CTK Co., Ltd.
386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970 Fax: +82-31-339-9855
www.e-ctk.com

TEST REPORT For FCC

Test Report No.	:	CTK-2012-01203
Date of Issue	:	2012-11-19
FCC ID	:	FFMHG10ZZ0ENCXLUS
Model/Type No.	:	HG10ZZ0.ENCXLUS
Kind of Product	:	Smart Gateway
Applicant	:	LG Electronics, Inc.
Applicant Address	:	327-23, BdMS R&D Team, LG Electronics Gasan R&D Campus, Gasan-Dong, Geumcheon-Gu, Seoul 153-802 Korea
Manufacturer	:	Clipcomm, Inc.
Manufacturer Address	:	4th Fl. Bldg. 249-11, Nonhyeon-dong, Gangnam-gu, Seoul 135-832, Korea
Contact Person	:	GeunChang, Do / Senior researcher
Telephone	:	+82-02-6915-1001
Received Date	:	2012-11-05
Test period	:	Start : 2012-11-07 End : 2012-11-16

The test results presented in this report relate only to the object tested.

Tested by

Won-Jae, Hwang
Test Engineer
Date: 2012-11-19

Reviewed by

Young-Joon, Park
Technical Manager
Date: 2012-11-19

REPORT REVISION HISTORY

Date	Revision	Page No
2012-11-19	Issued (CTK-2012-01203)	All

TABLE OF CONTENTS

1.0 General Product Description

Equipment model name	HG10ZZ0.ENCXLUS
Serial number	Prototype
EUT condition	Pre-production, not damaged
Frequency Range	802.11b/g/n(20 MHz) : 2412 MHz - 2462 MHz 802.11n(40 MHz) : 2422 MHz - 2452 MHz
RF output power	802.11b : 14.73 dBm 802.11g : 13.26 dBm 802.11n(20 MHz) : 13.72 dBm 802.11n(40 MHz) : 13.03 dBm
Number of channels	802.11b/g/n(20 MHz) : 11 802.11n(40 MHz) : 7
Transfer Rate	802.11b : 11 / 5.5 / 2 / 1 Mbps 802.11g : 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps 802.11n : up to 300 Mbps
Type of Modulation	802.11b : DSSS 802.11g/n : OFDM
Duty cycle TX power	1.0
Power Source	120 Vac
Antenna Type	Chip antenna Gain : 2.1 dBi

1.1 Tested Frequency

802.11b, 802.11g, 802.11n (20MHz)

	LOW	MID	HIGH
Frequency (MHz)	2412	2437	2462

802.11n (40MHz)

	LOW	MID	HIGH
Frequency (MHz)	2422	2437	2452

1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	DELL INC.	Inspiron 6400	-
Switching Adapter2	DDongguang Lite Power 2nd Plant	LA65NS0-00	-

1.4 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.5 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.6 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	**FCC**	3 m & 10 m OATS, 3 m & 10 m SAC and Conducted Test Site to perform FCC Part 15/18 measurements	805871
JAPAN	**VCCI**	10 m OATS, 3 m & 10 m SAC and Conducted Test Site	R-948, C-986, T-1843
KOREA	**KCC**	EMI (10 m OATS, 10 m SAC and Conducted Test Site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and Interruptions)	No. 51, KR0025
International	**KOLAS**	EMC	

2 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500 kHz	Conducted	C
15.247(b)	Maximum Output Power	< 1 Watt		C
15.247(d)	Conducted Spurious emission	> 20 dBc		C
15.247(d)	Band Edge	> 20 dBc		C
15.247(e)	Transmitter Power Spectral Density	< 8 dBm @ 3 kHz		C
				C
15.209	Field Strength of Harmonics	15.209(a)	Radiated	C
15.207	AC Conducted Emissions	15.207(a)	Line Conducted	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:
- FCC Part 15.247, ANSI C63.4-2003

The tests were performed according to the method of measurements prescribed in KDB No.558074

2.1 Technical Characteristic Test

2.1.1 6dB Bandwidth

Procedure:

The bandwidth at 6dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz

VBW = 100 kHz (VBW ≥ RBW)

Trace = max hold

Span = 40 MHz

Sweep = auto

Detector function = peak

Measurement Data:

Test mode : 802.11b

Mode	Frequency (MHz)	Channel No.	Test Results		
			6dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Result
802.11b	2412	1	7.56	10.47	Complies
	2437	6	7.64	10.61	Complies
	2462	11	8.28	10.68	Complies

Test mode : 802.11g

Mode	Frequency (MHz)	Channel No.	Test Results		
			6dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Result
802.11g	2412	1	15.05	16.22	Complies
	2437	6	15.09	16.30	Complies
	2462	11	15.07	16.24	Complies

Test mode : 802.11n (20 MHz)

Mode	Frequency (MHz)	Channel No.	Test Results		
			6dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Result
802.11n (20 MHz)	2412	1	15.05	17.34	Complies
	2437	6	15.09	17.47	Complies
	2462	11	15.07	17.38	Complies

Test mode : 802.11n (40 MHz)

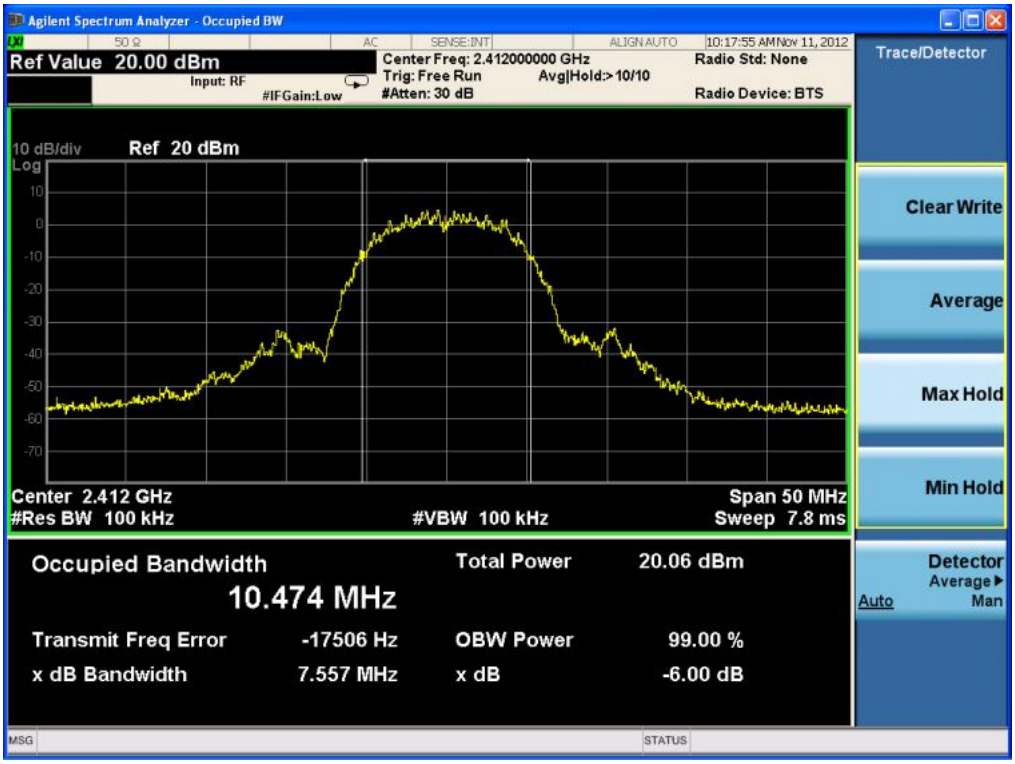
Mode	Frequency (MHz)	Channel No.	Test Results		
			6dB Bandwidth (MHz)	Occupied Bandwidth (MHz)	Result
802.11n (40 MHz)	2422	3	36.38	36.48	Complies
	2437	6	35.12	36.35	Complies
	2452	9	30.11	36.12	Complies

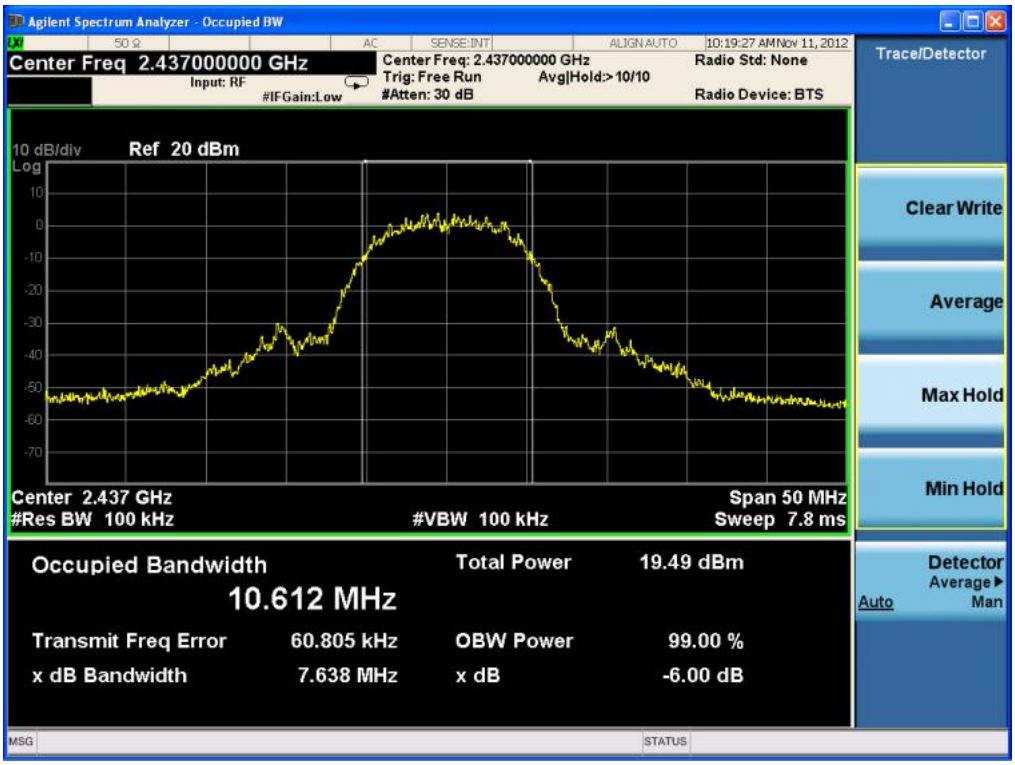
Minimum Standard:

6 dB Bandwidth > 500kHz

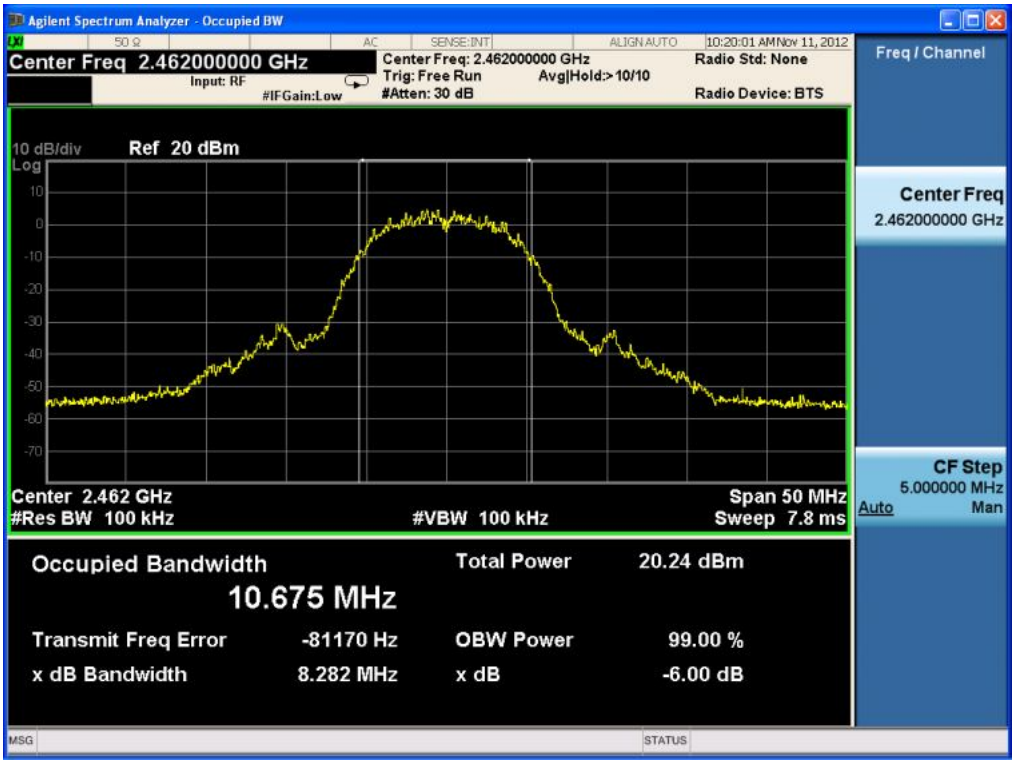
See next pages for actual measured spectrum plots.

