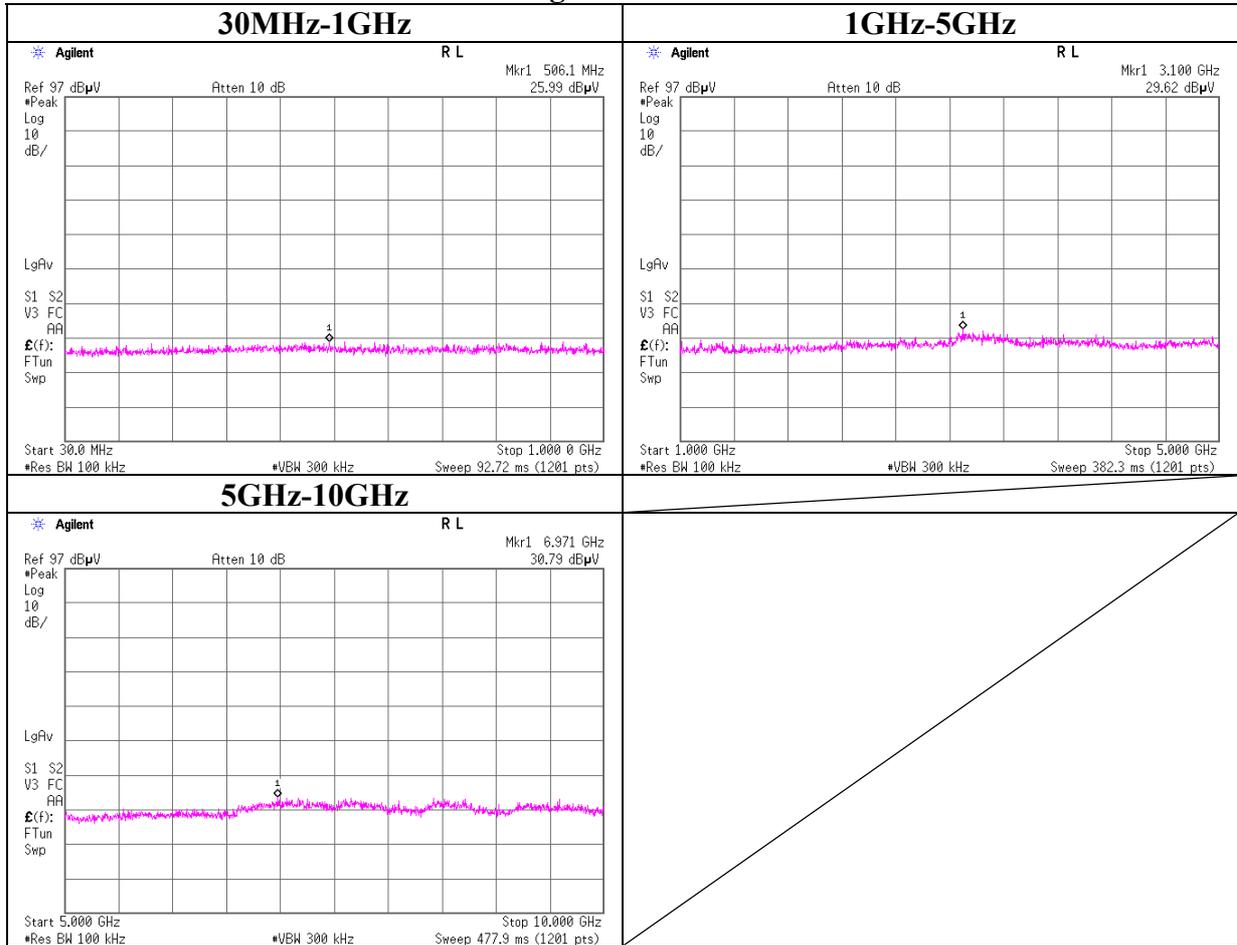
## Conducted Spurious Emission

### 11g Tx 2462MHz



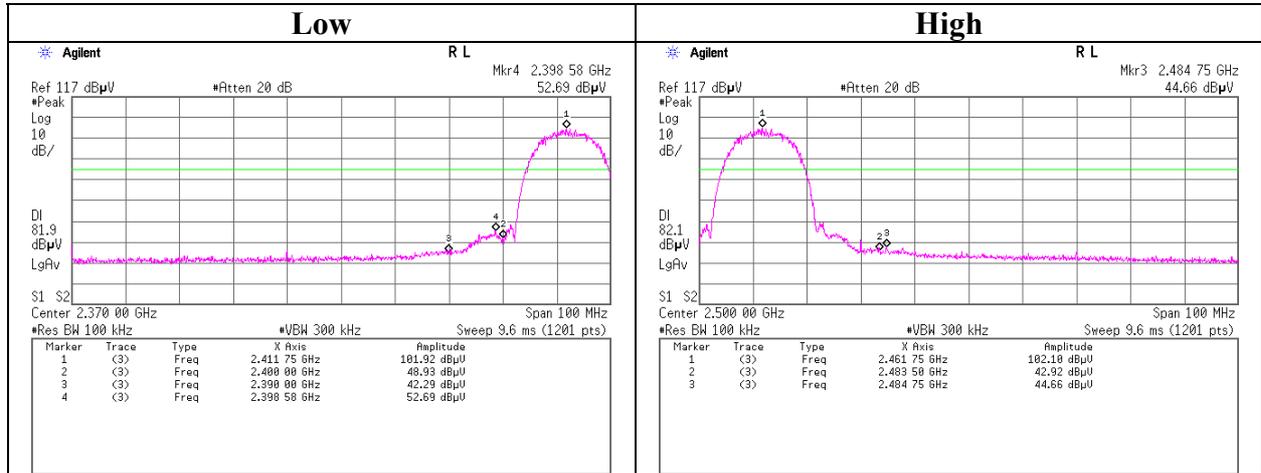
**Conducted Spurious Emission**

**11b/g Rx 2437MHz**

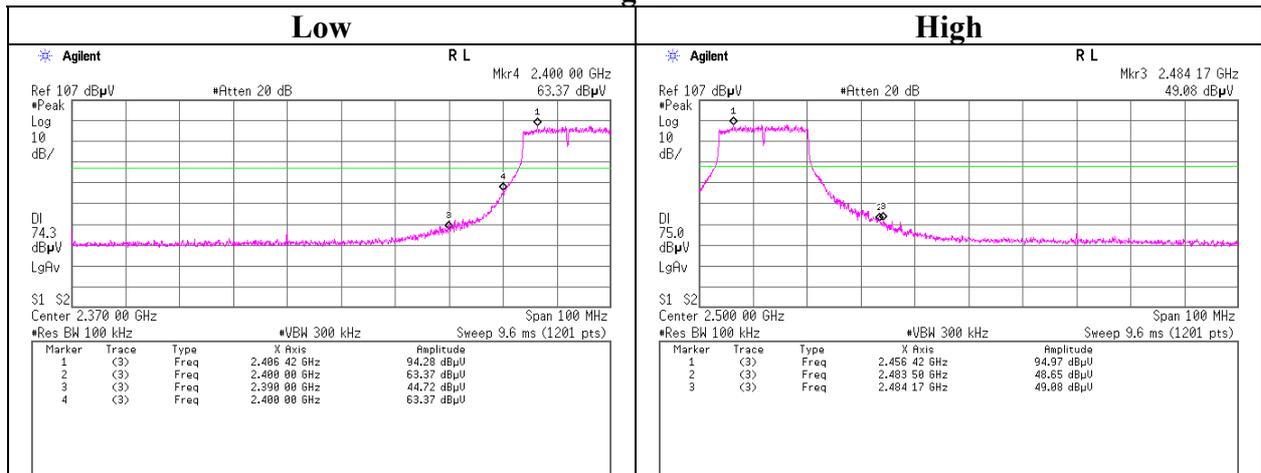


## Conducted Emission Band Edge compliance

### 11b Tx



### 11g Tx



### Power Density

Test place Head Office EMC Lab. No.7 Shielded Room  
Report No. 30IE0279-HO-01  
Date 05/14/2010  
Temperature/ Humidity 23 deg.C./ 33%  
Engineer Takumi Shimada  
Mode 11b, Tx, 11Mbps, Ant:1 / 11g, Tx, 54Mbps, Ant:1

11b Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-10.20	1.96	10.00	1.76	8.00	6.24
2437.00	-9.98	1.97	10.00	1.99	8.00	6.01
2462.00	-10.01	1.96	10.00	1.95	8.00	6.05

