DATA OF CONDUCTED EMISSION TEST

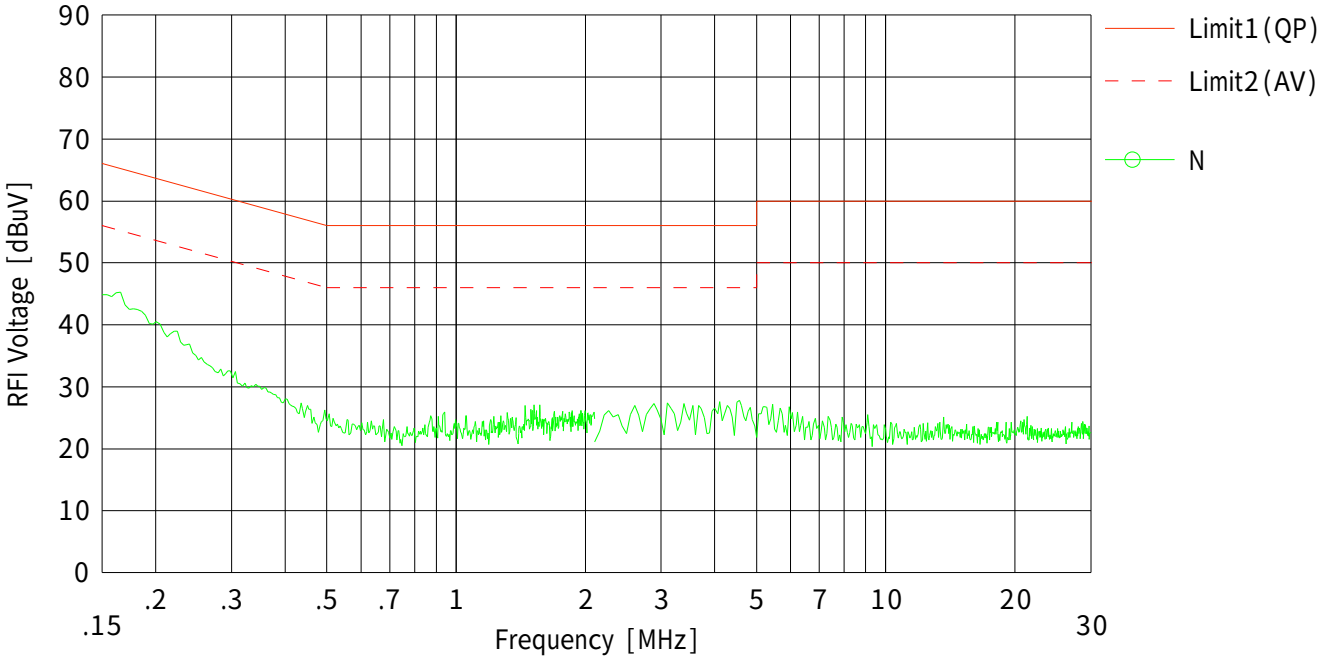
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

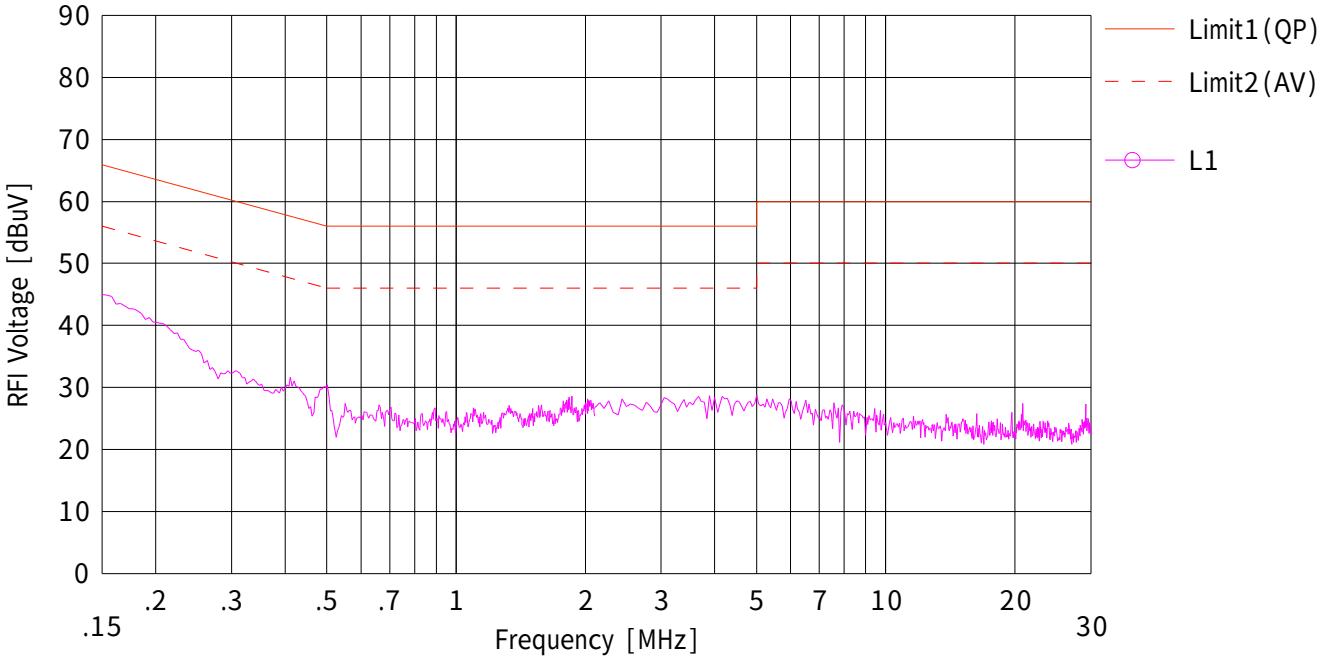
Company	: Sony Corporation	Mode	: IEEE802.11b 2412MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 11Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

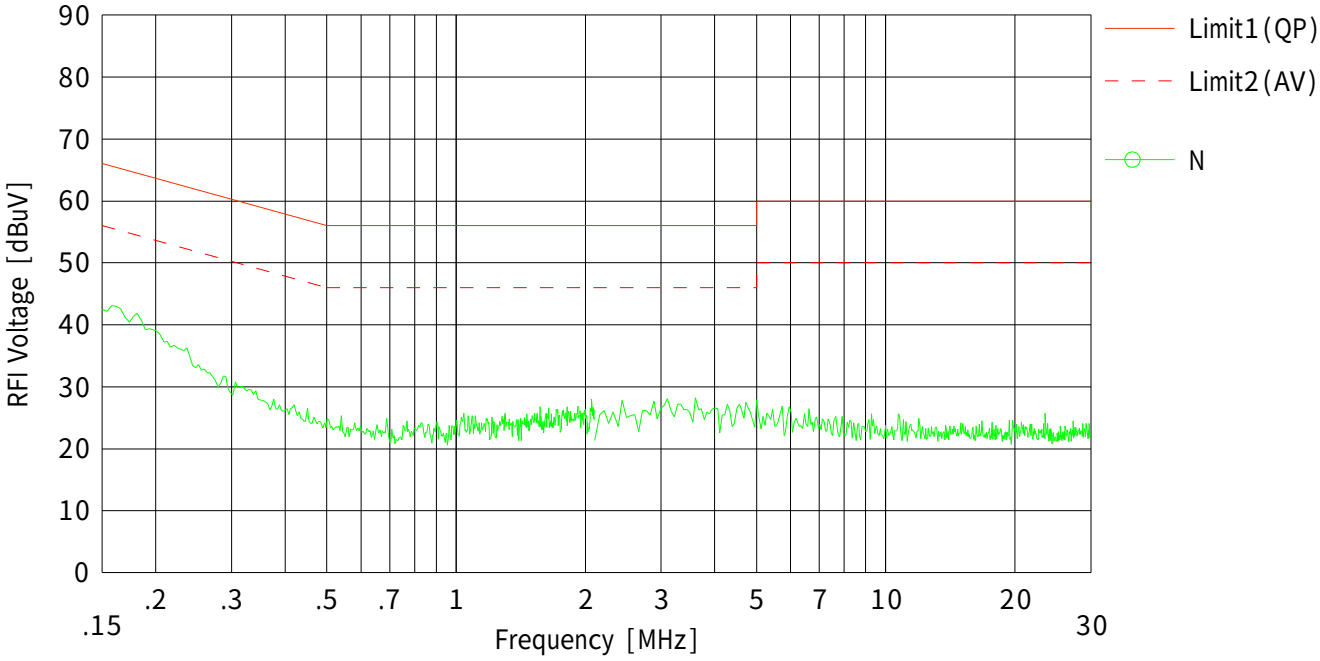
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

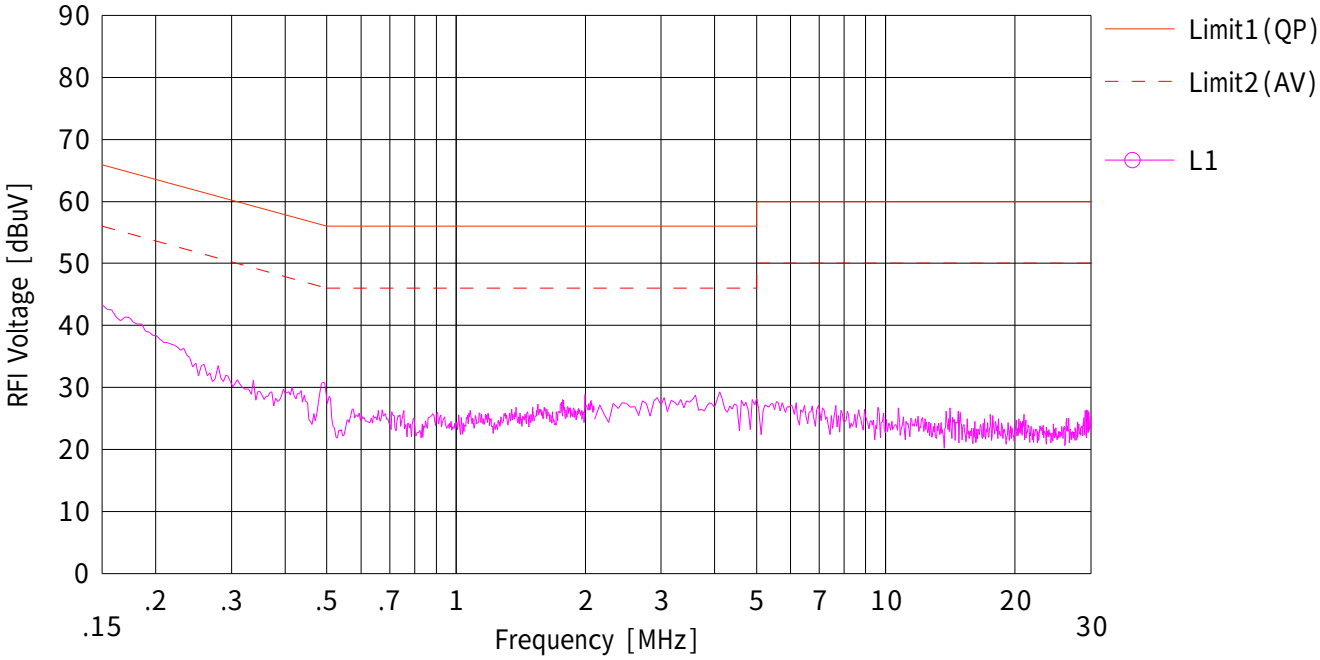
Company	: Sony Corporation	Mode	: IEEE802.11b 2437MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 11Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

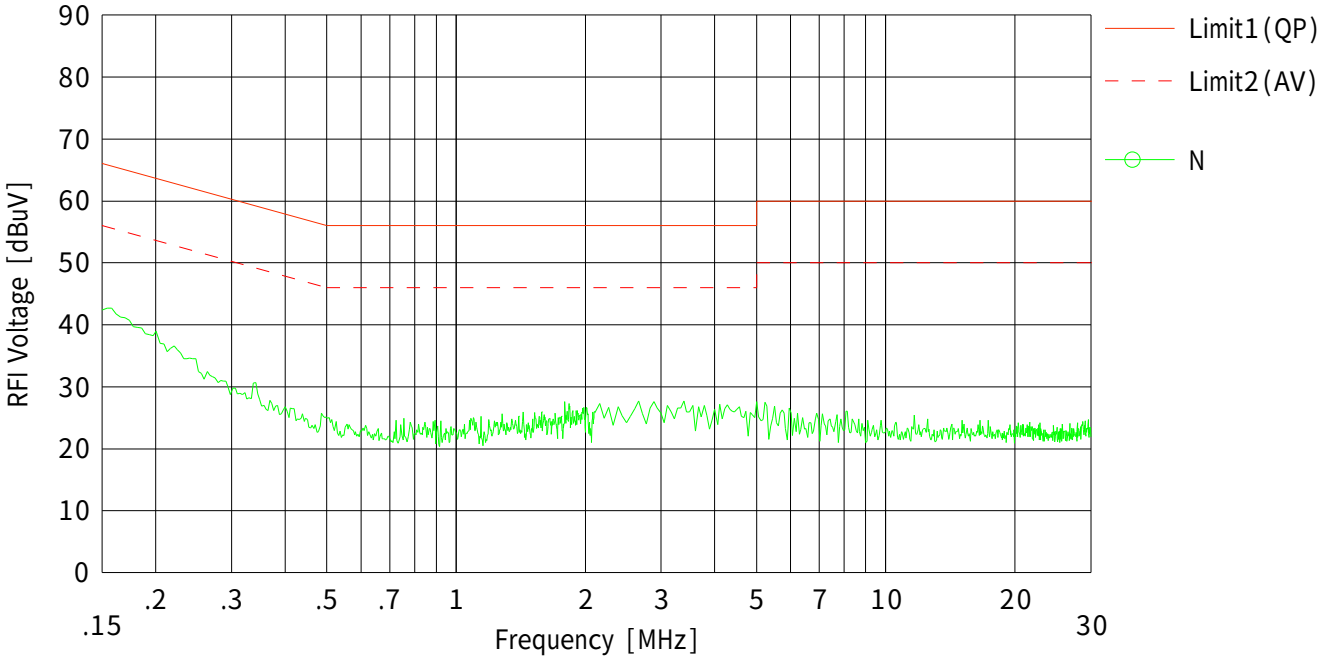
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

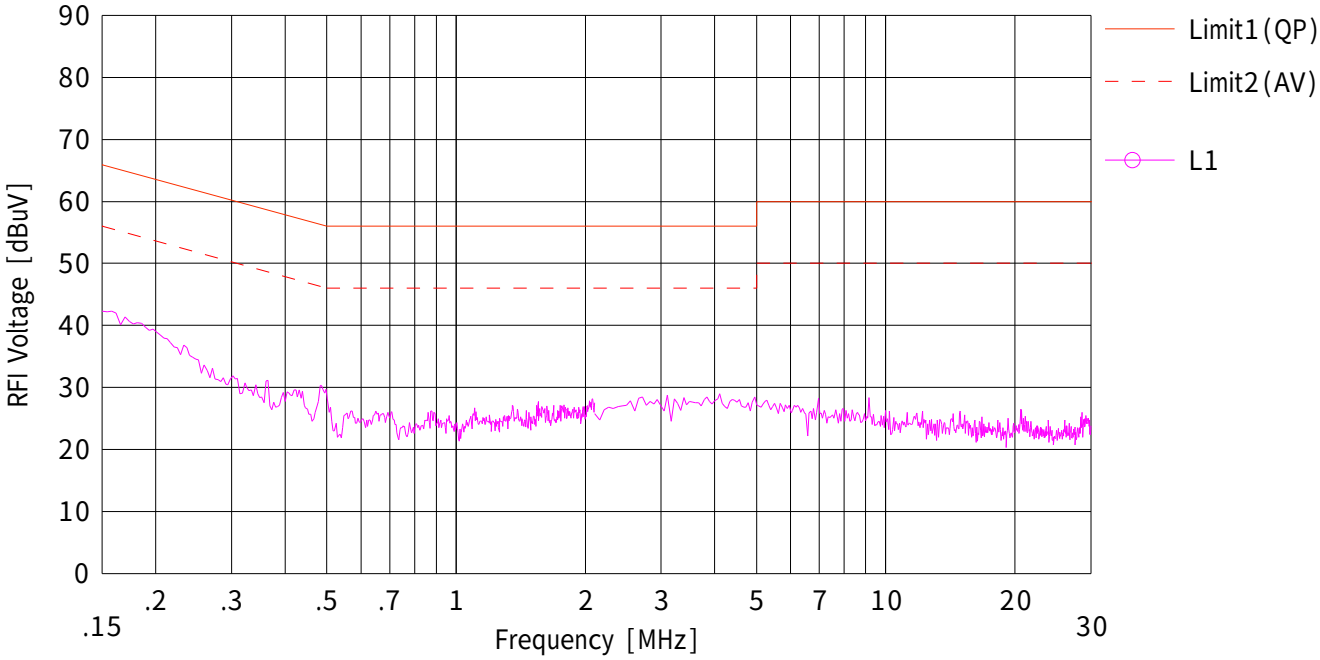
Company	: Sony Corporation	Mode	: IEEE802.11b 2462MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 11Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

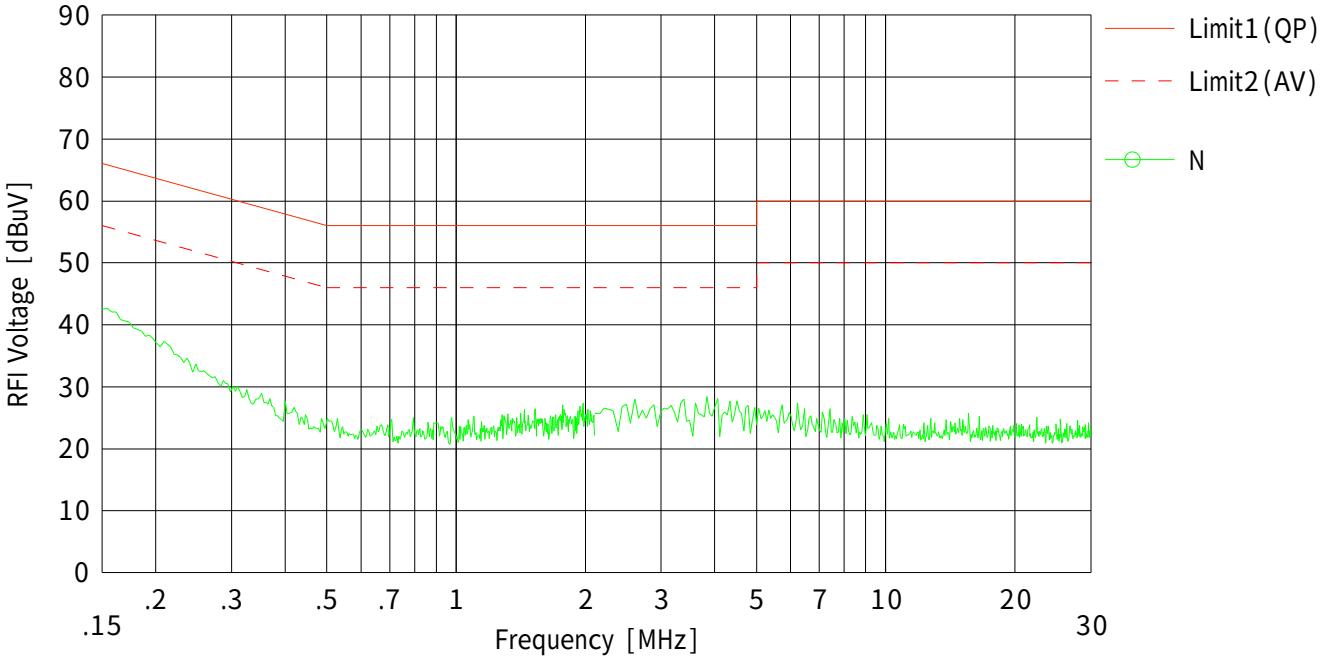
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

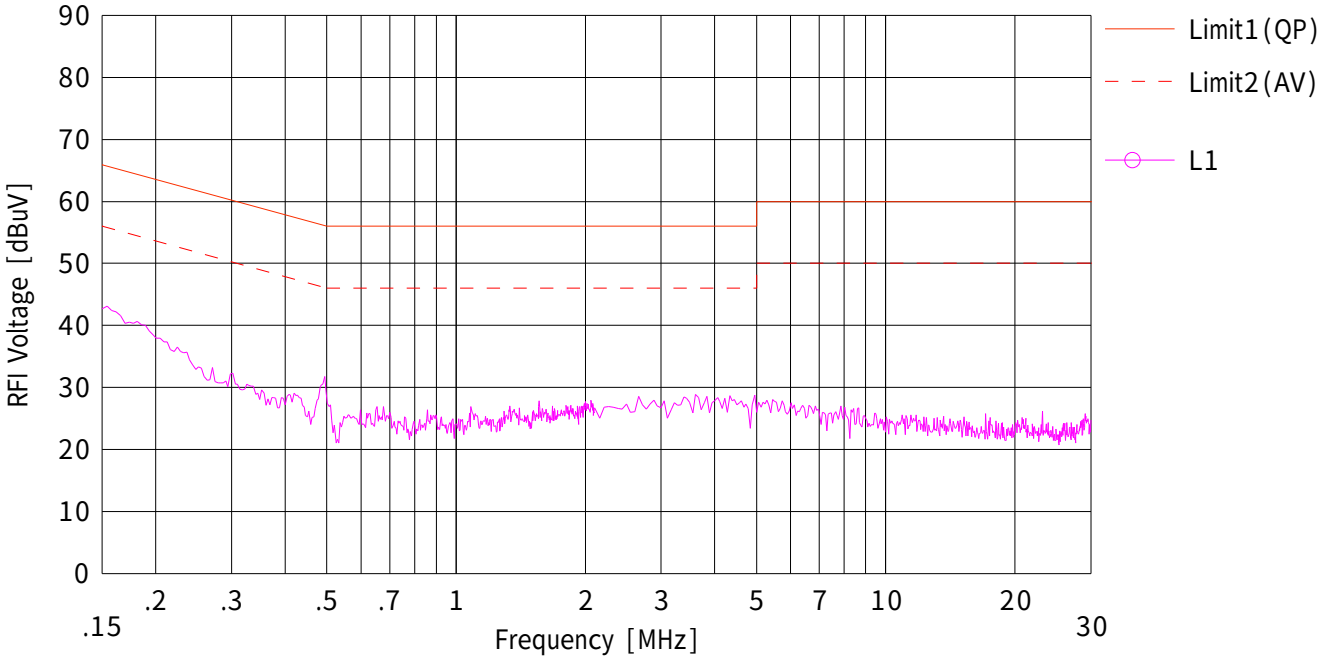
Company	: Sony Corporation	Mode	: IEEE802.11g 2412MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 6Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

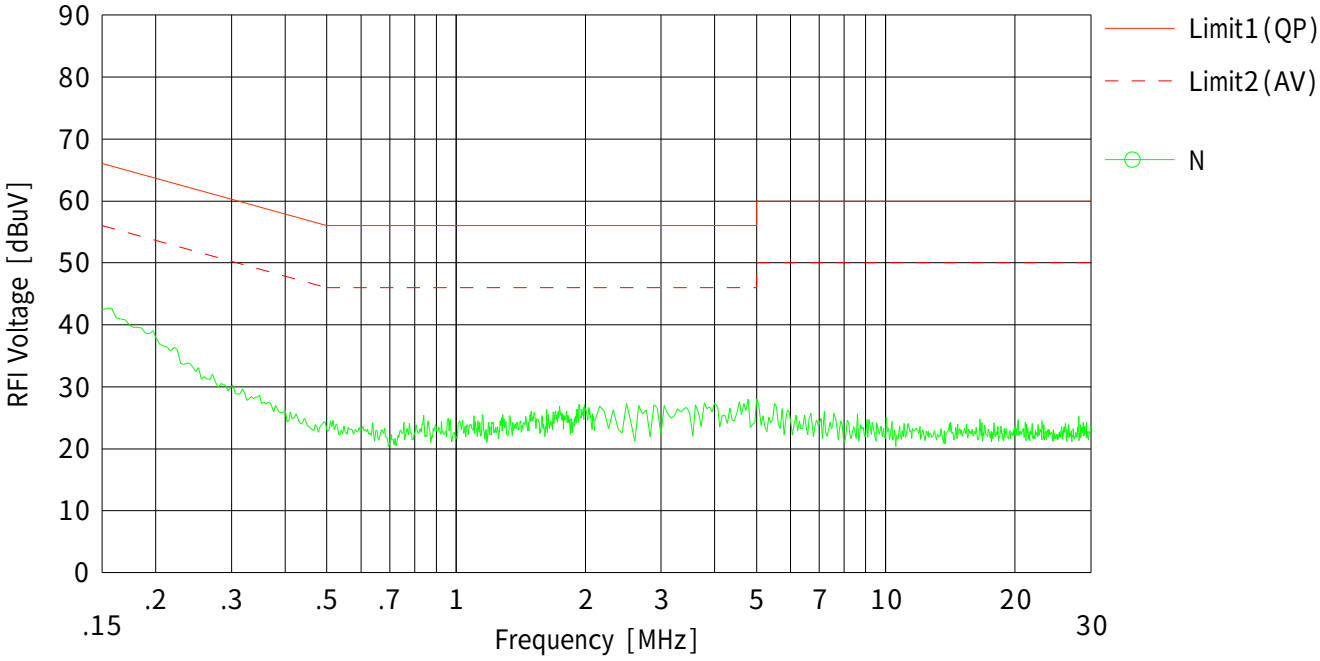
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