802.11b

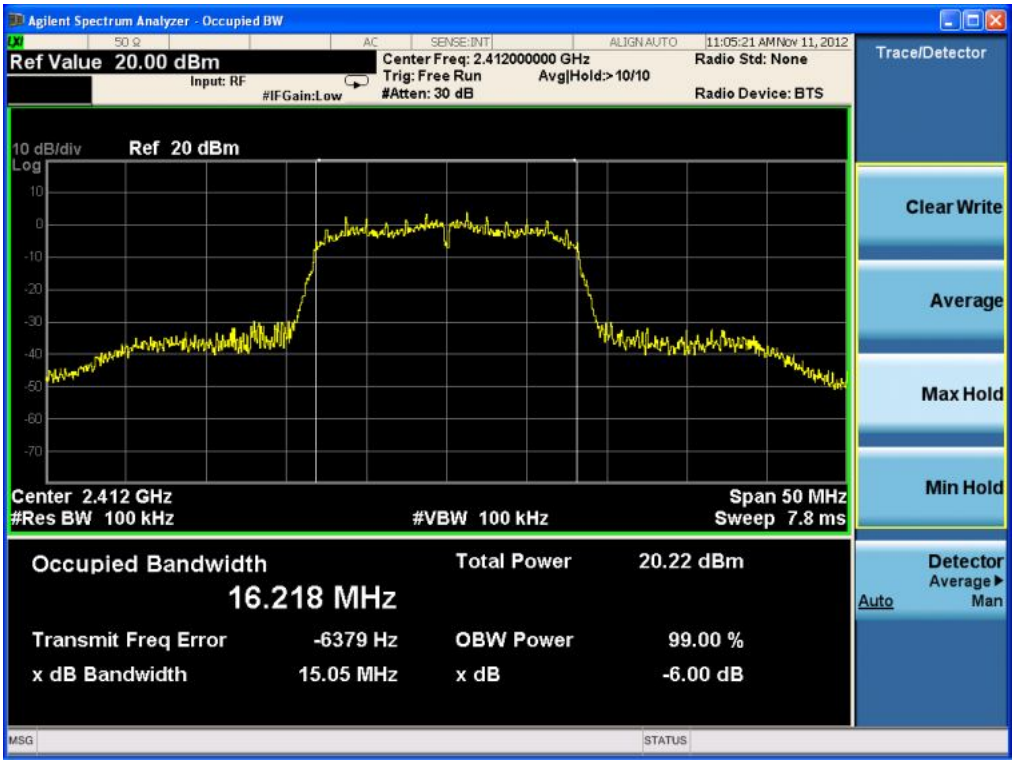


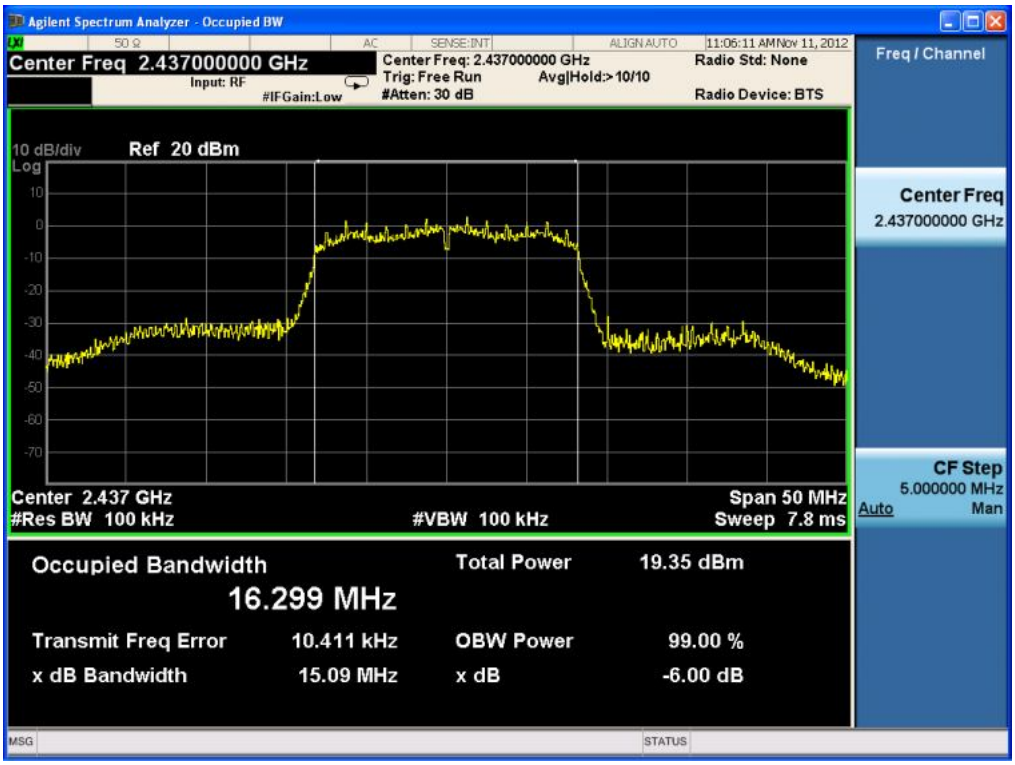


802.11b

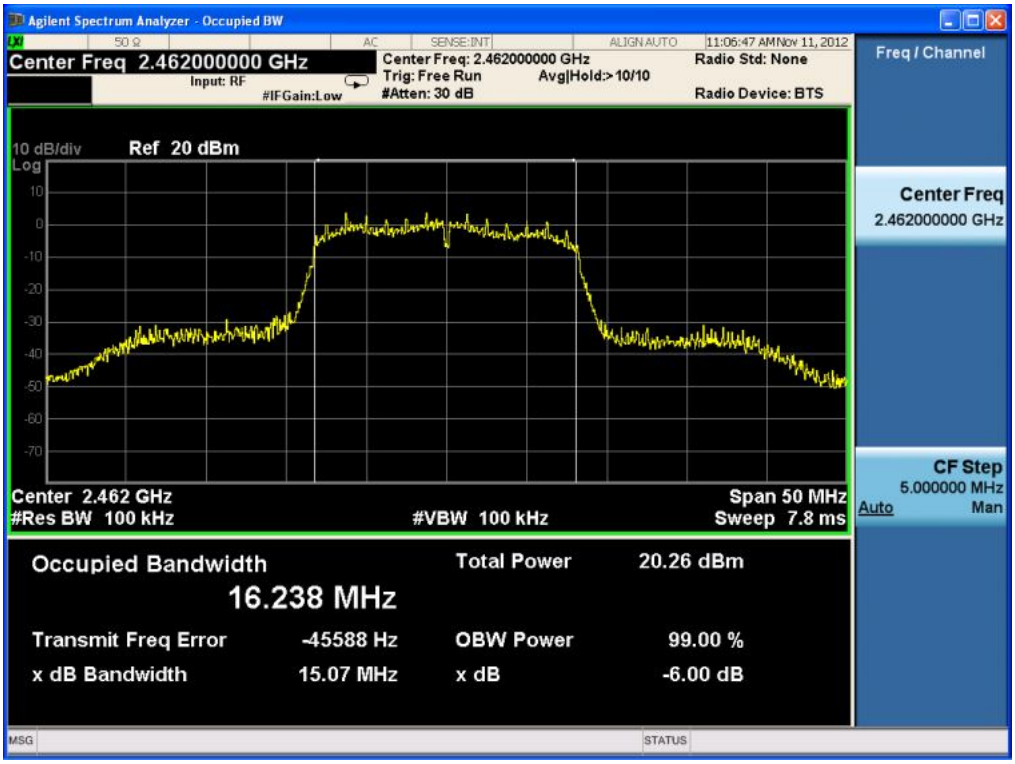


802.11g

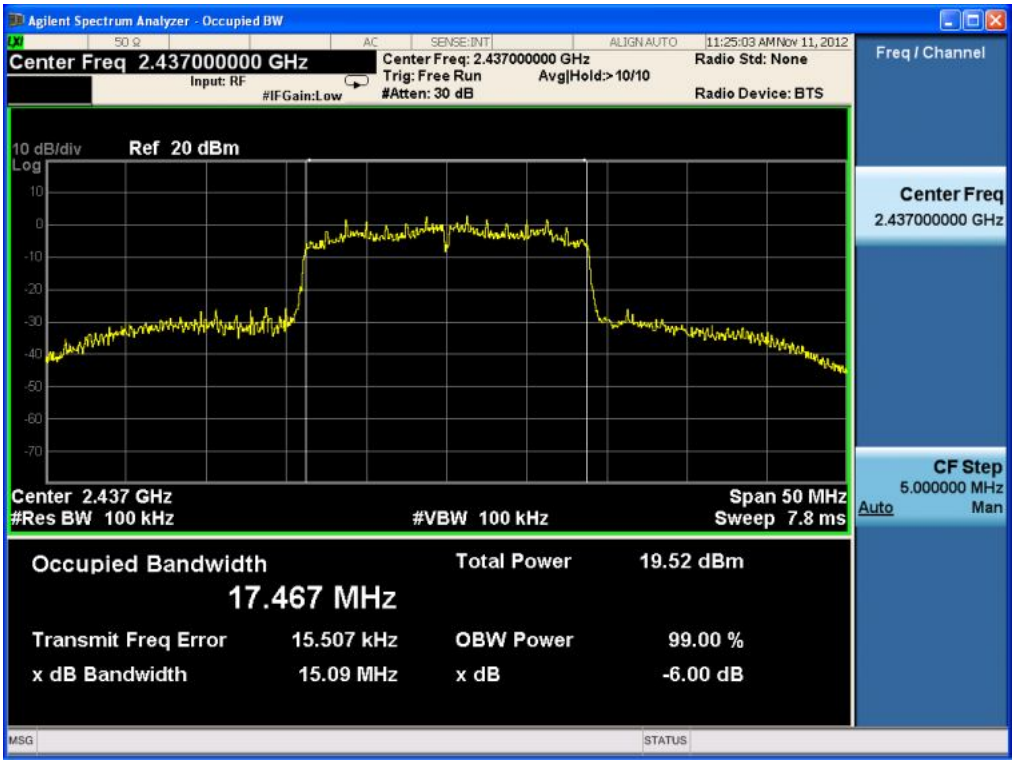




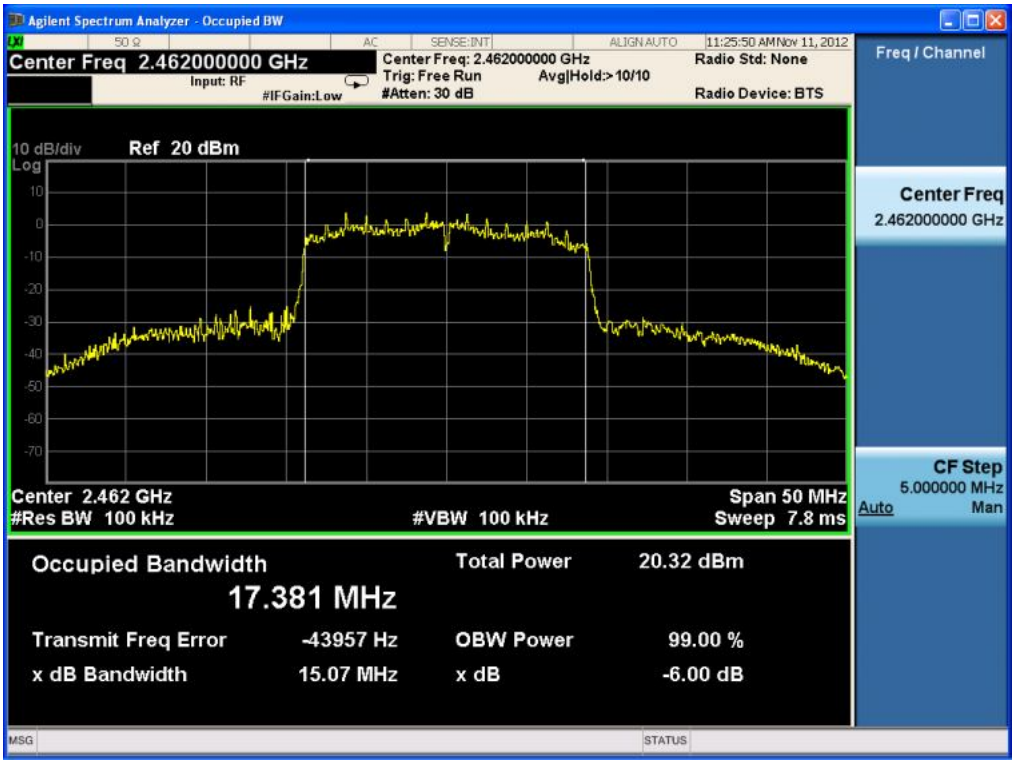
802.11g



802.11n (20 MHz)

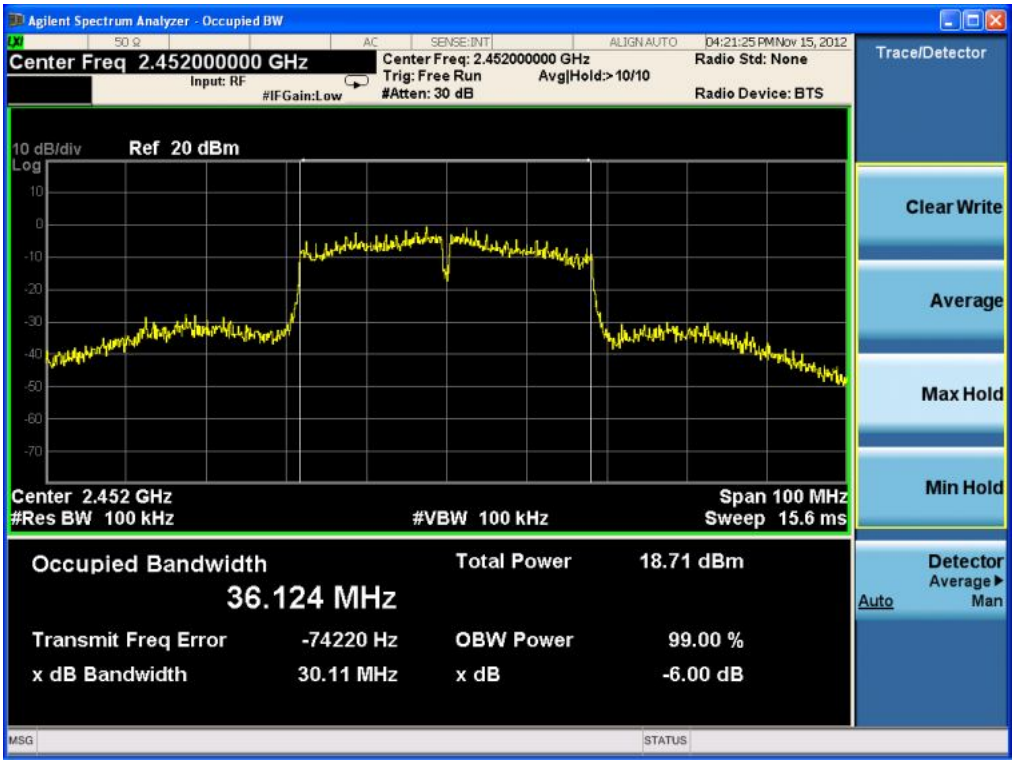


802.11n (20 MHz)



802.11n (40 MHz)

802.11n (40 MHz)



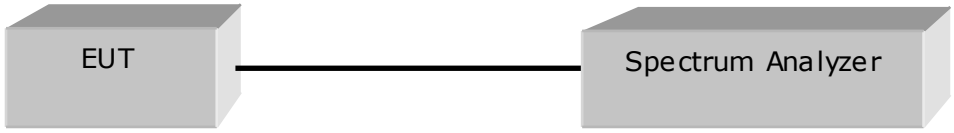
2.1.2 Maximum peak Conducted Output Power

Test Location

RF Test Room

Test Procedures

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.



Limit

< 1 W

Test Results

Cable loss : 2.3 dB

Test mode : 802.11b - 1 Mbps

Frequency (MHz)	Channel No.	Mesurement data (dBm)	Total Power (dBm)	Limit	Result
2412	1	12.43	14.73	30dBm	Complies
2437	6	11.67	13.97		Complies
2462	11	12.40	14.70		Complies

Remark.
The 802.11b data rate were set in 1 Mbps, due to the highest RF output power.

