Lenovo (Beijing) Limited

Application
For
Certification

FCC ID: A5MC100

Lenovo new glass C100

Model: C100

Brand name: Lenovo

2.4GHz WiFi Transceiver

Report No.: 150701028SZN-005

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-14]

Prepared and Checked by:

Sign on file

Leo Lai
Project Engineer

Approved by:

Digitally signed by Andy Yan
Location: Intertek Testing Services

Andy Yan
Senior Project Engineer
Date: December 13, 2015

TRF no.: FCC 15C_Tx_c

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch
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LIST OF EXHIBITS

MEASUREMENT/TECHNICAL REPORT

Lenovo new glass C100

Model: C100

FCC ID: A5MC100

This report concerns (check one) Original Grant ___X___ Class II Change ____

Equipment Type: DTS - Part 15 Digital Transmission Systems (WiFi transmitter portion)

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No ___X___

If yes, defer until : _____ date

Company Name agrees to notify the Commission by: _____ date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes _____ No ___X___

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [10-01-14] Edition] provision.

Report prepared by:

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Table of Contents

List of attached file

Exhibit type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
Schematics	Circuit Diagram	circuit.pdf
Operation Description	Technical Description	descri.pdf
ID Label/Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Confidentiality Letter	request.pdf
Cover Letter	Letter of Agency	agency.pdf

EXHIBIT 1

SUMMARY OF TEST RESULTS

1.0 Summary of Test results

Lenovo new glass C100

Model: C100

FCC ID: A5MC100

TEST	REFERENCE	RESULTS
Max. Output power	15.247(b)(3)	Pass
6 dB Bandwidth	15.247(a)(2)	Pass
Max. Power Density	15.247(e)	Pass
Out of Band Antenna Conducted Emission	15.247(d)	Pass
Radiated Emission in Restricted Bands	15.247(d)	Pass
AC Conducted Emission	15.207	Pass
Antenna Requirement	15.203	Pass (See Notes)

Notes: The EUT uses an Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

EXHIBIT 2

GENERAL DESCRIPTION

2.0 General Description

2.1 Product Description

The Equipment Under Test (EUT) is a Lenovo new glass C100 with WiFi function operating at 2412-2462MHz for 802.11b/g/n-HT20, 11 channels with 5MHz channel spacing. The EUT was powered by D.C. 3.7V from internal rechargeable battery. For more detailed features description, please refer to the user's manual.

Type of Modulation: BPSK, QPSK, 16QAM, 64QAM, CCK, DQPSK, DBPSK.

Antenna Type: Integral Antenna.

For electronic filing, the brief circuit description is saved with filename: descri.pdf.

2.2 Related Submittal(s) Grants

This is an application for certification of:
DTS- Part 15 Digital Transmission Systems (WiFi transmitter portion), and other digital functions were reported in the verification report: 151023010SZN-001
Computer peripheral: 150701028SZN-002
Bluetooth 4.0 Classic: 150701028SZN-003
Bluetooth 4.0 BLE: 150701028SZN-004

2.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10: 2013 and KDB 558074 v03r03. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. All other measurements were made in accordance with the procedures in part 2 of CFR 47.

2.4 Test Facility

The Semi-Anechoic chamber and shield room used to collect the radiated data and conducted data are **Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, Block D, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC (Registration Number: 242492).

EXHIBIT 3

SYSTEM TEST CONFIGURATION

3.0 System Test Configuration

3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables were manipulated to produce worst case emissions. The EUT was powered by a fully charged 3.7V internal rechargeable battery and charged by AC/DC adapter through AC 120/60Hz input during the test.

The simultaneous transmission spurious was tested, only the worst case data was recorded in this report. On 802.11b/g/n mode, all data rate were tested and only the worst case data is shown in the report.

For maximizing emissions, the EUT was rotated through 360°, the EUT was placed on the styrene turntable with 0.8m up to 1GHz and 1.5 m above 1GHz. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

The rear of unit was flushed with the rear of the table when it was powered by adapter up to 1GHz and placed in the centre of turntable above 1GHz.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

3.2 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

The parameters of test software setting:
During the test, Channel and power controlling software provided by the applicant was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the application and is going to be fixed on the firmware of the end product.

3.3 Special Accessories

Attached shielded USB Cable was used.

3.4 Measurement Uncertainty

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

3.5 Equipment Modification

Any modifications installed previous to testing by Lenovo (Beijing) Limited will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

3.6 Support Equipment List and Description

This product was tested in the following configuration:

Refer List:

Description	Manufacturer	Model No.
Adapter	Asian Power	WA-05M05FU (Input: 100V-240V~ / 50-50Hz Output: 5V/1A)
USB Cable	Lenovo	Shielded, Length 92cm
Earphone	Lenovo	Length 30cm

EXHIBIT 4

MEASUREMENT RESULTS

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.0 **Measurement Results**

4.1 Maximum Conducted Output Power at Antenna Terminals, FCC Rules 15.247(b)(3):

The antenna power of the EUT was connected to the input of a broadband peak RF power meter. The power meter have a video bandwidth that is greater than DTS bandwidth and utilize a fast-responding diode detector. Power was read directly at the EUT antenna terminals with cable loss added.

For antennas with gains of 6 dBi or less, maximum allowed Transmitter output is 1 watt (+30 dBm).

