

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

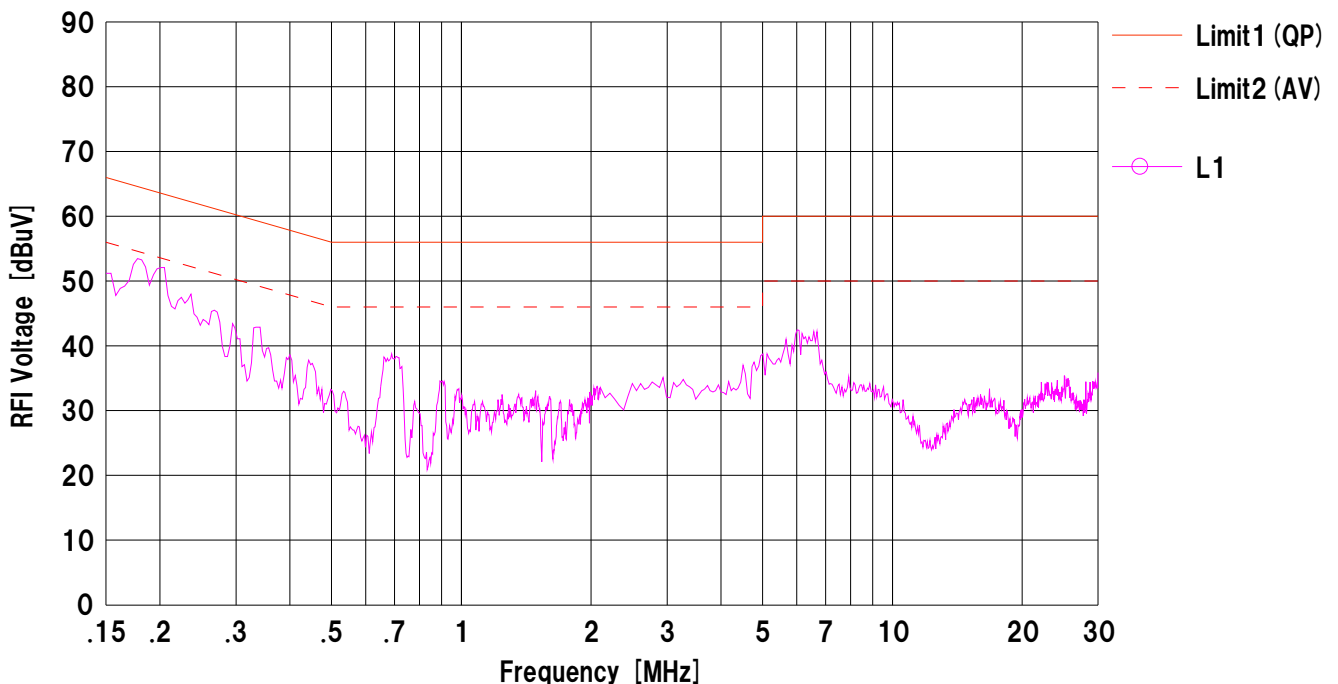
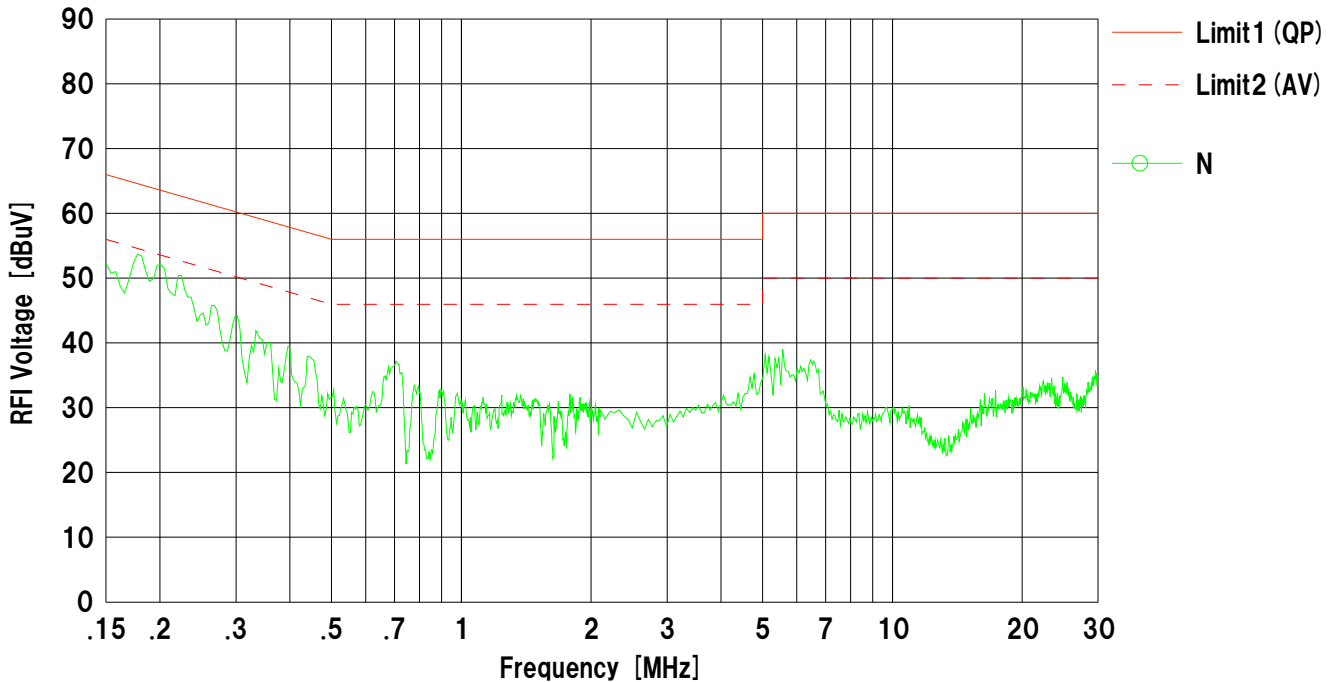
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11b Tx 2412MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

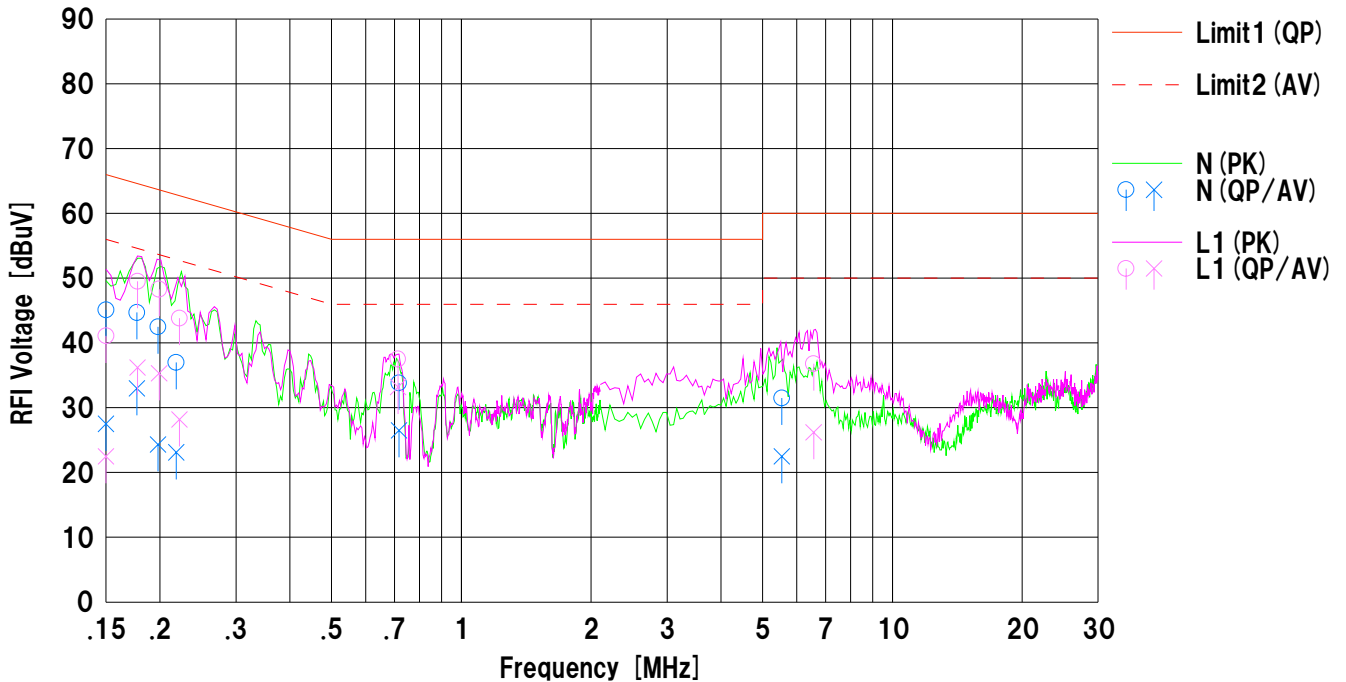
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11b Tx 2437MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	32.5	14.9	12.6	45.1	27.5	66.0	56.0	20.9	28.5	N	
2	0.17665	32.1	20.4	12.6	44.7	33.0	64.6	54.6	19.9	21.6	N	
3	0.19778	29.9	11.7	12.6	42.5	24.3	63.7	53.7	21.2	29.4	N	
4	0.21802	24.4	10.5	12.6	37.0	23.1	62.9	52.9	25.9	29.8	N	
5	0.71623	21.2	13.9	12.6	33.8	26.5	56.0	46.0	22.2	19.5	N	
6	5.53707	18.6	9.6	12.9	31.5	22.5	60.0	50.0	28.5	27.5	N	
7	0.15000	28.5	9.9	12.6	41.1	22.5	66.0	56.0	24.9	33.5	L1	
8	0.17729	36.9	23.6	12.6	49.5	36.2	64.6	54.6	15.1	18.4	L1	
9	0.19902	35.7	22.7	12.6	48.3	35.3	63.7	53.7	15.4	18.4	L1	
10	0.22202	31.2	15.6	12.6	43.8	28.2	62.7	52.7	18.9	24.5	L1	
11	0.71263	24.9	20.6	12.6	37.5	33.2	56.0	46.0	18.5	12.8	L1	
12	6.56513	23.9	13.3	12.9	36.8	26.2	60.0	50.0	23.2	23.8	L1	

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

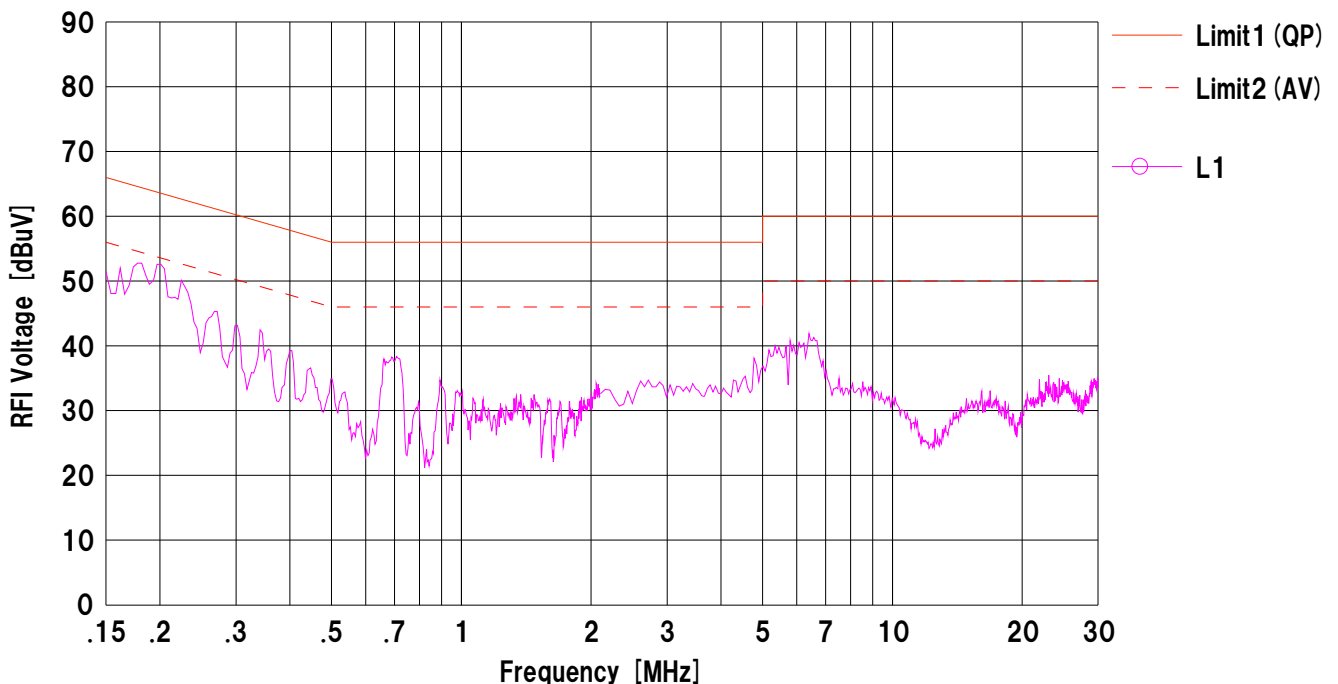
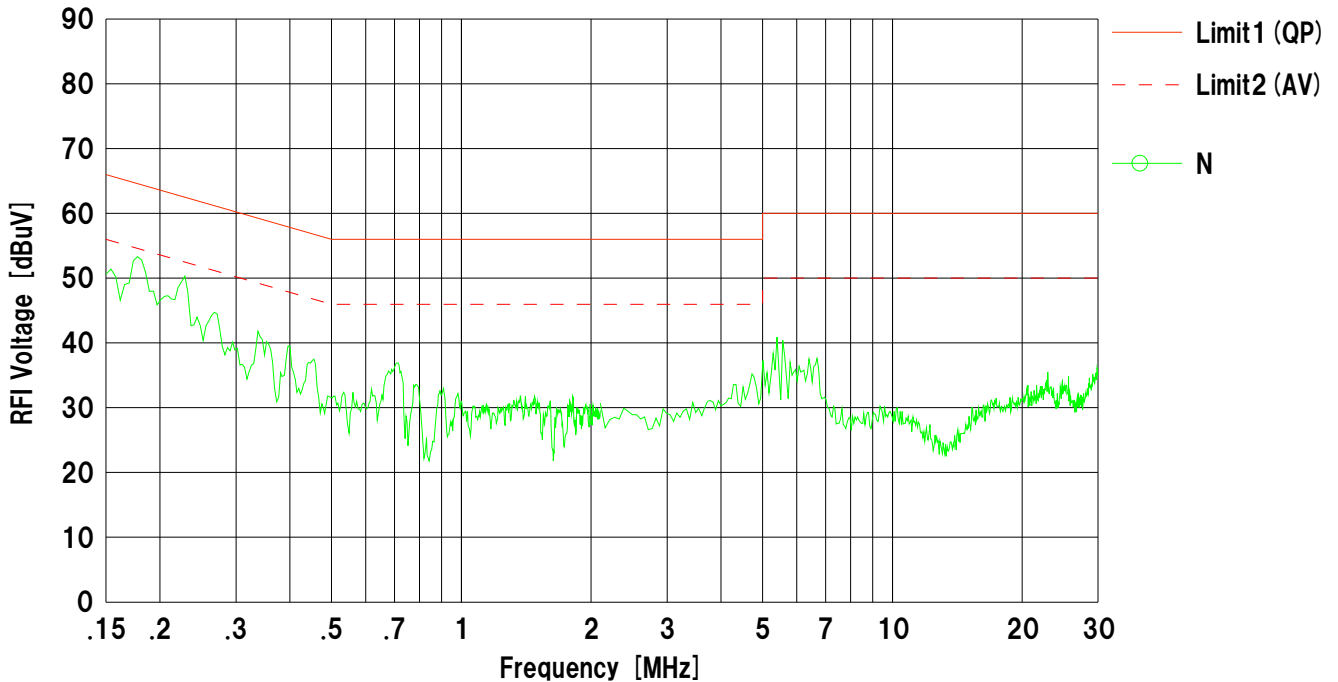
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11b Tx 2462MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

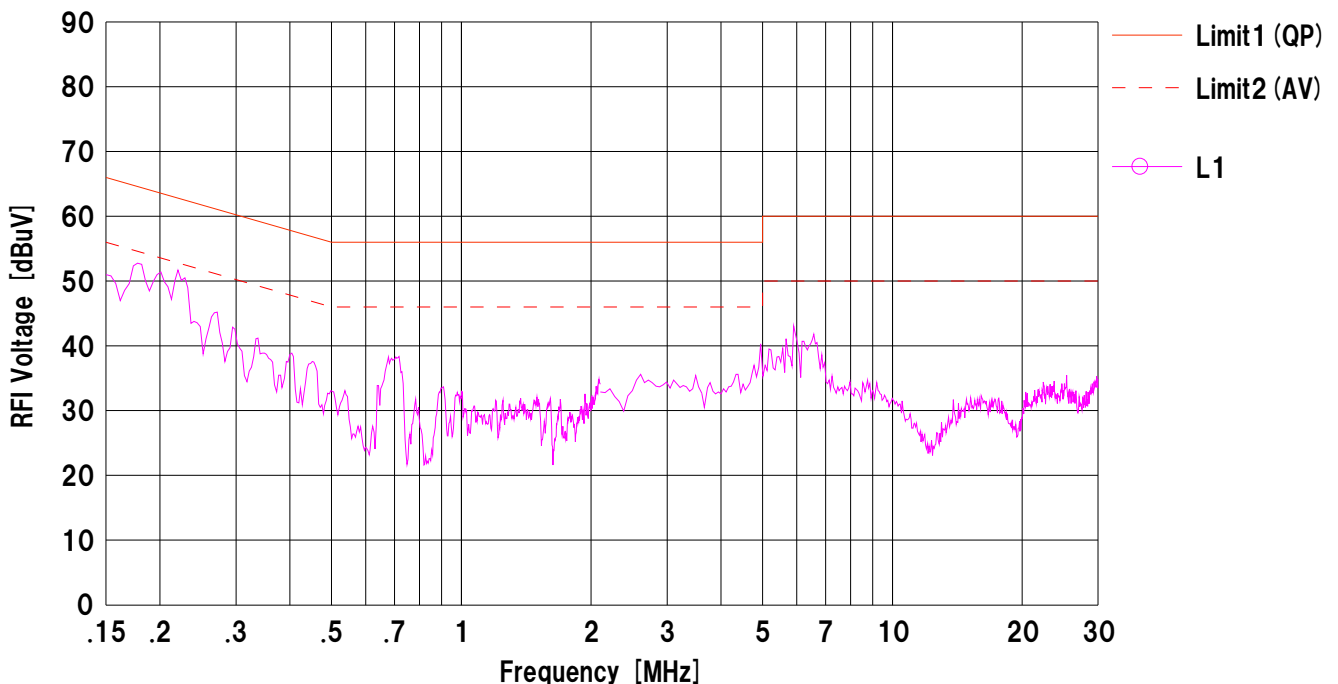
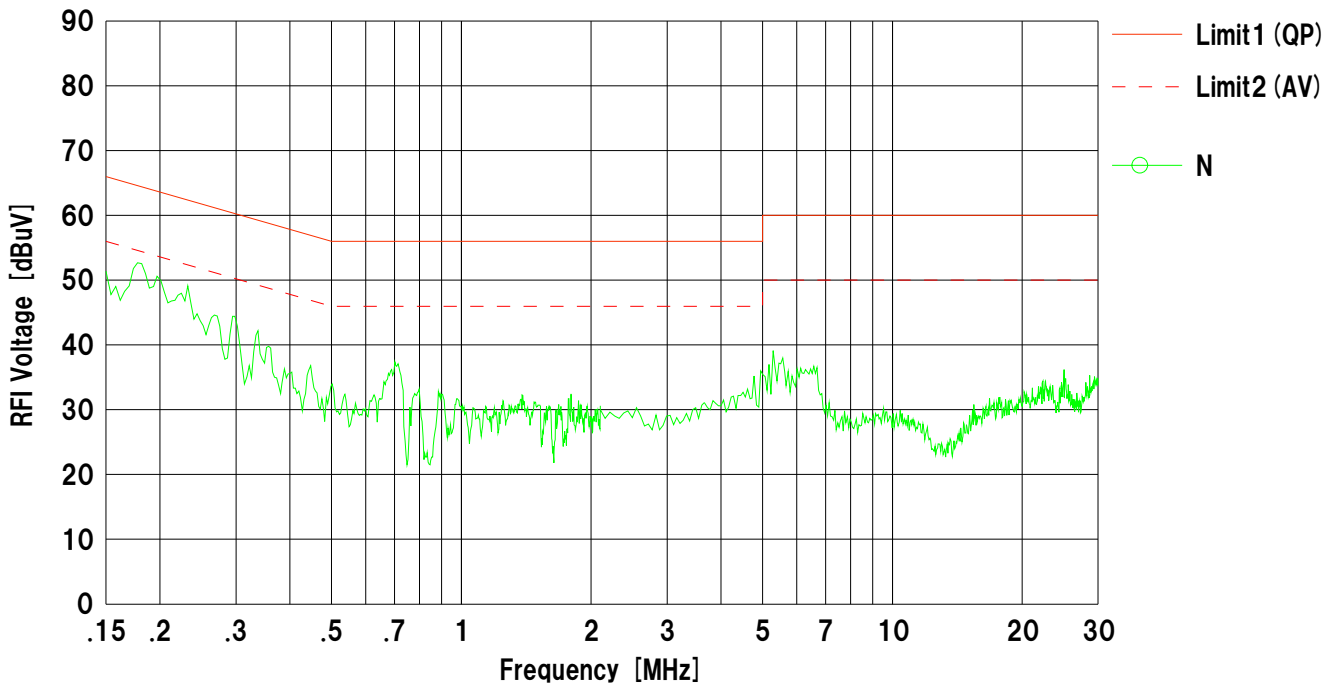
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11g Tx 2412MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

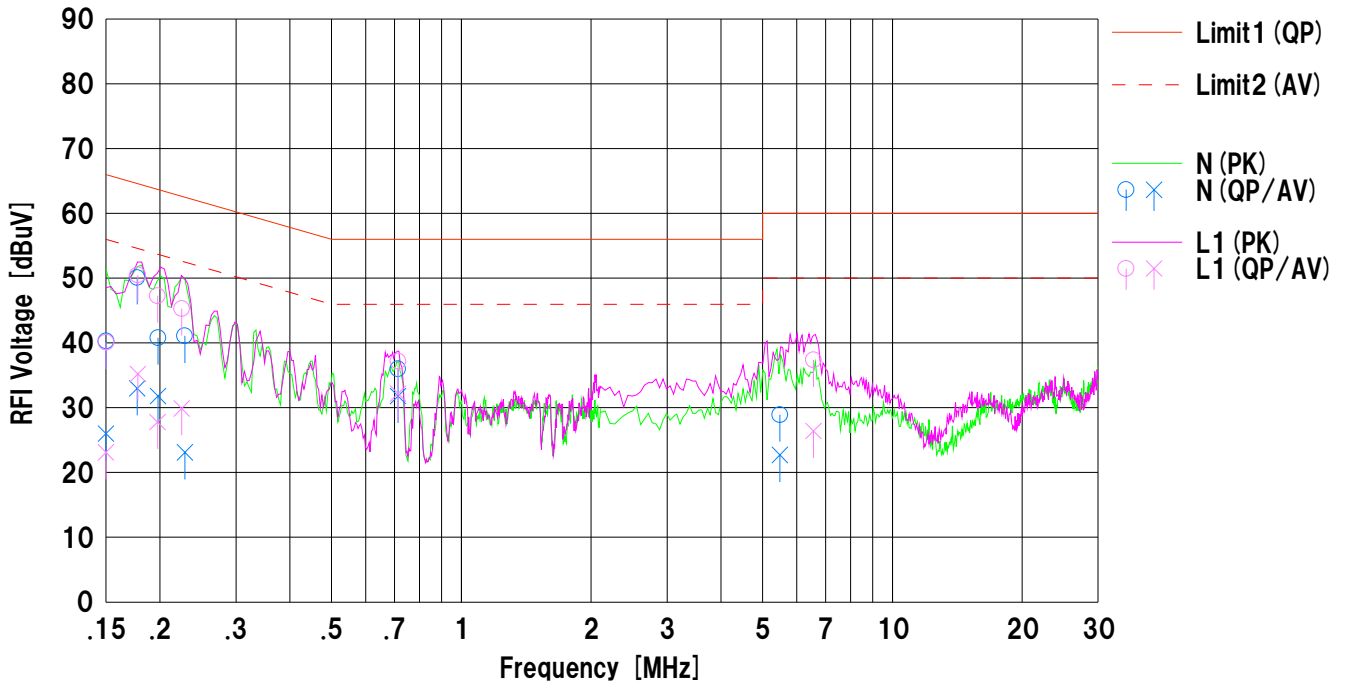
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11g Tx 2437MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	27.7	13.4	12.6	40.3	26.0	66.0	56.0	25.7	30.0	N	
2	0.17697	37.5	20.4	12.6	50.1	33.0	64.6	54.6	14.5	21.6	N	
3	0.19794	28.2	19.2	12.6	40.8	31.8	63.7	53.7	22.9	21.9	N	
4	0.22822	28.5	10.5	12.6	41.1	23.1	62.5	52.5	21.4	29.4	N	
5	0.71263	23.4	19.2	12.6	36.0	31.8	56.0	46.0	20.0	14.2	N	
6	5.48096	16.0	9.8	12.9	28.9	22.7	60.0	50.0	31.1	27.3	N	
7	0.15000	27.5	10.5	12.6	40.1	23.1	66.0	56.0	25.9	32.9	L1	
8	0.17750	37.9	22.6	12.6	50.5	35.2	64.6	54.6	14.1	19.4	L1	
9	0.19737	34.7	15.2	12.6	47.3	27.8	63.7	53.7	16.4	25.9	L1	
10	0.22467	32.7	17.3	12.6	45.3	29.9	62.6	52.6	17.3	22.7	L1	
11	0.71343	24.6	19.6	12.6	37.2	32.2	56.0	46.0	18.8	13.8	L1	
12	6.56313	24.5	13.5	12.9	37.4	26.4	60.0	50.0	22.6	23.6	L1	

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

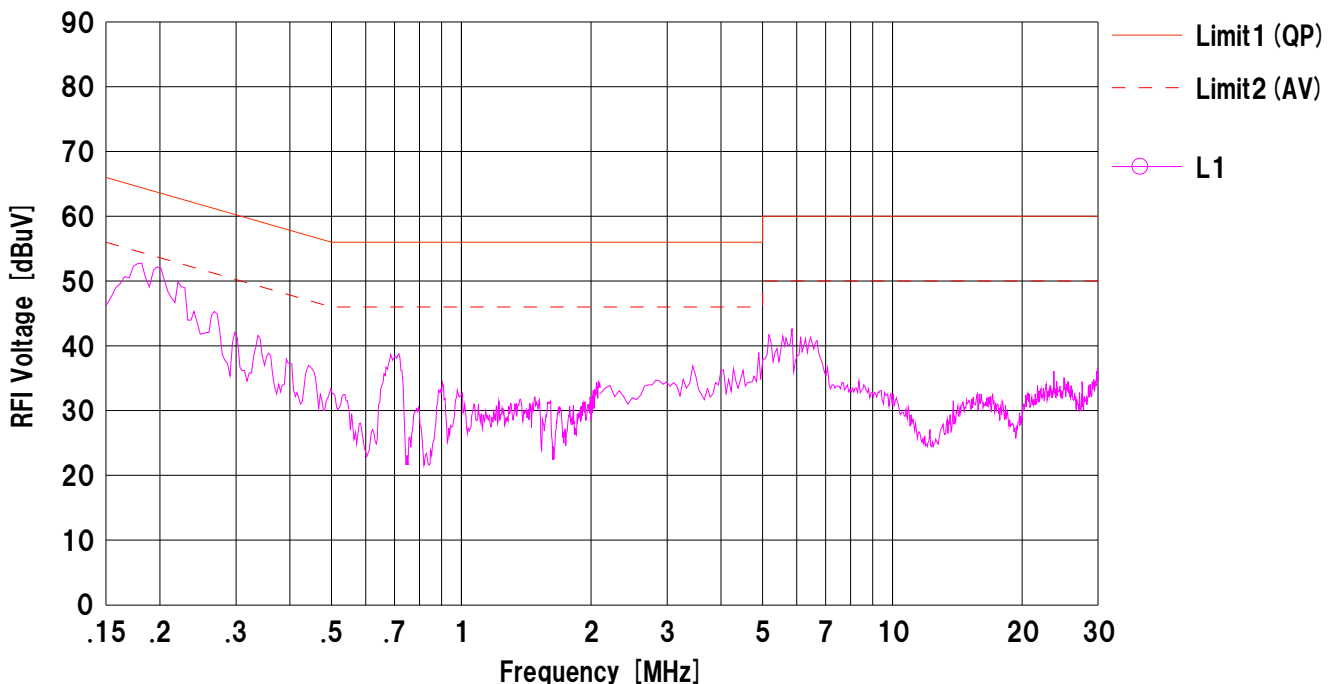
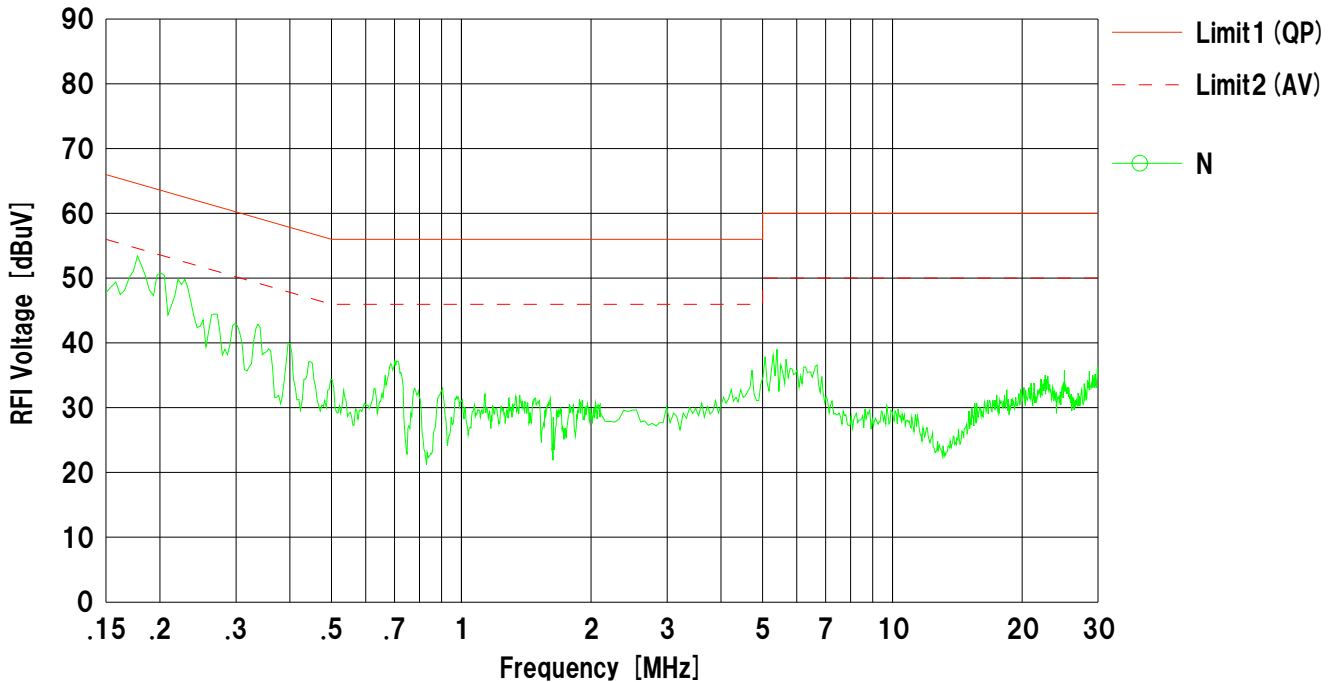
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11g Tx 2462MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

