26dB Bandwidth and 99% Occupied Bandwidth

Test place	UL Japan, Inc. Shonan EMC Lab.	No.2 Shielded Room
Date	2010/6/3	
Temperature / Humidity	24deg.C. , 41%	
Engineer	Tatsuya Arai	
Mode	11a, Tx, Main Antenna	

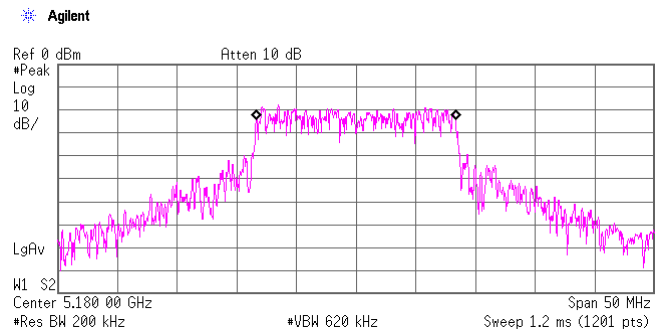
11a, 9Mbps

Frequency [MHz]	26dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
5180	20.137	17.811
5220	20.285	17.904
5240	20.338	17.859
5260	20.293	17.750
5300	20.467	17.826
5320	20.137	17.781

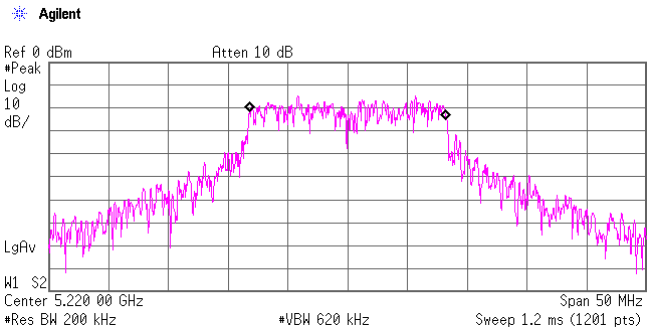
26dB Bandwidth

11a, 9Mbps

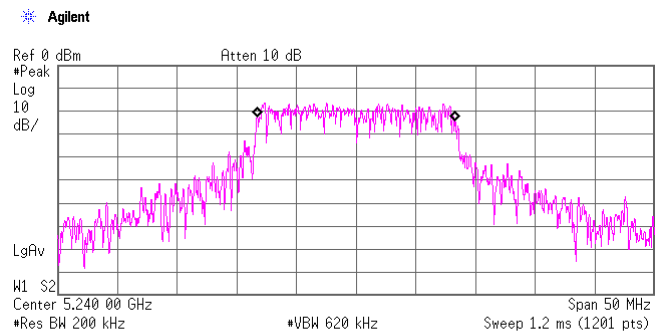
Tx, 5180MHz



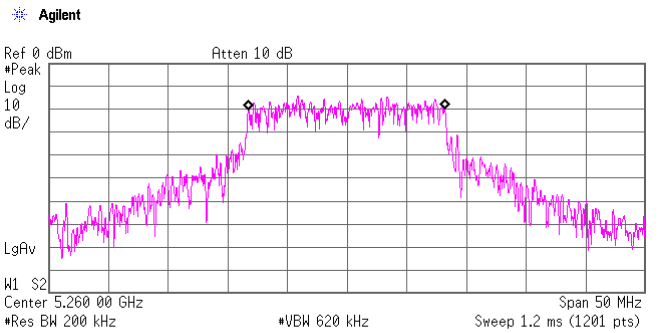
Tx, 5220MHz



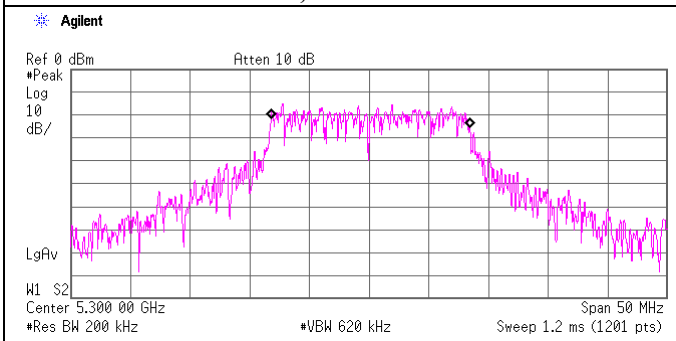
Tx, 5240MHz



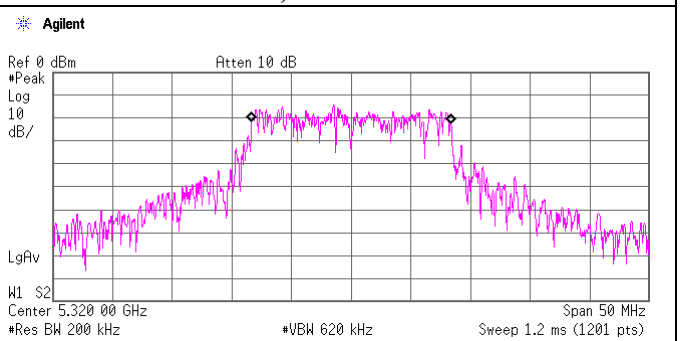
Tx, 5260MHz



Tx, 5300MHz



Tx, 5320MHz



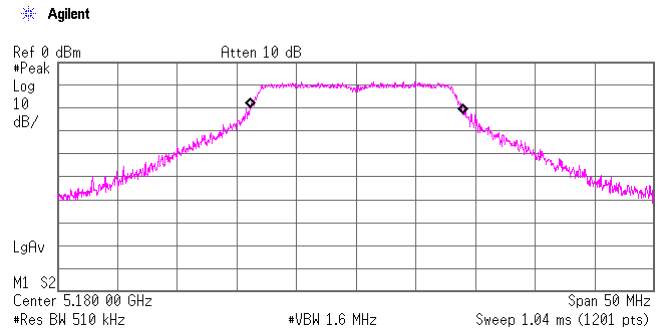
UL Japan, Inc.
Shonan EMC Lab.

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

99% Occupied Bandwidth

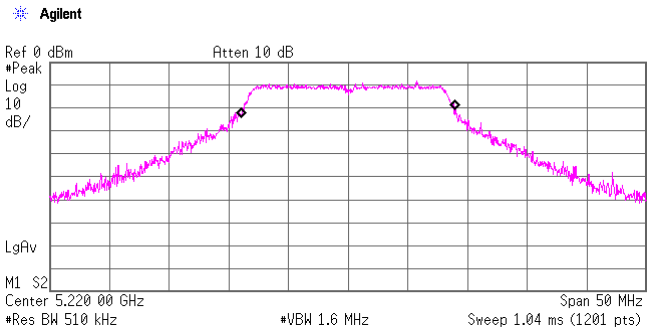
11a, 9Mbps

Tx, 5180MHz



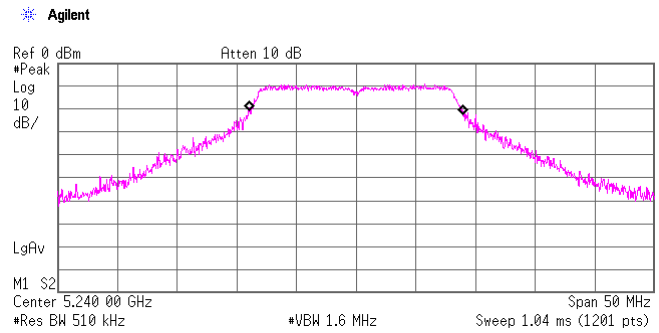
Transmit Freq Error 23.068 kHz
x dB Bandwidth 27.189 MHz

Tx, 5220MHz



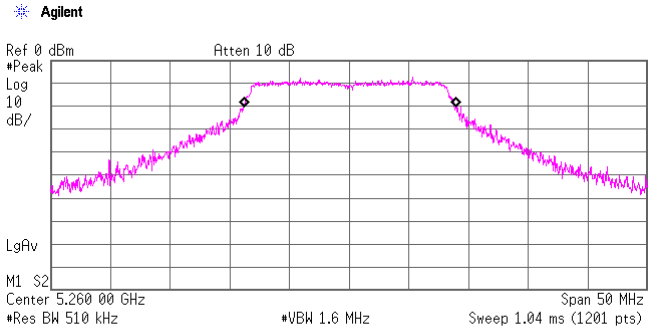
Transmit Freq Error -6.395 kHz
x dB Bandwidth 26.519 MHz

Tx, 5240MHz



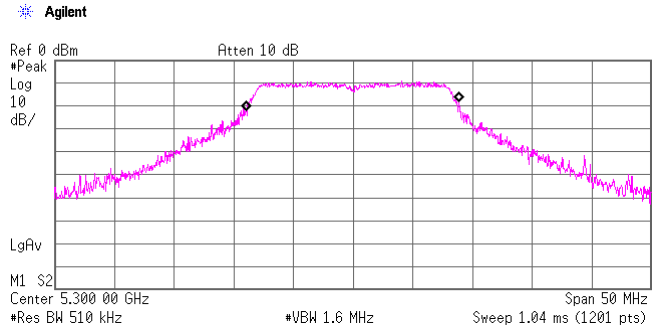
Transmit Freq Error 8.830 kHz
x dB Bandwidth 27.316 MHz

Tx, 5260MHz



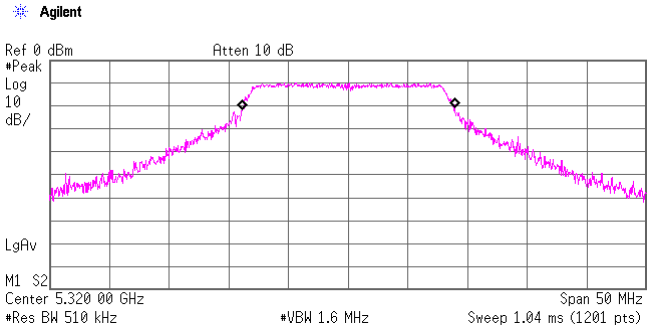
Transmit Freq Error 64.000 kHz
x dB Bandwidth 26.480 MHz

Tx, 5300MHz



Transmit Freq Error -51.073 kHz
x dB Bandwidth 27.148 MHz

Tx, 5320MHz



Transmit Freq Error 6.625 kHz
x dB Bandwidth 27.874 MHz

Peak Output Power (Conducted)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date	2010/5/26
Temperature / Humidity	23deg.C. , 47%
Engineer	Tatsuya Arai
Mode	11a, Tx, Main Antenna

11a, 9Mbps

Ch	Freq.	S/A (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low band, Low	5180.0	-0.85	2.83	9.86	11.84	15.28	16.99	50	5.15
Low band, Mid	5220.0	-0.54	2.85	9.87	12.18	16.52	16.99	50	4.81
Low band, High	5240.0	-0.91	2.85	9.87	11.81	15.17	16.99	50	5.18
Mid band, Low	5260.0	-0.95	2.83	9.87	11.75	14.96	23.98	250	12.23
Mid band, Mid	5300.0	-0.79	2.81	9.88	11.90	15.49	23.98	250	12.08
Mid band, High	5320.0	-0.76	2.79	9.88	11.91	15.52	23.98	250	12.07

Sample Calculation:
Result = Reading + Cable Loss (Including customer's 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]
Main Antenna

Data Rate	Freq.	S/A (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
6	5180.0	-1.48	2.83	9.86	11.21	13.21	16.99	50	5.78
9	5180.0	**-0.85**	2.83	9.86	11.84	15.28	16.99	50	5.15
12	5180.0	-0.88	2.83	9.86	11.81	15.17	16.99	50	5.18
18	5180.0	-1.64	2.83	9.86	11.05	12.74	16.99	50	5.94
24	5180.0	-0.93	2.83	9.86	11.76	15.00	16.99	50	5.23
36	5180.0	-1.63	2.83	9.86	11.06	12.76	16.99	50	5.93
48	5180.0	-0.97	2.83	9.86	11.72	14.86	16.99	50	5.27
54	5180.0	-1.00	2.83	9.86	11.69	14.76	16.99	50	5.30

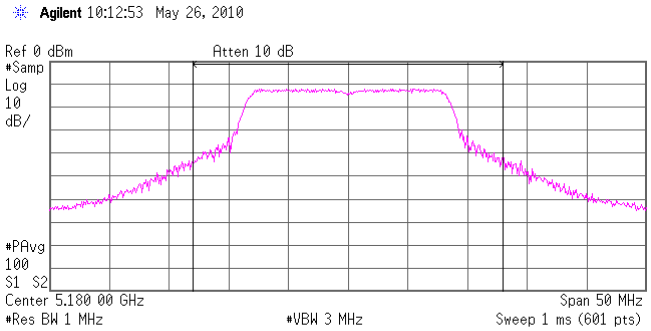
Sub Antenna

Data Rate	Freq.	S/A (PK) Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[Mbps]	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
9	5180.0	-2.12	2.83	9.86	10.57	11.40	16.99	50	6.42

Peak Output Power (Conducted)

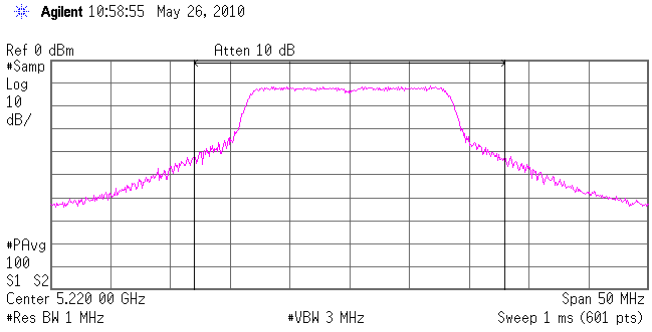
11a, 9Mbps

Tx, 5180MHz



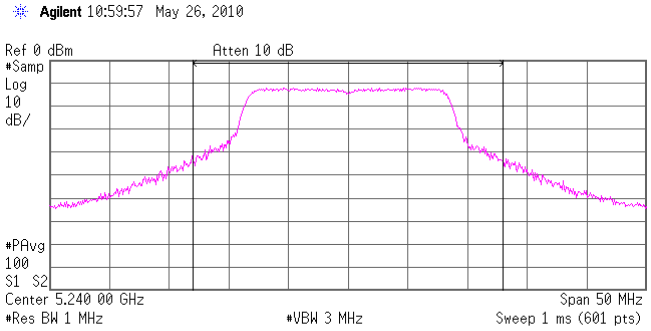
Channel Power	Power Spectral Density
-0.85 dBm /26.0000 MHz	-75.00 dBm/Hz

Tx, 5220MHz



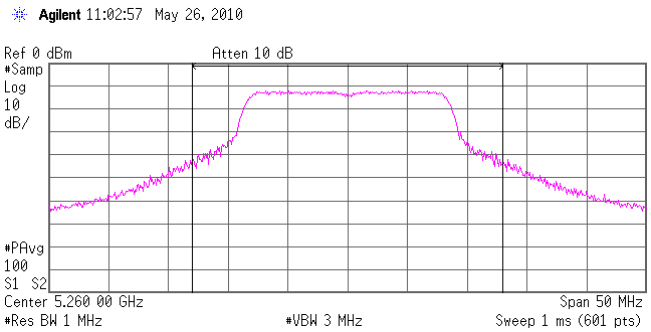
Channel Power	Power Spectral Density
-0.54 dBm /26.0000 MHz	-74.69 dBm/Hz