IEEE 802.11b (Antenna Gain = 0.9dBi) (CCK, 1Mbps)		
Frequency (MHz)	Peak Output in dBm	Output in mWatt
Low Channel: 2412	17.21	52.6
Middle Channel: 2437	17.02	50.4
High Channel: 2462	16.69	46.7

IEEE 802.11g (Antenna Gain = 0.9dBi) (16QAM, 6Mbps)		
Frequency (MHz)	Peak Output in dBm	Output in mWatt
Low Channel: 2412	22.04	160.0
Middle Channel: 2437	21.72	148.6
High Channel: 2462	21.53	142.2

IEEE 802.11n-HT20 (Antenna Gain = 0.9dBi) (16QAM, 6.5Mbps)		
Frequency (MHz)	Peak Output in dBm	Output in mWatt
Low Channel: 2412	21.15	130.3
Middle Channel: 2437	20.70	117.5
High Channel: 2462	21.08	128.2

Cable loss: 1.0 dB External Attenuation: 0 dB

Cable loss, external attenuation has been included in OFFSET function

EUT max. output level = 22.04dBm

For RF Exposure, the information is saved with filename: sar report.pdf.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.2 Minimum 6 dB RF Bandwidth, FCC Rule 15.247(a)(2):

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 KHz according to FCC KDB 558074. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

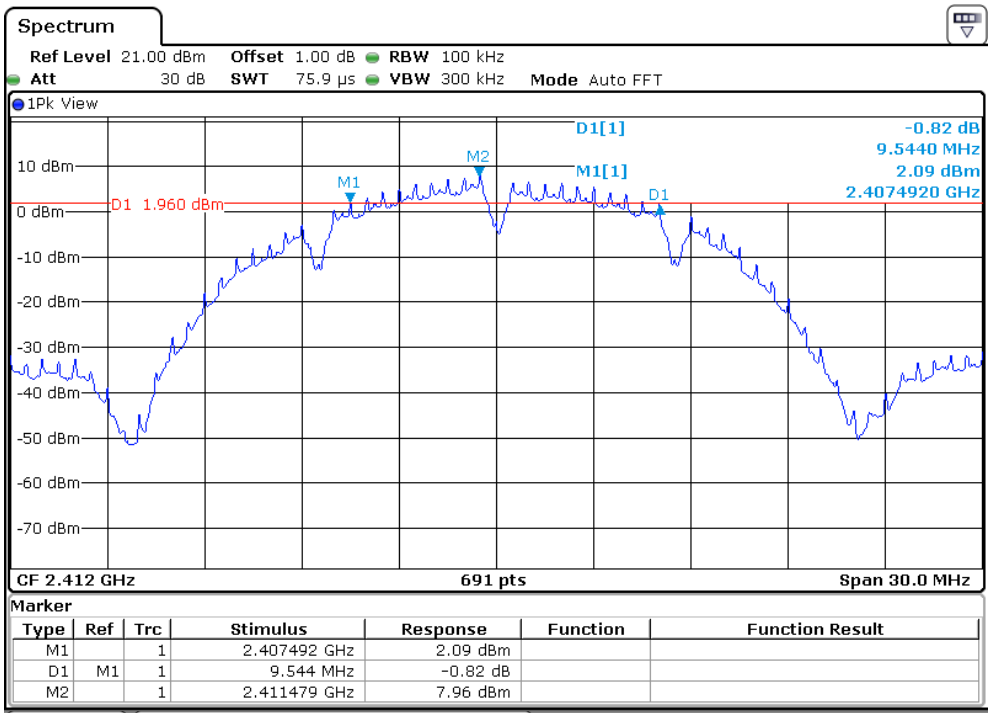
Limit: The 6 dB Bandwidth is at least 500 kHz.

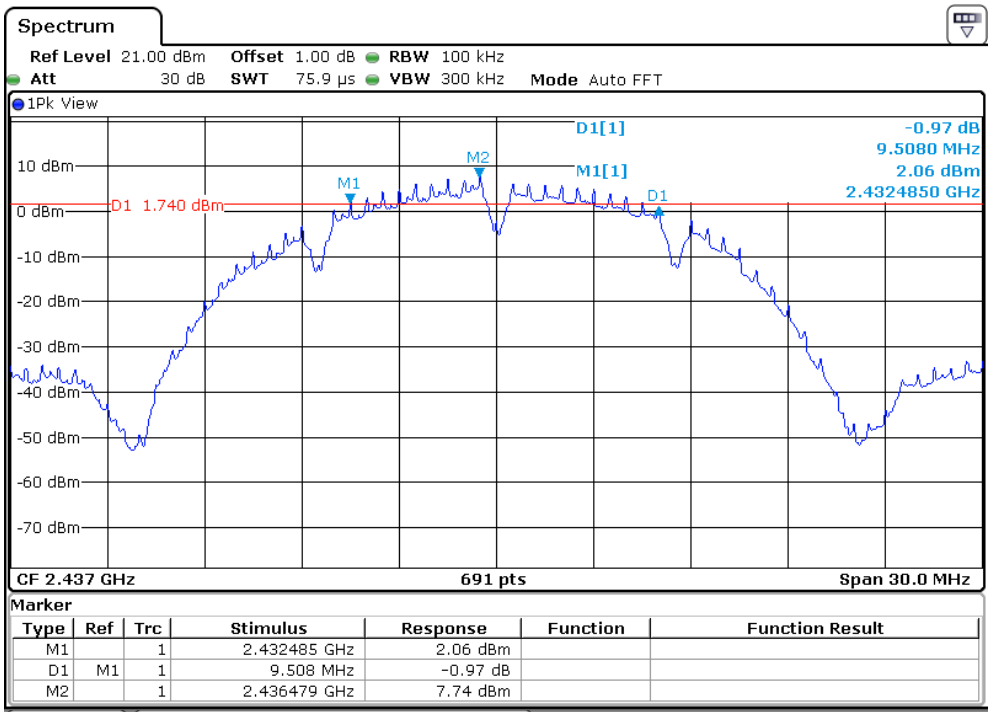
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	9.544
2437	9.508
2462	9.030

