Conducted Output Power (802.11n-CH 52) 121.5 Mbps

Conducted Output Power (802.11n-CH 60) 135 Mbps

Conducted Output Power (802.11n-CH 52) 13.5 Mbps

Conducted Output Power (802.11n-CH 52) 27 Mbps

Conducted Output Power (802.11n-CH 52) 40.5 Mbps

Conducted Output Power (802.11n-CH 52) 54 Mbps

Conducted Output Power (802.11n-CH 52) 81 Mbps

Conducted Output Power (802.11n-CH 52) 108 Mbps

Conducted Output Power (802.11n-CH 52) 121.5 Mbps

Conducted Output Power (802.11n-CH 60) 135 Mbps

▣ RESULT PLOTS (5510 MHz ~5670 MHz)

Conducted Output Power (802.11n-CH 100) 13.5 Mbps

Conducted Output Power (802.11n-CH 100) 27 Mbps

Conducted Output Power (802.11n-CH 100) 40.5 Mbps

Conducted Output Power (802.11n-CH 100) 54 Mbps

Conducted Output Power (802.11n-CH 100) 81 Mbps

Conducted Output Power (802.11n-CH 100) 108 Mbps

Conducted Output Power (802.11n-CH 100) 121.5 Mbps

Conducted Output Power (802.11n-CH 100) 135 Mbps

Conducted Output Power (802.11n-CH 100) 13.5 Mbps

Conducted Output Power (802.11n-CH 100) 27 Mbps

Conducted Output Power (802.11n-CH 100) 40.5 Mbps

Conducted Output Power (802.11n-CH 100) 54 Mbps

Conducted Output Power (802.11n-CH 100) 81 Mbps

Conducted Output Power (802.11n-CH 100) 108 Mbps

Conducted Output Power (802.11n-CH 100) 121.5 Mbps

Conducted Output Power (802.11n-CH 100) 135 Mbps

Conducted Output Power (802.11n-CH 100) 13.5 Mbps

Conducted Output Power (802.11n-CH 100) 27 Mbps

Conducted Output Power (802.11n-CH 100) 40.5 Mbps

Conducted Output Power (802.11n-CH 100) 54 Mbps

Conducted Output Power (802.11n-CH 100) 81 Mbps

Conducted Output Power (802.11n-CH 100) 108 Mbps

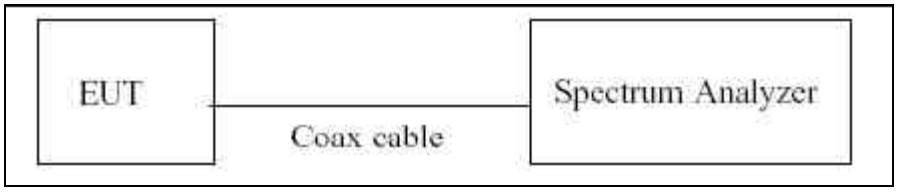
Conducted Output Power (802.11n-CH 100) 121.5 Mbps

Conducted Output Power (802.11n-CH 100) 135 Mbps

8.3 POWER SPECTRAL DENSITY

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies. The maximum permissible peak power spectral density is 4 dBm/ MHz in the 5.15 GHz – 5.25 GHz band and 11 dBm/ MHz in the 5.25 GHz – 5.35 GHz and 5.47 GHz – 5.725 GHz bands

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to Method in KDB 789033(issued 9/26/2012).

The spectrum analyzer is set to :
RBW = 1 MHz
VBW = 3 MHz
SPAN = to encompass the entire EBW of the signal
Sweep Time = auto
Sweep Point = 1001
Detector Mode = Average
Trace average at least 100 traces in power averaging(RMS) mode

▣ Sample Calculation

PSD = Reading Value + ATT loss + Cable loss(1 ea)
= -5 dBm + 10 dB + 0.8 dB = 15.8 dBm

Note :
1. Spectrum reading values are not plot data. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

Band	Frequency(MHz)	Loss(dB)
UNII 1	5180	10.26
	5190	10.22
	5200	10.18
	5230	10.19
	5240	10.19
UNII 2	5260	10.18
	5270	10.17
	5300	10.14
	5310	10.11
	5320	10.09
UNII 3	5500	10.20
	5510	10.20
	5550	10.23
	5580	10.24
	5670	10.36
	5700	10.40

(Actual value of loss for the attenuator and cable combination)

▣ TEST RESULTS

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			Power Density (dBm)	Limit (dBm)	Pass/Fail
5180	36	802.11a	1.440	4	Pass
5200	40		1.721	4	Pass
5240	48		1.216	4	Pass
5260	52	802.11a	1.746	11	Pass
5300	60		1.494	11	Pass
5320	64		1.517	11	Pass
5500	100	802.11a	0.796	11	Pass
5580	116		1.383	11	Pass
5700	140		1.543	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			Power Density (dBm)	Limit (dBm)	Pass/Fail
5180	36	802.11n_20MHz BW	-0.118	4	Pass
5200	40		0.342	4	Pass
5240	48		0.564	4	Pass
5260	52	802.11n_20MHz BW	-0.021	11	Pass
5300	60		0.142	11	Pass
5320	64		0.442	11	Pass
5500	100	802.11n_20MHz BW	-0.427	11	Pass
5580	116		-0.254	11	Pass
5700	140		-0.072	11	Pass

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			Power Density (dBm)	Limit (dBm)	Pass/Fail
5190	38	802.11n_40 MHz BW	-3.101	4	Pass
5230	46		-2.823	4	Pass
5270	54	802.11n_40 MHz BW	-3.003	4	Pass
5310	62		-2.252	11	Pass
5510	102	802.11n_40 MHz BW	-3.971	11	Pass
5550	110		-3.787	11	Pass
5670	134		-3.514	11	Pass

▣ RESULT PLOTS

Power Spectral Density (802.11a-CH 36)

Power Spectral Density (802.11a-CH 40)

Power Spectral Density (802.11a-CH 48)

Power Spectral Density (802.11a-CH 52)

Power Spectral Density (802.11a-CH 60)

Power Spectral Density (802.11a-CH 64)

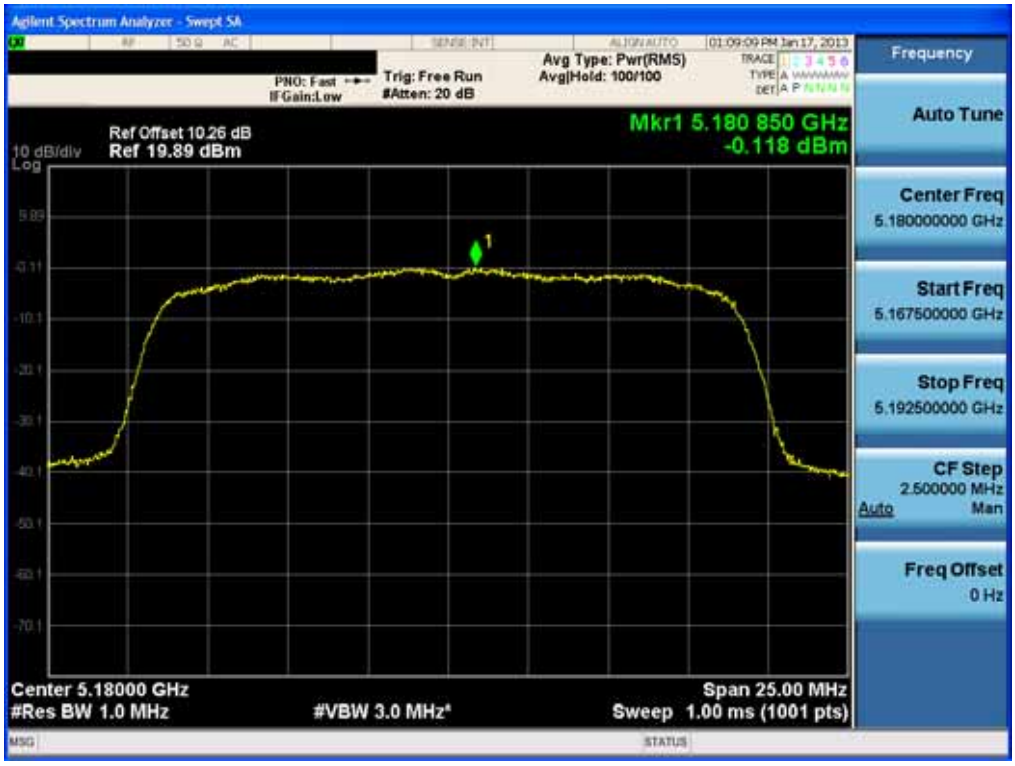
Power Spectral Density (802.11a-CH 100)

Power Spectral Density (802.11a-CH 116)

Power Spectral Density (802.11a-CH 140)

20 MHz BW

Power Spectral Density (802.11n-CH 36)



Power Spectral Density (802.11n-CH 40)

Power Spectral Density (802.11n-CH 48)