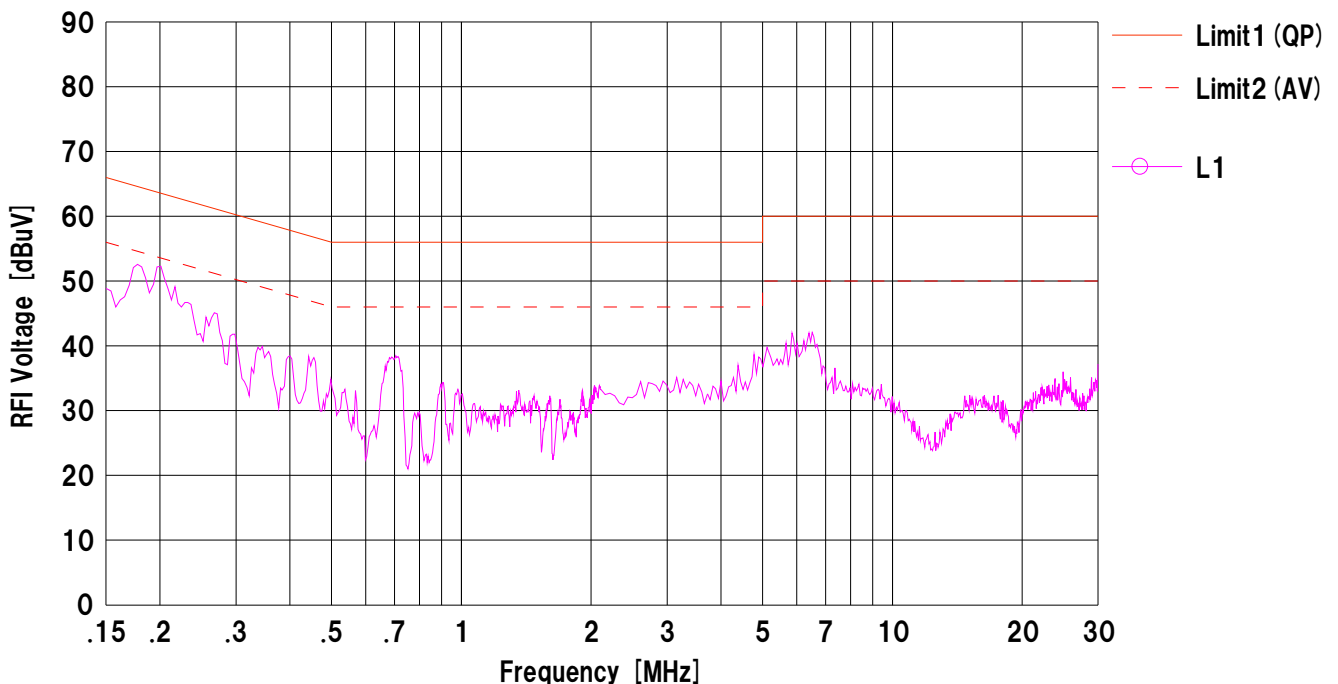
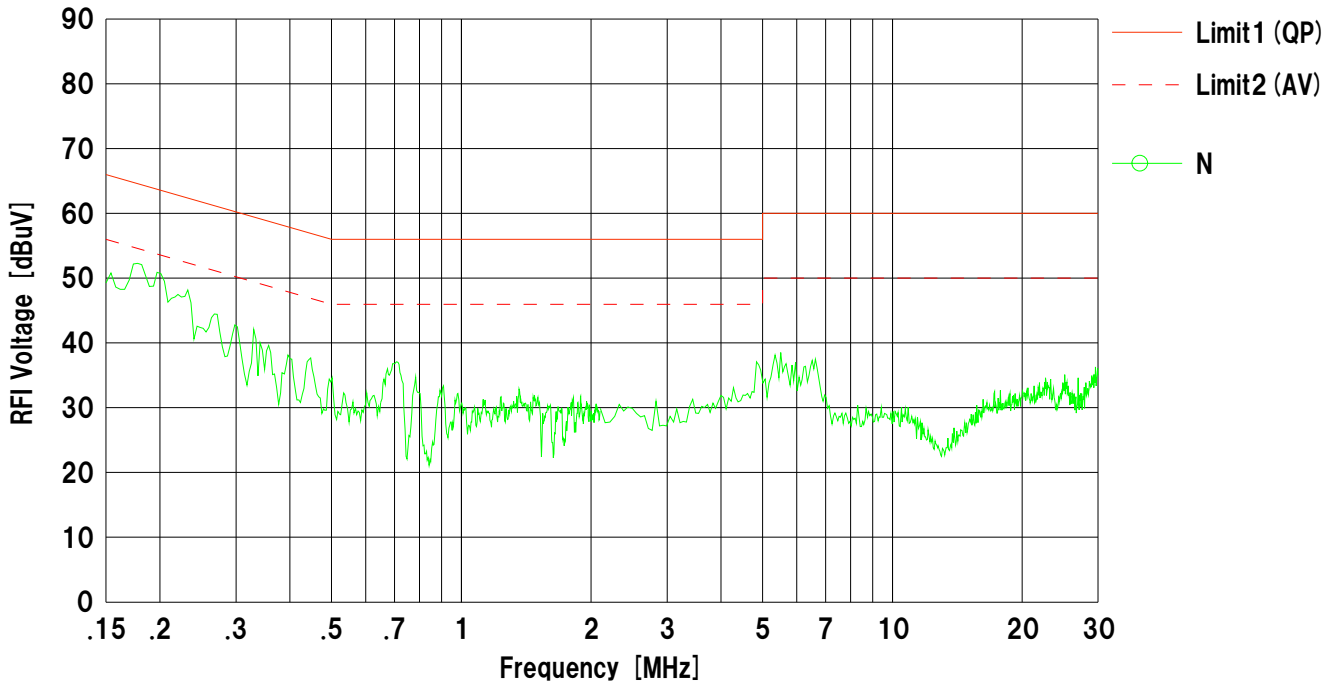
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-20 Tx 2412MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

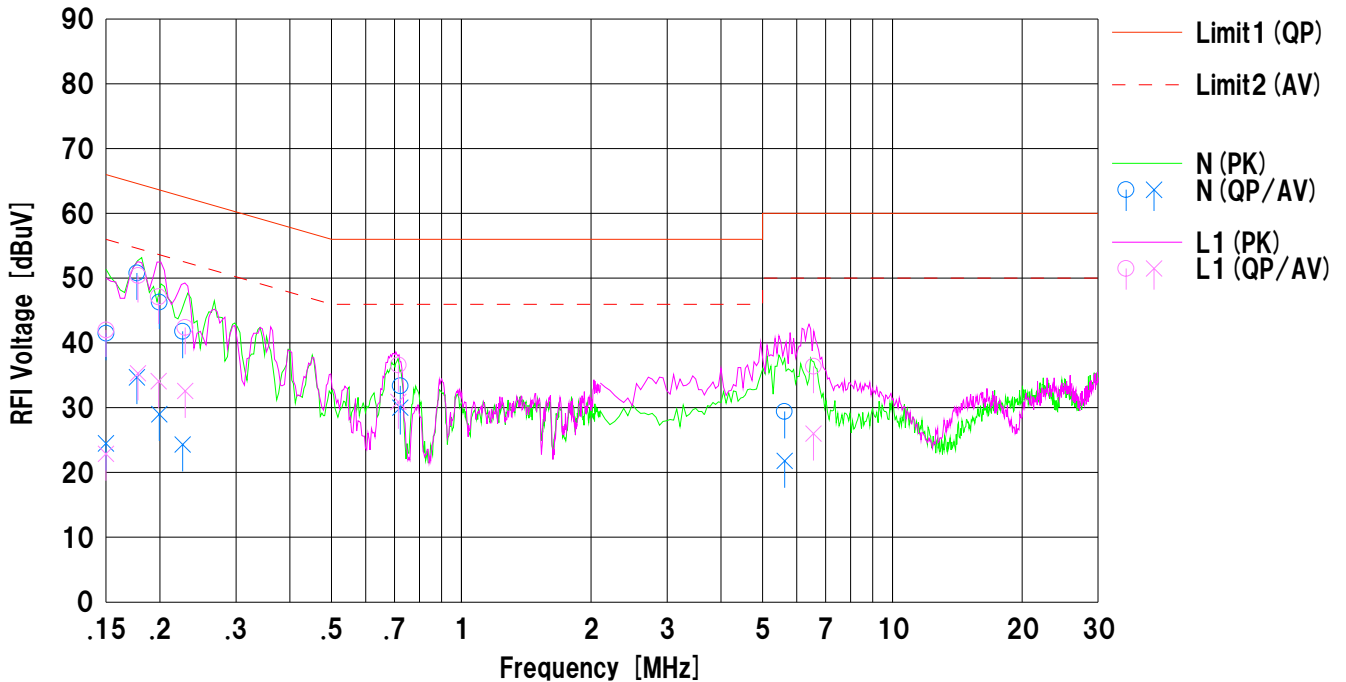
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-20 Tx 2437MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	28.9	11.9	12.6	41.5	24.5	66.0	56.0	24.5	31.5	N	
2	0.17665	38.2	22.1	12.6	50.8	34.7	64.6	54.6	13.8	19.9	N	
3	0.19924	33.7	16.4	12.6	46.3	29.0	63.6	53.6	17.3	24.6	N	
4	0.22575	29.2	11.7	12.6	41.8	24.3	62.6	52.6	20.8	28.3	N	
5	0.72144	20.8	17.4	12.6	33.4	30.0	56.0	46.0	22.6	16.0	N	
6	5.62124	16.5	8.9	12.9	29.4	21.8	60.0	50.0	30.6	28.2	N	
7	0.15000	29.4	10.3	12.6	42.0	22.9	66.0	56.0	24.0	33.1	L1	
8	0.17810	37.8	22.7	12.6	50.4	35.3	64.6	54.6	14.2	19.3	L1	
9	0.19842	34.5	21.5	12.6	47.1	34.1	63.7	53.7	16.6	19.6	L1	
10	0.22868	29.8	20.0	12.6	42.4	32.6	62.5	52.5	20.1	19.9	L1	
11	0.71433	24.0	18.3	12.6	36.6	30.9	56.0	46.0	19.4	15.1	L1	
12	6.56333	23.5	13.1	12.9	36.4	26.0	60.0	50.0	23.6	24.0	L1	

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

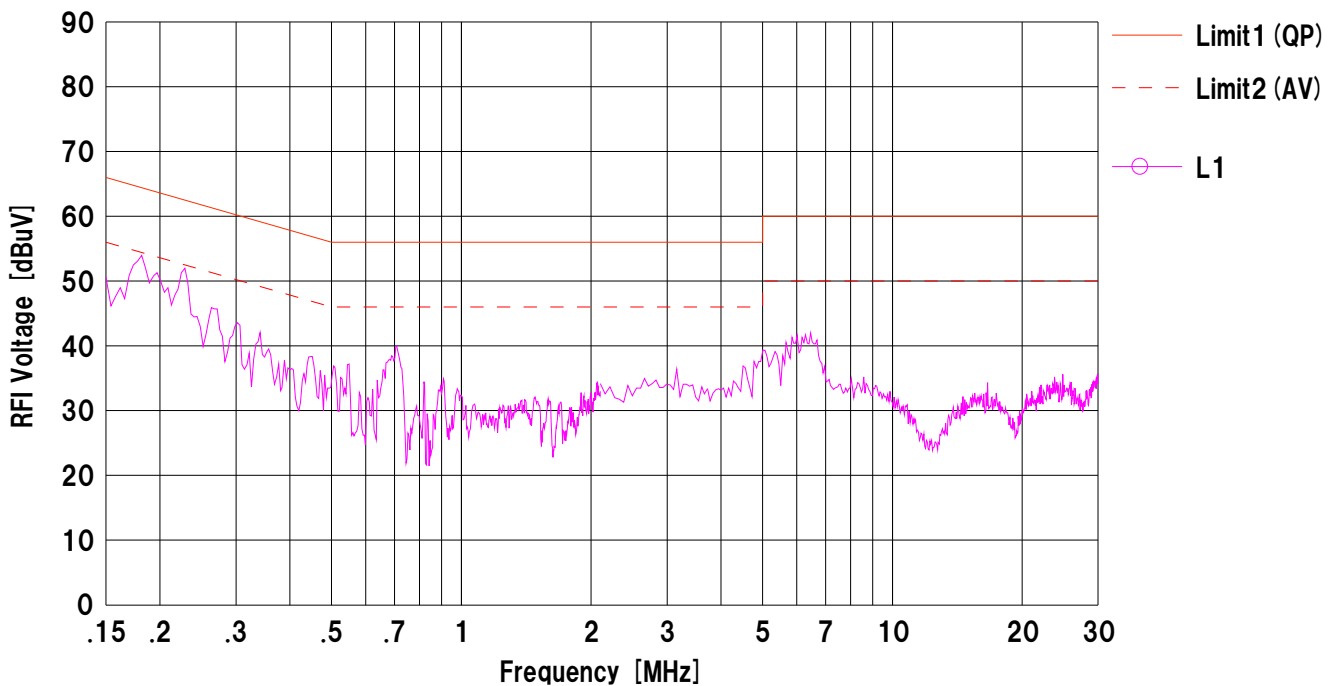
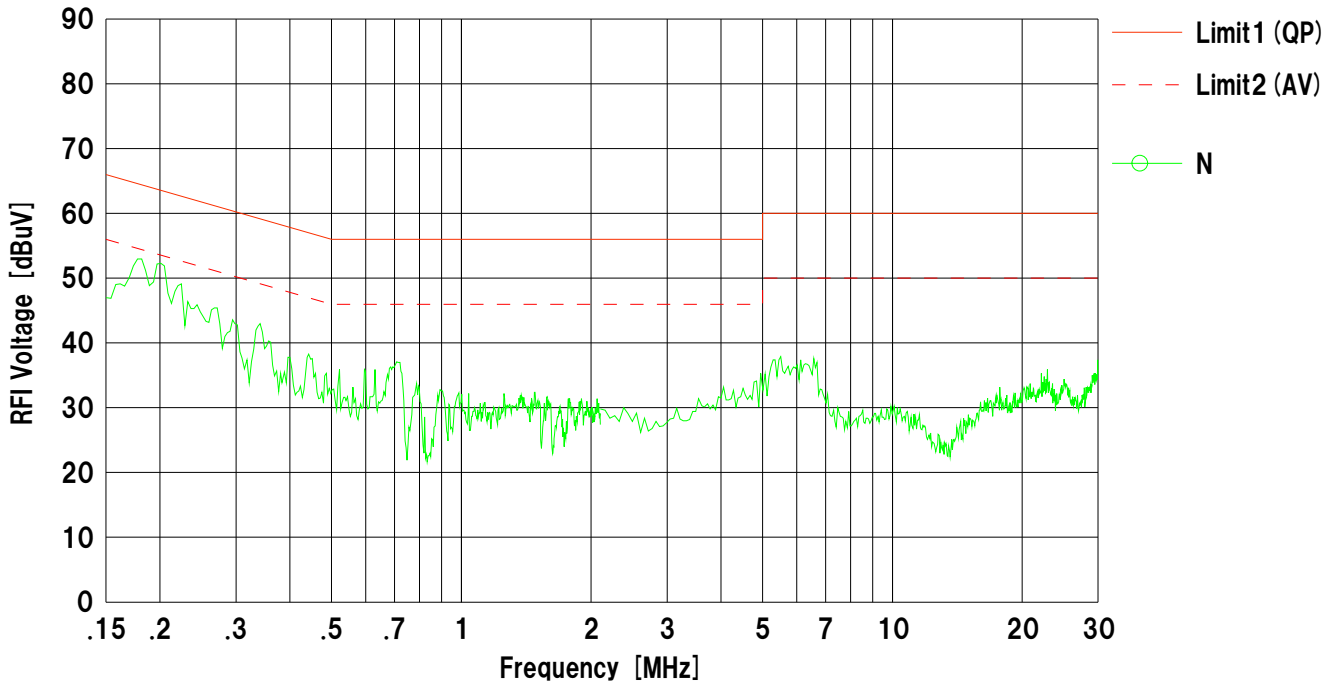
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-20 Tx 2462MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

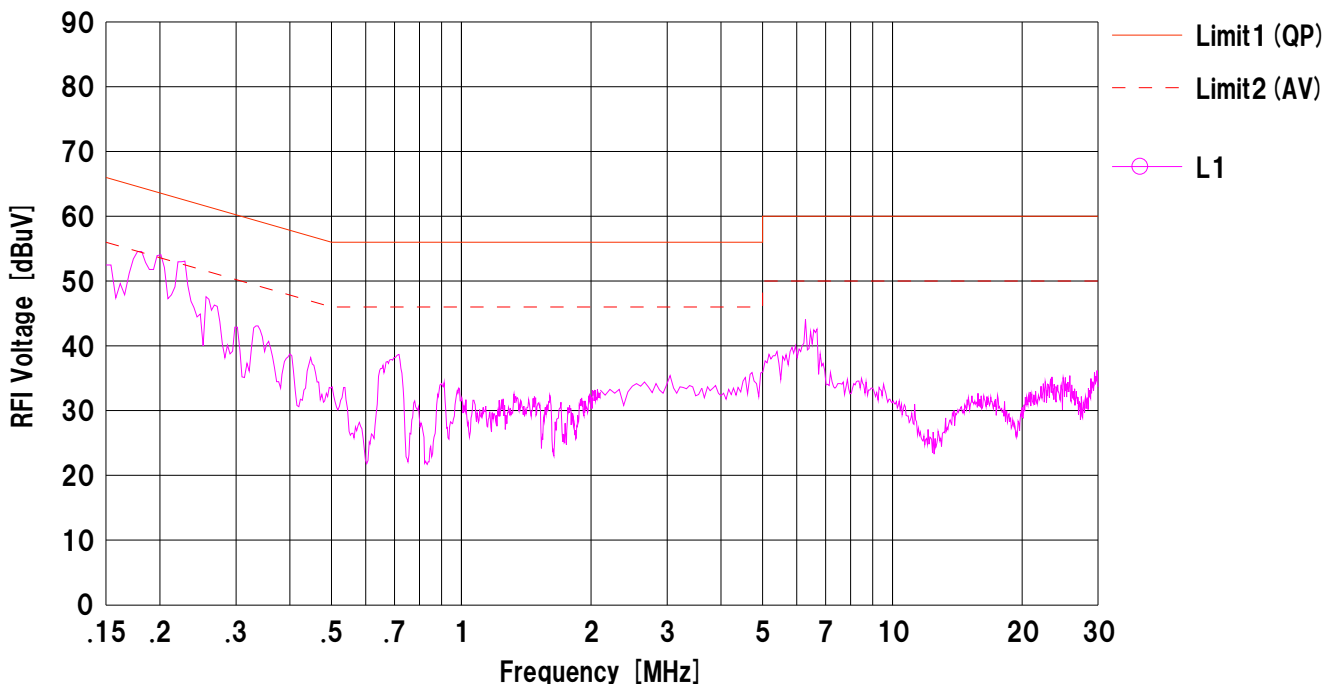
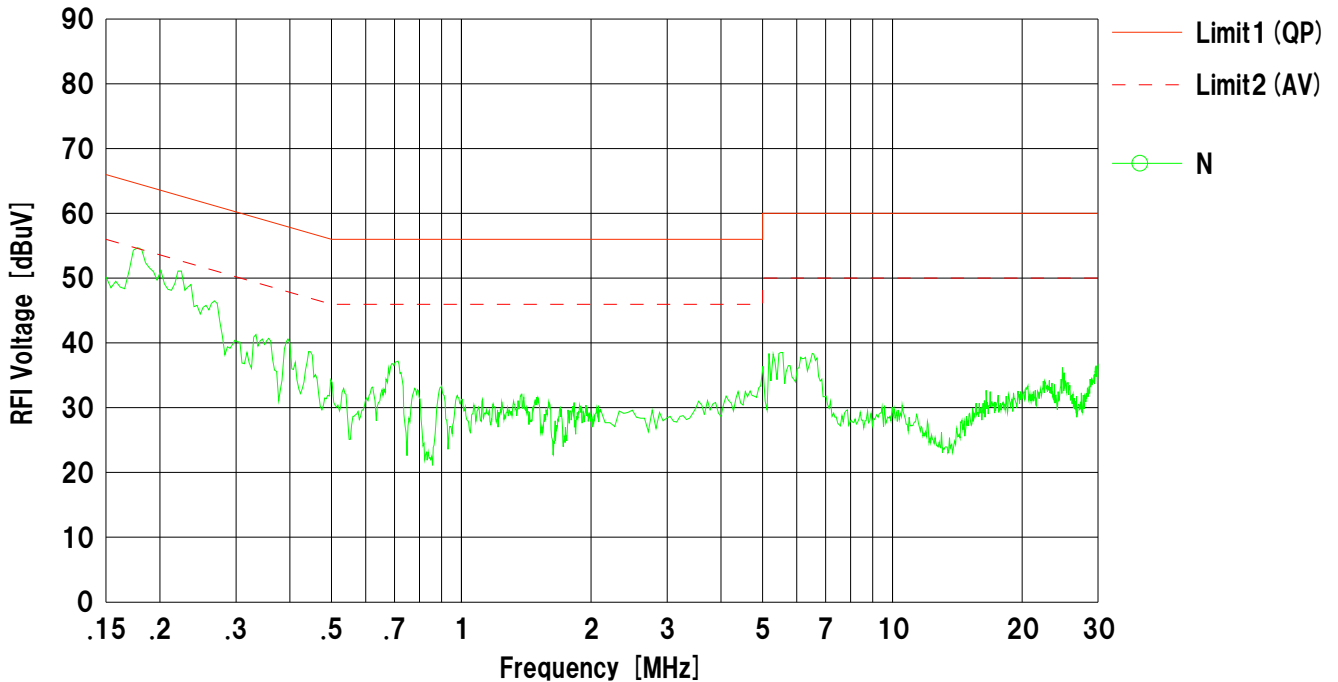
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-40 Tx 2422MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

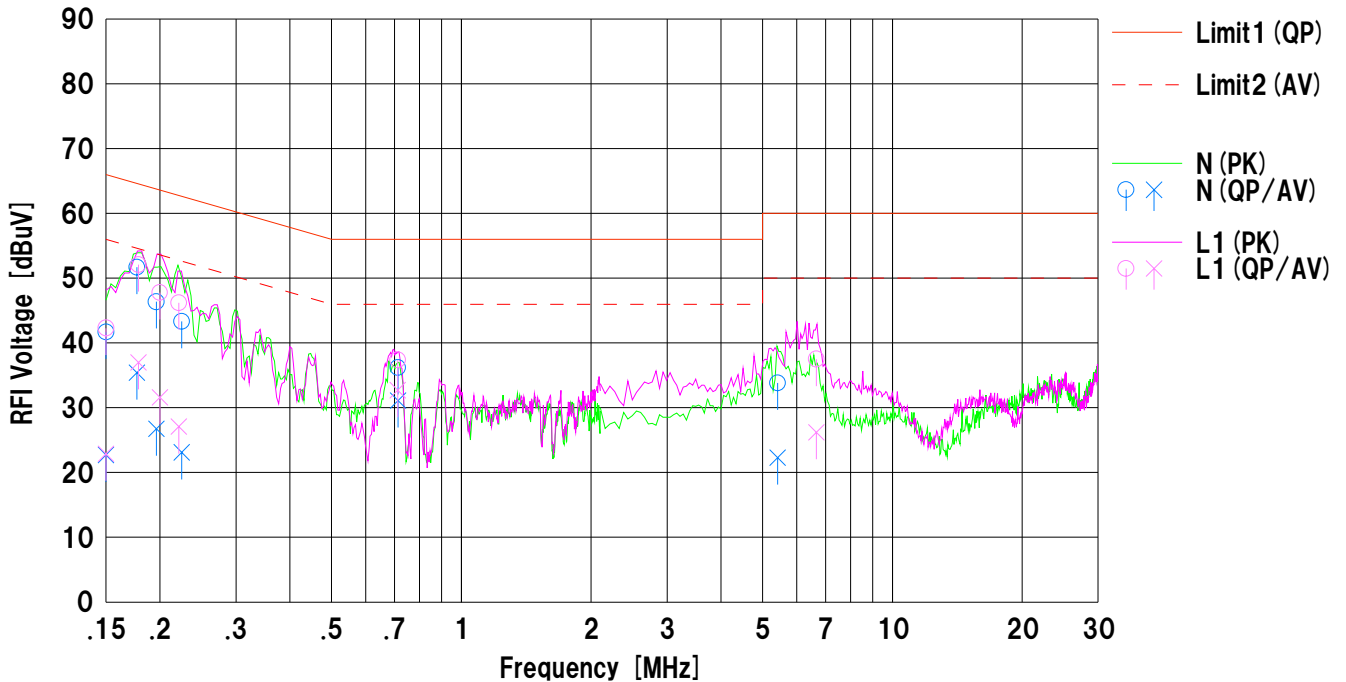
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-40 Tx 2437MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	29.1	10.1	12.6	41.7	22.7	66.0	56.0	24.3	33.3	N	
2	0.17673	39.1	22.8	12.6	51.7	35.4	64.6	54.6	12.9	19.2	N	
3	0.19611	33.8	14.1	12.6	46.4	26.7	63.8	53.8	17.4	27.1	N	
4	0.22467	30.7	10.5	12.6	43.3	23.1	62.6	52.6	19.3	29.5	N	
5	0.71272	23.6	18.5	12.6	36.2	31.1	56.0	46.0	19.8	14.9	N	
6	5.41683	20.9	9.4	12.9	33.8	22.3	60.0	50.0	26.2	27.7	N	
7	0.15000	29.7	10.3	12.6	42.3	22.9	66.0	56.0	23.7	33.1	L1	
8	0.17828	39.5	24.4	12.6	52.1	37.0	64.6	54.6	12.5	17.6	L1	
9	0.19968	35.2	19.0	12.6	47.8	31.6	63.6	53.6	15.8	22.0	L1	
10	0.22124	33.6	14.5	12.6	46.2	27.1	62.8	52.8	16.6	25.7	L1	
11	0.71222	24.8	20.1	12.6	37.4	32.7	56.0	46.0	18.6	13.3	L1	
12	6.66333	24.6	13.3	12.9	37.5	26.2	60.0	50.0	22.5	23.8	L1	