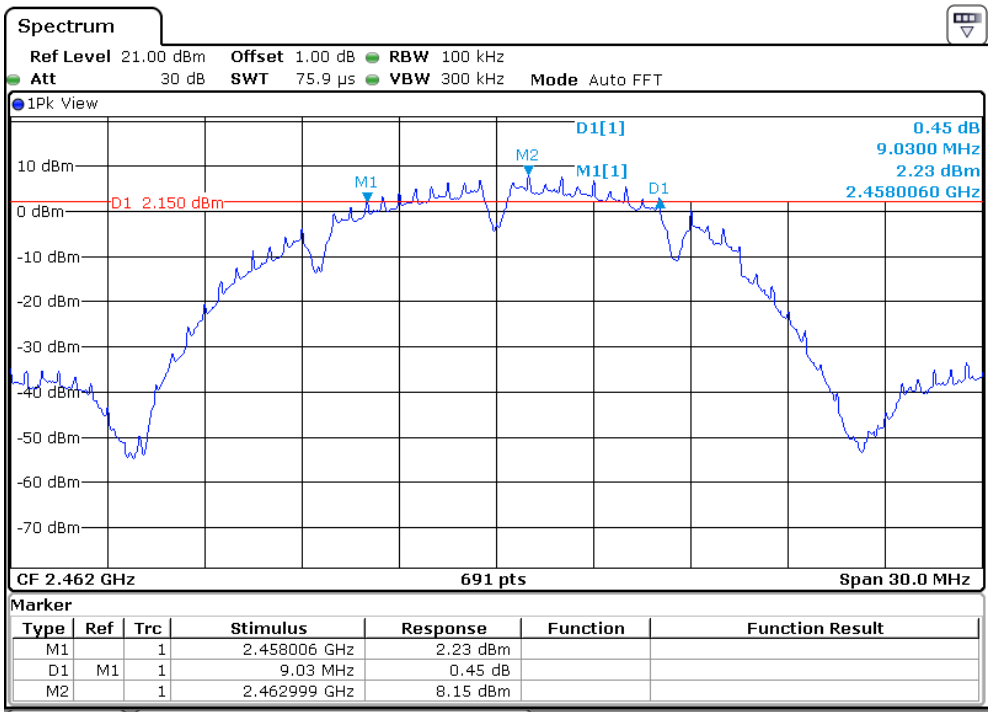
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	14.986
2437	15.043
2462	13.893

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	6 dB Bandwidth (MHz)
2412	15.051
2437	14.993
2462	15.109

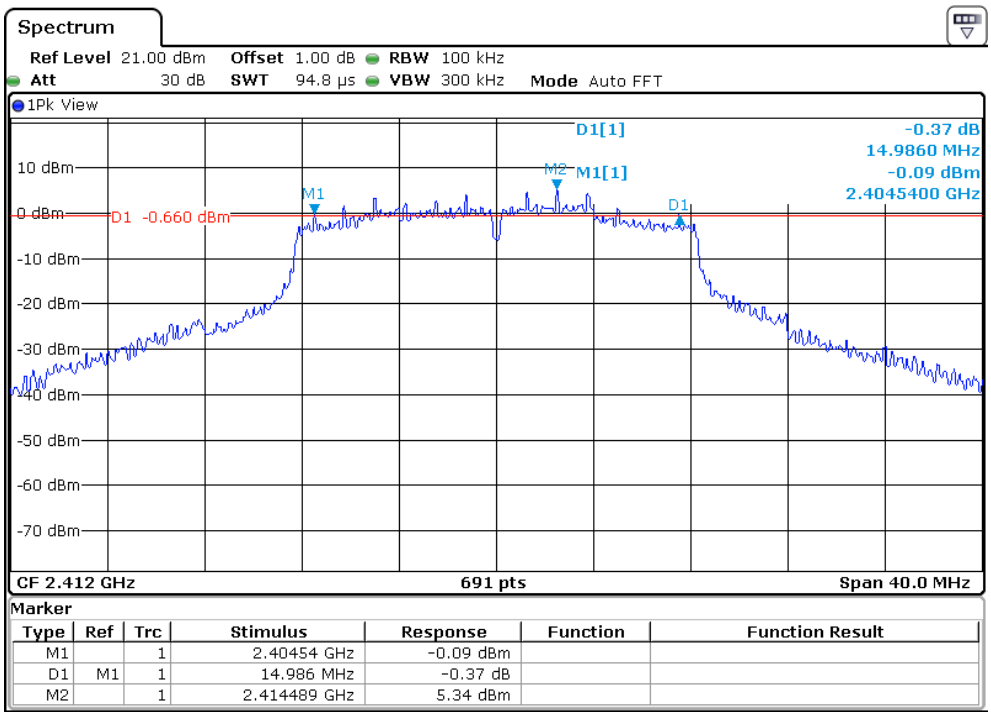
The test plots are attached as below.
802.11b