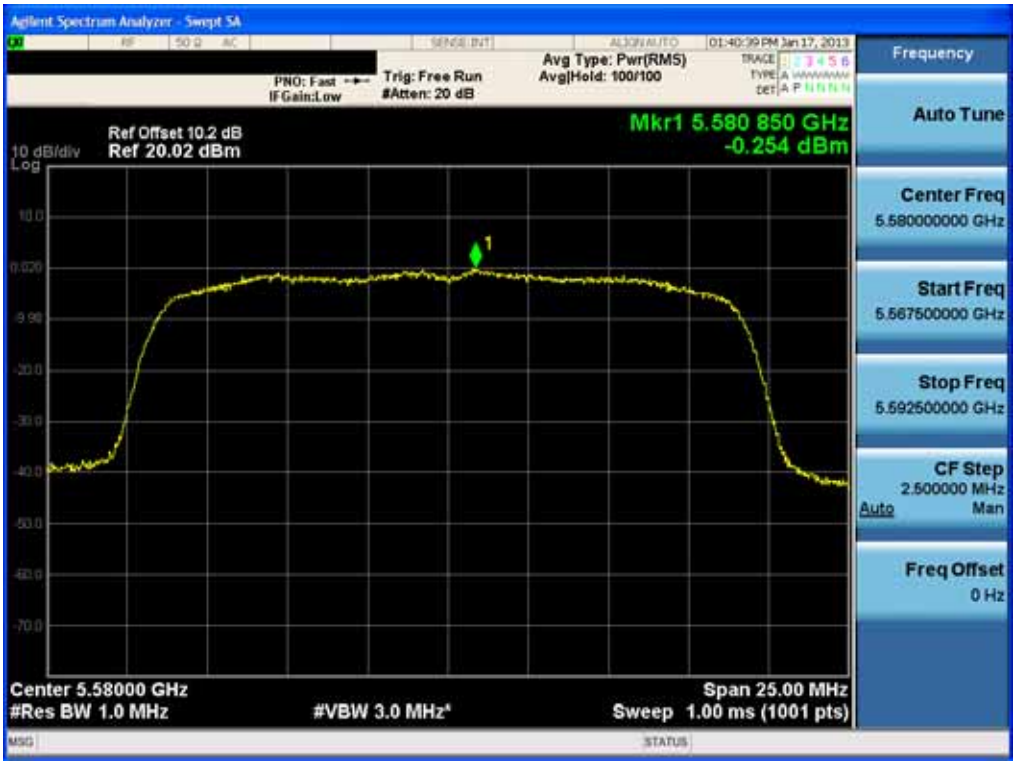
Power Spectral Density (802.11n-CH 52)

Power Spectral Density (802.11n-CH 60)

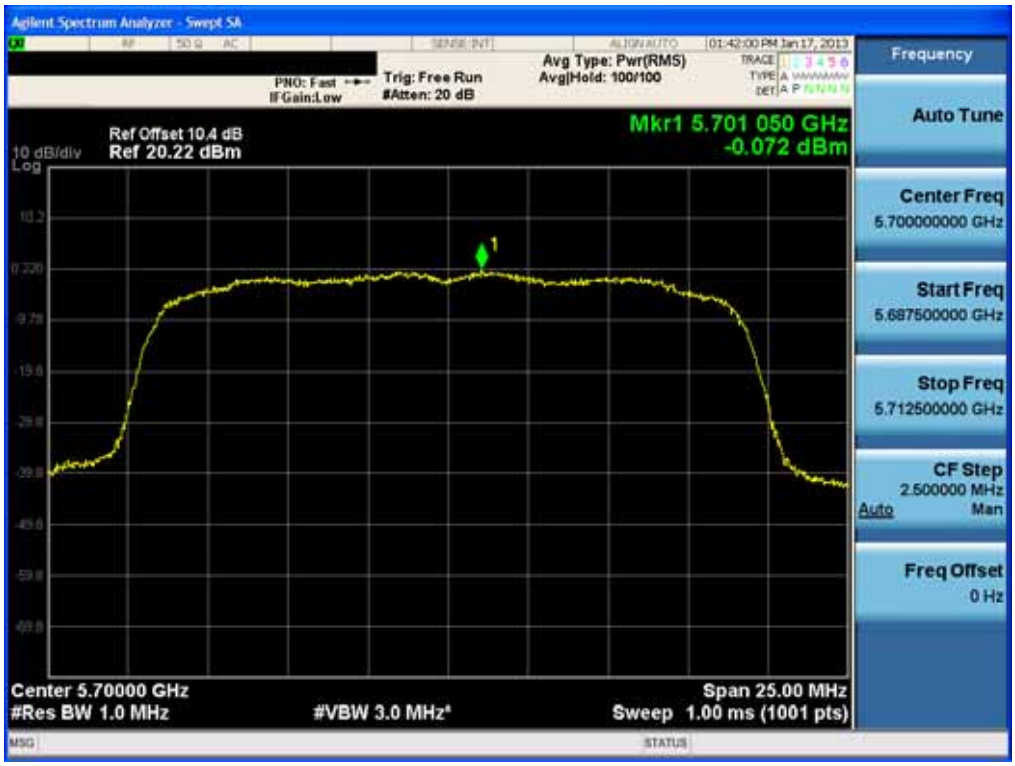
Power Spectral Density (802.11n-CH 64)

Power Spectral Density (802.11n-CH 100)

Power Spectral Density (802.11n-CH 116)



Power Spectral Density (802.11n-CH 140)



40 MHz BW

Power Spectral Density (802.11n-CH 38)

Power Spectral Density (802.11n-CH 46)

Power Spectral Density (802.11n-CH 54)

Power Spectral Density (802.11n-CH 62)

Power Spectral Density (802.11n-CH 102)

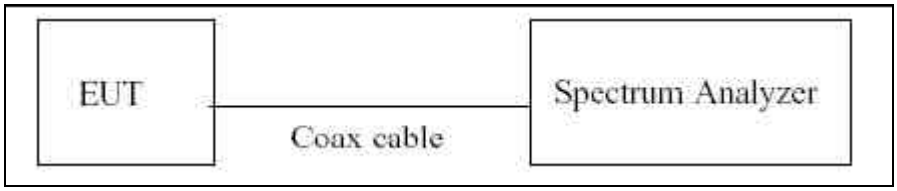
Power Spectral Density (802.11n-CH 110)

Power Spectral Density (802.11n-CH 134)

8.4 PEAK EXCURSION RATIO

The spectrum analyzer was connected to the antenna terminal while the EUT was operating in the continuous transmission mode at the appropriate center frequencies. The largest permissible difference between the modulation envelope(measured using a peak hold function) and the maximum conducted output power 13 dB/MHz.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

We tested according to KDB 789033(issued 09/26/2012).

The spectrum analyzer is set to :

1. Span = Set the span to view the entire emission bandwidth.
2. RBW = 1 MHz
3. VBW = 3 MHz
4. Sweep = Auto couple
5. Detector Mode = Peak
6. Trace Mode = Max hold
7. Use the procedure to measure the PPSD
8. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

Note :

1. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 5.2 GHz, 5.3 GHz and 5.6 GHz range that was rounded off to the closest tenth dB. Actual value of loss for the attenuator and cable combination is below table.

Band	Frequency(MHz)	Loss(dB)
UNII 1	5180	10.26
	5190	10.22
	5200	10.18
	5230	10.19
	5240	10.19
UNII 2	5260	10.18
	5270	10.17
	5300	10.14
	5310	10.11
	5320	10.09
UNII 3	5500	10.20
	5510	10.20
	5550	10.23
	5580	10.24
	5670	10.36
	5700	10.40

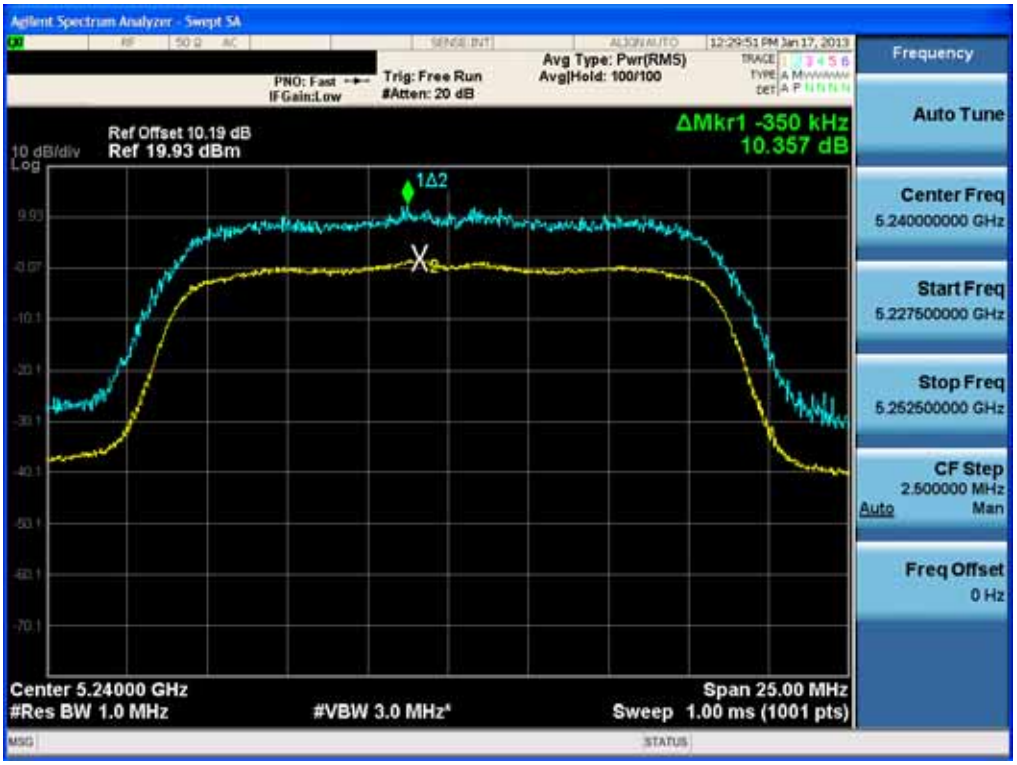
(Actual value of loss for the attenuator and cable combination)