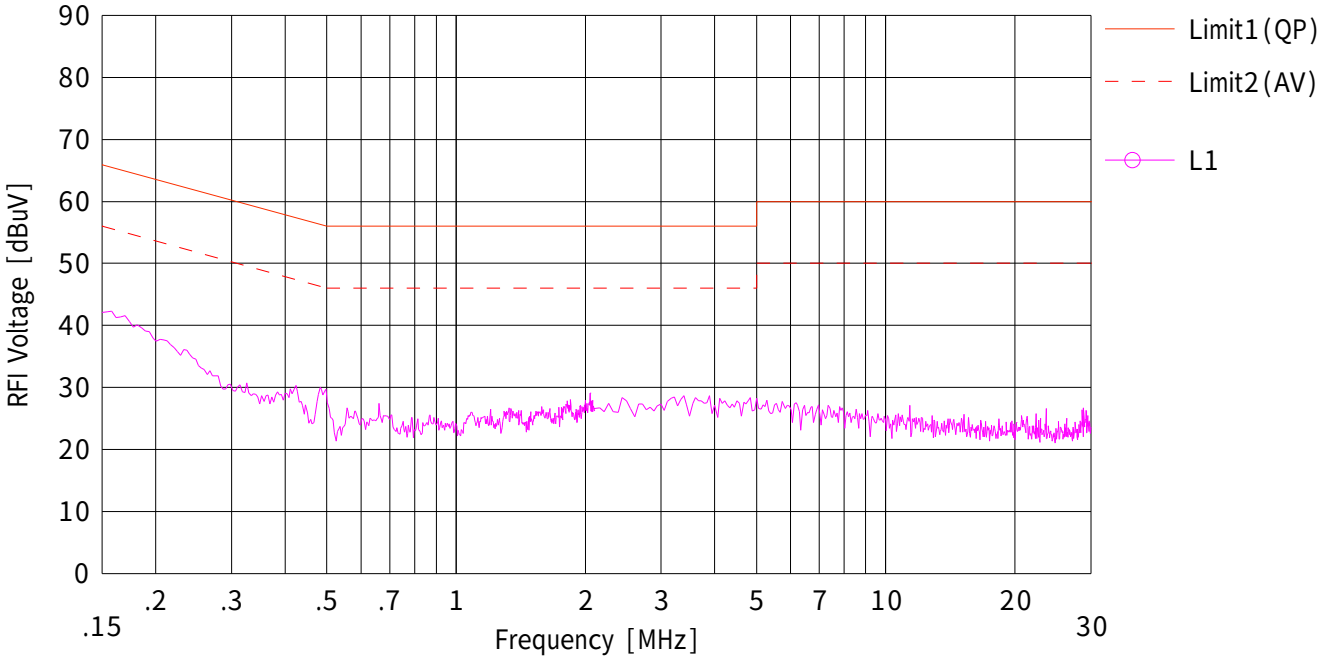
Company	: Sony Corporation	Mode	: IEEE802.11g 2437MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 6Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

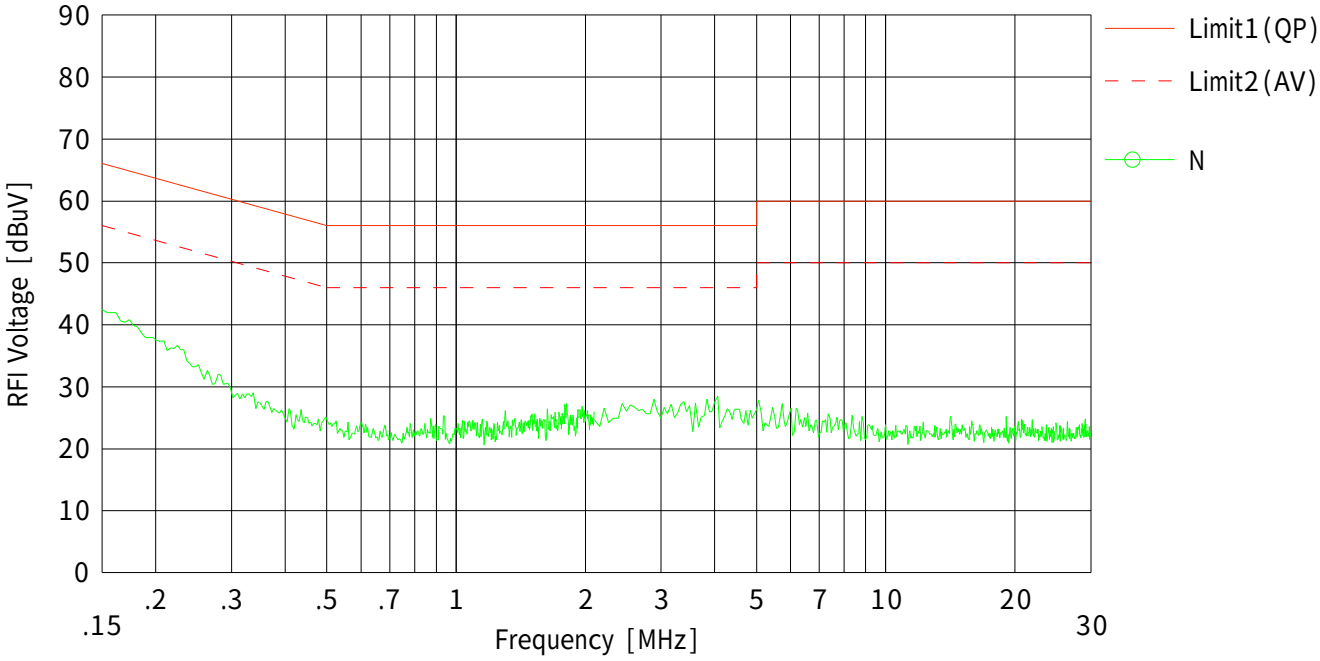
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

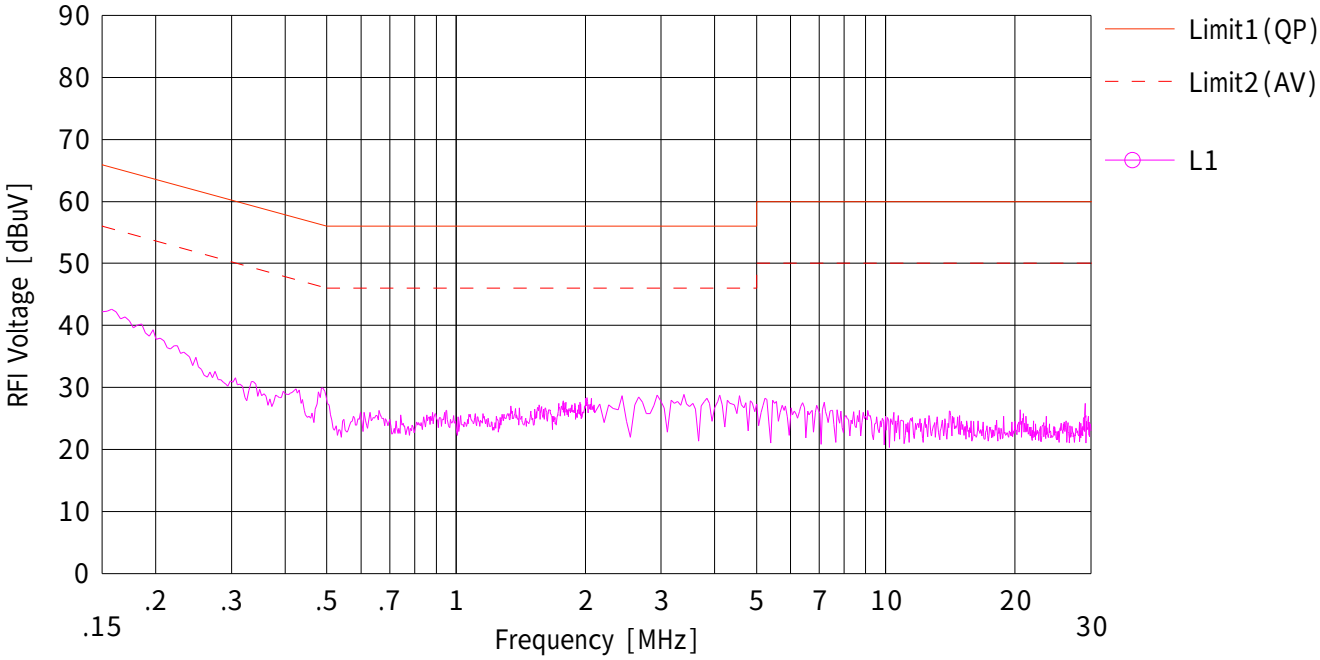
Company	: Sony Corporation	Mode	: IEEE802.11g 2462MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : 6Mbps

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

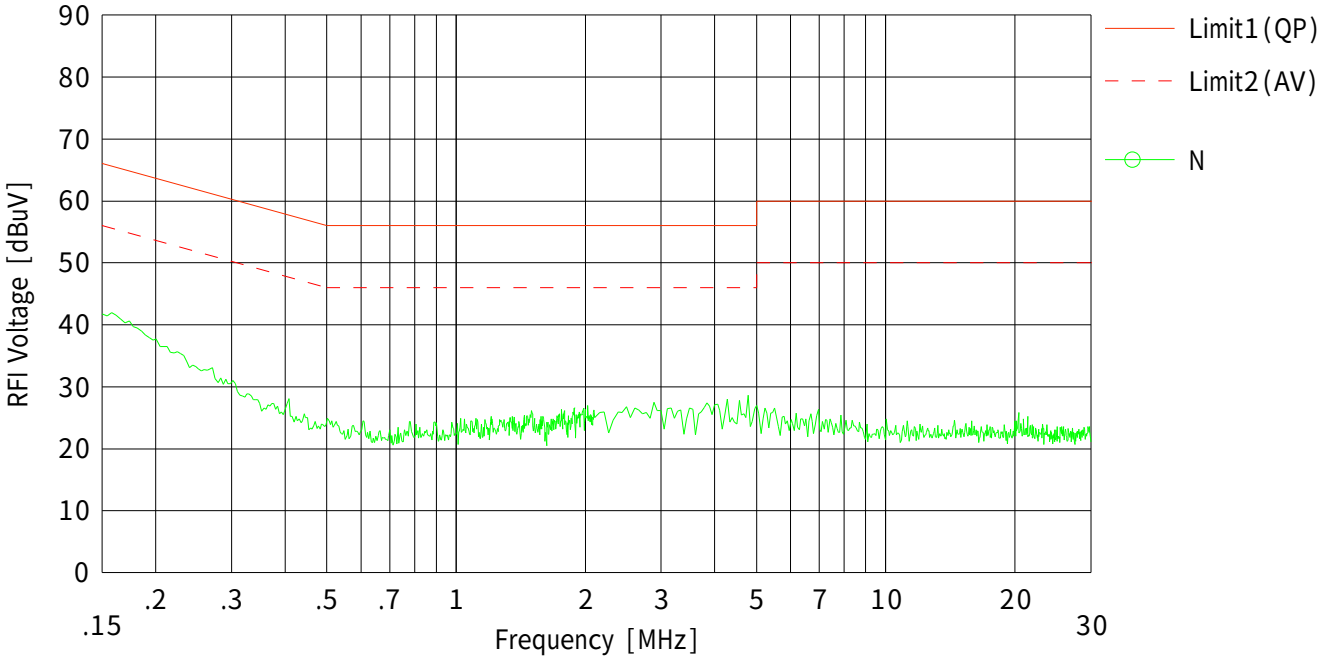
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

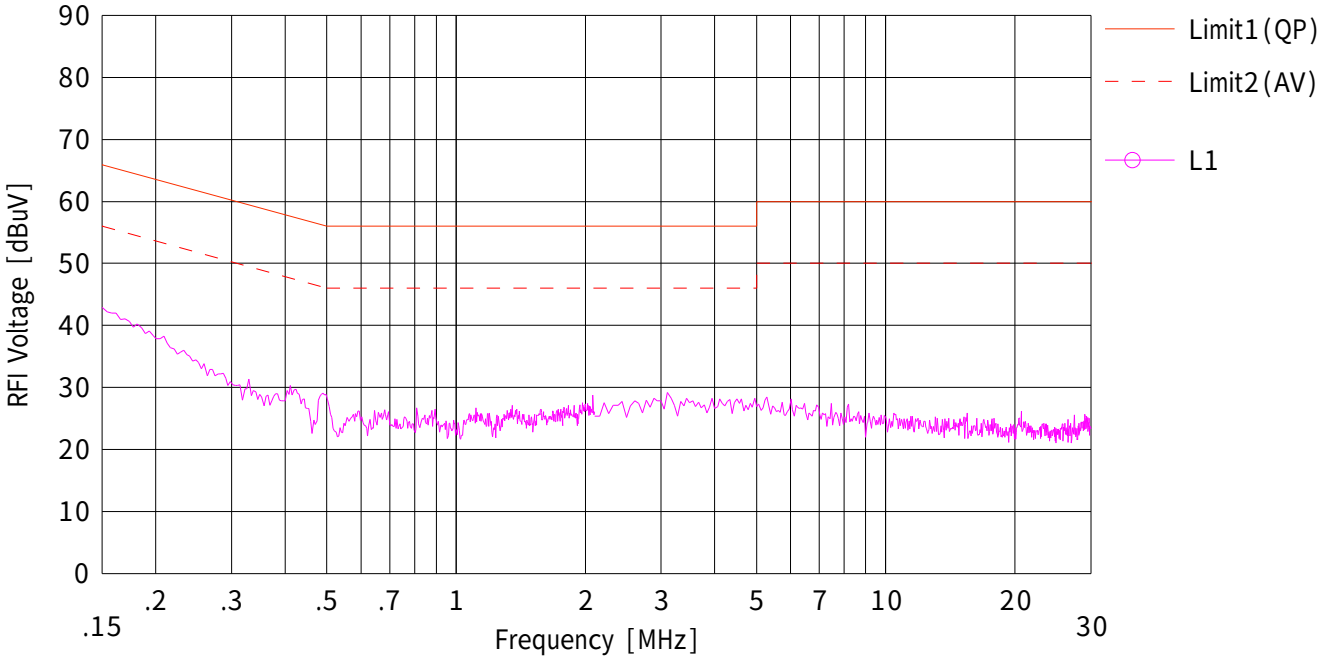
Company	: Sony Corporation	Mode	: IEEE802.11n(20HT) 2412MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : MCS3

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

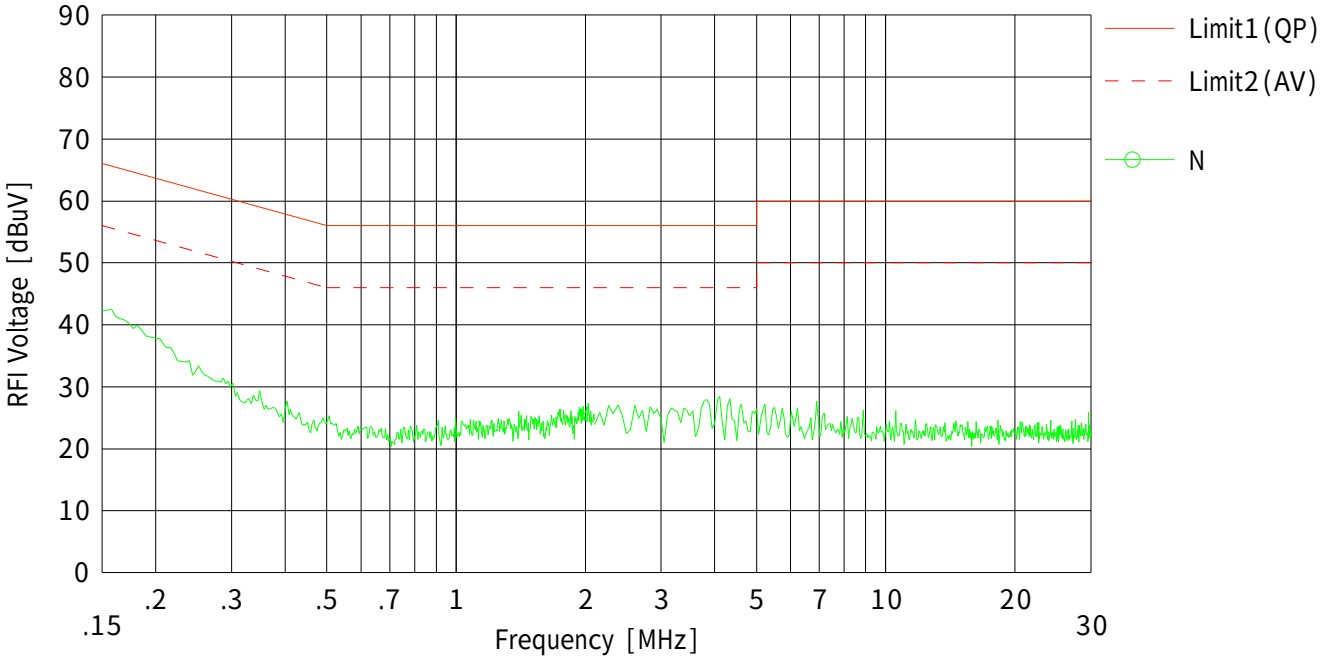
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

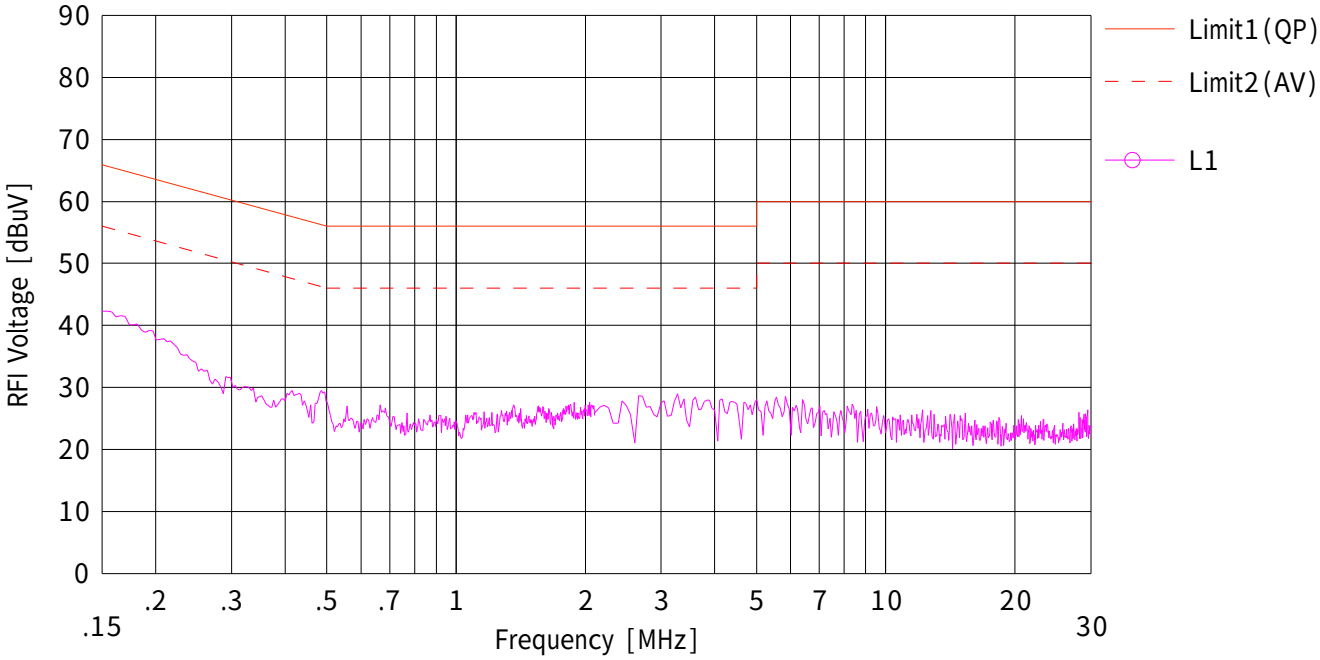
Company	: Sony Corporation	Mode	: IEEE802.11n(20HT) 2437MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : MCS3

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

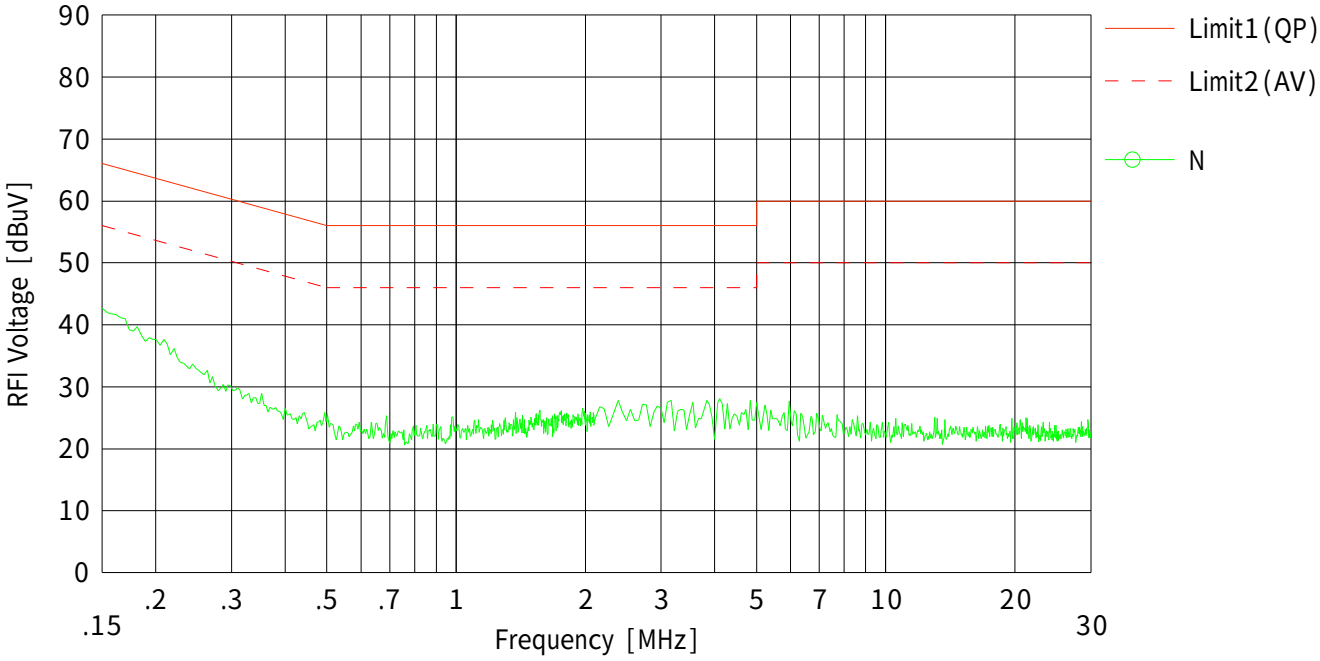
UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

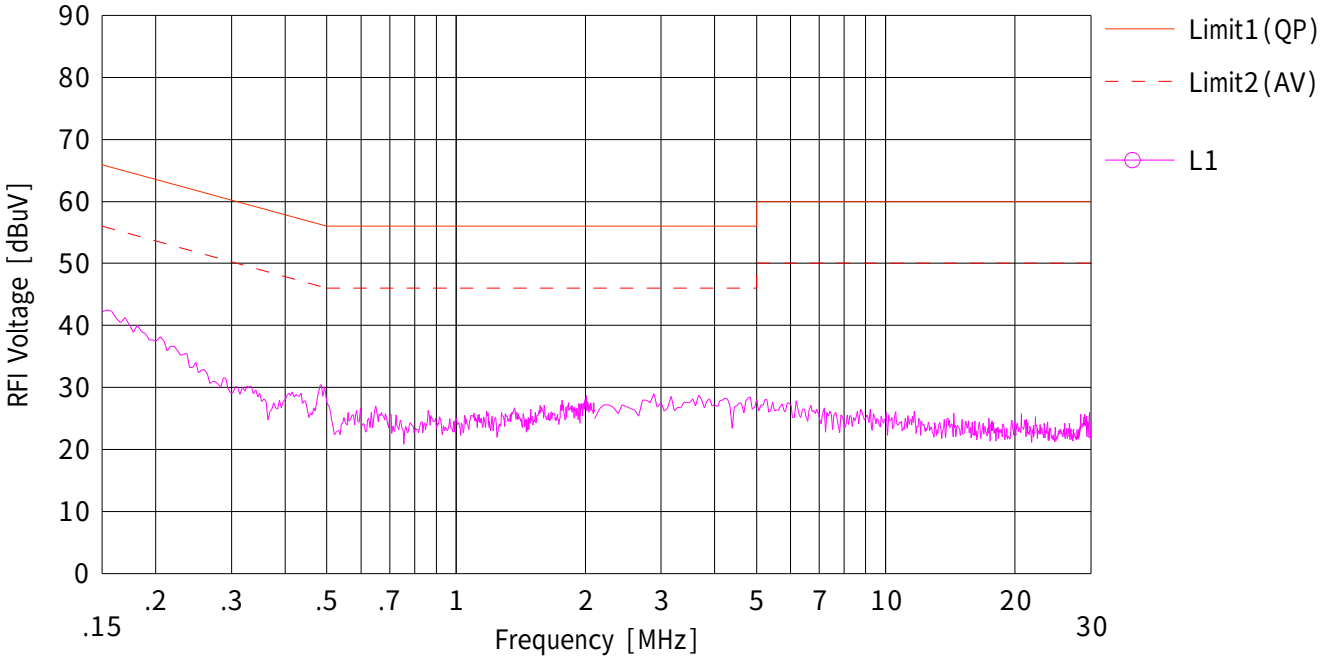
Company	: Sony Corporation	Mode	: IEEE802.11n(20HT) 2462MHz
Kind of EUT	: Digital Book Reader	Report No.	: 31KE0212-SH-02-B
Model No.	: PRS-T1	Power	: AC120V/60Hz
Serial No.	: 497	Temp./Humi.	: 27deg.C /49%RH

Remarks : MCS3

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

Engineer : Kenichi Adachi





Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/07/09

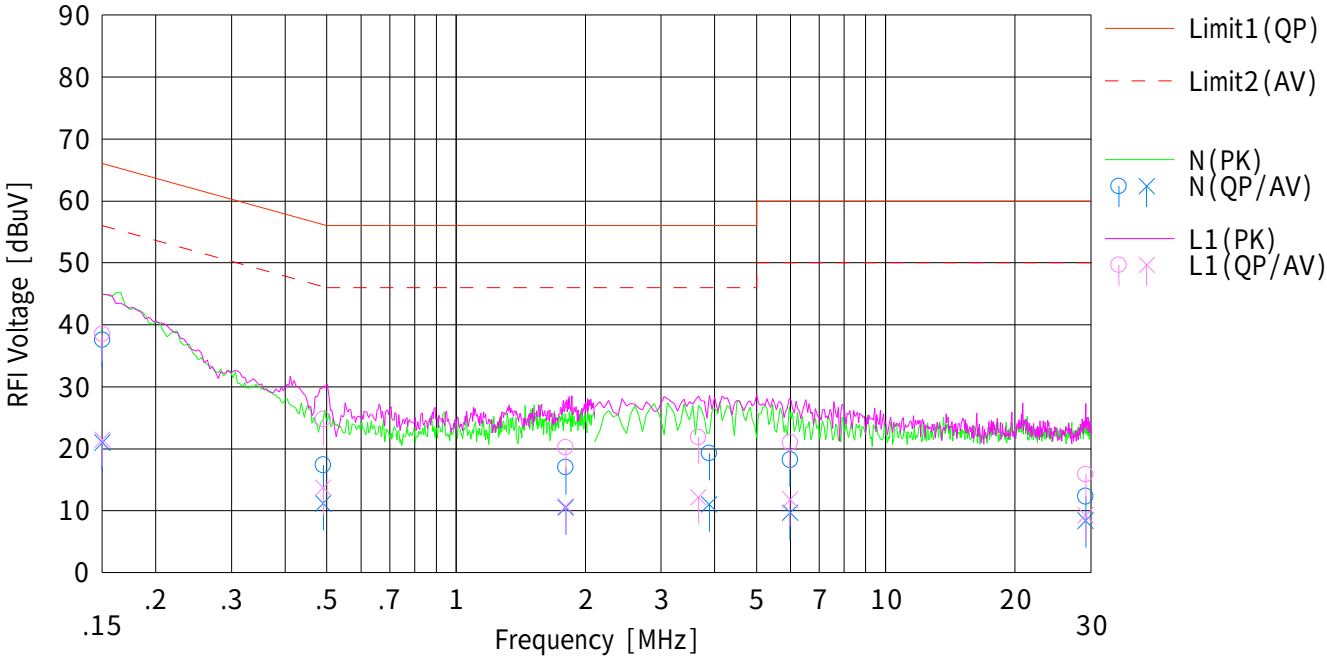
Company : Sony Corporation
Kind of EUT : Digital Book Reader
Model No. : PRS-T1
Serial No. : 497