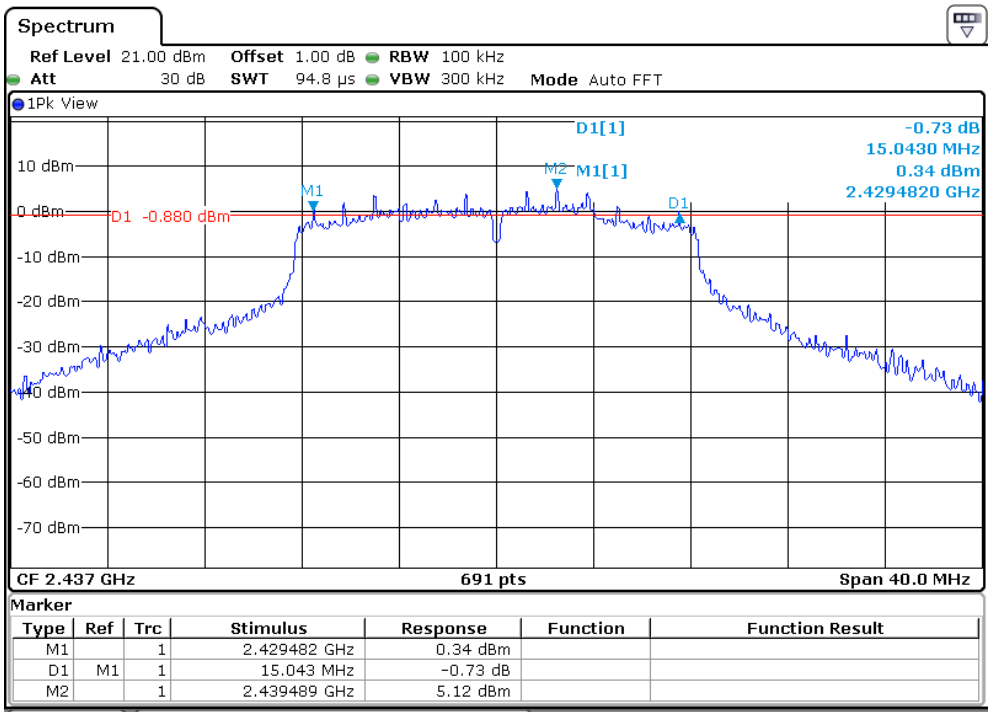


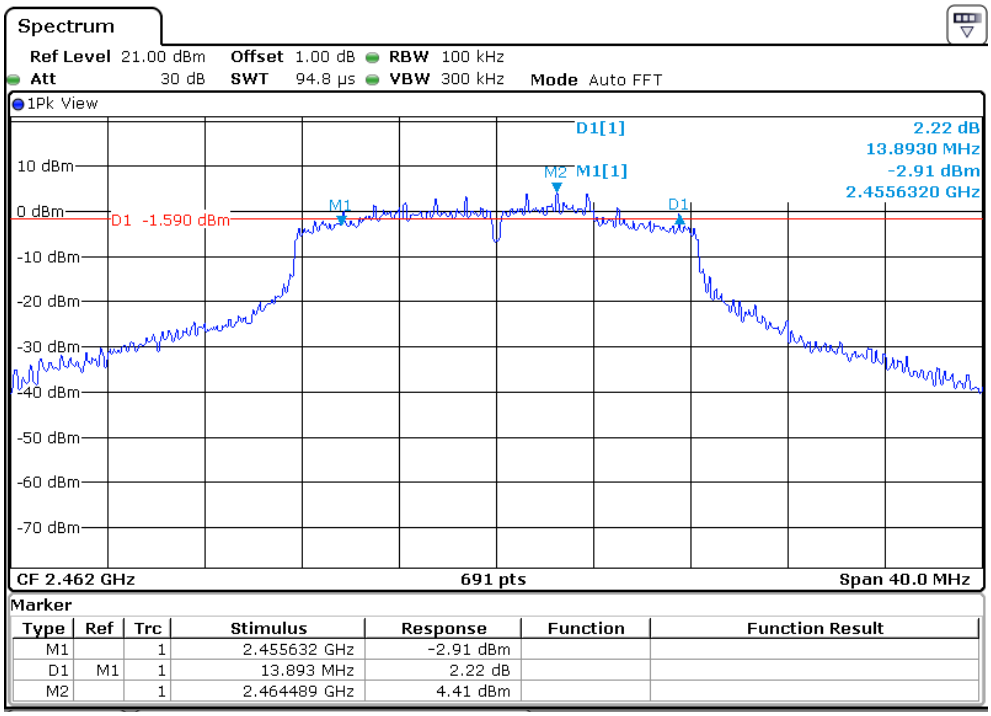



Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 75.9 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] 0.45 dB
9.0300 MHz
M1[1] 2.23 dBm
2.4580060 GHz
M2
M1
D1
D1 2.150 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 30.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.458006 GHz 2.23 dBm
D1 M1 1 9.03 MHz 0.45 dB
M2 1 2.462999 GHz 8.15 dBm