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2010/05/01

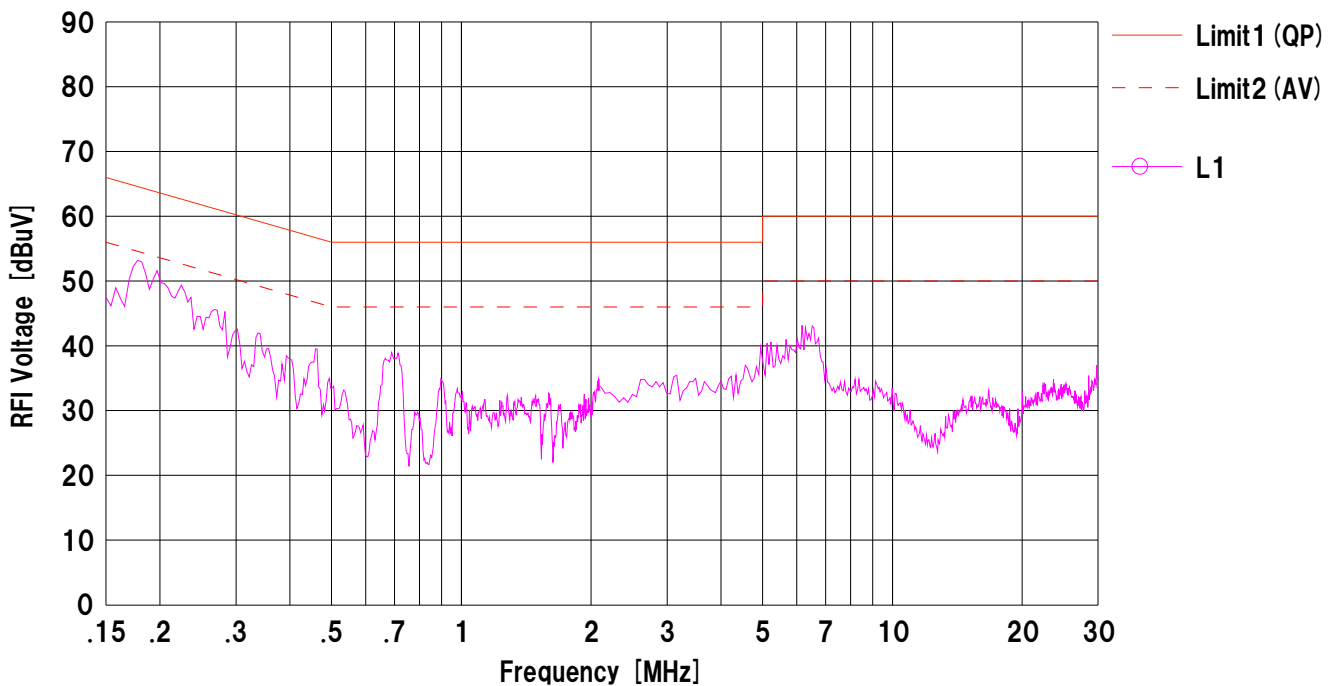
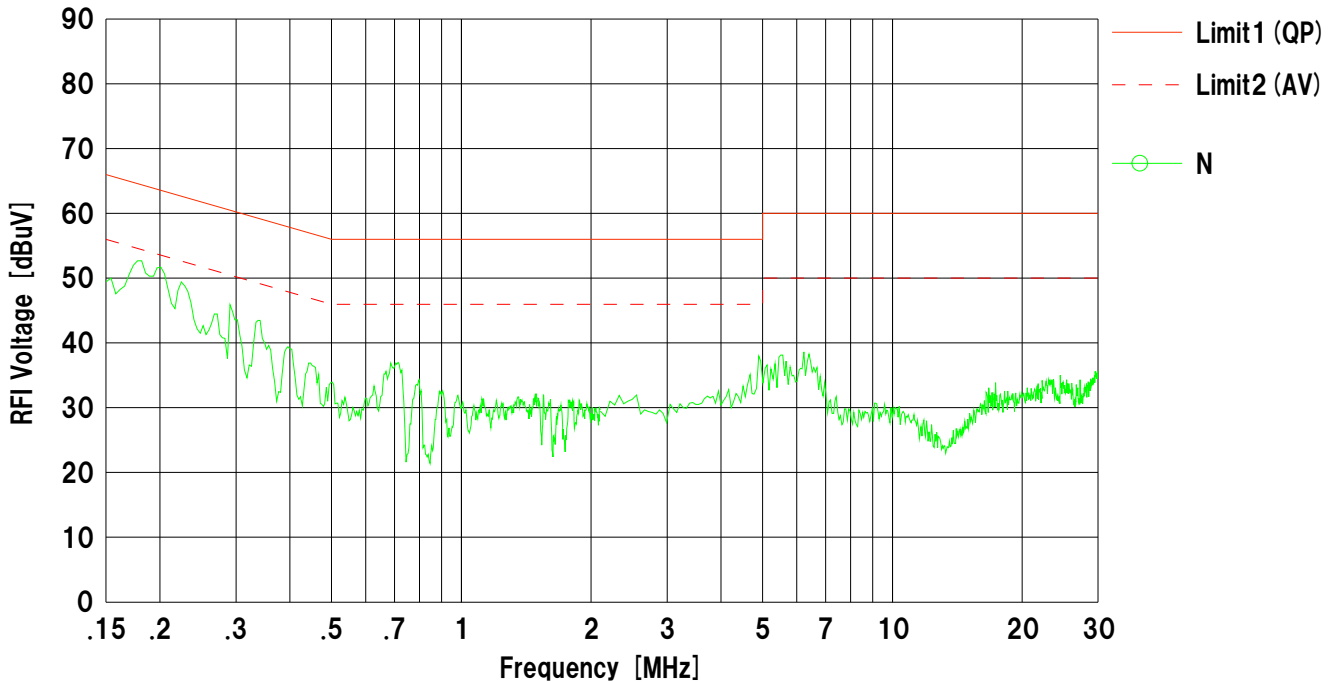
Company : CANON INC.
Kind of EUT : Wireless LAN Module
Model No. : BM70432
Serial No. : 14

Mode : 11n-40 Tx 2452MHz
Report No. : 30IE0003-SH-03-A
Power : AC120V/60Hz
Temp./Humi. : 21deg.C/40%

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Tatsuya Arai



6dB Bandwidth

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date 2010/4/27
Temperature / Humidity 23deg.C. , 42%
Engineer Akio Hayashi
Mode Tx,

11b

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	9.540	>500
2437	9.544	>500
2462	9.542	>500

11g

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	16.602	>500
2437	16.584	>500
2462	16.595	>500

11n-20

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2412	17.859	>500
2437	17.851	>500
2462	17.851	>500

11n-40

Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
2422	36.597	>500
2437	36.597	>500
2452	36.596	>500

UL Japan, Inc.

Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

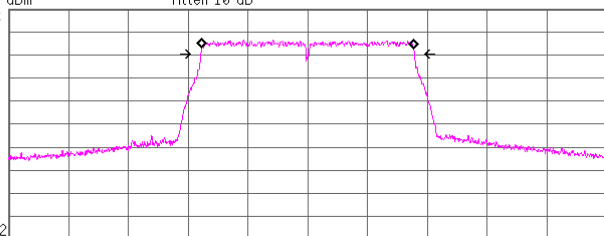
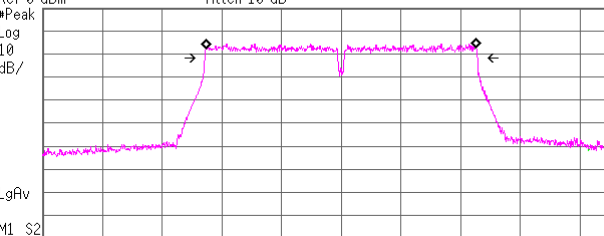
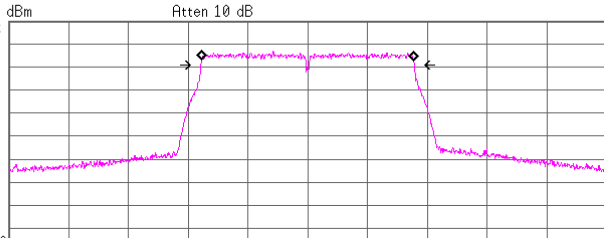
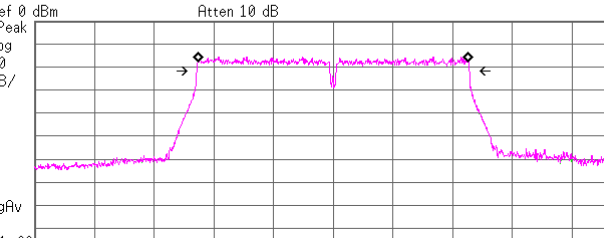
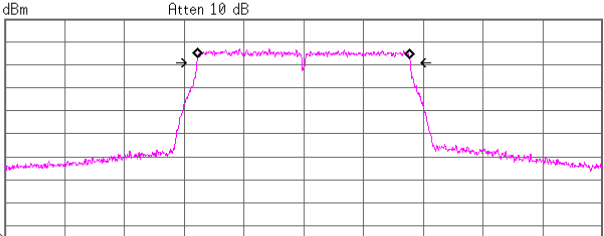
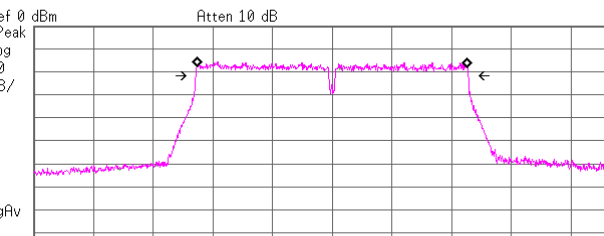
6dB Bandwidth

11b Tx, 2412MHz	11g Tx, 2412MHz
Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.412 000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (1201 pts) Span 30 MHz Occupied Bandwidth 13.3678 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -16.641 kHz x dB Bandwidth 9.540 MHz	Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.412 00 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (1201 pts) Span 50 MHz Occupied Bandwidth 16.4760 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -11.594 kHz x dB Bandwidth 16.602 MHz
Tx, 2437MHz	Tx, 2437MHz
Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.437 000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (1201 pts) Span 30 MHz Occupied Bandwidth 13.3725 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -30.825 kHz x dB Bandwidth 9.544 MHz	Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.437 00 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (1201 pts) Span 50 MHz Occupied Bandwidth 16.4724 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -11.882 kHz x dB Bandwidth 16.584 MHz
Tx, 2462MHz	Tx, 2462MHz
Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.462 000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.88 ms (1201 pts) Span 30 MHz Occupied Bandwidth 13.3733 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -40.167 kHz x dB Bandwidth 9.542 MHz	Agilent R T Ref 0 dBm #Peak Log 10 dB/ LgAv Atten 10 dB M1 S2 Center 2.462 00 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (1201 pts) Span 50 MHz Occupied Bandwidth 16.4776 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -15.417 kHz x dB Bandwidth 16.595 MHz

UL Japan, Inc.
Shonan EMC Lab.

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

6dB Bandwidth

11n-20MHz Tx, 2412MHz	11n-40MHz Tx, 2422MHz
Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.412 00 GHz *Res BW 100 kHz Span 50 MHz *VBW 300 kHz Sweep 4.8 ms (1201 pts) Occupied Bandwidth 17.6871 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 9.551 kHz x dB Bandwidth 17.859 MHz	Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.422 00 GHz *Res BW 100 kHz Span 80 MHz *VBW 300 kHz Sweep 7.68 ms (1201 pts) Occupied Bandwidth 36.2514 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 13.509 kHz x dB Bandwidth 36.597 MHz
Tx, 2437MHz	Tx, 2437MHz
Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.437 00 GHz *Res BW 100 kHz Span 50 MHz *VBW 300 kHz Sweep 4.8 ms (1201 pts) Occupied Bandwidth 17.6891 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 6.662 kHz x dB Bandwidth 17.851 MHz	Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.437 00 GHz *Res BW 100 kHz Span 80 MHz *VBW 300 kHz Sweep 7.68 ms (1201 pts) Occupied Bandwidth 36.2558 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 8.426 kHz x dB Bandwidth 36.597 MHz
Tx, 2462MHz	Tx, 2452MHz
Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.462 00 GHz *Res BW 100 kHz Span 50 MHz *VBW 300 kHz Sweep 4.8 ms (1201 pts) Occupied Bandwidth 17.6887 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -419.432 Hz x dB Bandwidth 17.851 MHz	Agilent R T Ref 0 dBm *Peak Log 10 dB/ Atten 10 dB  LgAv M1 S2 Center 2.452 00 GHz *Res BW 100 kHz Span 80 MHz *VBW 300 kHz Sweep 7.68 ms (1201 pts) Occupied Bandwidth 36.2551 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 433.889 Hz x dB Bandwidth 36.596 MHz

UL Japan, Inc.
Shonan EMC Lab.

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

Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date 2010/4/27
Temperature / Humidity 22deg.C. , 42%
Engineer Akio Hayashi
Mode Tx,
 11b,

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	4.25	0.77	9.95	14.97	31.39	30.00	1000	15.03
Mid	2437.0	4.14	0.74	9.95	14.83	30.42	30.00	1000	15.17
High	2462.0	4.24	0.73	9.95	14.92	31.07	30.00	1000	15.08

Sample Calculation:

Result = Reading + Cable Loss + Atten. Loss

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

[Pre check]

Data Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
1	2412.0	10.40	0.77	0.00	11.17	13.09	30.00	1000	18.83
2	2412.0	10.10	0.77	0.00	10.87	12.22	30.00	1000	19.13
5.5	2412.0	13.50	0.77	0.00	14.27	26.73	30.00	1000	15.73
11	2412.0	14.20	0.77	0.00	14.97	31.41	30.00	1000	15.03

UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date 2010/4/27
 Temperature / Humidity 22deg.C. , 42%
 Engineer Akio Hayashi
 Mode Tx,
 11g,

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	11.81	0.77	9.95	22.53	178.97	30.00	1000	7.47
Mid	2437.0	11.61	0.74	9.95	22.30	169.89	30.00	1000	7.70
High	2462.0	11.83	0.73	9.95	22.51	178.40	30.00	1000	7.49

Sample Calculation:

Result = Reading + Cable Loss + Atten. Loss

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

[Pre check]

Data Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
6	2412.0	20.57	0.77	0.00	21.34	136.14	30.00	1000	8.66
9	2412.0	20.96	0.77	0.00	21.73	148.94	30.00	1000	8.27
12	2412.0	20.63	0.77	0.00	21.40	138.04	30.00	1000	8.60
18	2412.0	19.86	0.77	0.00	20.63	115.61	30.00	1000	9.37
24	2412.0	21.02	0.77	0.00	21.79	151.01	30.00	1000	8.21
36	2412.0	20.35	0.77	0.00	21.12	129.42	30.00	1000	8.88
48	2412.0	20.32	0.77	0.00	21.09	128.53	30.00	1000	8.91
54	2412.0	20.68	0.77	0.00	21.45	139.64	30.00	1000	8.55

UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date 2010/4/27
 Temperature / Humidity 22deg.C. , 42%
 Engineer Akio Hayashi
 Mode Tx,
 11n-20MHz,

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	10.57	0.77	9.95	21.29	134.52	30.00	1000	8.71
Mid	2437.0	10.62	0.74	9.95	21.31	135.26	30.00	1000	8.69
High	2462.0	10.25	0.73	9.95	20.93	123.99	30.00	1000	9.07

Sample Calculation:

Result = Reading + Cable Loss + Atten. Loss

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

[Pre check]

Data Rate	Freq.	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
MCS0	2412.0	19.73	0.77	0.00	20.50	112.20	30.00	1000	9.50
MCS1	2412.0	19.80	0.77	0.00	20.57	114.02	30.00	1000	9.43
MCS2	2412.0	20.48	0.77	0.00	21.25	133.35	30.00	1000	8.75
MCS3	2412.0	20.40	0.77	0.00	21.17	130.92	30.00	1000	8.83
MCS4	2412.0	19.78	0.77	0.00	20.55	113.50	30.00	1000	9.45
MCS5	2412.0	20.44	0.77	0.00	21.21	132.13	30.00	1000	8.79
MCS6	2412.0	20.22	0.77	0.00	20.99	125.60	30.00	1000	9.01
MCS7	2412.0	20.20	0.77	0.00	20.97	125.03	30.00	1000	9.03

UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Peak Output Power (Conducted)

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
 Date 2010/4/27
 Temperature / Humidity 22deg.C. , 42%
 Engineer Akio Hayashi
 Mode Tx,
 11n-40MHz,

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2422.0	10.85	0.77	9.95	21.57	143.48	30.00	1000	8.43
Mid	2437.0	10.59	0.74	9.95	21.28	134.33	30.00	1000	8.72
High	2452.0	10.40	0.73	9.95	21.08	128.35	30.00	1000	8.92

Sample Calculation:

Result = Reading + Cable Loss + Atten. Loss

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

[Pre check]

Data Rate [Mbps]	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
MCS0	2422.0	19.50	0.77	0.00	20.27	106.41	30.00	1000	9.73
MCS1	2422.0	19.20	0.77	0.00	19.97	99.31	30.00	1000	10.03
MCS2	2422.0	20.00	0.77	0.00	20.77	119.40	30.00	1000	9.23
MCS3	2422.0	20.60	0.77	0.00	21.37	137.09	30.00	1000	8.63
MCS4	2422.0	20.10	0.77	0.00	20.87	122.18	30.00	1000	9.13
MCS5	2422.0	20.30	0.77	0.00	21.07	127.94	30.00	1000	8.93
MCS6	2422.0	19.70	0.77	0.00	20.47	111.43	30.00	1000	9.53
MCS7	2422.0	19.60	0.77	0.00	20.37	108.89	30.00	1000	9.63

UL Japan, Inc.
Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2412 MHz
 11b

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	26.2	15.4	7.6	32.0	17.2	43.5	26.3	199	335	
Hori.	640.012	QP	29.8	19.5	9.8	31.9	27.2	46.0	18.8	147	167	
Hori.	800.006	QP	32.2	20.7	10.4	31.6	31.7	46.0	14.3	100	144	
Hori.	880.009	QP	27.5	21.6	10.6	31.1	28.6	46.0	17.4	100	147	
Hori.	2390.000	PK	53.0	27.6	13.3	40.2	53.7	74.0	20.3	116	100	
Hori.	2400.000	PK	61.4	27.6	13.4	40.2	62.2	-	-	114	149	See 20dBc Data Sheet
Hori.	4824.000	PK	58.7	30.7	5.5	40.1	54.8	74.0	19.2	138	65	
Hori.	7236.000	PK	47.3	36.0	6.7	38.3	51.7	74.0	22.3	100	165	
Hori.	9648.000	PK	46.6	38.4	7.6	37.4	55.2	-	-	150	40	See 20dBc Data Sheet
Hori.	12060.000	PK	44.5	39.7	8.9	38.3	54.8	74.0	19.2	143	0	
Hori.	19296.000	PK	52.2	40.2	-2.7	44.0	45.7	74.0	28.3	100	127	
Hori.	2390.000	AV	40.0	27.6	13.3	40.2	40.7	54.0	13.3	116	100	
Hori.	2400.000	AV	49.6	27.6	13.4	40.2	50.4	-	-	114	149	See 20dBc Data Sheet
Hori.	4824.000	AV	47.6	30.7	5.5	40.1	43.7	54.0	10.3	138	65	
Hori.	7236.000	AV	34.5	36.0	6.7	38.3	38.9	54.0	15.1	100	165	
Hori.	9648.000	AV	44.4	38.4	7.6	37.4	53.0	-	-	150	40	See 20dBc Data Sheet
Hori.	12060.000	AV	33.2	39.7	8.9	38.3	43.5	54.0	10.5	143	0	
Hori.	19296.000	AV	49.3	40.2	-2.7	44.0	42.8	54.0	11.2	100	127	
Vert.	160.009	QP	24.3	15.4	7.6	32.0	15.3	43.5	28.2	169	193	
Vert.	640.012	QP	27.3	19.5	9.8	31.9	24.7	46.0	21.3	131	160	
Vert.	800.006	QP	27.8	20.7	10.4	31.6	27.3	46.0	18.7	100	268	
Vert.	2390.000	PK	48.6	27.6	13.3	40.2	49.3	74.0	24.7	100	157	
Vert.	2400.000	PK	54.6	27.6	13.4	40.2	55.4	-	-	114	149	See 20dBc Data Sheet
Vert.	4824.000	PK	57.2	30.7	5.5	40.1	53.3	74.0	20.7	104	75	
Vert.	7236.000	PK	47.2	36.0	6.7	38.3	51.6	74.0	22.4	100	0	
Vert.	9648.000	PK	47.7	38.4	7.6	37.4	56.3	-	-	115	116	See 20dBc Data Sheet
Vert.	12060.000	PK	45.7	39.7	8.9	38.3	56.0	74.0	18.0	100	0	
Vert.	19296.000	PK	48.5	40.2	-2.7	44.0	42.0	74.0	32.0	100	40	
Vert.	2390.000	AV	35.3	27.6	13.3	40.2	36.0	54.0	18.0	100	157	
Vert.	2400.000	AV	42.3	27.6	13.4	40.2	43.1	-	-	114	149	See 20dBc Data Sheet
Vert.	4824.000	AV	45.7	30.7	5.5	40.1	41.8	54.0	12.2	104	75	
Vert.	7236.000	AV	34.5	36.0	6.7	38.3	38.9	54.0	15.1	100	0	
Vert.	9648.000	AV	38.7	38.4	7.6	37.4	47.3	-	-	115	116	See 20dBc Data Sheet
Vert.	12060.000	AV	33.0	39.7	8.9	38.3	43.3	54.0	10.7	100	0	
Vert.	19296.000	AV	43.6	40.2	-2.7	44.0	37.1	54.0	16.9	100	40	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place	UL Japan, Inc.	Shonan EMC Lab.	No.3 Semi Anechoic Chamber
Date	2010/4/28		2010/4/30
Temperature / Humidity	21deg.C. , 37%		24deg.C. , 38%
Engineer	Hikaru Shirasawa		Tatsuya Arai
Mode	Tx,	2412 MHz	
	11b		

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2412.000	PK	99.1	27.7	13.4	40.2	100.0	-	-	114	149	Carrier
Hori.	2400.000	PK	47.8	27.6	13.4	40.2	48.6	80.0	31.4	114	149	
Hori.	9648.000	PK	45.3	38.4	7.6	37.4	53.9	80.0	26.1	150	40	
Vert.	2412.000	PK	94.1	27.7	13.4	40.2	95.0	-	-	100	166	Carrier
Vert.	2400.000	PK	43.7	27.6	13.4	40.2	44.5	75.0	30.5	100	169	
Vert.	9648.000	PK	42.1	38.4	7.6	37.4	50.7	75.0	24.3	115	116	

$$\text{Result} = \text{Reading} + \text{Ant Factor} + \text{Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz))} - \text{Gain(Amprifier)}$$

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2437 MHz
 11b

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.007	QP	25.7	15.4	7.6	32.0	16.7	43.5	26.8	192	330	
Hori.	640.016	QP	30.2	19.5	9.8	31.9	27.6	46.0	18.4	156	167	
Hori.	800.004	QP	32.7	20.7	10.4	31.6	32.2	46.0	13.8	100	146	
Hori.	880.007	QP	27.4	21.6	10.6	31.1	28.5	46.0	17.5	100	150	
Hori.	4874.000	PK	58.9	30.8	5.5	40.0	55.2	74.0	18.8	147	86	
Hori.	7311.000	PK	46.5	36.0	6.8	38.5	50.8	74.0	23.2	100	133	
Hori.	9748.000	PK	51.0	38.4	7.6	37.4	59.6	-	-	149	40	See 20dBc Data Sheet
Hori.	12185.000	PK	44.5	39.7	9.0	38.2	55.0	74.0	19.0	100	5	
Hori.	19496.990	PK	51.4	40.2	-2.6	43.9	45.1	74.0	28.9	100	57	
Hori.	4874.000	AV	47.3	30.8	5.5	40.0	43.6	54.0	10.4	147	86	
Hori.	7311.000	AV	34.2	36.0	6.8	38.5	38.5	54.0	15.5	100	133	
Hori.	9748.000	AV	46.8	38.4	7.6	37.4	55.4	-	-	149	40	See 20dBc Data Sheet
Hori.	12185.000	AV	32.2	39.7	9.0	38.2	42.7	54.0	11.3	100	5	
Hori.	19496.990	AV	48.0	40.2	-2.6	43.9	41.7	54.0	12.3	100	57	
Vert.	160.007	QP	23.9	15.4	7.6	32.0	14.9	43.5	28.6	173	197	
Vert.	640.016	QP	27.7	19.5	9.8	31.9	25.1	46.0	20.9	130	162	
Vert.	800.004	QP	28.7	20.7	10.4	31.6	28.2	46.0	17.8	100	268	
Vert.	4874.000	PK	58.3	30.8	5.5	40.0	54.6	74.0	19.4	100	0	
Vert.	7311.000	PK	46.9	36.0	6.8	38.5	51.2	74.0	22.8	155	147	
Vert.	9748.000	PK	47.9	38.4	7.6	37.4	56.5	-	-	114	119	See 20dBc Data Sheet
Vert.	12185.000	PK	44.2	39.7	9.0	38.2	54.7	74.0	19.3	100	97	
Vert.	19496.990	PK	48.6	40.2	-2.6	43.9	42.3	74.0	31.7	100	109	
Vert.	4874.000	AV	45.8	30.8	5.5	40.0	42.1	54.0	11.9	100	0	
Vert.	7311.000	AV	34.1	36.0	6.8	38.5	38.4	54.0	15.6	155	147	
Vert.	9748.000	AV	39.5	38.4	7.6	37.4	48.1	-	-	114	119	See 20dBc Data Sheet
Vert.	12185.000	AV	32.3	39.7	9	38.2	42.8	54	11.2	100	97	
Vert.	19496.990	AV	44	40.2	-2.6	43.9	37.7	54	16.3	100	109	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2437 MHz
 11b

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2437.000	PK	96.4	27.7	13.4	40.2	97.3	-	-	115	149	Carrier
Hori.	9748.000	PK	47.4	38.4	7.6	37.4	56.0	77.3	21.3	149	40	
Vert.	2437.000	PK	95.5	27.7	13.4	40.2	96.4	-	-	100	185	Carrier
Vert.	9748.000	PK	42.8	38.4	7.6	37.4	51.4	76.4	25.0	114	119	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2462 MHz
 11b

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.005	QP	26.8	15.4	7.6	32.0	17.8	43.5	25.7	198	335	
Hori.	640.014	QP	30.2	19.5	9.8	31.9	27.6	46.0	18.4	152	167	
Hori.	800.009	QP	32.6	20.7	10.4	31.6	32.1	46.0	13.9	100	144	
Hori.	880.009	QP	28.4	21.6	10.6	31.1	29.5	46.0	16.5	100	152	
Hori.	2483.500	PK	50.1	27.9	13.5	40.1	51.4	74.0	22.6	113	159	
Hori.	4924.000	PK	55.8	31.0	5.6	40.0	52.4	74.0	21.6	100	61	
Hori.	7386.000	PK	46.7	35.9	6.9	38.6	50.9	74.0	23.1	100	5	
Hori.	9848.000	PK	48.3	38.3	7.8	37.5	56.9	-	-	147	50	See 20dBc Data Sheet
Hori.	12310.000	PK	46.5	39.7	9.3	38.0	57.5	74.0	16.5	100	63	
Hori.	19696.000	PK	52.8	40.3	-2.6	43.8	46.7	74.0	27.3	100	116	
Hori.	2483.500	AV	38.0	27.9	13.5	40.1	39.3	54.0	14.7	113	159	
Hori.	4924.000	AV	43.7	31.0	5.6	40.0	40.3	54.0	13.7	100	61	
Hori.	7386.000	AV	34.4	35.9	6.9	38.6	38.6	54.0	15.4	100	5	
Hori.	9848.000	AV	42.7	38.3	7.8	37.5	51.3	-	-	147	50	See 20dBc Data Sheet
Hori.	12310.000	AV	32.1	39.7	9.3	38.0	43.1	54.0	10.9	100	63	
Hori.	19696.000	AV	50.3	40.3	-2.6	43.8	44.2	54.0	9.8	100	116	
Vert.	160.005	QP	24.9	15.4	7.6	32.0	15.9	43.5	27.6	176	199	
Vert.	640.014	QP	27.9	19.5	9.8	31.9	25.3	46.0	20.7	134	161	
Vert.	800.009	QP	28.8	20.7	10.4	31.6	28.3	46.0	17.7	100	268	
Vert.	2483.500	PK	50.0	27.9	13.5	40.1	51.3	74.0	22.7	100	185	
Vert.	4924.000	PK	57.7	31.0	5.6	40.0	54.3	74.0	19.7	100	93	
Vert.	7386.000	PK	48.2	35.9	6.9	38.6	52.4	74.0	21.6	100	75	
Vert.	9848.000	PK	47.8	38.3	7.8	37.5	56.4	-	-	156	117	See 20dBc Data Sheet
Vert.	12310.000	PK	46.9	39.7	9.3	38.0	57.9	74.0	16.1	100	68	
Vert.	19696.000	PK	49.8	40.3	-2.6	43.8	43.7	74.0	30.3	100	69	
Vert.	2483.500	AV	37.1	27.9	13.5	40.1	38.4	54.0	15.6	100	185	
Vert.	4924.000	AV	43.5	31.0	5.6	40.0	40.1	54.0	13.9	100	93	
Vert.	7386.000	AV	32.9	35.9	6.9	38.6	37.1	54.0	16.9	100	75	
Vert.	9848.000	AV	39.6	38.3	7.8	37.5	48.2	-	-	156	117	See 20dBc Data Sheet
Vert.	12310.000	AV	32.0	39.7	9.3	38.0	43.0	54.0	11.0	100	68	
Vert.	19696.000	AV	45.2	40.3	-2.6	43.8	39.1	54.0	14.9	100	69	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2462 MHz
 11b