Tx, 5240MHz



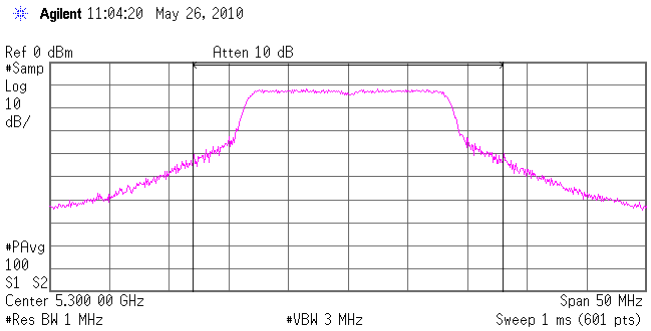
Channel Power	Power Spectral Density
-0.91 dBm /26.0000 MHz	-75.06 dBm/Hz

Tx, 5260MHz



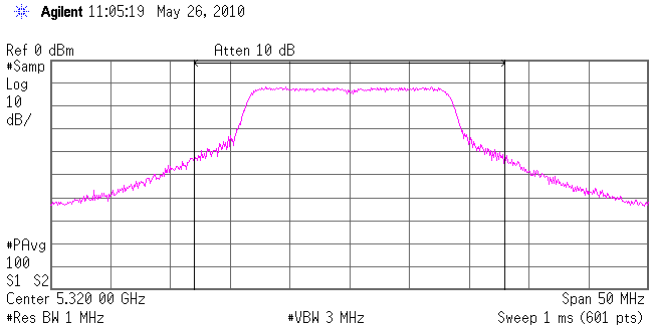
Channel Power	Power Spectral Density
-0.95 dBm /26.0000 MHz	-75.10 dBm/Hz

Tx, 5300MHz



Channel Power	Power Spectral Density
-0.79 dBm /26.0000 MHz	-74.94 dBm/Hz

Tx, 5320MHz



Channel Power	Power Spectral Density
-0.76 dBm /26.0000 MHz	-74.91 dBm/Hz

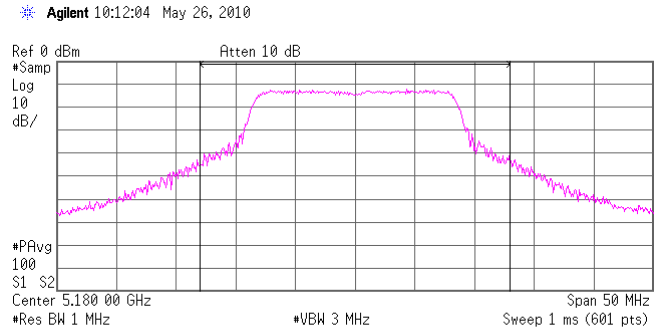
UL Japan, Inc.
Shonan EMC Lab.

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

Peak Output Power (Conducted)

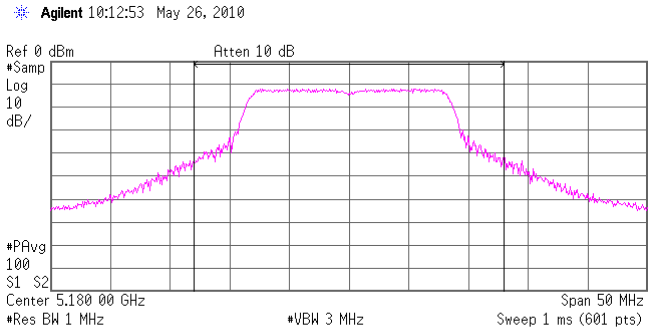
11a, Reference chart Tx 5180 MHz

6Mbps



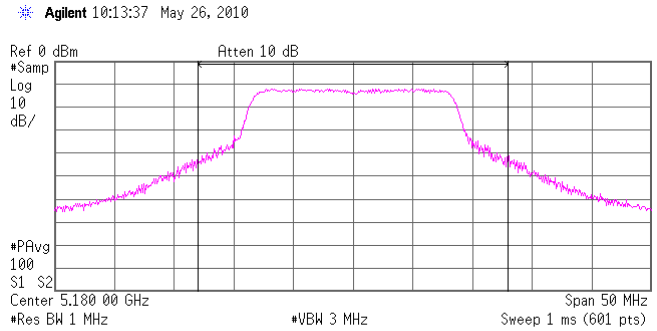
Channel Power	Power Spectral Density
-1.48 dBm /26.0000 MHz	-75.63 dBm/Hz

9Mbps



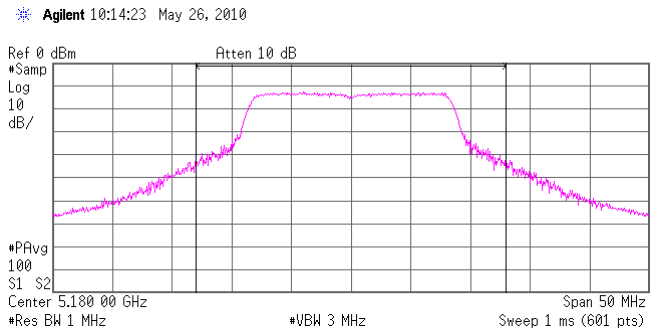
Channel Power	Power Spectral Density
-0.85 dBm /26.0000 MHz	-75.00 dBm/Hz

12Mbps



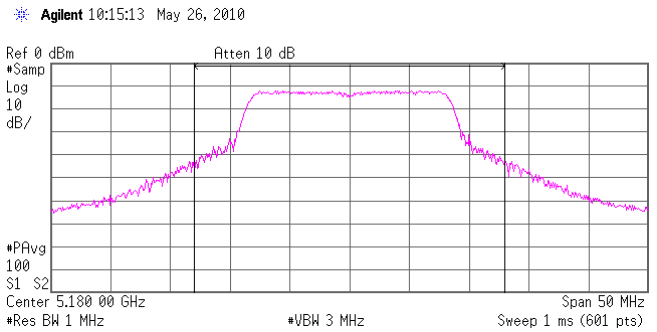
Channel Power	Power Spectral Density
-0.88 dBm /26.0000 MHz	-75.03 dBm/Hz

18Mbps



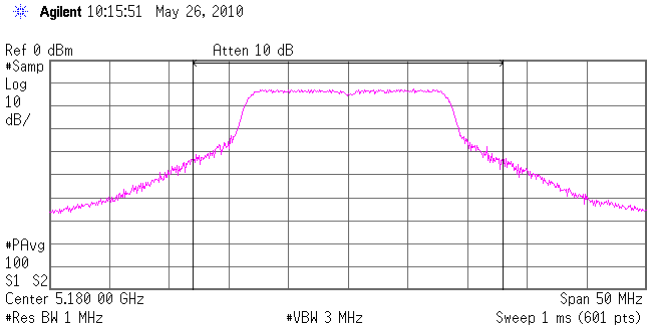
Channel Power	Power Spectral Density
-1.64 dBm /26.0000 MHz	-75.79 dBm/Hz

24Mbps



Channel Power	Power Spectral Density
-0.93 dBm /26.0000 MHz	-75.08 dBm/Hz

36Mbps



Channel Power	Power Spectral Density
-1.63 dBm /26.0000 MHz	-75.78 dBm/Hz

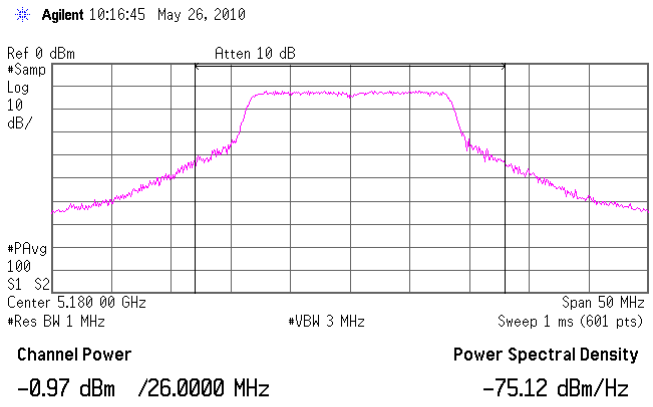
UL Japan, Inc.
Shonan EMC Lab.

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

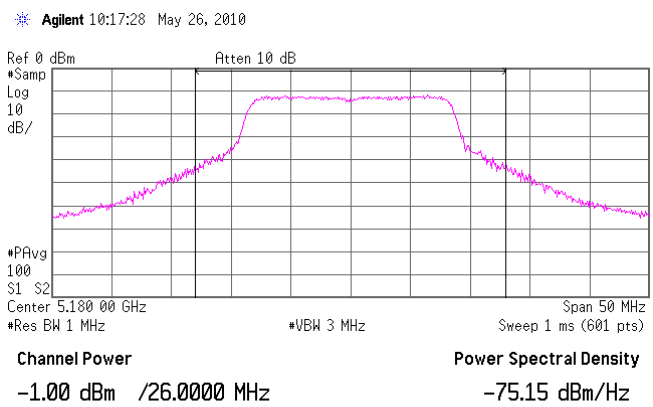
Peak Output Power (Conducted)

11a, Reference chart Tx 5180 MHz

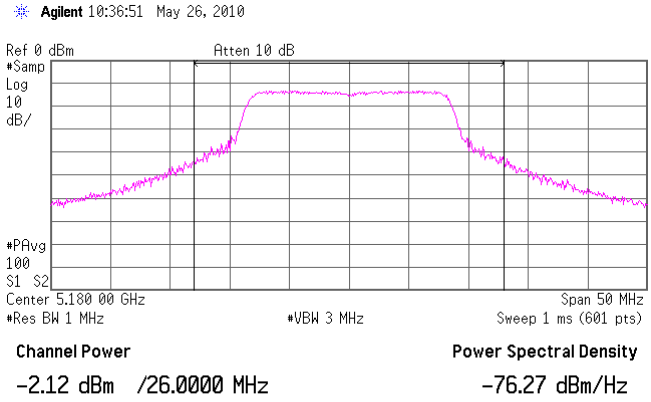
48Mbps



54Mbps



11a, Reference chart [Sub Antenna] Tx 5180 MHz



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

Peak Output Power (Conducted)

Reference data for SAR testing

Test place	UL Japan, Inc. Shonan EMC Lab.	No.3 Shielded Room
Date	2010/5/26	
Temperature / Humidity	23deg.C. , 47%	
Engineer	Tatsuya Arai	
Mode	Tx,	
	11a, 9Mbps	

Main Antenna

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	5180.0	-0.97	3.03	9.93	11.99	15.81
Mid	5220.0	-0.84	3.03	9.94	12.13	16.33
High	5240.0	-1.29	3.00	9.94	11.65	14.62
Low	5260.0	-1.00	3.03	9.93	11.96	15.70
Mid	5300.0	-1.08	3.03	9.94	11.89	15.45
High	5320.0	-1.21	3.00	9.94	11.73	14.89

Sub Antenna

Ch	Freq.	P/M (AV) Reading	Cable Loss	Atten. Loss	Result	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]
Low	5180.0	-2.41	3.03	9.93	10.55	11.35
Mid	5220.0	-2.32	3.03	9.94	10.65	11.61
High	5240.0	-2.14	3.00	9.94	10.80	12.02
Low	5260.0	-1.98	3.03	9.93	10.98	12.53
Mid	5300.0	-2.05	3.03	9.94	10.92	12.36
High	5320.0	-1.66	3.00	9.94	11.28	13.43

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

Radiated Emission (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5180 MHz 11a, 9Mbps		

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.	479.559	QP	25.6	17.0	9.2	31.9	19.9	46.0	26.1	100	36	Axis:Y
Hori.	583.734	QP	26.9	18.7	9.6	31.9	23.3	46.0	22.7	100	28	Axis:Y
Hori.	639.253	QP	24.2	19.5	9.8	31.9	21.6	46.0	24.4	100	346	Axis:Y
Hori.	5150.000	PK	48.5	31.5	15.0	39.7	55.3	74.0	18.7	100	190	Axis:X
Hori.	15540.000	PK	43.1	39.6	0.1	37.1	45.7	74.0	28.3	100	0	Axis:Y
Hori.	20720.000	PK	43.7	40.2	-2.3	44.1	37.5	74.0	36.5	100	0	Axis:Y
Hori.	5150.000	AV	35.5	31.5	15.0	39.7	42.3	54.0	11.7	100	190	Axis:X
Hori.	15540.000	AV	31.7	39.6	0.1	37.1	34.3	54.0	19.7	100	0	Axis:Y
Hori.	20720.000	AV	32.1	40.2	-2.3	44.1	25.9	54.0	28.1	100	0	Axis:Y
Vert.	479.559	QP	24.3	17.0	9.2	31.9	18.6	46.0	27.4	100	324	Axis:Y
Vert.	583.734	QP	24.6	18.7	9.6	31.9	21.0	46.0	25.0	100	78	Axis:Y
Vert.	639.250	QP	23.5	19.5	9.8	31.9	20.9	46.0	25.1	100	296	Axis:Y
Vert.	5150.000	PK	47.6	31.5	15.0	39.7	54.4	74.0	19.6	100	141	Axis:Z
Vert.	15540.000	PK	42.9	39.6	0.1	37.1	45.5	74.0	28.5	100	0	Axis:Z
Vert.	20720.000	PK	44.5	40.2	-2.3	44.1	38.3	74.0	35.7	100	0	Axis:Z
Vert.	5150.000	AV	35.4	31.5	15.0	39.7	42.2	54.0	11.8	100	141	Axis:Z
Vert.	15540.000	AV	31.2	39.6	0.1	37.1	33.8	54.0	20.2	100	0	Axis:Z
Vert.	20720.000	AV	32.3	40.2	-2.3	44.1	26.1	54.0	27.9	100	0	Axis:Z

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).

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

Radiated Emission (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5220 MHz 11a, 9Mbps		

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.	479.559	QP	25.6	17.0	9.2	31.9	19.9	46.0	26.1	100	29	Axis:Y
Hori.	583.762	QP	24.7	18.7	9.6	31.9	21.1	46.0	24.9	100	29	Axis:Y
Hori.	639.253	QP	25.3	19.5	9.8	31.9	22.7	46.0	23.3	100	86	Axis:Y
Hori.	15660.000	PK	44.5	39.2	0.3	37.1	46.9	74.0	27.1	100	0	Axis:Y
Hori.	20880.000	PK	43.9	40.1	-2.4	44.3	37.3	74.0	36.7	100	0	Axis:Y
Hori.	15660.000	AV	33.2	39.2	0.3	37.1	35.6	54.0	18.4	100	0	Axis:Y
Hori.	20880.000	AV	31.8	40.1	-2.4	44.3	25.2	54.0	28.8	100	0	Axis:Y
Vert.	479.559	QP	24.8	17.0	9.2	31.9	19.1	46.0	26.9	100	264	Axis:Y
Vert.	583.756	QP	26.9	18.7	9.6	31.9	23.3	46.0	22.7	100	37	Axis:Y
Vert.	639.250	QP	26.5	19.5	9.8	31.9	23.9	46.0	22.1	100	254	Axis:Y
Vert.	15660.000	PK	45.6	39.2	0.3	37.1	48.0	74.0	26.0	100	0	Axis:Z
Vert.	20880.000	PK	43.9	40.1	-2.4	44.3	37.3	74.0	36.7	100	0	Axis:Z
Vert.	15660.000	AV	33.4	39.2	0.3	37.1	35.8	54.0	18.2	100	0	Axis:Z
Vert.	20880.000	AV	31.9	40.1	-2.4	44.3	25.3	54.0	28.7	100	0	Axis:Z

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).