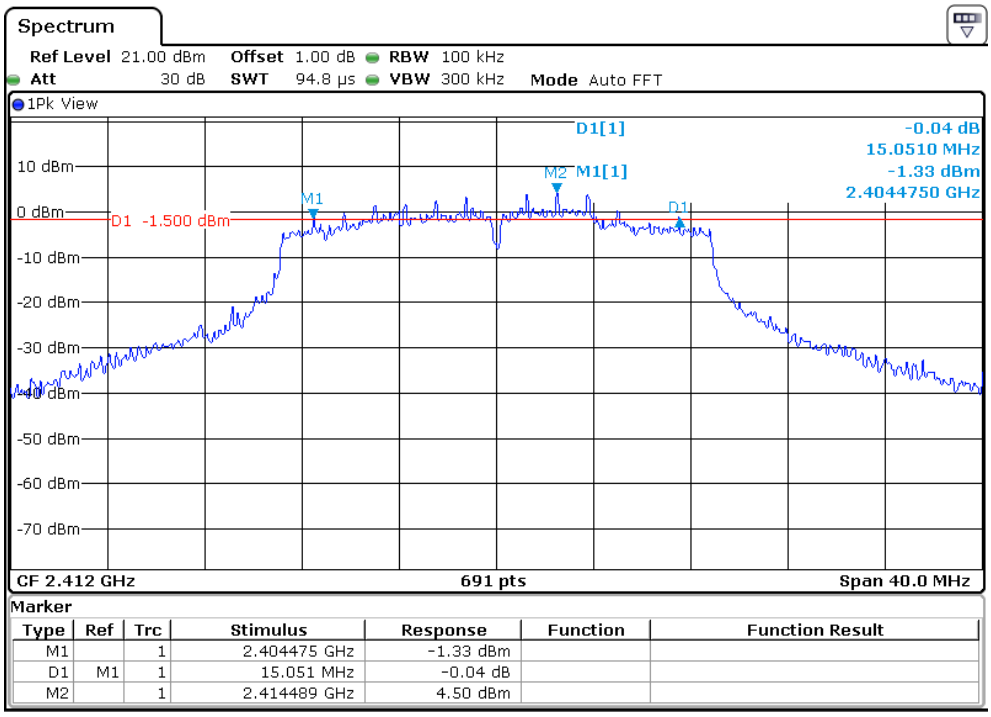
802.11g

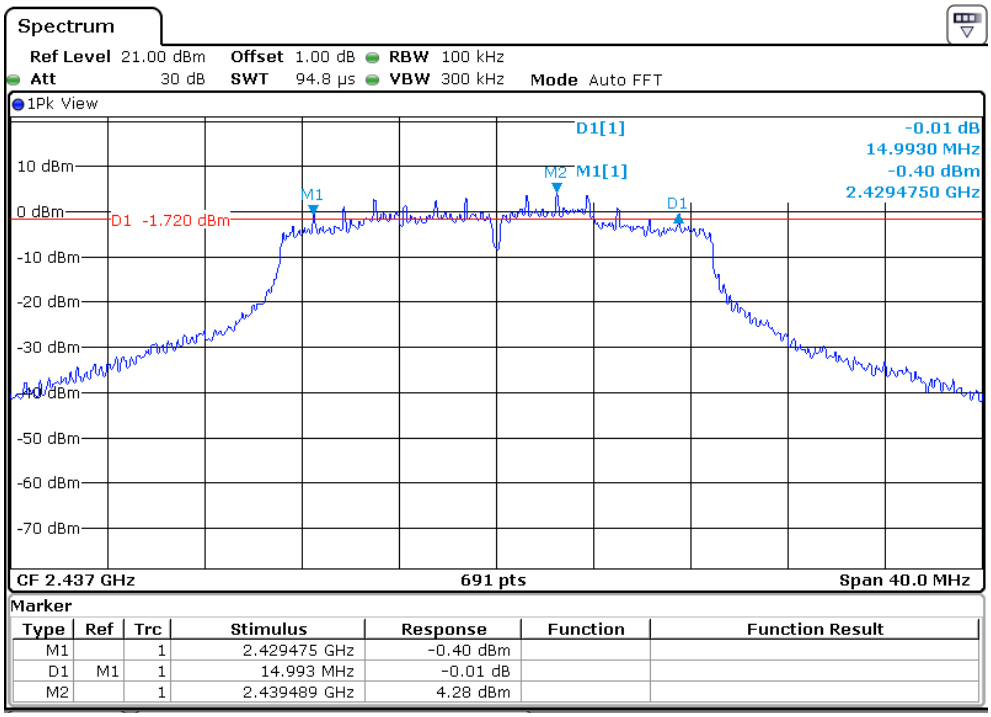

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.37 dB
14.9860 MHz
M2[1] -0.09 dBm
2.4045400 GHz
10 dBm
0 dBm
D1 -0.660 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.40454 GHz -0.09 dBm
D1 M1 1 14.986 MHz -0.37 dB
M2 1 2.414489 GHz 5.34 dBm

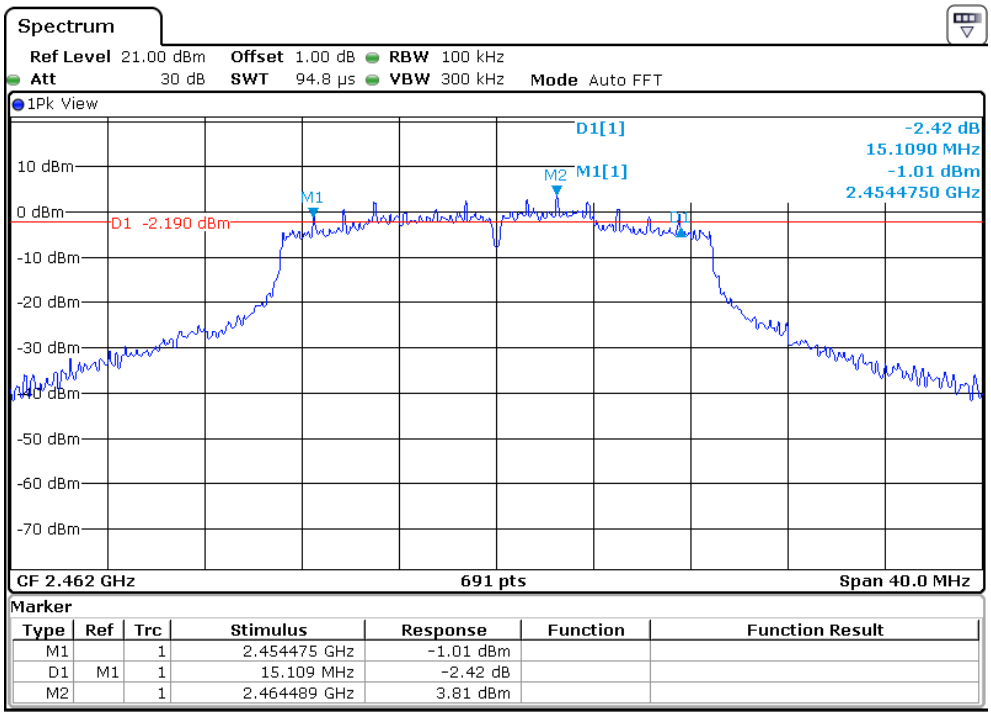

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.73 dB
15.0430 MHz
M2[1] 0.34 dBm
2.4294820 GHz
10 dBm
0 dBm
D1 -0.880 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.429482 GHz 0.34 dBm
D1 M1 1 15.043 MHz -0.73 dB
M2 1 2.439489 GHz 5.12 dBm


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1]
2.22 dB
13.8930 MHz
M2 M1[1]
-2.91 dBm
2.4556320 GHz
10 dBm
0 dBm
D1 -1.590 dBm
M1
D1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.455632 GHz -2.91 dBm
D1 M1 1 13.893 MHz 2.22 dB
M2 1 2.464489 GHz 4.41 dBm

802.11n-HT20


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.04 dB
15.0510 MHz
M2 M1[1] -1.33 dBm
2.4044750 GHz
10 dBm
0 dBm
D1 -1.500 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.412 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.404475 GHz -1.33 dBm
D1 M1 1 15.051 MHz -0.04 dB
M2 1 2.414489 GHz 4.50 dBm


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1] -0.01 dB
14.9930 MHz
M2 M1[1] -0.40 dBm
2.4294750 GHz
10 dBm
0 dBm
D1 -1.720 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.437 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.429475 GHz -0.40 dBm
D1 M1 1 14.993 MHz -0.01 dB
M2 1 2.439489 GHz 4.28 dBm


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
D1[1]
-2.42 dB
15.1090 MHz
M2 M1[1]
-1.01 dBm
2.4544750 GHz
10 dBm
0 dBm
D1 -2.190 dBm
M1
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 40.0 MHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 2.454475 GHz -1.01 dBm
D1 M1 1 15.109 MHz -2.42 dB
M2 1 2.464489 GHz 3.81 dBm

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.3 Maximum Power Density Reading, FCC Rule 15.247(e):

The Measurement Procedure PKPSD was set according to the FCC KDB 558074.

Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

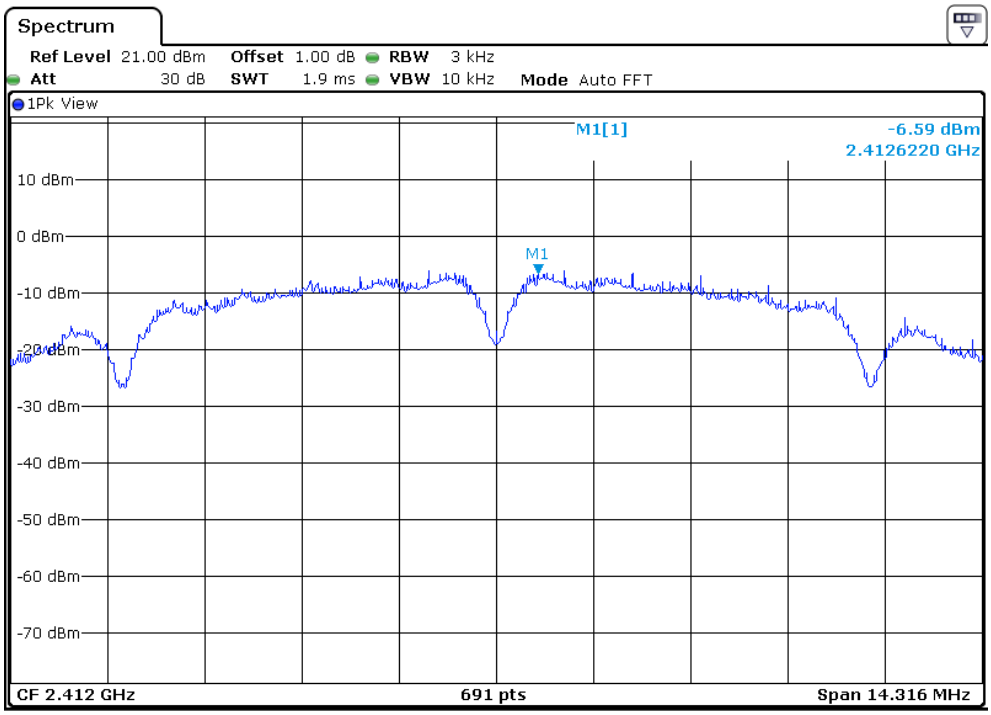
Limit: The Power Density does not exceed 8dBm/3 kHz.

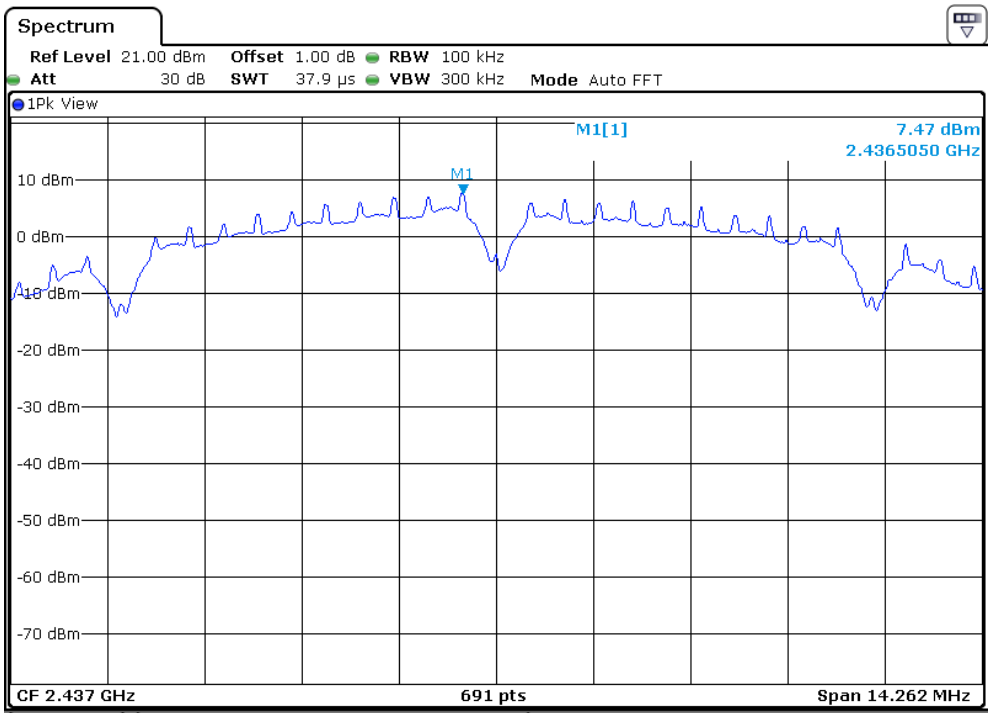
IEEE 802.11b (CCK, 1Mbps)	
Frequency (MHz)	Power Density with RBW 3KHz for 2412MHz and 2462MHz; RBW100KHz for 2437MHz
2412	-6.59
2437	7.47
2462	-6.68