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2462.000	PK	97.9	27.8	13.5	40.2	99.0	-	-	113	159	Carrier
Hori.	9848.000	PK	44.9	38.3	7.8	37.5	53.5	79.0	25.5	147	50	
Vert.	2462.000	PK	96.0	27.8	13.5	40.2	97.1	-	-	100	185	Carrier
Vert.	9848.000	PK	42.5	38.3	7.8	37.5	51.1	77.1	26.0	156	117	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2412 MHz
 11g

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.011	QP	26.4	15.4	7.6	32.0	17.4	43.5	26.1	196	332	
Hori.	640.014	QP	30.2	19.5	9.8	31.9	27.6	46.0	18.4	146	166	
Hori.	800.007	QP	32.7	20.7	10.4	31.6	32.2	46.0	13.8	100	145	
Hori.	880.011	QP	28.0	21.6	10.6	31.1	29.1	46.0	16.9	100	150	
Hori.	2390.000	PK	58.4	27.6	13.3	40.2	59.1	74.0	14.9	140	161	
Hori.	2400.000	PK	69.1	27.6	13.4	40.2	69.9	-	-	140	161	See 20dBc Data Sheet
Hori.	4824.000	PK	61.6	30.7	5.5	40.1	57.7	74.0	16.3	148	95	
Hori.	7236.000	PK	47.9	36.0	6.7	38.3	52.3	74.0	21.7	100	0	
Hori.	9648.000	PK	49.5	38.4	7.6	37.4	58.1	-	-	152	38	See 20dBc Data Sheet
Hori.	12060.000	PK	46.5	39.7	8.9	38.3	56.8	74.0	17.2	160	85	
Hori.	19296.000	PK	52.0	40.2	-2.7	44.0	45.5	74.0	28.5	100	63	
Hori.	2390.000	AV	43.1	27.6	13.3	40.2	43.8	54.0	10.2	140	161	
Hori.	2400.000	AV	55.1	27.6	13.4	40.2	55.9	-	-	140	161	See 20dBc Data Sheet
Hori.	4824.000	AV	49.6	30.7	5.5	40.1	45.7	54.0	8.3	148	95	
Hori.	7236.000	AV	34.9	36.0	6.7	38.3	39.3	54.0	14.7	100	0	
Hori.	9648.000	AV	43.3	38.4	7.6	37.4	51.9	-	-	152	38	See 20dBc Data Sheet
Hori.	12060.000	AV	33.4	39.7	8.9	38.3	43.7	54.0	10.3	160	85	
Hori.	19296.000	AV	48.6	40.2	-2.7	44.0	42.1	54.0	11.9	100	63	
Vert.	160.011	QP	24.4	15.4	7.6	32.0	15.4	43.5	28.1	177	196	
Vert.	640.014	QP	27.8	19.5	9.8	31.9	25.2	46.0	20.8	127	161	
Vert.	800.007	QP	29.1	20.7	10.4	31.6	28.6	46.0	17.4	100	266	
Vert.	2390.000	PK	55.7	27.6	13.3	40.2	56.4	74.0	17.6	100	184	
Vert.	2400.000	PK	67.9	27.6	13.4	40.2	68.7	-	-	100	184	See 20dBc Data Sheet
Vert.	4824.000	PK	60.1	30.7	5.5	40.1	56.2	74.0	17.8	100	99	
Vert.	7236.000	PK	47.3	36.0	6.7	38.3	51.7	74.0	22.3	100	23	
Vert.	9648.000	PK	47.4	38.4	7.6	37.4	56.0	-	-	130	112	See 20dBc Data Sheet
Vert.	12060.000	PK	45.9	39.7	8.9	38.3	56.2	74.0	17.8	122	60	
Vert.	19296.000	PK	48.6	40.2	-2.7	44.0	42.1	74.0	31.9	100	43	
Vert.	2390.000	AV	40.6	27.6	13.3	40.2	41.3	54.0	12.7	100	184	
Vert.	2400.000	AV	51.4	27.6	13.4	40.2	52.2	-	-	100	184	See 20dBc Data Sheet
Vert.	4824.000	AV	48.0	30.7	5.5	40.1	44.1	54.0	9.9	100	99	
Vert.	7236.000	AV	34.8	36.0	6.7	38.3	39.2	54.0	14.8	100	23	
Vert.	9648.000	AV	39.0	38.4	7.6	37.4	47.6	-	-	130	112	See 20dBc Data Sheet
Vert.	12060.000	AV	33.9	39.7	8.9	38.3	44.2	54.0	9.8	122	60	
Vert.	19296.000	AV	44.4	40.2	-2.7	44.0	37.9	54.0	16.1	100	43	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2412 MHz
 11g

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2412.000	PK	93.3	27.7	13.4	40.2	94.2	-	-	140	161	Carrier
Hori.	2400.000	PK	60.2	27.6	13.4	40.2	61.0	74.2	13.2	140	161	
Hori.	9648.000	PK	44.6	38.4	7.6	37.4	53.2	74.2	21.0	152	38	
Vert.	2412.000	PK	92.7	27.7	13.4	40.2	93.6	-	-	100	184	Carrier
Vert.	2400.000	PK	58.7	27.6	13.4	40.2	59.5	73.6	14.1	100	184	
Vert.	9648.000	PK	42.5	38.4	7.6	37.4	51.1	73.6	22.5	130	112	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m}) = 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2437 MHz
 11g

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	26.9	15.4	7.6	32.0	17.9	43.5	25.6	192	323	
Hori.	640.009	QP	30.5	19.5	9.8	31.9	27.9	46.0	18.1	151	168	
Hori.	800.008	QP	32.9	20.7	10.4	31.6	32.4	46.0	13.6	100	144	
Hori.	880.008	QP	29.0	21.6	10.6	31.1	30.1	46.0	15.9	100	150	
Hori.	4874.000	PK	59.7	30.8	5.5	40.0	56.0	74.0	18.0	149	89	
Hori.	7311.000	PK	47.8	36.0	6.8	38.5	52.1	74.0	21.9	109	56	
Hori.	9748.000	PK	48.8	38.4	7.6	37.4	57.4	-	-	100	0	See 20dBc Data Sheet
Hori.	12185.000	PK	45.5	39.7	9.0	38.2	56.0	74.0	18.0	172	164	
Hori.	19696.000	PK	53.6	40.3	-2.6	43.8	47.5	74.0	26.5	100	60	
Hori.	4874.000	AV	47.4	30.8	5.5	40.0	43.7	54.0	10.3	149	89	
Hori.	7311.000	AV	35.2	36.0	6.8	38.5	39.5	54.0	14.5	109	56	
Hori.	9748.000	AV	43.4	38.4	7.6	37.4	52.0	-	-	100	0	See 20dBc Data Sheet
Hori.	12185.000	AV	33.8	39.7	9.0	38.2	44.3	54.0	9.7	172	164	
Hori.	19696.000	AV	51.3	40.3	-2.6	43.8	45.2	54.0	8.8	100	60	
Vert.	160.009	QP	24.2	15.4	7.6	32.0	15.2	43.5	28.3	177	194	
Vert.	640.009	QP	28.1	19.5	9.8	31.9	25.5	46.0	20.5	137	159	
Vert.	800.008	QP	29.1	20.7	10.4	31.6	28.6	46.0	17.4	100	267	
Vert.	4874.000	PK	60.2	30.8	5.5	40.0	56.5	74.0	17.5	100	89	
Vert.	7311.000	PK	46.2	36.0	6.8	38.5	50.5	74.0	23.5	100	0	
Vert.	9748.000	PK	48.2	38.4	7.6	37.4	56.8	-	-	158	116	See 20dBc Data Sheet
Vert.	12185.000	PK	45.5	39.7	9.0	38.2	56.0	74.0	18.0	100	0	
Vert.	19696.000	PK	49.6	40.3	-2.6	43.8	43.5	74.0	30.5	100	97	
Vert.	4874.000	AV	48.6	30.8	5.5	40.0	44.9	54.0	9.1	100	89	
Vert.	7311.000	AV	34.1	36.0	6.8	38.5	38.4	54.0	15.6	100	0	
Vert.	9748.000	AV	39.8	38.4	7.6	37.4	48.4	-	-	158	116	See 20dBc Data Sheet
Vert.	12185.000	AV	33.4	39.7	9.0	38.2	43.9	54.0	10.1	100	0	
Vert.	19696.000	AV	45.4	40.3	-2.6	43.8	39.3	54.0	14.7	100	97	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2437 MHz
 11g

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2437.000	PK	94.4	27.7	13.4	40.2	95.3	-	-	139	148	Carrier
Hori.	9748.000	PK	44.6	38.4	7.6	37.4	53.2	75.3	22.1	100	0	
Vert.	2437.000	PK	92.9	27.7	13.4	40.2	93.8	-	-	100	177	Carrier
Vert.	9748.000	PK	42.9	38.4	7.6	37.4	51.5	73.8	22.3	158	116	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2462 MHz
 11g

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.008	QP	26.1	15.4	7.6	32.0	17.1	43.5	26.4	189	329	
Hori.	640.012	QP	30.4	19.5	9.8	31.9	27.8	46.0	18.2	152	168	
Hori.	800.009	QP	32.8	20.7	10.4	31.6	32.3	46.0	13.7	100	145	
Hori.	880.011	QP	28.2	21.6	10.6	31.1	29.3	46.0	16.7	100	149	
Hori.	2483.500	PK	50.6	27.9	13.5	40.1	51.9	74.0	22.1	136	158	
Hori.	4924.000	PK	57.5	31.0	5.6	40.0	54.1	74.0	19.9	150	90	
Hori.	7386.000	PK	46.7	35.9	6.9	38.6	50.9	74.0	23.1	100	0	
Hori.	9848.000	PK	48.7	38.3	7.8	37.5	57.3	-	-	149	38	See 20dBc Data Sheet
Hori.	12310.000	PK	45.4	39.7	9.3	38.0	56.4	74.0	17.6	168	101	
Hori.	19696.000	PK	53.6	40.3	-2.6	43.8	47.5	74.0	26.5	100	60	
Hori.	2483.500	AV	39.2	27.9	13.5	40.1	40.5	54.0	13.5	136	158	
Hori.	4924.000	AV	45.6	31.0	5.6	40.0	42.2	54.0	11.8	150	90	
Hori.	7386.000	AV	34.4	35.9	6.9	38.6	38.6	54.0	15.4	100	0	
Hori.	9848.000	AV	42.2	38.3	7.8	37.5	50.8	-	-	149	38	See 20dBc Data Sheet
Hori.	12310.000	AV	33.6	39.7	9.3	38.0	44.6	54.0	9.4	168	101	
Hori.	19696.000	AV	51.3	40.3	-2.6	43.8	45.2	54.0	8.8	100	60	
Vert.	160.008	QP	24.2	15.4	7.6	32.0	15.2	43.5	28.3	174	197	
Vert.	640.012	QP	28.0	19.5	9.8	31.9	25.4	46.0	20.6	133	159	
Vert.	800.009	QP	29.0	20.7	10.4	31.6	28.5	46.0	17.5	100	269	
Vert.	2483.500	PK	52.4	27.9	13.5	40.1	53.7	74.0	20.3	100	178	
Vert.	4924.000	PK	55.6	31.0	5.6	40.0	52.2	74.0	21.8	100	186	
Vert.	7386.000	PK	47.4	35.9	6.9	38.6	51.6	74.0	22.4	100	0	
Vert.	9848.000	PK	47.4	38.3	7.8	37.5	56.0	-	-	156	116	See 20dBc Data Sheet
Vert.	12310.000	PK	45.8	39.7	9.3	38.0	56.8	74.0	17.2	100	0	
Vert.	19696.000	PK	49.6	40.3	-2.6	43.8	43.5	74.0	30.5	100	97	
Vert.	2483.500	AV	38.1	27.9	13.5	40.1	39.4	54.0	14.6	100	178	
Vert.	4924.000	AV	46.2	31.0	5.6	40.0	42.8	54.0	11.2	100	186	
Vert.	7386.000	AV	34.4	35.9	6.9	38.6	38.6	54.0	15.4	100	0	
Vert.	9848.000	AV	39.4	38.3	7.8	37.5	48.0	-	-	156	116	See 20dBc Data Sheet
Vert.	12310.000	AV	33.6	39.7	9.3	38.0	44.6	54.0	9.4	100	0	
Vert.	19696.000	AV	45.4	40.3	-2.6	43.8	39.3	54.0	14.7	100	97	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/28 2010/4/30
Temperature / Humidity 21deg.C. , 37% 24deg.C. , 38%
Engineer Hikaru Shirasawa Tatsuya Arai
Mode Tx, 2462 MHz
 11g

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2462.000	PK	94.3	27.8	13.5	40.2	95.4	-	-	136	158	Carrier
Hori.	9848.000	PK	43.1	38.3	7.8	37.5	51.7	75.4	23.7	149	38	
Vert.	2462.000	PK	92.7	27.8	13.5	40.2	93.8	-	-	100	178	Carrier
Vert.	9848.000	PK	42.3	38.3	7.8	37.5	50.9	73.8	22.9	156	116	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2412 MHz
 11n-20

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	26.8	15.4	7.6	32.0	17.8	43.5	25.7	198	327	
Hori.	640.015	QP	30.4	19.5	9.8	31.9	27.8	46.0	18.2	148	168	
Hori.	800.009	QP	33.3	20.7	10.4	31.6	32.8	46.0	13.2	100	144	
Hori.	880.014	QP	28.3	21.6	10.6	31.1	29.4	46.0	16.6	100	149	
Hori.	2390.000	PK	67.5	27.6	13.3	40.2	68.2	74.0	5.8	142	148	
Hori.	2400.000	PK	69.8	27.6	13.4	40.2	70.6	-	-	142	148	See 20dBc Data Sheet
Hori.	4824.000	PK	62.6	30.7	5.5	40.1	58.7	74.0	15.3	151	91	
Hori.	7236.000	PK	47.1	36.0	6.7	38.3	51.5	74.0	22.5	100	0	
Hori.	9648.000	PK	49.6	38.4	7.6	37.4	58.2	-	-	133	58	See 20dBc Data Sheet
Hori.	12060.000	PK	45.8	39.7	8.9	38.3	56.1	74.0	17.9	144	60	
Hori.	19496.000	PK	51.3	40.2	-2.6	43.9	45.0	74.0	29.0	100	57	
Hori.	2390.000	AV	48.3	27.6	13.3	40.2	49.0	54.0	5.0	142	148	
Hori.	2400.000	AV	53.1	27.6	13.4	40.2	53.9	-	-	142	148	See 20dBc Data Sheet
Hori.	4824.000	AV	49.3	30.7	5.5	40.1	45.4	54.0	8.6	151	91	
Hori.	7236.000	AV	34.9	36.0	6.7	38.3	39.3	54.0	14.7	100	0	
Hori.	9648.000	AV	43.3	38.4	7.6	37.4	51.9	-	-	133	58	See 20dBc Data Sheet
Hori.	12060.000	AV	34.0	39.7	8.9	38.3	44.3	54.0	9.7	144	60	
Hori.	19496.000	AV	48.2	40.2	-2.6	43.9	41.9	54.0	12.1	100	57	
Vert.	160.009	QP	24.9	15.4	7.6	32.0	15.9	43.5	27.6	176	198	
Vert.	640.015	QP	27.8	19.5	9.8	31.9	25.2	46.0	20.8	141	158	
Vert.	800.009	QP	29.2	20.7	10.4	31.6	28.7	46.0	17.3	100	267	
Vert.	2390.000	PK	63.3	27.6	13.3	40.2	64.0	74.0	10.0	100	184	
Vert.	2400.000	PK	67.5	27.6	13.4	40.2	68.3	-	-	100	184	See 20dBc Data Sheet
Vert.	4824.000	PK	61.7	30.7	5.5	40.1	57.8	74.0	16.2	102	90	
Vert.	7236.000	PK	47.0	36.0	6.7	38.3	51.4	74.0	22.6	100	0	
Vert.	9648.000	PK	46.4	38.4	7.6	37.4	55.0	-	-	216	79	See 20dBc Data Sheet
Vert.	12060.000	PK	45.6	39.7	8.9	38.3	55.9	74.0	18.1	233	57	
Vert.	19496.000	PK	47.9	40.2	-2.6	43.9	41.6	74.0	32.4	100	36	
Vert.	2390.000	AV	44.5	27.6	13.3	40.2	45.2	54.0	8.8	100	184	
Vert.	2400.000	AV	51.4	27.6	13.4	40.2	52.2	-	-	100	184	See 20dBc Data Sheet
Vert.	4824.000	AV	48.4	30.7	5.5	40.1	44.5	54.0	9.5	102	90	
Vert.	7236.000	AV	34.9	36.0	6.7	38.3	39.3	54.0	14.7	100	0	
Vert.	9648.000	AV	37.3	38.4	7.6	37.4	45.9	-	-	216	79	See 20dBc Data Sheet
Vert.	12060.000	AV	33.7	39.7	8.9	38.3	44.0	54.0	10.0	233	57	
Vert.	19496.000	AV	43.9	40.2	-2.6	43.9	37.6	54.0	16.4	100	36	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2412 MHz
 11n-20

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2412.000	PK	92.6	27.7	13.4	40.2	93.5	-	-	142	148	Carrier
Hori.	2400.000	PK	56.6	27.6	13.4	40.2	57.4	73.5	16.1	142	148	
Hori.	9648.000	PK	45.0	38.4	7.6	37.4	53.6	73.5	19.9	133	58	
Vert.	2412.000	PK	91.8	27.7	13.4	40.2	92.7	-	-	100	184	Carrier
Vert.	2400.000	PK	54.2	27.6	13.4	40.2	55.0	72.7	17.7	100	184	
Vert.	9648.000	PK	41.7	38.4	7.6	37.4	50.3	72.7	22.4	216	79	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2437 MHz
 11n-20

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	26.5	15.4	7.6	32.0	17.5	43.5	26.0	195	323	
Hori.	640.013	QP	30.2	19.5	9.8	31.9	27.6	46.0	18.4	150	166	
Hori.	800.009	QP	33.1	20.7	10.4	31.6	32.6	46.0	13.4	100	144	
Hori.	880.008	QP	28.1	21.6	10.6	31.1	29.2	46.0	16.8	100	148	
Hori.	4874.000	PK	59.3	30.8	5.5	40.0	55.6	74.0	18.4	134	60	
Hori.	7311.000	PK	47.1	36.0	6.8	38.5	51.4	74.0	22.6	100	0	
Hori.	9748.000	PK	48.4	38.4	7.6	37.4	57.0	-	-	133	57	See 20dBc Data Sheet
Hori.	12185.000	PK	44.9	39.7	9.0	38.2	55.4	74.0	18.6	100	0	
Hori.	19496.000	PK	53.7	40.2	-2.6	43.9	47.4	74.0	26.6	100	60	
Hori.	4874.000	AV	46.1	30.8	5.5	40.0	42.4	54.0	11.6	134	60	
Hori.	7311.000	AV	35.0	36.0	6.8	38.5	39.3	54.0	14.7	100	0	
Hori.	9748.000	AV	41.7	38.4	7.6	37.4	50.3	-	-	133	57	See 20dBc Data Sheet
Hori.	12185.000	AV	33.9	39.7	9.0	38.2	44.4	54.0	9.6	100	0	
Hori.	19496.000	AV	51.0	40.2	-2.6	43.9	44.7	54.0	9.3	100	60	
Vert.	160.009	QP	24.4	15.4	7.6	32.0	15.4	43.5	28.1	175	194	
Vert.	640.013	QP	27.7	19.5	9.8	31.9	25.1	46.0	20.9	130	156	
Vert.	800.009	QP	29.2	20.7	10.4	31.6	28.7	46.0	17.3	100	266	
Vert.	4874.000	PK	61.6	30.8	5.5	40.0	57.9	74.0	16.1	101	90	
Vert.	7311.000	PK	46.6	36.0	6.8	38.5	50.9	74.0	23.1	100	0	
Vert.	9748.000	PK	47.9	38.4	7.6	37.4	56.5	-	-	198	126	See 20dBc Data Sheet
Vert.	12185.000	PK	46.2	39.7	9.0	38.2	56.7	74.0	17.3	100	0	
Vert.	19496.000	PK	49.3	40.2	-2.6	43.9	43.0	74.0	31.0	100	51	
Vert.	4874.000	AV	48.3	30.8	5.5	40.0	44.6	54.0	9.4	101	90	
Vert.	7311.000	AV	35.0	36.0	6.8	38.5	39.3	54.0	14.7	100	0	
Vert.	9748.000	AV	38.2	38.4	7.6	37.4	46.8	-	-	198	126	See 20dBc Data Sheet
Vert.	12185.000	AV	33.8	39.7	9.0	38.2	44.3	54.0	9.7	100	0	
Vert.	19496.000	AV	44.7	40.2	-2.6	43.9	38.4	54.0	15.6	100	51	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2437 MHz
 11n-20

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2437.000	PK	91.7	27.7	13.4	40.2	92.6	-	-	112	147	Carrier
Hori.	9748.000	PK	43.9	38.4	7.6	37.4	52.5	72.6	20.1	133	57	
Vert.	2437.000	PK	92.3	27.7	13.4	40.2	93.2	-	-	100	0	Carrier
Vert.	9748.000	PK	42.0	38.4	7.6	37.4	50.6	73.2	22.6	198	126	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2462 MHz
 11n-20

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.012	QP	26.9	15.4	7.6	32.0	17.9	43.5	25.6	192	319	
Hori.	640.013	QP	30.2	19.5	9.8	31.9	27.6	46.0	18.4	147	167	
Hori.	800.008	QP	33.1	20.7	10.4	31.6	32.6	46.0	13.4	100	143	
Hori.	880.008	QP	28.5	21.6	10.6	31.1	29.6	46.0	16.4	100	150	
Hori.	2483.500	PK	58.5	27.9	13.5	40.1	59.8	74.0	14.2	112	158	
Hori.	4924.000	PK	58.3	31.0	5.6	40.0	54.9	74.0	19.1	133	61	
Hori.	7386.000	PK	46.3	35.9	6.9	38.6	50.5	74.0	23.5	100	0	
Hori.	9848.000	PK	47.9	38.3	7.8	37.5	56.5	-	-	144	40	See 20dBc Data Sheet
Hori.	12310.000	PK	45.5	39.7	9.3	38.0	56.5	74.0	17.5	100	0	
Hori.	19696.000	PK	51.4	40.3	-2.6	43.8	45.3	74.0	28.7	100	79	
Hori.	2483.500	AV	43.0	27.9	13.5	40.1	44.3	54.0	9.7	112	158	
Hori.	4924.000	AV	44.9	31.0	5.6	40.0	41.5	54.0	12.5	133	61	
Hori.	7386.000	AV	34.3	35.9	6.9	38.6	38.5	54.0	15.5	100	0	
Hori.	9848.000	AV	39.8	38.3	7.8	37.5	48.4	-	-	144	40	See 20dBc Data Sheet
Hori.	12310.000	AV	33.6	39.7	9.3	38.0	44.6	54.0	9.4	100	0	
Hori.	19696.000	AV	48.9	40.3	-2.6	43.8	42.8	54.0	11.2	100	79	
Vert.	160.012	QP	24.3	15.4	7.6	32.0	15.3	43.5	28.2	179	193	
Vert.	640.013	QP	27.8	19.5	9.8	31.9	25.2	46.0	20.8	136	157	
Vert.	800.008	QP	29.2	20.7	10.4	31.6	28.7	46.0	17.3	100	268	
Vert.	2483.500	PK	55.6	27.9	13.5	40.1	56.9	74.0	17.1	100	181	
Vert.	4924.000	PK	60.6	31.0	5.6	40.0	57.2	74.0	16.8	101	97	
Vert.	7386.000	PK	46.1	35.9	6.9	38.6	50.3	74.0	23.7	100	0	
Vert.	9848.000	PK	47.4	38.3	7.8	37.5	56.0	-	-	143	109	See 20dBc Data Sheet
Vert.	12310.000	PK	45.6	39.7	9.3	38.0	56.6	74.0	17.4	100	0	
Vert.	19696.000	PK	49.0	40.3	-2.6	43.8	42.9	74.0	31.1	100	69	
Vert.	2483.500	AV	39.6	27.9	13.5	40.1	40.9	54.0	13.1	100	181	
Vert.	4924.000	AV	47.3	31.0	5.6	40.0	43.9	54.0	10.1	101	97	
Vert.	7386.000	AV	34.3	35.9	6.9	38.6	38.5	54.0	15.5	100	0	
Vert.	9848.000	AV	38.1	38.3	7.8	37.5	46.7	-	-	143	109	See 20dBc Data Sheet
Vert.	12310.000	AV	33.6	39.7	9.3	38.0	44.6	54.0	9.4	100	0	
Vert.	19696.000	AV	44.8	40.3	-2.6	43.8	38.7	54.0	15.3	100	69	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2462 MHz
 11n-20

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2462.000	PK	93.7	27.8	13.5	40.2	94.8	-	-	112	158	Carrier
Hori.	9848.000	PK	42.0	38.3	7.8	37.5	50.6	74.8	24.2	144	40	
Vert.	2462.000	PK	91.4	27.8	13.5	40.2	92.5	-	-	100	181	Carrier
Vert.	9848.000	PK	41.3	38.3	7.8	37.5	49.9	72.5	22.6	143	109	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2422 MHz
 11n-40

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	26.8	15.4	7.6	32.0	17.8	43.5	25.7	198	320	
Hori.	640.011	QP	30.7	19.5	9.8	31.9	28.1	46.0	17.9	149	168	
Hori.	800.008	QP	33.4	20.7	10.4	31.6	32.9	46.0	13.1	100	144	
Hori.	880.010	QP	27.9	21.6	10.6	31.1	29.0	46.0	17.0	100	149	
Hori.	2390.000	PK	59.8	27.6	13.3	40.2	60.5	74.0	13.5	112	148	
Hori.	2400.000	PK	63.7	27.6	13.4	40.2	64.5	-	-	112	148	See 20dBc Data Sheet
Hori.	4844.000	PK	56.0	30.7	5.5	40.1	52.1	74.0	21.9	150	87	
Hori.	7266.000	PK	47.7	36.0	6.7	38.4	52.0	74.0	22.0	100	0	
Hori.	9688.000	PK	47.9	38.4	7.6	37.4	56.5	-	-	132	57	See 20dBc Data Sheet
Hori.	12110.000	PK	45.4	39.7	9.0	38.3	55.8	74.0	18.2	100	0	
Hori.	19376.000	PK	50.7	40.2	-2.7	44.0	44.2	74.0	29.8	100	59	
Hori.	2390.000	AV	47.6	27.6	13.3	40.2	48.3	54.0	5.7	112	148	
Hori.	2400.000	AV	50.5	27.6	13.4	40.2	51.3	-	-	112	148	See 20dBc Data Sheet
Hori.	4844.000	AV	44.9	30.7	5.5	40.1	41.0	54.0	13.0	150	87	
Hori.	7266.000	AV	35.1	36.0	6.7	38.4	39.4	54.0	14.6	100	0	
Hori.	9688.000	AV	41.0	38.4	7.6	37.4	49.6	-	-	132	57	See 20dBc Data Sheet
Hori.	12110.000	AV	33.7	39.7	9.0	38.3	44.1	54.0	9.9	100	0	
Hori.	19376.000	AV	47.2	40.2	-2.7	44.0	40.7	54.0	13.3	100	59	
Vert.	160.009	QP	24.5	15.4	7.6	32.0	15.5	43.5	28.0	177	197	
Vert.	640.011	QP	28.0	19.5	9.8	31.9	25.4	46.0	20.6	128	158	
Vert.	800.008	QP	29.4	20.7	10.4	31.6	28.9	46.0	17.1	100	267	
Vert.	2390.000	PK	58.9	27.6	13.3	40.2	59.6	74.0	14.4	100	185	
Vert.	2400.000	PK	62.0	27.6	13.4	40.2	62.8	-	-	100	185	See 20dBc Data Sheet
Vert.	4844.000	PK	56.2	30.7	5.5	40.1	52.3	74.0	21.7	101	89	
Vert.	7266.000	PK	47.2	36.0	6.7	38.4	51.5	74.0	22.5	100	0	
Vert.	9688.000	PK	47.7	38.4	7.6	37.4	56.3	-	-	174	144	See 20dBc Data Sheet
Vert.	12110.000	PK	45.1	39.7	9.0	38.3	55.5	74.0	18.5	100	0	
Vert.	19376.000	PK	47.9	40.2	-2.7	44.0	41.4	74.0	32.6	100	102	
Vert.	2390.000	AV	45.8	27.6	13.3	40.2	46.5	54.0	7.5	100	185	
Vert.	2400.000	AV	48.8	27.6	13.4	40.2	49.6	-	-	100	185	See 20dBc Data Sheet
Vert.	4844.000	AV	44.9	30.7	5.5	40.1	41.0	54.0	13.0	101	89	
Vert.	7266.000	AV	35.1	36.0	6.7	38.4	39.4	54.0	14.6	100	0	
Vert.	9688.000	AV	39.1	38.4	7.6	37.4	47.7	-	-	174	144	See 20dBc Data Sheet
Vert.	12110.000	AV	33.4	39.7	9.0	38.3	43.8	54.0	10.2	100	0	
Vert.	19376.000	AV	42.9	40.2	-2.7	44.0	36.4	54.0	17.6	100	102	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0m/1.0m) = 9.5dB$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2422 MHz
 11n-40