▣ RESULT PLOTS

Peak Excursion Ratio (802.11a-CH 36)

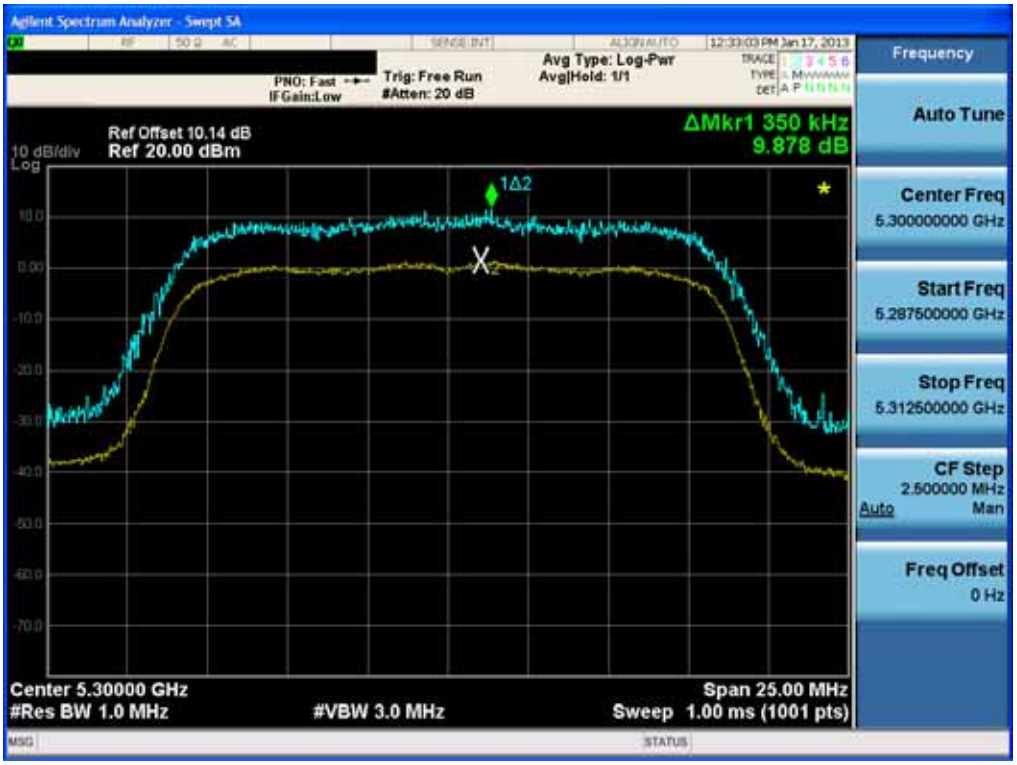
Peak Excursion Ratio (802.11a-CH 40)

Peak Excursion Ratio (802.11a-CH 48)

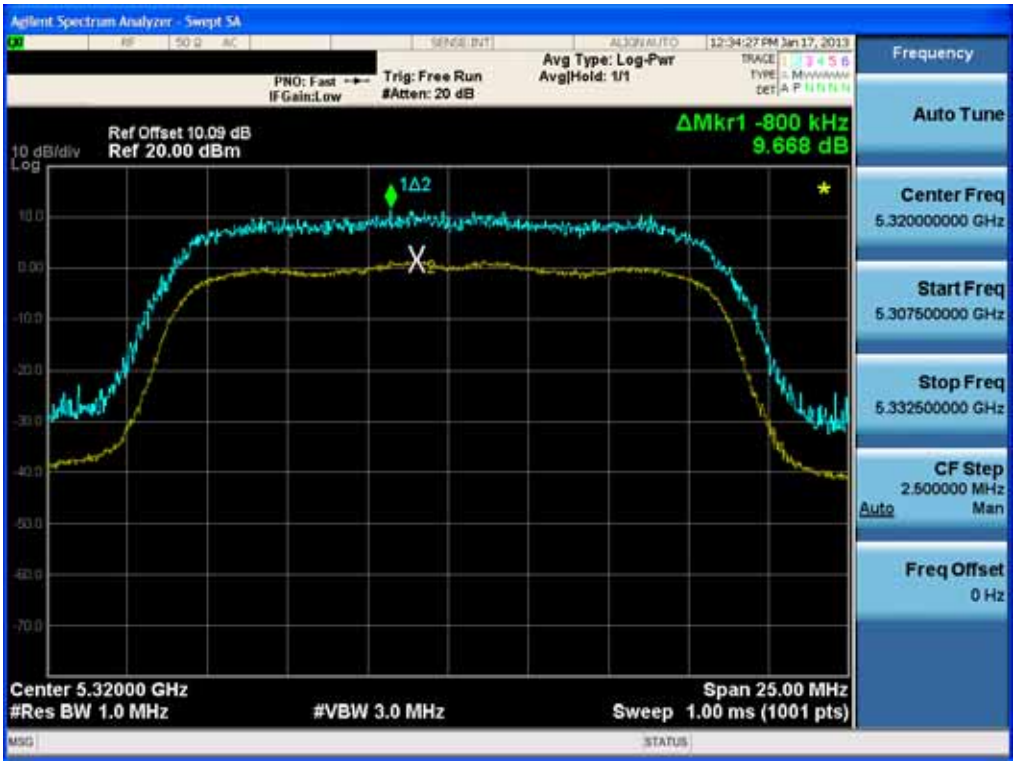


Peak Excursion Ratio (802.11a-CH 52)

Peak Excursion Ratio (802.11a-CH 60)



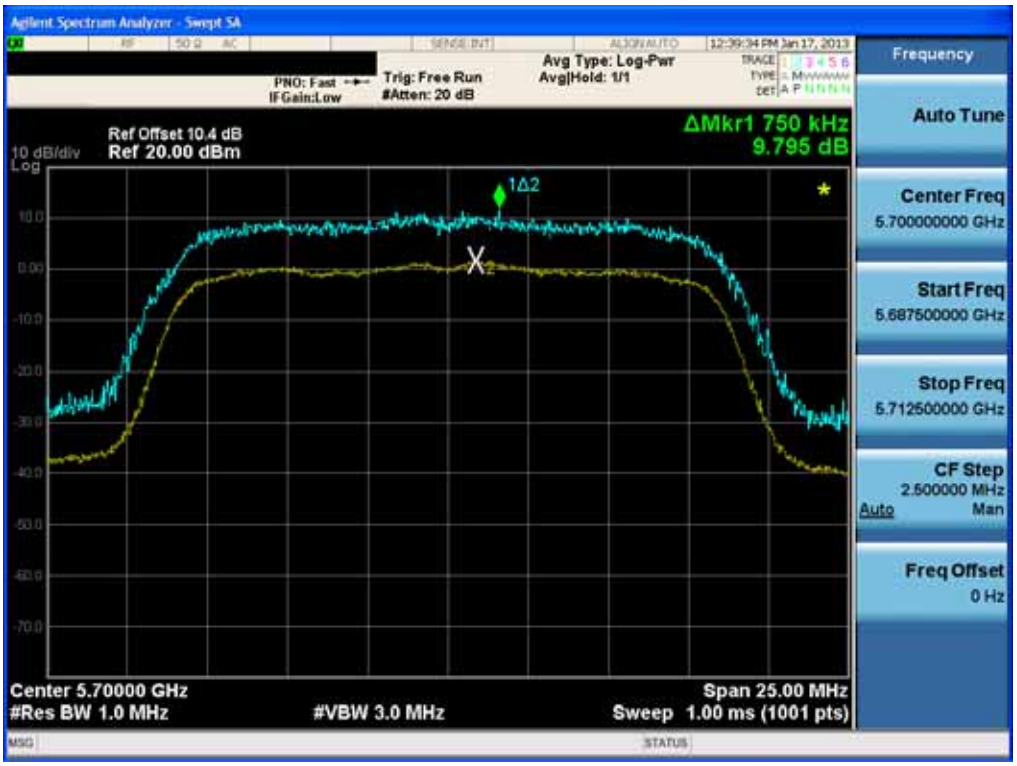
Peak Excursion Ratio (802.11a-CH 64)



Peak Excursion Ratio (802.11a-CH 100)