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

Radiated Emission (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5240 MHz 11a, 9Mbps		

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.	479.559	QP	23.2	17.0	9.2	31.9	17.5	46.0	28.5	100	19	Axis:Y
Hori.	583.762	QP	25.8	18.7	9.6	31.9	22.2	46.0	23.8	100	0	Axis:Y
Hori.	639.253	QP	25.1	19.5	9.8	31.9	22.5	46.0	23.5	100	275	Axis:Y
Hori.	15720.000	PK	45.9	39.0	0.3	37.1	48.1	74.0	25.9	100	0	Axis:Y
Hori.	20960.000	PK	44.1	40.1	-2.4	44.5	37.3	74.0	36.7	100	0	Axis:Y
Hori.	15720.000	AV	32.9	39.0	0.3	37.1	35.1	54.0	18.9	100	0	Axis:Y
Hori.	20960.000	AV	31.8	40.1	-2.4	44.5	25.0	54.0	29.0	100	0	Axis:Y
Vert.	479.559	QP	25.4	17.0	9.2	31.9	19.7	46.0	26.3	100	32	Axis:Y
Vert.	583.756	QP	26.2	18.7	9.6	31.9	22.6	46.0	23.4	100	24	Axis:Y
Vert.	639.250	QP	26.1	19.5	9.8	31.9	23.5	46.0	22.5	100	10	Axis:Y
Vert.	15720.000	PK	45.8	39.0	0.3	37.1	48.0	74.0	26.0	100	0	Axis:Z
Vert.	20960.000	PK	43.3	40.1	-2.4	44.5	36.5	74.0	37.5	100	0	Axis:Z
Vert.	15720.000	AV	32.6	39.0	0.3	37.1	34.8	54.0	19.2	100	0	Axis:Z
Vert.	20960.000	AV	31.4	40.1	-2.4	44.5	24.6	54.0	29.4	100	0	Axis:Z

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).

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 (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5260 MHz 11a, 9Mbps		

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.	479.559	QP	26.1	17.0	9.2	31.9	20.4	46.0	25.6	100	34	Axis:Y
Hori.	583.755	QP	23.2	18.7	9.6	31.9	19.6	46.0	26.4	100	22	Axis:Y
Hori.	639.251	QP	25.4	19.5	9.8	31.9	22.8	46.0	23.2	100	54	Axis:Y
Hori.	15780.000	PK	46.0	38.9	0.5	37.2	48.2	74.0	25.8	100	0	Axis:Y
Hori.	21040.000	PK	44.2	40.1	-2.4	44.5	37.4	74.0	36.6	100	0	Axis:Y
Hori.	15780.000	AV	33.6	38.9	0.5	37.2	35.8	54.0	18.2	100	0	Axis:Y
Hori.	21040.000	AV	32.2	40.1	-2.4	44.5	25.4	54.0	28.6	100	0	Axis:Y
Vert.	479.559	QP	26.1	17.0	9.2	31.9	20.4	46.0	25.6	100	111	Axis:Y
Vert.	583.756	QP	23.8	18.7	9.6	31.9	20.2	46.0	25.8	100	75	Axis:Y
Vert.	639.259	QP	24.4	19.5	9.8	31.9	21.8	46.0	24.2	100	54	Axis:Y
Vert.	15780.000	PK	45.6	38.9	0.5	37.2	47.8	74.0	26.2	100	0	Axis:Z
Vert.	21040.000	PK	43.7	40.1	-2.4	44.5	36.9	74.0	37.1	100	0	Axis:Z
Vert.	15780.000	AV	33.6	38.9	0.5	37.2	35.8	54.0	18.2	100	0	Axis:Z
Vert.	21040.000	AV	32.1	40.1	-2.4	44.5	25.3	54.0	28.7	100	0	Axis:Z

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).

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

Radiated Emission (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5300 MHz 11a, 9Mbps		

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.	479.559	QP	28.2	17.0	9.2	31.9	22.5	46.0	23.5	100	54	Axis:Y
Hori.	583.762	QP	24.4	18.7	9.6	31.9	20.8	46.0	25.2	100	24	Axis:Y
Hori.	639.262	QP	23.8	19.5	9.8	31.9	21.2	46.0	24.8	100	68	Axis:Y
Hori.	10600.000	PK	57.6	39.9	7.8	37.5	67.8	74.0	6.2	129	359	Axis:Y
Hori.	15900.000	PK	45.6	38.5	0.5	37.2	47.4	74.0	26.6	100	0	Axis:Y
Hori.	21200.000	PK	44.5	40.1	-2.4	44.5	37.7	74.0	36.3	100	0	Axis:Y
Hori.	10600.000	AV	43.6	39.9	7.8	37.5	53.8	54.0	**0.2**	129	359	Axis:Y
Hori.	15900.000	AV	32.8	38.5	0.5	37.2	34.6	54.0	19.4	100	0	Axis:Y
Hori.	21200.000	AV	32.4	40.1	-2.4	44.5	25.6	54.0	28.4	100	0	Axis:Y
Vert.	479.559	QP	28.4	17.0	9.2	31.9	22.7	46.0	23.3	100	210	Axis:Y
Vert.	583.756	QP	25.2	18.7	9.6	31.9	21.6	46.0	24.4	100	32	Axis:Y
Vert.	639.259	QP	26.1	19.5	9.8	31.9	23.5	46.0	22.5	100	75	Axis:Y
Vert.	10600.000	PK	56.6	39.9	7.8	37.5	66.8	74.0	7.2	100	39	Axis:Z
Vert.	15900.000	PK	47.8	38.5	0.5	37.2	49.6	74.0	24.4	100	0	Axis:Z
Vert.	21200.000	PK	44.8	40.1	-2.4	44.5	38.0	74.0	36.0	100	0	Axis:Z
Vert.	10600.000	AV	42.5	39.9	7.8	37.5	52.7	54.0	1.3	100	39	Axis:Z
Vert.	15900.000	AV	33.5	38.5	0.5	37.2	35.3	54.0	18.7	100	0	Axis:Z
Vert.	21200.000	AV	32.5	40.1	-2.4	44.5	25.7	54.0	28.3	100	0	Axis:Z

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).

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

Radiated Emission (below 1GHz and above 1GHz Inside of the restricted band)

Test place	UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Date	2010/5/26	2010/5/28	2010/5/29
Temperature / Humidity	23deg.C. , 46%	25deg.C. , 49%	25deg.C. , 49%
Engineer	Tatsuya Arai	Shinichi Takano	Tatsuya Arai
Mode	Tx, 5320 MHz 11a, 9Mbps		

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.	479.559	QP	27.1	17.0	9.2	31.9	21.4	46.0	24.6	100	76	Axis:Y
Hori.	583.762	QP	24.3	18.7	9.6	31.9	20.7	46.0	25.3	100	45	Axis:Y
Hori.	639.248	QP	24.9	19.5	9.8	31.9	22.3	46.0	23.7	100	65	Axis:Y
Hori.	5350.000	PK	51.0	31.8	15.1	39.3	58.6	74.0	15.4	100	174	Axis:X
Hori.	10640.000	PK	56.1	39.9	7.8	37.6	66.2	74.0	7.8	127	356	Axis:Y
Hori.	15960.000	PK	45.4	38.3	0.6	37.3	47.0	74.0	27.0	100	0	Axis:Y
Hori.	21280.000	PK	44.3	40.1	-2.4	44.5	37.5	74.0	36.5	100	0	Axis:Y
Hori.	5350.000	AV	35.8	31.8	15.1	39.3	43.4	54.0	10.6	100	174	Axis:X
Hori.	10640.000	AV	43.5	39.9	7.8	37.6	53.6	54.0	0.4	127	356	Axis:Y
Hori.	15960.000	AV	32.5	38.3	0.6	37.3	34.1	54.0	19.9	100	0	Axis:Y
Hori.	21280.000	AV	32.8	40.1	-2.4	44.5	26.0	54.0	28.0	100	0	Axis:Y
Vert.	479.559	QP	24.1	17.0	9.2	31.9	18.4	46.0	27.6	100	197	Axis:Y
Vert.	583.750	QP	24.7	18.7	9.6	31.9	21.1	46.0	24.9	100	65	Axis:Y
Vert.	639.299	QP	26.7	19.5	9.8	31.9	24.1	46.0	21.9	100	2	Axis:Y
Vert.	5350.000	PK	52.3	31.8	15.1	39.3	59.9	74.0	14.1	100	94	Axis:Z
Vert.	10640.000	PK	56.6	39.9	7.8	37.6	66.7	74.0	7.3	100	39	Axis:Z
Vert.	15960.000	PK	45.8	38.3	0.6	37.3	47.4	74.0	26.6	100	0	Axis:Z
Vert.	21280.000	PK	44.5	40.1	-2.4	44.5	37.7	74.0	36.3	100	0	Axis:Z
Vert.	5350.000	AV	36.2	31.8	15.1	39.3	43.8	54.0	10.2	100	94	Axis:Z
Vert.	10640.000	AV	43.5	39.9	7.8	37.6	53.6	54.0	0.4	100	39	Axis:Z
Vert.	15960.000	AV	33.5	38.3	0.6	37.3	35.1	54.0	18.9	100	0	Axis:Z
Vert.	21280.000	AV	32.7	40.1	-2.4	44.5	25.9	54.0	28.1	100	0	Axis:Z

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).

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

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx	5180 MHz	REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/ 1m (above13GHz)	
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable	Tx Ant.	Tx, Ant. Atten.	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		Loss	Gain	Loss	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
5150.00	48.50	47.6	-50.5	-52.1	9.1	12.7	0.0	-46.90	-48.50	-27.00	19.90	21.50	100	190	100	141	Hor:X , Ver:Z
10360.00	61.80	60.9	-26.5	-29.1	13.1	11.4	0.0	-28.20	-30.80	-27.00	**1.20**	3.80	133	357	100	146	Hor:Y , Ver:Z
25900.00	44.90	45.5	-68.1	-66.7	21.1	11.6	0.0	-77.60	-76.20	-27.00	50.60	49.20	100	0	100	0	Hor:Y , Ver:Z

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx	5220 MHz	REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/ 1m (above13GHz)	
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable	Tx Ant.	Tx, Ant. Atten.	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		Loss	Gain	Loss	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
10440.00	62.20	61.0	-25.6	-30.9	13.2	11.3	0.0	-27.50	-32.80	-27.00	**0.50**	5.80	131	359	100	50	Hor:Y , Ver:Z
26100.00	45.40	45.7	-67.5	-66.7	21.2	11.7	0.0	-77.00	-76.20	-27.00	50.00	49.20	100	0	100	0	Hor:Y , Ver:Z

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx 5240 MHz		REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/ 1m (above13GHz)	
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable Loss	Tx Ant. Gain	Tx, Ant. Atten. Loss	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER				HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
10480.00	61.30	60.7	-27.3	-30.0	13.2	11.2	0.0	-29.30	-32.03	-27.00	**2.30**	5.03	131	359	100	43	Hor:Y , Ver:Z
26200.00	46.10	46.3	-68.3	-67.1	21.2	11.8	0.0	-77.70	-76.50	-27.00	50.70	49.50	100	0	100	0	Hor:Y , Ver:Z

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx 5260 MHz		REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/ 1m (above13GHz)	
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable	Tx Ant.	Tx, Ant. Atten.	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		Loss	Gain	Loss	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
10520.00	61.60	59.5	-26.7	-30.8	13.2	11.2	0.0	-28.71	-32.82	-27.00	**1.71**	5.82	129	359	100	44	Hor:Y , Ver:Z
26300.00	46.60	46.6	-66.7	-65.3	21.2	11.9	0.0	-76.00	-74.60	-27.00	49.00	47.60	100	0	100	0	Hor:Y , Ver:Z

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx	5300 MHz	REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/	1m (above13GHz)
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable	Tx Ant.	Tx, Ant. Atten.	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		Loss	Gain	Loss	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER	[dB]	[dBi]	[dB]	HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
26500.00	53.00	52.5	-61.1	-60.2	21.2	12.1	0.0	-70.20	-69.30	-27.00	43.20	**42.30**	100	0	100	0	Hor:Y , Ver:Z

CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Data of Spurious Emissions (Substitution)(above 1GHz Outside of the restricted band)

UL Japan, Inc.
Shonan EMC Lab. Semi Anechoic Chamber : No3

MODE	Tx 5320 MHz		REGULATION	FCC	15.407(b)
	11a, 9Mbps, Main Antenna		TEST DISTANCE	3m (below13GHz)/ 1m (above13GHz)	
EUT Position	H: Y-axis / V: Z-axis		DATE	5/28/10	5/29/10
			TEMPERATURE	25deg.C.	25deg.C.
Tx Antenna Height	0.8m		HUMIDITY	49%	49%
			ENGINEER	Shinichi Takano	Tatsuya Arai

Frequency	Rx, T/R or S/A Reading		Tx, SG Reading		Tx Cable Loss	Tx Ant. Gain	Tx, Ant. Atten. Loss	RESULT (EIRP)		LIMIT	MARGIN		Horzontal		Vertical		Remarks
													Rx, Ant.	Turn	Rx, Ant.	Turn	
[MHz]	[dBuV]		[dBm]		[dB]	[dBi]	[dB]	[dBm]		[dBm]	[dB]		Height	Table	Height	Table	
	HOR	VER	HOR	VER				HOR	VER	(EIRP)	HOR	VER	[cm]	[deg.]	[cm]	[deg.]	
5350.00	51.00	52.3	-45.6	-43.5	9.3	12.8	0.0	-42.11	-40.03	-27.00	15.11	**13.03**	100	174	100	94	Hor:X , Ver:Z
26600.00	63.20	63.3	-62.3	-61.8	21.3	12.2	0.0	-71.40	-70.90	-27.00	44.40	43.90	100	0	100	0	Hor:Y , Ver:Z

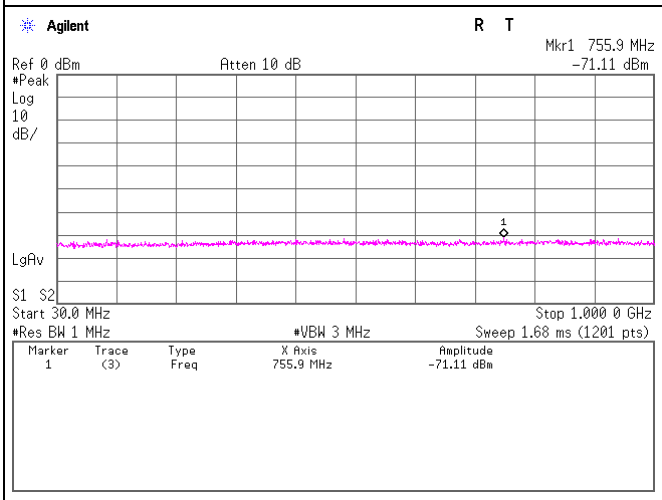
CALCULATION RESULT = SG Reading - Tx Loss + Tx Ant. Gain - Tx Ant. ATT. Loss
Rx-ANTENNA : Horn Antenna(1G-40GHz)
Tx-ANTENNA : Horn Antenna(1G-40GHz)
All other emissions were at least 20dB below the specification limit.
With the result above, the equivalent isotropic radiated power was calculated on the basis of the reference value
- for the calibration data on the substitution measurement.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
Detector : Above 1GHz : S/A PK(RBW:1MHz/VBW:3MHz)

Spurious emission (Conducted)