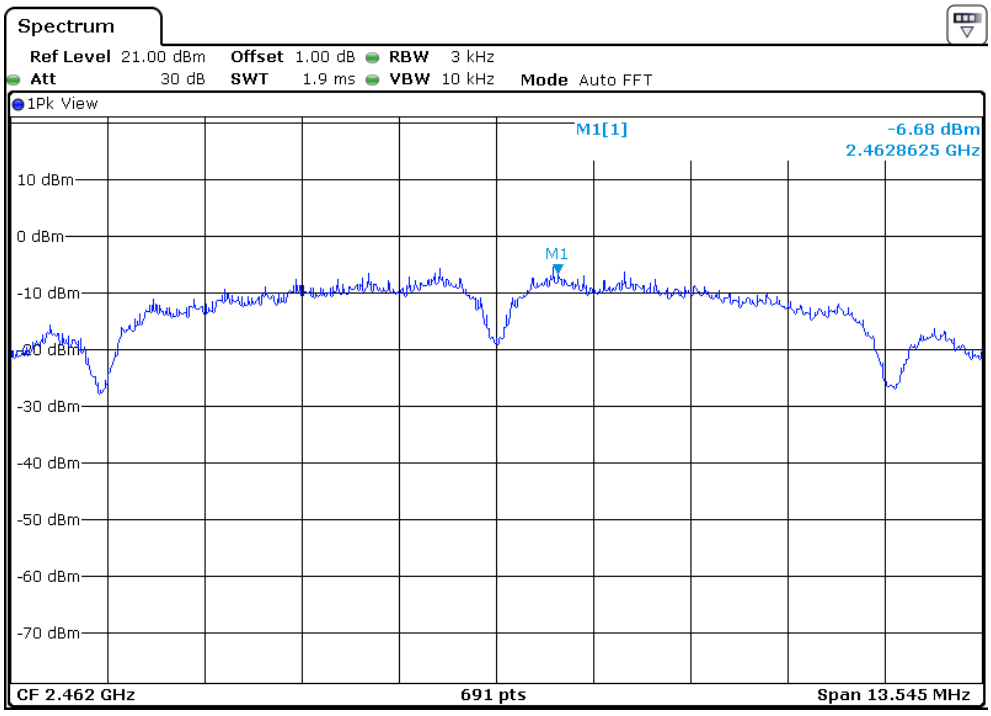
IEEE 802.11g (16QAM, 6Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.29
2437	4.17
2462	4.41

IEEE 802.11n-HT20 (16QAM, 6.5Mbps)	
Frequency (MHz)	Power Density with RBW 100KHz
2412	4.32
2437	4.23
2462	3.66

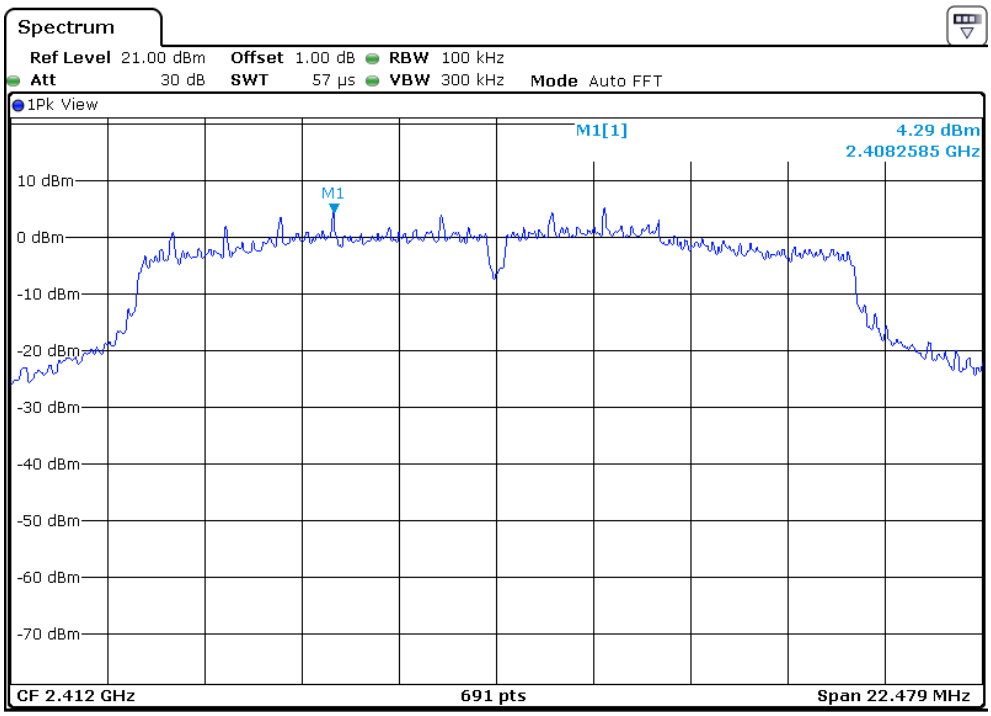
The test plots are attached as below.
802.11b