Mode : IEEE802.11b 2412MHz
Report No. : 31KE0212-SH-02-B
Power : AC120V/60Hz
Temp./Humi. : 27deg.C /49%RH

Remarks : 11Mbps

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

Engineer : Kenichi Adachi



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	25.0	8.4	12.6	37.6	21.0	66.0	56.0	28.4	35.0	N	
2	0.49063	4.8	-1.5	12.6	17.4	11.2	56.1	46.1	38.7	34.9	N	
3	1.80077	4.3	-2.2	12.7	17.0	10.5	56.0	46.0	39.0	35.5	N	
4	3.88188	6.6	-1.7	12.7	19.3	11.0	56.0	46.0	36.7	35.0	N	
5	5.98278	5.3	-3.2	12.9	18.2	9.7	60.0	50.0	41.8	40.3	N	
6	29.20622	-1.5	-5.4	13.8	12.3	8.4	60.0	50.0	47.7	41.6	N	
7	0.15000	25.9	8.9	12.6	38.5	21.5	66.0	56.0	27.5	34.5	L1	
8	0.49063	12.2	1.1	12.6	24.8	13.7	56.1	46.1	31.3	32.4	L1	
9	1.80077	7.5	-2.0	12.7	20.2	10.7	56.0	46.0	35.8	35.3	L1	
10	3.66770	9.2	-0.5	12.7	21.9	12.2	56.0	46.0	34.1	33.8	L1	
11	5.98278	8.1	-1.1	12.9	21.0	11.8	60.0	50.0	39.0	38.2	L1	
12	29.20622	2.1	-4.5	13.8	15.9	9.3	60.0	50.0	44.1	40.7	L1	

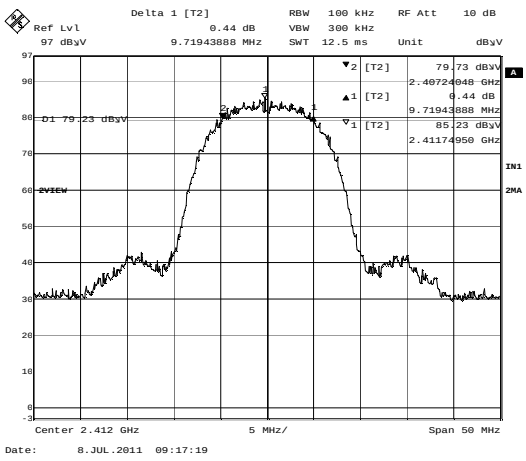
Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]
LISN:SLS-05

-6dB Bandwidth

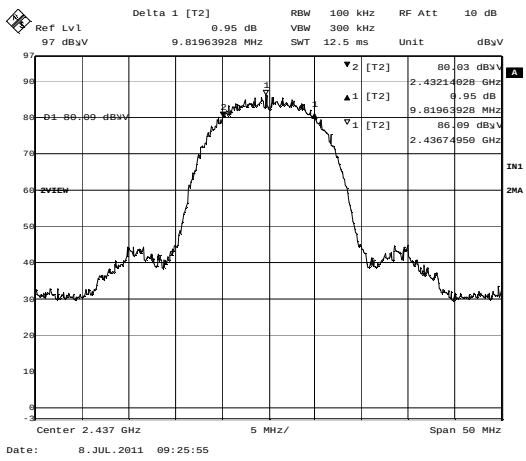
Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	2011/7/8	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11b, 11Mbps	
Serial Number	465	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	9.719	> 0.500
2437.0000	9.820	> 0.500
2462.0000	9.820	> 0.500

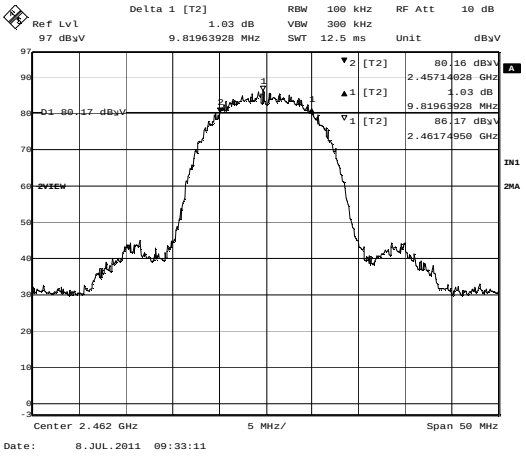
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)



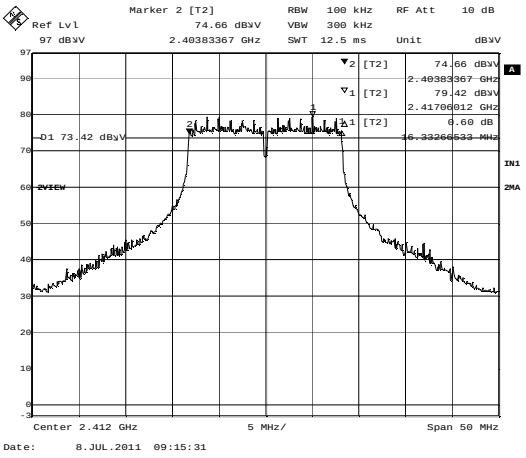
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

-6dB Bandwidth

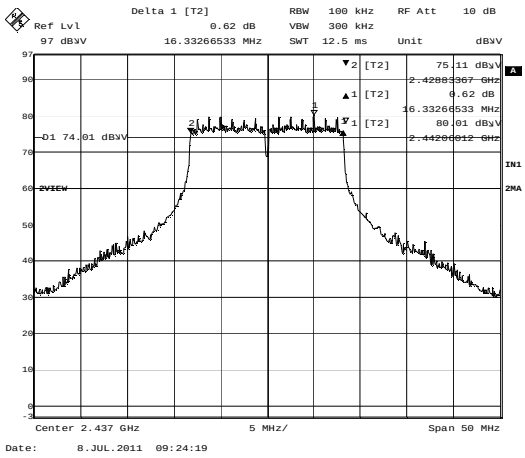
Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	2011/7/8	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11g, 6Mbps	
Serial Number	465	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	16.333	> 0.500
2437.0000	16.333	> 0.500
2462.0000	16.333	> 0.500

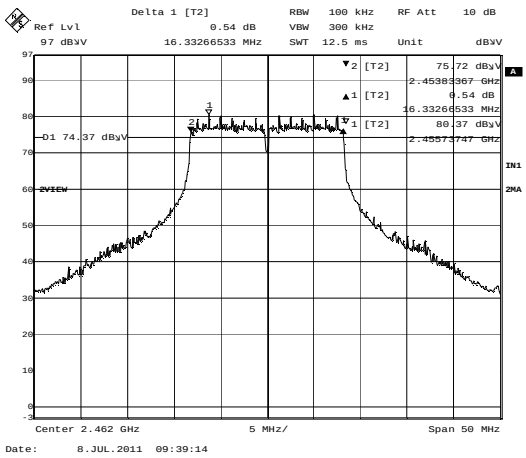
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)



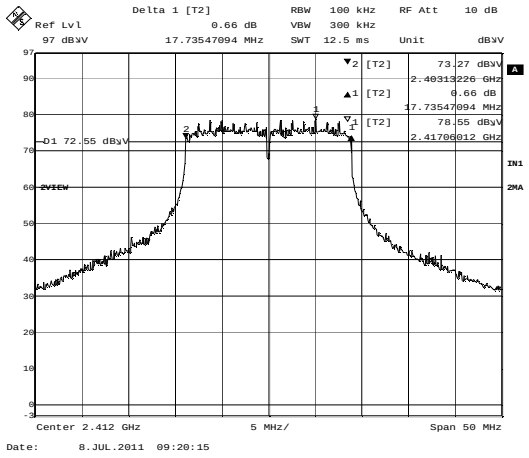
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

-6dB Bandwidth

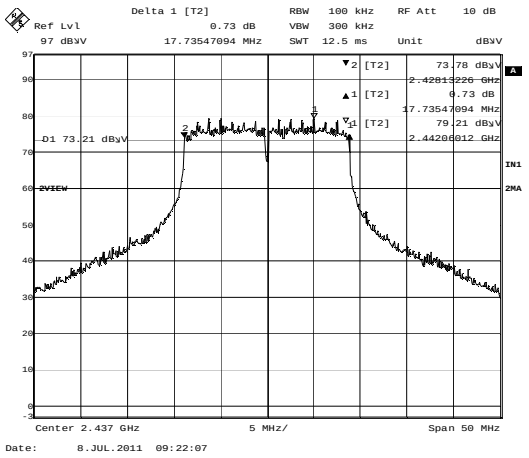
Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	July 8, 2011	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11n, MCS3	
Serial Number	465	

Freq. [MHz]	-6dB Bandwidth [MHz]	Limit [MHz]
2412.0000	17.735	> 0.500
2437.0000	17.735	> 0.500
2462.0000	17.735	> 0.500

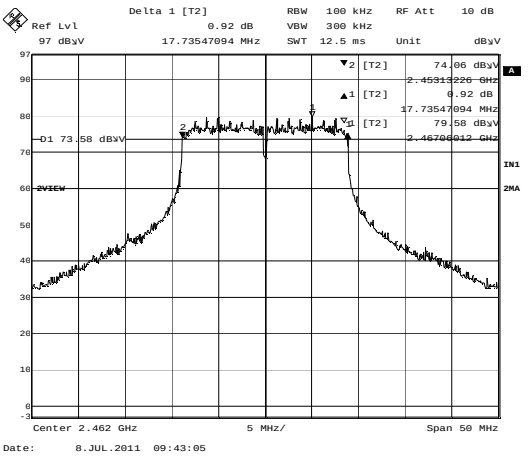
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)



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.3 Shielded Room	
Date	2011/6/23		
Temperature / Humidity	26deg.C. , 50%RH		
Engineer	Makoto Hosaka		
Mode	Tx, IEEE802.11b	worst antenna : -	worst data mode : 11 Mbps
Serial Number	497		

Ch	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	-6.08	0.77	20.16	14.85	30.55	30.00	1000	15.15
Mid	2437.0	-4.84	0.74	20.15	16.05	40.27	30.00	1000	13.95
High	2462.0	-5.01	0.74	20.15	15.88	38.73	30.00	1000	14.12

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

	Data rate	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
A	1	2437.0	-4.95	0.74	20.15	15.94	39.26	30.00	1000	14.06
A	2	2437.0	-4.91	0.74	20.15	15.98	39.63	30.00	1000	14.02
A	5.5	2437.0	-4.89	0.74	20.15	16.00	39.81	30.00	1000	14.00
A	11	2437.0	-4.84	0.74	20.15	**16.05**	40.27	30.00	1000	**13.95**

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.3 Shielded Room	
Date	2011/6/23		
Temperature / Humidity	26deg.C. , 50%RH		
Engineer	Makoto Hosaka		
Mode	Tx, IEEE802.11g	worst antenna : -	worst data mode : 6 Mbps
Serial Number	497		

Ch	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	-3.39	0.77	20.16	17.54	56.75	30.00	1000	12.46
Mid	2437.0	-2.62	0.74	20.15	18.27	67.14	30.00	1000	11.73
High	2462.0	-2.26	0.74	20.15	18.63	72.95	30.00	1000	11.37

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

	Data rate	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
A	6	2437.0	-2.62	0.74	20.15	**18.27**	67.14	30.00	1000	**11.73**
A	9	2437.0	-2.95	0.74	20.15	17.94	62.23	30.00	1000	12.06
A	12	2437.0	-2.67	0.74	20.15	18.22	66.37	30.00	1000	11.78
A	18	2437.0	-3.35	0.74	20.15	17.54	56.75	30.00	1000	12.46
A	24	2437.0	-2.65	0.74	20.15	18.24	66.68	30.00	1000	11.76
A	36	2437.0	-2.72	0.74	20.15	18.17	65.61	30.00	1000	11.83
A	48	2437.0	-2.97	0.74	20.15	17.92	61.94	30.00	1000	12.08
A	54	2437.0	-2.98	0.74	20.15	17.91	61.80	30.00	1000	12.09

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.3 Shielded Room	
Date	2011/6/23		
Temperature / Humidity	26deg.C. , 50%RH		
Engineer	Makoto Hosaka		
Mode	Tx, IEEE802.11n(20HT)	worst antenna : -	worst data mode : 3 (MCS)
Serial Number	497		

Ch	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2412.0	-4.30	0.77	20.16	16.63	46.03	30.00	1000	13.37
Mid	2437.0	-3.13	0.74	20.15	17.76	59.70	30.00	1000	12.24
High	2462.0	-3.64	0.74	20.15	17.25	53.09	30.00	1000	12.75

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

[Pre check]

	Mode	Freq.	P/M (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	(MCS)	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
A	0	2437.0	-3.61	0.74	20.15	17.28	53.46	30.00	1000	12.72
A	1	2437.0	-4.21	0.74	20.15	16.68	46.56	30.00	1000	13.32
A	2	2437.0	-3.87	0.74	20.15	17.02	50.35	30.00	1000	12.98
A	3	2437.0	-3.13	0.74	20.15	**17.76**	59.70	30.00	1000	**12.24**
A	4	2437.0	-4.73	0.74	20.15	16.16	41.30	30.00	1000	13.84
A	5	2437.0	-3.91	0.74	20.15	16.98	49.89	30.00	1000	13.02
A	6	2437.0	-3.56	0.74	20.15	17.33	54.08	30.00	1000	12.67
A	7	2437.0	-4.50	0.74	20.15	16.39	43.55	30.00	1000	13.61

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2412 MHz		
	Tx, IEEE802.11b, worst data mode 11Mbps		

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.	87.026	QP	41.4	7.7	7.8	31.9	25.0	40.0	15.0	200	19	
Hori.	150.006	QP	32.7	14.3	8.6	31.8	23.8	43.5	19.7	200	240	
Hori.	843.895	QP	22.3	21.4	9.7	31.2	22.2	46.0	23.8	150	343	
Vert.	35.221	QP	29.1	16.0	7.0	31.9	20.2	40.0	19.8	100	300	
Vert.	37.485	QP	38.4	15.4	7.1	31.9	29.0	40.0	11.0	100	299	
Vert.	39.997	QP	34.1	14.9	7.1	31.9	24.2	40.0	15.8	100	310	
Vert.	45.287	QP	32.5	13.4	7.2	31.9	21.2	40.0	18.8	100	319	
Vert.	87.026	QP	42.0	7.7	7.8	31.9	25.6	40.0	14.4	100	190	
Hori.	2390.000	PK	44.4	27.5	24.0	37.8	58.1	73.9	15.8	139	326	
Hori.	2400.000	PK	51.8	27.5	24.0	37.8	65.5	73.9	-	139	326	Refer to 20dBc data sheet
Hori.	4824.000	PK	52.9	31.6	6.0	41.5	49.0	73.9	24.9	103	184	
Hori.	7236.000	PK	47.0	36.5	7.4	40.7	50.2	73.9	23.7	100	0	noise floor level
Hori.	9648.000	PK	46.8	37.9	8.7	40.5	52.9	73.9	21.0	101	179	noise floor level
Hori.	12060.000	PK	46.9	39.3	10.2	39.5	56.9	73.9	17.0	100	0	noise floor level
Hori.	19296.000	PK	48.8	40.0	-3.2	48.3	37.3	73.9	36.6	100	238	
Hori.	24120.000	PK	45.4	40.2	-2.1	47.2	36.3	73.9	37.6	100	0	noise floor level
Hori.	2390.000	AV	33.3	27.5	24.0	37.8	47.0	53.9	6.9	139	326	
Hori.	2400.000	AV	40.9	27.5	24.0	37.8	54.6	53.9	-	139	326	Refer to 20dBc data sheet
Hori.	4824.000	AV	43.8	31.6	6.0	41.5	39.9	53.9	14.0	103	184	
Hori.	7236.000	AV	36.0	36.5	7.4	40.7	39.2	53.9	14.7	100	0	noise floor level
Hori.	9648.000	AV	34.8	37.9	8.7	40.5	40.9	53.9	13.0	101	179	noise floor level
Hori.	12060.000	AV	35.2	39.3	10.2	39.5	45.2	53.9	8.7	100	0	noise floor level
Hori.	19296.000	AV	37.7	40.0	-3.2	48.3	26.2	53.9	27.7	100	238	
Hori.	24120.000	AV	33.7	40.2	-2.1	47.2	24.6	53.9	29.3	100	0	noise floor level
Vert.	2390.000	PK	44.6	27.5	24.0	37.8	58.3	73.9	15.6	109	282	
Vert.	2400.000	PK	51.1	27.5	24.0	37.8	64.8	73.9	-	109	282	Refer to 20dBc data sheet
Vert.	4824.000	PK	53.3	31.6	6.0	41.5	49.4	73.9	24.5	103	167	
Vert.	7236.000	PK	46.9	36.5	7.4	40.7	50.1	73.9	23.8	100	0	noise floor level
Vert.	9648.000	PK	46.7	37.9	8.7	40.5	52.8	73.9	21.1	102	168	noise floor level
Vert.	12060.000	PK	46.8	39.3	10.2	39.5	56.8	73.9	17.1	100	0	noise floor level
Vert.	19296.000	PK	48.7	40.0	-3.2	48.3	37.2	73.9	36.7	100	184	
Vert.	24120.000	PK	45.3	40.2	-2.1	47.2	36.2	73.9	37.7	100	0	noise floor level
Vert.	2390.000	AV	33.2	27.5	24.0	37.8	46.9	53.9	7.0	109	282	
Vert.	2400.000	AV	39.5	27.5	24.0	37.8	53.2	53.9	-	109	282	Refer to 20dBc data sheet
Vert.	4824.000	AV	44.9	31.6	6.0	41.5	41.0	53.9	12.9	103	167	
Vert.	7236.000	AV	36.1	36.5	7.4	40.7	39.3	53.9	14.6	100	0	noise floor level
Vert.	9648.000	AV	34.9	37.9	8.7	40.5	41.0	53.9	12.9	102	168	noise floor level
Vert.	12060.000	AV	35.2	39.3	10.2	39.5	45.2	53.9	8.7	100	0	noise floor level
Vert.	19296.000	AV	37.6	40.0	-3.2	48.3	26.1	53.9	27.8	100	184	
Vert.	24120.000	AV	33.7	40.2	-2.1	47.2	24.6	53.9	29.3	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

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	86.9	27.6	24.0	37.8	100.7	-	-	Carrier
Hori.	2397.484	PK	46.9	27.5	24.0	37.8	60.6	80.7	20.1	
Hori.	2400.000	PK	41.7	27.5	24.0	37.8	55.4	80.7	25.3	
Vert.	2412.000	PK	86.5	27.6	24.0	37.8	100.3	-	-	Carrier
Vert.	2397.484	PK	45.4	27.5	24.0	37.8	59.1	80.3	21.2	
Vert.	2400.000	PK	41.6	27.5	24.0	37.8	55.3	80.3	25.0	

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

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2437 MHz		
	Tx, IEEE802.11b, worst data mode 11Mbps		

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.	86.490	QP	43.5	7.6	7.8	31.9	27.0	40.0	13.0	200	234	
Hori.	150.003	QP	31.6	14.3	8.6	31.8	22.7	43.5	20.8	150	246	
Hori.	349.721	QP	22.2	15.2	7.3	31.7	13.0	46.0	33.0	100	356	
Vert.	35.312	QP	31.3	15.9	7.0	31.9	22.3	40.0	17.7	100	288	
Vert.	37.273	QP	38.1	15.5	7.0	31.9	28.7	40.0	11.3	100	316	
Vert.	40.013	QP	33.7	14.8	7.1	31.9	23.7	40.0	16.3	100	300	
Vert.	86.540	QP	44.4	7.6	7.8	31.9	27.9	40.0	12.1	100	187	
Vert.	110.754	QP	34.4	11.6	8.1	31.8	22.3	43.5	21.2	100	40	
Hori.	4874.000	PK	51.5	31.7	6.0	41.5	47.7	73.9	26.2	112	186	
Hori.	7311.000	PK	46.9	36.7	7.4	40.7	50.3	73.9	23.6	100	0	noise floor level,
Hori.	9748.000	PK	46.9	38.1	8.7	40.5	53.2	73.9	20.7	101	178	noise floor level,
Hori.	12185.000	PK	46.8	39.2	10.3	39.5	56.8	73.9	17.1	100	0	noise floor level,
Hori.	19496.000	PK	48.6	40.1	-3.1	48.1	37.5	73.9	36.4	100	236	
Hori.	24370.000	PK	45.5	40.2	-2.0	47.3	36.4	73.9	37.5	100	0	noise floor level,
Hori.	4874.000	AV	41.2	31.7	6.0	41.5	37.4	53.9	16.5	112	186	
Hori.	7311.000	AV	35.9	36.7	7.4	40.7	39.3	53.9	14.6	100	0	noise floor level,
Hori.	9748.000	AV	34.7	38.1	8.7	40.5	41.0	53.9	12.9	101	178	noise floor level,
Hori.	12185.000	AV	34.5	39.2	10.3	39.5	44.5	53.9	9.4	100	0	noise floor level,
Hori.	19496.000	AV	39.8	40.1	-3.1	48.1	28.7	53.9	25.2	100	236	
Hori.	24370.000	AV	34.2	40.2	-2.0	47.3	25.1	53.9	28.8	100	0	noise floor level,
Vert.	4874.000	PK	52.2	31.7	6.0	41.5	48.4	73.9	25.5	123	178	
Vert.	7311.000	PK	46.8	36.7	7.4	40.7	50.2	73.9	23.7	100	0	noise floor level,
Vert.	9748.000	PK	46.8	38.1	8.7	40.5	53.1	73.9	20.8	101	170	noise floor level,
Vert.	12185.000	PK	46.7	39.2	10.3	39.5	56.7	73.9	17.2	100	0	noise floor level,
Vert.	19496.000	PK	48.5	40.1	-3.1	48.1	37.4	73.9	36.5	100	183	
Vert.	24370.000	PK	45.6	40.2	-2.0	47.3	36.5	73.9	37.4	100	0	noise floor level,
Vert.	4874.000	AV	42.2	31.7	6.0	41.5	38.4	53.9	15.5	123	178	
Vert.	7311.000	AV	35.9	36.7	7.4	40.7	39.3	53.9	14.6	100	0	noise floor level,
Vert.	9748.000	AV	34.8	38.1	8.7	40.5	41.1	53.9	12.8	101	170	noise floor level,
Vert.	12185.000	AV	34.4	39.2	10.3	39.5	44.4	53.9	9.5	100	0	noise floor level,
Vert.	19496.000	AV	38.3	40.1	-3.1	48.1	27.2	53.9	26.7	100	183	
Vert.	24370.000	AV	34.2	40.2	-2.0	47.3	25.1	53.9	28.8	100	0	noise floor level,

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2462 MHz		
	Tx, IEEE802.11b, worst data mode 11Mbps		

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.	84.479	QP	44.0	7.2	7.8	31.9	27.1	40.0	12.9	211	32	
Hori.	150.005	QP	32.5	14.3	8.6	31.8	23.6	43.5	19.9	200	230	
Hori.	934.198	QP	21.6	22.3	10.1	30.7	23.3	46.0	22.7	150	321	
Vert.	35.141	QP	29.5	16.0	7.0	31.9	20.6	40.0	19.4	100	290	
Vert.	37.376	QP	38.2	15.5	7.0	31.9	28.8	40.0	11.2	100	315	
Vert.	40.030	QP	35.1	14.8	7.1	31.9	25.1	40.0	14.9	100	305	
Vert.	86.629	QP	44.0	7.6	7.8	31.9	27.5	40.0	12.5	100	80	
Vert.	111.658	QP	32.8	11.7	8.1	31.8	20.8	43.5	22.7	100	50	
Hori.	2483.500	PK	45.2	27.6	24.0	37.6	59.2	73.9	14.7	136	329	
Hori.	4924.000	PK	53.0	31.8	6.0	41.5	49.3	73.9	24.6	110	182	
Hori.	7386.000	PK	46.8	36.8	7.3	40.7	50.2	73.9	23.7	100	0	noise floor level
Hori.	9848.000	PK	45.1	38.3	8.8	40.5	51.7	73.9	22.2	102	182	noise floor level
Hori.	12310.000	PK	44.7	39.2	10.3	39.5	54.7	73.9	19.2	100	0	noise floor level
Hori.	19696.000	PK	48.4	40.1	-3.0	48.1	37.4	73.9	36.5	100	235	
Hori.	24620.000	PK	45.6	40.2	-1.9	47.2	36.7	73.9	37.2	100	0	noise floor level
Hori.	2483.500	AV	33.6	27.6	24.0	37.6	47.6	53.9	6.3	136	329	
Hori.	4924.000	AV	43.9	31.8	6.0	41.5	40.2	53.9	13.7	110	182	
Hori.	7386.000	AV	35.8	36.8	7.3	40.7	39.2	53.9	14.7	100	0	noise floor level
Hori.	9848.000	AV	34.0	38.3	8.8	40.5	40.6	53.9	13.3	102	182	noise floor level
Hori.	12310.000	AV	33.0	39.2	10.3	39.5	43.0	53.9	10.9	100	0	noise floor level
Hori.	19696.000	AV	37.2	40.1	-3.0	48.1	26.2	53.9	27.7	100	235	
Hori.	24620.000	AV	34.2	40.2	-1.9	47.2	25.3	53.9	28.6	100	0	noise floor level
Vert.	2483.500	PK	45.1	27.6	24.0	37.6	59.1	73.9	14.8	104	282	
Vert.	4924.000	PK	53.2	31.8	6.0	41.5	49.5	73.9	24.4	101	181	
Vert.	7386.000	PK	46.7	36.8	7.3	40.7	50.1	73.9	23.8	100	0	noise floor level
Vert.	9848.000	PK	45.2	38.3	8.8	40.5	51.8	73.9	22.1	101	167	noise floor level
Vert.	12310.000	PK	44.6	39.2	10.3	39.5	54.6	73.9	19.3	100	0	noise floor level
Vert.	19696.000	PK	48.2	40.1	-3.0	48.1	37.2	73.9	36.7	100	186	
Vert.	24620.000	PK	45.5	40.2	-1.9	47.2	36.6	73.9	37.3	100	0	noise floor level
Vert.	2483.500	AV	33.4	27.6	24.0	37.6	47.4	53.9	6.5	104	282	
Vert.	4924.000	AV	44.6	31.8	6.0	41.5	40.9	53.9	13.0	101	181	
Vert.	7386.000	AV	35.8	36.8	7.3	40.7	39.2	53.9	14.7	100	0	noise floor level
Vert.	9848.000	AV	33.9	38.3	8.8	40.5	40.5	53.9	13.4	101	167	noise floor level
Vert.	12310.000	AV	32.9	39.2	10.3	39.5	42.9	53.9	11.0	100	0	noise floor level
Vert.	19696.000	AV	37.1	40.1	-3.0	48.1	26.1	53.9	27.8	100	186	
Vert.	24620.000	AV	34.2	40.2	-1.9	47.2	25.3	53.9	28.6	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2412 MHz		
	Tx, IEEE802.11g, worst data mode 6Mbps		