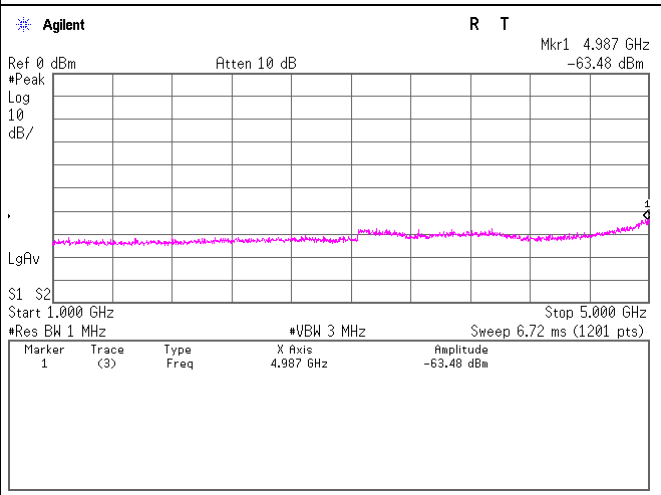
11a, 9Mbps

Tx, 5180MHz

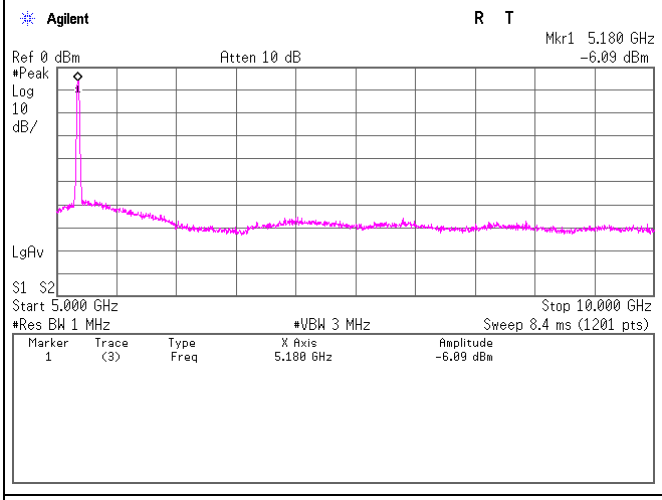
30MHz - 1GHz



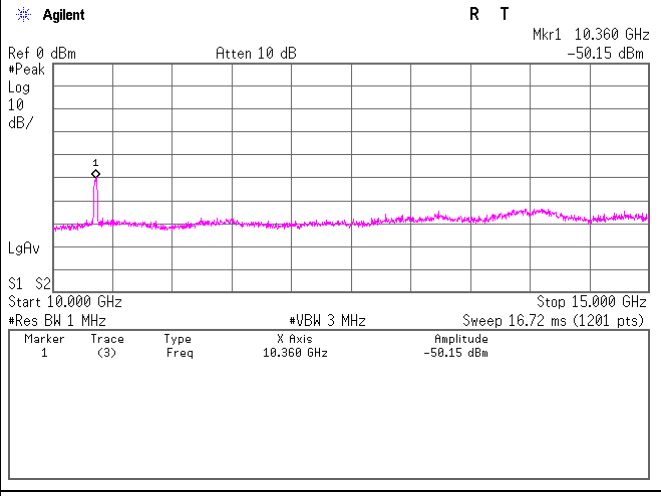
1GHz - 5GHz



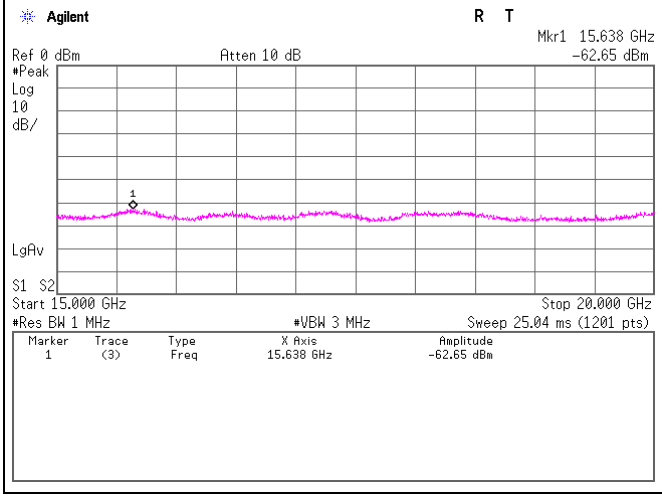
5GHz - 10GHz



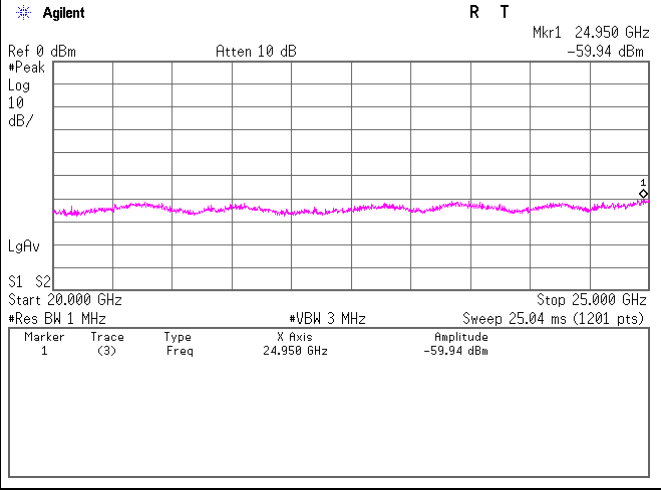
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz

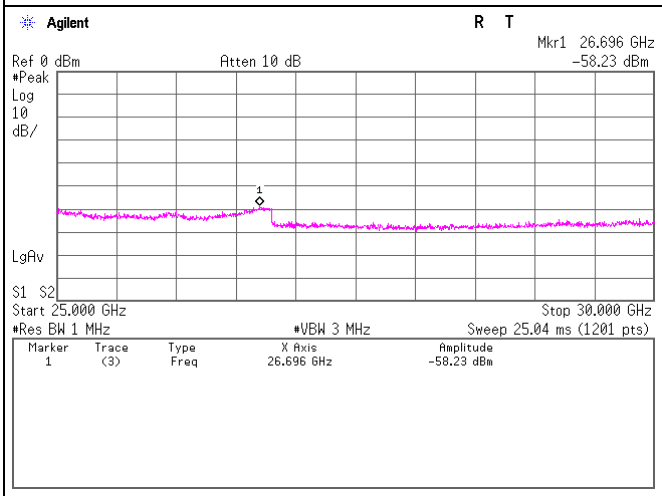


Spurious emission (Conducted)

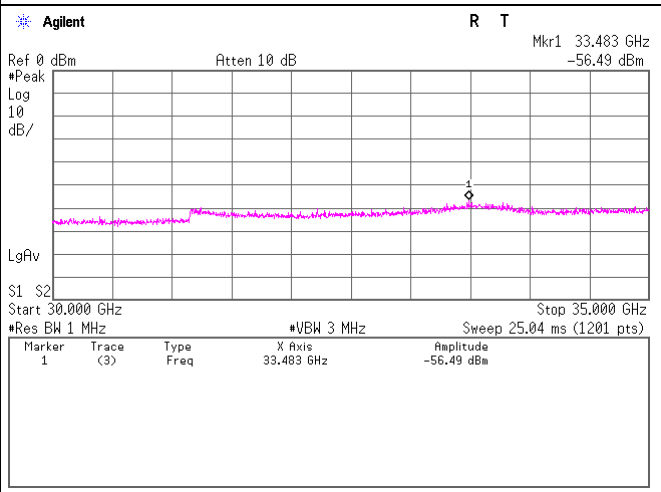
11a, 9Mbps

Tx, 5180MHz

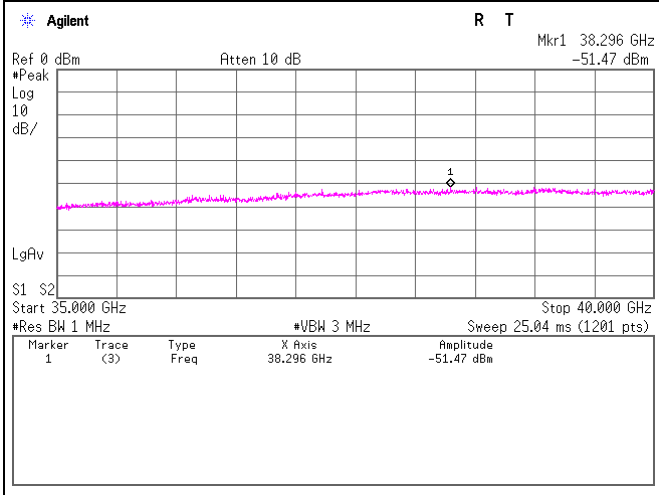
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



UL Japan, Inc.
Shonan EMC Lab.

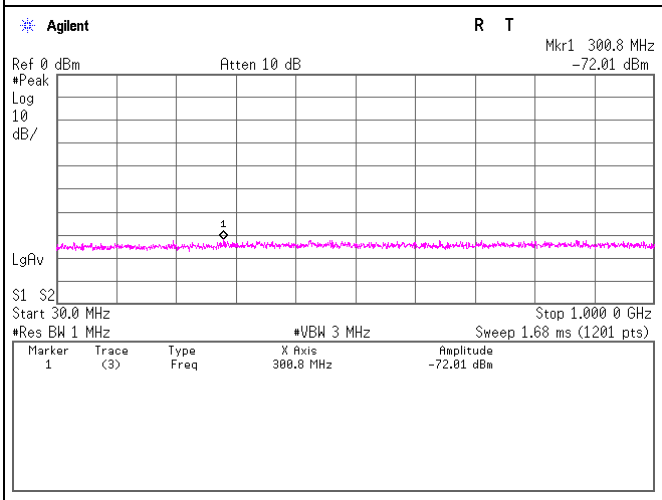
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

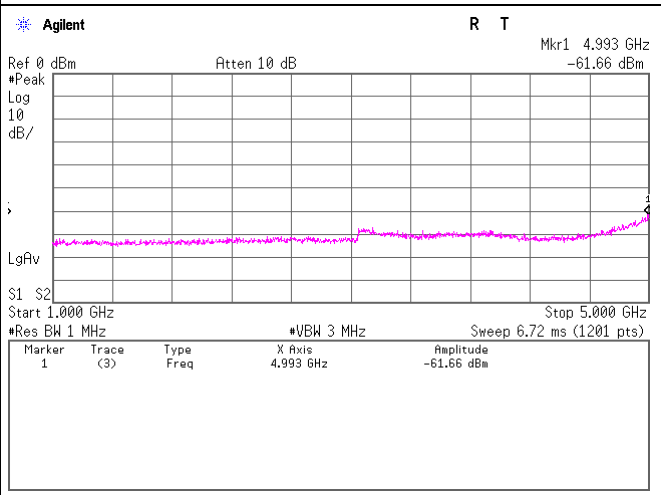
11a, 9Mbps

Tx, 5220MHz

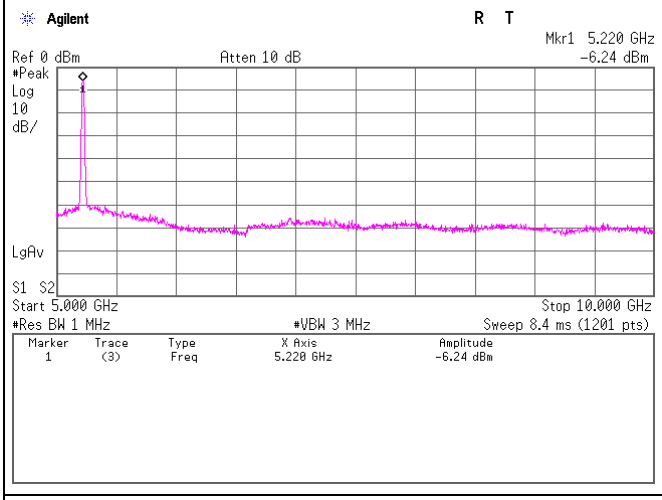
30MHz - 1GHz



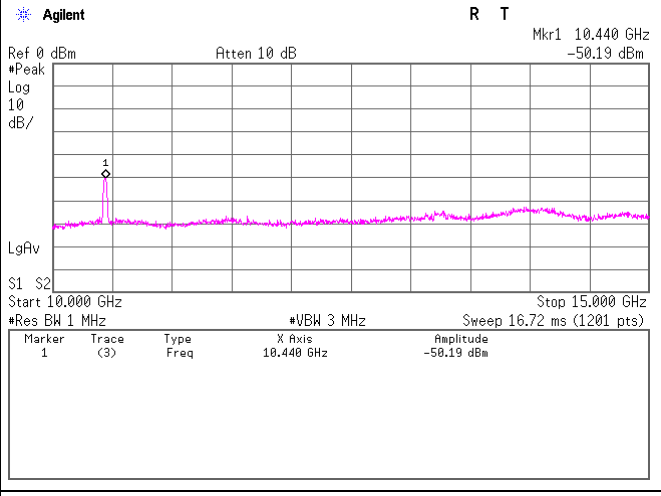
1GHz - 5GHz



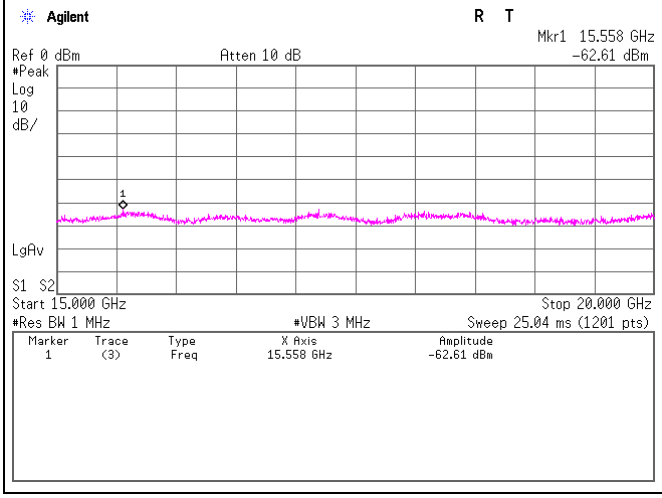
5GHz - 10GHz



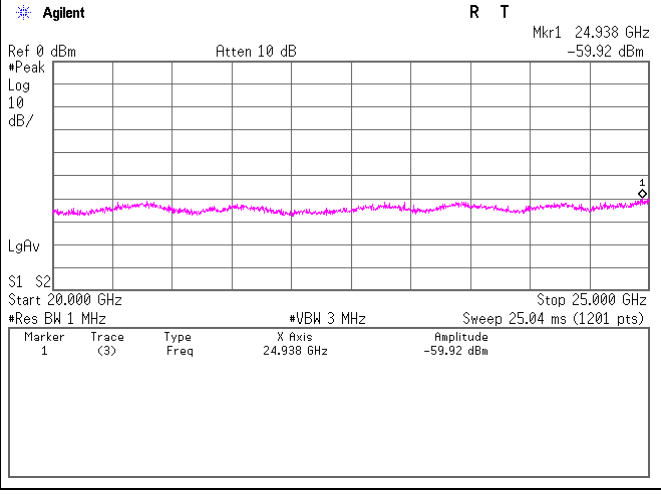
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

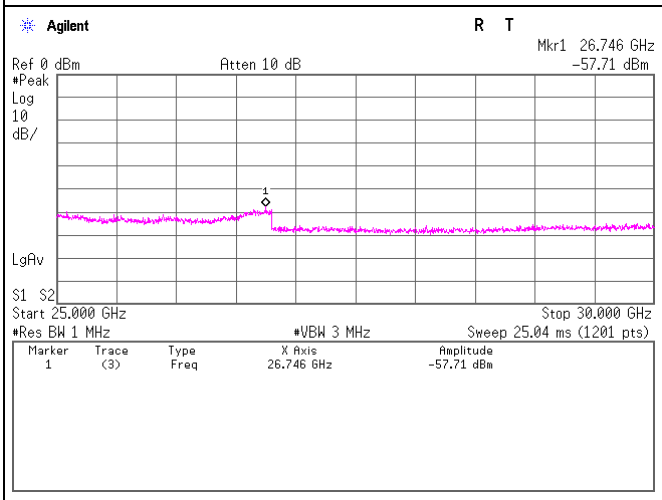
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