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2422.000	PK	88.6	27.7	13.4	40.2	89.5	-	-	112	148	Carrier
Hori.	2400.000	PK	49.8	27.6	13.4	40.2	50.6	69.5	18.9	112	148	
Hori.	9688.000	PK	43.2	38.4	7.6	37.4	51.8	69.5	17.7	132	57	
Vert.	2422.000	PK	88.4	27.7	13.4	40.2	89.3	-	-	100	185	Carrier
Vert.	2400.000	PK	49.8	27.6	13.4	40.2	50.6	69.3	18.7	100	185	
Vert.	9688.000	PK	42.2	38.4	7.6	37.4	50.8	69.3	18.5	174	144	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2437 MHz
 11n-40

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.009	QP	27.0	15.4	7.6	32.0	18.0	43.5	25.5	195	322	
Hori.	640.011	QP	30.8	19.5	9.8	31.9	28.2	46.0	17.8	153	169	
Hori.	800.010	QP	33.6	20.7	10.4	31.6	33.1	46.0	12.9	100	144	
Hori.	880.010	QP	28.4	21.6	10.6	31.1	29.5	46.0	16.5	100	149	
Hori.	4874.000	PK	54.4	30.8	5.5	40.0	50.7	74.0	23.3	130	61	
Hori.	7311.000	PK	46.9	36.0	6.8	38.5	51.2	74.0	22.8	100	0	
Hori.	9748.000	PK	48.2	38.4	7.6	37.4	56.8	-	-	131	57	See 20dBc Data Sheet
Hori.	12185.000	PK	45.3	39.7	9.0	38.2	55.8	74.0	18.2	100	0	
Hori.	19496.000	PK	51.3	40.2	-2.6	43.9	45.0	74.0	29.0	100	57	
Hori.	4874.000	AV	42.9	30.8	5.5	40.0	39.2	54.0	14.8	130	61	
Hori.	7311.000	AV	34.8	36.0	6.8	38.5	39.1	54.0	14.9	100	0	
Hori.	9748.000	AV	42.7	38.4	7.6	37.4	51.3	-	-	131	57	See 20dBc Data Sheet
Hori.	12185.000	AV	33.8	39.7	9.0	38.2	44.3	54.0	9.7	100	0	
Hori.	19496.000	AV	48.2	40.2	-2.6	43.9	41.9	54.0	12.1	100	57	
Vert.	160.009	QP	24.7	15.4	7.6	32.0	15.7	43.5	27.8	172	195	
Vert.	640.011	QP	28.1	19.5	9.8	31.9	25.5	46.0	20.5	130	159	
Vert.	800.010	QP	29.4	20.7	10.4	31.6	28.9	46.0	17.1	100	268	
Vert.	4874.000	PK	56.1	30.8	5.5	40.0	52.4	74.0	21.6	100	89	
Vert.	7311.000	PK	47.9	36.0	6.8	38.5	52.2	74.0	21.8	100	0	
Vert.	9748.000	PK	47.4	38.4	7.6	37.4	56.0	-	-	198	126	See 20dBc Data Sheet
Vert.	12185.000	PK	45.9	39.7	9.0	38.2	56.4	74.0	17.6	100	0	
Vert.	19496.000	PK	48.9	40.2	-2.6	43.9	42.6	74.0	31.4	100	112	
Vert.	4874.000	AV	45.1	30.8	5.5	40.0	41.4	54.0	12.6	100	89	
Vert.	7311.000	AV	34.8	36.0	6.8	38.5	39.1	54.0	14.9	100	0	
Vert.	9748.000	AV	37.6	38.4	7.6	37.4	46.2	-	-	198	126	See 20dBc Data Sheet
Vert.	12185.000	AV	33.8	39.7	9.0	38.2	44.3	54.0	9.7	100	0	
Vert.	19496.000	AV	44.4	40.2	-2.6	43.9	38.1	54.0	15.9	100	112	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2437 MHz
 11n-40

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2437.000	PK	88.5	27.7	13.4	40.2	89.4	-	-	110	145	Carrier
Hori.	9748.000	PK	44.7	38.4	7.6	37.4	53.3	69.4	16.1	131	57	
Vert.	2437.000	PK	89.4	27.7	13.4	40.2	90.3	-	-	100	0	Carrier
Vert.	9748.000	PK	41.2	38.4	7.6	37.4	49.8	70.3	20.5	198	126	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2452 MHz
 11n-40

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	160.010	QP	26.7	15.4	7.6	32.0	17.7	43.5	25.8	193	328	
Hori.	640.007	QP	30.9	19.5	9.8	31.9	28.3	46.0	17.7	147	165	
Hori.	800.008	QP	33.6	20.7	10.4	31.6	33.1	46.0	12.9	100	144	
Hori.	880.008	QP	28.6	21.6	10.6	31.1	29.7	46.0	16.3	100	148	
Hori.	2483.500	PK	60.2	27.9	13.5	40.1	61.5	74.0	12.5	112	157	
Hori.	4904.000	PK	52.8	30.9	5.6	40.0	49.3	74.0	24.7	133	62	
Hori.	7356.000	PK	46.2	36.0	6.9	38.5	50.6	74.0	23.4	100	0	
Hori.	9808.000	PK	48.6	38.3	7.7	37.5	57.1	-	-	130	57	See 20dBc Data Sheet
Hori.	12260.000	PK	45.5	39.7	9.2	38.1	56.3	74.0	17.7	100	0	
Hori.	19616.000	PK	51.2	40.3	-2.6	43.8	45.1	74.0	28.9	100	130	
Hori.	2483.500	AV	46.1	27.9	13.5	40.1	47.4	54.0	6.6	112	157	
Hori.	4904.000	AV	41.8	30.9	5.6	40.0	38.3	54.0	15.7	133	62	
Hori.	7356.000	AV	34.7	36.0	6.9	38.5	39.1	54.0	14.9	100	0	
Hori.	9808.000	AV	41.9	38.3	7.7	37.5	50.4	-	-	130	57	See 20dBc Data Sheet
Hori.	12260.000	AV	33.7	39.7	9.2	38.1	44.5	54.0	9.5	100	0	
Hori.	19616.000	AV	48.2	40.3	-2.6	43.8	42.1	54.0	11.9	100	130	
Vert.	160.010	QP	24.2	15.4	7.6	32.0	15.2	43.5	28.3	174	199	
Vert.	640.007	QP	28.1	19.5	9.8	31.9	25.5	46.0	20.5	136	160	
Vert.	800.008	QP	29.4	20.7	10.4	31.6	28.9	46.0	17.1	100	268	
Vert.	2483.500	PK	54.4	27.9	13.5	40.1	55.7	74.0	18.3	100	190	
Vert.	4904.000	PK	55.1	30.9	5.6	40.0	51.6	74.0	22.4	100	90	
Vert.	7356.000	PK	46.9	36.0	6.9	38.5	51.3	74.0	22.7	100	0	
Vert.	9808.000	PK	46.7	38.3	7.7	37.5	55.2	-	-	161	126	See 20dBc Data Sheet
Vert.	12260.000	PK	44.7	39.7	9.2	38.1	55.5	74.0	18.5	100	0	
Vert.	19616.000	PK	48.6	40.3	-2.6	43.8	42.5	74.0	31.5	100	65	
Vert.	2483.500	AV	40.7	27.9	13.5	40.1	42.0	54.0	12.0	100	190	
Vert.	4904.000	AV	44.3	30.9	5.6	40.0	40.8	54.0	13.2	100	90	
Vert.	7356.000	AV	34.6	36.0	6.9	38.5	39.0	54.0	15.0	100	0	
Vert.	9808.000	AV	36.9	38.3	7.7	37.5	45.4	-	-	161	126	See 20dBc Data Sheet
Vert.	12260.000	AV	33.4	39.7	9.2	38.1	44.2	54	9.8	100	0	
Vert.	19616.000	AV	44.1	40.3	-2.6	43.8	38.0	54	16.0	100	65	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

Distance factor: 13GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

Radiated Emission

Test place UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date 2010/4/29 2010/4/30
Temperature / Humidity 24deg.C. , 52% 24deg.C. , 38%
Engineer Tatsuya Arai Tatsuya Arai
Mode Tx, 2452 MHz
 11n-40

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	2452.000	PK	92.0	27.8	13.4	40.2	93.0	-	-	112	157	Carrier
Hori.	9808.000	PK	44.9	38.3	7.7	37.5	53.4	73.0	19.6	130	57	
Vert.	2452.000	PK	88.4	27.8	13.4	40.2	89.4	-	-	100	190	Carrier
Vert.	9808.000	PK	40.4	38.3	7.7	37.5	48.9	69.4	20.5	161	126	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 13GHz)) - Gain(Amplifier)

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

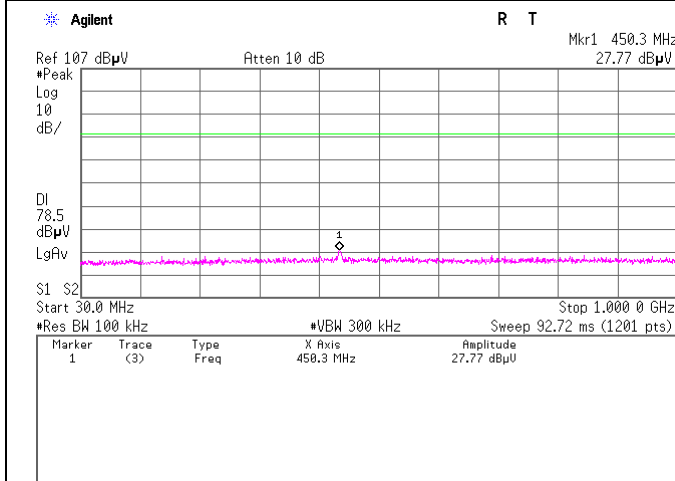
Distance factor: 13GHz-26.5GHz $20\log(3.0\text{m}/1.0\text{m})= 9.5\text{dB}$

Spurious emission (Conducted)

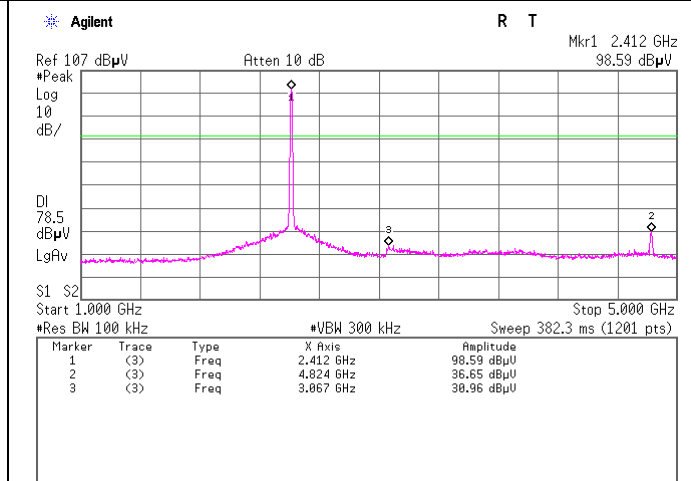
11b

Tx, 2412MHz

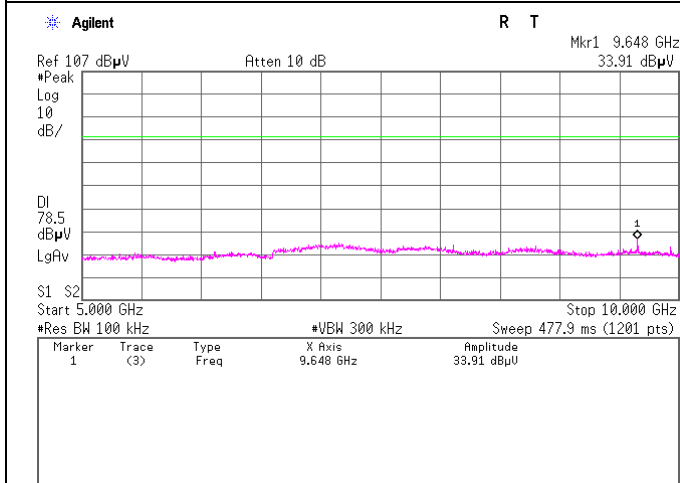
30MHz - 1GHz



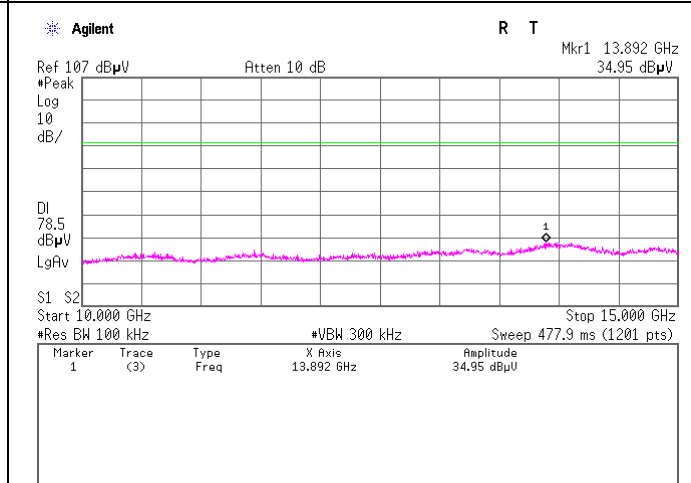
1GHz - 5GHz



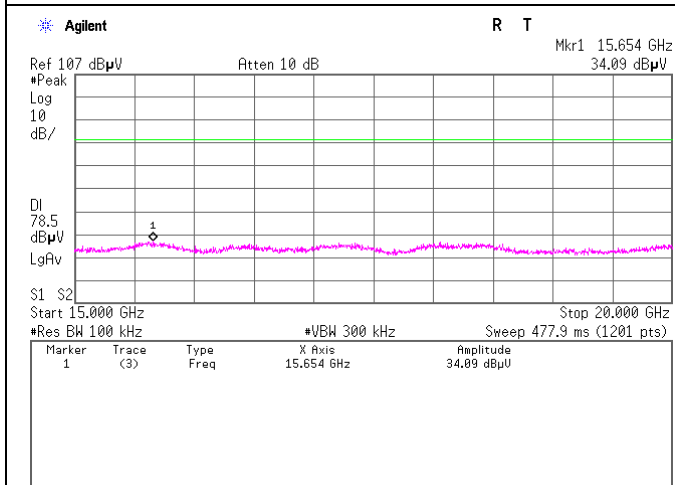
5GHz - 10GHz



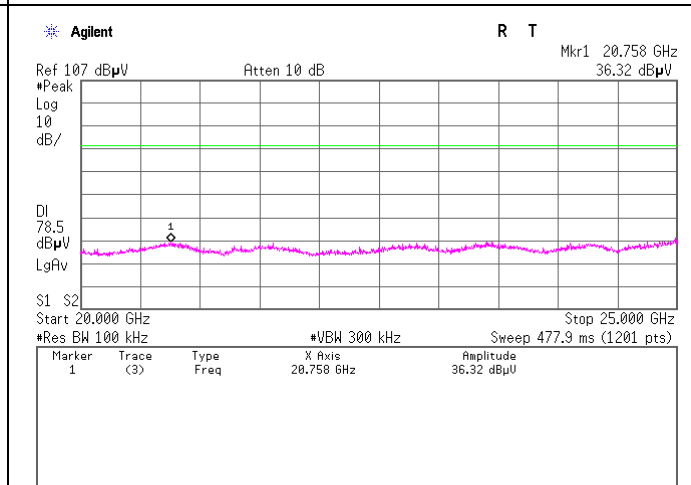
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

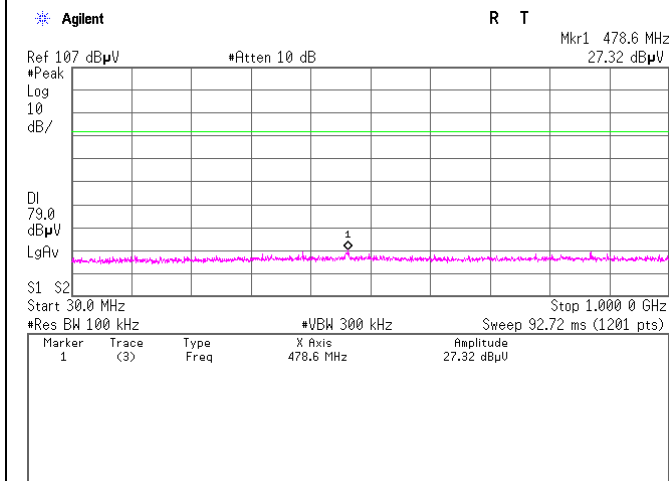
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

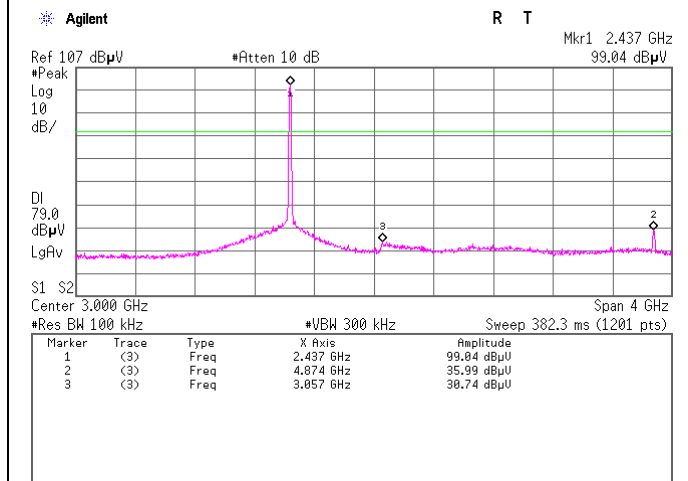
11b

Tx, 2437MHz

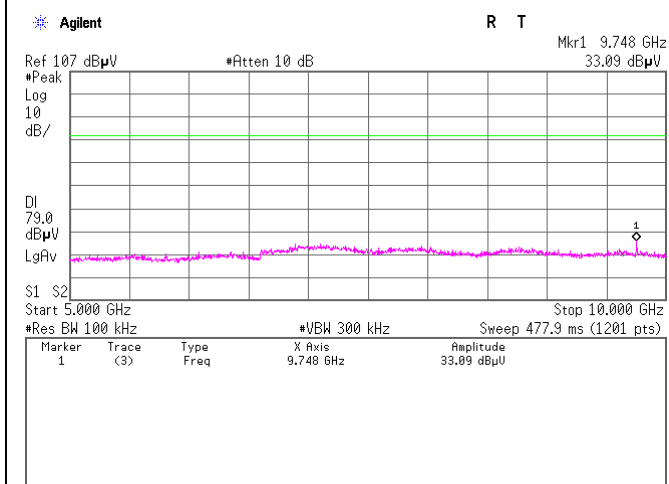
30MHz - 1GHz



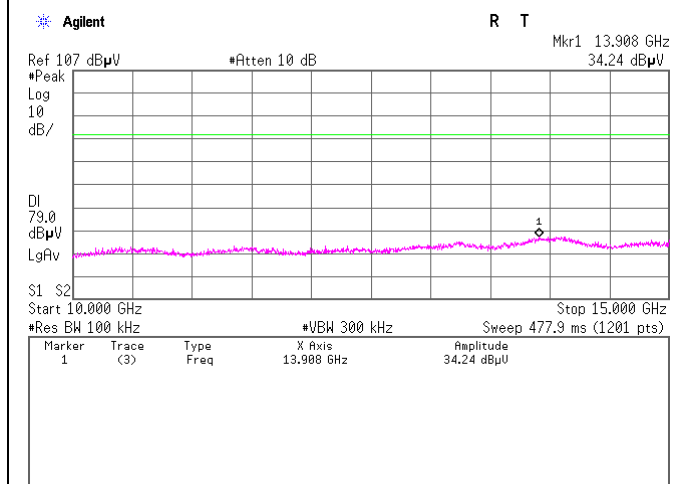
1GHz - 5GHz



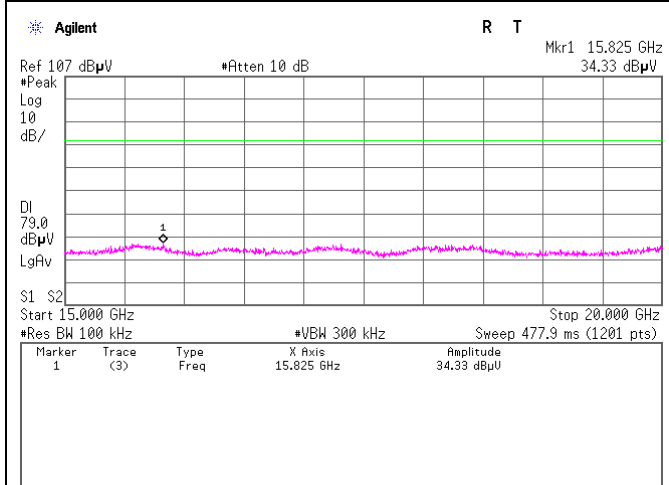
5GHz - 10GHz



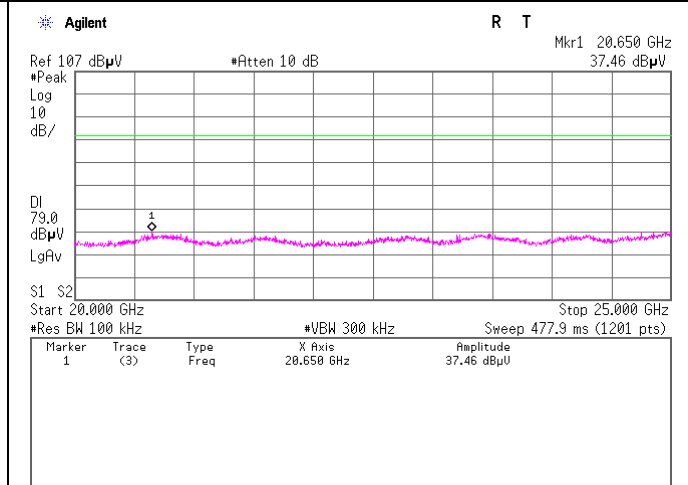
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

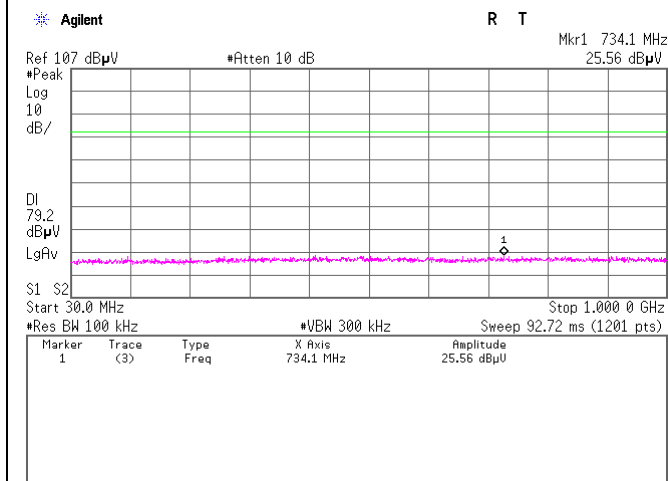
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

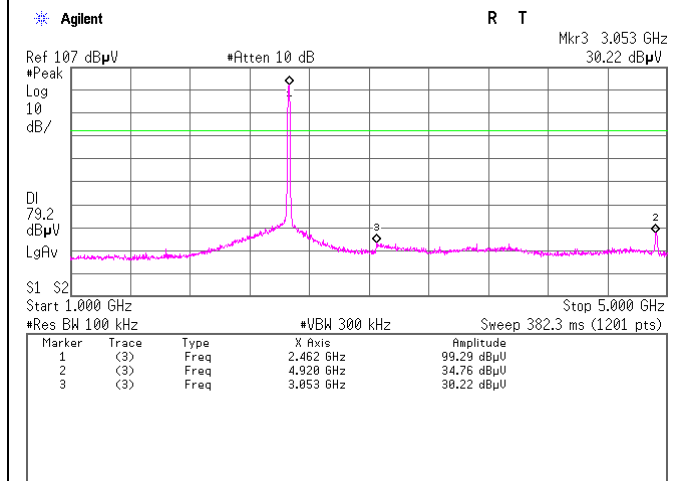
11b

Tx, 2462MHz

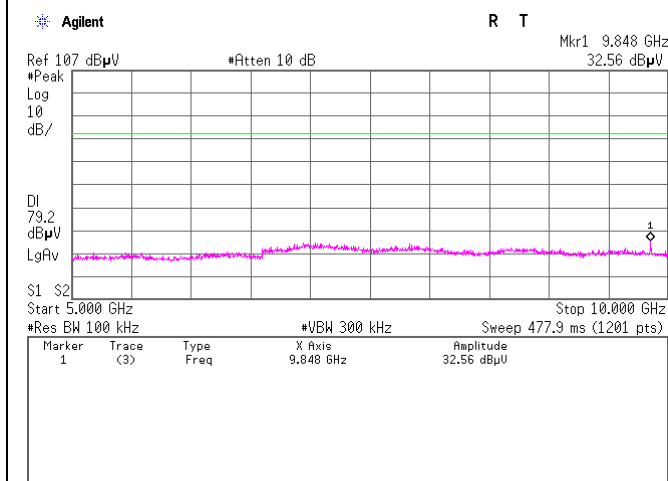
30MHz - 1GHz



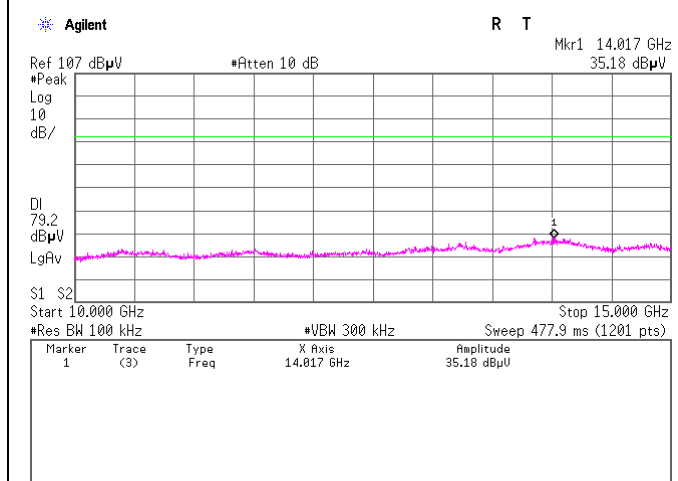
1GHz - 5GHz



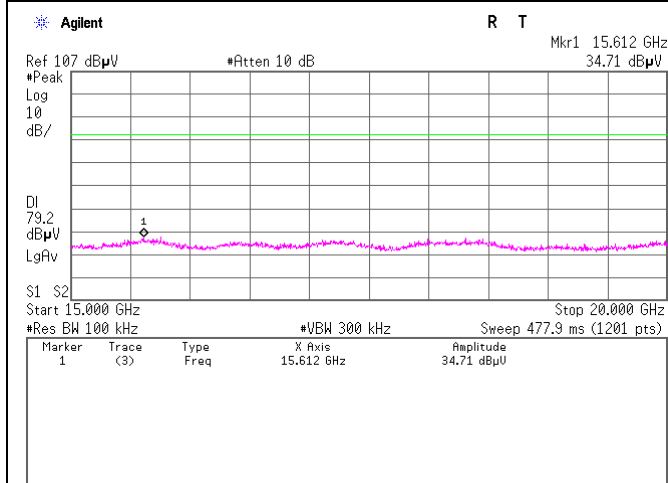
5GHz - 10GHz



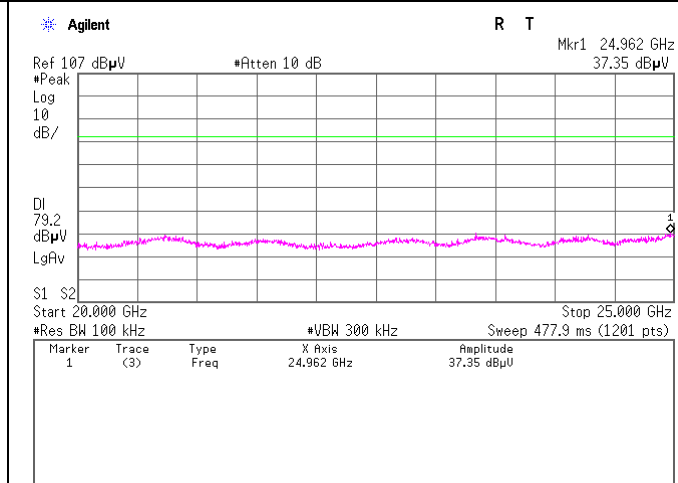
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