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.	87.110	QP	39.5	7.7	7.8	31.9	23.1	40.0	16.9	200	243	
Hori.	150.007	QP	32.0	14.3	8.6	31.8	23.1	43.5	20.4	200	248	
Hori.	843.475	QP	21.8	21.4	9.7	31.2	21.7	46.0	24.3	150	267	
Vert.	35.239	QP	30.0	16.0	7.0	31.9	21.1	40.0	18.9	100	301	
Vert.	37.655	QP	38.2	15.4	7.1	31.9	28.8	40.0	11.2	100	308	
Vert.	40.108	QP	34.0	14.9	7.1	31.9	24.1	40.0	15.9	100	299	
Vert.	45.697	QP	31.7	13.2	7.2	31.9	20.2	40.0	19.8	100	310	
Vert.	87.432	QP	41.5	7.7	7.8	31.9	25.1	40.0	14.9	100	210	
Hori.	2390.000	PK	47.1	27.5	24.0	37.8	60.8	73.9	13.1	139	331	
Hori.	2400.000	PK	64.8	27.5	24.0	37.8	78.5	73.9	-	139	331	Refer to 20dBc data sheet
Hori.	4824.000	PK	51.5	31.6	6.0	41.5	47.6	73.9	26.3	102	187	
Hori.	7236.000	PK	46.7	36.5	7.4	40.7	49.9	73.9	24.0	100	0	noise floor level
Hori.	9648.000	PK	46.7	37.9	8.7	40.5	52.8	73.9	21.1	100	178	noise floor level
Hori.	12060.000	PK	46.6	39.3	10.2	39.5	56.6	73.9	17.3	100	0	noise floor level
Hori.	19296.000	PK	48.3	40.0	-3.2	48.3	36.8	73.9	37.1	100	238	
Hori.	24120.000	PK	45.5	40.2	-2.1	47.2	36.4	73.9	37.5	100	0	noise floor level
Hori.	2390.000	AV	34.3	27.5	24.0	37.8	48.0	53.9	5.9	139	331	
Hori.	2400.000	AV	48.3	27.5	24.0	37.8	62.0	53.9	-	139	331	Refer to 20dBc data sheet
Hori.	4824.000	AV	39.5	31.6	6.0	41.5	35.6	53.9	18.3	102	187	
Hori.	7236.000	AV	35.9	36.5	7.4	40.7	39.1	53.9	14.8	100	0	noise floor level
Hori.	9648.000	AV	34.8	37.9	8.7	40.5	40.9	53.9	13.0	100	178	noise floor level
Hori.	12060.000	AV	35.0	39.3	10.2	39.5	45.0	53.9	8.9	100	0	noise floor level
Hori.	19296.000	AV	37.3	40.0	-3.2	48.3	25.8	53.9	28.1	100	238	
Hori.	24120.000	AV	34.1	40.2	-2.1	47.2	25.0	53.9	28.9	100	0	noise floor level
Vert.	2390.000	PK	47.1	27.5	24.0	37.8	60.8	73.9	13.1	108	283	
Vert.	2400.000	PK	64.2	27.5	24.0	37.8	77.9	73.9	-	108	283	Refer to 20dBc data sheet
Vert.	4824.000	PK	51.2	31.6	6.0	41.5	47.3	73.9	26.6	104	185	
Vert.	7236.000	PK	46.8	36.5	7.4	40.7	50.0	73.9	23.9	100	0	noise floor level
Vert.	9648.000	PK	46.6	37.9	8.7	40.5	52.7	73.9	21.2	103	189	noise floor level
Vert.	12060.000	PK	46.7	39.3	10.2	39.5	56.7	73.9	17.2	100	0	noise floor level
Vert.	19296.000	PK	48.1	40.0	-3.2	48.3	36.6	73.9	37.3	100	182	
Vert.	24120.000	PK	45.6	40.2	-2.1	47.2	36.5	73.9	37.4	100	0	noise floor level
Vert.	2390.000	AV	34.2	27.5	24.0	37.8	47.9	53.9	6.0	108	283	
Vert.	2400.000	AV	47.7	27.5	24.0	37.8	61.4	53.9	-	108	283	Refer to 20dBc data sheet
Vert.	4824.000	AV	40.6	31.6	6.0	41.5	36.7	53.9	17.2	104	185	
Vert.	7236.000	AV	36.0	36.5	7.4	40.7	39.2	53.9	14.7	100	0	noise floor level
Vert.	9648.000	AV	34.8	37.9	8.7	40.5	40.9	53.9	13.0	103	189	noise floor level
Vert.	12060.000	AV	35.1	39.3	10.2	39.5	45.1	53.9	8.8	100	0	noise floor level
Vert.	19296.000	AV	37.0	40.0	-3.2	48.3	25.5	53.9	28.4	100	182	
Vert.	24120.000	AV	34.2	40.2	-2.1	47.2	25.1	53.9	28.8	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

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	81.3	27.6	24.0	37.8	95.1	-	-	Carrier
Hori.	2400.000	PK	49.4	27.5	24.0	37.8	63.1	75.1	12.0	
Vert.	2412.000	PK	80.9	27.6	24.0	37.8	94.7	-	-	Carrier
Vert.	2400.000	PK	48.6	27.5	24.0	37.8	62.3	74.7	12.4	

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

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2437 MHz		
	Tx, IEEE802.11g, worst data mode 6Mbps		

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.	84.940	QP	41.2	7.4	7.8	31.9	24.5	40.0	15.5	200	250	
Hori.	150.009	QP	32.4	14.3	8.6	31.8	23.5	43.5	20.0	200	261	
Hori.	919.069	QP	21.9	22.2	10.1	30.7	23.5	46.0	22.5	150	355	
Vert.	37.583	QP	37.7	15.4	7.1	31.9	28.3	40.0	11.7	100	308	
Vert.	40.076	QP	34.6	14.8	7.1	31.9	24.6	40.0	15.4	100	320	
Vert.	51.643	QP	33.3	10.7	7.3	31.9	19.4	40.0	20.6	100	310	
Vert.	87.230	QP	42.0	7.7	7.8	31.9	25.6	40.0	14.4	100	179	
Vert.	114.927	QP	30.8	12.2	8.2	31.8	19.4	43.5	24.1	100	48	
Hori.	4874.000	PK	50.9	31.7	6.0	41.5	47.1	73.9	26.8	103	173	
Hori.	7311.000	PK	46.8	36.7	7.4	40.7	50.2	73.9	23.7	100	0	noise floor level
Hori.	9748.000	PK	47.0	38.1	8.7	40.5	53.3	73.9	20.6	102	179	noise floor level
Hori.	12185.000	PK	46.7	39.2	10.3	39.5	56.7	73.9	17.2	100	0	noise floor level
Hori.	19496.000	PK	48.7	40.1	-3.1	48.1	37.6	73.9	36.3	100	235	
Hori.	24370.000	PK	45.7	40.2	-2.0	47.3	36.6	73.9	37.3	100	0	noise floor level
Hori.	4874.000	AV	39.2	31.7	6.0	41.5	35.4	53.9	18.5	103	173	
Hori.	7311.000	AV	35.8	36.7	7.4	40.7	39.2	53.9	14.7	100	0	noise floor level
Hori.	9748.000	AV	34.7	38.1	8.7	40.5	41.0	53.9	12.9	102	179	noise floor level
Hori.	12185.000	AV	34.4	39.2	10.3	39.5	44.4	53.9	9.5	100	0	noise floor level
Hori.	19496.000	AV	38.6	40.1	-3.1	48.1	27.5	53.9	26.4	100	235	
Hori.	24370.000	AV	34.3	40.2	-2.0	47.3	25.2	53.9	28.7	100	0	noise floor level
Vert.	4874.000	PK	50.6	31.7	6.0	41.5	46.8	73.9	27.1	115	193	
Vert.	7311.000	PK	46.9	36.7	7.4	40.7	50.3	73.9	23.6	100	0	noise floor level
Vert.	9748.000	PK	46.9	38.1	8.7	40.5	53.2	73.9	20.7	102	168	noise floor level
Vert.	12185.000	PK	46.6	39.2	10.3	39.5	56.6	73.9	17.3	100	0	noise floor level
Vert.	19496.000	PK	48.6	40.1	-3.1	48.1	37.5	73.9	36.4	100	184	
Vert.	24370.000	PK	45.6	40.2	-2.0	47.3	36.5	73.9	37.4	100	0	noise floor level
Vert.	4874.000	AV	39.0	31.7	6.0	41.5	35.2	53.9	18.7	115	193	
Vert.	7311.000	AV	35.8	36.7	7.4	40.7	39.2	53.9	14.7	100	0	noise floor level
Vert.	9748.000	AV	34.7	38.1	8.7	40.5	41.0	53.9	12.9	102	168	noise floor level
Vert.	12185.000	AV	34.4	39.2	10.3	39.5	44.4	53.9	9.5	100	0	noise floor level
Vert.	19496.000	AV	38.1	40.1	-3.1	48.1	27.0	53.9	26.9	100	184	
Vert.	24370.000	AV	34.2	40.2	-2.0	47.3	25.1	53.9	28.8	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2462 MHz		
	Tx, IEEE802.11g, worst data mode 6Mbps		

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.	85.067	QP	42.6	7.3	7.8	31.9	25.8	40.0	14.2	215	224	
Hori.	150.003	QP	32.5	14.3	8.6	31.8	23.6	43.5	19.9	200	232	
Hori.	883.648	QP	22.2	21.8	9.9	31.0	22.9	46.0	23.1	150	254	
Vert.	35.285	QP	30.0	16.0	7.0	31.9	21.1	40.0	18.9	100	297	
Vert.	37.615	QP	38.0	15.4	7.1	31.9	28.6	40.0	11.4	100	356	
Vert.	40.218	QP	34.7	14.8	7.1	31.9	24.7	40.0	15.3	100	311	
Vert.	45.485	QP	30.8	13.3	7.2	31.9	19.4	40.0	20.6	100	314	
Vert.	85.061	QP	42.5	7.3	7.8	31.9	25.7	40.0	14.3	100	190	
Hori.	2483.500	PK	32.6	27.6	3.6	0.0	63.8	73.9	10.1	113	308	
Hori.	4924.000	PK	52.3	31.8	6.0	41.5	48.6	73.9	25.3	113	183	
Hori.	7386.000	PK	46.6	36.8	7.3	40.7	50.0	73.9	23.9	100	0	noise floor level
Hori.	9848.000	PK	45.2	38.3	8.8	40.5	51.8	73.9	22.1	101	178	noise floor level
Hori.	12310.000	PK	44.7	39.2	10.3	39.5	54.7	73.9	19.2	100	0	noise floor level
Hori.	19696.000	PK	48.3	40.1	-3.0	48.1	37.3	73.9	36.6	100	239	
Hori.	24620.000	PK	45.6	40.2	-1.9	47.2	36.7	73.9	37.2	100	0	noise floor level
Hori.	2483.500	AV	17.5	27.6	3.6	0.0	48.7	53.9	5.2	113	308	
Hori.	4924.000	AV	40.6	31.8	6.0	41.5	36.9	53.9	17.0	113	183	
Hori.	7386.000	AV	35.8	36.8	7.3	40.7	39.2	53.9	14.7	100	0	noise floor level
Hori.	9848.000	AV	33.9	38.3	8.8	40.5	40.5	53.9	13.4	101	178	noise floor level
Hori.	12310.000	AV	32.8	39.2	10.3	39.5	42.8	53.9	11.1	100	0	noise floor level
Hori.	19696.000	AV	37.1	40.1	-3.0	48.1	26.1	53.9	27.8	100	239	
Hori.	24620.000	AV	34.2	40.2	-1.9	47.2	25.3	53.9	28.6	100	0	noise floor level
Vert.	2483.500	PK	33.4	27.6	3.6	0.0	64.6	73.9	9.3	106	285	
Vert.	4924.000	PK	52.5	31.8	6.0	41.5	48.8	73.9	25.1	109	178	
Vert.	7386.000	PK	46.6	36.8	7.3	40.7	50.0	73.9	23.9	100	0	noise floor level
Vert.	9848.000	PK	45.3	38.3	8.8	40.5	51.9	73.9	22.0	101	171	noise floor level
Vert.	12310.000	PK	44.7	39.2	10.3	39.5	54.7	73.9	19.2	100	0	noise floor level
Vert.	19696.000	PK	48.5	40.1	-3.0	48.1	37.5	73.9	36.4	100	186	
Vert.	24620.000	PK	45.7	40.2	-1.9	47.2	36.8	73.9	37.1	100	0	noise floor level
Vert.	2483.500	AV	18.4	27.6	3.6	0.0	49.6	53.9	4.3	106	285	
Vert.	4924.000	AV	40.8	31.8	6.0	41.5	37.1	53.9	16.8	109	178	
Vert.	7386.000	AV	35.9	36.8	7.3	40.7	39.3	53.9	14.6	100	0	noise floor level
Vert.	9848.000	AV	34.0	38.3	8.8	40.5	40.6	53.9	13.3	101	171	noise floor level
Vert.	12310.000	AV	32.9	39.2	10.3	39.5	42.9	53.9	11.0	100	0	noise floor level
Vert.	19696.000	AV	37.0	40.1	-3.0	48.1	26.0	53.9	27.9	100	186	
Vert.	24620.000	AV	34.3	40.2	-1.9	47.2	25.4	53.9	28.5	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2412 MHz		
	Tx, IEEE802.11n (20HT), worst data mode MCS3		

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.	84.778	QP	45.3	7.3	7.8	31.9	28.5	40.0	11.5	199	238	
Hori.	700.458	QP	22.1	20.5	9.1	31.5	20.2	46.0	25.8	150	17	
Vert.	35.237	QP	30.3	16.0	7.0	31.9	21.4	40.0	18.6	100	330	
Vert.	37.686	QP	38.0	15.4	7.1	31.9	28.6	40.0	11.4	100	325	
Vert.	40.181	QP	33.8	14.8	7.1	31.9	23.8	40.0	16.2	100	285	
Vert.	45.667	QP	30.2	13.3	7.2	31.9	18.8	40.0	21.2	100	300	
Vert.	84.821	QP	46.7	7.3	7.8	31.9	29.9	40.0	10.1	100	78	
Vert.	109.449	QP	31.0	11.5	8.1	31.8	18.8	43.5	24.7	100	28	
Hori.	2390.000	PK	46.6	27.5	24.0	37.8	60.3	73.9	13.6	115	307	
Hori.	2400.000	PK	62.9	27.5	24.0	37.8	76.6	73.9	-	115	307	Refer to 20dBc data sheet
Hori.	4824.000	PK	52.2	31.6	6.0	41.5	48.3	73.9	25.6	102	162	
Hori.	7236.000	PK	46.9	36.5	7.4	40.7	50.1	73.9	23.8	100	0	noise floor level
Hori.	9648.000	PK	46.6	37.9	8.7	40.5	52.7	73.9	21.2	100	0	noise floor level
Hori.	12060.000	PK	46.6	39.3	10.2	39.5	56.6	73.9	17.3	100	0	noise floor level
Hori.	19296.000	PK	48.9	40.0	-3.2	48.3	37.4	73.9	36.5	100	235	
Hori.	24120.000	PK	45.4	40.2	-2.1	47.2	36.3	73.9	37.6	100	0	noise floor level
Hori.	2390.000	AV	34.4	27.5	24.0	37.8	48.1	53.9	5.8	115	307	
Hori.	2400.000	AV	46.8	27.5	24.0	37.8	60.5	53.9	-	115	307	Refer to 20dBc data sheet
Hori.	4824.000	AV	40.4	31.6	6.0	41.5	36.5	53.9	17.4	102	162	
Hori.	7236.000	AV	35.9	36.5	7.4	40.7	39.1	53.9	14.8	100	0	noise floor level
Hori.	9648.000	AV	34.7	37.9	8.7	40.5	40.8	53.9	13.1	100	0	noise floor level
Hori.	12060.000	AV	35.0	39.3	10.2	39.5	45.0	53.9	8.9	100	0	noise floor level
Hori.	19296.000	AV	37.6	40.0	-3.2	48.3	26.1	53.9	27.8	100	235	
Hori.	24120.000	AV	33.7	40.2	-2.1	47.2	24.6	53.9	29.3	100	0	noise floor level
Vert.	2390.000	PK	48.2	27.5	24.0	37.8	61.9	73.9	12.0	109	289	
Vert.	2400.000	PK	63.5	27.5	24.0	37.8	77.2	73.9	-	109	289	Refer to 20dBc data sheet
Vert.	4824.000	PK	52.6	31.6	6.0	41.5	48.7	73.9	25.2	105	185	
Vert.	7236.000	PK	47.0	36.5	7.4	40.7	50.2	73.9	23.7	100	0	noise floor level
Vert.	9648.000	PK	46.7	37.9	8.7	40.5	52.8	73.9	21.1	100	0	noise floor level
Vert.	12060.000	PK	46.5	39.3	10.2	39.5	56.5	73.9	17.4	100	0	noise floor level
Vert.	19296.000	PK	48.8	40.0	-3.2	48.3	37.3	73.9	36.6	100	184	
Vert.	24120.000	PK	45.4	40.2	-2.1	47.2	36.3	73.9	37.6	100	0	noise floor level
Vert.	2390.000	AV	34.9	27.5	24.0	37.8	48.6	53.9	5.3	109	289	
Vert.	2400.000	AV	47.6	27.5	24.0	37.8	61.3	53.9	-	109	289	Refer to 20dBc data sheet
Vert.	4824.000	AV	40.9	31.6	6.0	41.5	37.0	53.9	16.9	105	185	
Vert.	7236.000	AV	35.9	36.5	7.4	40.7	39.1	53.9	14.8	100	0	noise floor level
Vert.	9648.000	AV	34.7	37.9	8.7	40.5	40.8	53.9	13.1	100	0	noise floor level
Vert.	12060.000	AV	34.9	39.3	10.2	39.5	44.9	53.9	9.0	100	0	noise floor level
Vert.	19296.000	AV	37.5	40.0	-3.2	48.3	26.0	53.9	27.9	100	184	
Vert.	24120.000	AV	33.8	40.2	-2.1	47.2	24.7	53.9	29.2	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

20dBc Data Sheet (RBW 100kHz, VBW 300kHz)

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	80.2	27.6	24.0	37.8	94.0	-	-	Carrier
Hori.	2400.000	PK	47.8	27.5	24.0	37.8	61.5	74.0	12.5	
Vert.	2412.000	PK	80.2	27.6	24.0	37.8	94.0	-	-	Carrier
Vert.	2400.000	PK	48.9	27.5	24.0	37.8	62.6	74.0	11.4	

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

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2437 MHz		
	Tx, IEEE802.11n (20HT), worst data mode MCS3		

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.	84.887	QP	46.0	7.3	7.8	31.9	29.2	40.0	10.8	200	241	
Hori.	150.132	QP	31.7	14.3	8.6	31.8	22.8	43.5	20.7	180	255	
Hori.	864.140	QP	21.1	21.6	9.8	31.1	21.4	46.0	24.6	150	355	
Vert.	37.642	QP	38.0	15.4	7.1	31.9	28.6	40.0	11.4	100	315	
Vert.	40.285	QP	34.1	14.8	7.1	31.9	24.1	40.0	15.9	100	295	
Vert.	54.015	QP	37.1	10.0	7.3	31.9	22.5	40.0	17.5	100	307	
Vert.	85.017	QP	46.6	7.3	7.8	31.9	29.8	40.0	10.2	100	80	
Vert.	109.557	QP	34.7	11.5	8.1	31.8	22.5	43.5	21.0	100	29	
Hori.	4874.000	PK	52.9	31.7	6.0	41.5	49.1	73.9	24.8	105	178	
Hori.	7311.000	PK	46.8	36.7	7.4	40.7	50.2	73.9	23.7	100	0	noise floor level
Hori.	9748.000	PK	47.0	38.1	8.7	40.5	53.3	73.9	20.6	100	0	noise floor level
Hori.	12185.000	PK	46.7	39.2	10.3	39.5	56.7	73.9	17.2	100	0	noise floor level
Hori.	19496.000	PK	48.7	40.1	-3.1	48.1	37.6	73.9	36.3	100	236	
Hori.	24370.000	PK	45.6	40.2	-2.0	47.3	36.5	73.9	37.4	100	0	noise floor level
Hori.	4874.000	AV	41.1	31.7	6.0	41.5	37.3	53.9	16.6	105	178	
Hori.	7311.000	AV	35.8	36.7	7.4	40.7	39.2	53.9	14.7	100	0	noise floor level
Hori.	9748.000	AV	34.7	38.1	8.7	40.5	41.0	53.9	12.9	100	0	noise floor level
Hori.	12185.000	AV	34.4	39.2	10.3	39.5	44.4	53.9	9.5	100	0	noise floor level
Hori.	19496.000	AV	38.8	40.1	-3.1	48.1	27.7	53.9	26.2	100	236	
Hori.	24370.000	AV	34.2	40.2	-2.0	47.3	25.1	53.9	28.8	100	0	noise floor level
Vert.	4874.000	PK	53.1	31.7	6.0	41.5	49.3	73.9	24.6	104	182	
Vert.	7311.000	PK	46.9	36.7	7.4	40.7	50.3	73.9	23.6	100	0	noise floor level
Vert.	9748.000	PK	46.9	38.1	8.7	40.5	53.2	73.9	20.7	100	0	noise floor level
Vert.	12185.000	PK	46.7	39.2	10.3	39.5	56.7	73.9	17.2	100	0	noise floor level
Vert.	19496.000	PK	48.4	40.1	-3.1	48.1	37.3	73.9	36.6	100	187	
Vert.	24370.000	PK	45.7	40.2	-2.0	47.3	36.6	73.9	37.3	100	0	noise floor level
Vert.	4874.000	AV	41.2	31.7	6.0	41.5	37.4	53.9	16.5	104	182	
Vert.	7311.000	AV	35.9	36.7	7.4	40.7	39.3	53.9	14.6	100	0	noise floor level
Vert.	9748.000	AV	34.6	38.1	8.7	40.5	40.9	53.9	13.0	100	0	noise floor level
Vert.	12185.000	AV	34.5	39.2	10.3	39.5	44.5	53.9	9.4	100	0	noise floor level
Vert.	19496.000	AV	38.2	40.1	-3.1	48.1	27.1	53.9	26.8	100	187	
Vert.	24370.000	AV	34.3	40.2	-2.0	47.3	25.2	53.9	28.7	100	0	noise floor level

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

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

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

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

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.2 Semi Anechoic Chamber	No.3 Semi Anechoic Chamber	
Date	July 4, 2011	July 7, 2011	July 8, 2011
Temperature / Humidity	24deg.C , 60%RH	26deg.C , 57%RH	26deg.C , 51%RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Kenichi Adachi
Mode	Tx, 2462 MHz		
	Tx, IEEE802.11n (20HT), worst data mode MCS3		

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.	84.908	QP	45.0	7.3	7.8	31.9	28.2	40.0	11.8	200	240	
Hori.	893.504	QP	21.9	21.9	10.0	30.9	22.9	46.0	23.1	150	303	
Vert.	35.258	QP	30.1	16.0	7.0	31.9	21.2	40.0	18.8	100	296	
Vert.	37.647	QP	38.3	15.4	7.1	31.9	28.9	40.0	11.1	100	300	
Vert.	40.272	QP	34.9	14.8	7.1	31.9	24.9	40.0	15.1	100	310	
Vert.	51.830	QP	34.0	10.6	7.3	31.9	20.0	40.0	20.0	100	318	
Vert.	85.174	QP	46.0	7.4	7.8	31.9	29.3	40.0	10.7	100	210	
Vert.	110.147	QP	34.3	11.6	8.1	31.8	22.2	43.5	21.3	100	40	
Hori.	2483.500	PK	35.1	27.6	3.6	0.0	66.3	73.9	7.6	113	324	
Hori.	4924.000	PK	52.1	31.8	6.0	41.5	48.4	73.9	25.5	116	181	
Hori.	7386.000	PK	46.7	36.8	7.3	40.7	50.1	73.9	23.8	100	0	noise floor level
Hori.	9848.000	PK	45.1	38.3	8.8	40.5	51.7	73.9	22.2	100	0	noise floor level
Hori.	12310.000	PK	44.8	39.2	10.3	39.5	54.8	73.9	19.1	100	0	noise floor level
Hori.	19696.000	PK	48.6	40.1	-3.0	48.1	37.6	73.9	36.3	100	233	
Hori.	24620.000	PK	45.7	40.2	-1.9	47.2	36.8	73.9	37.1	100	0	noise floor level
Hori.	2483.500	AV	18.2	27.6	3.6	0.0	49.4	53.9	4.5	113	324	
Hori.	4924.000	AV	40.8	31.8	6.0	41.5	37.1	53.9	16.8	116	181	
Hori.	7386.000	AV	35.9	36.8	7.3	40.7	39.3	53.9	14.6	100	0	noise floor level
Hori.	9848.000	AV	33.8	38.3	8.8	40.5	40.4	53.9	13.5	100	0	noise floor level
Hori.	12310.000	AV	32.7	39.2	10.3	39.5	42.7	53.9	11.2	100	0	noise floor level
Hori.	19696.000	AV	37.1	40.1	-3.0	48.1	26.1	53.9	27.8	100	233	
Hori.	24620.000	AV	34.2	40.2	-1.9	47.2	25.3	53.9	28.6	100	0	noise floor level
Vert.	2483.500	PK	35.3	27.6	3.6	0.0	66.5	73.9	7.4	104	282	
Vert.	4924.000	PK	52.3	31.8	6.0	41.5	48.6	73.9	25.3	103	187	
Vert.	7386.000	PK	46.7	36.8	7.3	40.7	50.1	73.9	23.8	100	0	noise floor level
Vert.	9848.000	PK	45.2	38.3	8.8	40.5	51.8	73.9	22.1	100	0	noise floor level
Vert.	12310.000	PK	44.9	39.2	10.3	39.5	54.9	73.9	19.0	100	0	noise floor level
Vert.	19696.000	PK	48.4	40.1	-3.0	48.1	37.4	73.9	36.5	100	184	
Vert.	24620.000	PK	45.6	40.2	-1.9	47.2	36.7	73.9	37.2	100	0	noise floor level
Vert.	2483.500	AV	18.7	27.6	3.6	0.0	49.9	53.9	4.0	104	282	
Vert.	4924.000	AV	40.9	31.8	6.0	41.5	37.2	53.9	16.7	103	187	
Vert.	7386.000	AV	35.9	36.8	7.3	40.7	39.3	53.9	14.6	100	0	noise floor level
Vert.	9848.000	AV	33.8	38.3	8.8	40.5	40.4	53.9	13.5	100	0	noise floor level
Vert.	12310.000	AV	32.7	39.2	10.3	39.5	42.7	53.9	11.2	100	0	noise floor level
Vert.	19696.000	AV	37.0	40.1	-3.0	48.1	26.0	53.9	27.9	100	184	
Vert.	24620.000	AV	34.1	40.2	-1.9	47.2	25.2	53.9	28.7	100	0	noise floor level