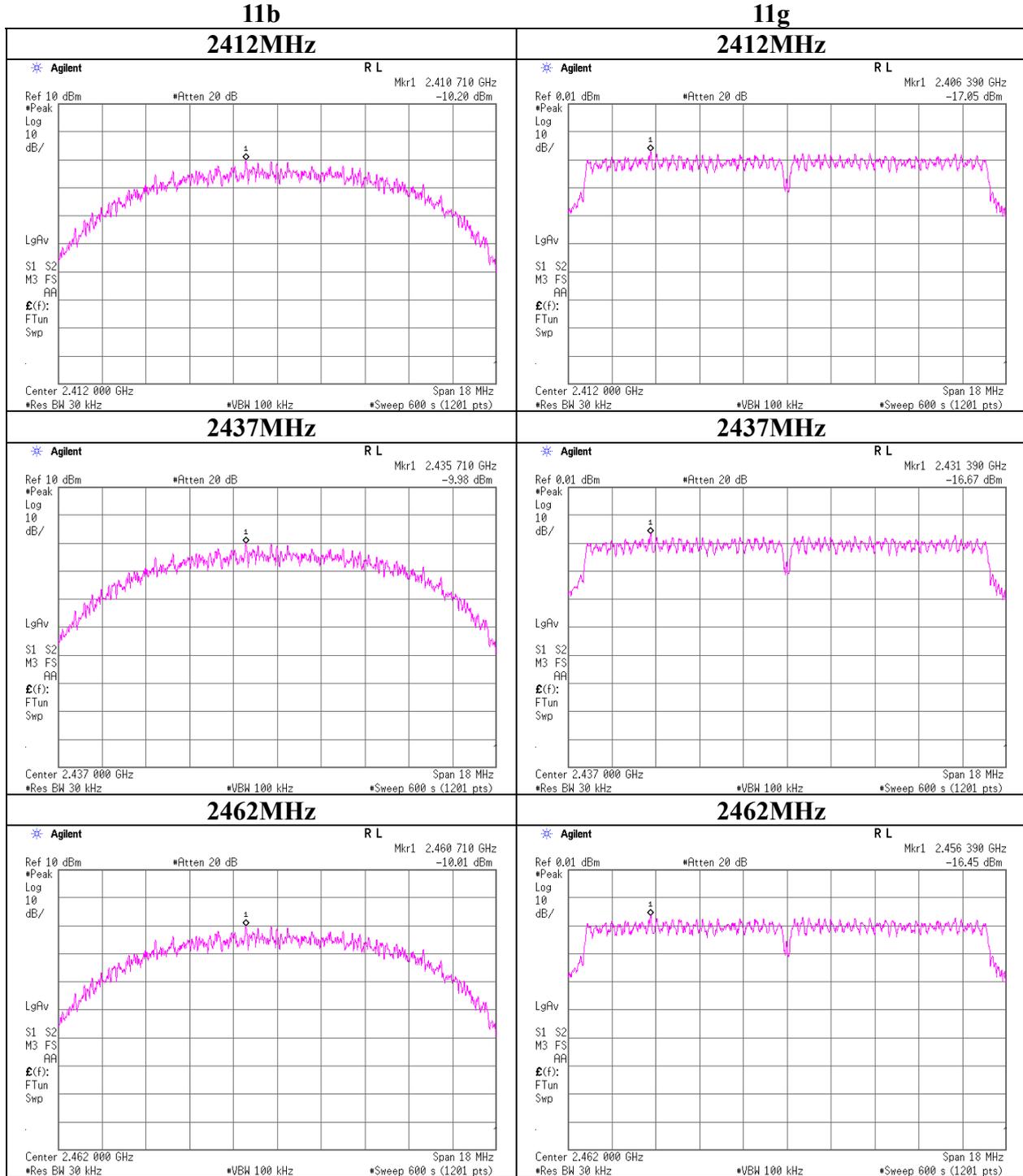
11g Antenna 1

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.00	-17.05	1.96	10.00	-5.09	8.00	13.09
2437.00	-16.67	1.97	10.00	-4.70	8.00	12.70
2462.00	-16.45	1.96	10.00	-4.49	8.00	12.49