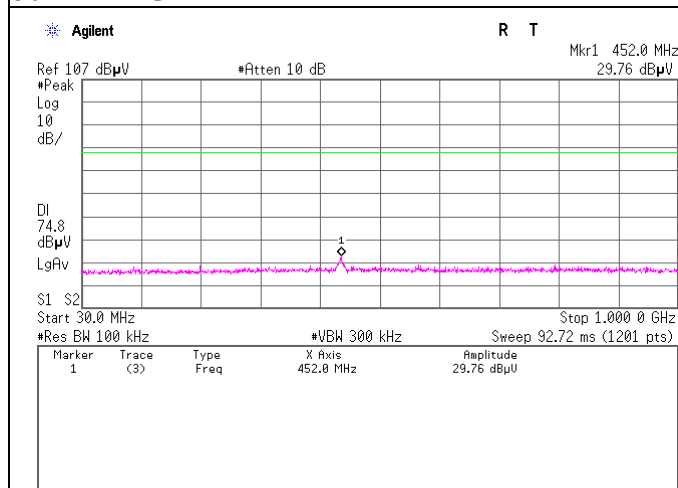
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

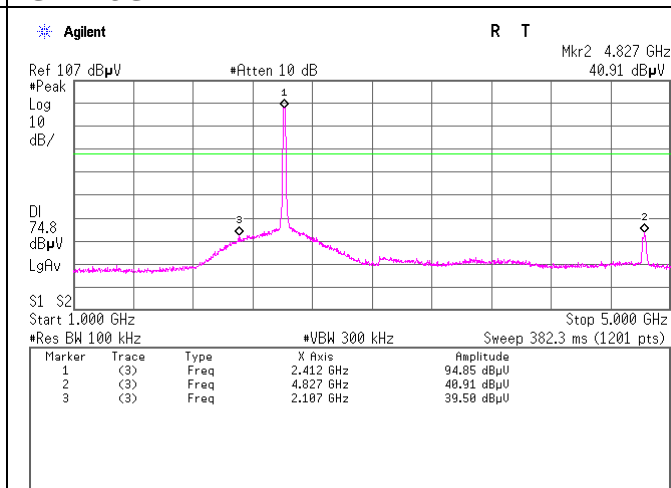
11g

Tx, 2412MHz

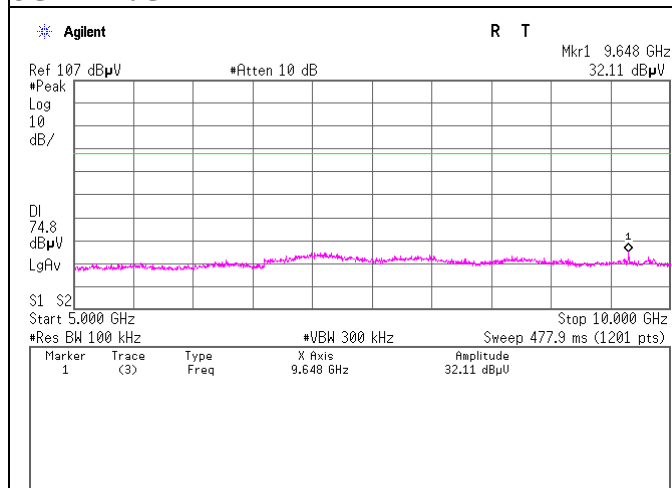
30MHz - 1GHz



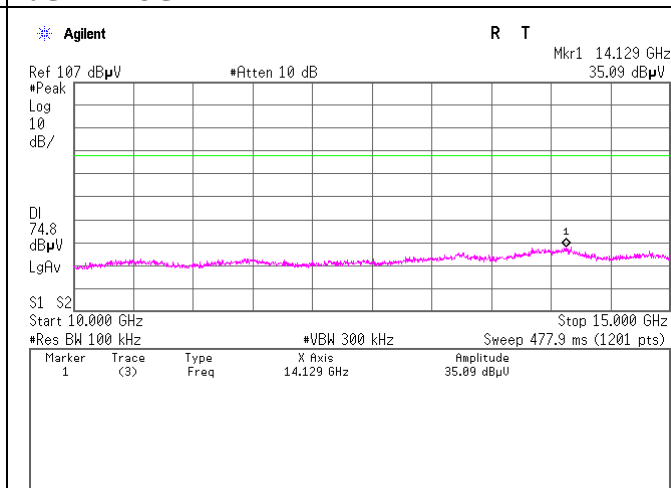
1GHz - 5GHz



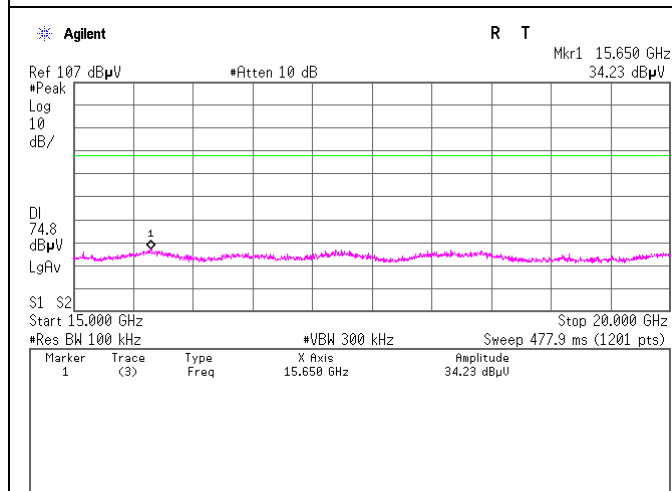
5GHz - 10GHz



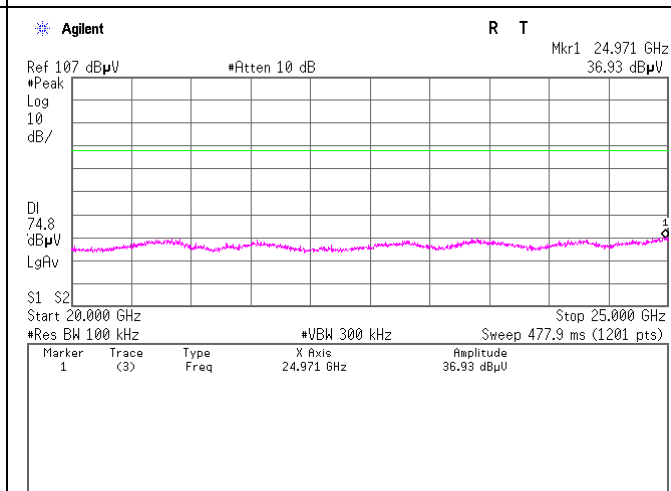
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

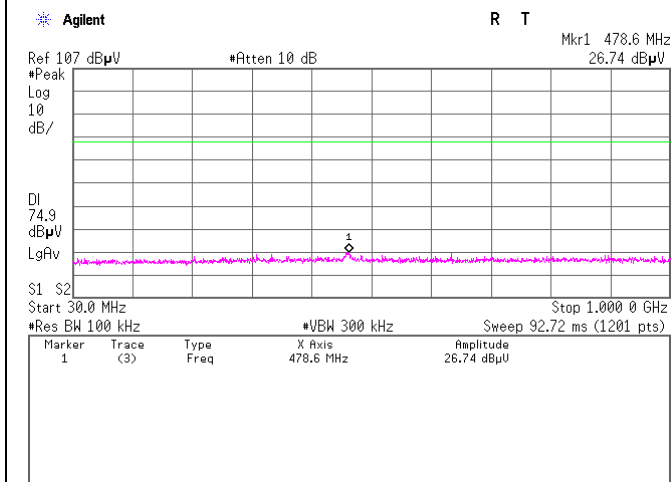
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

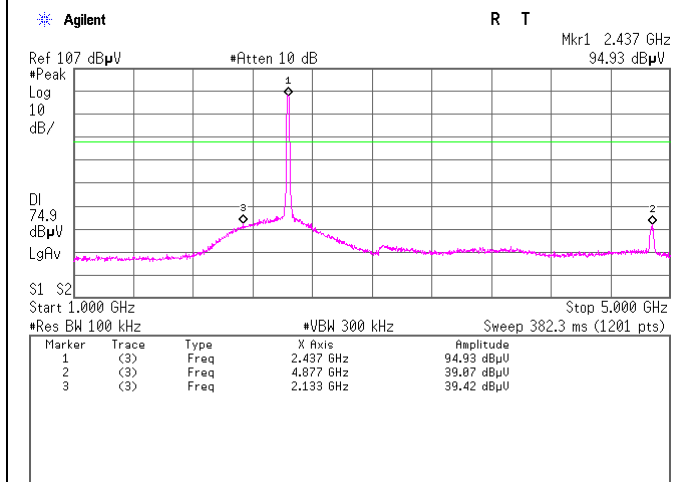
11g

Tx, 2437MHz

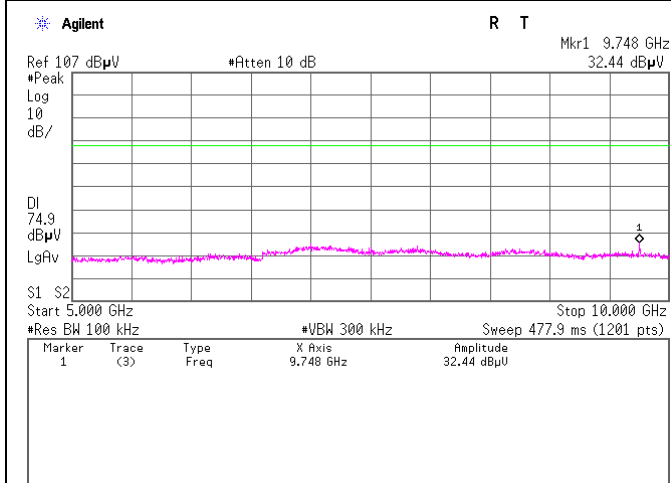
30MHz - 1GHz



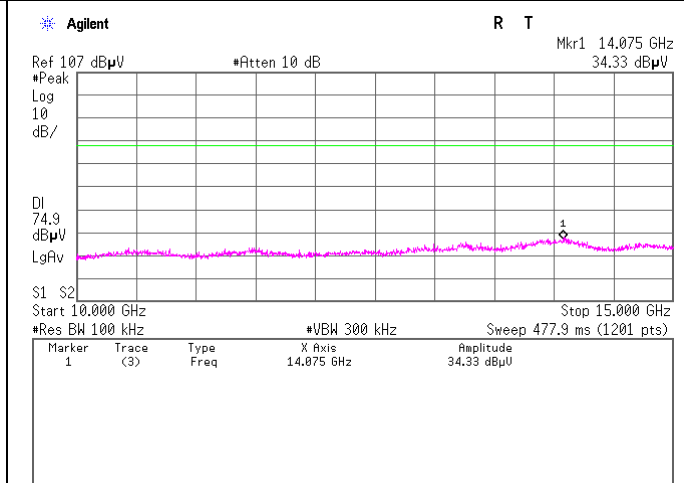
1GHz - 5GHz



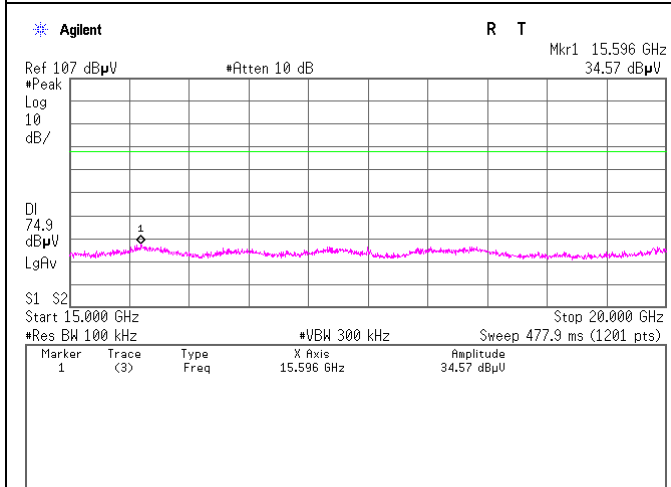
5GHz - 10GHz



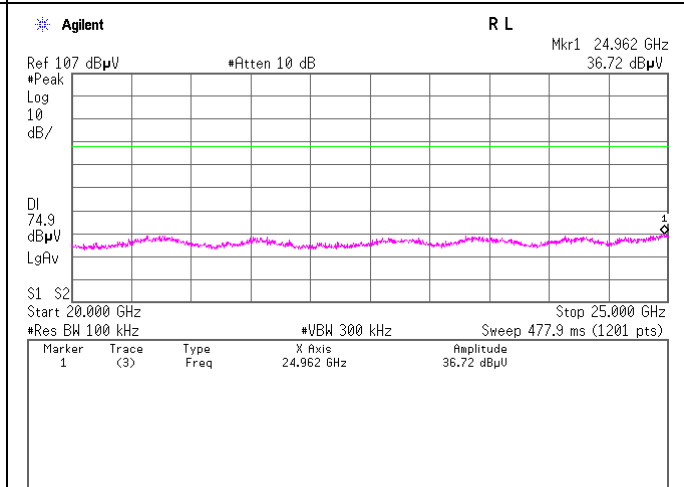
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

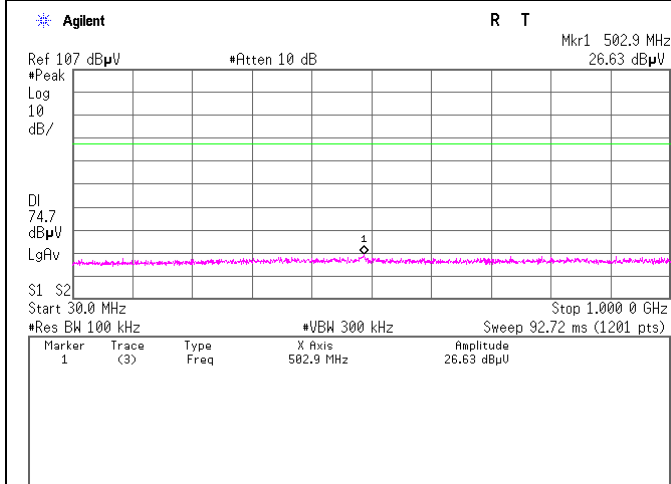
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

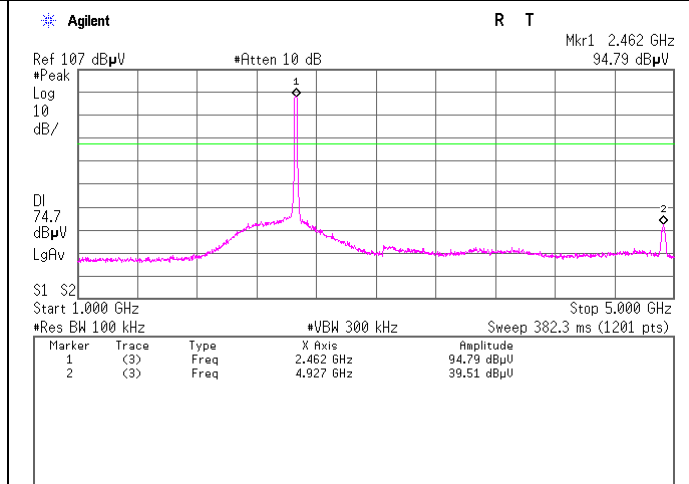
11g

Tx, 2462MHz

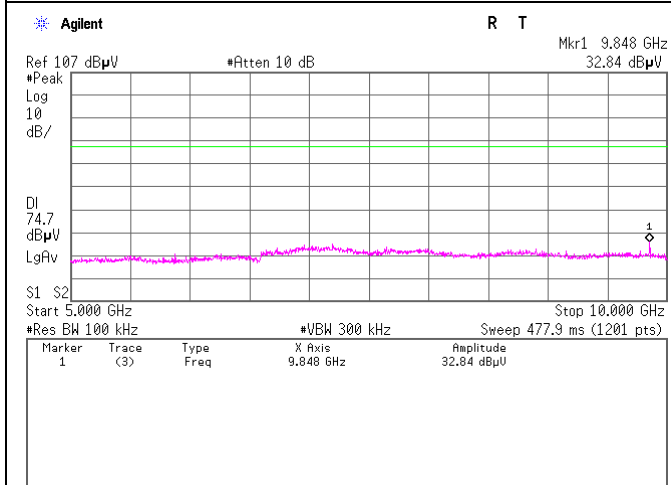
30MHz - 1GHz



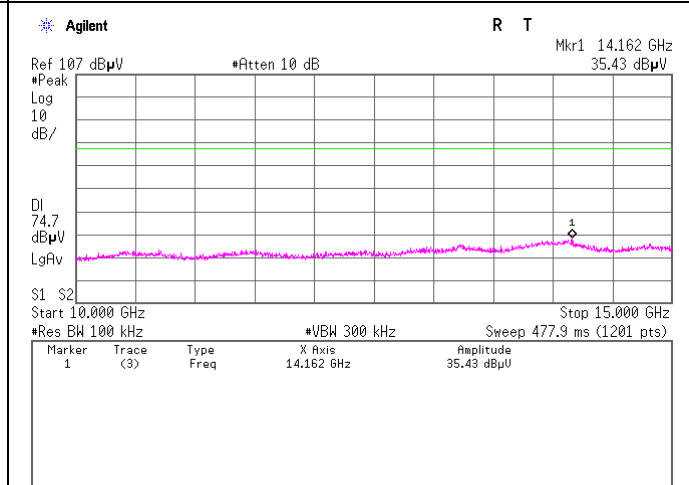
1GHz - 5GHz



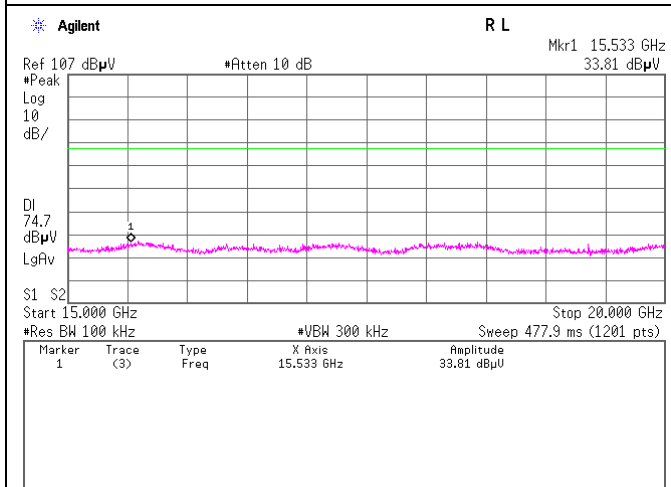
5GHz - 10GHz



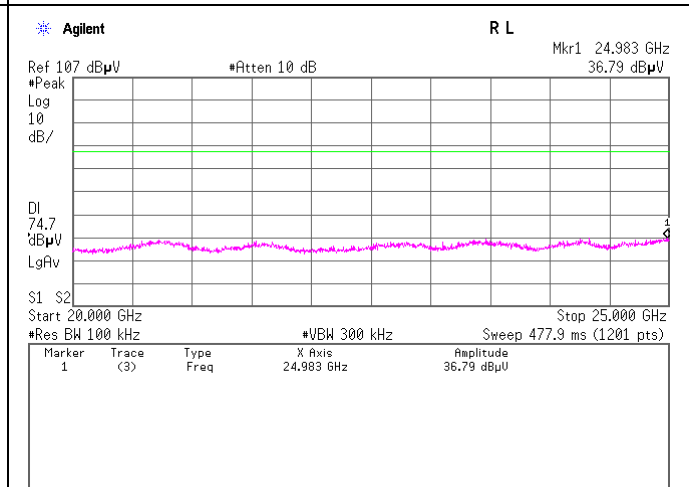
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

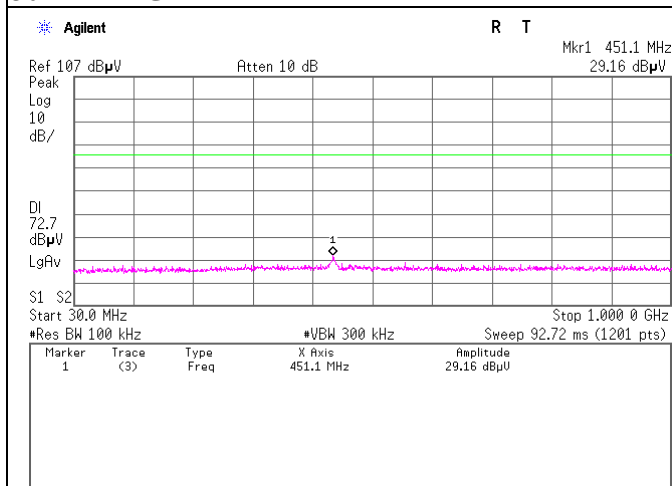
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

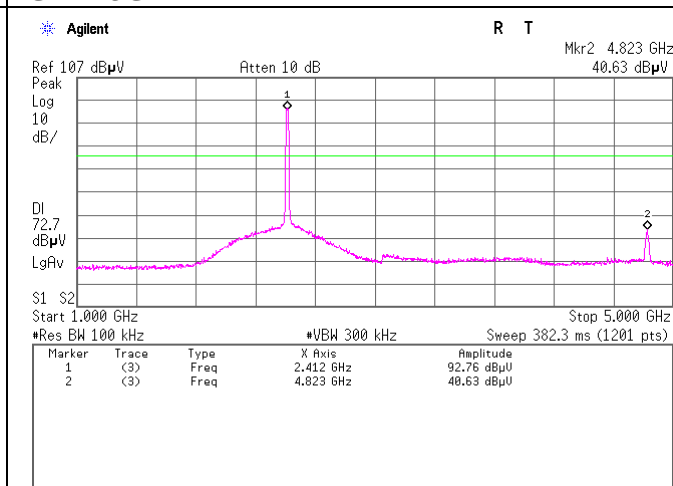
11n-20

Tx, 2412MHz

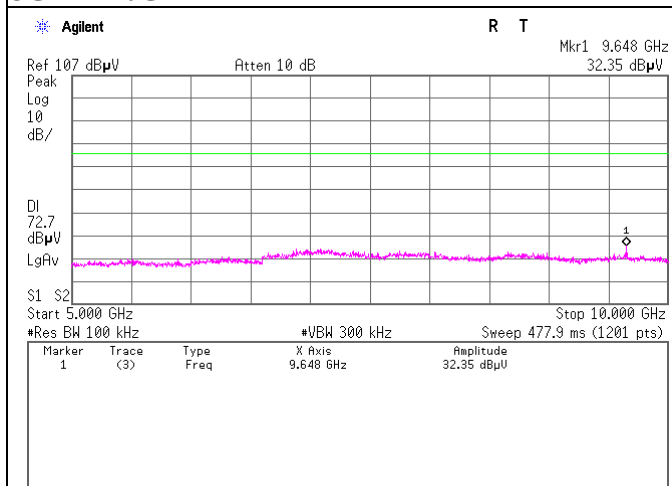
30MHz - 1GHz



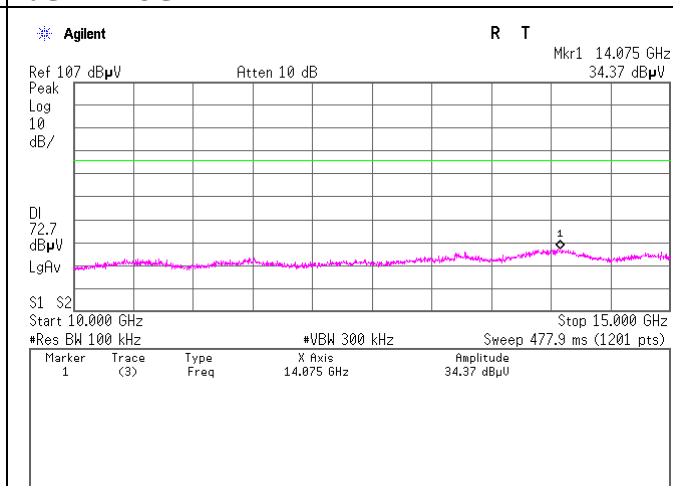
1GHz - 5GHz



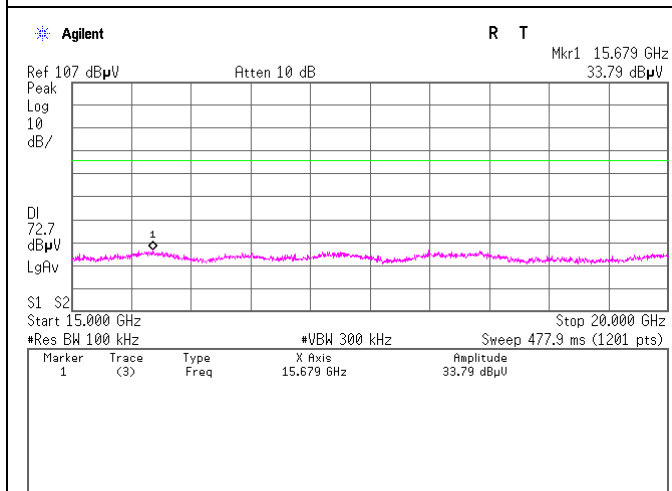
5GHz - 10GHz



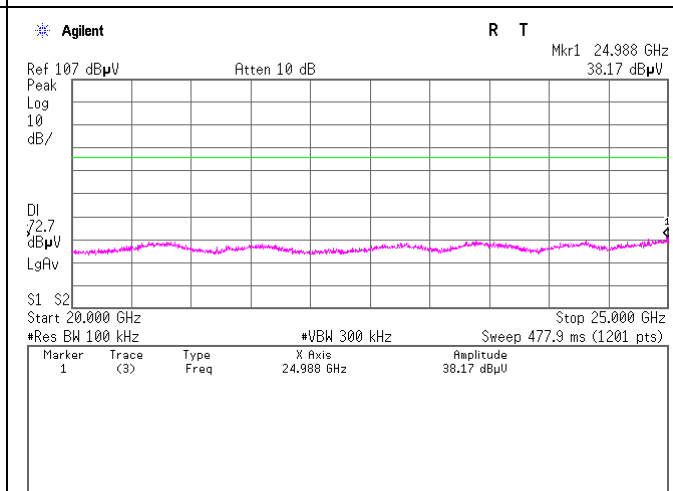
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

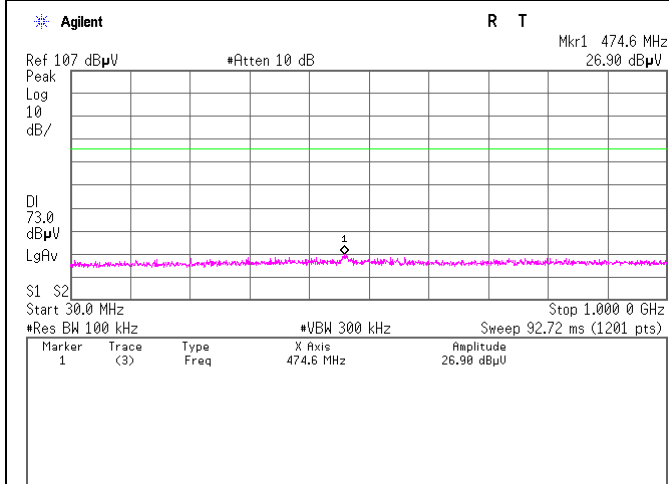
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