Test mode : 802.11g - 6 Mbps

Frequency (MHz)	Channel No.	Mesurement data (dBm)	Total Power (dBm)	Limit	Result
2412	1	10.90	13.20	30dBm	Complies
2437	6	10.09	12.39		Complies
2462	11	10.96	13.26		Complies

Remark.
The 802.11g data rate were set in 6 Mbps, due to the highest RF output power.

Test mode : 802.11n (20 MHz) – MCS0

Frequency (MHz)	Channel No.	Mesurement data (dBm)	Total Power (dBm)	Limit	Result
2412	1	11.42	13.72	30dBm	Complies
2437	6	10.71	13.01		Complies
2462	11	11.40	13.70		Complies

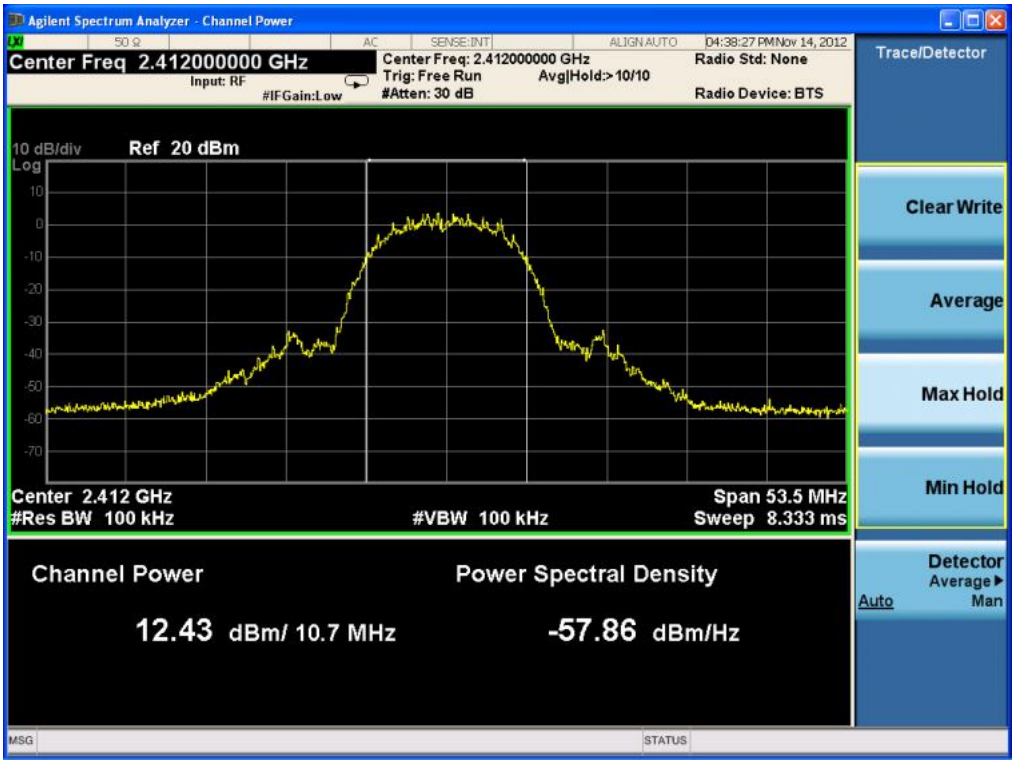
Remark.
The 802.11n(20 MHz) data rate were set in MCS0, due to the highest RF output power.

Test mode : 802.11n (40 MHz) – MCS0

Frequency (MHz)	Channel No.	Mesurement data (dBm)	Total Power (dBm)	Limit	Result
2422	3	10.56	12.86	30dBm	Complies
2437	6	10.59	12.89		Complies
2452	9	10.73	13.03		Complies

Remark.
The 802.11n(40 MHz) data rate were set in MCS0, due to the highest RF output power.

802.11b

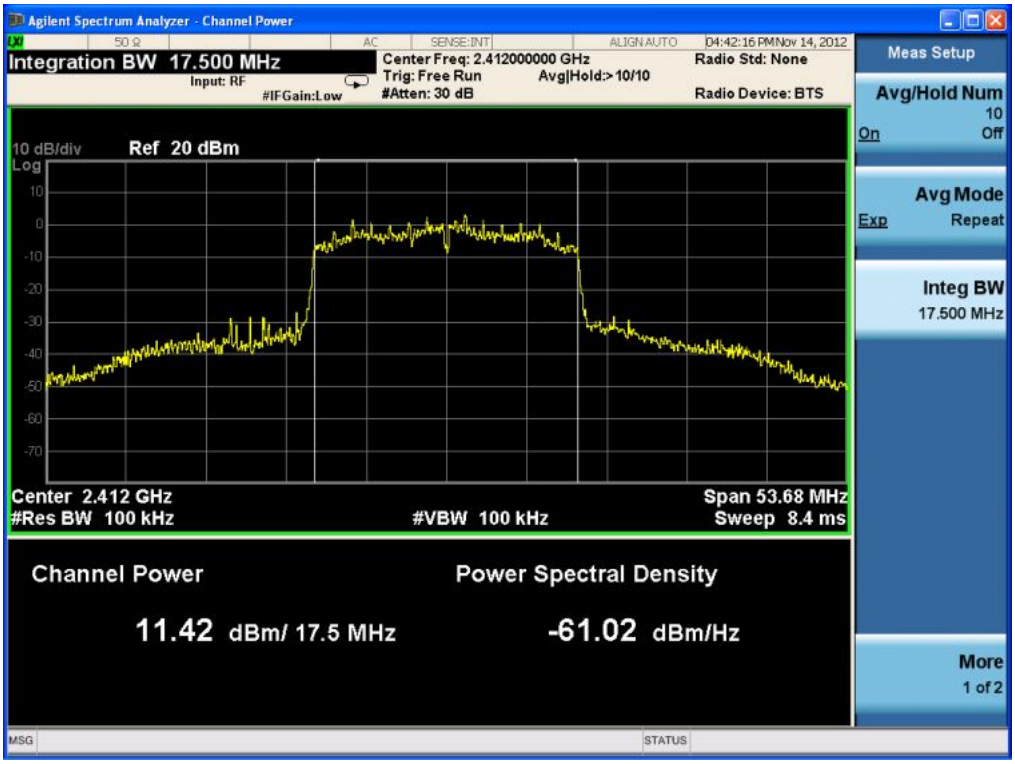


802.11b

802.11g

802.11g

802.11n (20 MHz)



802.11n (20MHz)

802.11n (40Hz)

802.11n (40MHz)

2.1.3 Power Spectral Density

Procedure:

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 spectrum analyzer is set to:

RBW = 3 kHz VBW = (VBW ≥ RBW)

Sweep = 100 s (Span/3 kHz) Span = 300 kHz

Detector function = peak Trace = max hold

Test Results

Test mode : 802.11b

Mode	Frequency (MHz)	Ch.	Test Results	
			dBm	Result
802.11b	2412	1	-14.88	Complies
	2437	6	-15.89	Complies
	2462	11	-15.25	Complies

Test mode : 802.11g

Mode	Frequency (MHz)	Ch.	Test Results	
			dBm	Result
802.11g	2412	1	-18.90	Complies
	2437	6	-19.67	Complies
	2462	11	-18.52	Complies

Test mode : 802.11n(20 MHz)

Mode	Frequency (MHz)	Ch.	Test Results	
			dBm	Result
802.11n (20 MHz)	2412	1	-18.66	Complies
	2437	6	-19.97	Complies
	2462	11	-18.75	Complies

Test mode : 802.11n(40 MHz)

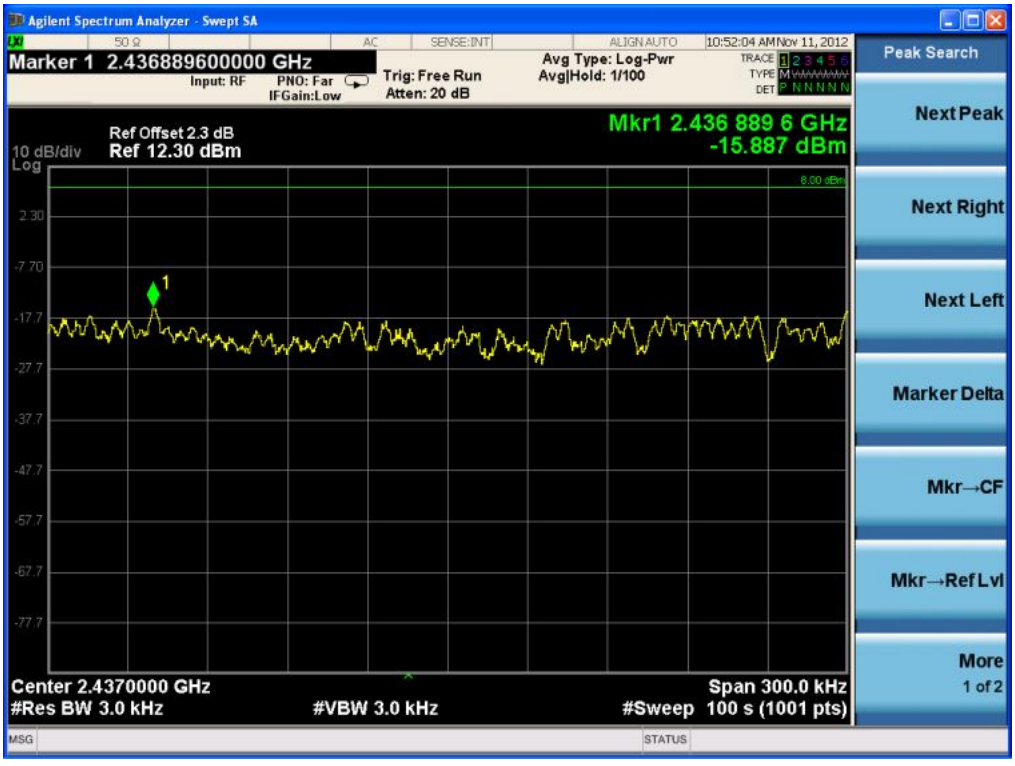
Mode	Frequency (MHz)	Ch.	Test Results	
			dBm	Result
802.11n (40 MHz)	2422	3	-29.73	Complies
	2437	6	-28.74	Complies
	2452	9	-26.54	Complies

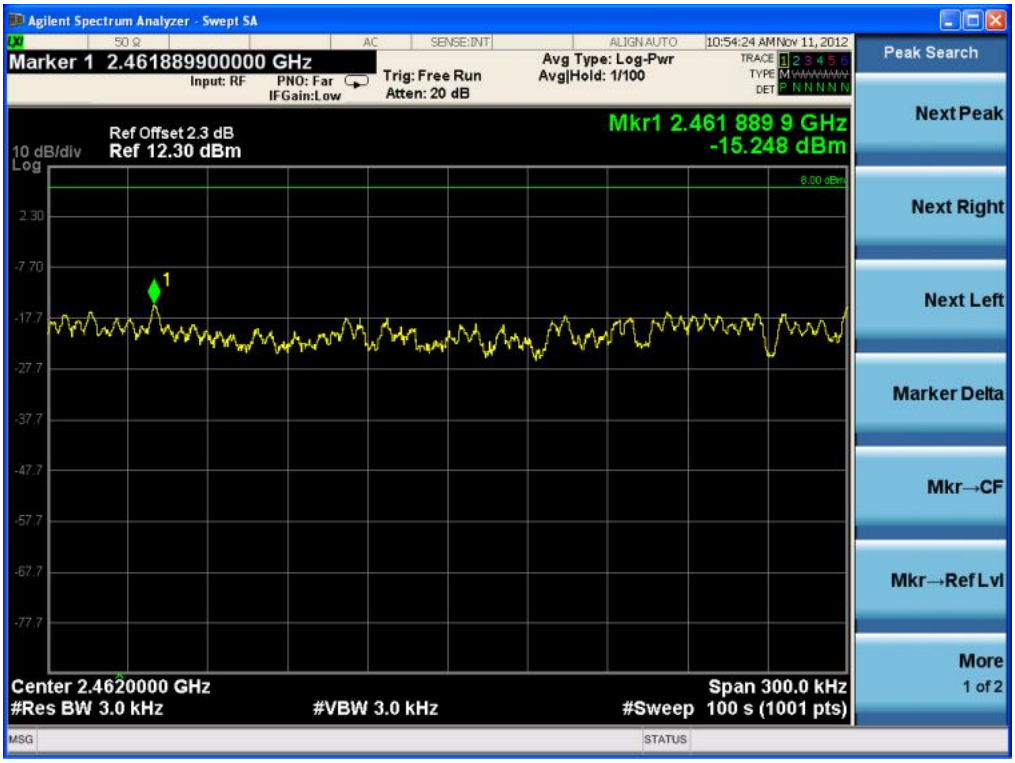
Minimum Standard:

Power Spectral Density	< 8dBm @ 3 kHz BW

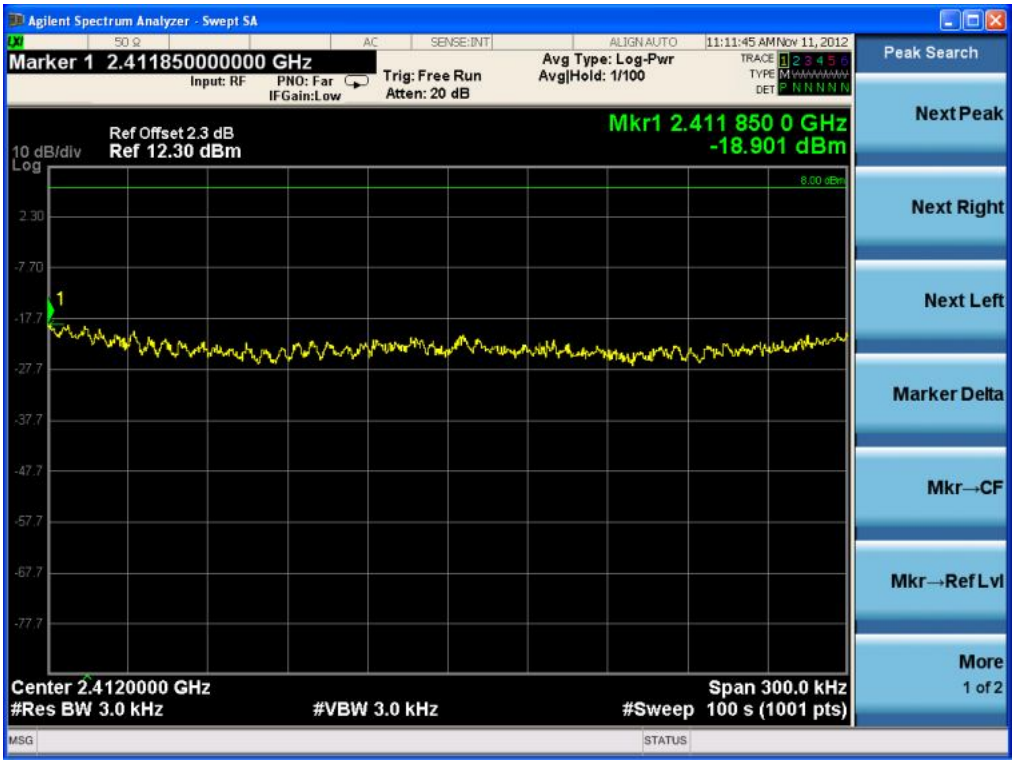
See next pages for actual measured spectrum plots.