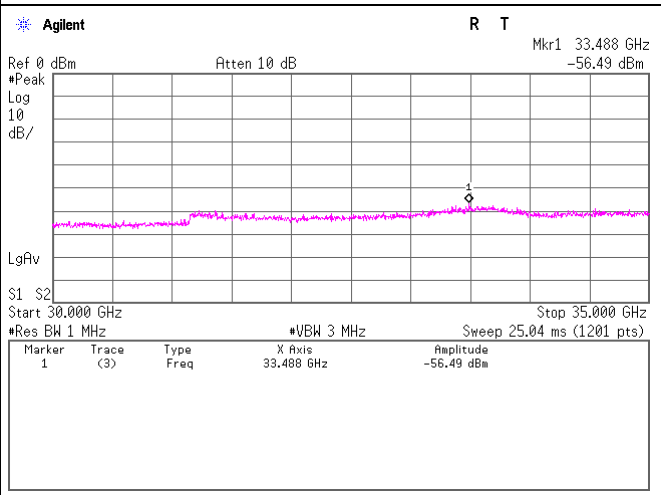
11a, 9Mbps

Tx, 5220MHz

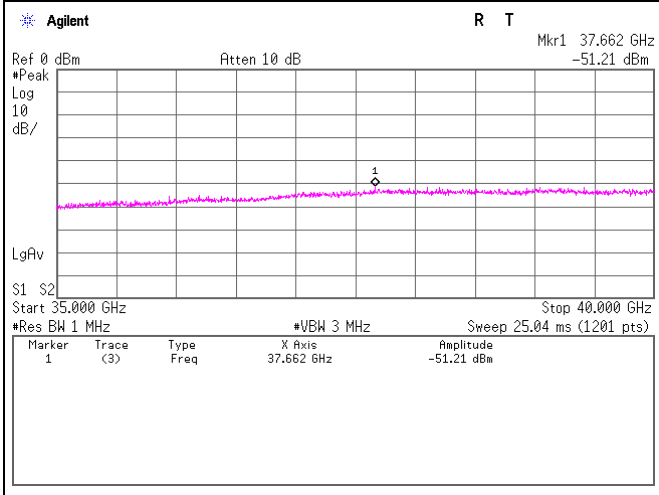
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



UL Japan, Inc.
Shonan EMC Lab.

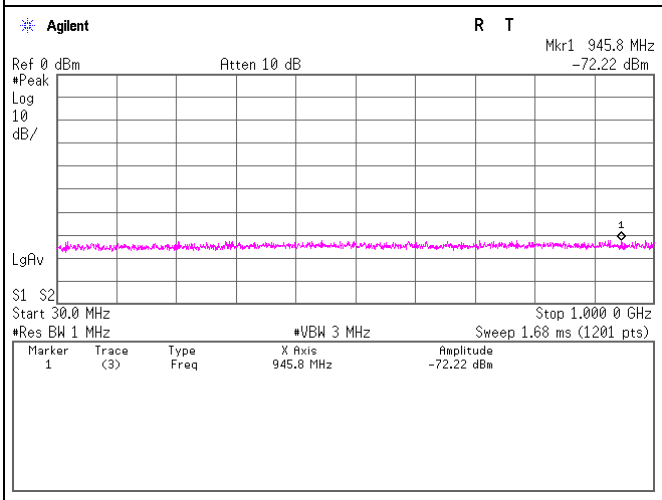
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

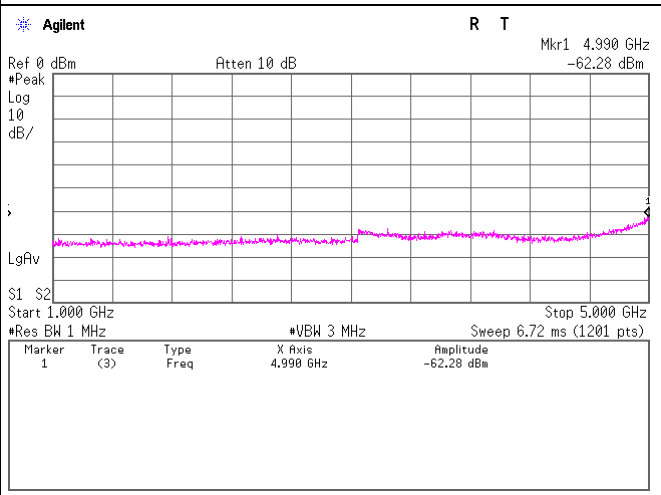
11a, 9Mbps

Tx, 5240MHz

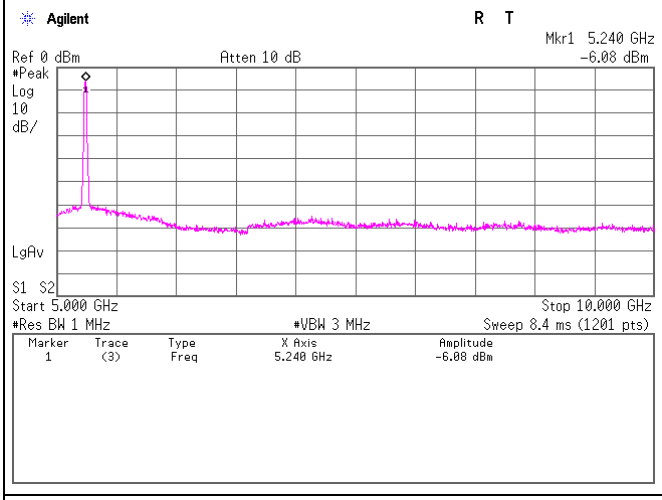
30MHz - 1GHz



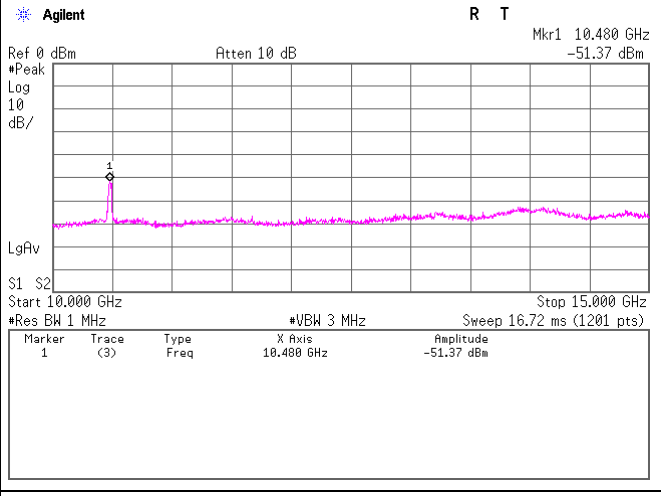
1GHz - 5GHz



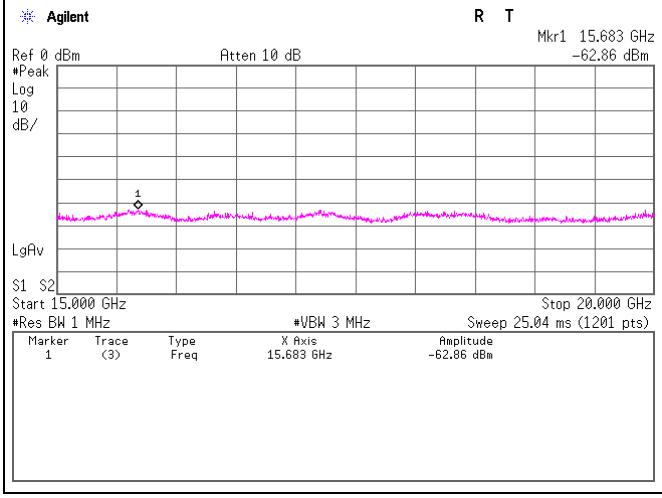
5GHz - 10GHz



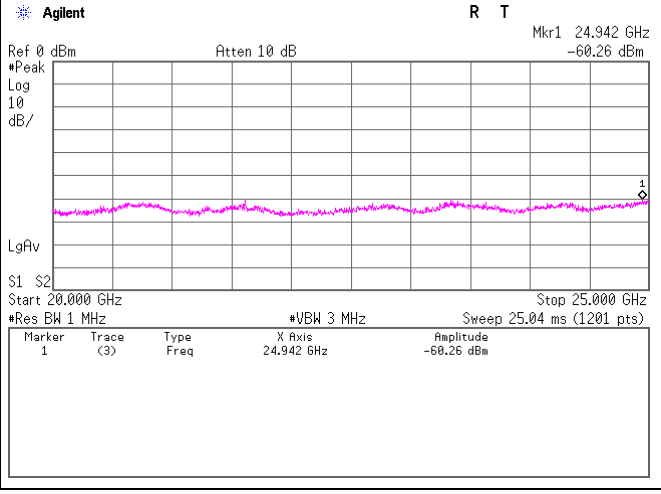
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

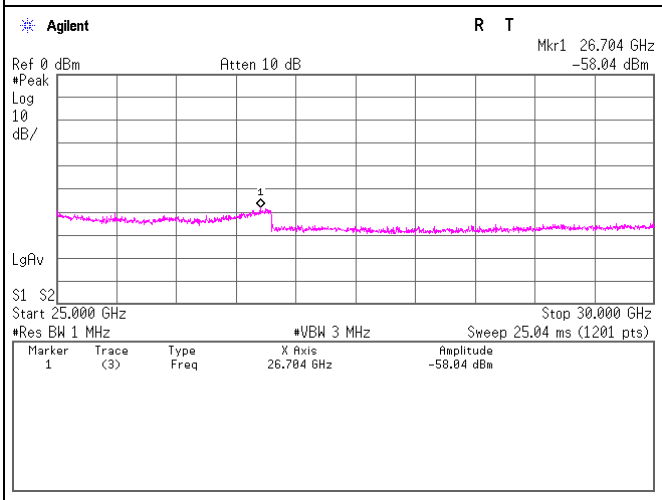
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

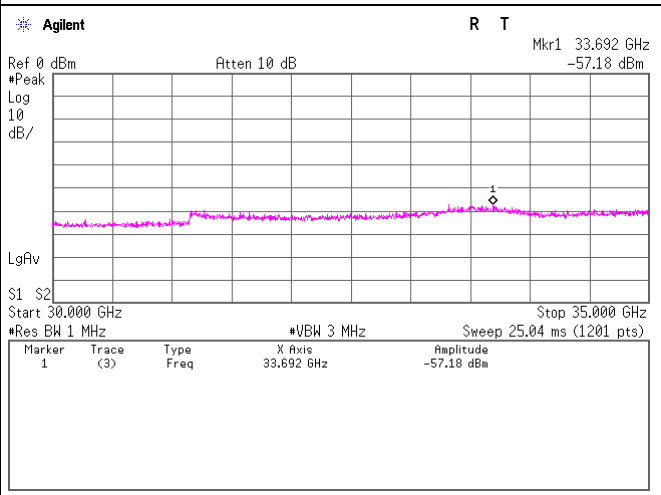
11a, 9Mbps

Tx, 5240MHz

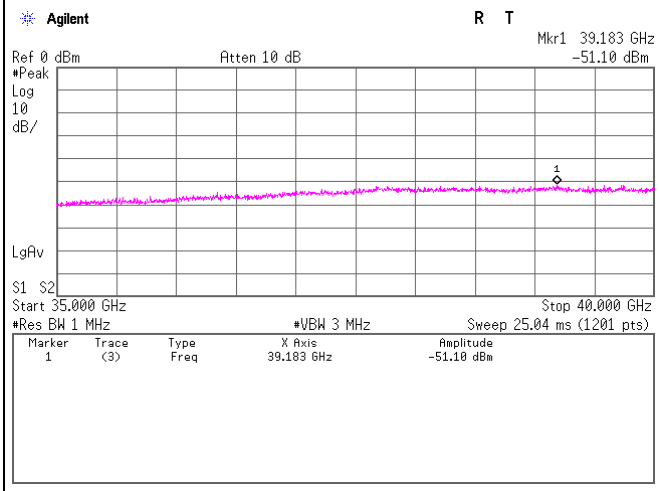
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



UL Japan, Inc.
Shonan EMC Lab.

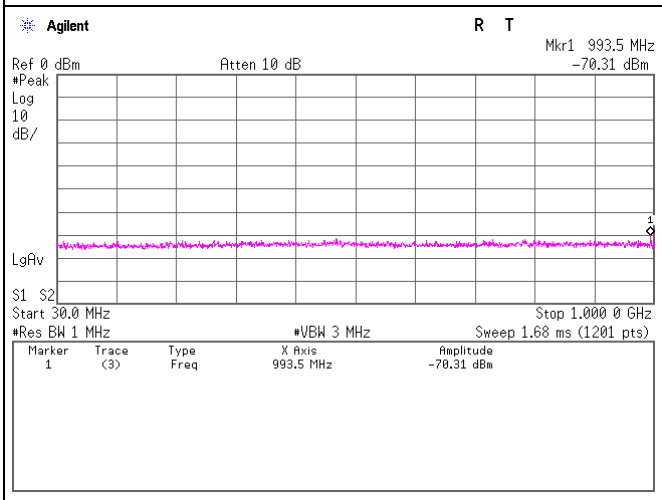
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