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

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

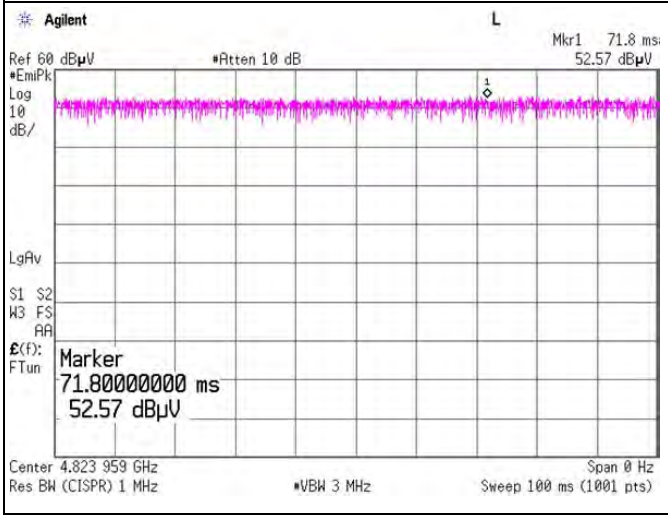
*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 13GHz-40GHz 20log(3.0m/1.0m)= 9.5dB

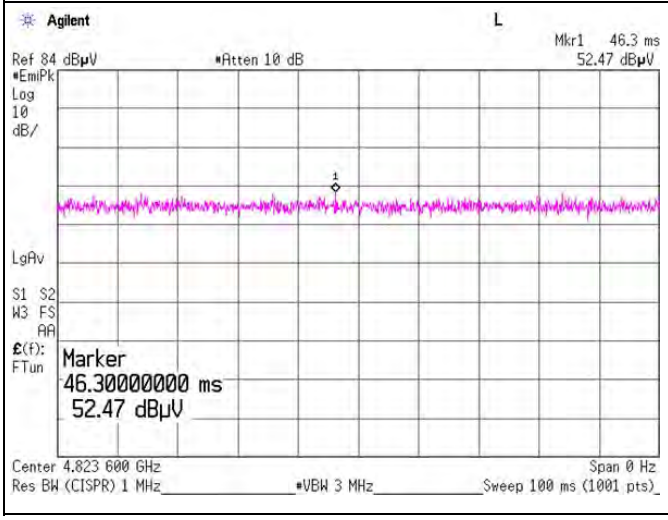
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Radiated)

Tx, IEEE802.11b, worst data mode 11Mbps

VBW (AV) Calculation	
VBW: 10Hz **Tx on / (Tx on+Tx off) = 1 (duty 100%)**	
	

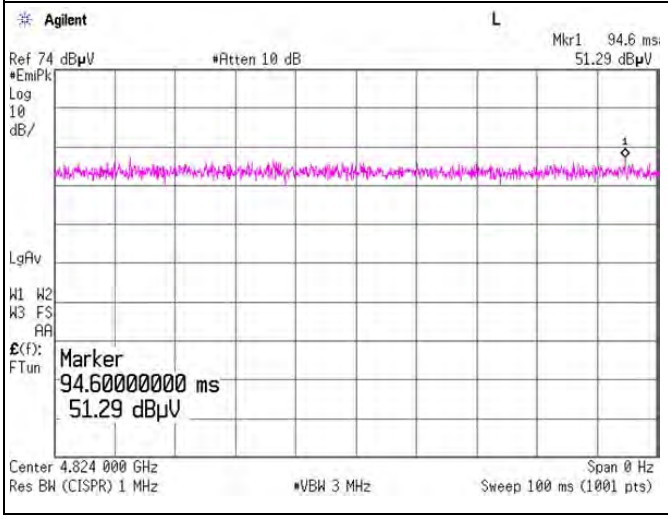
Tx, IEEE802.11g, worst data mode 6Mbps

VBW (AV) Calculation	
VBW: 10Hz **Tx on / (Tx on+Tx off) = 1 (duty 100%)**	
	

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 (Radiated)

Tx, IEEE802.11n (20HT), worst data mode MCS3

VBW (AV) Calculation	
VBW: 10Hz **Tx on / (Tx on+Tx off) = 1 (duty 100%)**	
	

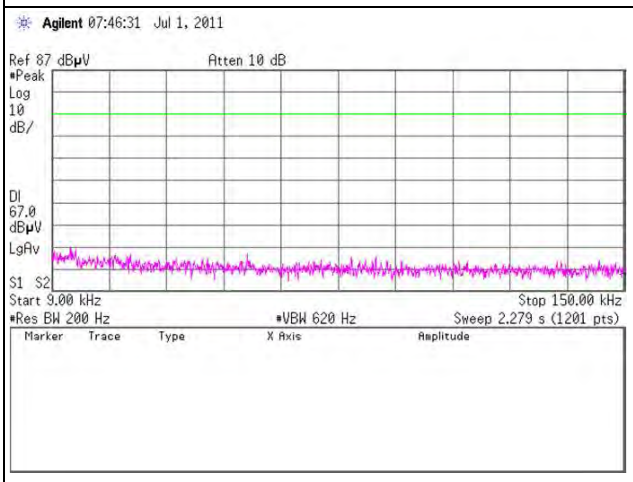
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

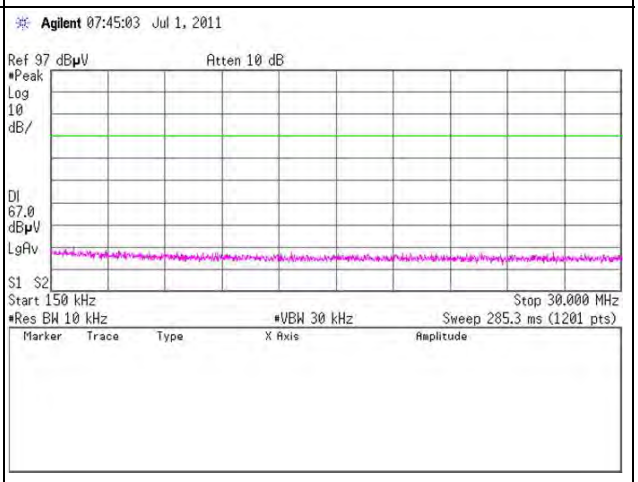
IEEE802.11b, 11Mbps

Tx 2412MHz (1/2)

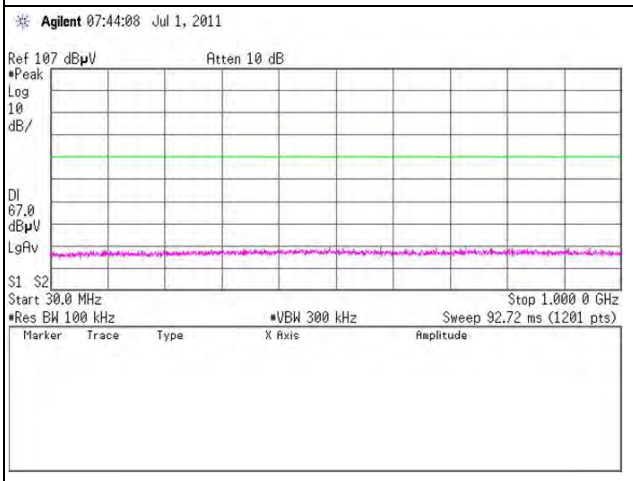
9kHz - 150kHz



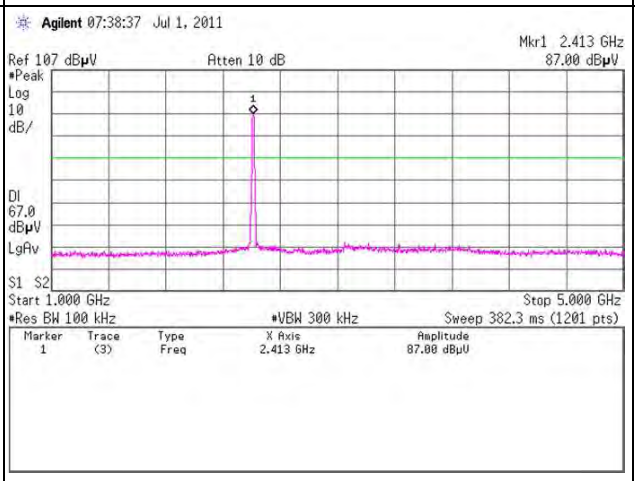
150kHz - 30MHz



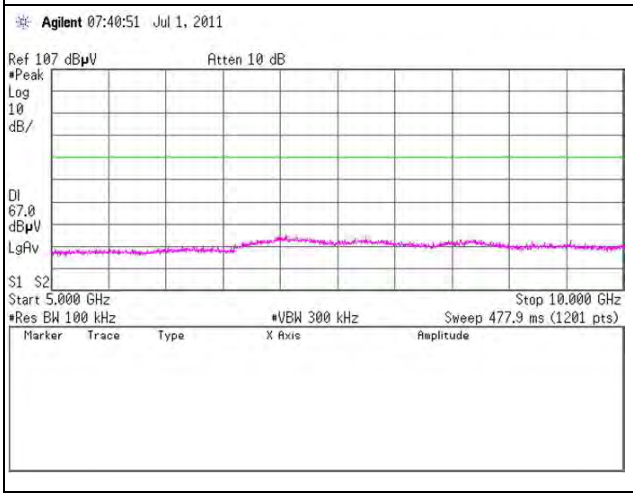
30MHz - 1GHz



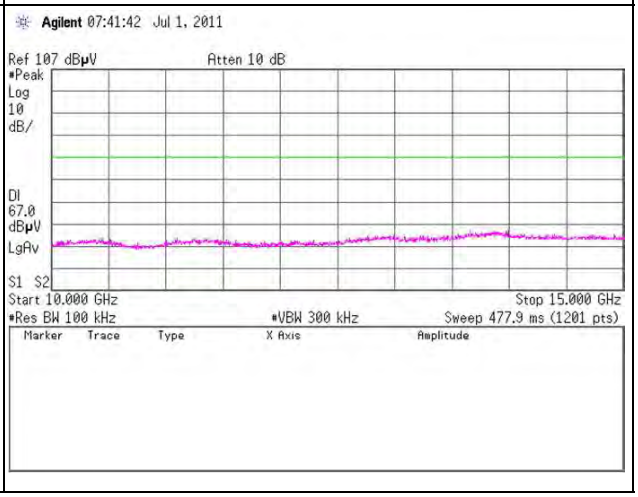
1GHz - 5GHz



5GHz - 10GHz



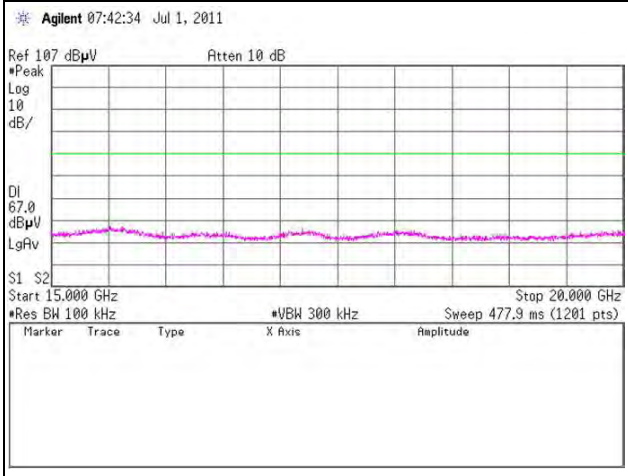
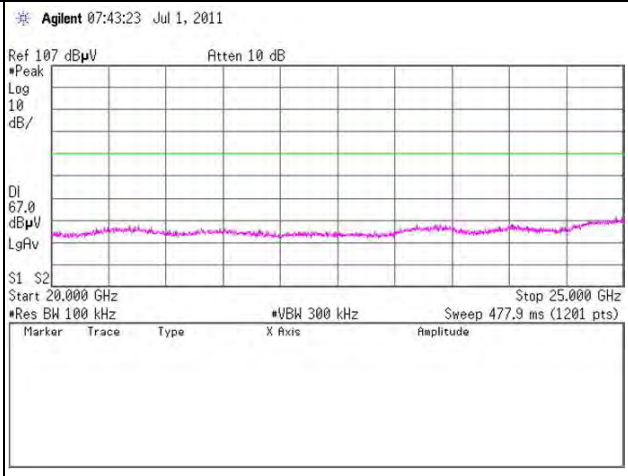
10GHz - 15GHz



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)

IEEE802.11b, 11Mbps

Tx 2412MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

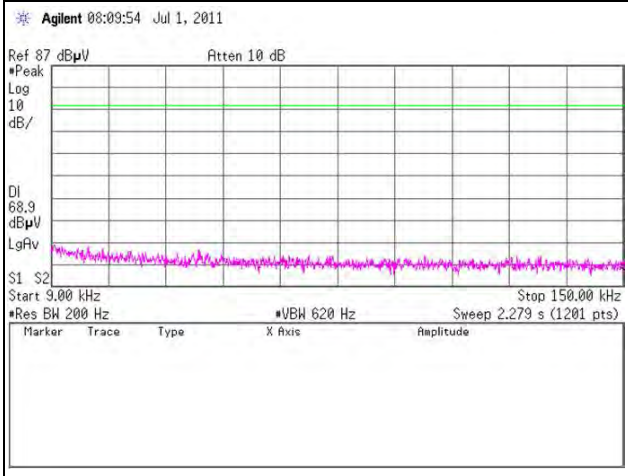
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

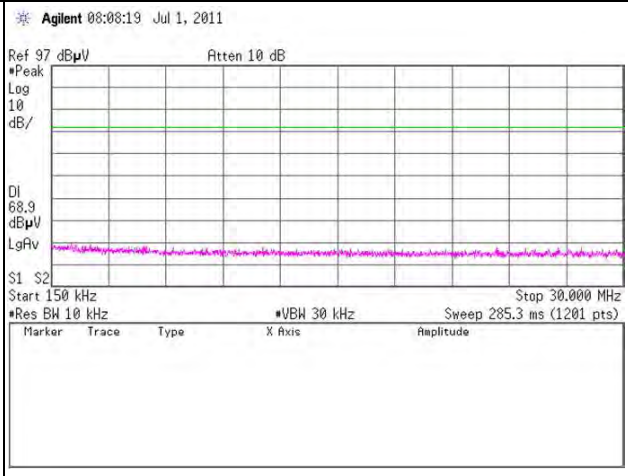
IEEE802.11b, 11Mbps

Tx 2437MHz (1/2)

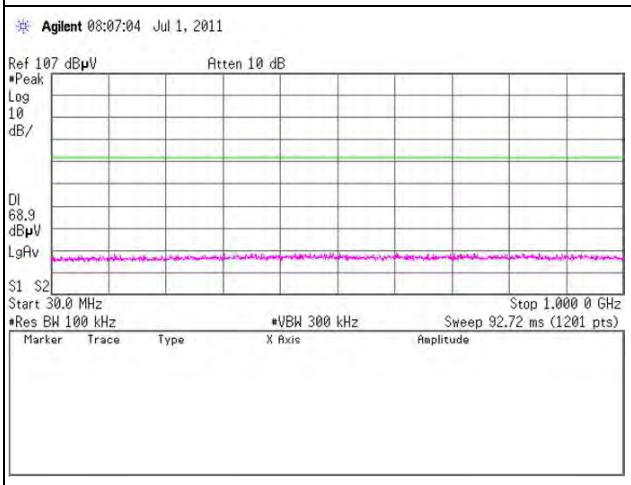
9kHz - 150kHz



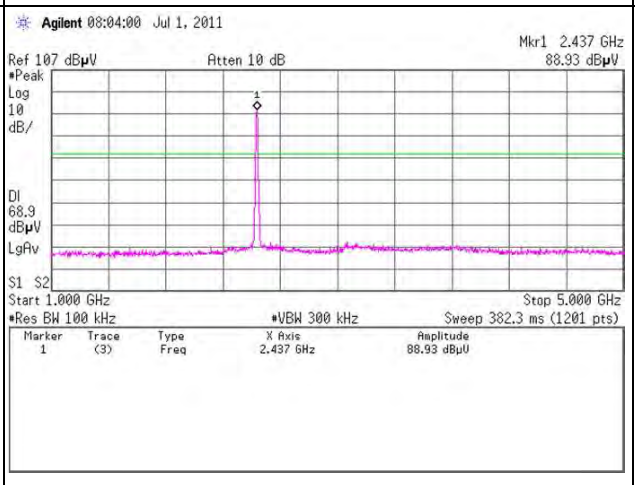
150kHz - 30MHz



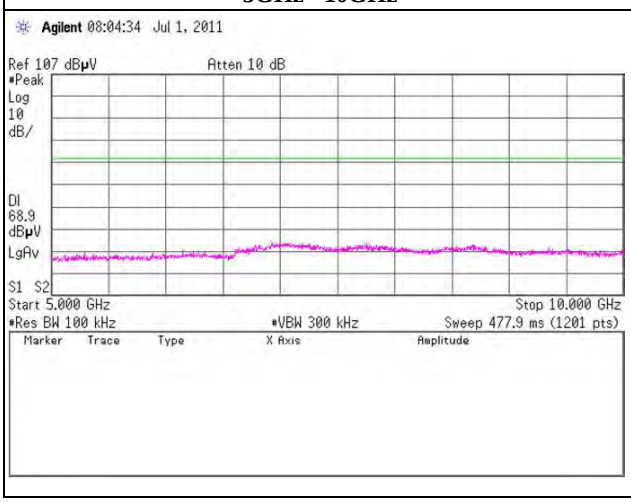
30MHz - 1GHz



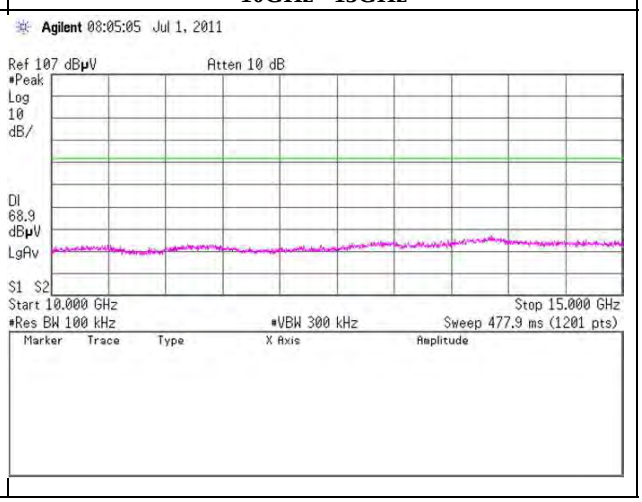
1GHz - 5GHz



5GHz - 10GHz



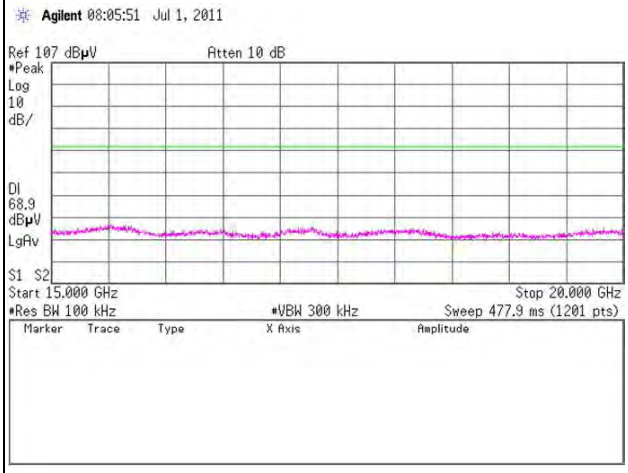
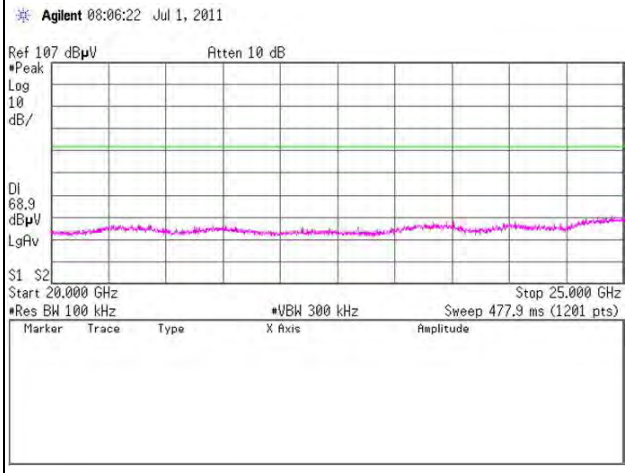
10GHz - 15GHz



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)

IEEE802.11b, 11Mbps

Tx 2437MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

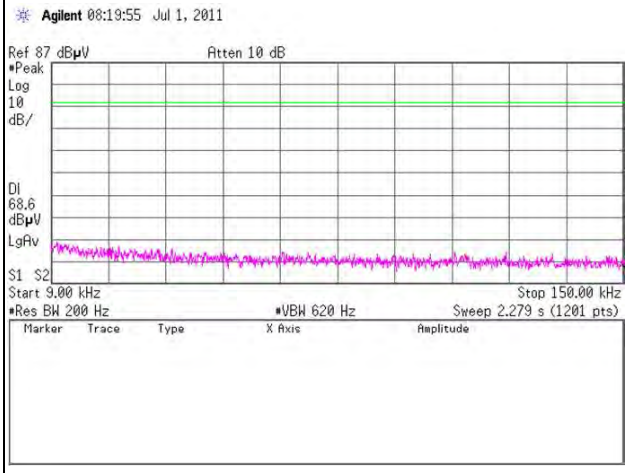
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

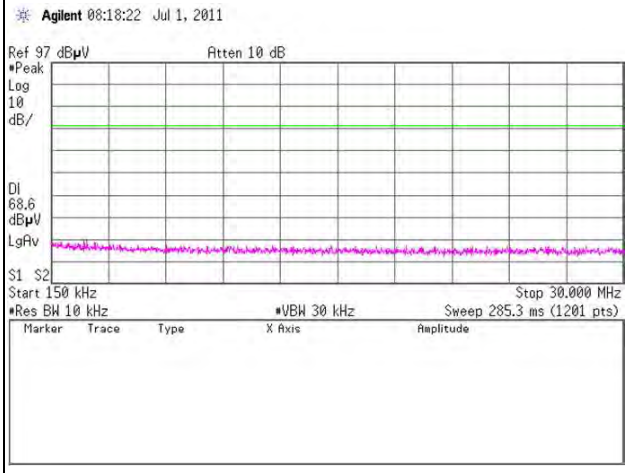
IEEE802.11b, 11Mbps

Tx 2462MHz (1/2)

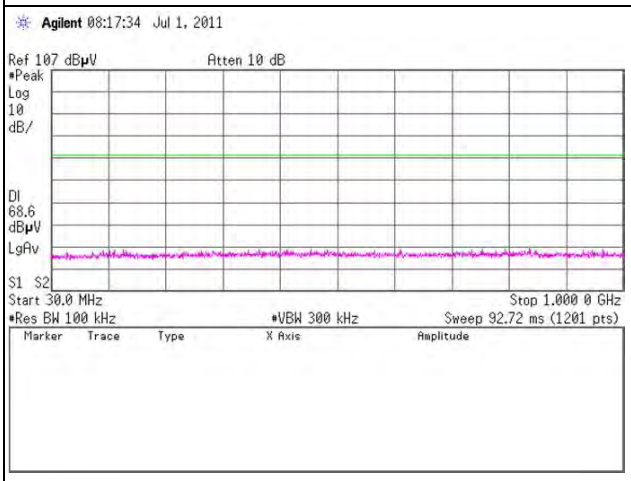
9kHz - 150kHz



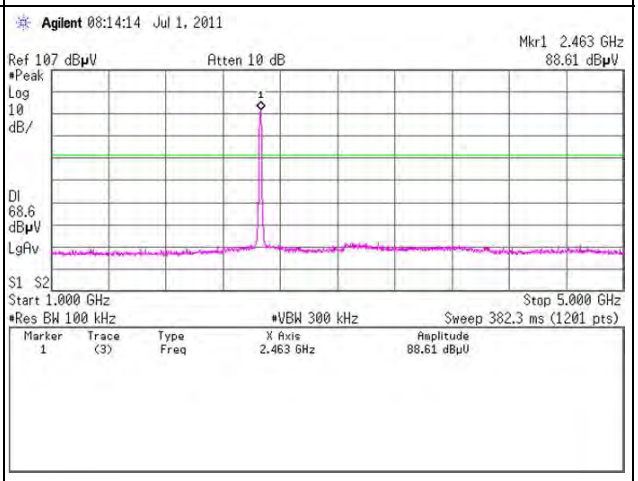
150kHz - 30MHz



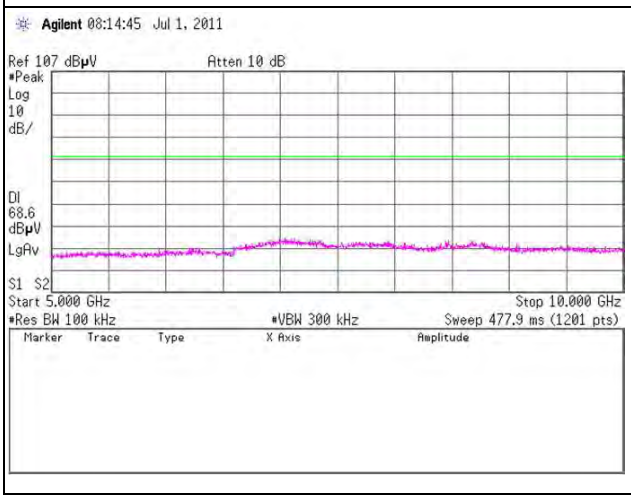
30MHz - 1GHz



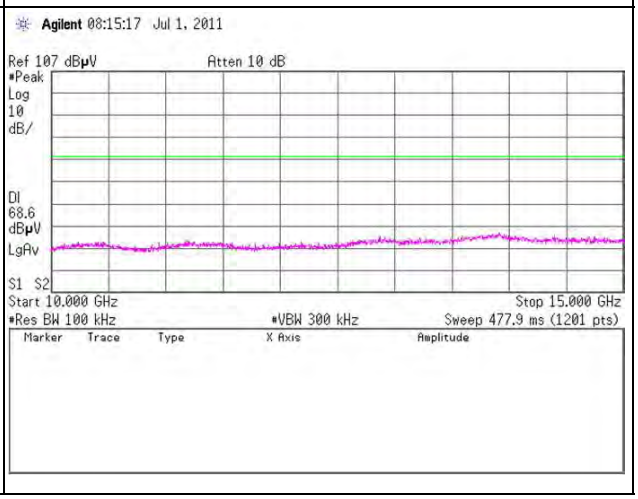
1GHz - 5GHz



5GHz - 10GHz



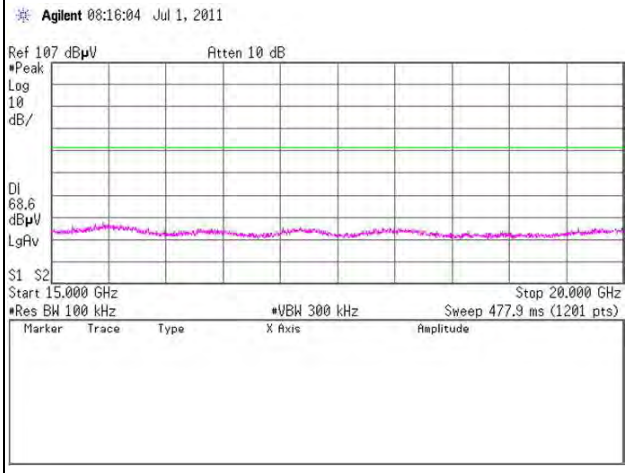
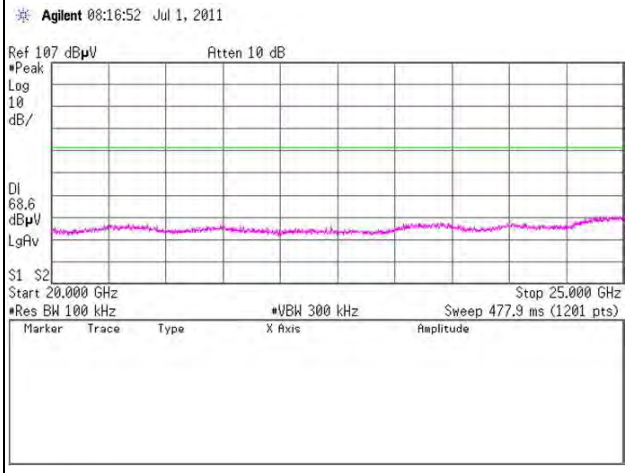
10GHz - 15GHz