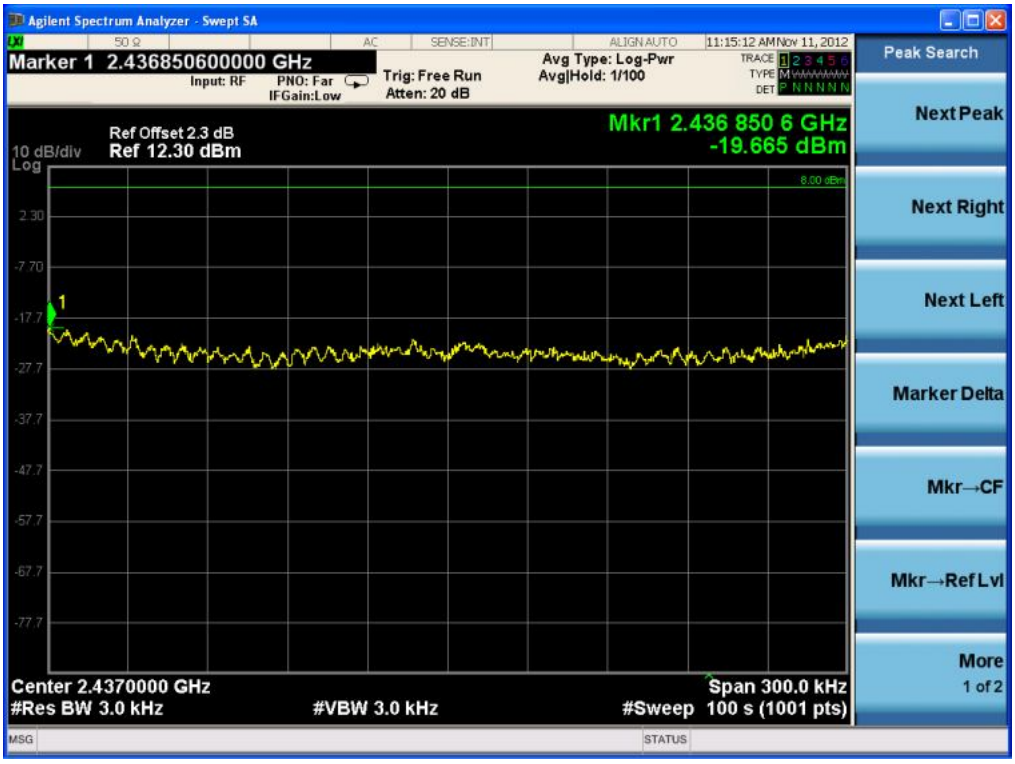
802.11b Power Density Measurement

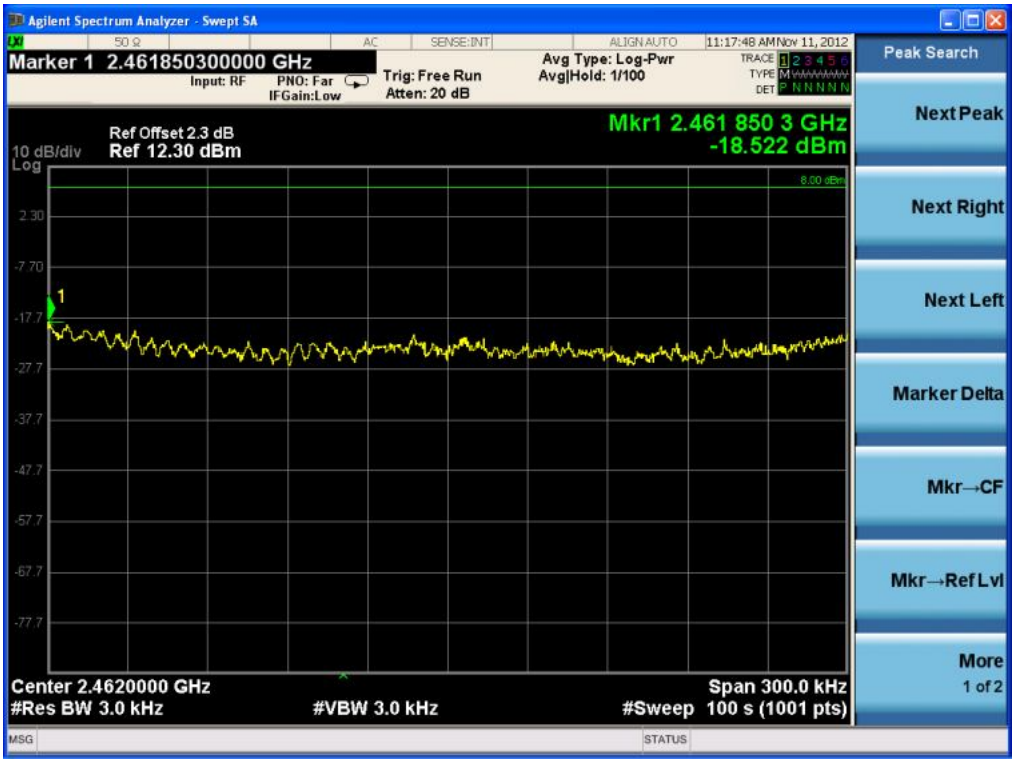




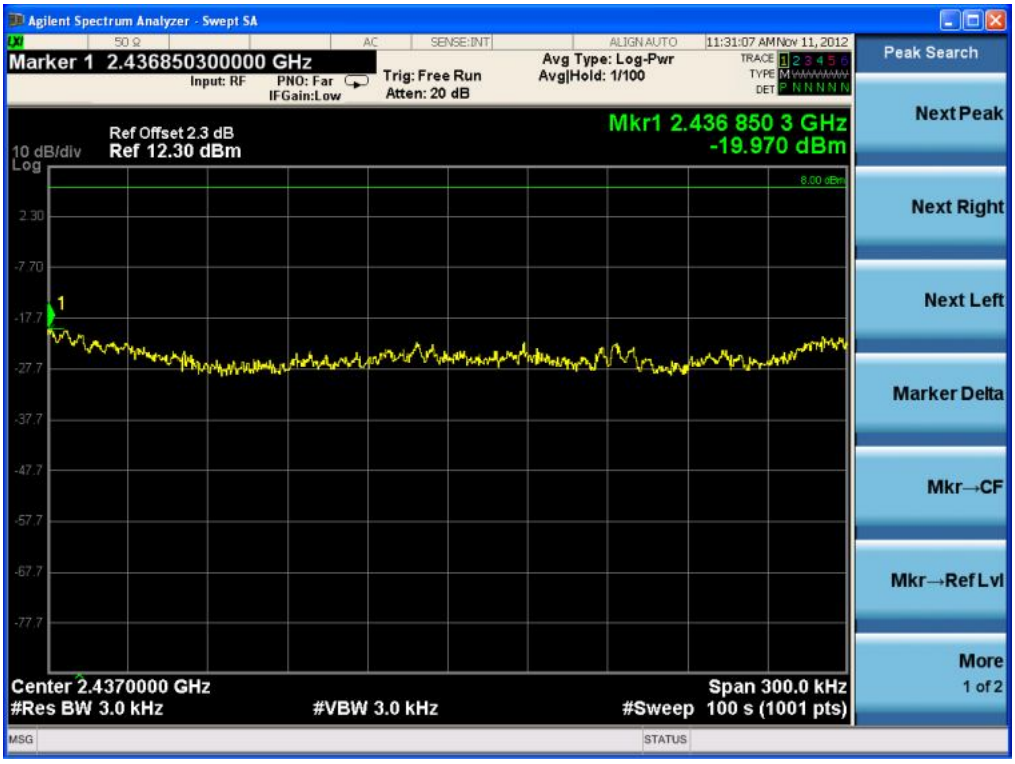
802.11g Power Density Measurement

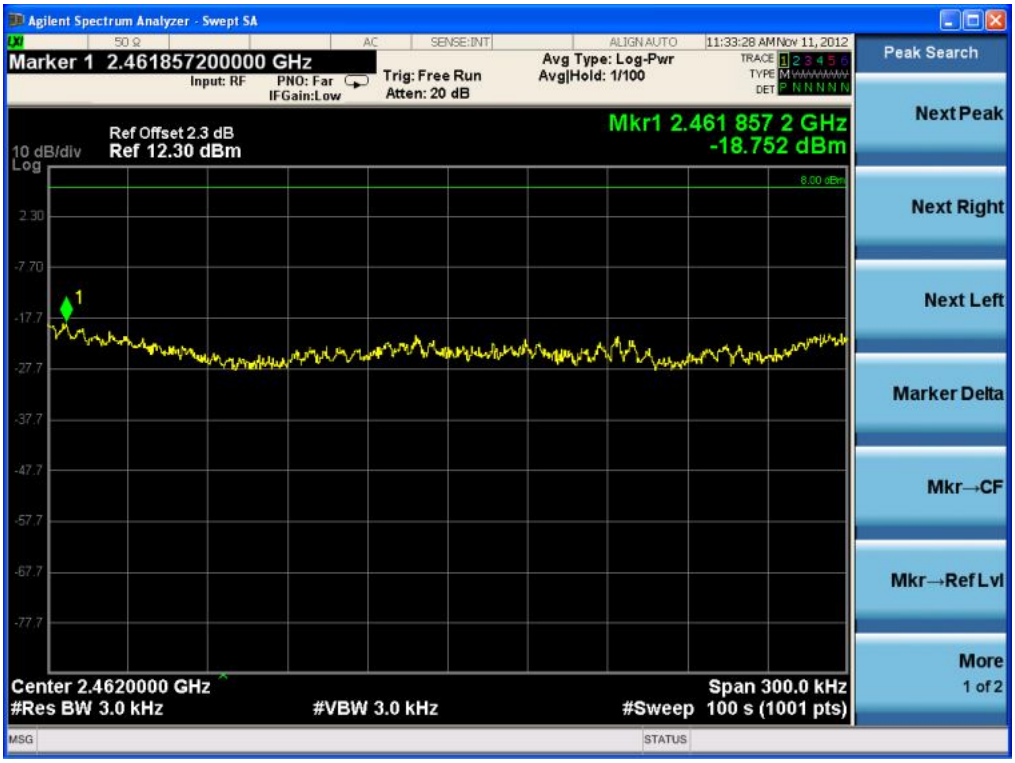




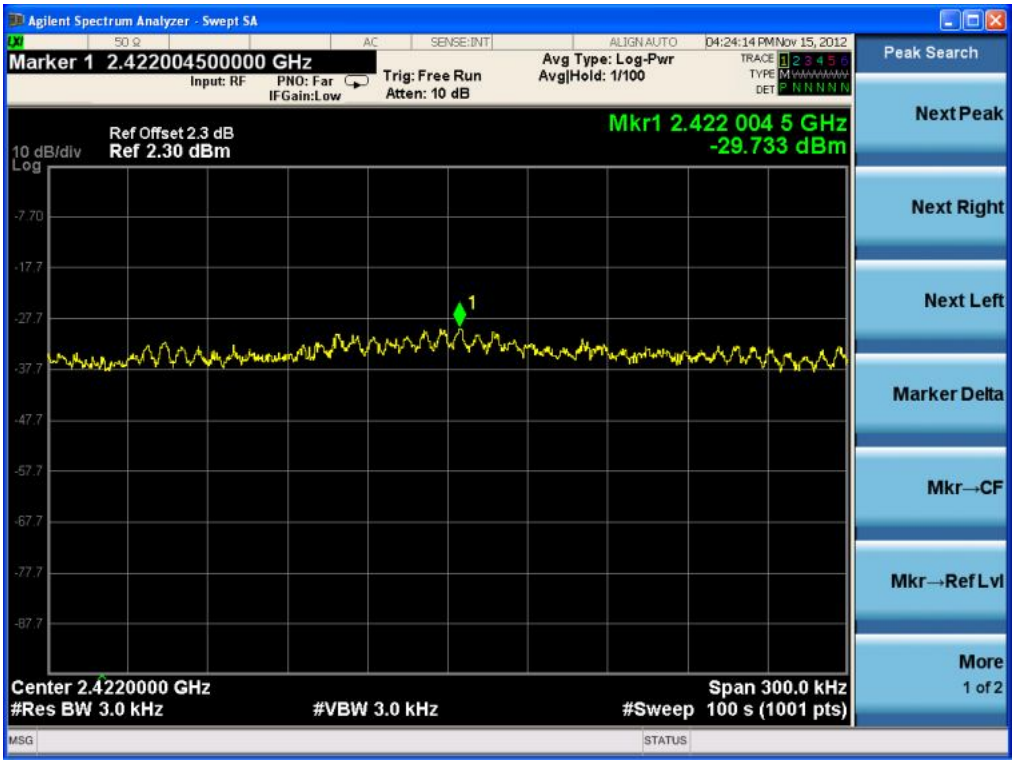


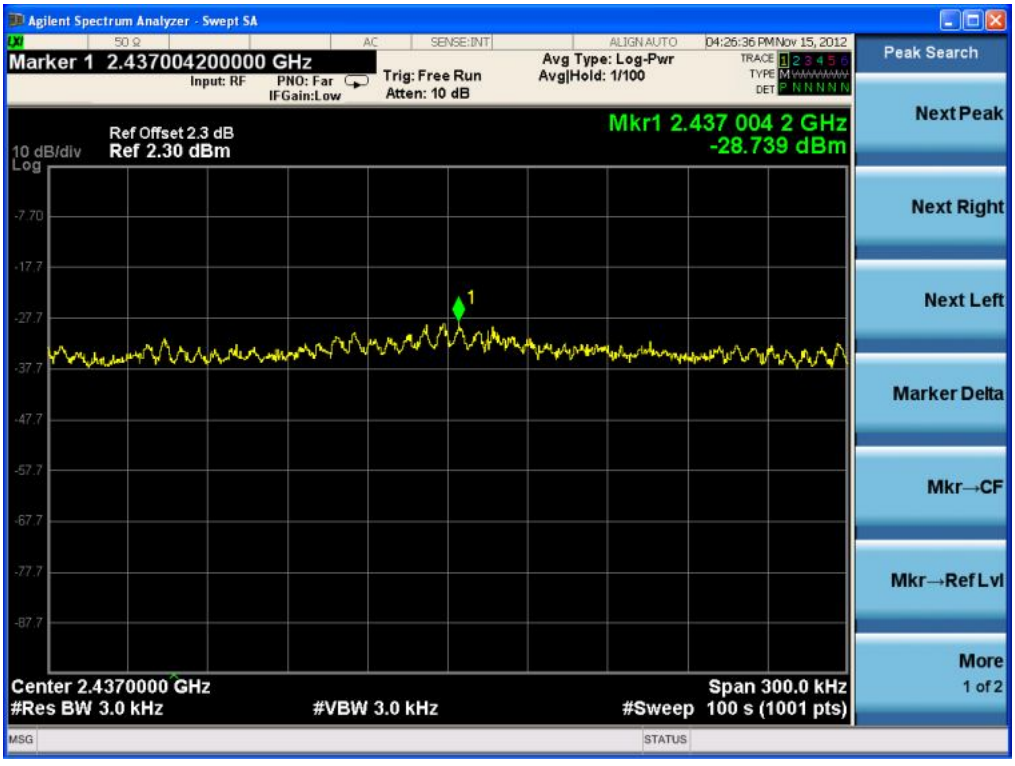
802.11n(20 MHz) Power Density Measurement