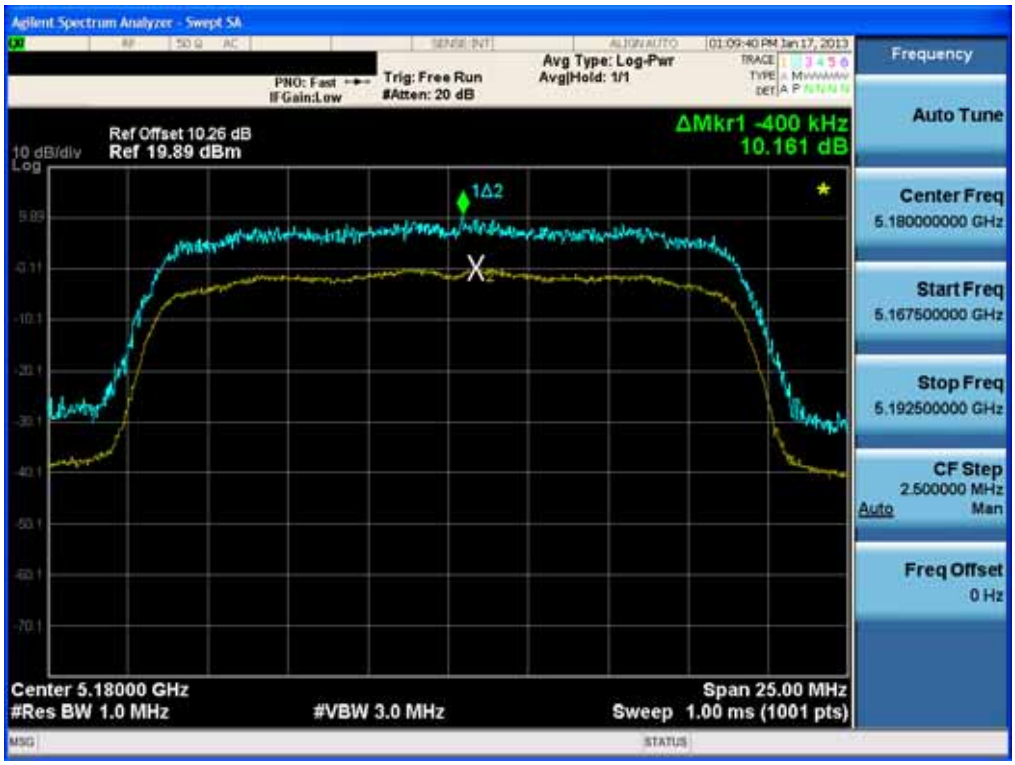
Peak Excursion Ratio (802.11a-CH 116)

Peak Excursion Ratio (802.11a-CH 140)



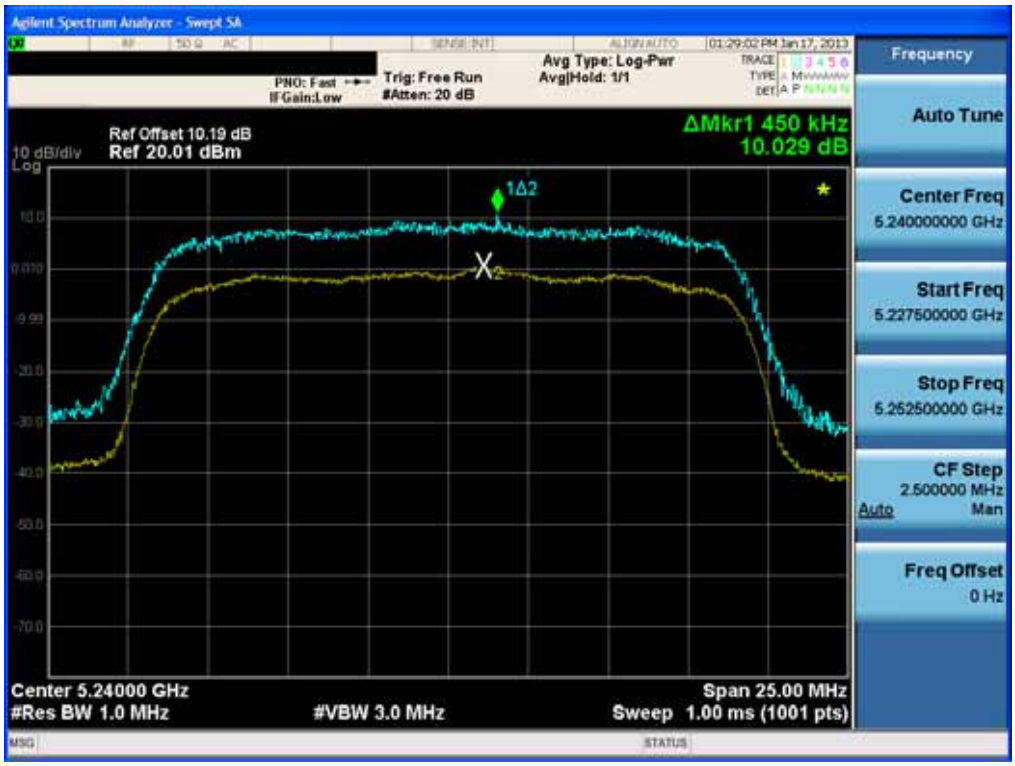
20 MHz BW

Peak Excursion Ratio (802.11n-CH 36)

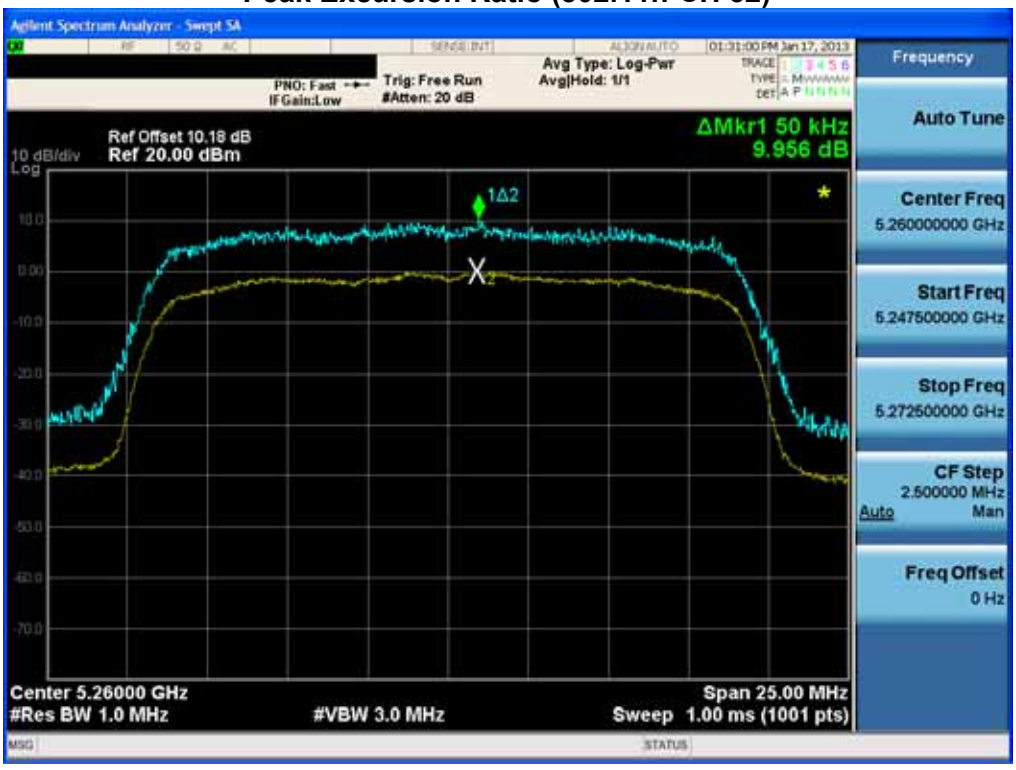


Peak Excursion Ratio (802.11n-CH 40)

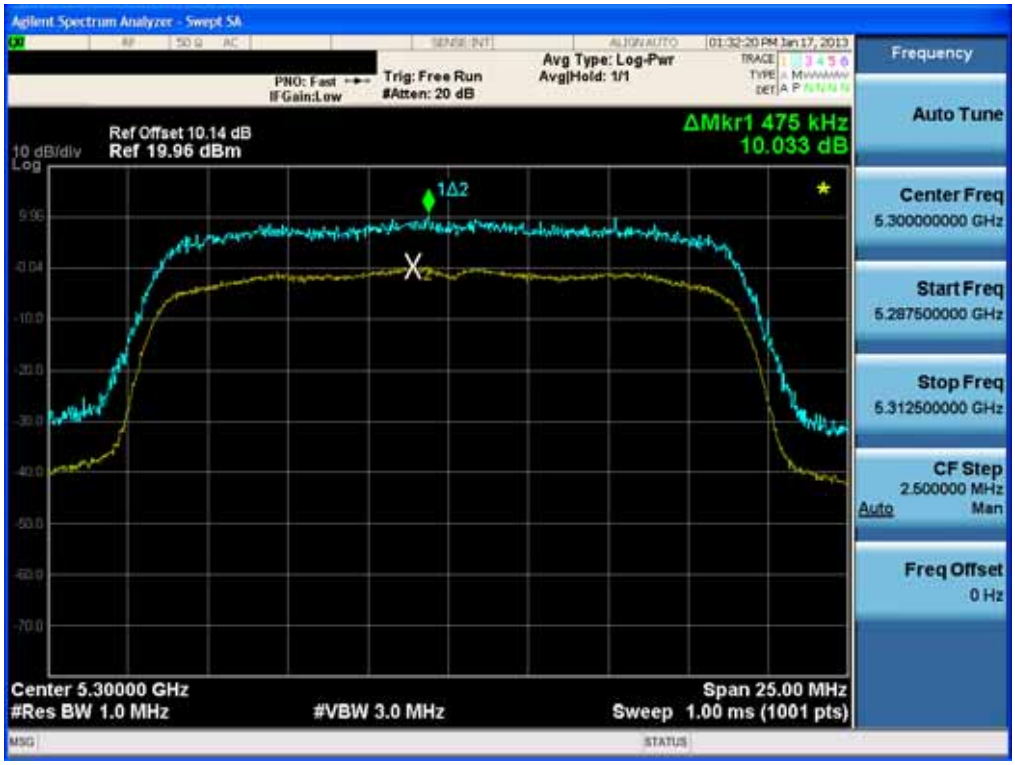
Peak Excursion Ratio (802.11n-CH 48)