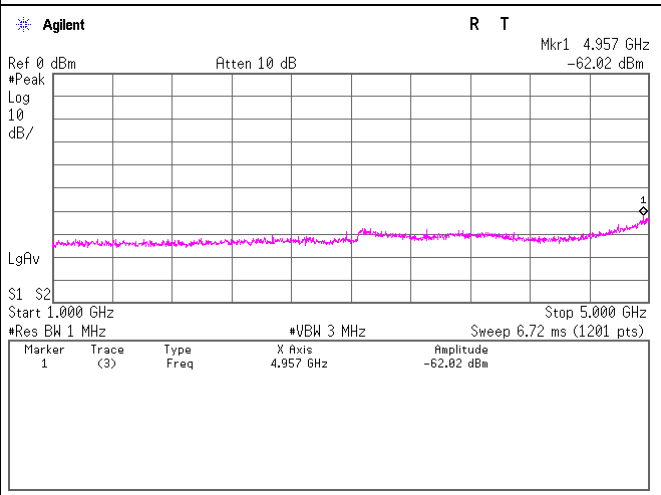
11a, 9Mbps

Tx, 5260MHz

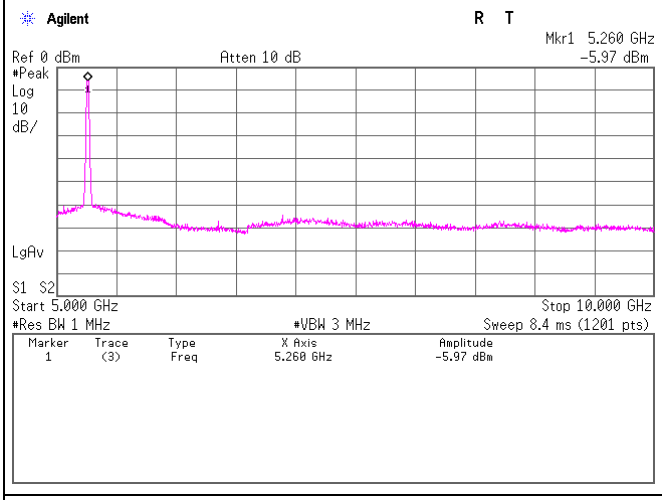
30MHz - 1GHz



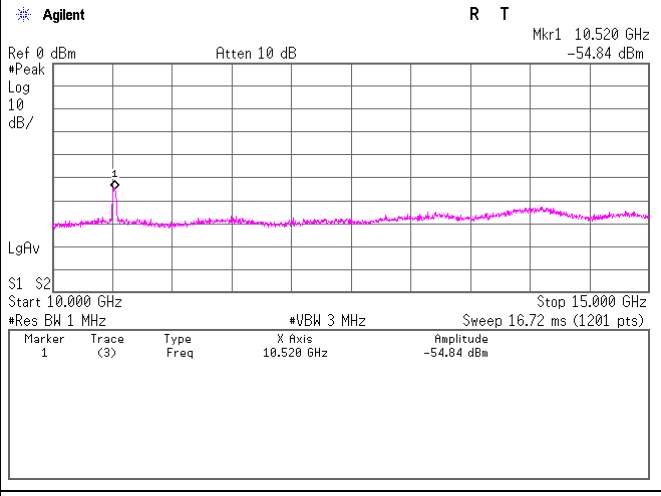
1GHz - 5GHz



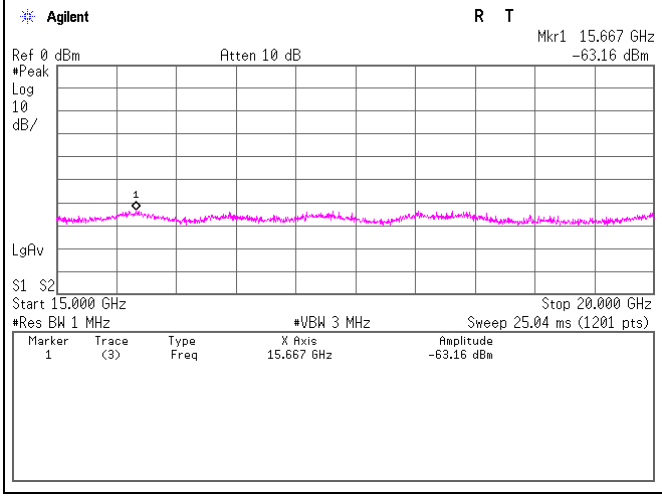
5GHz - 10GHz



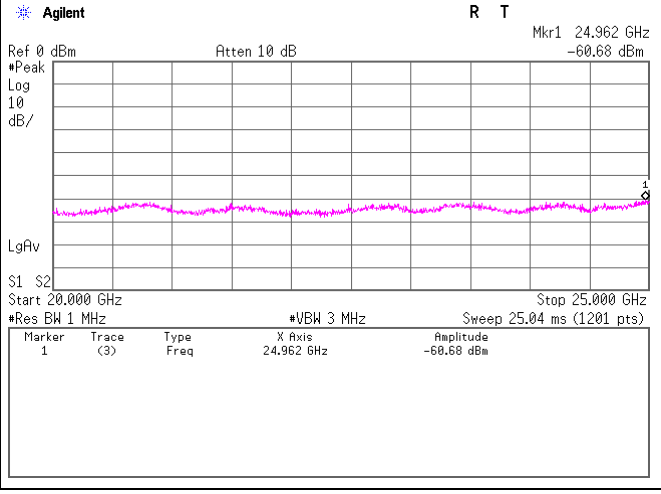
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz

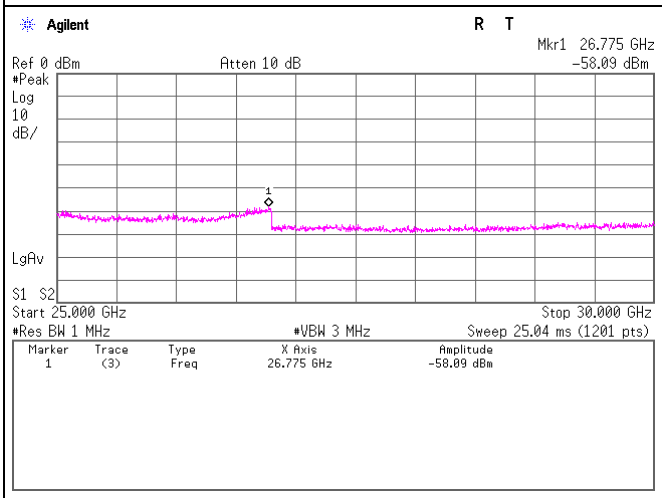


Spurious emission (Conducted)

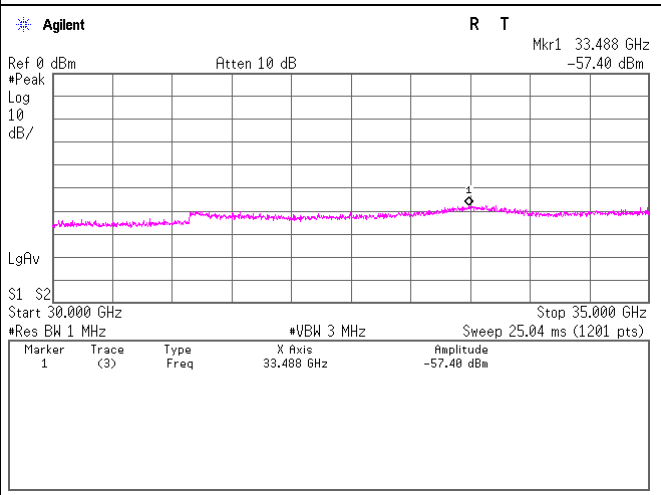
11a, 9Mbps

Tx, 5260MHz

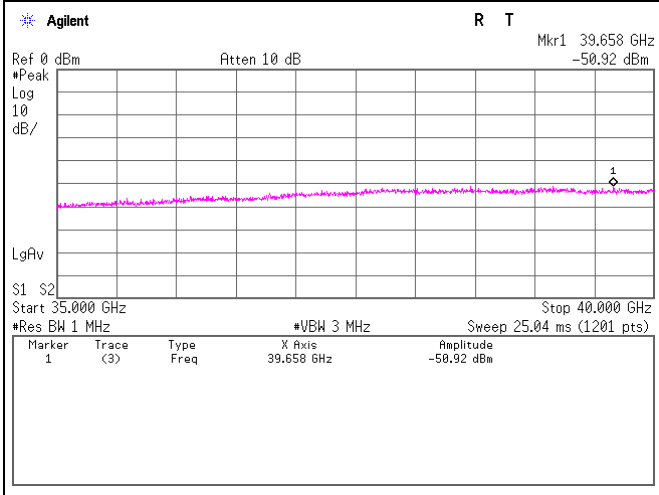
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



UL Japan, Inc.
Shonan EMC Lab.

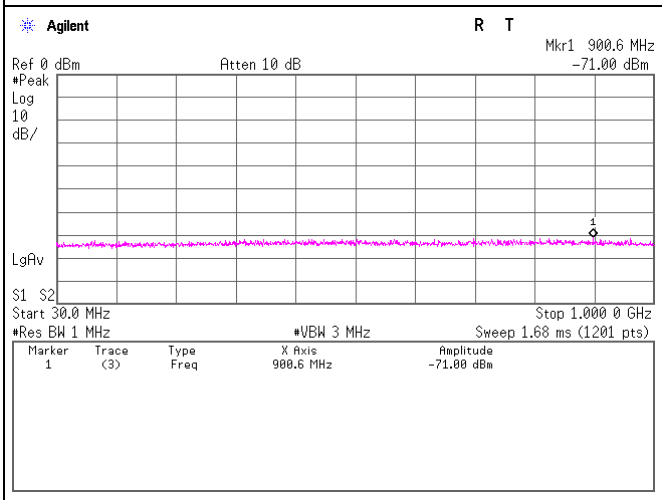
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

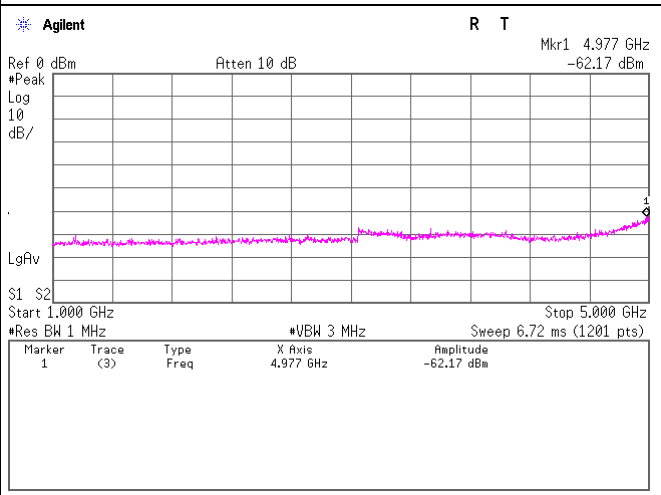
11a, 9Mbps

Tx, 5300MHz

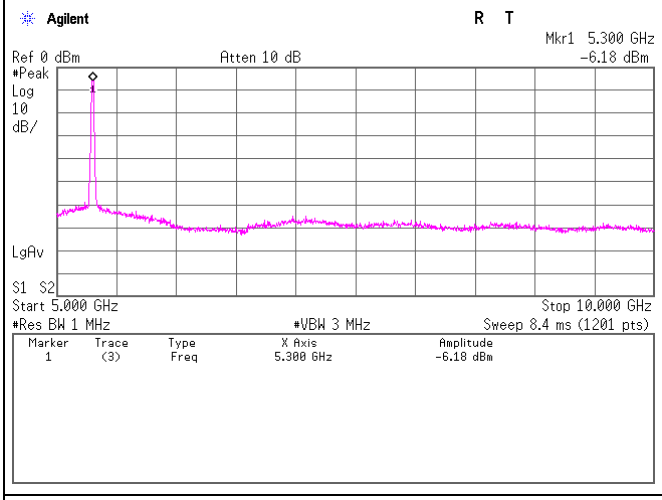
30MHz - 1GHz



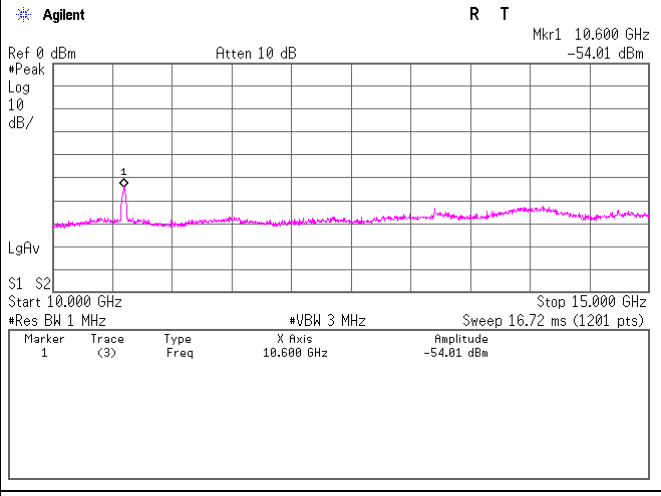
1GHz - 5GHz



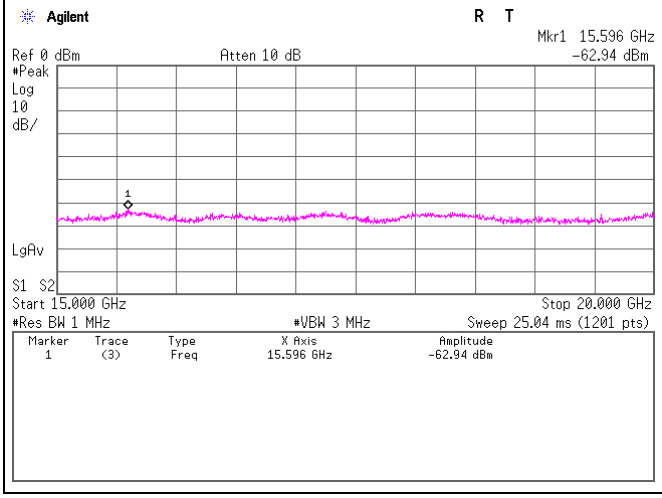
5GHz - 10GHz



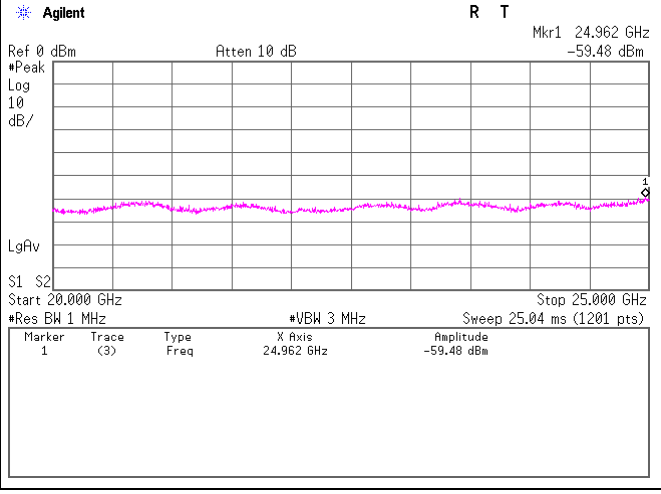
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

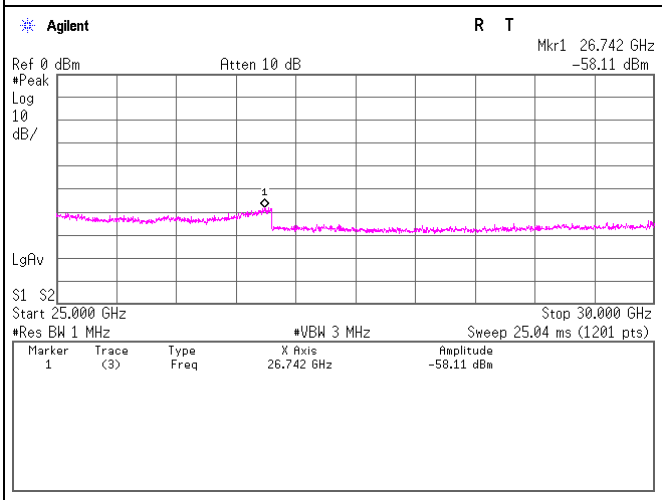
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

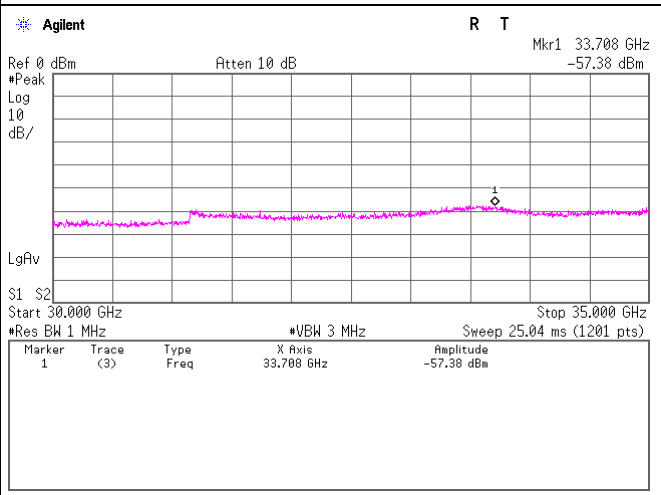
11a, 9Mbps

Tx, 5300MHz

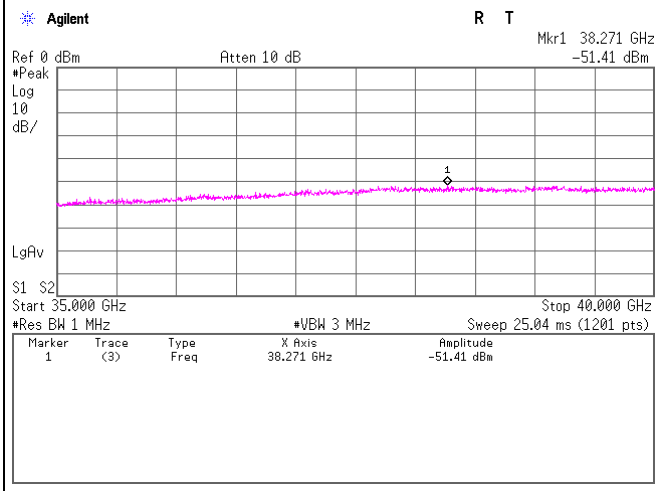
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



UL Japan, Inc.
Shonan EMC Lab.