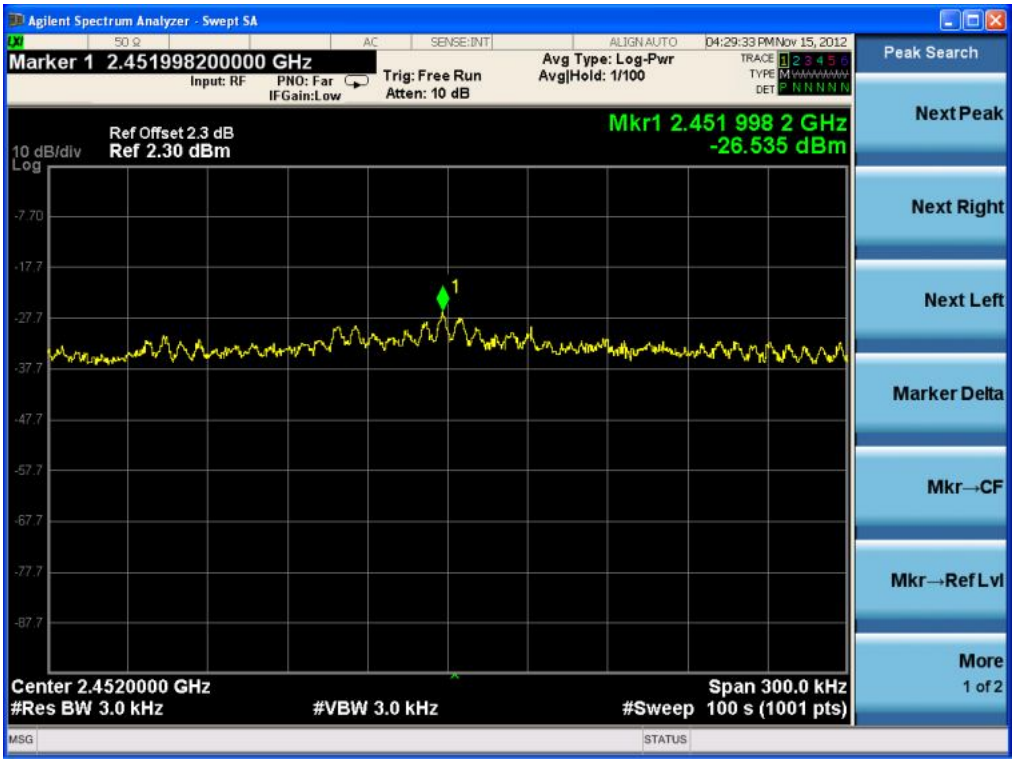




802.11n(40MHz) Power Density Measurement







2.1.4 Band - edge

Procedure:

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz	VBW = 100 kHz
Span = 50 MHz	Detector function = peak
Trace = max hold	Sweep = auto

Measurement Data: Complies

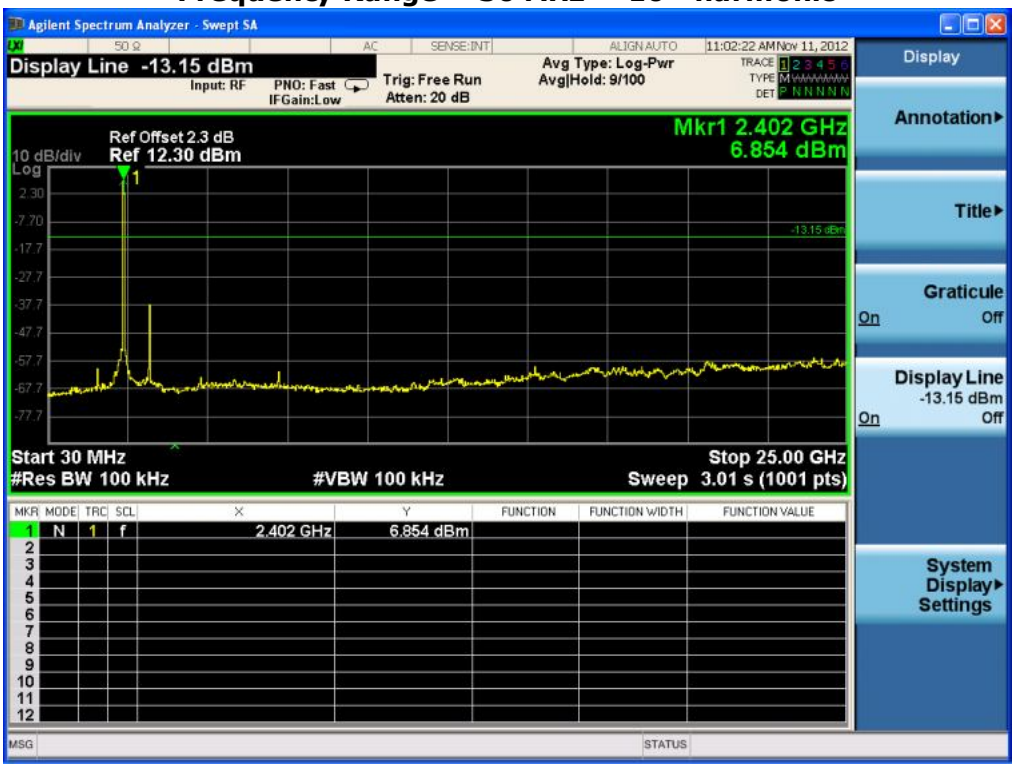
- All conducted emission in any 100 kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.

Minimum Standard:	> 20 dBc

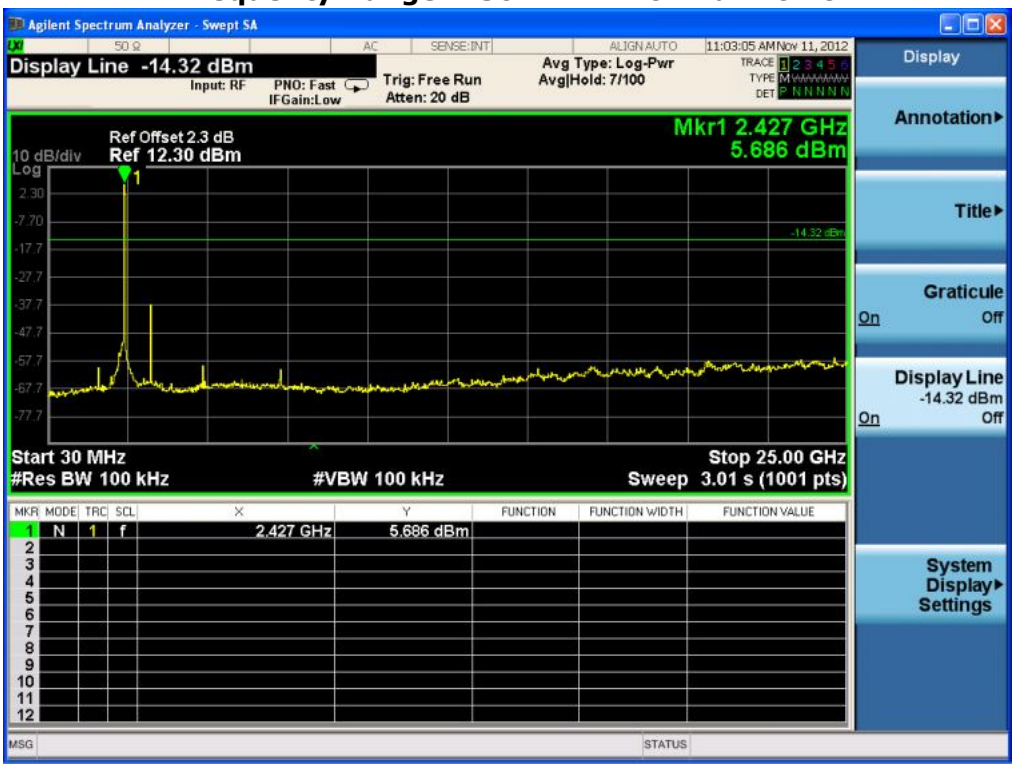
See next pages for actual measured spectrum plots.

802.11b Band–edge Measurements

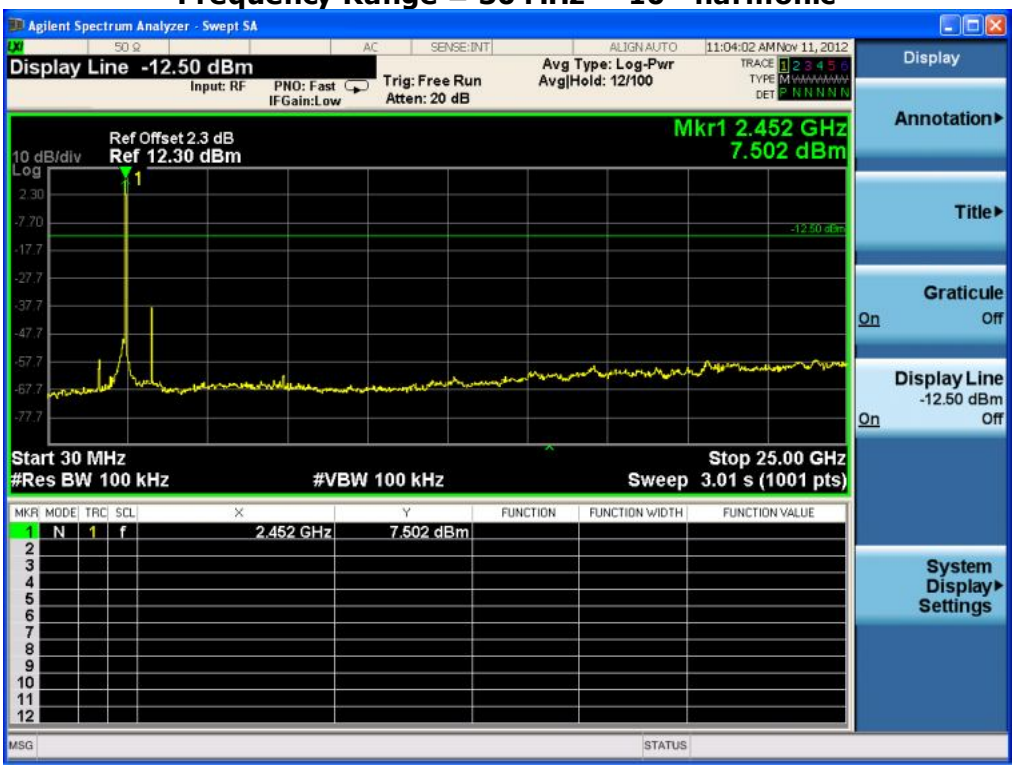
Band – edge (at 20 dB blow) – Low channel(802.11b)
Frequency Range = 30 MHz ~ 10th harmonic



Band – edge (at 20 dB blow) – Mid channel(802.11b)
Frequency Range = 30 MHz ~ 10th harmonic

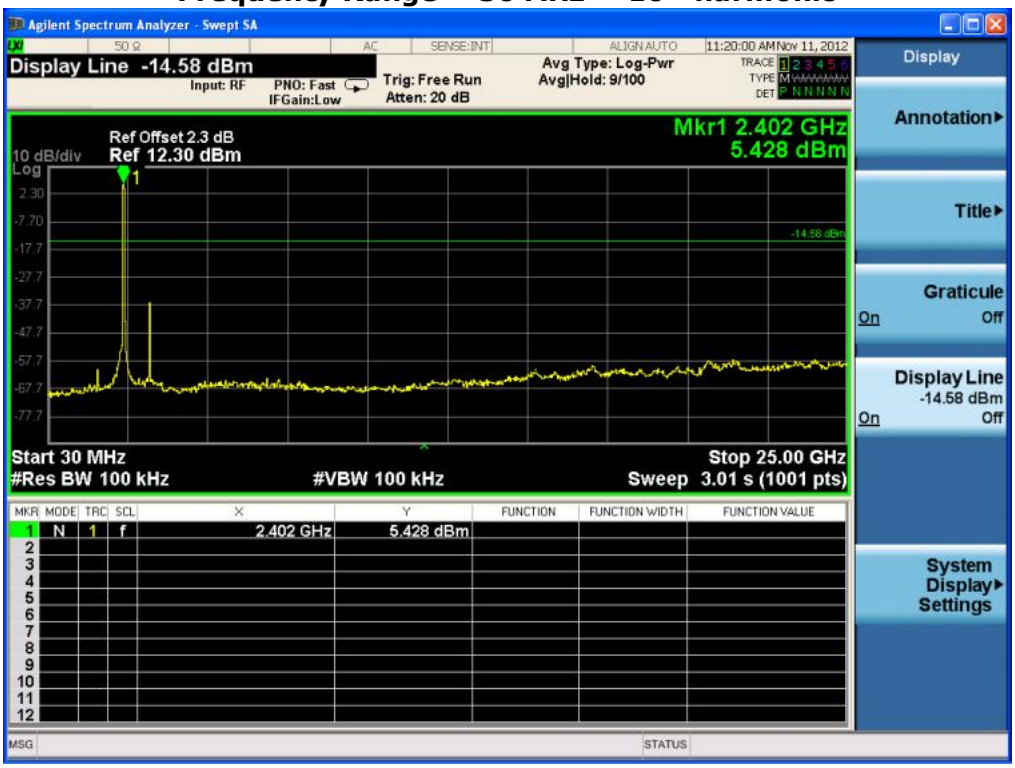


Band – edge (at 20 dB blow) – High channel(802.11b)
Frequency Range = 30 MHz ~ 10th harmonic