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)

IEEE802.11b, 11Mbps

Tx 2462MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

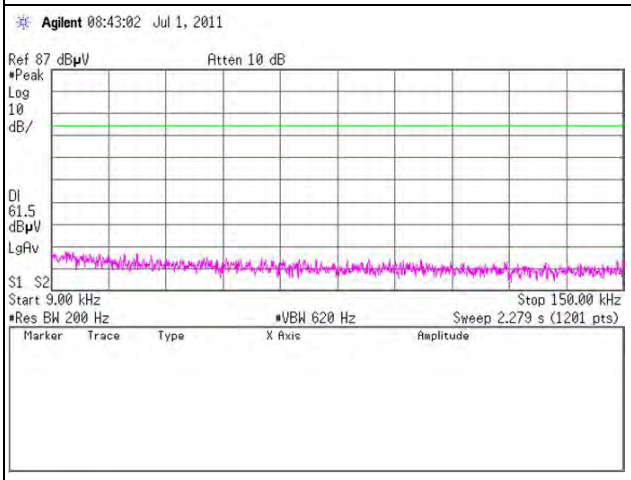
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

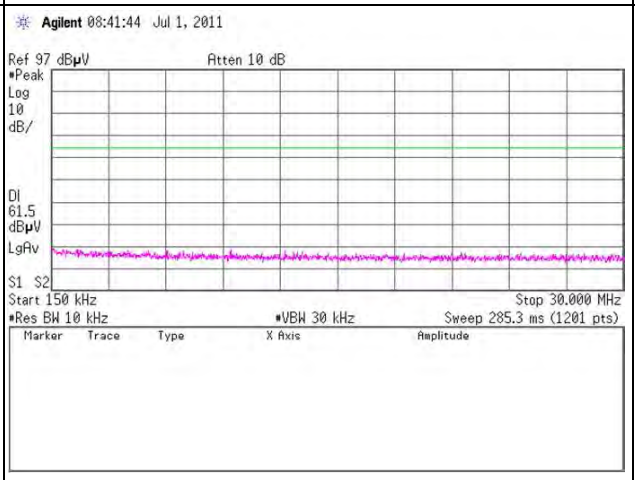
IEEE802.11g, 6Mbps

Tx 2412MHz (1/2)

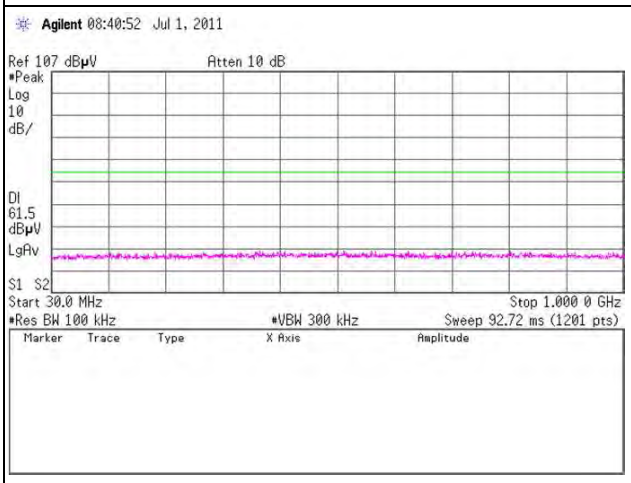
9kHz - 150kHz



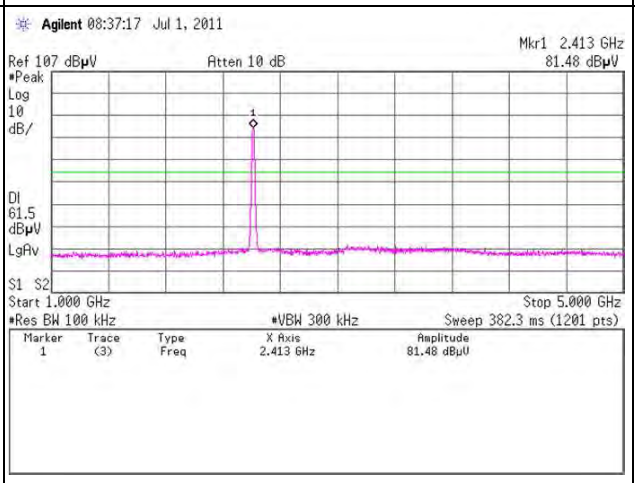
150kHz - 30MHz



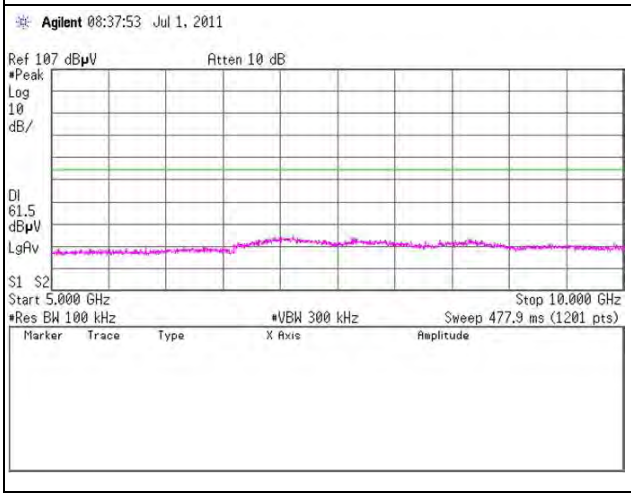
30MHz - 1GHz



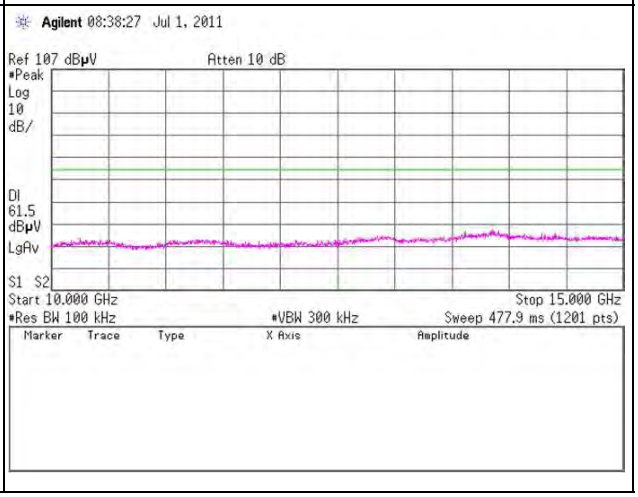
1GHz - 5GHz



5GHz - 10GHz



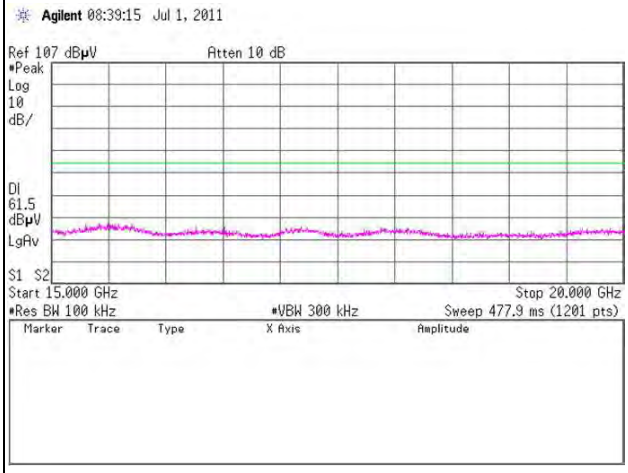
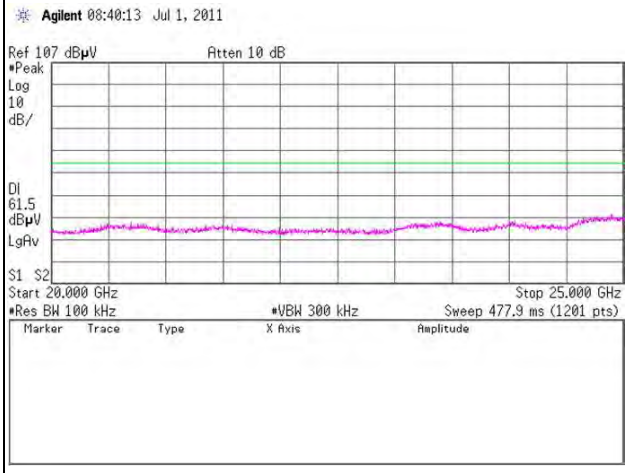
10GHz - 15GHz



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)

IEEE802.11g, 6Mbps

Tx 2412MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

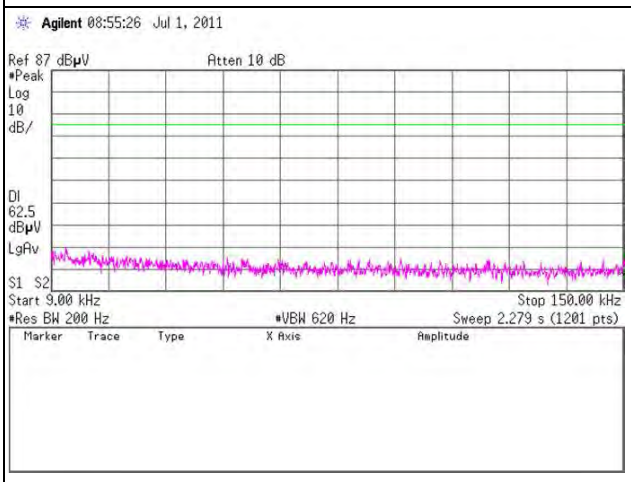
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

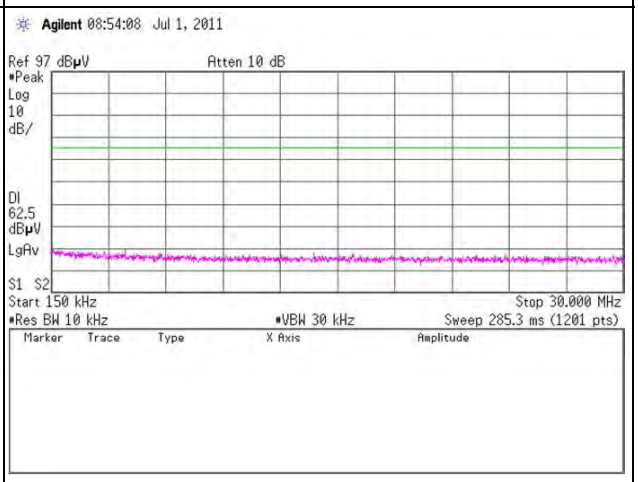
IEEE802.11g, 6Mbps

Tx 2437MHz (1/2)

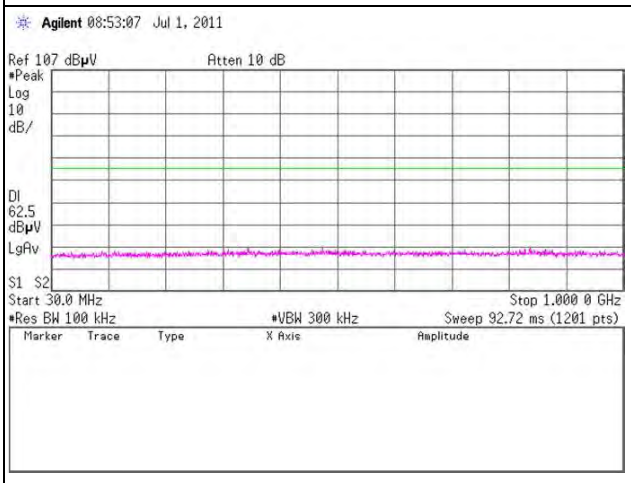
9kHz - 150kHz



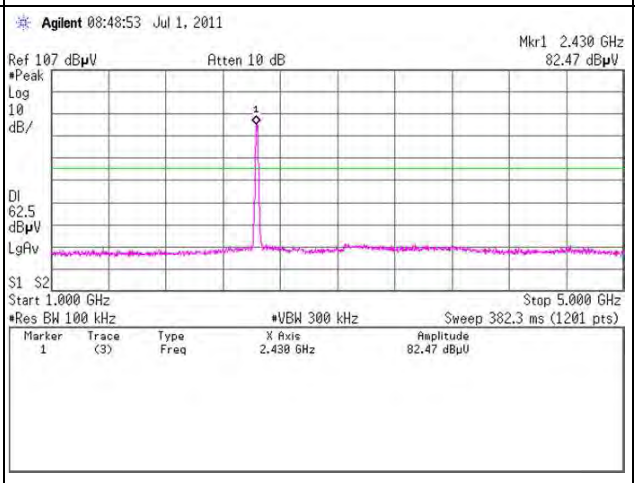
150kHz - 30MHz



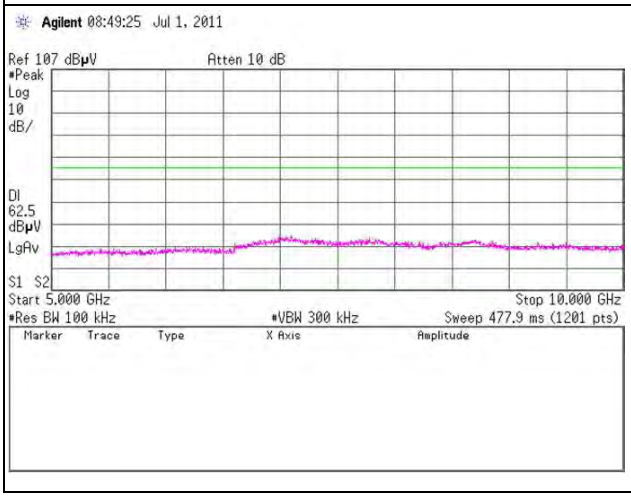
30MHz - 1GHz



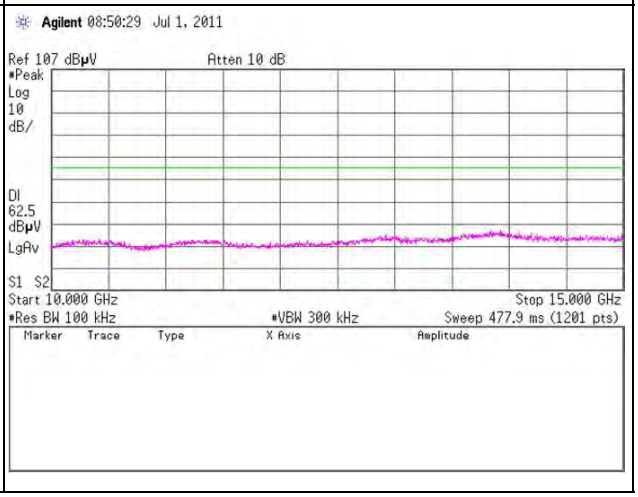
1GHz - 5GHz



5GHz - 10GHz



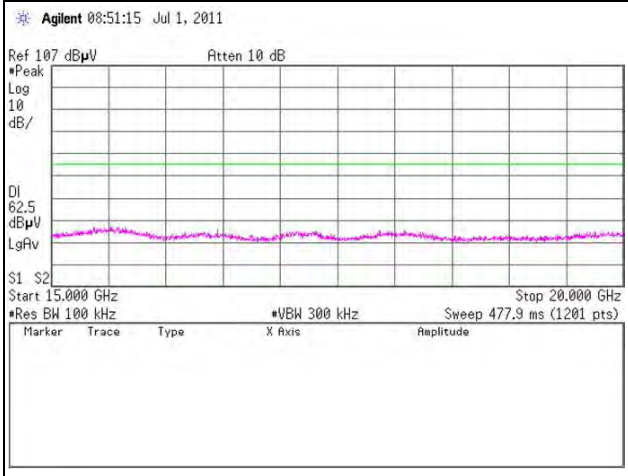
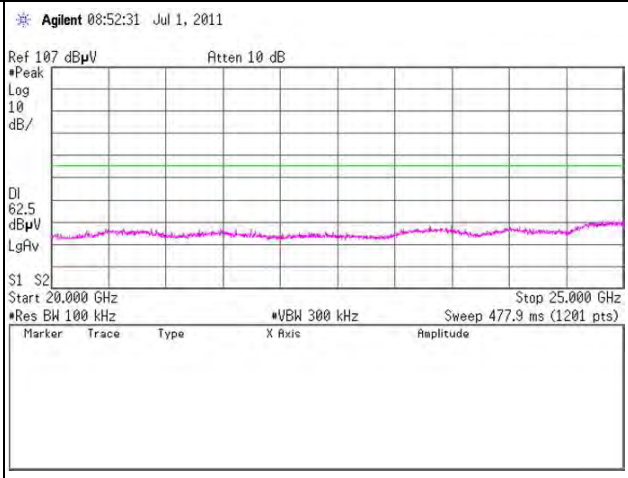
10GHz - 15GHz



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)

IEEE802.11g, 6Mbps

Tx 2437MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

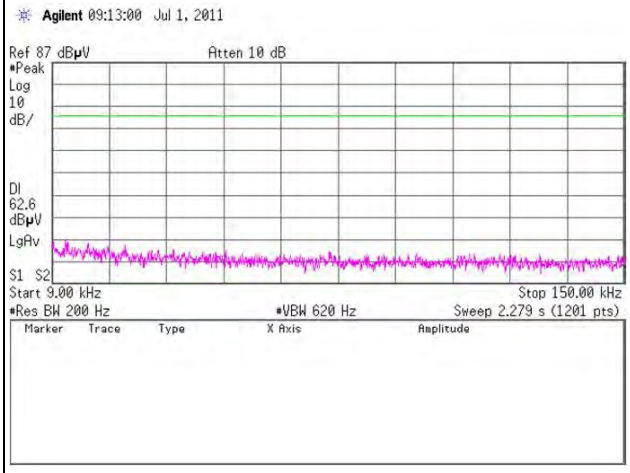
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

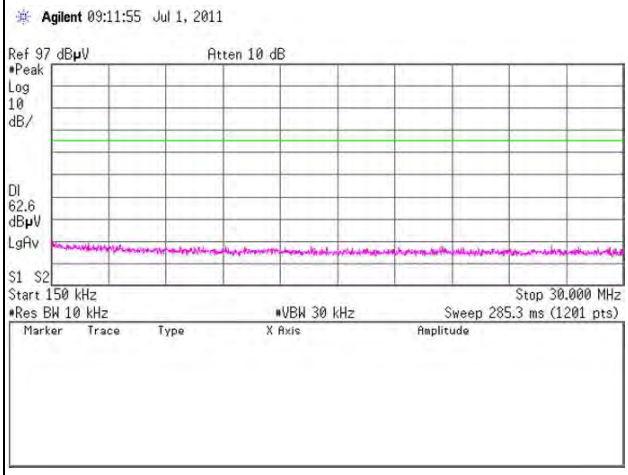
IEEE802.11g, 6Mbps

Tx 2462MHz (1/2)

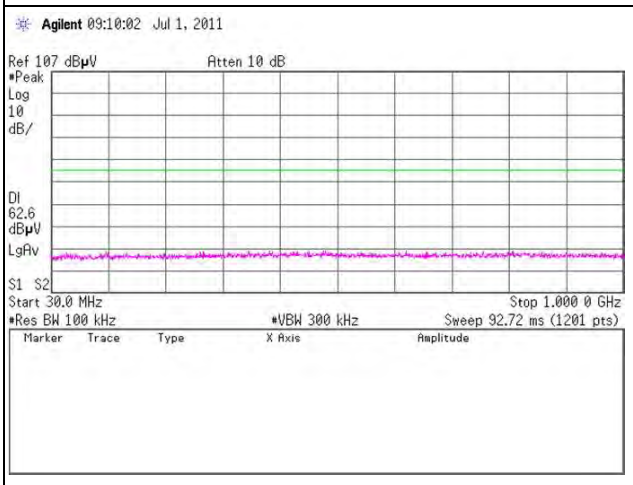
9kHz - 150kHz



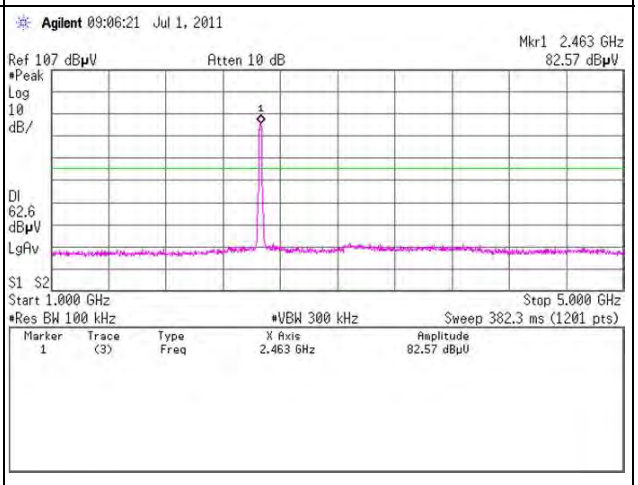
150kHz - 30MHz



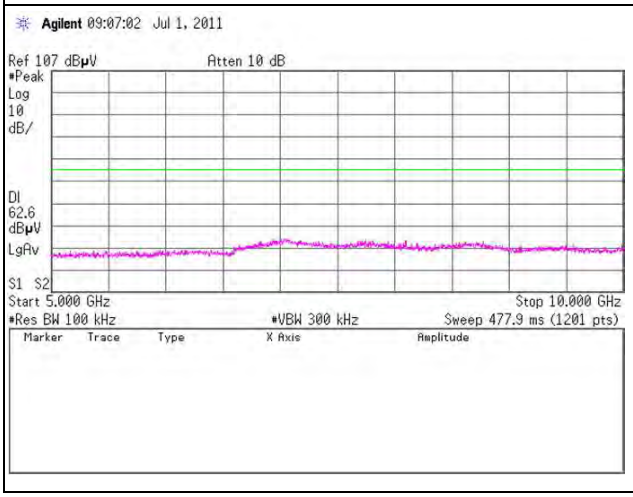
30MHz - 1GHz



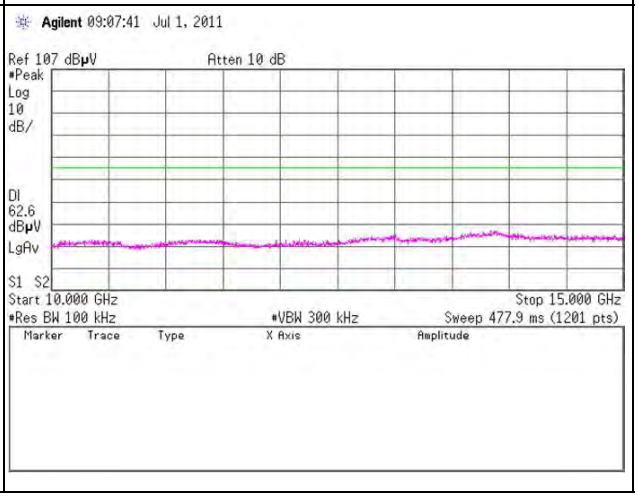
1GHz - 5GHz



5GHz - 10GHz



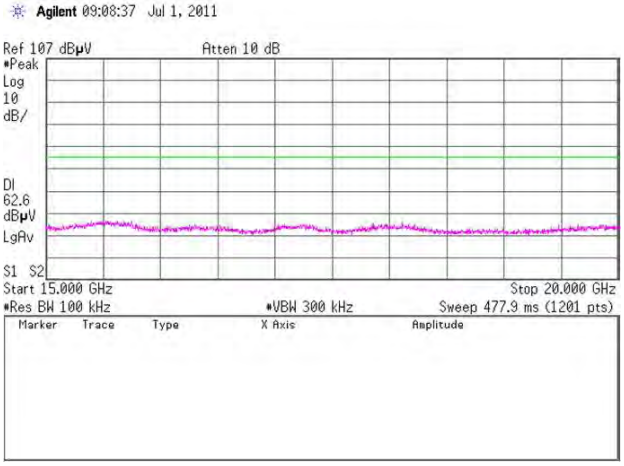
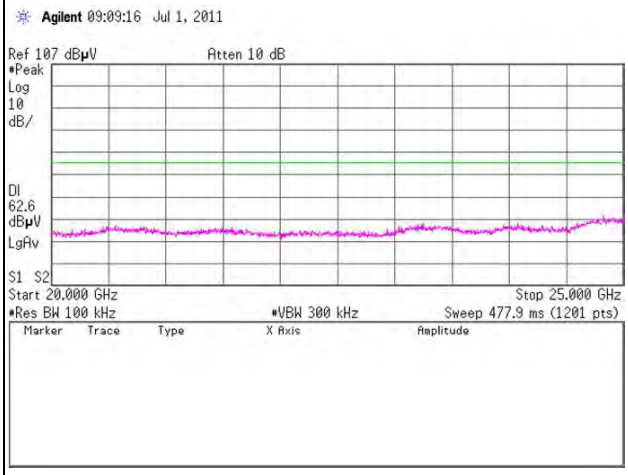
10GHz - 15GHz