Peak Excursion Ratio (802.11n-CH 52)



Peak Excursion Ratio (802.11n-CH 60)



Peak Excursion Ratio (802.11n-CH 64)

Peak Excursion Ratio (802.11n-CH 100)

Peak Excursion Ratio (802.11n-CH 116)

Peak Excursion Ratio (802.11n-CH 140)

40 MHz BW

Peak Excursion Ratio (802.11n-CH 38)

Peak Excursion Ratio (802.11n-CH 46)

Peak Excursion Ratio (802.11n-CH 54)

Peak Excursion Ratio (802.11n-CH 62)

Peak Excursion Ratio (802.11n-CH 102)

Peak Excursion Ratio (802.11n-CH 110)

Peak Excursion Ratio (802.11n-CH 134)

8.5 FREQUENCY STABILITY.

The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 °C and 50 °C. The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

20 MHz BW

OPERATING FREQUENCY: 5,200,000,000 Hz

CHANNEL: 40

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5200 023	22.9
100%		-30	5200 025	24.8
100%		-20	5199 980	-20.3
100%		-10	5199 984	-16.2
100%		0	5200 022	22.0
100%		+10	5200 014	14.3
100%		+30	5200 026	26.3
100%		+40	5200 024	24.0
100%		+50	5199 975	-24.8
115%	4.37	+20	5200 025	25.1
Batt. Endpoint	3.3	+20	5200 022	22.4

OPERATING FREQUENCY: 5,300,000,000 Hz

CHANNEL: 60

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5300 021	21.2
100%		-30	5300 016	16.3
100%		-20	5300 024	24.2
100%		-10	5300 030	30.1
100%		0	5300 030	29.5
100%		+10	5300 033	33.2
100%		+30	5299 983	-16.7
100%		+40	5300 024	23.5
100%		+50	5300 021	21.2
115%	4.37	+20	5300 027	26.5
Batt. Endpoint	3.3	+20	5299 974	-26.1

OPERATING FREQUENCY: 5,580,000,000 Hz

CHANNEL: 116

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5580 023	22.5
100%		-30	5580 021	21.3
100%		-20	5580 022	22.3
100%		-10	5580 026	25.6
100%		0	5580 030	29.8
100%		+10	5580 018	18.2
100%		+30	5580 016	15.6
100%		+40	5580 024	23.5
100%		+50	5579 984	-15.8
115%	4.37	+20	5579 979	-21.2
Batt. Endpoint	3.3	+20	5580 023	23.0

40 MHz BW

OPERATING FREQUENCY: 5,190,000,000 Hz

CHANNEL: 38

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5190 023	22.6
100%		-30	5190 023	23.4
100%		-20	5190 020	19.8
100%		-10	5189 983	-17.2
100%		0	5190 021	21.4
100%		+10	5190 014	13.7
100%		+30	5190 026	25.5
100%		+40	5189 976	-23.7
100%		+50	5190 023	23.4
115%	4.37	+20	5189 976	-24.1
Batt. Endpoint	3.3	+20	5190 021	21.2

OPERATING FREQUENCY: 5,310,000,000 Hz

CHANNEL: 62

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5310 022	22.1
100%		-30	5310 015	15.4
100%		-20	5310 024	23.6
100%		-10	5309 970	-29.8
100%		0	5310 028	27.5
100%		+10	5309 968	-32.3
100%		+30	5309 980	-19.8
100%		+40	5310 023	22.7
100%		+50	5310 021	20.6
115%	4.37	+20	5310 025	25.4
Batt. Endpoint	3.3	+20	5310 025	25.2

OPERATING FREQUENCY: 5,550,000,000 Hz

CHANNEL: 110

REFERENCE VOLTAGE: 3.8 VDC

Voltage (%)	Power (VDC)	Temp. (°C)	Frequency (kHz)	Frequency Error (kHz)
100%	3.8	+20(Ref)	5550 023	22.7
100%		-30	5550 021	21.1
100%		-20	5550 022	22.4
100%		-10	5549 974	-25.6
100%		0	5550 027	27.4
100%		+10	5550 021	21.2
100%		+30	5549 982	-18.5
100%		+40	5550 024	23.8
100%		+50	5549 982	-18.5
115%	4.37	+20	5550 022	22.1
Batt. Endpoint	3.3	+20	5549 977	-22.8

8.6 RADIATED MEASUREMENT.

8.6.1 RADIATED SPURIOUS EMISSIONS.

Test Requirements and limit, §15.205, §15.209, §15.407

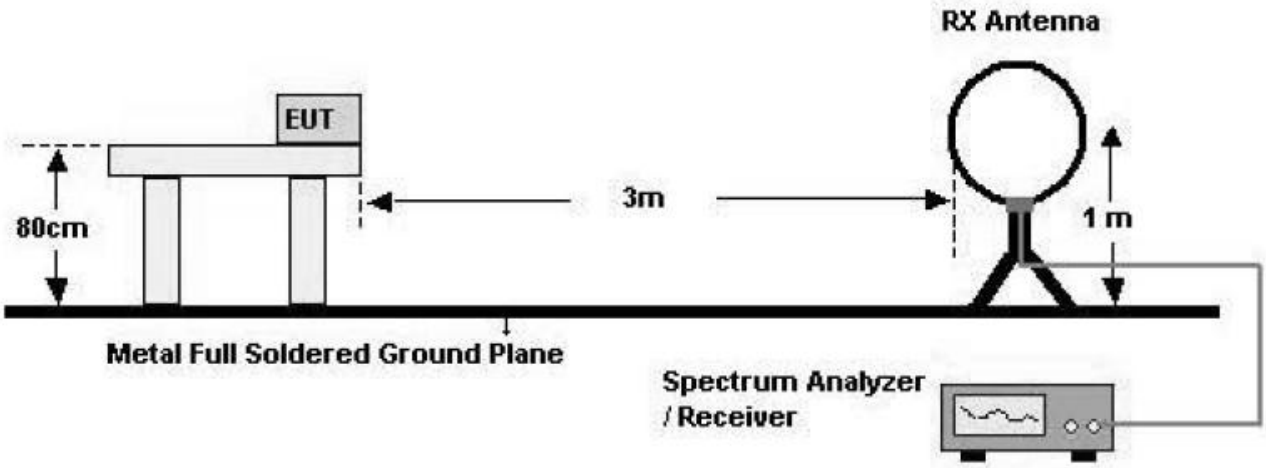
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

▣ §15.407, KDB 789033

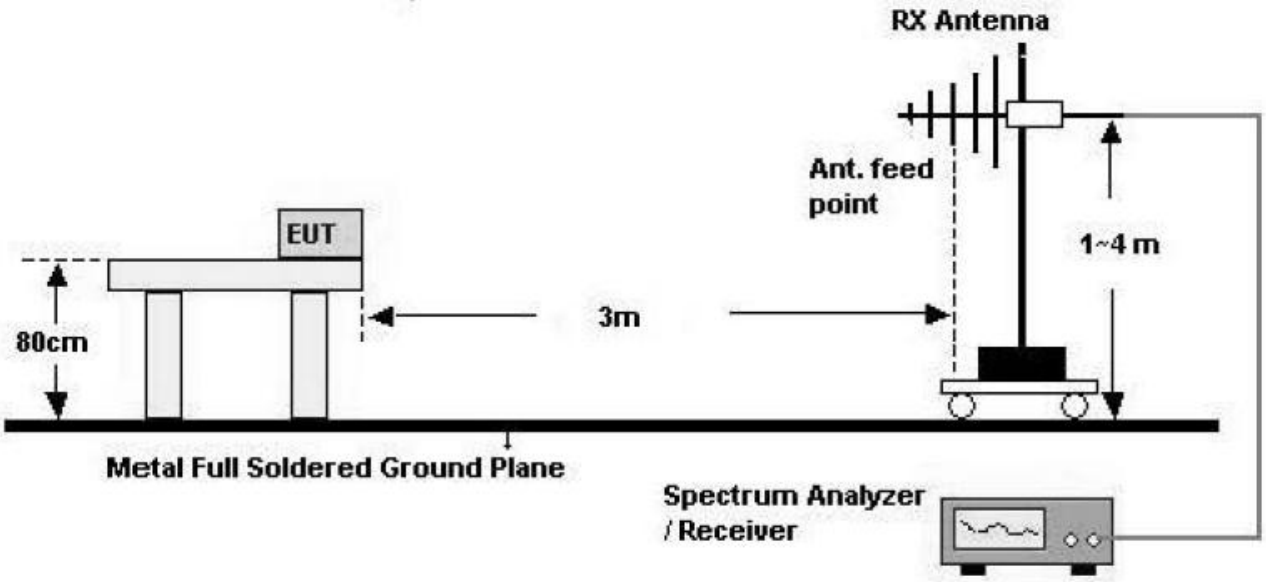
All harmonics that do not lie in a restricted band are subject to a peak limit of -27 dBm/MHz. At a distance of 3 meters the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2 dB to the EIRP limit of -27 dBm/MHz to obtain the limit for out of band spurious emissions of 68.2 dBμV/m.