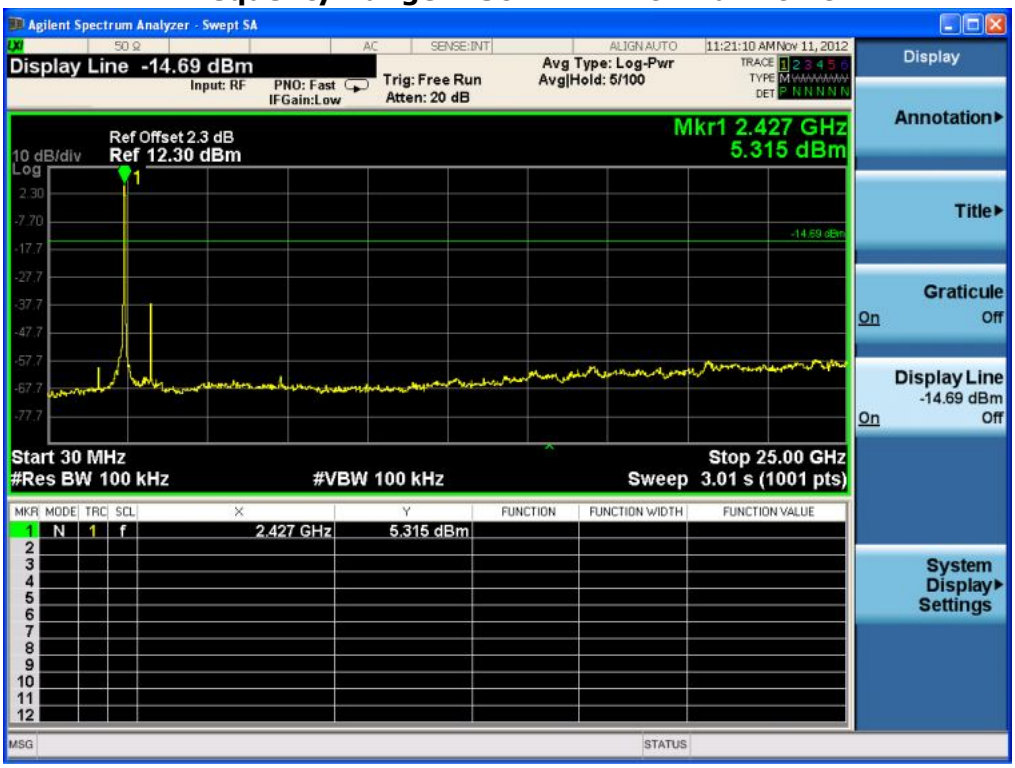


802.11g Band–edge Measurements

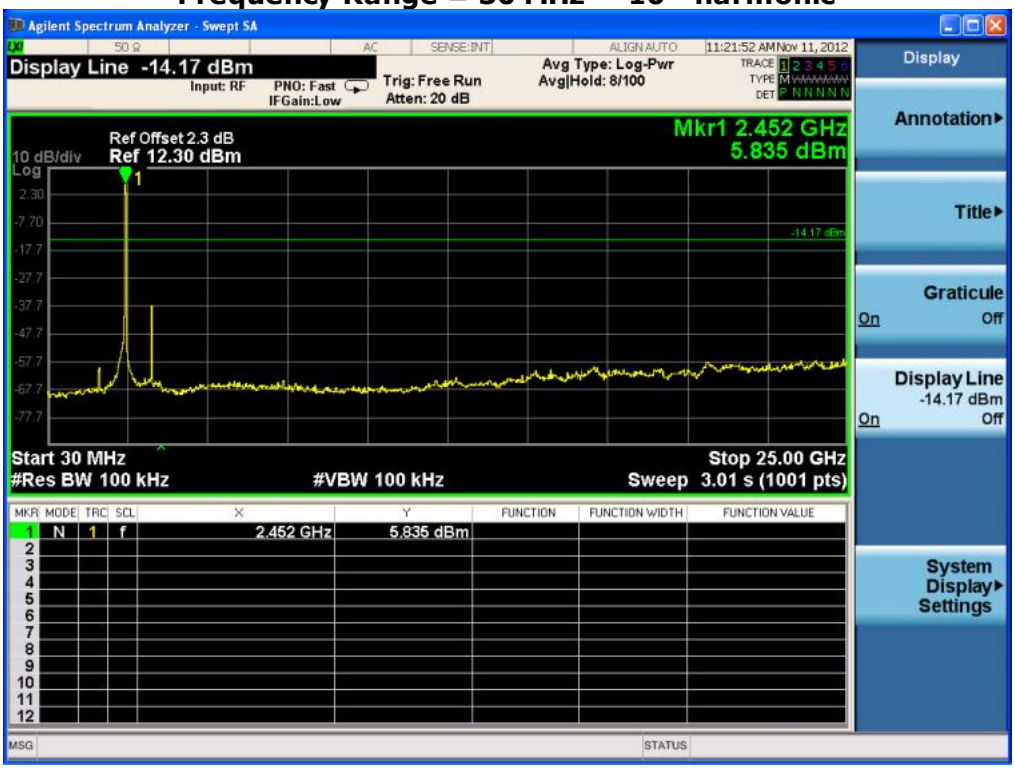
Band – edge (at 20 dB blow) – Low channel(802.11g)
Frequency Range = 30 MHz ~ 10th harmonic



Band – edge (at 20 dB blow) – Mid channel(802.11g)
Frequency Range = 30 MHz ~ 10th harmonic

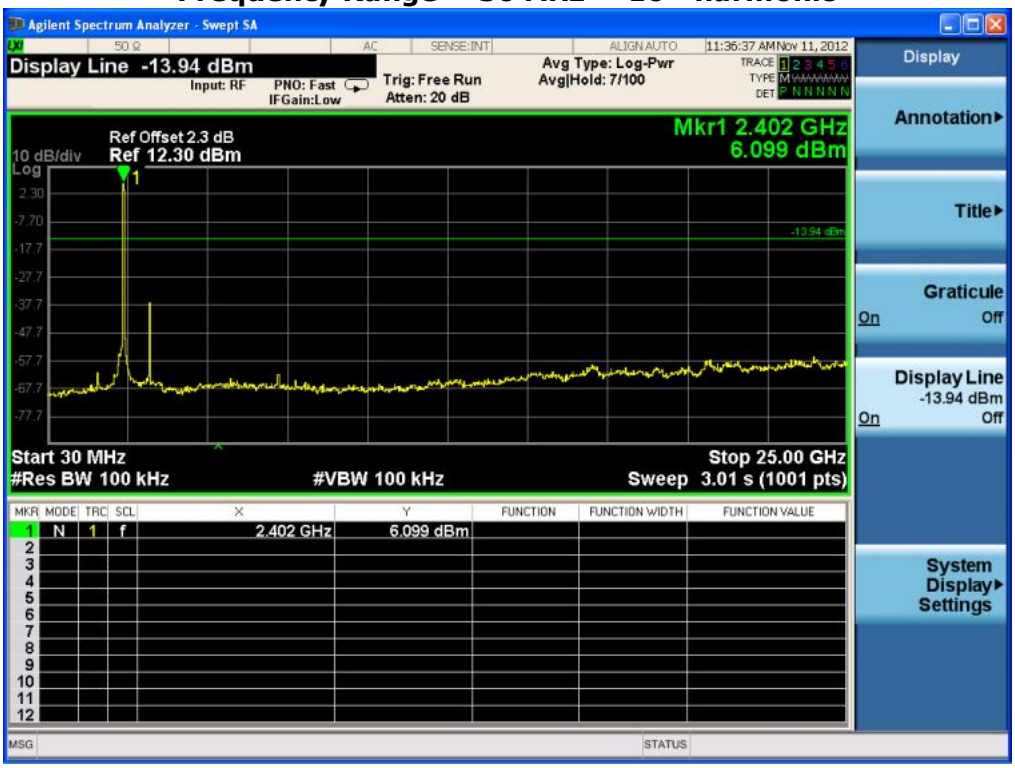


Band – edge (at 20 dB blow) – High channel(802.11g)
Frequency Range = 30 MHz ~ 10th harmonic

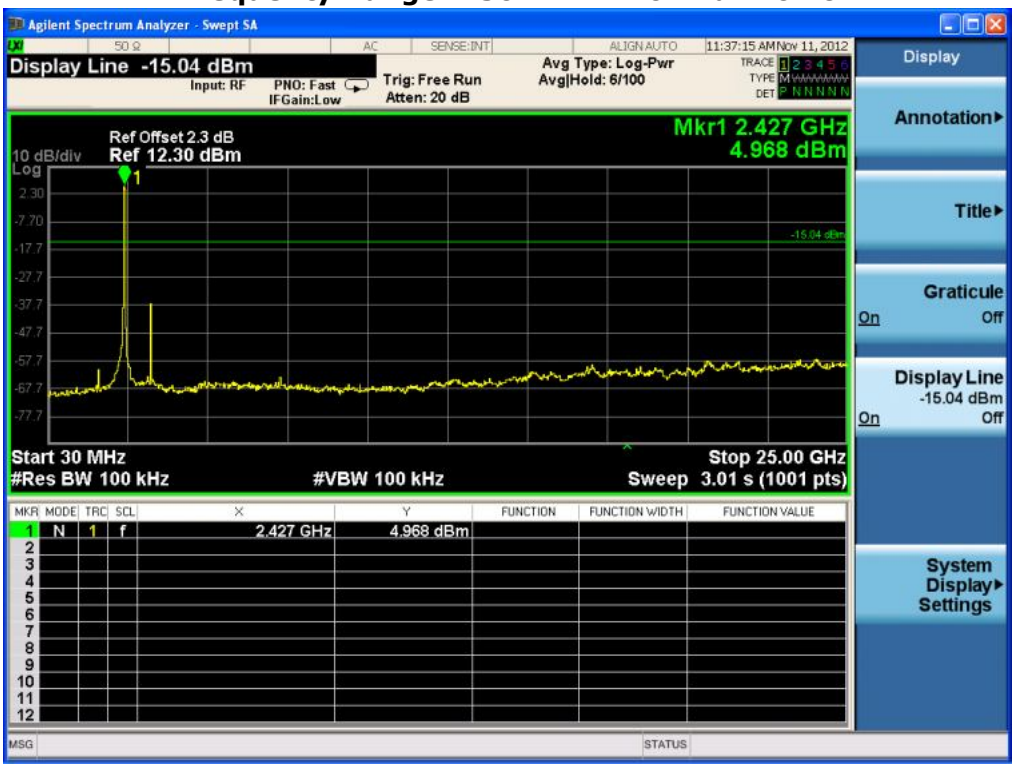


802.11n(20MHz) Band–edge Measurements

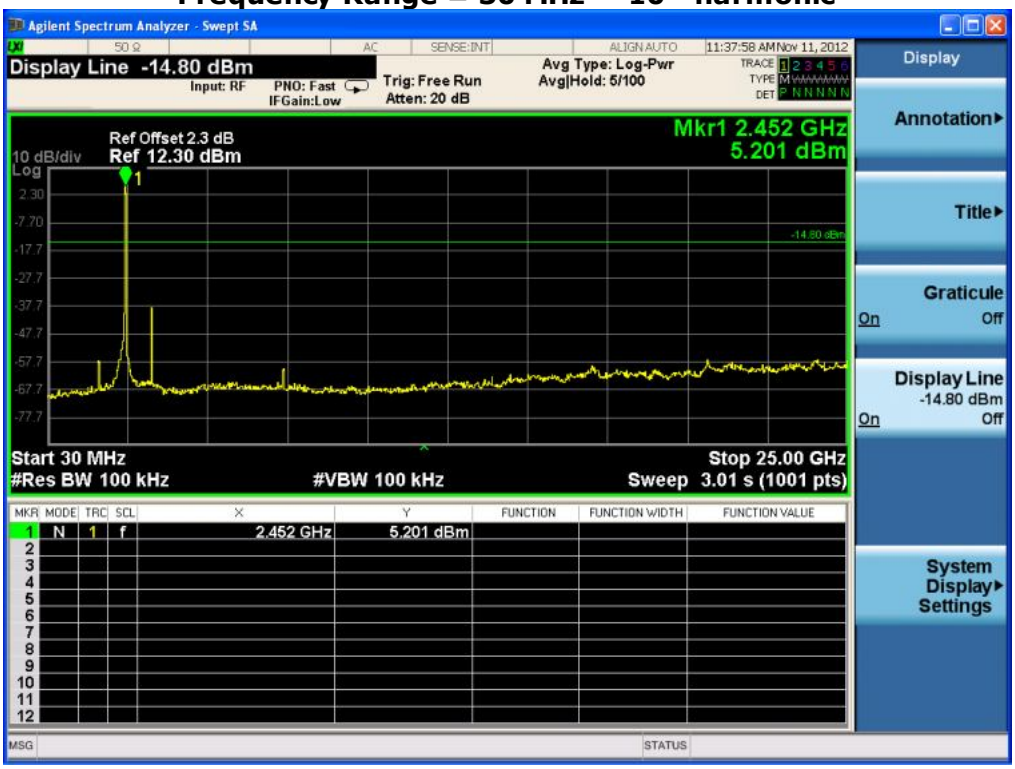
Band – edge (at 20 dB blow) – Low channel(802.11n(20MHz))
Frequency Range = 30 MHz ~ 10th harmonic



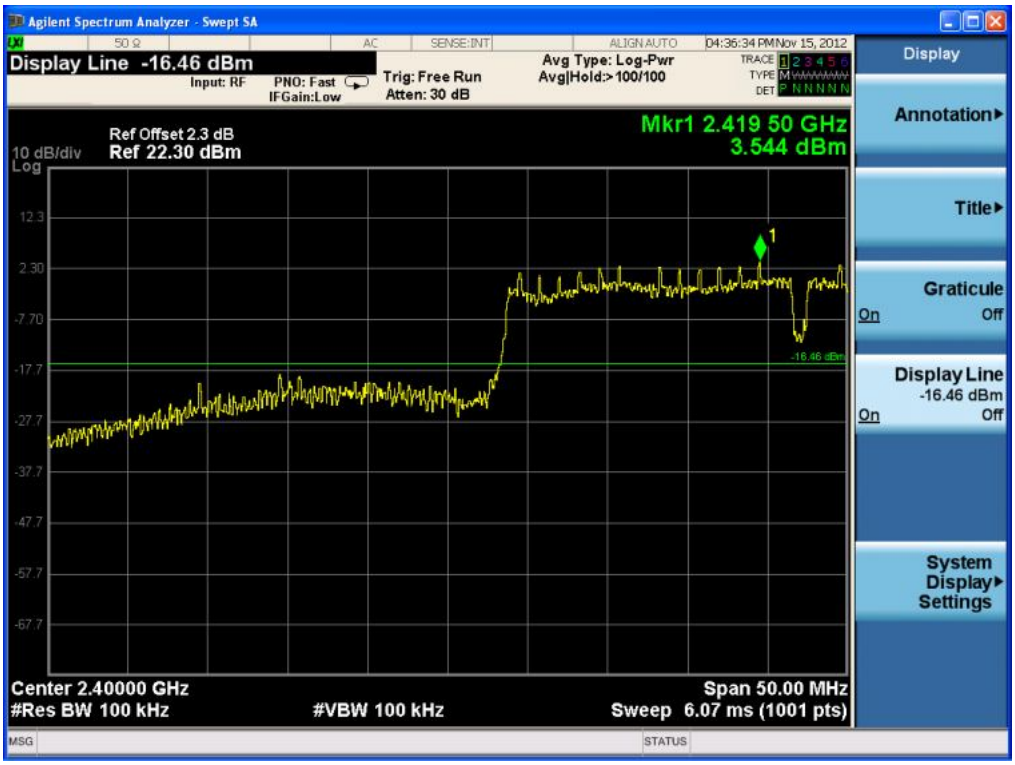
Band – edge (at 20 dB blow) – Mid channel(802.11n(20MHz))
Frequency Range = 30 MHz ~ 10th harmonic