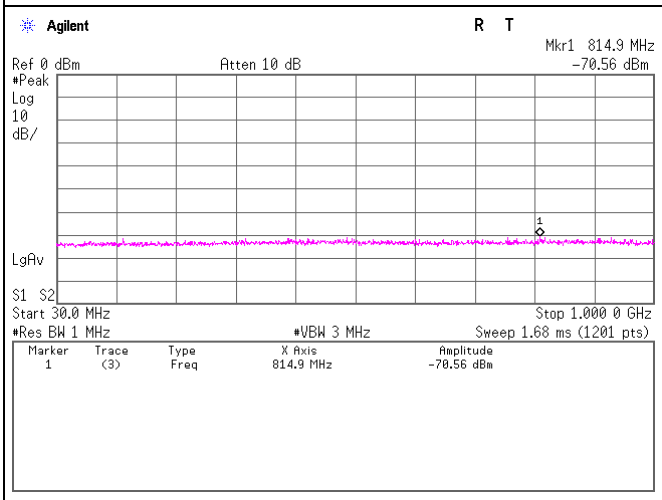
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

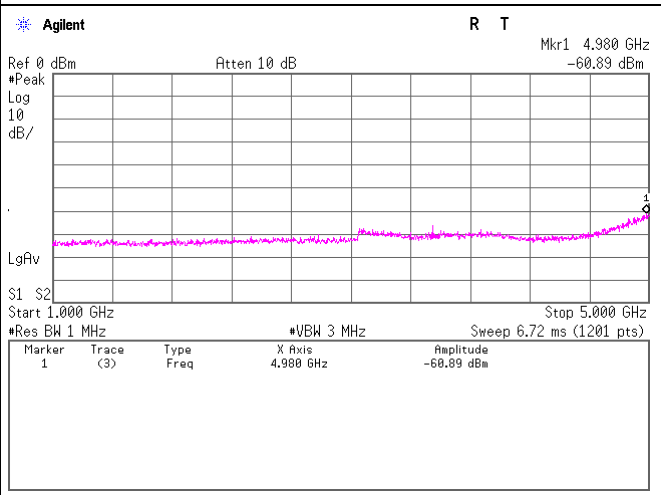
11a, 9Mbps

Tx, 5320MHz

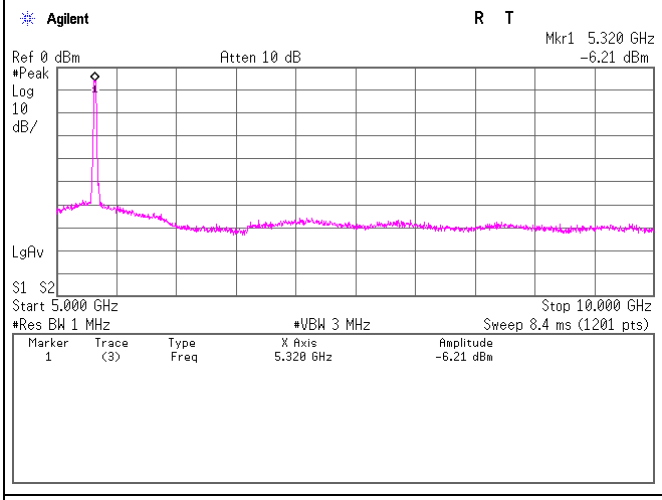
30MHz - 1GHz



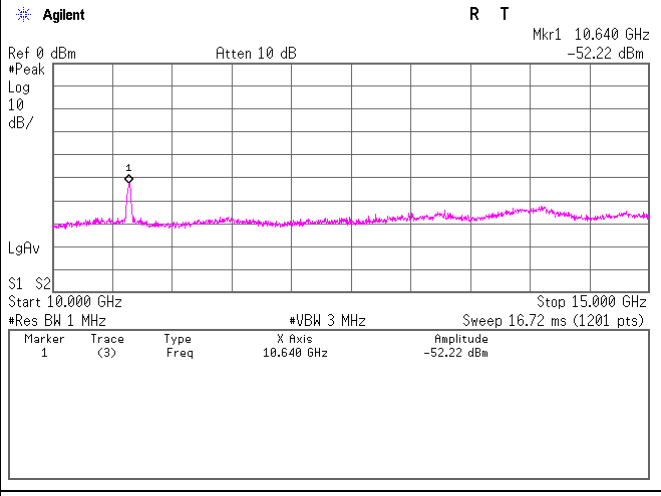
1GHz - 5GHz



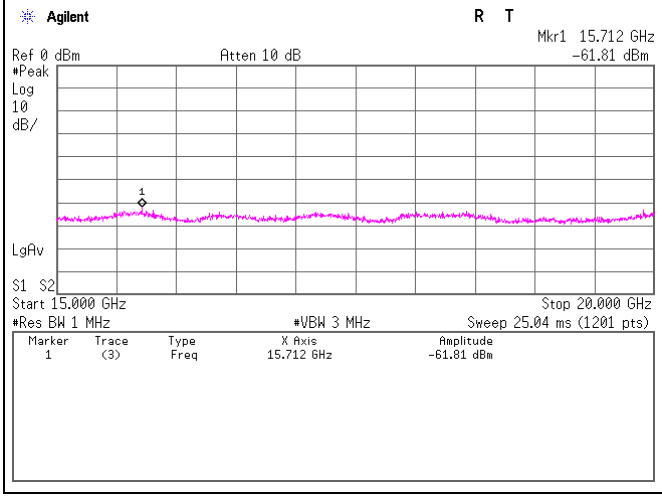
5GHz - 10GHz



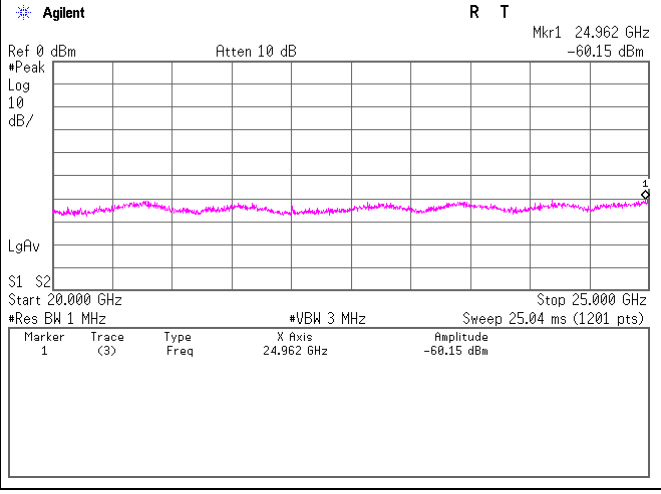
10GHz - 15GHz



15GHz - 20GHz



20GHz - 25GHz



UL Japan, Inc.
Shonan EMC Lab.

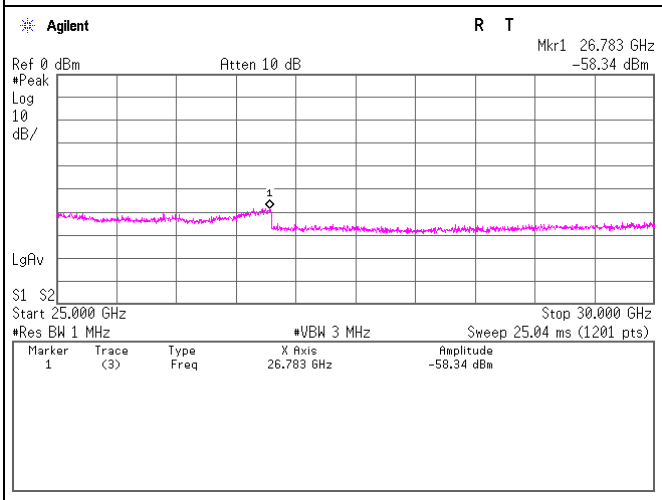
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

Spurious emission (Conducted)

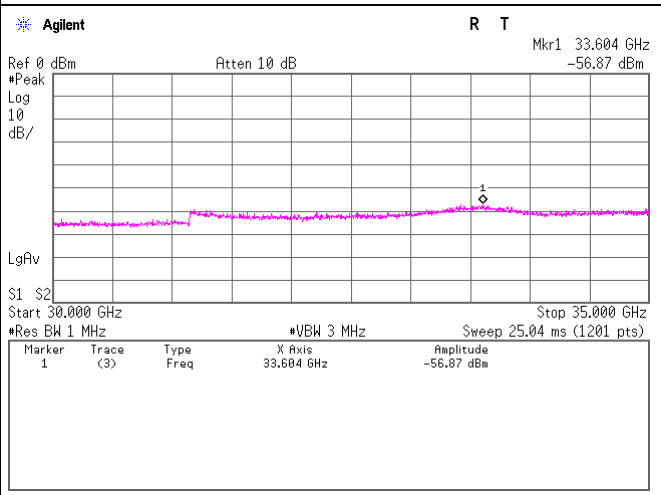
11a, 9Mbps

Tx, 5320MHz

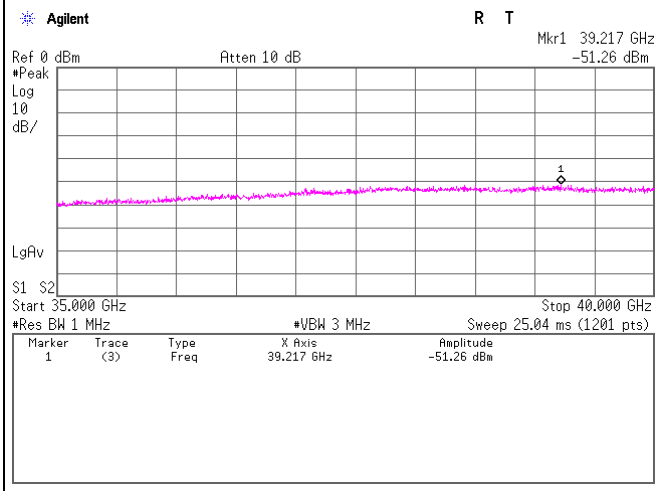
25GHz - 30GHz



30GHz - 35GHz



35GHz - 40GHz



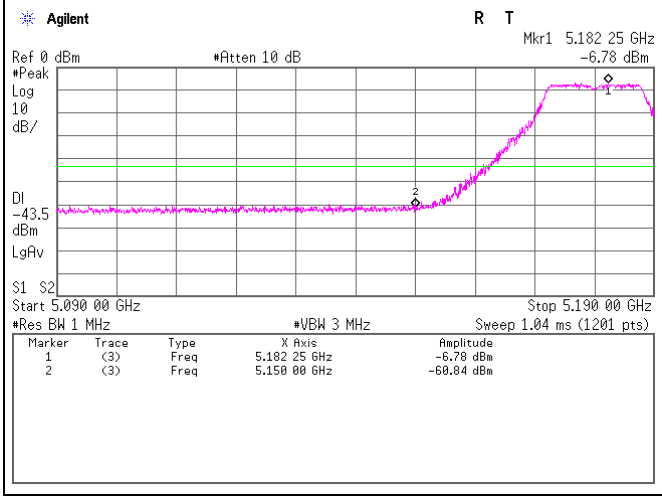
UL Japan, Inc.
Shonan EMC Lab.

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

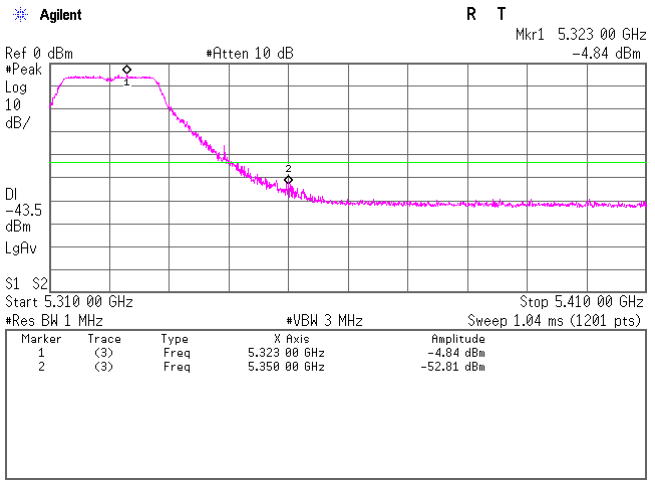
Spurious emission (Conducted)

Band Edge compliance
11a, 9Mbps

Tx, 5180MHz



Tx, 5320MHz



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 Power Spectral Density

Test place	UL Japan, Inc. Shonan EMC Lab.	No.2 Shielded Room
Date	2010/6/3	
Temperature / Humidity	24deg.C. , 41%	
Engineer	Tatsuya Arai	
Mode	11a, Tx, Main Antenna	

11a, 9Mbps

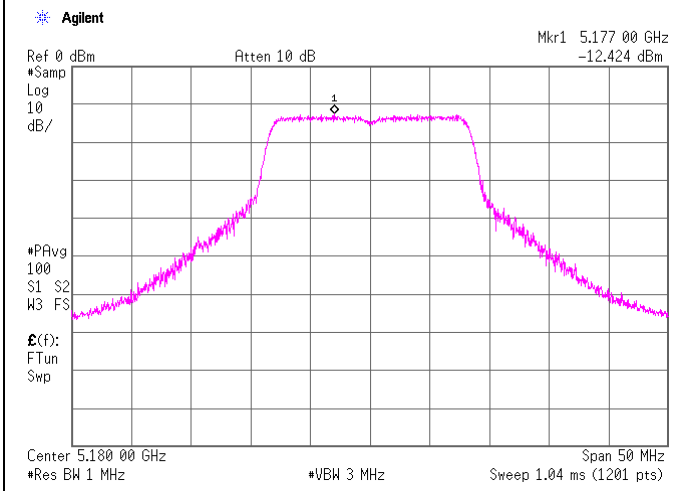
Ch. Freq. [MHz]	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
5180	5177.00	-12.42	2.83	9.86	0.27	4.00	3.73
5220	5215.17	-13.24	2.85	9.87	-0.52	4.00	4.52
5240	5246.00	-12.86	2.85	9.87	-0.14	4.00	4.14
5260	5256.38	-12.22	2.83	9.87	0.48	11.00	10.52
5300	5297.29	-13.32	2.81	9.88	-0.63	11.00	11.63
5320	5318.12	-13.38	2.79	9.88	-0.71	11.00	11.71