Test Configuration

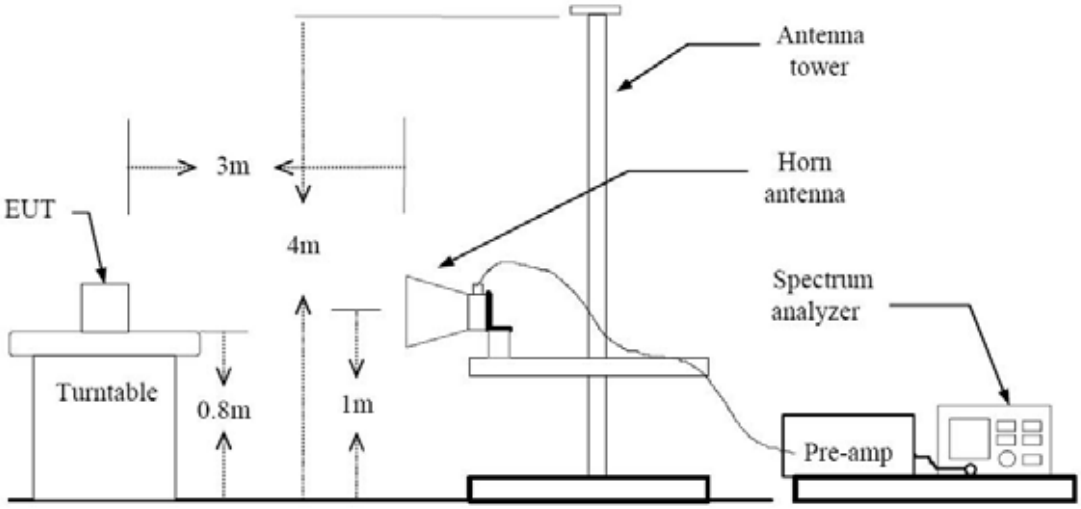
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8 m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3 m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

TEST RESULTS

9 kHz – 30MHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dB㎶	dB /m	dB	(H/V)	dB㎶/m	dB㎶/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 9 kHz to the 30MHz.
2. The reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
3. Distance extrapolation factor = 40 log (specific distance / test distance) (dB)
4. Limit line = specific Limits (dBuV) + Distance extrapolation factor
5. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

TEST RESULTS

Below 1 GHz

Operation Mode: Normal Mode

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
㎒	dB㎶	dB /m	dB	(H/V)	dB㎶/m	dB㎶/m	dB
No Critical peaks found							

Notes:

1. Measuring frequencies from 30 MHz to the 1 GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.
3. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Above 1 GHz

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10360	40.71	9.33	V	50.04	68.2	18.16	PK
10360	27.85	9.33	V	37.18	54.0	16.82	AV
15540	45.40	14.61	V	60.01	74.0	13.99	PK
15540	31.86	14.61	V	46.47	54.0	7.53	AV
10360	40.78	9.33	H	50.11	68.2	18.09	PK
10360	27.41	9.33	H	36.74	54.0	17.26	AV
15540	44.97	14.61	H	59.58	74.0	14.42	PK
15540	31.87	14.61	H	46.48	54.0	7.52	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10400	39.64	10.13	V	49.77	68.2	18.43	PK
10400	26.77	10.13	V	36.90	54.0	17.10	AV
15600	45.17	14.60	V	59.77	74.0	14.23	PK
15600	31.74	14.60	V	46.34	54.0	7.66	AV
10400	40.34	10.13	H	50.47	68.2	17.73	PK
10400	26.92	10.13	H	37.05	54.0	16.95	AV
15600	47.57	14.60	H	62.17	74.0	11.83	PK
15600	32.98	14.60	H	47.58	54.0	6.42	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10480	40.60	10.20	V	50.80	68.2	17.40	PK
10480	27.37	10.20	V	37.57	54.0	16.43	AV
15720	46.87	13.47	V	60.34	74.0	13.66	PK
15720	32.91	13.47	V	46.38	54.0	7.62	AV
10480	40.56	10.20	H	50.76	68.2	17.44	PK
10480	27.23	10.20	H	37.43	54.0	16.57	AV
15720	46.43	13.47	H	59.90	74.0	14.10	PK
15720	32.92	13.47	H	46.39	54.0	7.61	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10380	40.11	9.33	V	49.44	68.2	18.76	PK
10380	26.59	9.33	V	35.92	54.0	18.08	AV
15570	45.08	14.61	V	59.69	74.0	14.31	PK
15570	31.51	14.61	V	46.12	54.0	7.88	AV
10380	40.09	9.33	H	49.42	68.2	18.78	PK
10380	26.53	9.33	H	35.86	54.0	18.14	AV
15570	44.88	14.61	H	59.49	74.0	14.51	PK
15570	31.78	14.61	H	46.39	54.0	7.61	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5230 MHz
Channel No.	46 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10460	40.26	10.13	V	50.39	68.2	17.81	PK
10460	27.25	10.13	V	37.38	54.0	16.62	AV
15690	46.01	14.60	V	60.61	74.0	13.39	PK
15690	32.58	14.60	V	47.18	54.0	6.82	AV
10460	39.98	10.13	H	50.11	68.2	18.09	PK
10460	26.92	10.13	H	37.05	54.0	16.95	AV
15690	45.73	14.60	H	60.33	74.0	13.67	PK
15690	32.58	14.60	H	47.18	54.0	6.82	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10520	41.13	10.38	V	51.51	68.2	16.69	PK
10520	27.58	10.38	V	37.96	54.0	16.04	AV
15780	45.91	14.38	V	60.29	74.0	13.71	PK
15780	32.77	14.38	V	47.15	54.0	6.85	AV
10520	40.62	10.38	H	51.00	68.2	17.20	PK
10520	27.21	10.38	H	37.59	54.0	16.41	AV
15780	46.23	14.38	H	60.61	74.0	13.39	PK
15780	32.76	14.38	H	47.14	54.0	6.86	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5300 MHz
Channel No.	60 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10600	40.67	10.39	V	51.06	68.2	17.14	PK
10600	27.10	10.39	V	37.49	54.0	16.51	AV
15900	44.19	14.00	V	58.19	74.0	15.81	PK
15900	31.26	14.00	V	45.26	54.0	8.74	AV
10600	40.11	10.39	H	50.50	68.2	17.70	PK
10600	26.58	10.39	H	36.97	54.0	17.03	AV
15900	44.43	14.00	H	58.43	74.0	15.57	PK
15900	31.22	14.00	H	45.22	54.0	8.78	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10640	40.53	10.50	V	51.03	74	22.97	PK
10640	27.35	10.50	V	37.85	54	16.15	AV
15960	44.53	14.27	V	58.80	74	15.20	PK
15960	31.03	14.27	V	45.30	54	8.70	AV
10640	40.04	10.50	H	50.54	74	23.46	PK
10640	26.84	10.50	H	37.34	54	16.66	AV
15960	44.45	14.27	H	58.72	74	15.28	PK
15960	30.87	14.27	H	45.14	54	8.86	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5270 MHz
Channel No.	54 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10540	40.60	10.55	V	51.15	68.2	17.05	PK
10540	27.23	10.55	V	37.78	54.0	16.22	AV
15810	46.32	14.26	V	60.58	74.0	13.42	PK
15810	32.16	14.26	V	46.42	54.0	7.58	AV
10540	41.07	10.55	H	51.62	68.2	16.58	PK
10540	27.22	10.55	H	37.77	54.0	16.23	AV
15810	45.59	14.26	H	59.85	74.0	14.15	PK
15810	32.19	14.26	H	46.45	54.0	7.55	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
10620	39.85	10.25	V	50.10	74	23.90	PK
10620	26.38	10.25	V	36.63	54	17.37	AV
15930	44.47	13.62	V	58.09	74	15.91	PK
15930	30.81	13.62	V	44.43	54	9.57	AV
10620	39.41	10.25	H	49.66	74	24.34	PK
10620	26.22	10.25	H	36.47	54	17.53	AV
15930	43.84	13.62	H	57.46	74	16.54	PK
15930	30.82	13.62	H	44.44	54	9.56	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11000	40.05	11.28	V	51.33	74.0	22.67	PK
11000	26.70	11.28	V	37.98	54.0	16.02	AV
16500	45.61	14.19	V	59.80	68.2	8.40	PK
16500	32.31	14.19	V	46.50	54.0	7.50	AV
11000	40.17	11.28	H	51.45	74.0	22.55	PK
11000	26.54	11.28	H	37.82	54.0	16.18	AV
16500	45.75	14.19	H	59.94	68.2	8.26	PK
16500	32.31	14.19	H	46.50	54.0	7.50	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5580 MHz
Channel No.	116 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11160	39.55	11.10	V	50.65	74.0	23.35	PK
11160	26.33	11.10	V	37.43	54.0	16.57	AV
16740	46.41	15.70	V	62.11	68.2	6.09	PK
16740	32.26	15.70	V	47.96	54.0	6.04	AV
11160	38.81	11.10	H	49.91	74.0	24.09	PK
11160	25.49	11.10	H	36.59	54.0	17.41	AV
16740	45.80	15.70	H	61.50	68.2	6.70	PK
16740	32.12	15.70	H	47.82	54.0	6.18	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5700 MHz
Channel No.	140 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11400	39.17	10.97	V	50.14	74.0	23.86	PK
11400	26.72	10.97	V	37.69	54.0	16.31	AV
17100	45.22	17.82	V	63.04	68.2	5.16	PK
17100	32.07	17.82	V	49.89	54.0	4.11	AV
11400	39.20	10.97	H	50.17	74.0	23.83	PK
11400	25.22	10.97	H	36.19	54.0	17.81	AV
17100	45.41	17.82	H	63.23	68.2	4.97	PK
17100	31.96	17.82	H	49.78	54.0	4.22	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11020	38.92	11.28	V	50.20	74.0	23.80	PK
11020	25.72	11.28	V	37.00	54.0	17.00	AV
16530	44.99	8.83	V	53.82	68.2	14.38	PK
16530	31.85	8.83	V	40.68	54.0	13.32	AV
11020	38.47	11.28	H	49.75	74.0	24.25	PK
11020	25.71	11.28	H	36.99	54.0	17.01	AV
16530	44.91	8.83	H	53.74	68.2	14.46	PK
16530	31.89	8.83	H	40.72	54.0	13.28	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5550 MHz
Channel No.	110 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11100	38.82	11.56	V	50.38	74	23.62	PK
11100	25.35	11.56	V	36.91	54	17.09	AV
16650	45.37	14.98	V	60.35	74	13.65	PK
16650	31.75	14.98	V	46.73	54	7.27	AV
11100	38.35	11.56	H	49.91	74	24.09	PK
11100	25.24	11.56	H	36.80	54	17.20	AV
16650	45.62	14.98	H	60.60	74	13.40	PK
16650	31.76	14.98	H	46.74	54	7.26	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5670 MHz
Channel No.	134 Ch