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)

IEEE802.11g, 6Mbps

Tx 2462MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

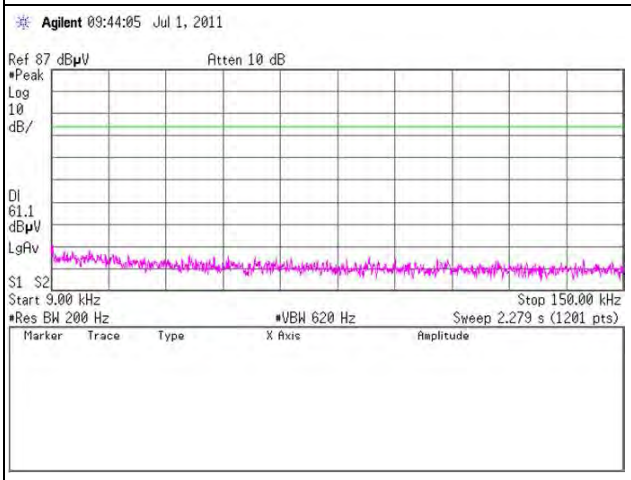
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

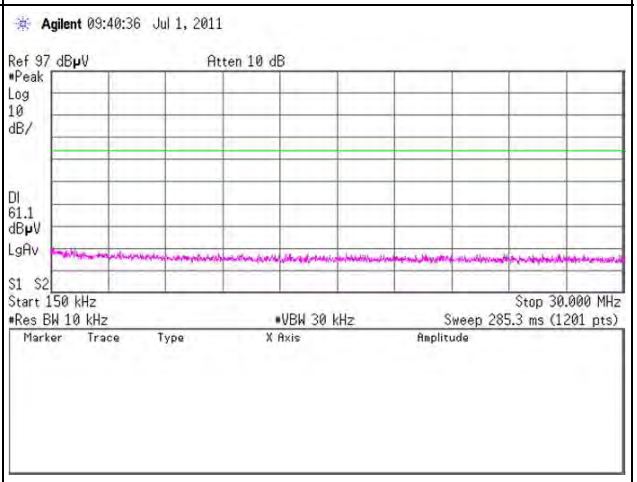
IEEE802.11n, MCS3

Tx 2412MHz (1/2)

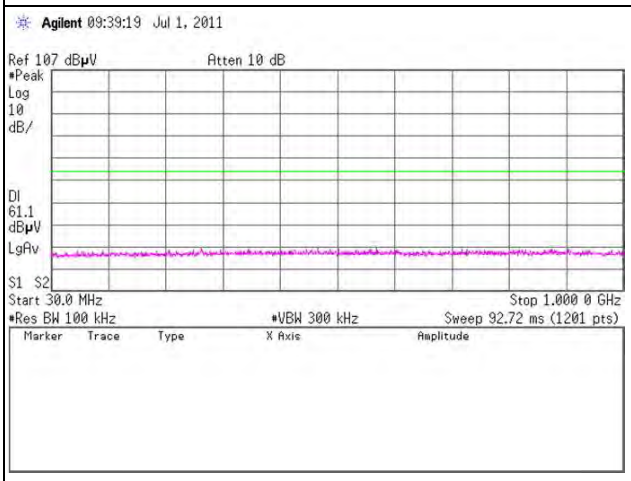
9kHz - 150kHz



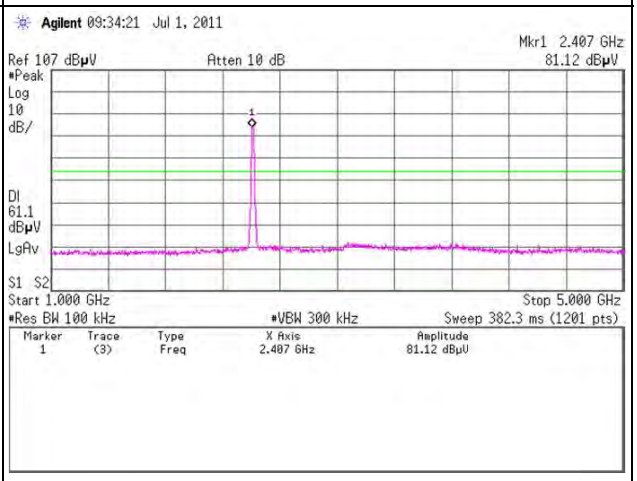
150kHz - 30MHz



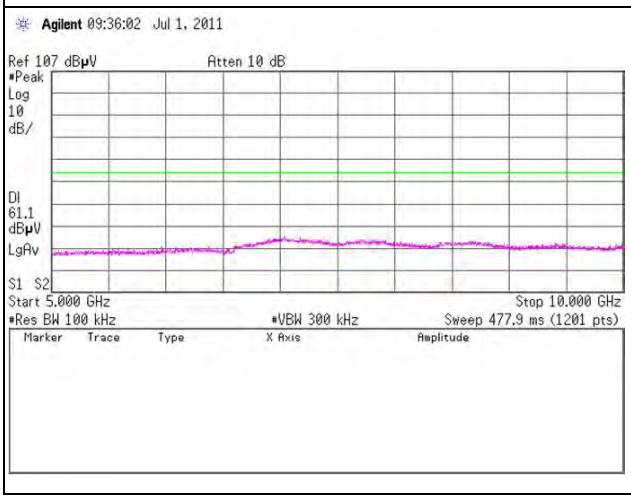
30MHz - 1GHz



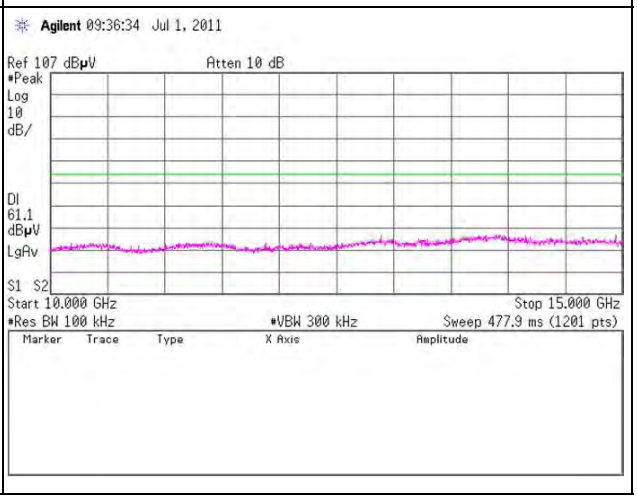
1GHz - 5GHz



5GHz - 10GHz



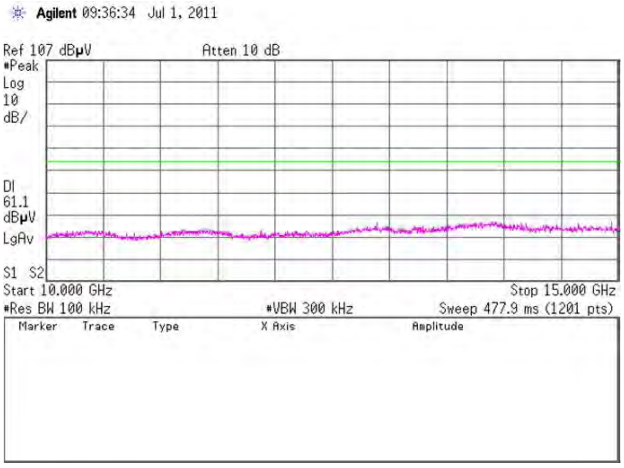
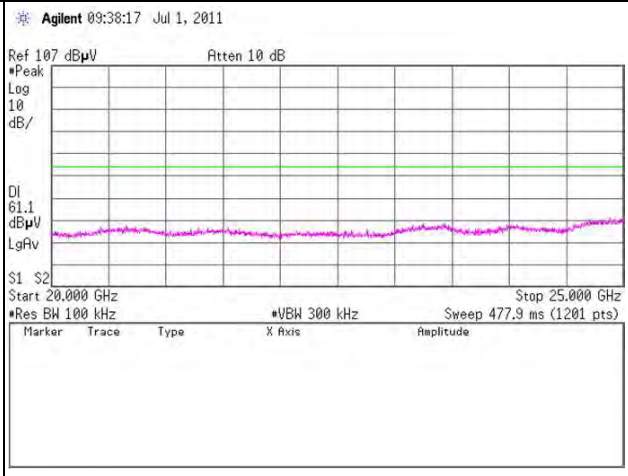
10GHz - 15GHz



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)

IEEE802.11n, MCS3

Tx 2412MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

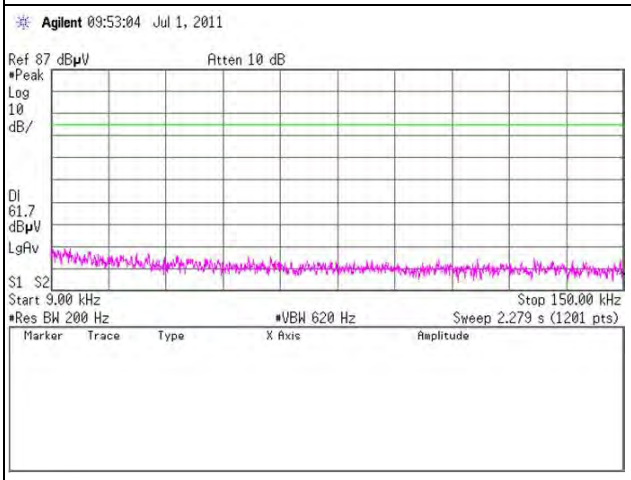
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

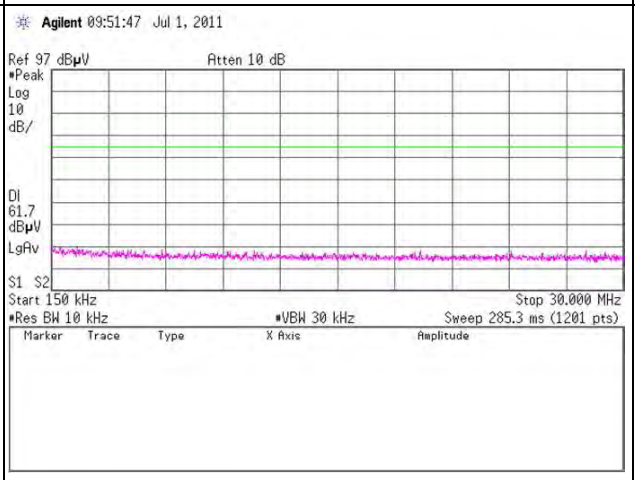
IEEE802.11n, MCS3

Tx 2437MHz (1/2)

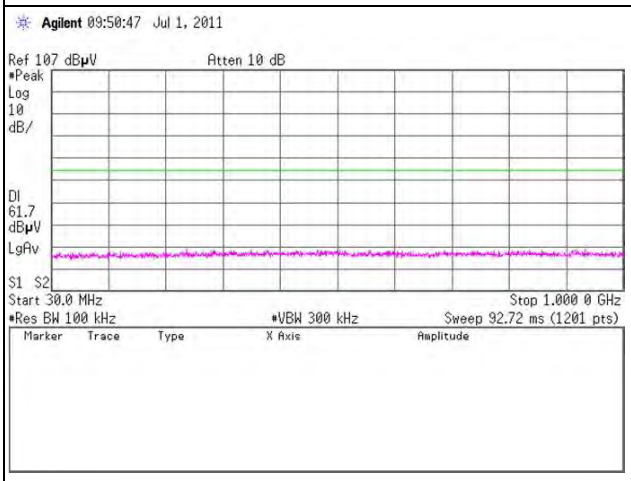
9kHz - 150kHz



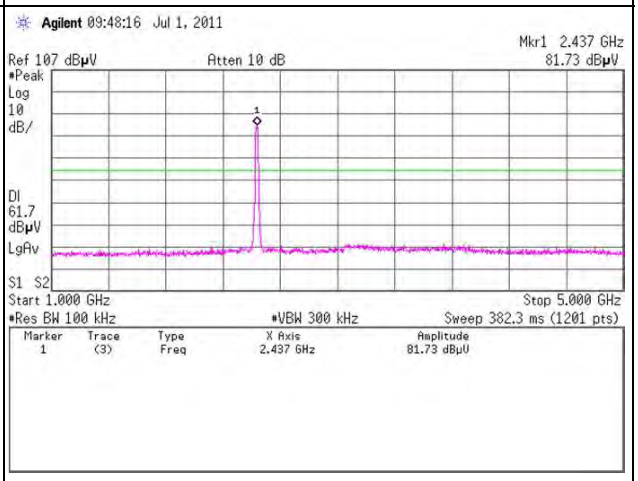
150kHz - 30MHz



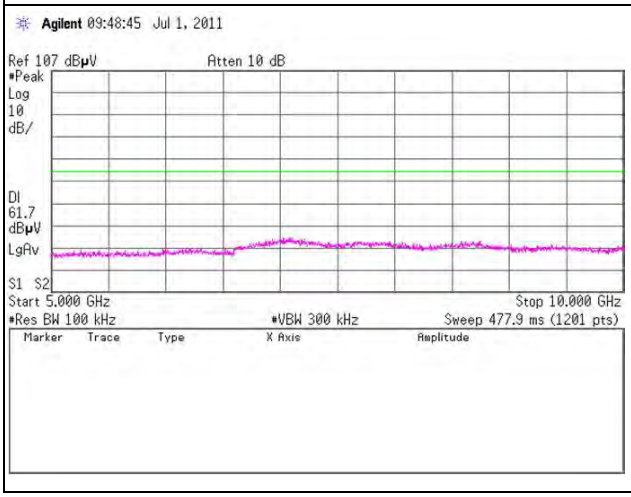
30MHz - 1GHz



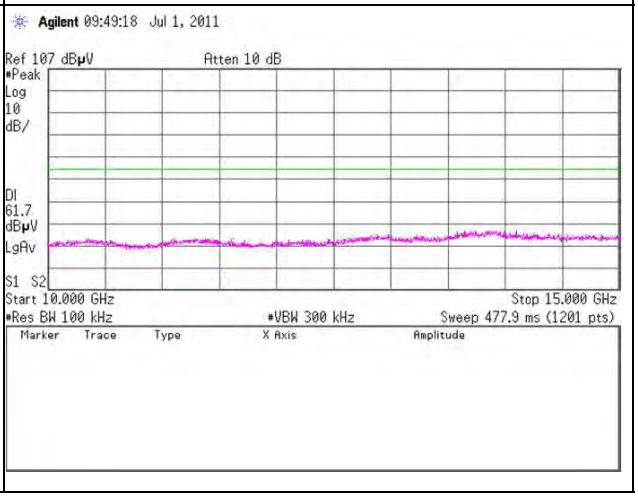
1GHz - 5GHz



5GHz - 10GHz



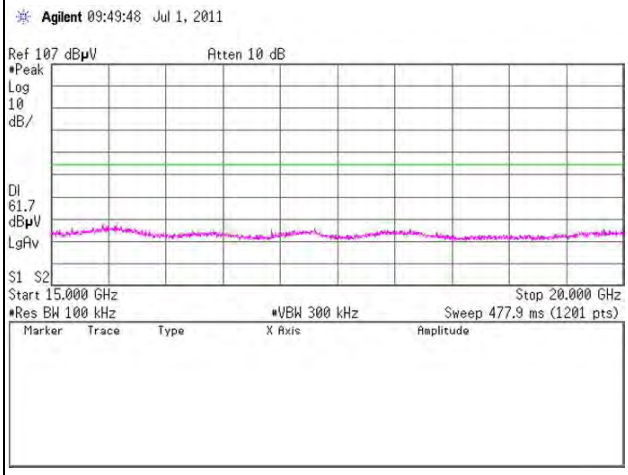
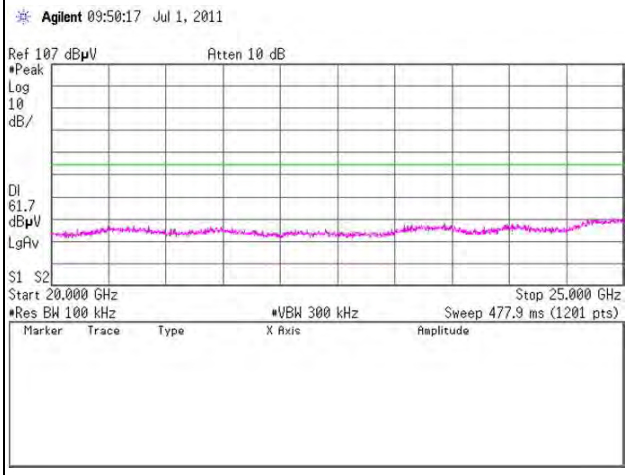
10GHz - 15GHz



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)

IEEE802.11n, MCS3

Tx 2437MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

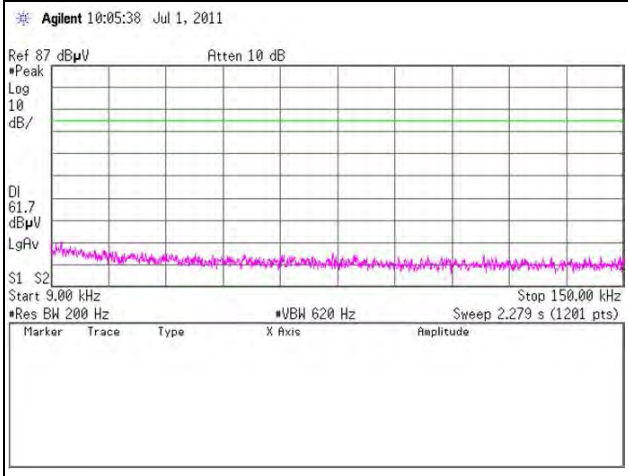
UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

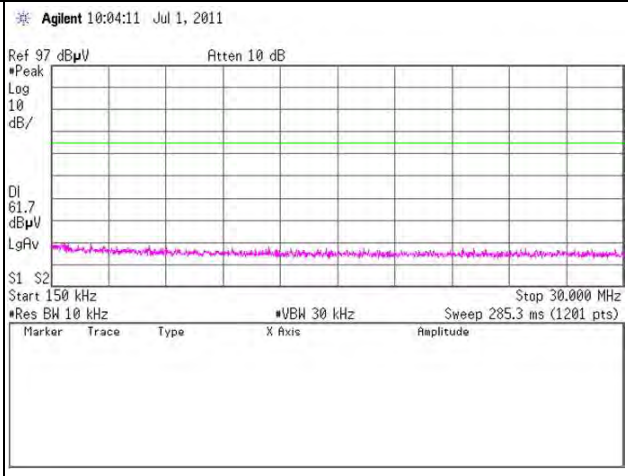
IEEE802.11n, MCS3

Tx 2462MHz (1/2)

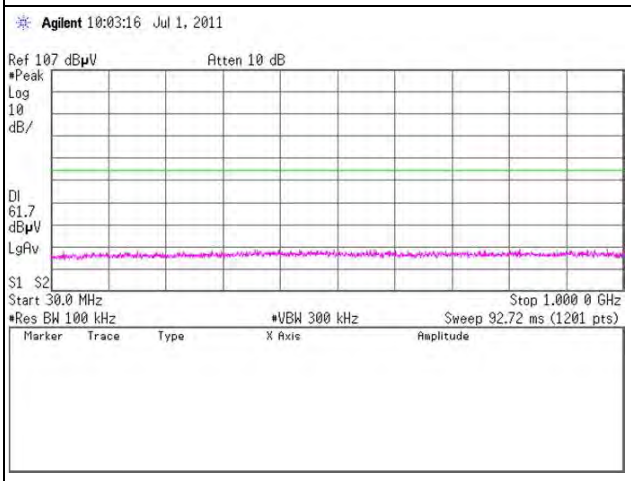
9kHz - 150kHz



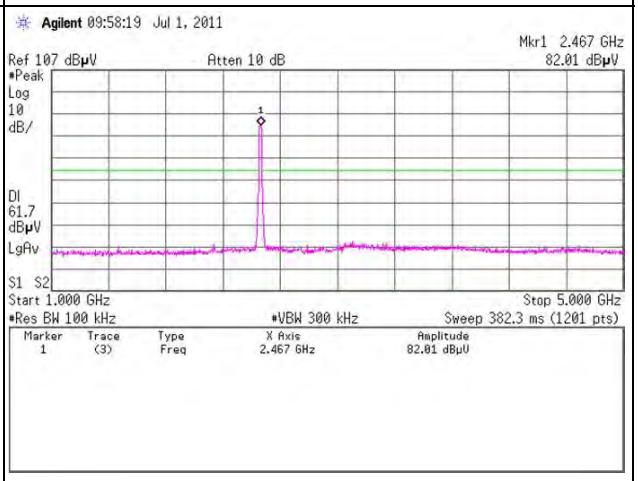
150kHz - 30MHz



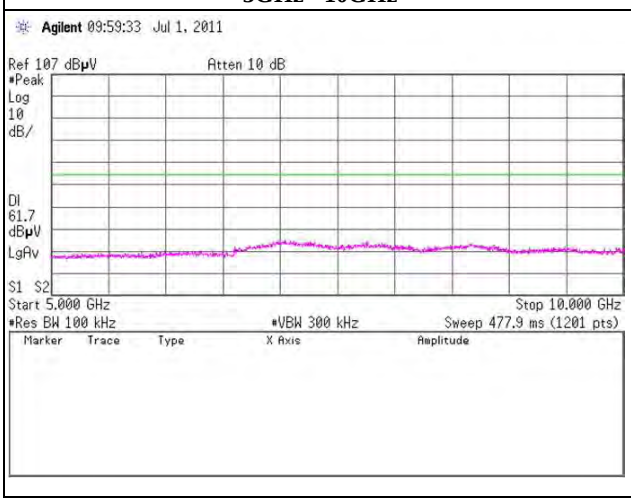
30MHz - 1GHz



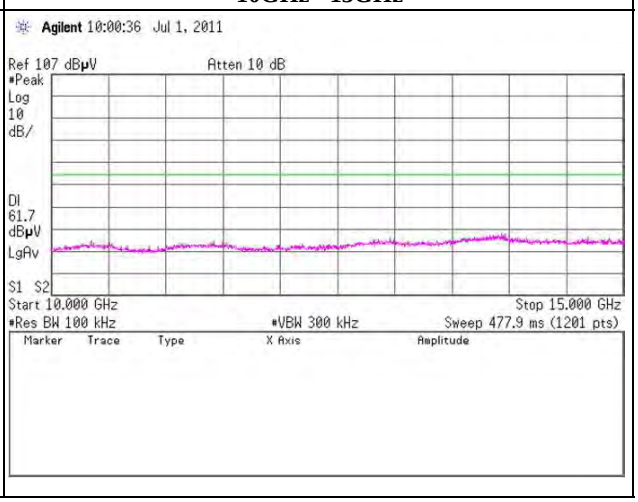
1GHz - 5GHz



5GHz - 10GHz



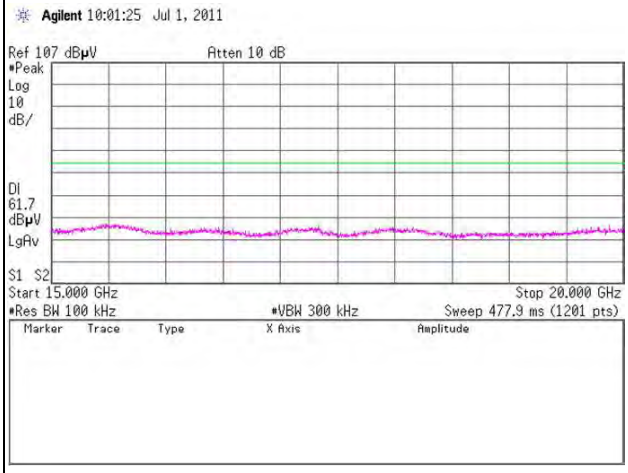
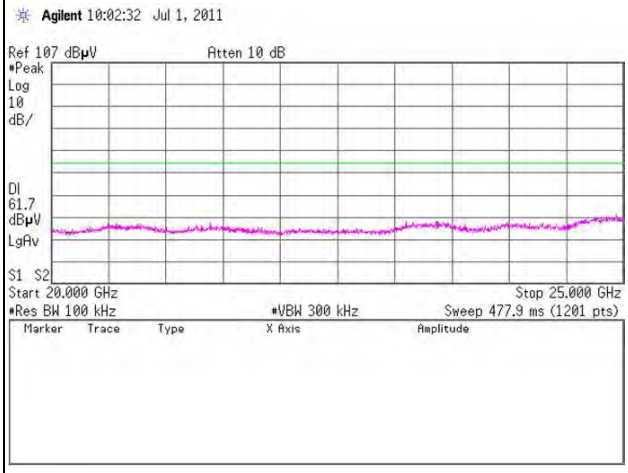
10GHz - 15GHz



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)

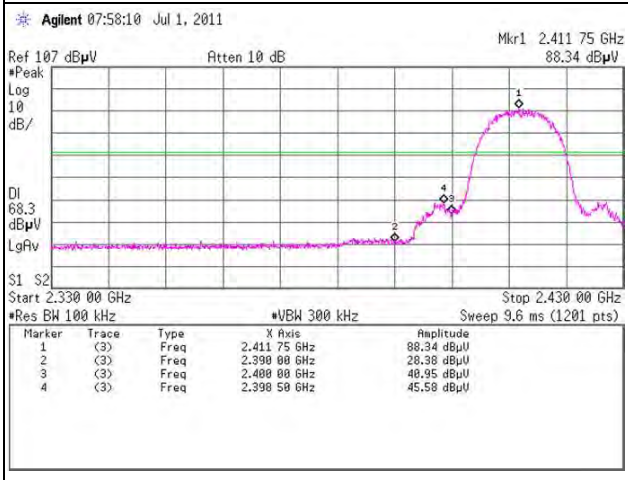
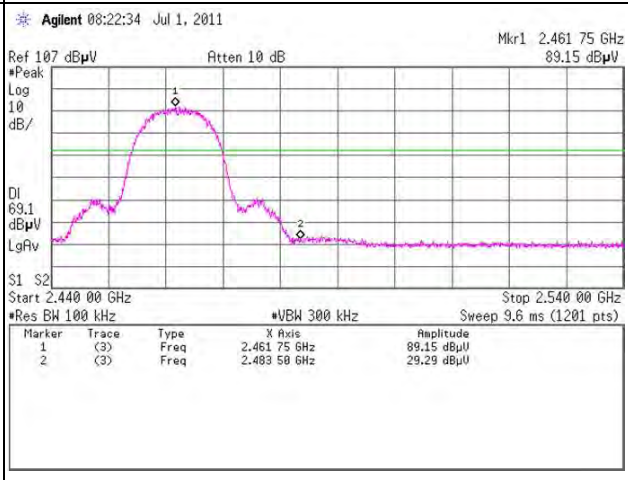
IEEE802.11n, MCS3