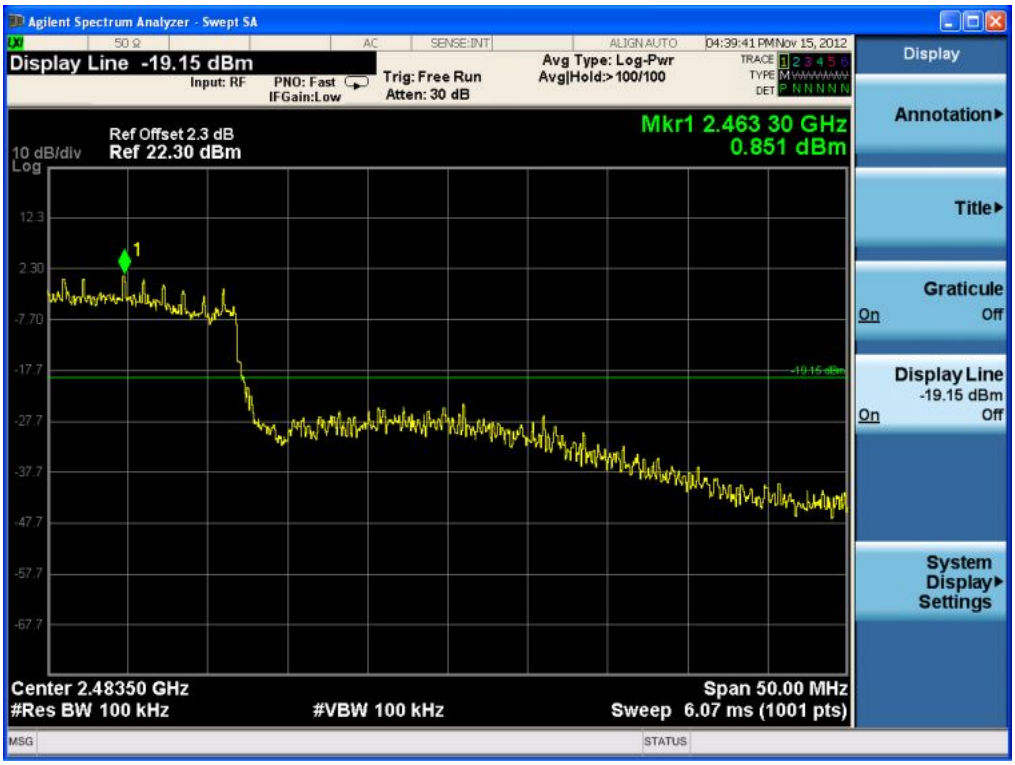


Band – edge (at 20 dB blow) – High channel(802.11n(20MHz))
Frequency Range = 30 MHz ~ 10th harmonic

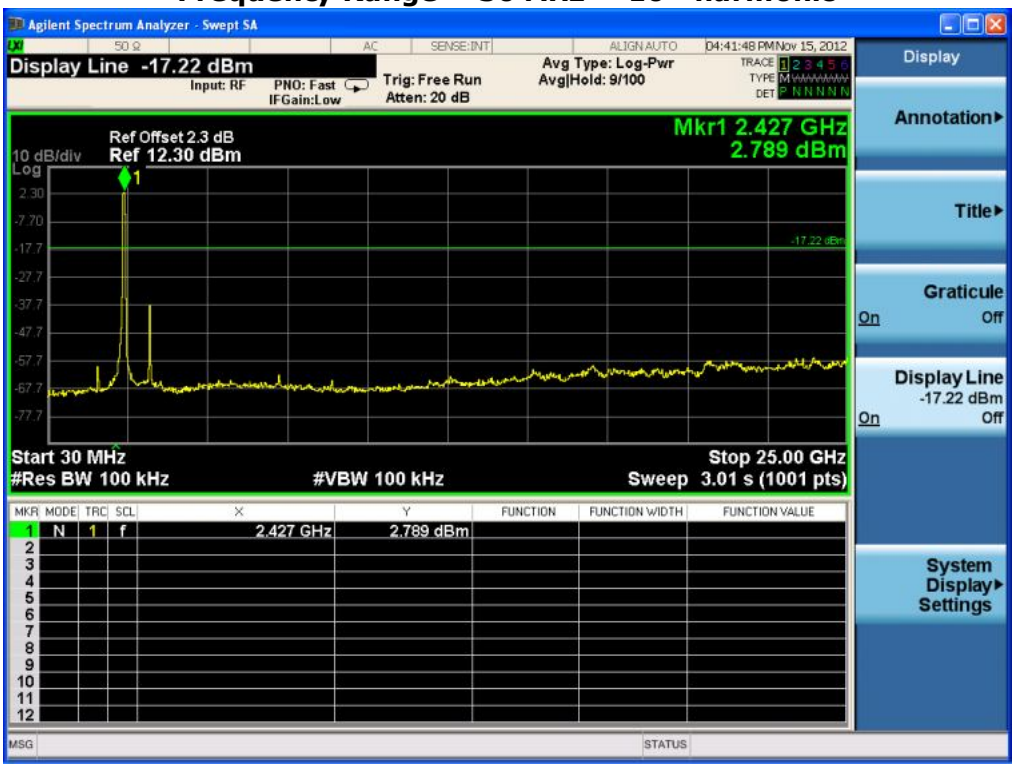


802.11n(40MHz) Band–edge Measurements

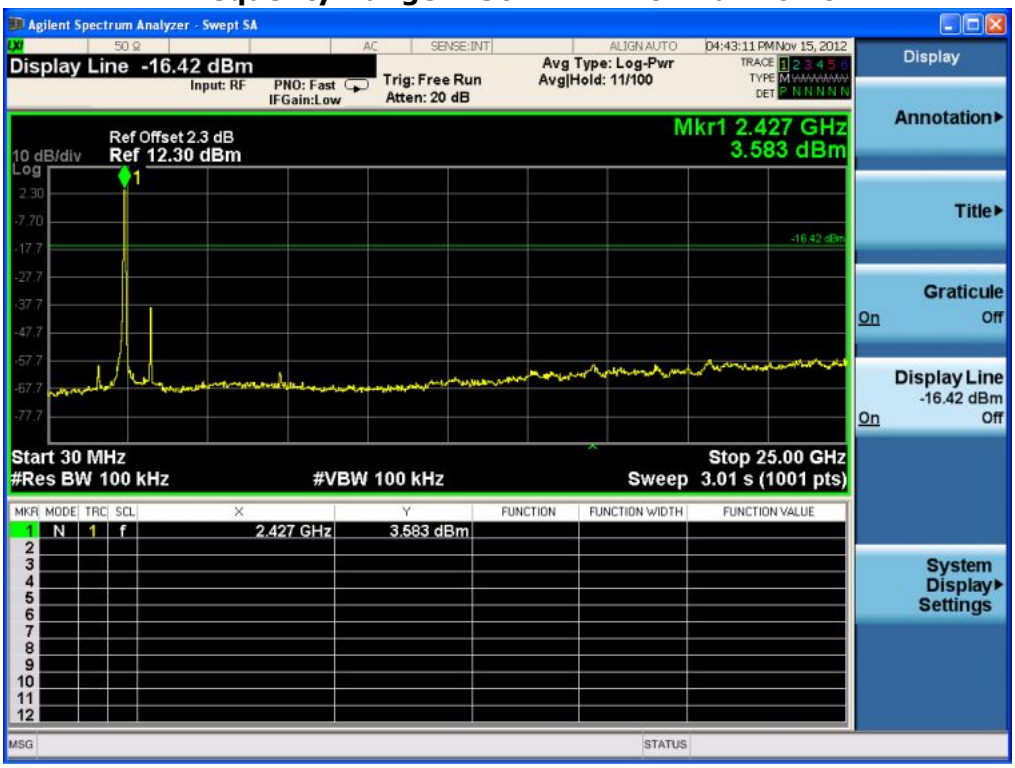




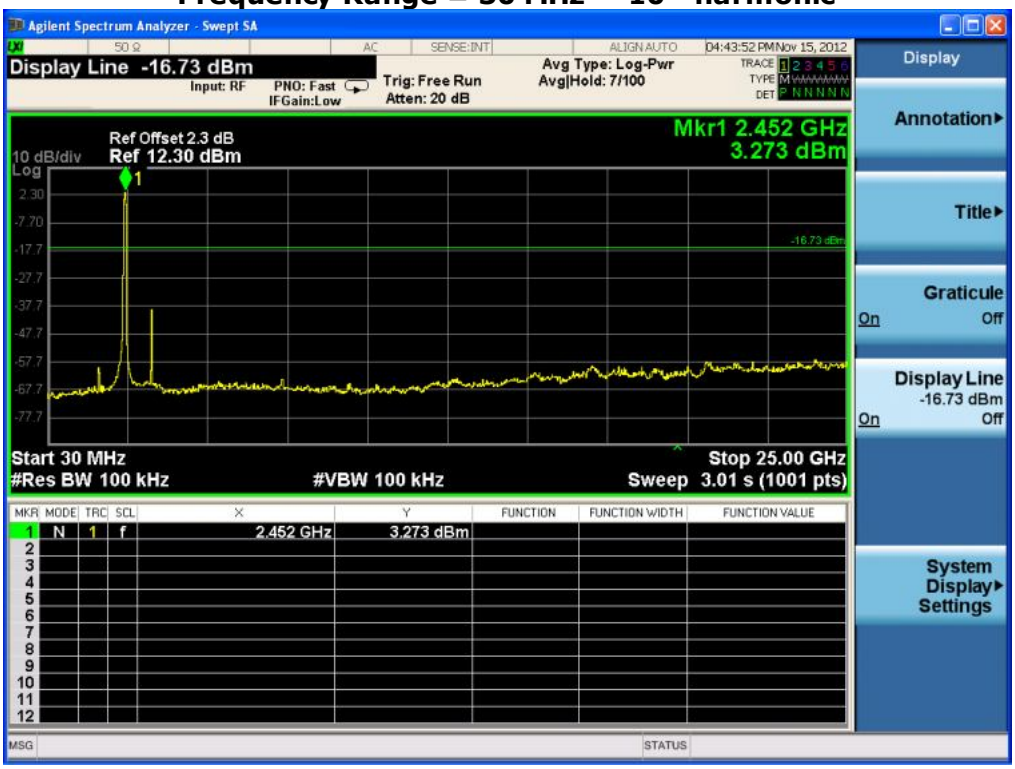
Band – edge (at 20 dB blow) – Low channel(802.11n(40MHz))
Frequency Range = 30 MHz ~ 10th harmonic



Band – edge (at 20 dB blow) – Mid channel(802.11n(40MHz))
Frequency Range = 30 MHz ~ 10th harmonic



Band – edge (at 20 dB blow) – High channel(802.11n(40MHz))
Frequency Range = 30 MHz ~ 10th harmonic



2.1.5 Field Strength of Emissions

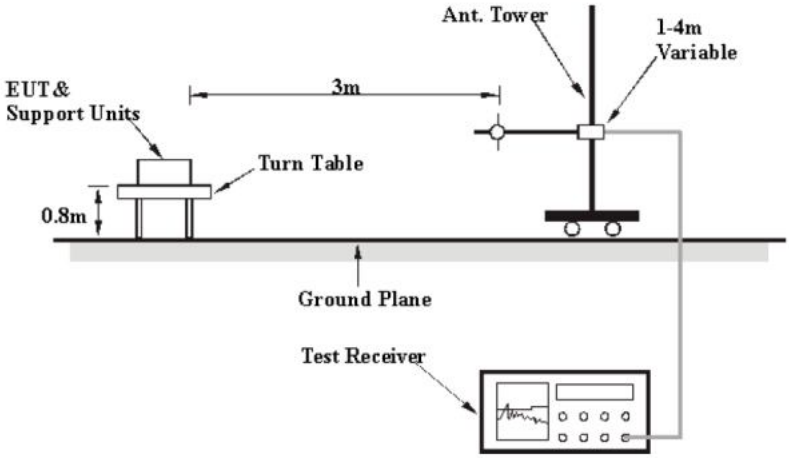
Test Location

☒ Testing was performed at a test distance of 3 meter SAC

Test Procedures

The height of the measuring antenna was varied between 1 to 4 m and the table was rotated a full revolution in order to obtain maximum values of the electric field intensity. The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

The spectrum analyzer is set to:
Center frequency = the worst channel
Frequency Range =30 MHz ~ 10th harmonic
RBW = 120 kHz (30 MHz ~ 1 GHz) VBW ≥ RBW
= 1 MHz (1 GHz ~ 10th harmonic)
Span = 100 MHz Detector function = Quasi-peak
Trace = max hold



Limit

- **15.209(a)**

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m
30-88	100**	40
88-216	150**	43.5
216-960	200**	46
Above 960	500	54

** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Test Results

Test mode : 802.11b

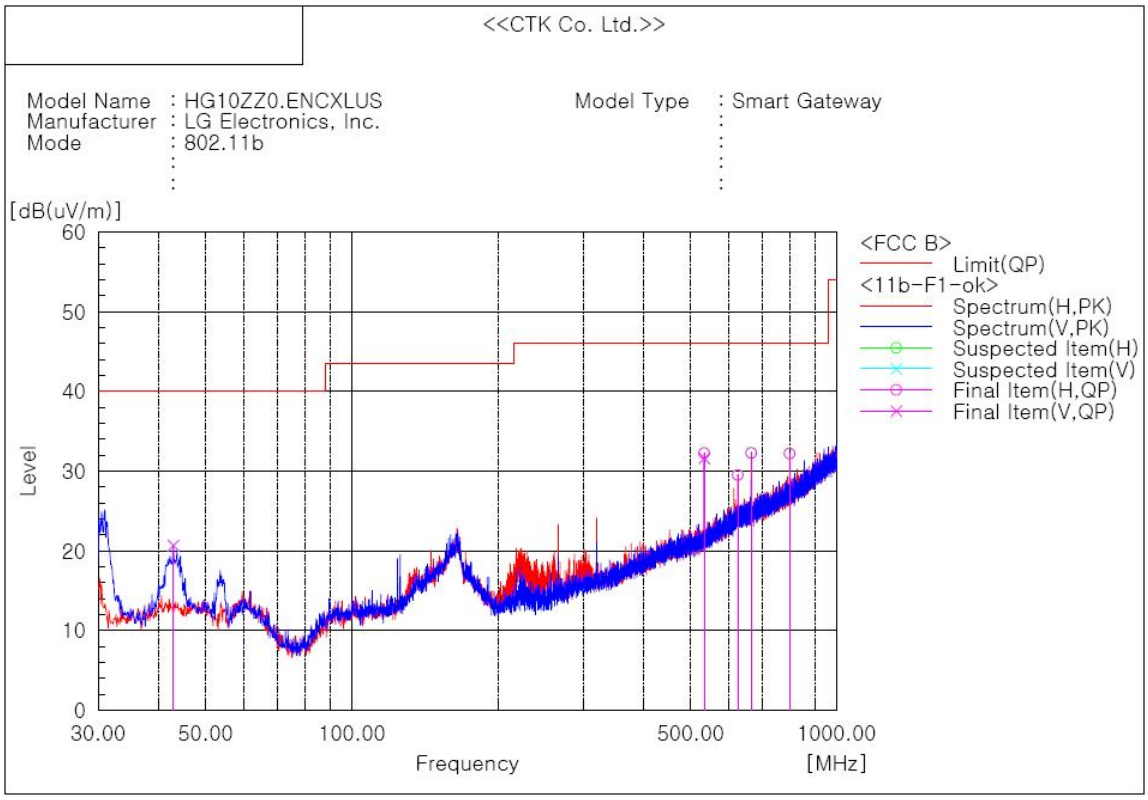
EUT	Smart Gateway	Measurement Detail	
Model	HG10ZZ0.ENCXLUS	Frequency Range	Below 1000MHz
Mode	802.11b(Worst Case)	Detector function	Quasi-Peak

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
666.684	32.3	13.7	Quasi-peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	42.853	V	34.1	-13.4	20.7	40.0	19.3	100.0	27.0
2	533.309	V	35.5	-3.9	31.6	46.0	14.4	100.0	0.0
3	533.309	H	36.2	-3.9	32.3	46.0	13.7	205.0	215.0
4	624.974	H	30.9	-1.4	29.5	46.0	16.5	305.0	258.0
5	666.684	H	33.3	-1.0	32.3	46.0	13.7	100.0	92.0
6	800.059	H	30.7	1.5	32.2	46.0	13.8	100.0	168.0

Remark :
1. The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(X axis) and the worst case was recorded.

Test Results

EUT	NetweeN	Measurement Detail	
Model	HG10ZZ0.ENCXLUS	Frequency Range	1-25GHz
		Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
-	-	-	-

Test Data (Mode: 802.11b)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data (Mode: 802.11g)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data (Mode: 802.11n_20MHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data (Mode: 802.11n_40MHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Restricted band edge test data

Measured frequency range : 2310-2390 MHz, 2483.5-2500 MHz

Test data - 802.11b

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data – 802.11g

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data – 802.11n(20 MHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

Test Data – 802.11n(40 MHz)

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Height [m]	Correction Factor			Limits [dBuV/m] AV / Peak	Result [dBuV/m] AV / Peak	Margin [dB] AV / Peak
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

2.1.6 AC Conducted Emissions

Test Location
Shielded Room

Frequency Range of Measurement
150 kHz to 30 MHz

Instrument Settings
IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.
Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- **15.207(a)**

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency.

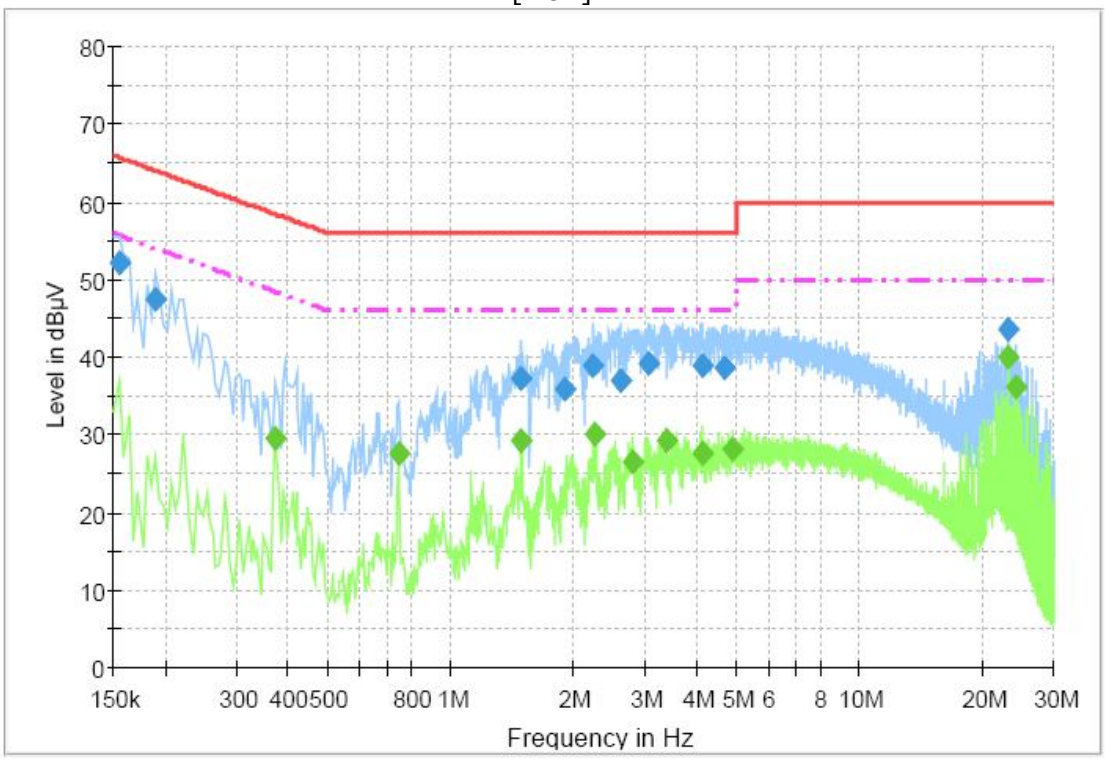
Test Results
The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
23.127	40.1	9.9	Average

Test Data

[HOT]



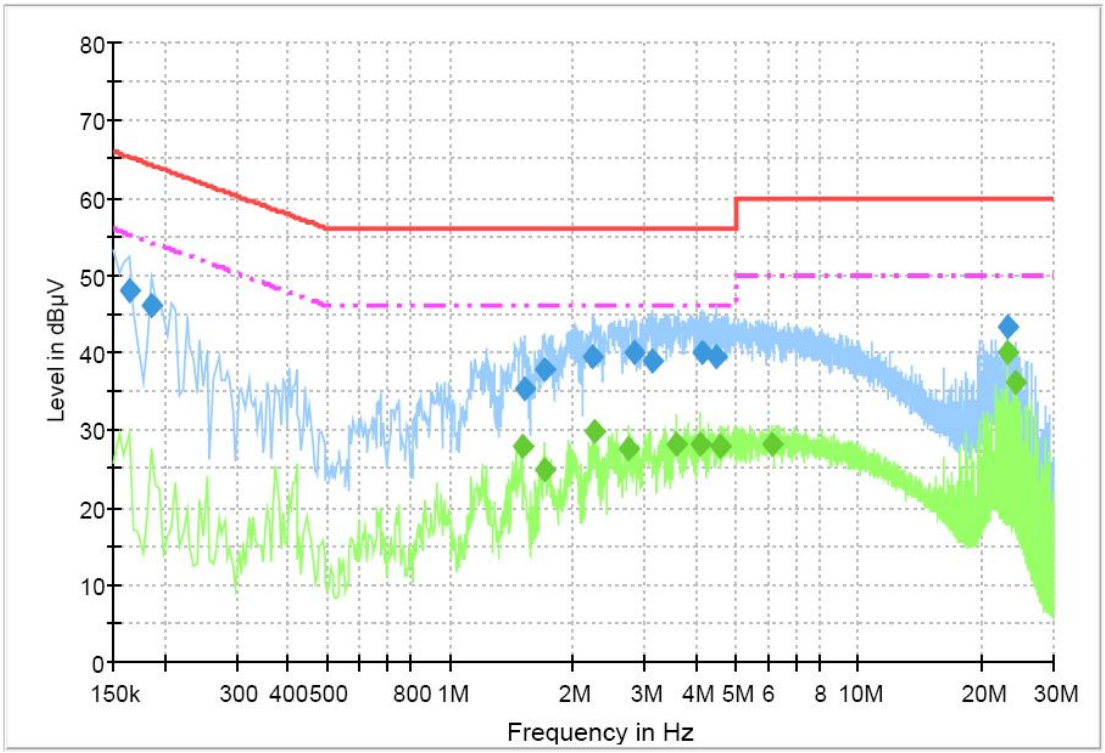
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.154500	52.3	1000.0	9.000	On	L1	9.9	13.5	65.8
0.190500	47.6	1000.0	9.000	On	L1	10.0	16.4	64.0
1.495500	37.4	1000.0	9.000	On	L1	9.8	18.6	56.0
1.905000	35.8	1000.0	9.000	On	L1	9.8	20.2	56.0
2.242500	39.0	1000.0	9.000	On	L1	9.8	17.0	56.0
2.616000	37.1	1000.0	9.000	On	L1	9.8	18.9	56.0
3.057000	39.3	1000.0	9.000	On	L1	9.7	16.7	56.0
4.137000	39.0	1000.0	9.000	On	L1	9.7	17.0	56.0
4.699500	38.7	1000.0	9.000	On	L1	9.7	17.4	56.0
23.127000	43.5	1000.0	9.000	On	L1	10.0	16.5	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.375000	29.5	1000.0	9.000	On	L1	10.1	18.9	48.4
0.748500	27.5	1000.0	9.000	On	L1	10.0	18.5	46.0
1.495500	29.3	1000.0	9.000	On	L1	9.8	16.7	46.0
2.247000	30.0	1000.0	9.000	On	L1	9.8	16.0	46.0
2.796000	26.5	1000.0	9.000	On	L1	9.7	19.5	46.0
3.367500	29.3	1000.0	9.000	On	L1	9.7	16.7	46.0
4.137000	27.5	1000.0	9.000	On	L1	9.7	18.5	46.0
4.911000	28.0	1000.0	9.000	On	L1	9.7	18.0	46.0
23.127000	40.1	1000.0	9.000	On	L1	10.0	9.9	50.0
24.351000	36.0	1000.0	9.000	On	L1	10.0	14.0	50.0

[NEUTRAL]



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.163500	48.0	1000.0	9.000	On	N	10.1	17.3	65.3
0.186000	46.0	1000.0	9.000	On	N	10.0	18.2	64.2
1.522500	35.2	1000.0	9.000	On	N	9.8	20.8	56.0
1.698000	37.7	1000.0	9.000	On	N	9.8	18.3	56.0
2.242500	39.4	1000.0	9.000	On	N	9.8	16.6	56.0
2.814000	39.9	1000.0	9.000	On	N	9.7	16.1	56.0
3.129000	39.0	1000.0	9.000	On	N	9.7	17.0	56.0
4.123500	40.0	1000.0	9.000	On	N	9.7	16.0	56.0
4.492500	39.5	1000.0	9.000	On	N	9.7	16.5	56.0
23.127000	43.4	1000.0	9.000	On	N	10.1	16.6	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.500000	27.9	1000.0	9.000	On	N	9.8	18.1	46.0
1.707000	24.9	1000.0	9.000	On	N	9.8	21.1	46.0
2.247000	29.9	1000.0	9.000	On	N	9.8	16.1	46.0
2.733000	27.5	1000.0	9.000	On	N	9.7	18.5	46.0
3.592500	28.1	1000.0	9.000	On	N	9.7	17.9	46.0
4.110000	28.2	1000.0	9.000	On	N	9.7	17.8	46.0
4.600500	28.0	1000.0	9.000	On	N	9.7	18.0	46.0
6.126000	28.1	1000.0	9.000	On	N	9.7	21.9	50.0
23.127000	40.0	1000.0	9.000	On	N	10.1	10.0	50.0
24.351000	36.1	1000.0	9.000	On	N	10.2	13.9	50.0

APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2013-11-08
2	Spectrum Analyzer	Rohde & Schwarz	FSP-30	100994	2013-11-08
3	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2012-12-13
4	EMI Test Receiver	Rohde & Schwarz	ESCI7	100816	2012-12-16
5	Trilog Broadband Antenna	SCHWARZBECK	VULB 9161 SE	9161-4133	2014-06-11
6	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2014-06-06
7	Attenuator	HP	8498A	1801A06913	2013-11-09
8	EPM Series Power Meter	HP	E4418A	GB38272734	2013-11-08
9	Power Sensor	HP	8487A	3318A03524	2013-07-10
10	Audio Analyzer	HP	8903B	2747A03432	2013-11-08
11	ESG-D Series Signal Generator	Agilent	E4432B	US40054094	2013-11-08
12	SYNTHESIZED SWEEPER	HP	8341B	2819A01563	2013-11-08
13	Attenuator	HP	8494A	3308A33351	2013-11-09
14	Temp&Humi Chamber	Kunpoong	JT-TH-556-1	9QE5-002	2013-01-12
15	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2013-11-08
16	Horn Antenna	ETS-Lindgren	3115	00078894	2013-03-22
17	Horn Antenna	ETS-Lindgren	3115	00078895	2013-03-22
18	Dipole Antenna	SCHWARZBECK	VHA 9103	VHA91032557	2013-11-04
19	Dipole Antenna	SCHWARZBECK	UHA 9105	UHA91052417	2013-11-04
20	OPT H64 AMPLIFIER	HP	8447F	3113A06814	2013-03-27
21	PREAMPLIFIER	Agilent	8449B	3008A02307	2013-11-09
22	Radio Communication Tester	Rohde & Schwarz	CMU200	106765	2013-02-09
23	LISN	Rohde & Schwarz	ENV216	101235	2013-08-06
24	LISN	Rohde & Schwarz	ENV216	101236	2013-08-06
25	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2013-11-08
26	EMI Test Receiver	Rohde & Schwarz	ESCI3	100032	2013-02-09
27	6dB Attenuator	R&S	DNF	272.4110.50	2013-11-09
28	AMPLIFIER	Sonoma Instrument Co.	310	291721	2013-03-27
29	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2013-06-29
30	Signal Generator	Rohde & Schwarz	SMB100A	175528	2013-10-08