Frequency [MHz]	Reading dBuV	AN.+CL-Amp G. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
11340	38.99	10.86	V	49.85	74	24.15	PK
11340	25.36	10.86	V	36.22	54	17.78	AV
17010	45.17	18.15	V	63.32	74	10.68	PK
17010	31.50	18.15	V	49.65	54	4.35	AV
11340	39.81	10.86	H	50.67	74	23.33	PK
11340	25.35	10.86	H	36.21	54	17.79	AV
17010	45.64	18.15	H	63.79	74	10.21	PK
17010	31.49	18.15	H	49.64	54	4.36	AV

Notes:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain
5. Spectrum setting:

   - Peak (Page 12 in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 3 MHz

   Detector = Peak

   Sweep Time = auto

   Trace mode = max hold

   - Average (Method VB in KDB 789033, issued 09/26/2012)

   RBW = 1 MHz

   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

   Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

6. We have done 802.11a, 802.11n test. Worst case is 6 Mbps in 802.11a.
7. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

8.6.2 RADIATED RESTRICTED BAND EDGE MEASUREMENTS

Test Requirements and limit, §15.247(d) §15.205, §15.209

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in section 15.209(a) (See section 15.205(c)).

Band :	UNII 1
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	55.11	3.63	H	58.74	74	15.26	PK
5150	39.49	3.63	H	43.12	54	10.88	AV
5150	53.96	3.63	V	57.59	74	16.41	PK
5150	39.36	3.63	V	42.99	54	11.01	AV

Band :	UNII 2
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	53.62	4.45	H	58.07	74	15.93	PK
5350	38.26	4.45	H	42.71	54	11.29	AV

Band :	UNII 3
Operation Mode:	802.11 a
Transfer Rate:	6 Mbps
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading DBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	50.97	5.54	H	56.51	68.2	11.69	PK
5460	37.26	5.54	H	42.80	54.0	11.20	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. Spectrum setting:

- Peak (Page 12 in KDB 789033, issued 09/26/2012)

RBW = 1 MHz

VBW = 3 MHz

Detector = Peak

Sweep Time = auto

Trace mode = max hold

- Average (Method VB in KDB 789033, issued 09/26/2012)

RBW = 1 MHz

VBW = 10 Hz.(Duty Cycle ≥ 98 percent)

Detector = Peak

Sweep Time = auto

Trace Mode = max hold

Trace = 50 traces

3. We have done 802.11a/n mode test. . Worst case of EUT is 6 Mbps in 802.11a.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

Band :	UNII 1
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5190 MHz
Channel No.	38 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5150	62.09	3.63	H	65.72	74	8.28	PK
5150	42.67	3.63	H	46.30	54	7.70	AV
5150	56.70	3.63	V	60.33	74	13.67	PK
5150	40.32	3.63	V	43.95	54	10.05	AV

Band :	UNII 2
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5310 MHz
Channel No.	62 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5350	65.43	4.45	H	69.88	74	4.12	PK
5350	43.17	4.45	H	47.62	54	6.38	AV
5350	61.05	4.45	V	65.50	74	8.50	PK
5350	40.35	4.45	V	44.80	54	9.20	AV

Band :	UNII 3
Operation Mode:	802.11n_40 MHz BW
Transfer Rate:	13.5 Mbps
Operating Frequency	5510 MHz
Channel No.	102 Ch

Frequency [MHz]	Reading dBuV	AN.+CL+AMP+ATT. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Detect
5460	55.22	5.54	H	60.76	68.2	7.44	PK
5460	39.03	5.54	H	44.57	54.0	9.43	AV
5460	51.59	5.54	V	57.13	68.2	11.07	PK
5460	37.91	5.54	V	43.45	54.0	10.55	AV

Notes:

1. Total = Reading Value + Antenna Factor + Cable Loss - Amp Gain + ATT
2. Spectrum setting:
   - Peak (Page 12 in KDB 789033, issued 09/26/2012)
   RBW = 1 MHz
   VBW = 3 MHz
   Detector = Peak
   Sweep Time = auto
   Trace mode = max hold
   - Average (Method VB in KDB 789033, issued 09/26/2012)
   RBW = 1 MHz
   VBW = 10 Hz.(Duty Cycle ≥ 98 percent)
   Detector = Peak
   Sweep Time = auto
   Trace Mode = max hold
   Trace = 50 traces
3. We have done 802.11a/n mode test. . Worst case of EUT is 6 Mbps in 802.11a.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.

8.7 POWERLINE CONDUCTED EMISSIONS

Test Requirements and limit, §15.207

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT is placed on a wooden table 80 cm above the reference groundplane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors – Quasi Peak and Average Detector.
5. We are performed the AC Power Line Conducted Emission test for 6 Mbps, Ch.64 and 802.11a mode in UNII 2. Because 802.11a mode in UNII 2 is worst case.

▣ RESULT PLOTS

Conducted Emissions (Line 1)

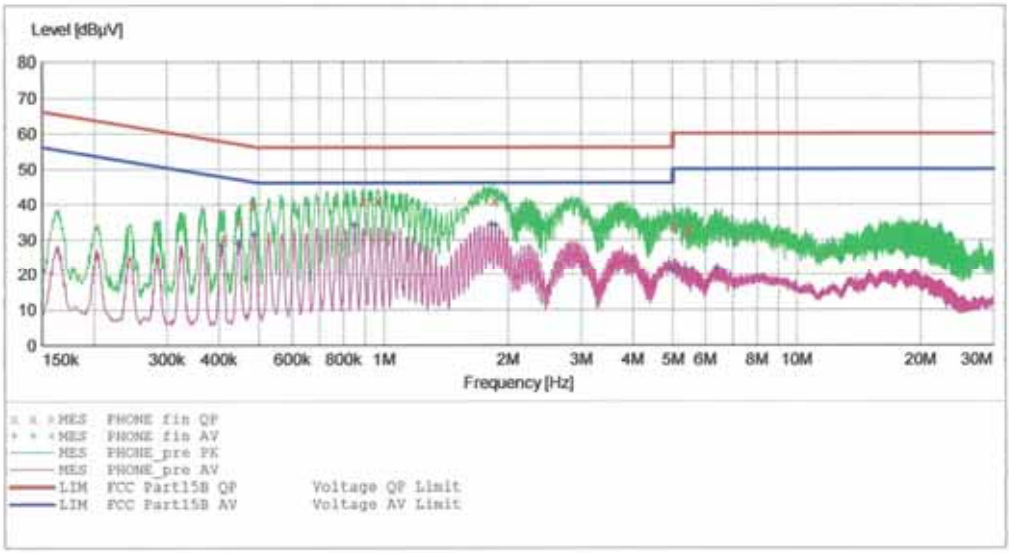
HCT

EMC

```
EUT:                    US780
Manufacturer:           LG
Operating Condition:    WLAN MODE(UNII)
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART 15 B
Comment:                H
```