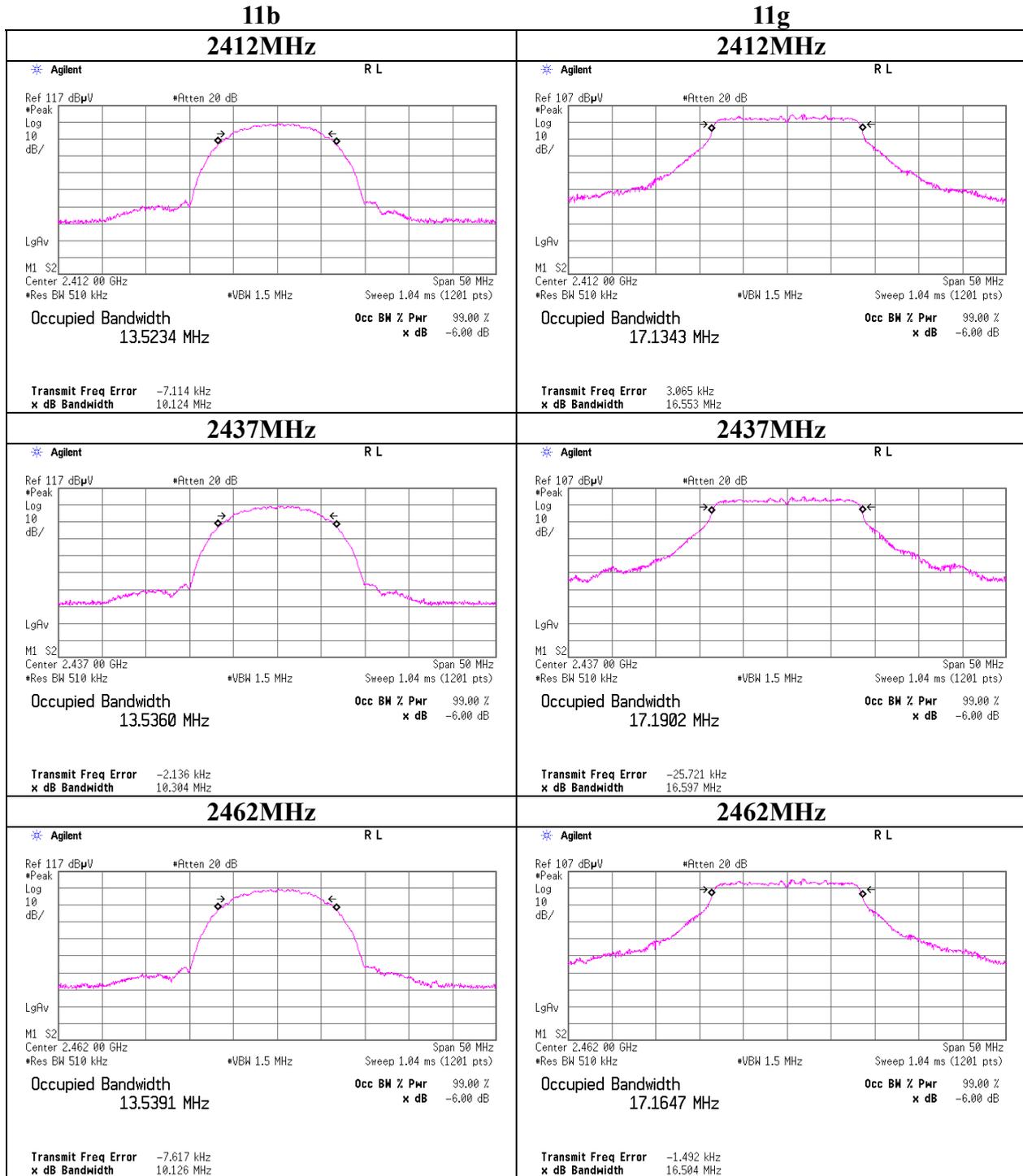
Sample Calculation:

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

**Power Density**



**99%Occupied Bandwidth**



### 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	RE	2010/02/02 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE	2010/02/09 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	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
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2009/06/18 * 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
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE/CE	2009/12/15 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE	2009/10/23 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/03/22 * 12
KLA-04	Logperiodic Antenna	Schwarzbeck	USLP9143	361	RE	2009/07/12 * 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
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	CE	2009/08/17 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	CE	2010/02/09 * 12
MJM-05	Measure	PROMART	SEN1955	-	CE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	CE	2009/11/20 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	CE	2010/04/19 * 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
MCC-13	Coaxial Cable	Fujikura	3D-2W(12m)/5D-2W(5m)/5D-2W(0.8m)/5D-2W(1m)	-	CE	2010/02/22 * 12

**EMI test equipment (2/2)**

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAT-65	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2010/02/04 * 12
MPM-08	Power Meter	Anritsu	ML2495A	6K00003338	AT	2009/09/09 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	011737	AT	2009/09/09 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2010/03/01 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	AT	2009/11/20 * 12
MCC-66	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	28636/2	AT	2010/04/27 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	MOS04	AT	2010/02/09 * 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-67	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2010/02/04 * 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**