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

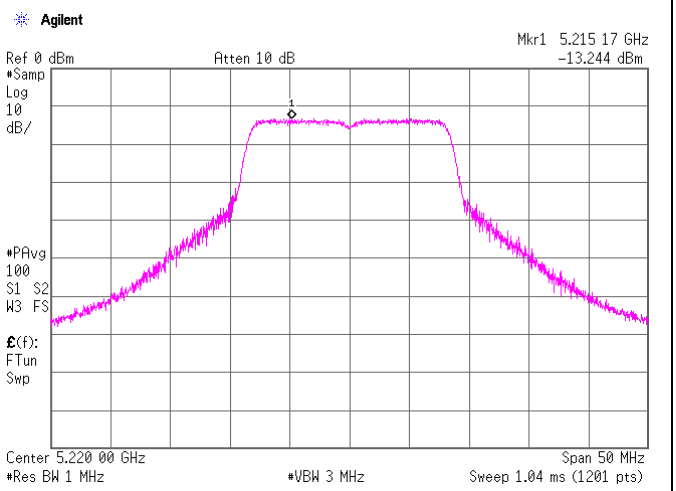
Peak Power Spectral Density

11a, 9Mbps

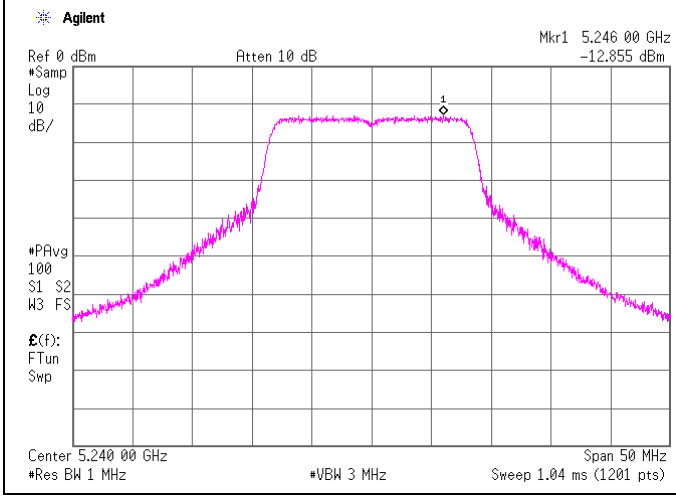
Tx, 5180MHz

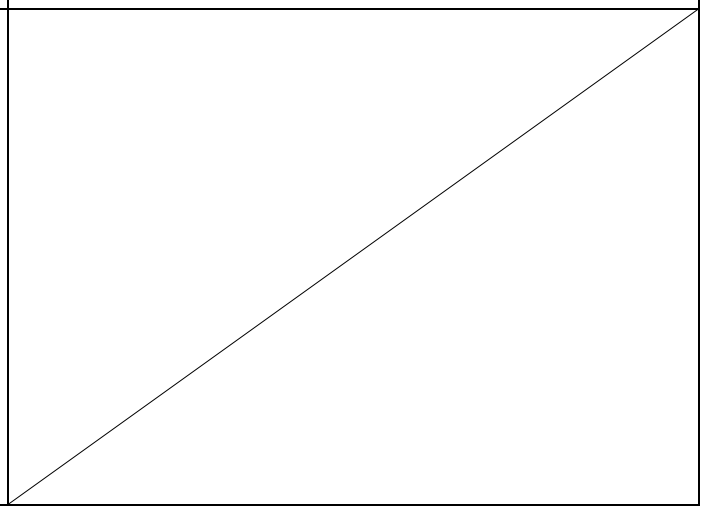


Tx, 5220MHz



Tx, 5240MHz





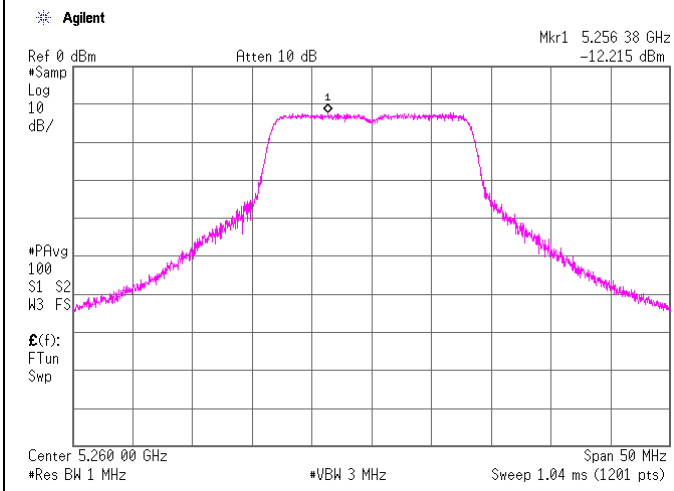
UL Japan, Inc.
Shonan EMC Lab.

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

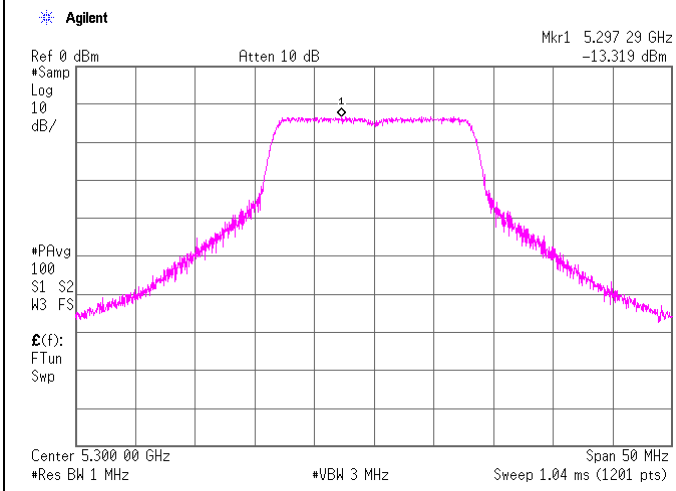
Peak Power Spectral Density

11a, 9Mbps

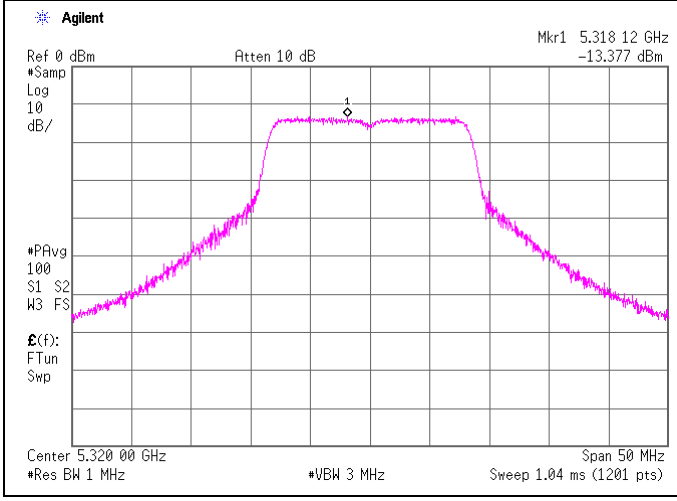
Tx, 5260MHz



Tx, 5300MHz



Tx, 5320MHz



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 Excursion Ratio

Test place	UL Japan, Inc. Shonan EMC Lab.	No.2 Shielded Room
Date	2010/6/3	
Temperature / Humidity	24deg.C. , 41%	
Engineer	Tatsuya Arai	
Mode	11a, Tx, Main Antenna	

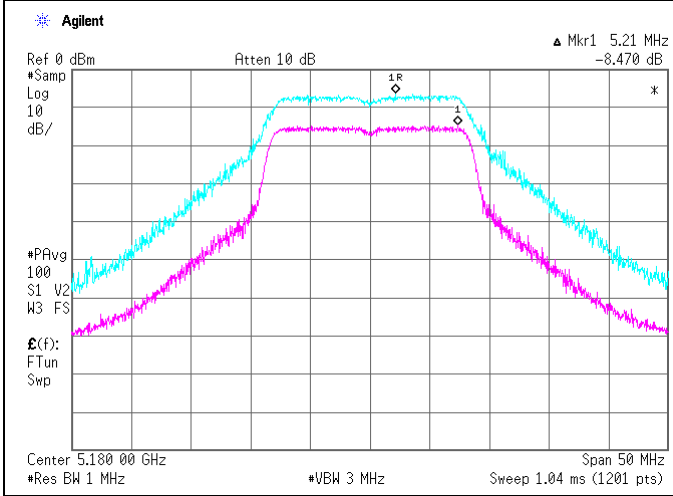
11a, 9Mbps

Freq. [MHz]	Peak Power Excursion [dB]	Limit [dB]
5180.0	8.470	=< 13.0
5220.0	7.968	=< 13.0
5240.0	7.825	=< 13.0
5260.0	8.343	=< 13.0
5300.0	7.960	=< 13.0
5320.0	7.661	=< 13.0

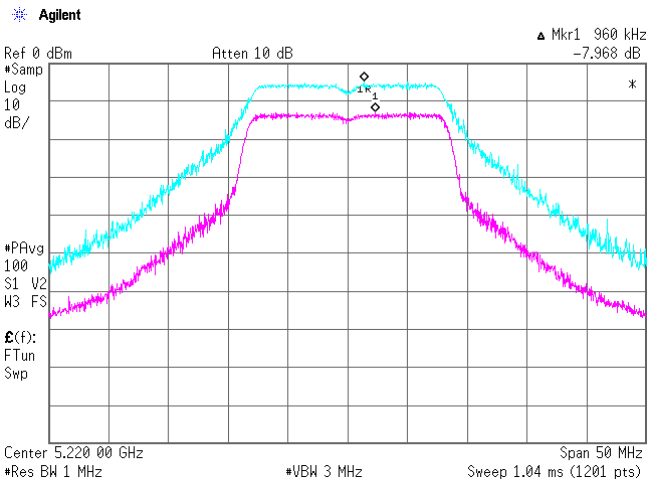
Peak Excursion Ratio

11a, 9Mbps

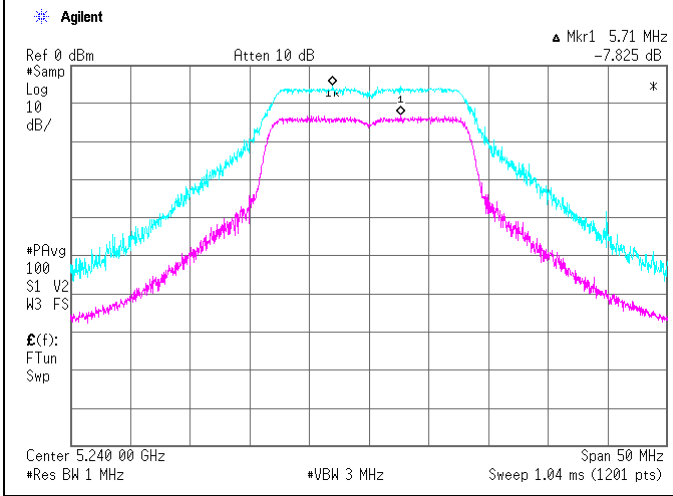
Tx, 5180MHz



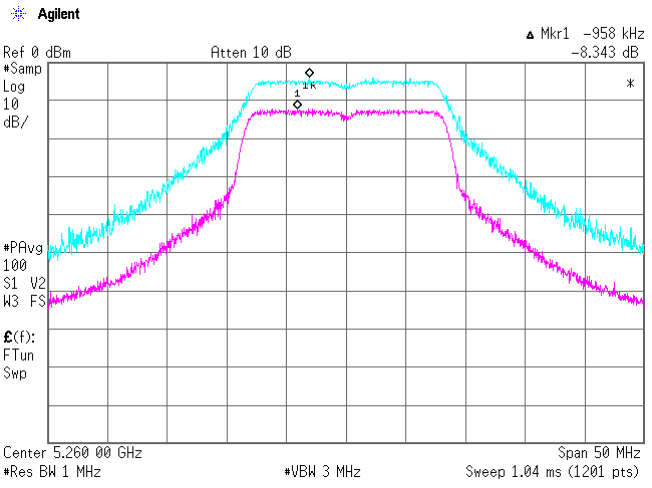
Tx, 5220MHz



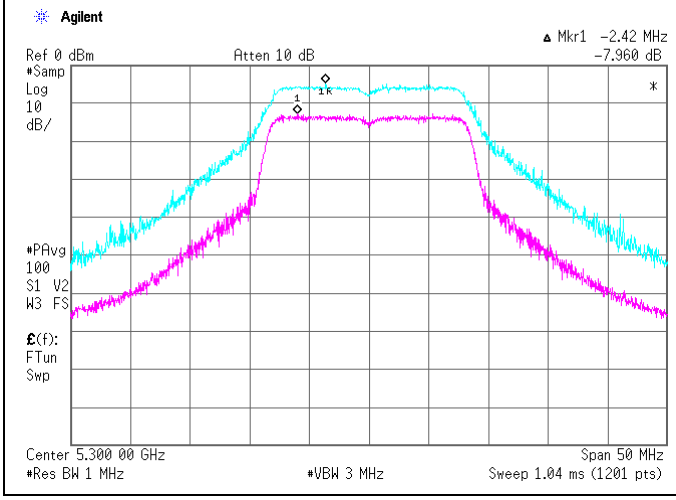
Tx, 5240MHz



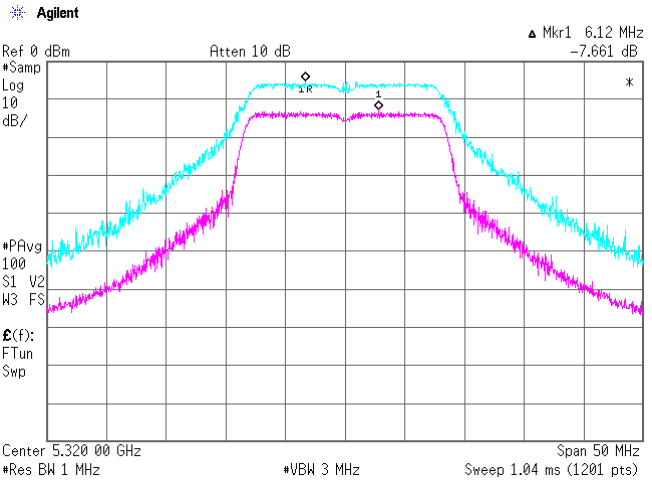
Tx, 5260MHz



Tx, 5300MHz



Tx, 5320MHz



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-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
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2010/02/09 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE	2010/04/12 * 24
SJM-07	Measure	PROMART	SEN1935	-	RE	-
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/09/18 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE	-
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	2010/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2009/08/23 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2010/03/05 * 12
SFL-03	Highpass Filter	MICRO-TRONICS	HPM50112	028	RE	2009/12/04 * 12
SHA-05	Horn Antenna	ETS LINDGREN	3160-09	LM4210	RE	2010/03/29 * 12
SAF-09	Pre Amplifier	TOYO Corporation	HAP18-26W	00000018	RE	2010/03/02 * 12
SCC-G18	Coaxial Cable	Suhner	SUCOFLEX 104A	46292/4A	RE	2010/03/02 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE	2010/04/09 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE	2009/06/29 * 12
SCC-G19	Coaxial Cable	Suhner	SUCOFLEX 102A	1188/2A	RE	2010/03/09 * 12
SHA-07	Horn Antenna	ETS・LINDGREN	3116	00108256	RE	2010/03/29 * 12
SCC-G16	Coaxial Cable	Suhner	SUCOFLEX 102	32704/2	RE	2010/03/09 * 12
SSG-02	Signal Generator	Agilent	E8257D-540	MY48051404	RE	2010/02/01 * 12
SHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-726	RE	2009/08/23 * 12
SAT10-08	Attenuator	Weinschel	W54-10	-	AT	2010/03/05 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	AT	2010/03/09 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	AT	2010/02/17 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	AT	2009/06/09 * 12
SOS-04	Humidity Indicator	A&D	AD-5681	4061512	AT	2010/02/17 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	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 :
RE: Radiated emission,
AT: Antenna terminal conducted test