SCAN TABLE: "FCC PART 15 B(H)"

```
  Short Description:                FCC PART 15 CLASS B
  Start       Stop        Step      Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width               Time      Bandw.
  150.0 kHz   500.0 kHz   1.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  500.0 kHz   5.0 MHz     4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
  5.0 MHz     30.0 MHz    4.0 kHz   MaxPeak   10.0 ms   9 kHz    None
                                    Average
```



MEASUREMENT RESULT: "PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.412010	30.50	9.8	58	27.1	---	---
0.450010	35.20	9.8	57	21.7	---	---
0.482010	39.80	9.8	56	16.6	---	---
0.896000	40.70	9.8	56	15.3	---	---
0.968000	41.00	9.8	56	15.0	---	---
1.852000	40.90	9.9	56	15.1	---	---
5.032000	33.60	10.2	60	26.4	---	---
5.420000	31.90	10.2	60	28.1	---	---
5.476000	33.00	10.2	60	27.0	---	---

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MEASUREMENT RESULT: "PHONE_fin AV"

1/21/2013 9:20AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.406010	28.30	9.8	48	19.4	---	---
0.445010	28.90	9.8	47	18.0	---	---
0.487010	31.50	9.8	46	14.7	---	---
0.852000	34.00	9.8	46	12.0	---	---
1.824000	34.20	9.9	46	11.8	---	---
1.868000	33.90	9.9	46	12.1	---	---
5.000000	21.40	10.2	46	24.6	---	---
5.356000	21.40	10.2	50	28.6	---	---
6.404000	21.50	10.3	50	28.5	---	---

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Conducted Emissions (Line 2)

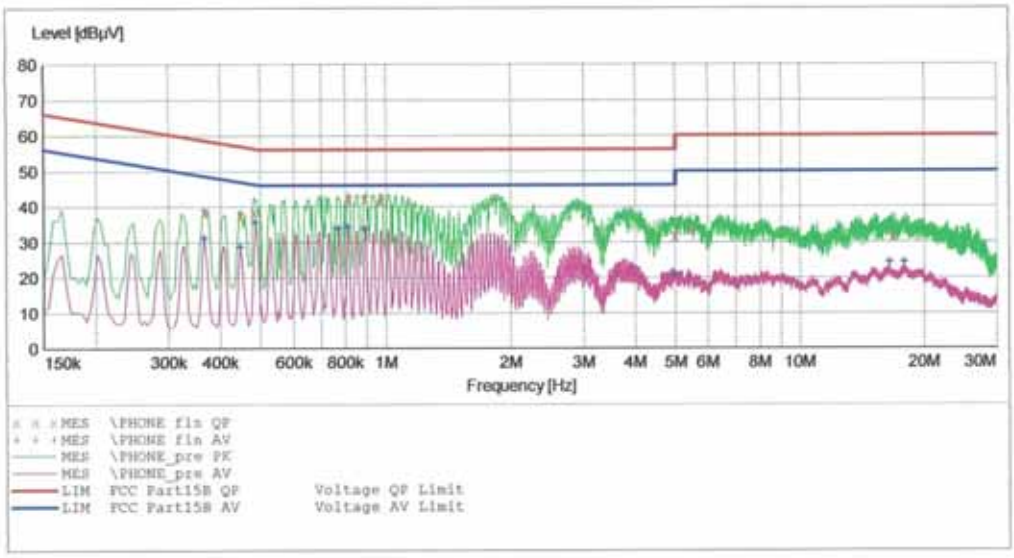
HCT

EMC

```
EUT:                    US780
Manufacturer:           LG
Operating Condition:    WLAN MODE(UNII)
Test Site:              SHIELD ROOM
Operator:               JS LEE
Test Specification:     FCC PART 15 CLASS B
Comment:                N
```

SCAN TABLE: "FCC PART 15 B(N)"

```
Short Description:                  FCC PART 15 CLASS B
Start       Stop        Step        Detector   Meas.     IF       Transducer
Frequency   Frequency   Width                  Time      Bandw.
150.0 kHz   500.0 kHz   4.0 kHz     MaxPeak    10.0 ms   9 kHz    None
                                    Average
500.0 kHz   5.0 MHz     4.0 kHz     MaxPeak    10.0 ms   9 kHz    None
                                    Average
5.0 MHz     30.0 MHz    4.0 kHz     MaxPeak    10.0 ms   9 kHz    None
                                    Average
```



MEASUREMENT RESULT: "\PHONE_fin QP"

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Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.366010	38.50	10.0	59	20.1	---	---
0.446010	37.80	10.0	57	19.2	---	---
0.482010	38.30	10.0	56	18.0	---	---
0.816000	42.10	10.0	56	13.9	---	---
0.892000	42.10	10.0	56	13.9	---	---
0.980000	41.70	10.0	56	14.3	---	---
5.000000	31.70	10.4	56	24.3	---	---
5.448000	33.40	10.4	60	26.6	---	---
16.772000	31.30	11.5	60	28.7	---	---

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MEASUREMENT RESULT: "\PHONE_fin AV"

1/21/2013 9:25AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Line	PE
0.366010	31.20	10.0	49	17.4	---	---
0.446010	28.70	10.0	47	18.3	---	---
0.486010	35.60	10.0	46	10.6	---	---
0.772000	33.80	10.0	46	12.2	---	---
0.812000	34.00	10.0	46	12.0	---	---
0.892000	33.60	10.0	46	12.4	---	---
5.000000	20.90	10.4	46	25.1	---	---
16.468000	24.10	11.5	50	25.9	---	---
17.860000	24.10	11.7	50	25.9	---	---

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9. LIST OF TEST EQUIPMENT

Manufacturer	Model / Equipment	Calibration Interval	Calibration Due	Serial No.
Rohde & Schwarz	ENV216/ LISN	Annual	02/09/2013	100073
Schwarzbeck	VULB 9168/ TRILOG Antenna	Biennial	02/09/2013	200
Rohde & Schwarz	ESI 40 / EMI TEST RECEIVER	Annual	05/03/2013	831564103
Agilent	E4440A/ Spectrum Analyzer	Annual	05/02/2013	US45303008
Agilent	N9020A/ SIGNAL ANALYZER	Annual	07/31/2013	MY51110020
HD	MA240/ Antenna Position Tower	N/A	N/A	556
EMCO	1050/ Turn Table	N/A	N/A	114
HD GmbH	HD 100/ Controller	N/A	N/A	13
HD GmbH	KMS 560/ SlideBar	N/A	N/A	12
Rohde & Schwarz	SCU-18/ Signal Conditioning Unit	Annual	09/11/2013	10094
MITEQ	AMF-6B-180265-35-10P / POWER AMP	Annual	04/16/2013	667624
CERNEX	CBL26405040 / POWER AMP	Annual	04/16/2013	19660
Schwarzbeck	BBHA 9120D/ Horn Antenna	Biennial	10/17/2013	937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	Biennial	10/30/2014	BBHA9170124
Rohde & Schwarz	FSP / Spectrum Analyzer	Annual	02/09/2013	839117/011
Agilent	E4416A /Power Meter	Annual	11/07/2013	GB41291412
Agilent	E9327A /POWER SENSOR	Annual	05/02/2013	MY4442009
Wainwright Instrument	WHF3.3/18G-10EF / High Pass Filter	Annual	05/02/2013	1
Wainwright Instrument	WHNX6.0/26.5G-6SS / High Pass Filter	Annual	05/02/2013	1
Wainwright Instrument	WHNX7.0/18G-8SS / High Pass Filter	Annual	05/02/2013	29
Wainwright Instrument	WRCJ2400/2483.5-2370/2520-60/14SS / Band Reject Filter	Annual	05/02/2013	1
Hewlett Packard	11636B/Power Divider	Annual	11/07/2013	11377
Hewlett Packard	11667B / Power Splitter	Annual	06/05/2013	05001
DIGITAL	EP-3010 /DC POWER SUPPLY	Annual	11/07/2013	3110117
ITECH	IT6720 / DC POWER SUPPLY	Annual	11/07/2013	010002156287001199
TESCOM	TC-3000C / BLUETOOTH TESTER	Annual	11/07/2013	3000C000276
Rohde & Schwarz	CBT / BLUETOOTH TESTER	Annual	05/02/2013	100422
EMCO	6502.LOOP ANTENNA	Biennial	01/11/2014	9009-2536
MITEQ	AMF-6D-001180-35-20P/ POWER AMP	Annual	07/30/2013	990893
Agilent	8493C / Attenuator(10 dB)	Annual	07/30/2013	76649
WEINSCHEL	2-3 / Attenuator(3 dB)	Annual	11/07/2013	BR0617
CERNEX	CBLU1183540 / POWER AMP	Annual	07/27/2013	21691