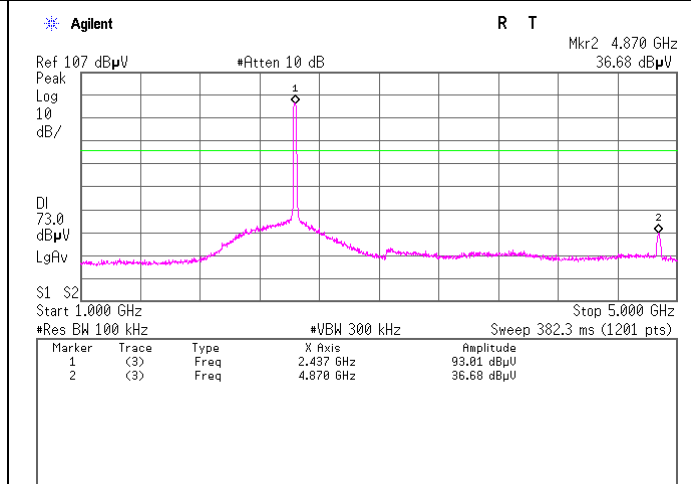
11n-20

Tx, 2437MHz

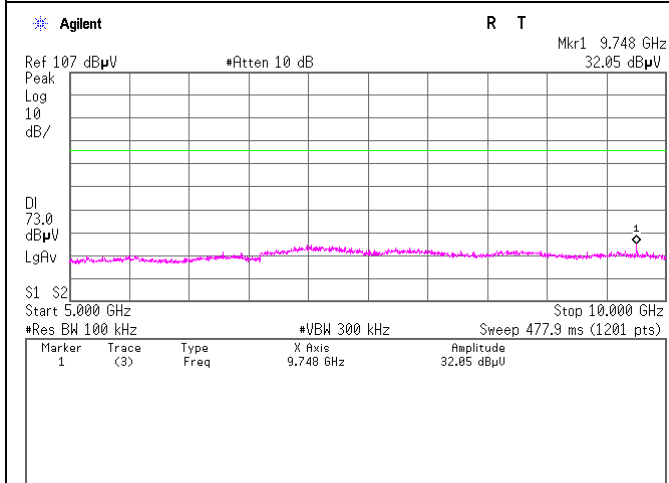
30MHz - 1GHz



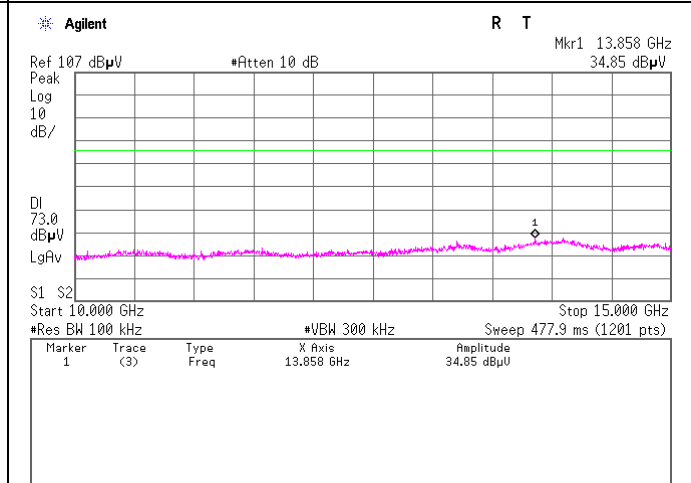
1GHz - 5GHz



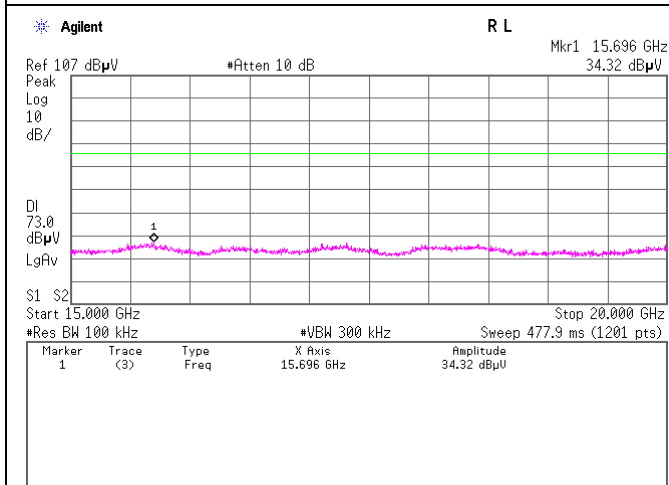
5GHz - 10GHz



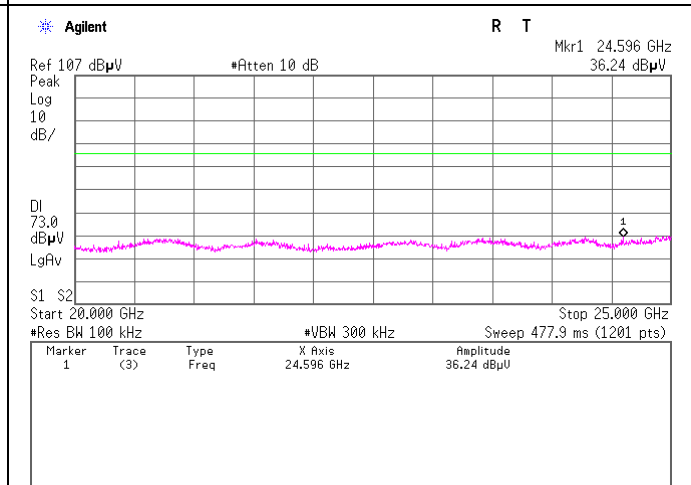
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

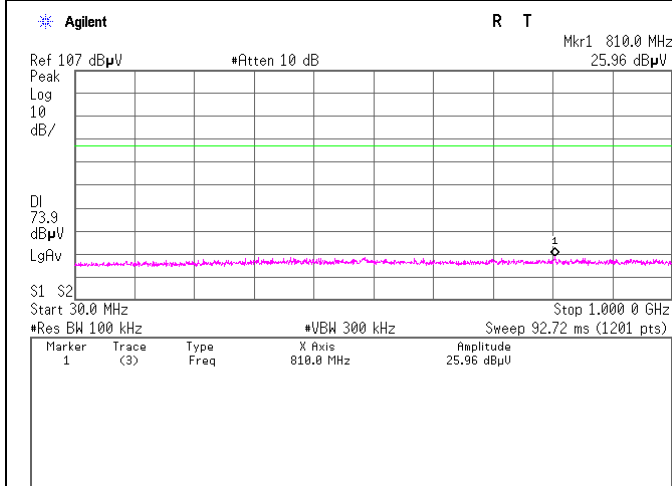
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

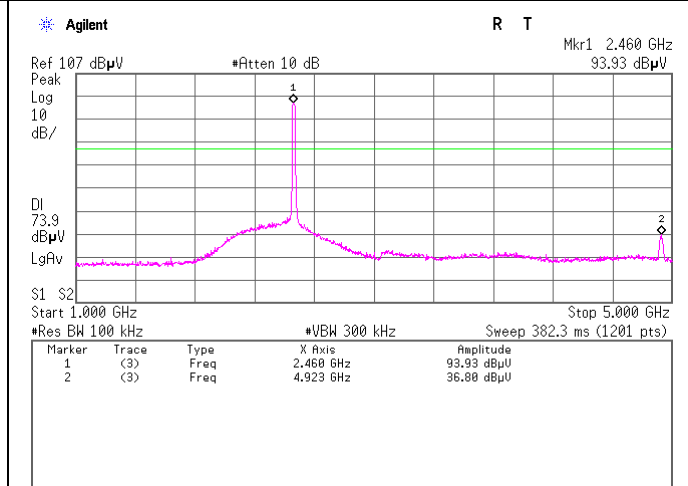
11n-20

Tx, 2462MHz

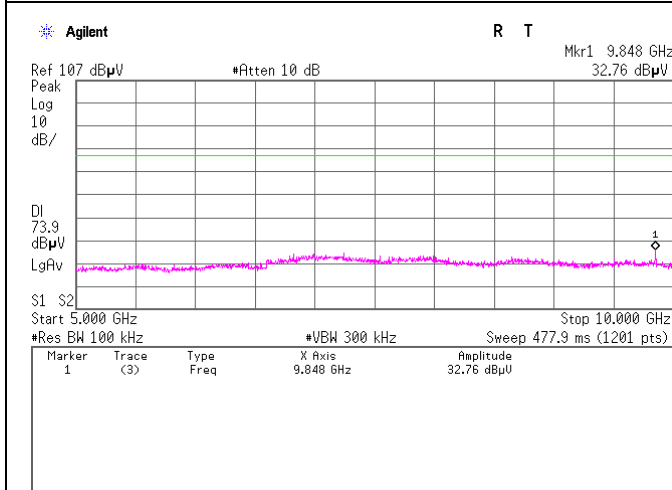
30MHz - 1GHz



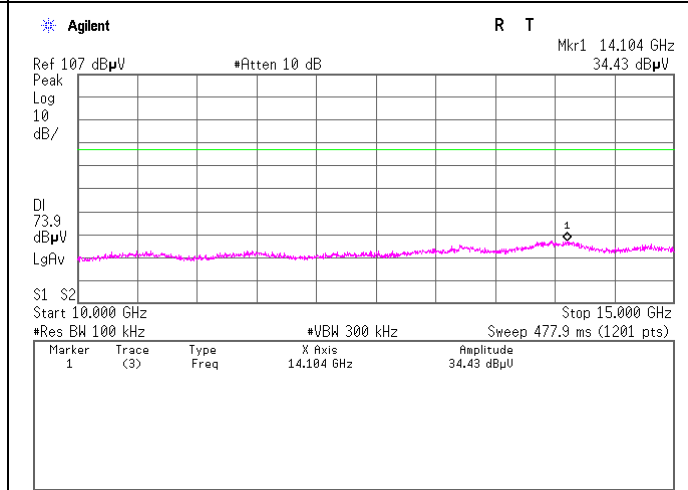
1GHz - 5GHz



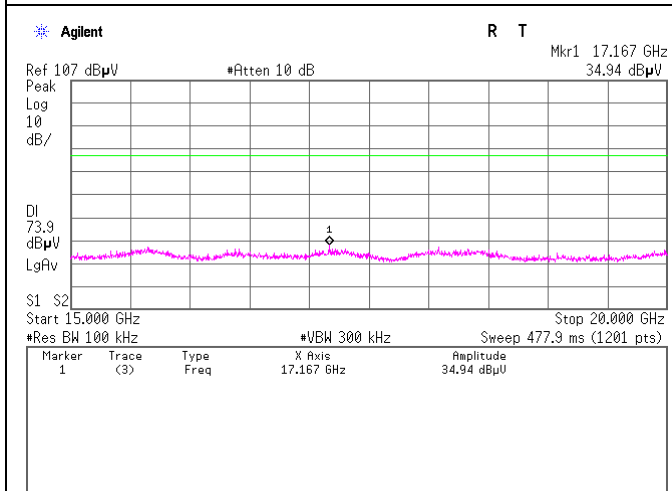
5GHz - 10GHz



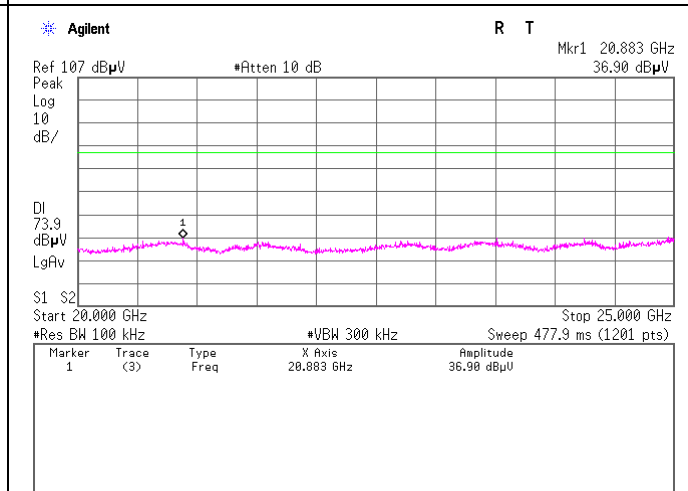
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

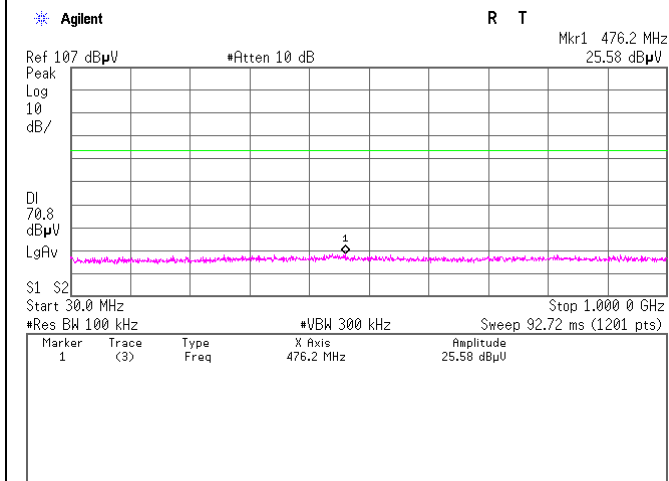
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

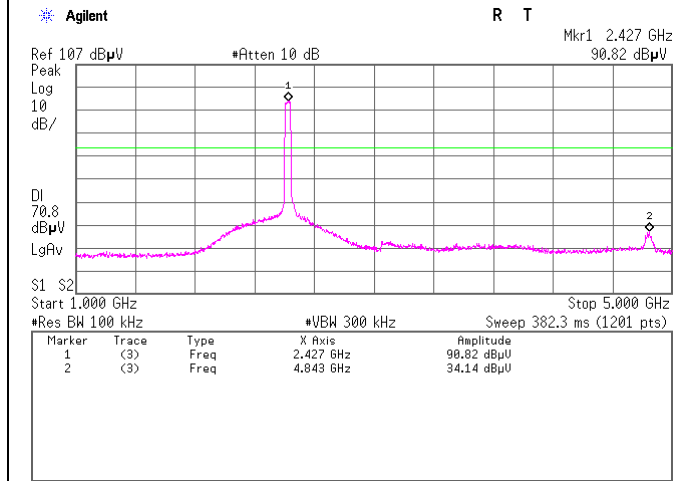
11n-40

Tx, 2422MHz

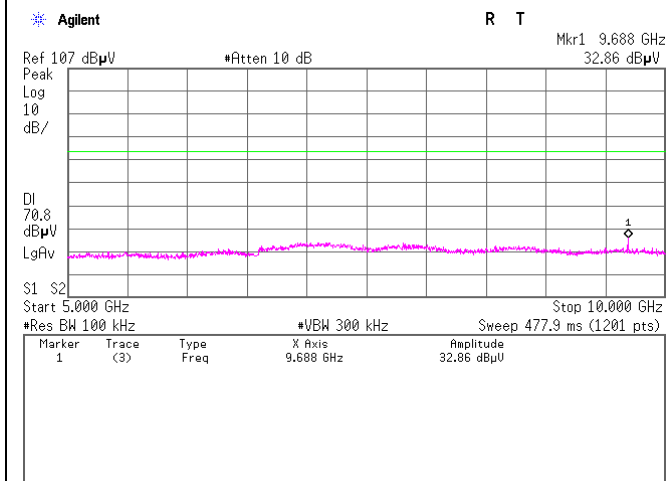
30MHz - 1GHz



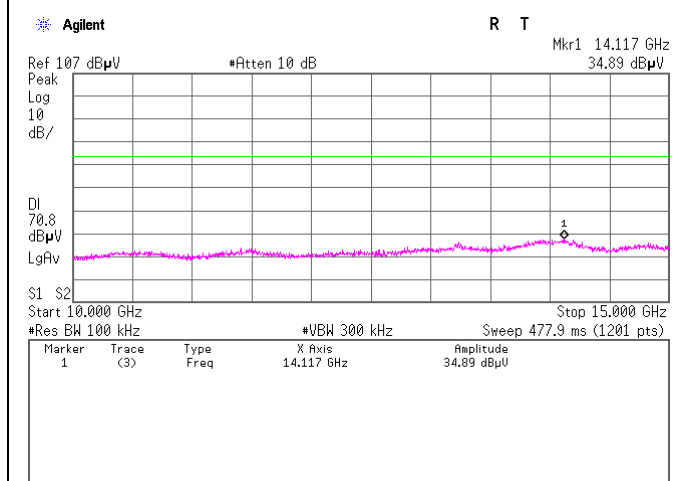
1GHz - 5GHz



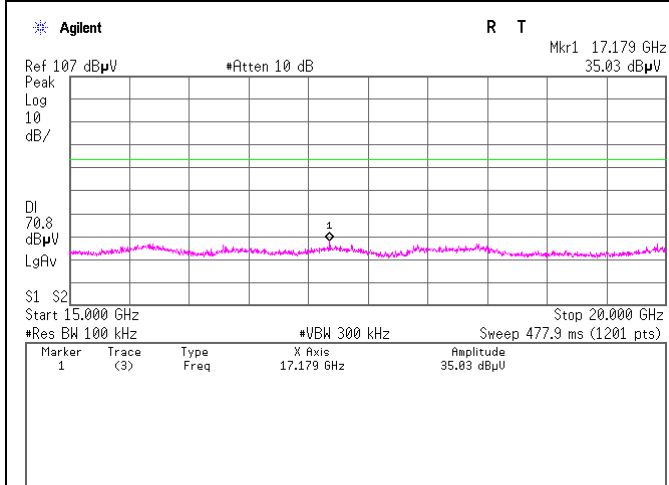
5GHz - 10GHz



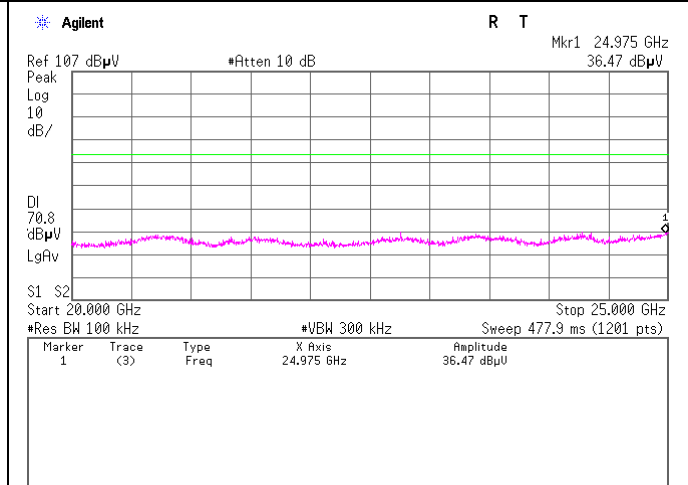
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

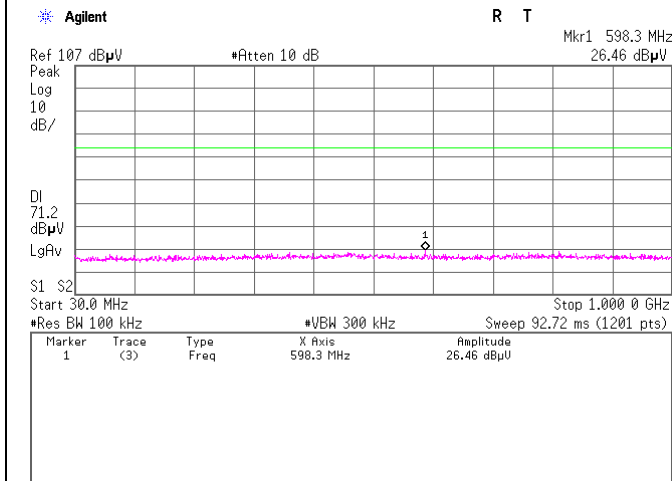
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

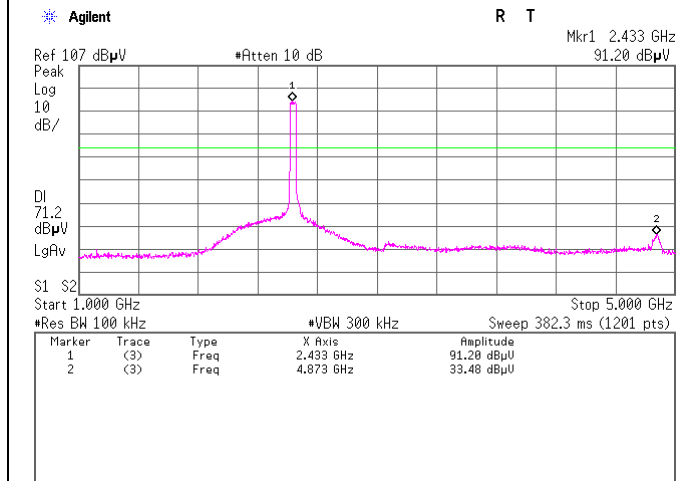
11n-40

Tx, 2437MHz

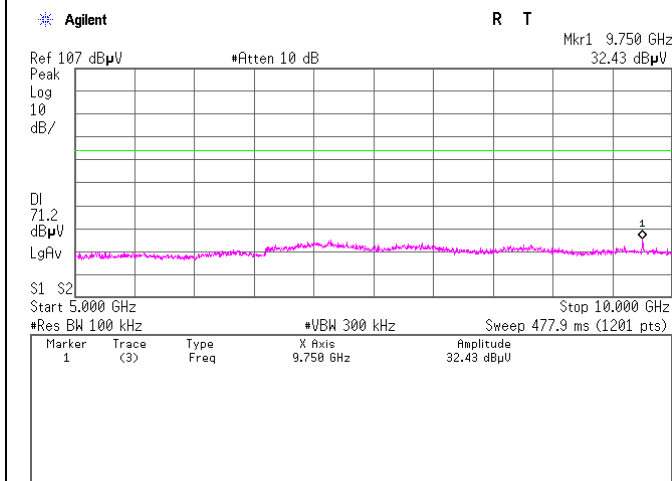
30MHz - 1GHz



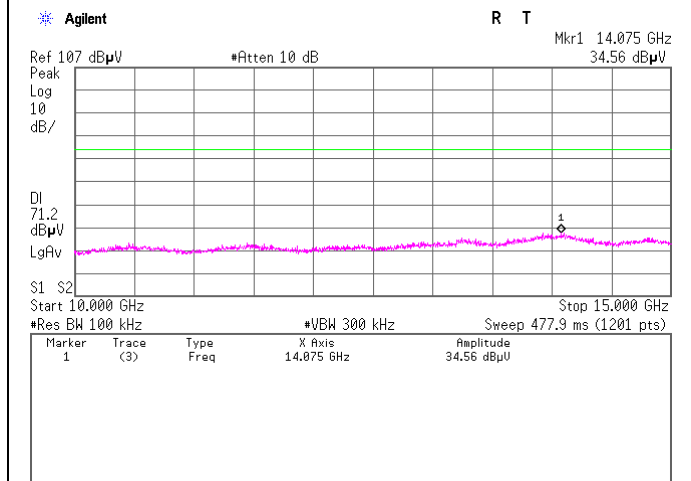
1GHz - 5GHz



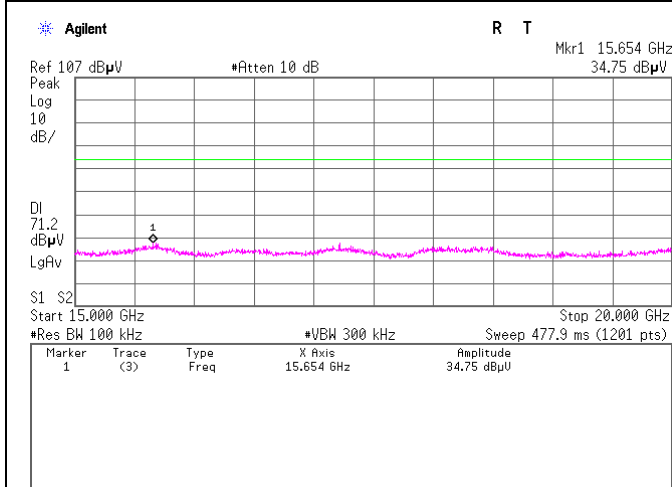
5GHz - 10GHz



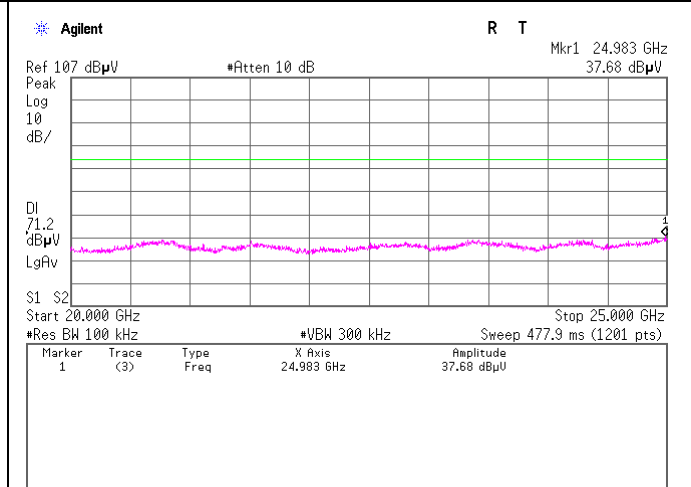
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

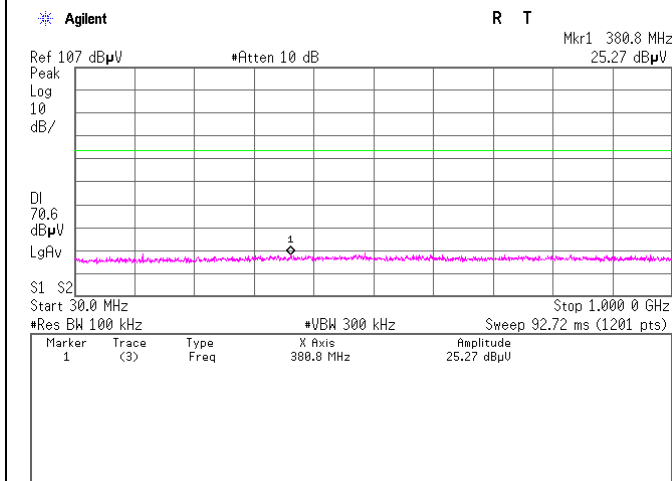
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

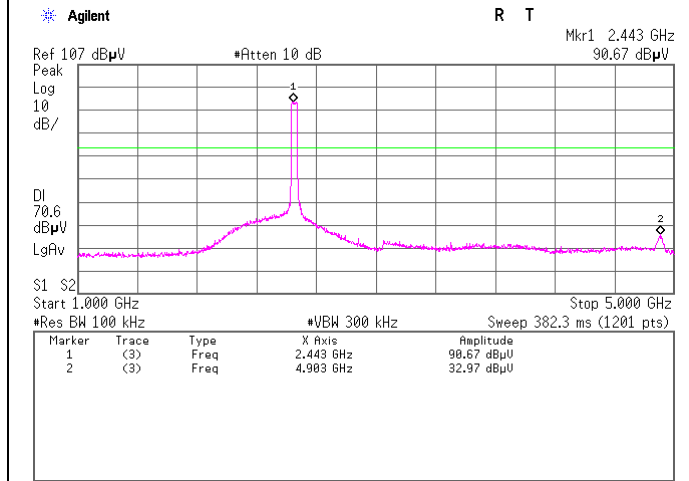
11n-40

Tx, 2452MHz

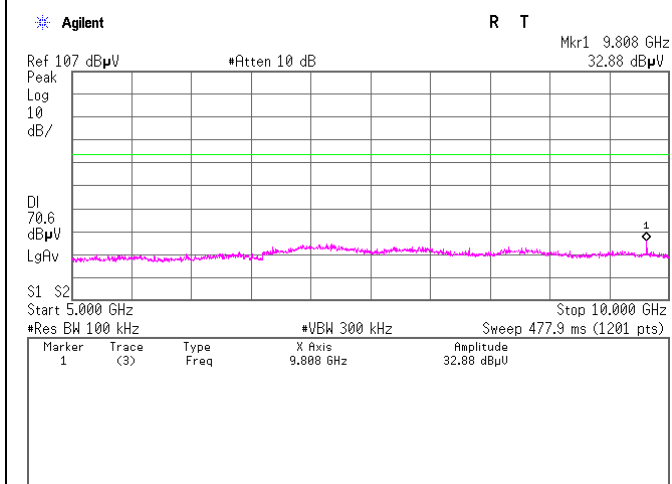
30MHz - 1GHz



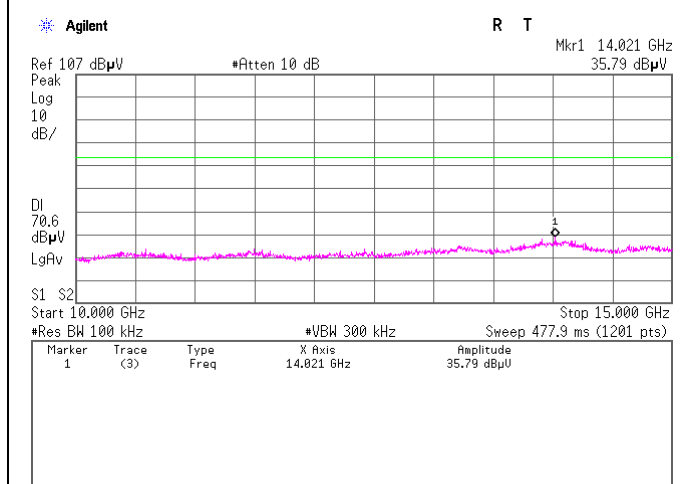
1GHz - 5GHz



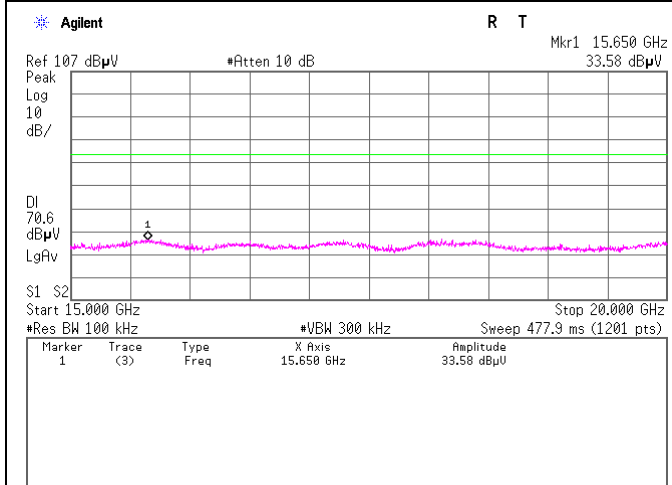
5GHz - 10GHz



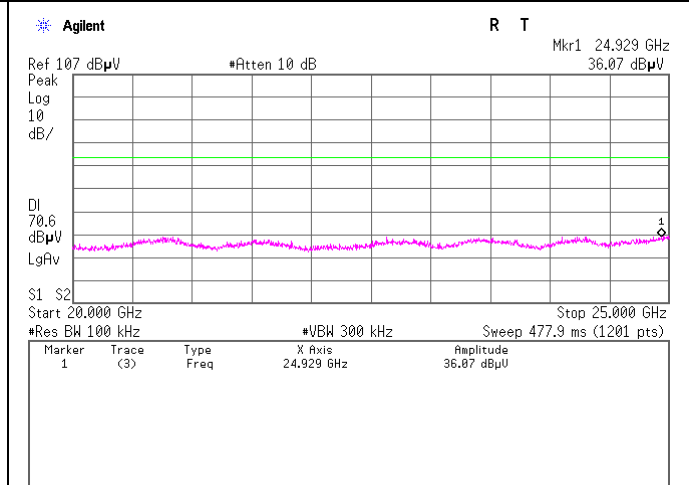
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



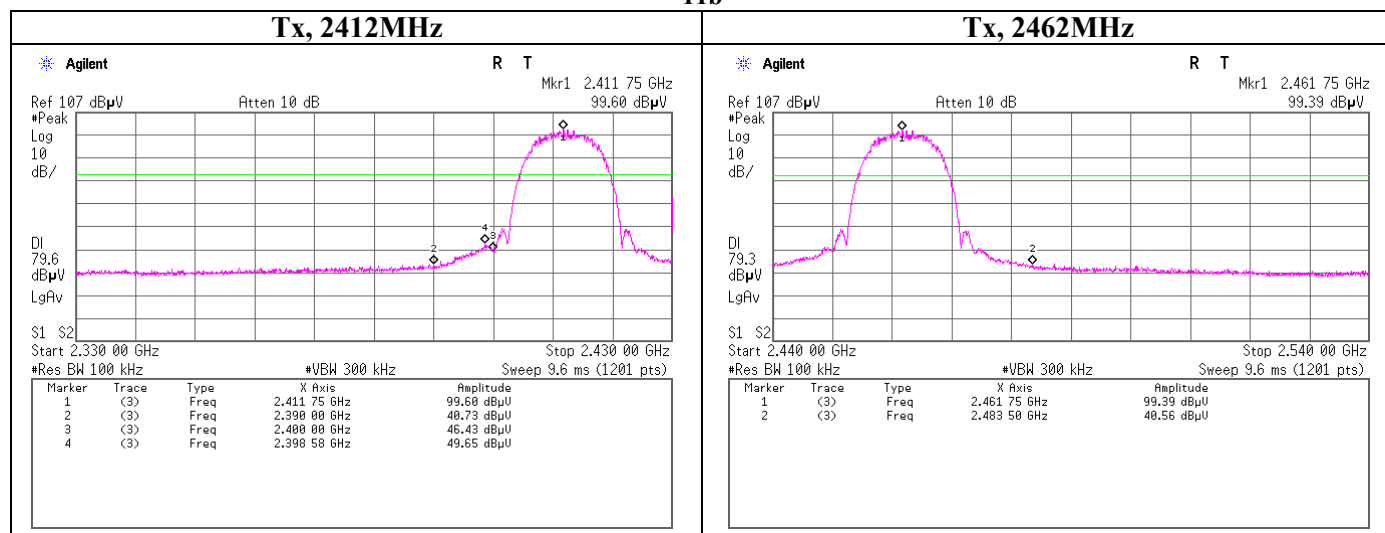
UL Japan, Inc.
Shonan EMC Lab.