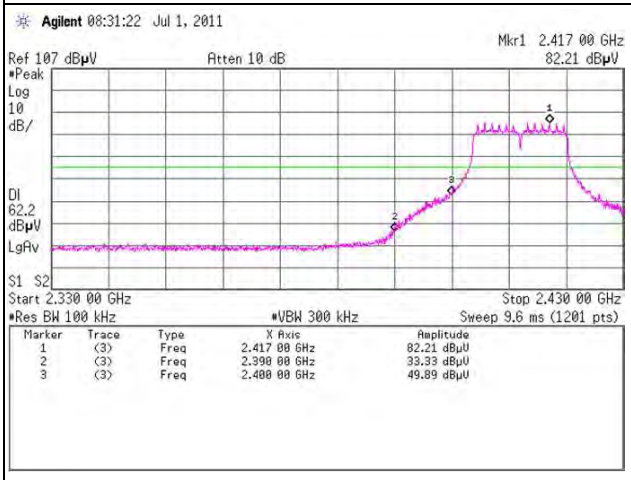
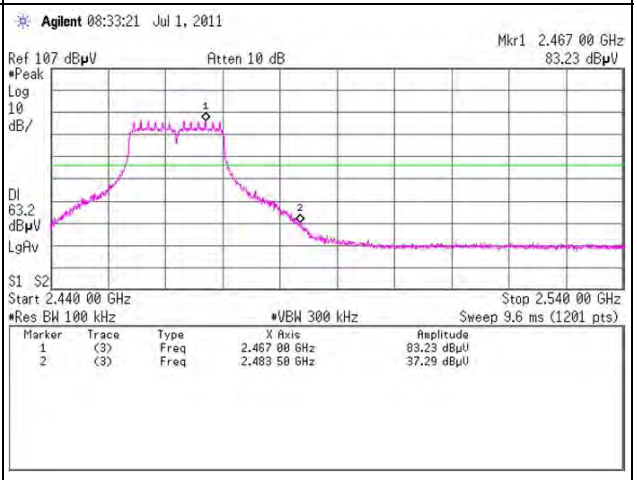
Tx 2462MHz (2/2)	
15GHz - 20GHz	**20GHz - 25GHz**
	

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

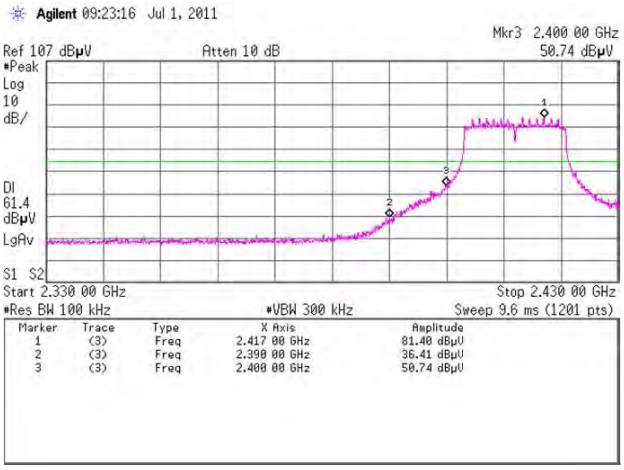
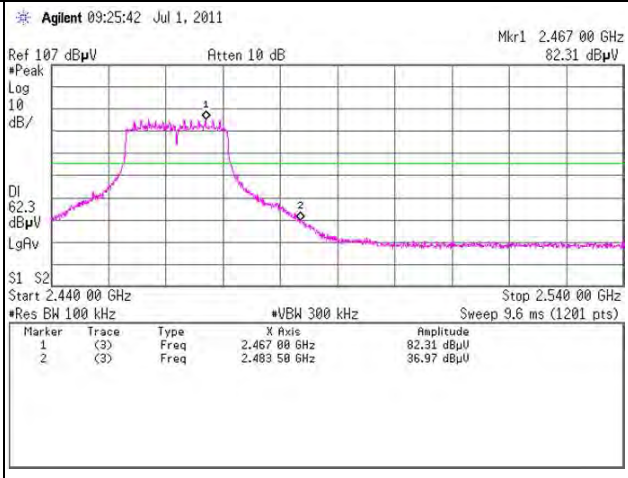
IEEE802.11b, 11Mbps	
Tx 2412MHz	**Tx 2462MHz**
	

IEEE802.11g, 6Mbps	
	

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

IEEE802.11n, MCS3	
Tx 2412MHz	**Tx 2462MHz**
	

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

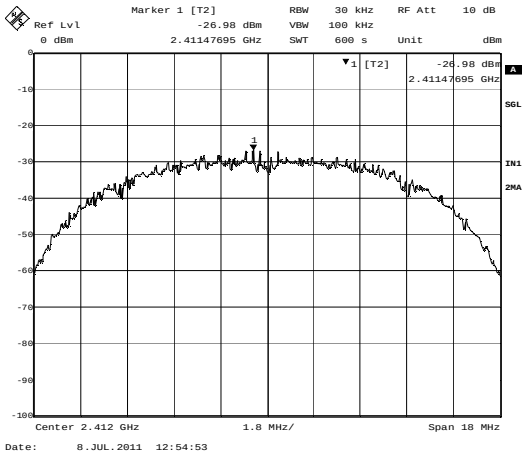
Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	2011/7/8	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11b, 11Mbps	
Serial Number	465	

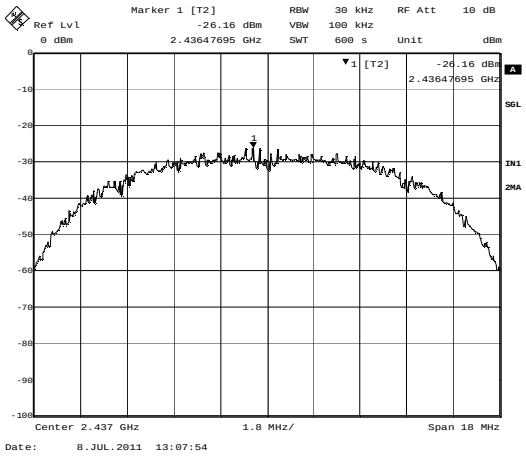
Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2411.477	-26.98	2.04	20.01	-4.93	8.00	12.93
2437.0000	2436.477	-26.16	2.01	20.01	-4.14	8.00	12.14
2462.0000	2461.477	-26.08	2.02	20.01	-4.05	8.00	12.05

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

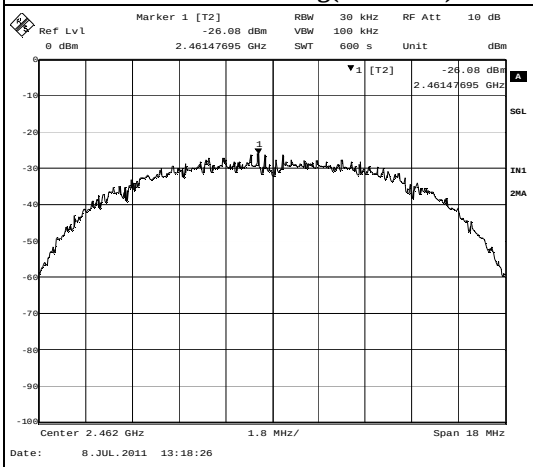
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)



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

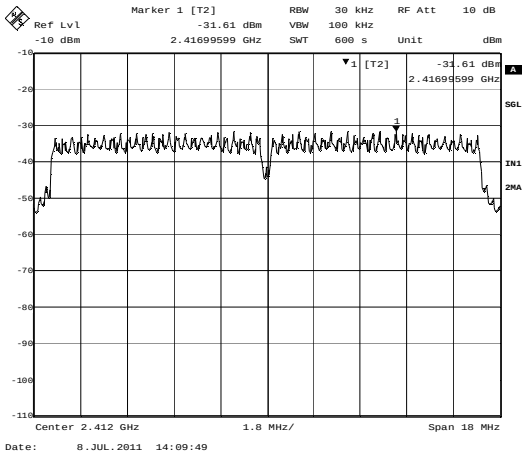
Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	2011/7/8	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11g, 6Mbps	
Serial Number	465	

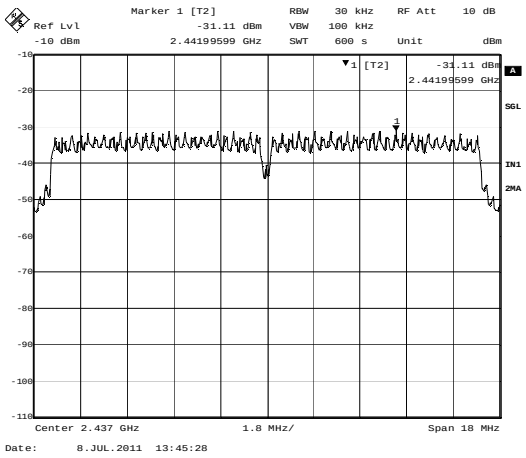
Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2416.996	-31.61	2.04	20.01	-9.56	8.00	17.56
2437.0000	2441.996	-31.11	2.01	20.01	-9.09	8.00	17.09
2462.0000	2466.996	-30.71	2.02	20.01	-8.68	8.00	16.68

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

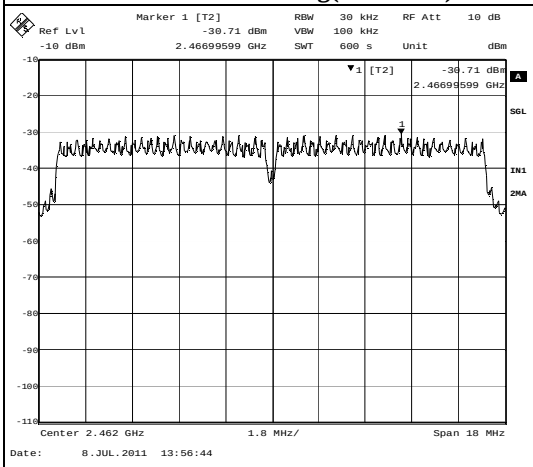
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)



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

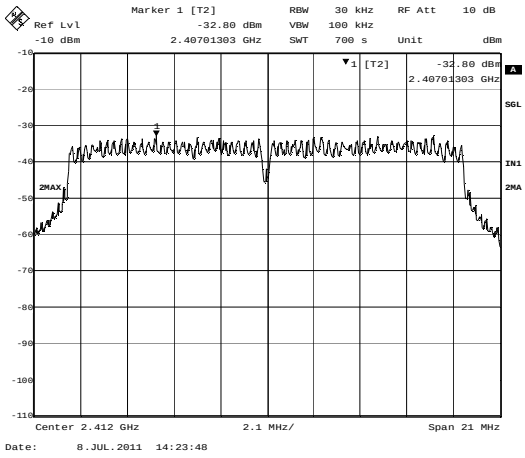
Power Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.6 Shilded room
Date	2011/7/8	
Temperature / Humidity	25deg.C. , 54%RH	
Engineer	Makoto Hosaka	
Mode	IEEE802.11n, MCS3	
Serial Number	465	

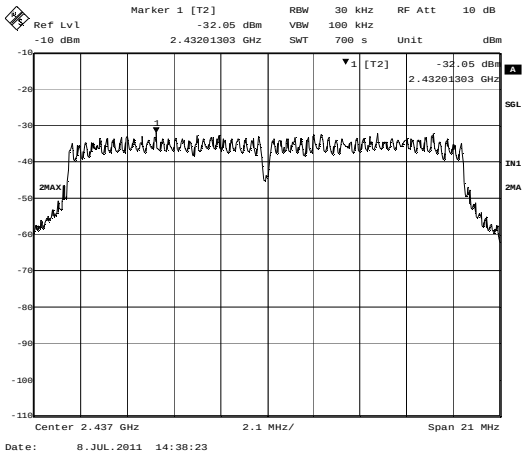
Ch. Freq. [MHz]	Freq. Reading [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412.0000	2407.013	-32.80	2.04	20.01	-10.75	8.00	18.75
2437.0000	2432.013	-32.05	2.01	20.01	-10.03	8.00	18.03
2462.0000	2457.013	-31.80	2.02	20.01	-9.77	8.00	17.77

Sample Calculation:
Result = Reading + Cable Loss + Atten. Loss

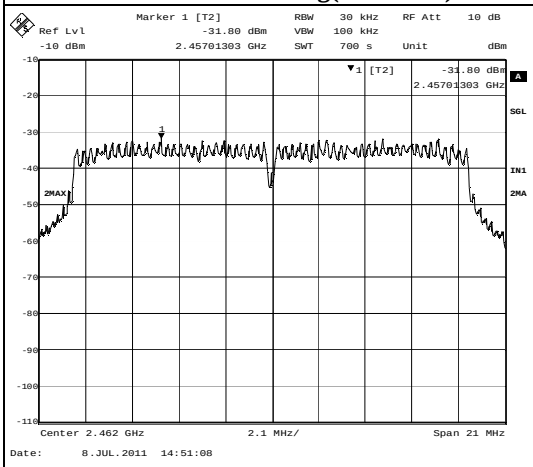
Transmitting(2412MHz)



Transmitting(2437MHz)



Transmitting(2462MHz)

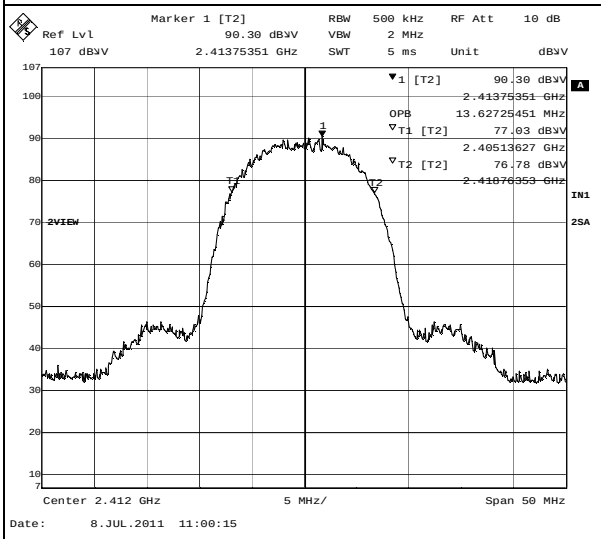


UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

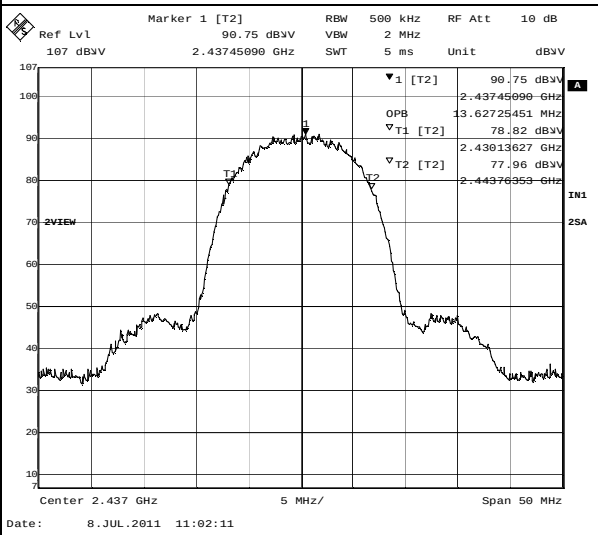
99% Occupied Bandwidth

IEEE802.11b, 11Mbps

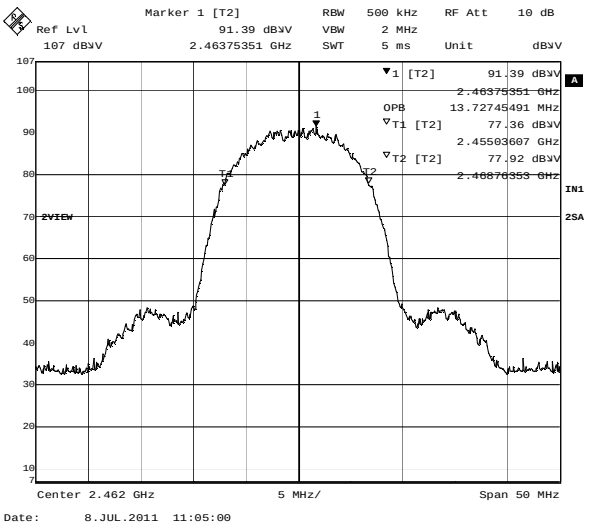
2412MHz: 13.627MHz



2437MHz: 13.627MHz



2462MHz: 13.727MHz

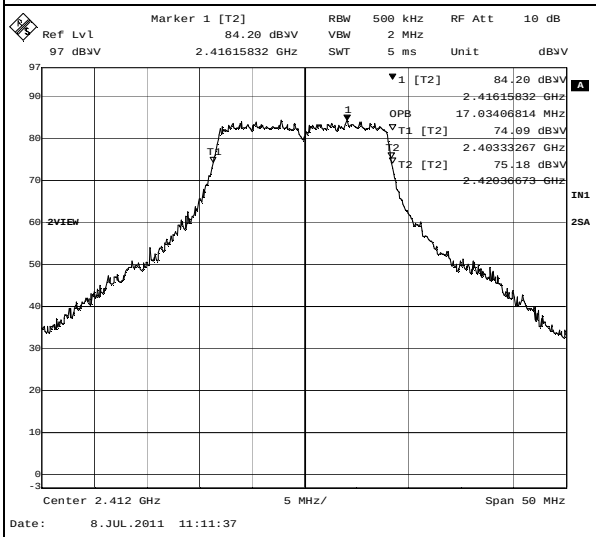


UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

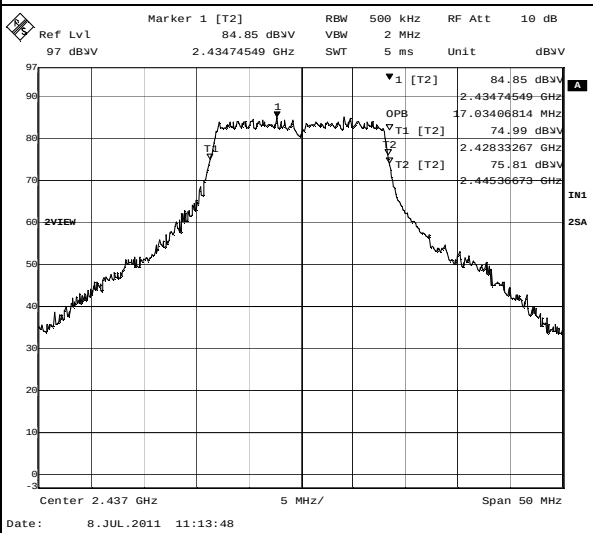
99% Occupied Bandwidth

IEEE802.11g, 6Mbps

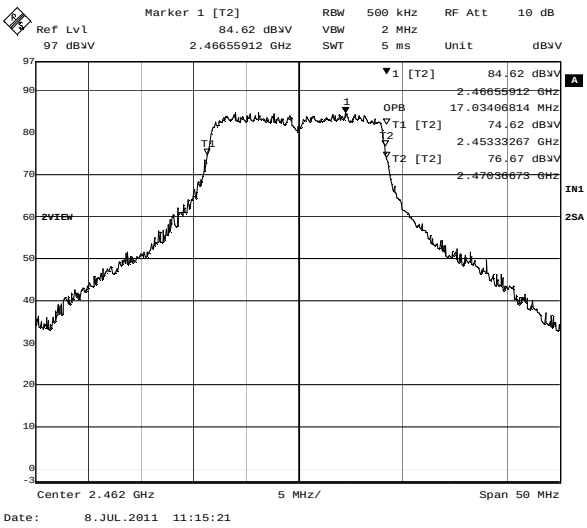
2412MHz: 17.034MHz



2437MHz: 17.034MHz



2462MHz: 17.034MHz

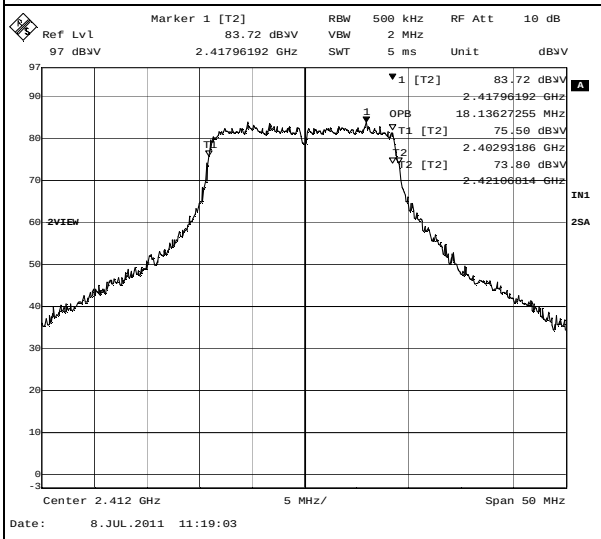


UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

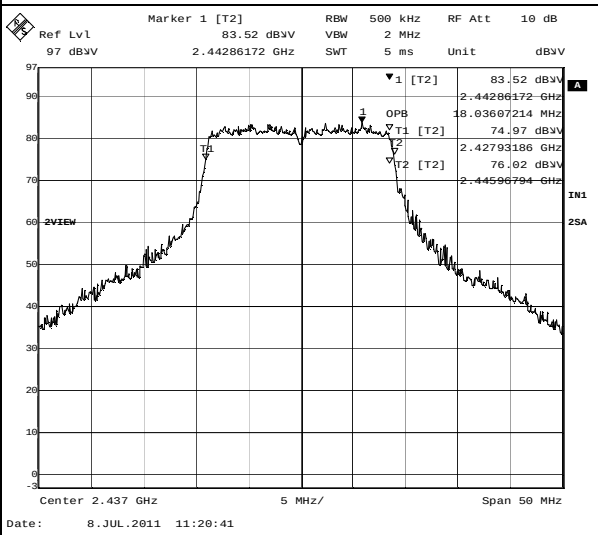
99% Occupied Bandwidth

IEEE802.11n, MCS3

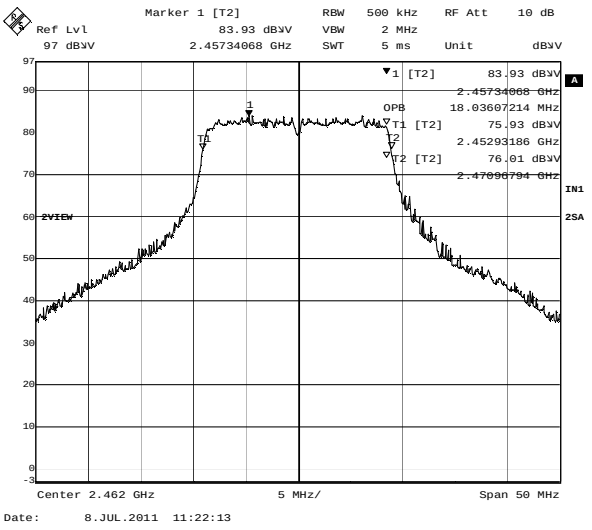
2412MHz: 18.136MHz



2437MHz: 18.036MHz



2462MHz: 18.036MHz



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 (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SPM-06	Power Meter	Anritsu	ML2495A	0850009	AT	2011/04/12 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	0917063	AT	2011/04/12 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	AT	2011/03/02 * 12
SCC-H1	Microwave cable	Hirose Electric	U.FL-2LP-066J1-A-(200)	-	AT	Pre Check
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	AT / CE	2010/07/21 * 12
SAT20-02	Attenuator	Agilent	8493C-020	74890	AT	2011/03/23 * 12
SCC-G14	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	AT	2011/03/23 * 12
SOS-10	Humidity Indicator	A&D	AD-5681	4064561	AT	2011/02/23 * 12
SAF-05	Pre Amplifier	TOYO Corporation	TPA0118-36	1440490	RE	2011/03/23 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2011/04/28 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2011/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2010/08/17 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2011/02/23 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2011/03/07 * 12
SJM-10	Measure	PROMART	SEN1935	-	RE / CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE / CE	-
SAT20-01	Attenuator(above1GHz)	Agilent	8493C-020	74889	RE / AT	2010/12/15 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	AT	2011/02/02 * 12
SCC-G11	Coaxial Cable	Suhner	SUCOFLEX 102	31595/2	AT	2011/03/23 * 12
SOS-04	Humidity Indicator	A&D	AD-5681	4061512	AT	2011/03/02 * 12
SCC-G02	Coaxial Cable	Suhner	SUCOFLEX 104A	46498/4A	RE	2011/04/28 * 12
SCC-G22	Coaxial Cable	Suhner	SUCOFLEX 104	296199/4	RE	2011/05/27 * 12
SHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-726	RE	2010/08/08 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2011/02/23 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2010/12/15 * 12
SAF-02	Pre Amplifier	SONOMA	310N	290212	RE	2011/02/17 * 12
SAT6-02	Attenuator	JFW	50HF-006N	-	RE	2011/02/17 * 12
SAT3-02	Attenuator	JFW	50HF-003N	-	RE	2011/02/17 * 12
SBA-02	Biconical Antenna	Schwarzbeck	BBA9106	91032665	RE	2010/10/11 * 12
SCC-B1/B3/B5/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2011/04/28 * 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 valid calibrations. Each measurement data is traceable to the national or international standards.
Test Item :
CE: Conducted emission ,
RE: Radiated emission ,
AT: Antenna terminal disturbance voltage

APPENDIX 3
Test Instruments

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SCC-B2/B4/B6/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2011/04/28 * 12
SLA-02	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0893	RE	2010/10/11 * 12
STR-02	Test Receiver	Rohde & Schwarz	ESCI	100575	RE	2010/08/18 * 12
SAEC-02(NSA)	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	RE	2010/09/04 * 12
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	RE	2010/12/15 * 12
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2011/03/23 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2011/03/15 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2011/03/16 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE	2011/03/16 * 12
SCC-C9/C10/SRSE-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	CE	2011/04/28 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2011/02/23 * 12
SAT3-06	Attenuator	JFW	50HF-003N	-	CE	2011/02/17 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2011/03/02 * 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 valid calibrations. Each measurement data is traceable to the national or international standards.
Test Item :
CE: Conducted emission ,
RE: Radiated emission ,
AT: Antenna terminal disturbance voltage