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

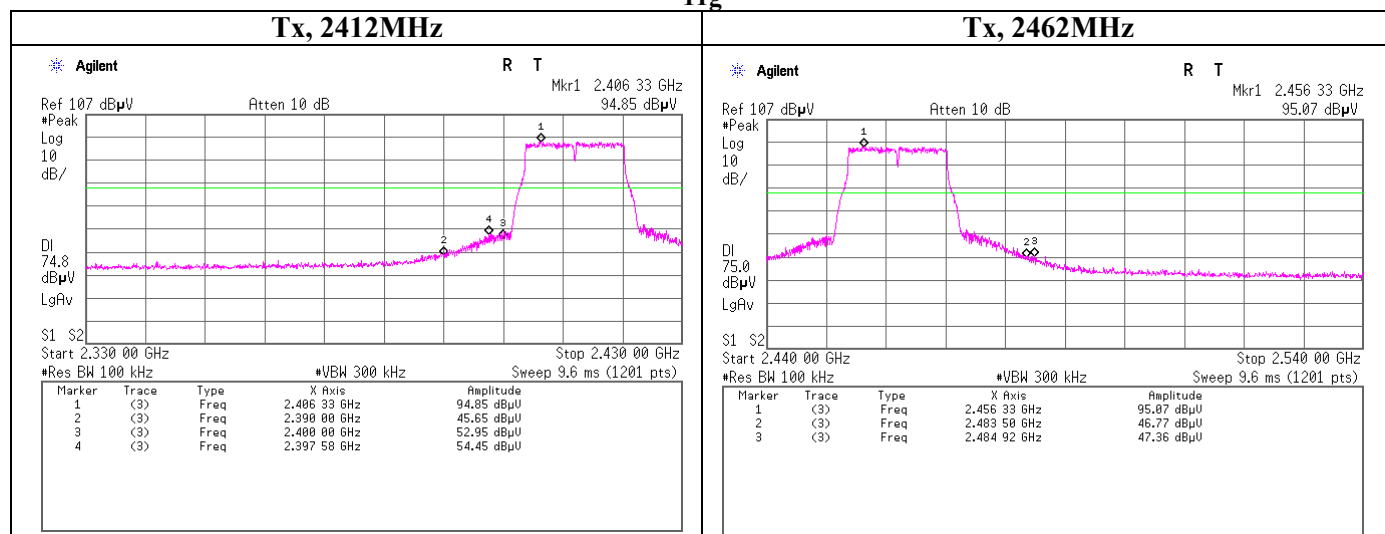
Spurious emission (Conducted)

Band Edge compliance

11b



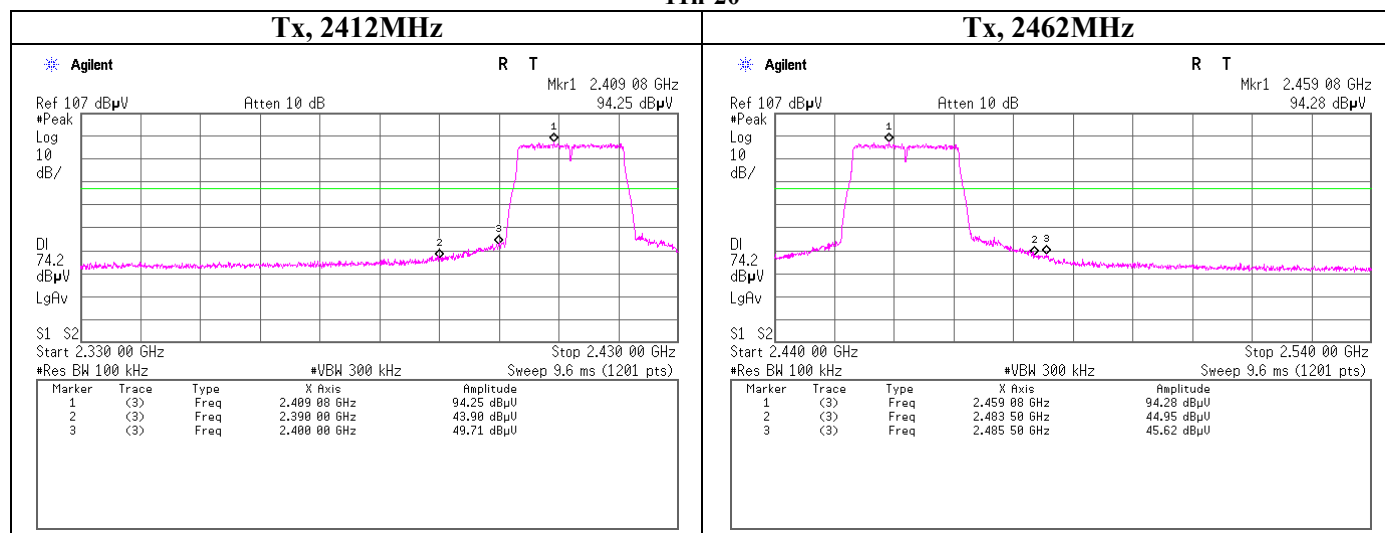
11g



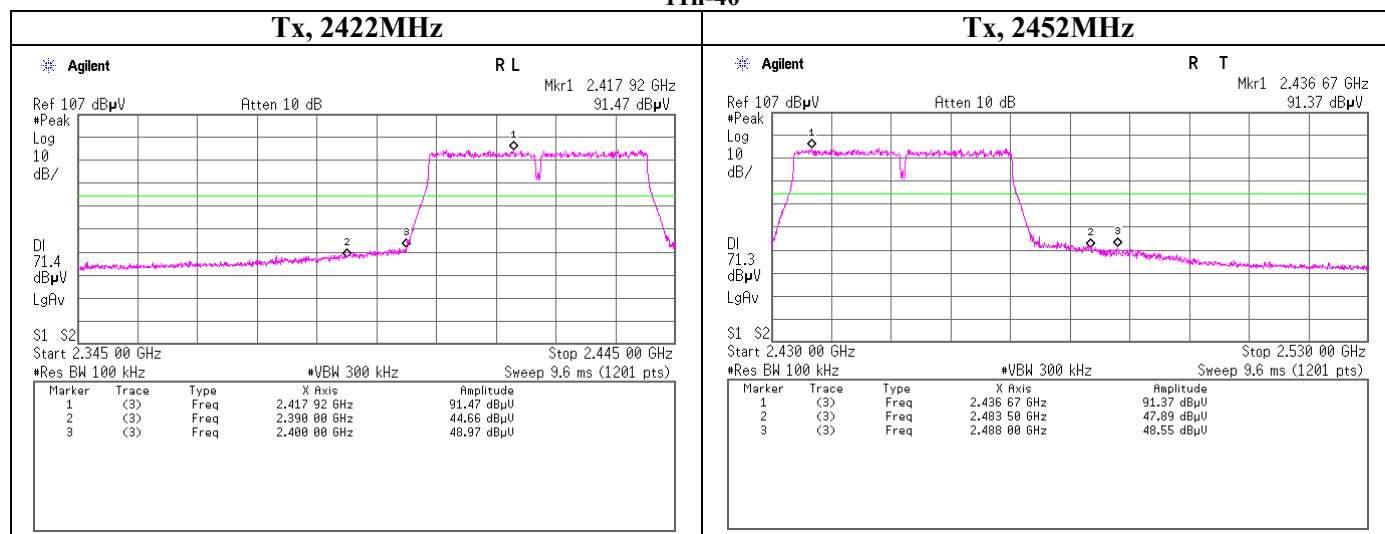
Spurious emission (Conducted)

Band Edge compliance

11n-20



11n-40



Power Density

Test place UL Japan, Inc. Shonan EMC Lab. No.5 Shielded Room
Date 2010/4/27
Temperature / Humidity 22deg.C. , 42%
Engineer Akio Hayashi
Mode Tx,

11b,

Ch. Freq.	Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2412	2410.73	-12.50	0.77	9.95	-1.78	8.00	9.78
2437	2435.73	-12.67	0.74	9.95	-1.98	8.00	9.98
2462	2460.73	-12.61	0.73	9.95	-1.93	8.00	9.93

11g,

Ch. Freq.	Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2412	2420.15	-16.60	0.76	9.95	-5.89	8.00	13.89
2437	2430.37	-16.53	0.75	9.95	-5.83	8.00	13.83
2462	2457.65	-16.50	0.74	9.95	-5.81	8.00	13.81

11n-20,

Ch. Freq.	Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2412	2412.62	-16.11	0.77	9.95	-5.39	8.00	13.39
2437	2437.62	-16.04	0.74	9.95	-5.35	8.00	13.35
2462	2462.62	-16.18	0.73	9.95	-5.50	8.00	13.50

11n-40,

Ch. Freq.	Freq.	Reading	Cable Loss	Atten.	Result	Limit	Margin
[MHz]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[dBm]	[dB]
2422	2417.93	-19.39	0.76	9.95	-8.68	8.00	16.68
2437	2421.70	-19.48	0.76	9.95	-8.77	8.00	16.77
2452	2436.70	-19.50	0.74	9.95	-8.81	8.00	16.81

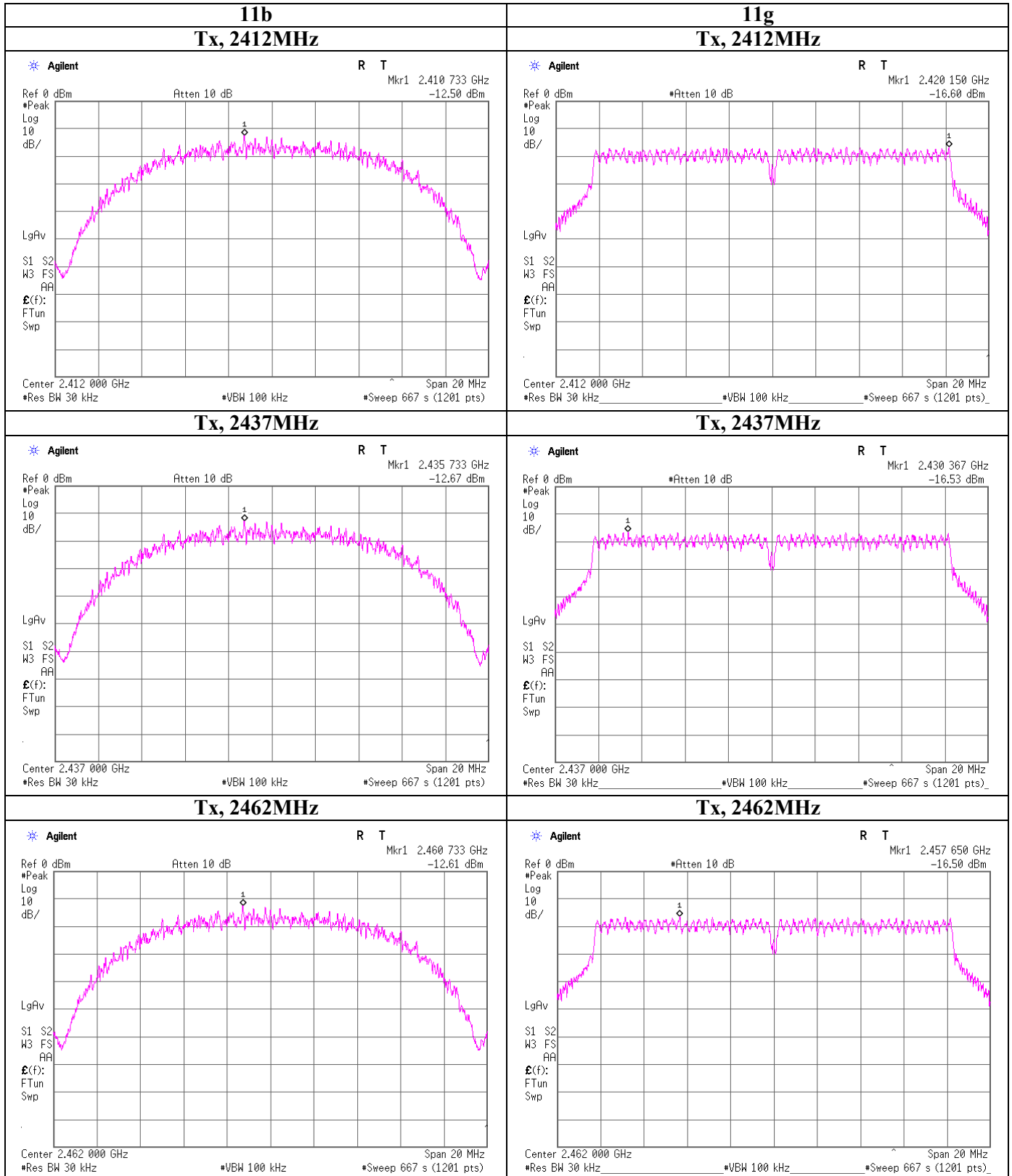
Sample Calculation:

Result = Reading + Cable Loss (Including customer's cable loss)+ Attenuator

UL Japan, Inc.
Shonan EMC Lab.

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

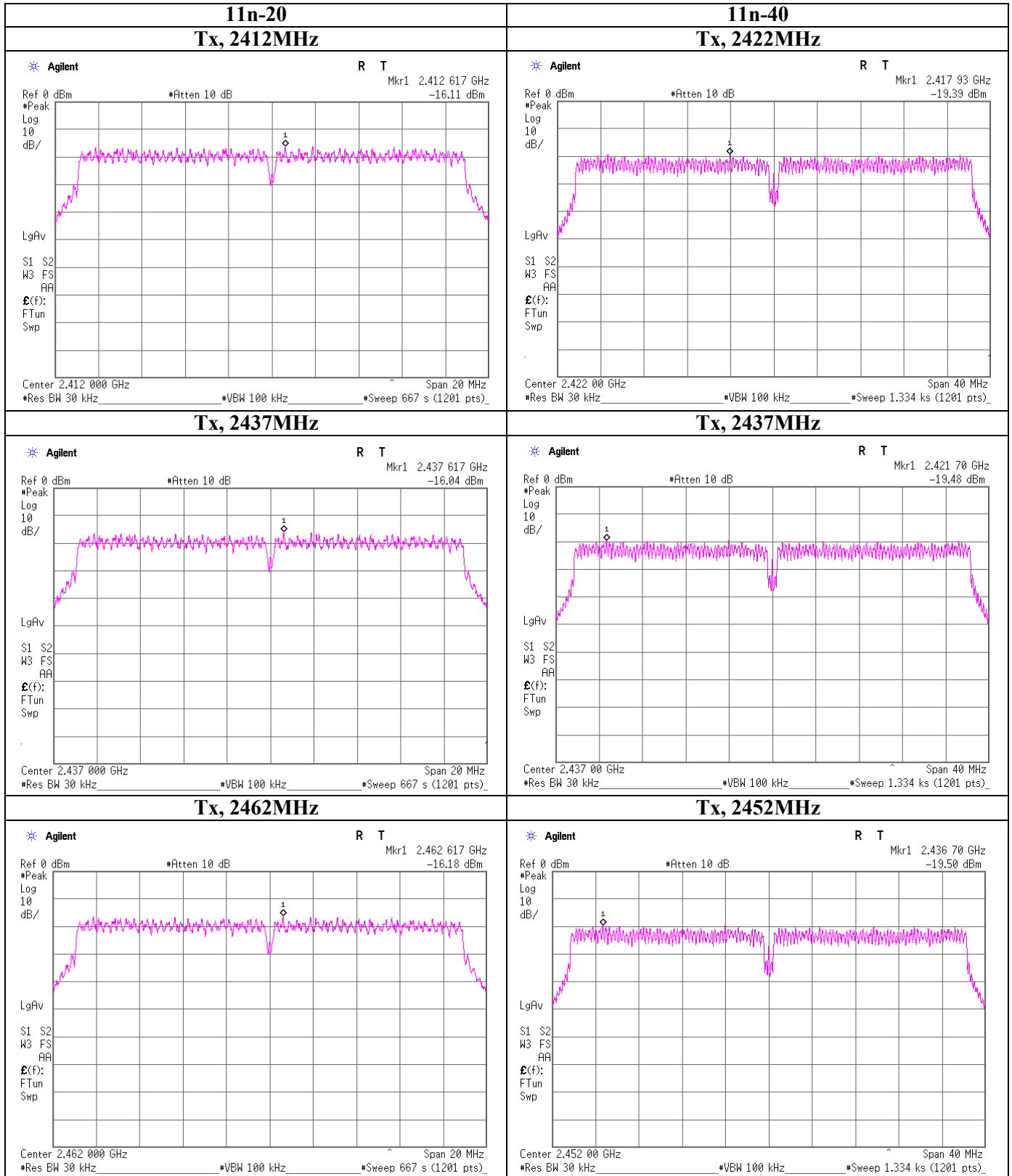
Power Density



UL Japan, Inc.
Shonan EMC Lab.

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

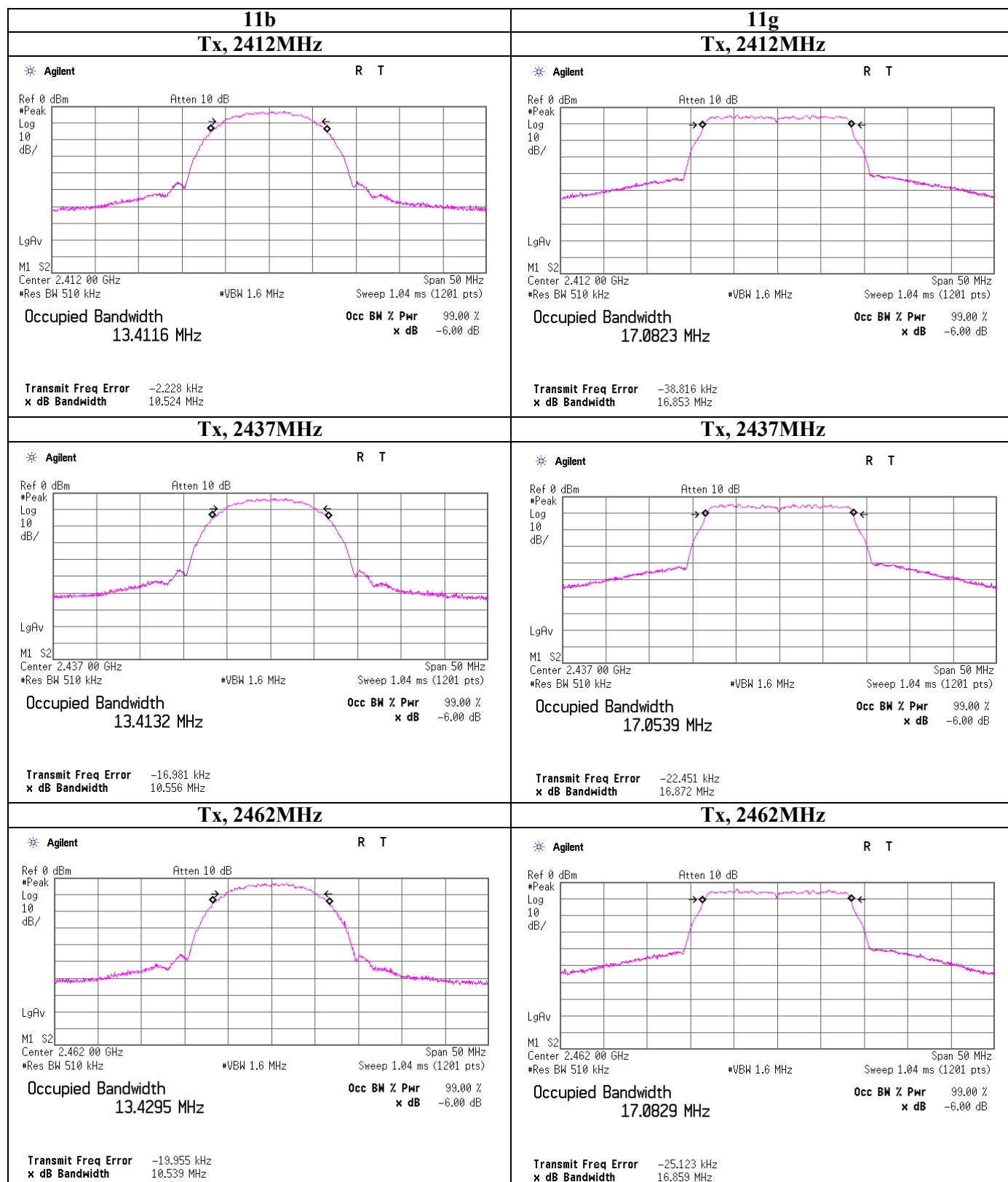
Power Density



UL Japan, Inc.
Shonan EMC Lab.

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

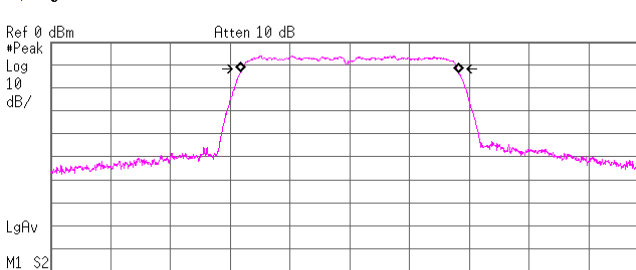
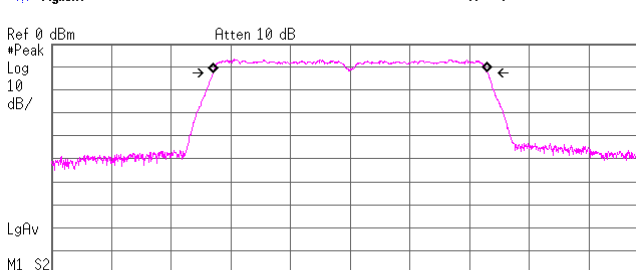
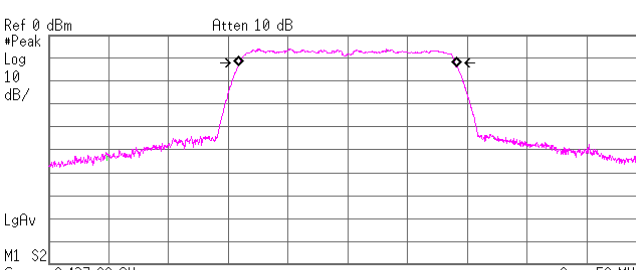
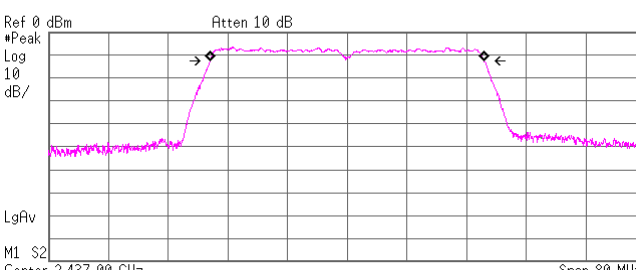
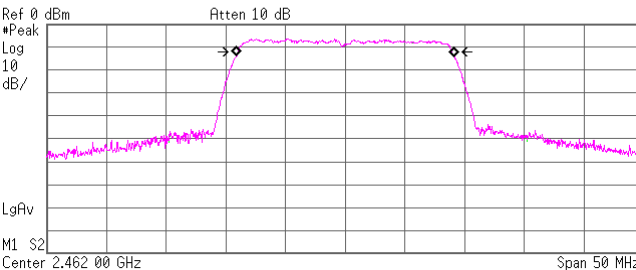
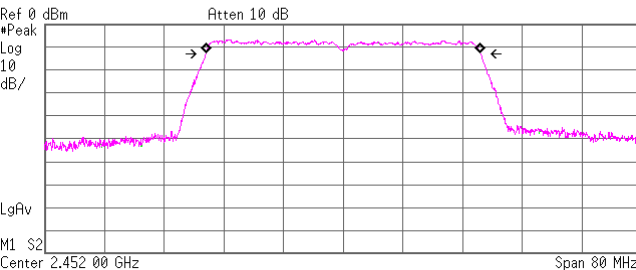
99% Occupied Bandwidth



UL Japan, Inc.
Shonan EMC Lab.

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

99% Occupied Bandwidth

11n-20 Tx, 2412MHz	11n-40 Tx, 2422MHz
Agilent R T  Center 2.412 00 GHz Span 50 MHz #Res BW 510 kHz #VBW 1.6 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 18.1846 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 12.131 kHz x dB Bandwidth 17.928 MHz	Agilent R T  Center 2.422 00 GHz Span 80 MHz #Res BW 820 kHz #VBW 2.7 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 36.7558 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 27.166 kHz x dB Bandwidth 36.850 MHz
Tx, 2437MHz	Tx, 2437MHz
Agilent R T  Center 2.437 00 GHz Span 50 MHz #Res BW 510 kHz #VBW 1.6 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 18.1707 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -5.476 kHz x dB Bandwidth 17.904 MHz	Agilent R T  Center 2.437 00 GHz Span 80 MHz #Res BW 820 kHz #VBW 2.7 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 36.7909 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 24.429 kHz x dB Bandwidth 36.823 MHz
Tx, 2462MHz	Tx, 2452MHz
Agilent R T  Center 2.462 00 GHz Span 50 MHz #Res BW 510 kHz #VBW 1.6 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 18.1768 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error -7.001 kHz x dB Bandwidth 17.876 MHz	Agilent R T  Center 2.452 00 GHz Span 80 MHz #Res BW 820 kHz #VBW 2.7 MHz Sweep 1.04 ms (1201 pts) Occupied Bandwidth 36.7645 MHz Occ BW % Pwr 99.00 % x dB -6.00 dB Transmit Freq Error 12.335 kHz x dB Bandwidth 36.847 MHz

UL Japan, Inc.
Shonan EMC Lab.

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

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2010/03/09 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2010/04/16 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2009/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2009/08/23 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2010/02/09 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE/CE	2010/04/12 * 24
SJM-03	Measure	KOMELON	KMC-36	-	RE/CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE	-
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	RE	2010/03/05 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2009/12/04 * 12
SPM-06	Power Meter	Anritsu	ML2495A	0850009	AT2	2010/04/01 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	0917063	AT2	2010/04/01 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	AT1,3,4	2009/06/09 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	AT all	2010/03/05 * 12
SCC-H1	Microwave cable	Hirose Electric	U.FL-2LP-066J1-A-(200)	-	AT all	Pre Check
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT all	2010/02/17 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2010/02/06 * 12
SAT6-03	Attenuator	JFW	50HF-006N	-	RE	2010/02/06 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2010/03/22 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE	2010/04/02 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2010/03/22 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/09/18 * 12
SCC-C9/C10/SRSE-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	CE	2010/04/02 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2010/02/19 * 12
SAT3-06	Attenuator	JFW	50HF-003N	-	CE	2010/02/06 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2010/02/17 * 12

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

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

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

Test Item :

- CE: Conducted Emission
- RE: Out of Band Emission (Radiated)
- AT: Antenna terminal conducted test
 - 1: 6dB Bandwidth
 - 2: Maximum Peak Output Power
 - 3: Out of Band Emission (Conducted)
 - 4: Peak Power Density