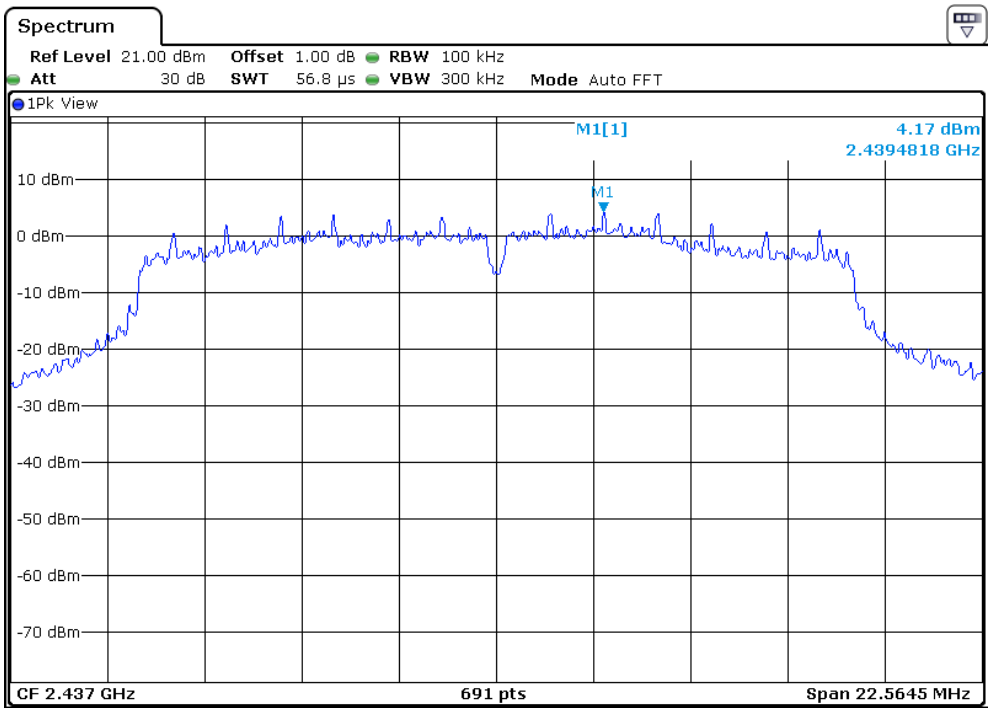


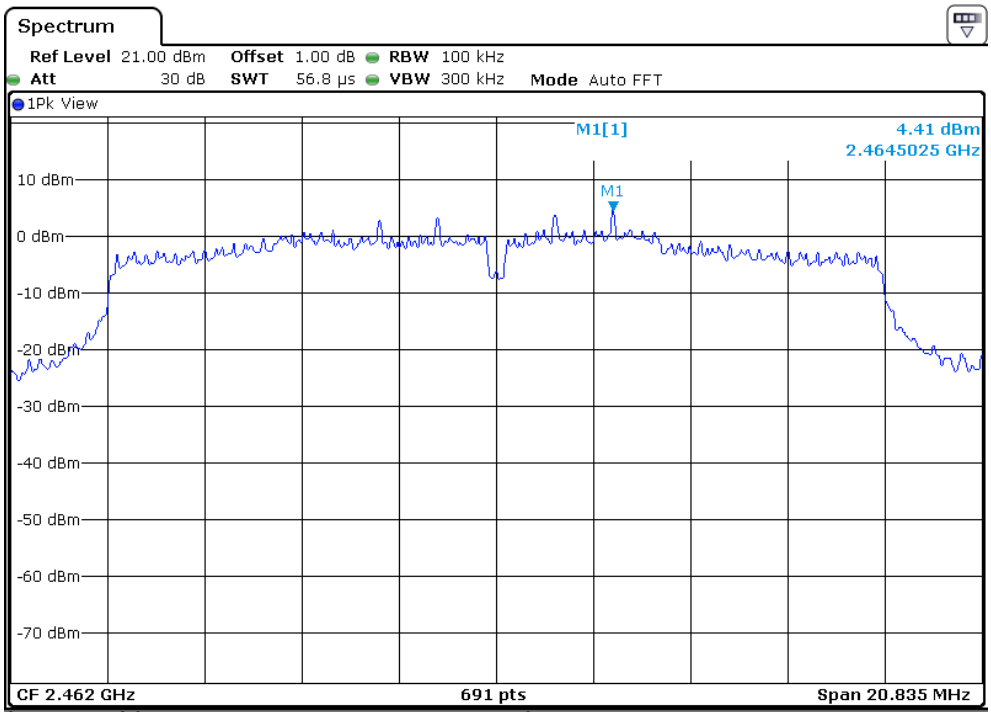



Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 3 kHz
Att 30 dB SWT 1.9 ms VBW 10 kHz Mode Auto FFT
1Pk View
M1[1]
-6.68 dBm
2.4628625 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.462 GHz
691 pts
Span 13.545 MHz

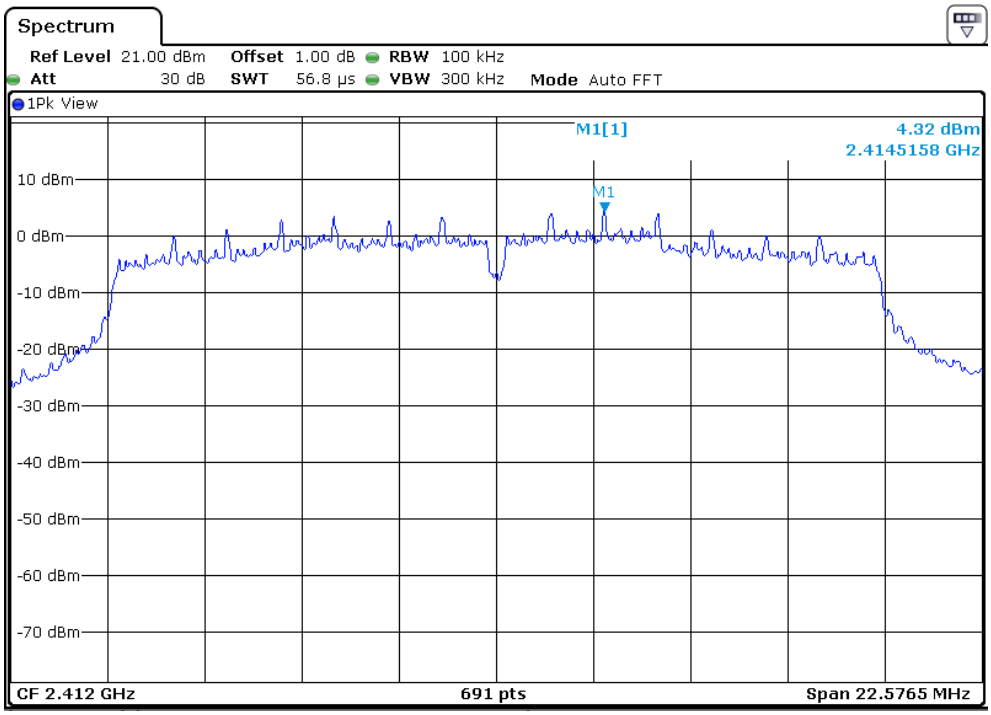
802.11g

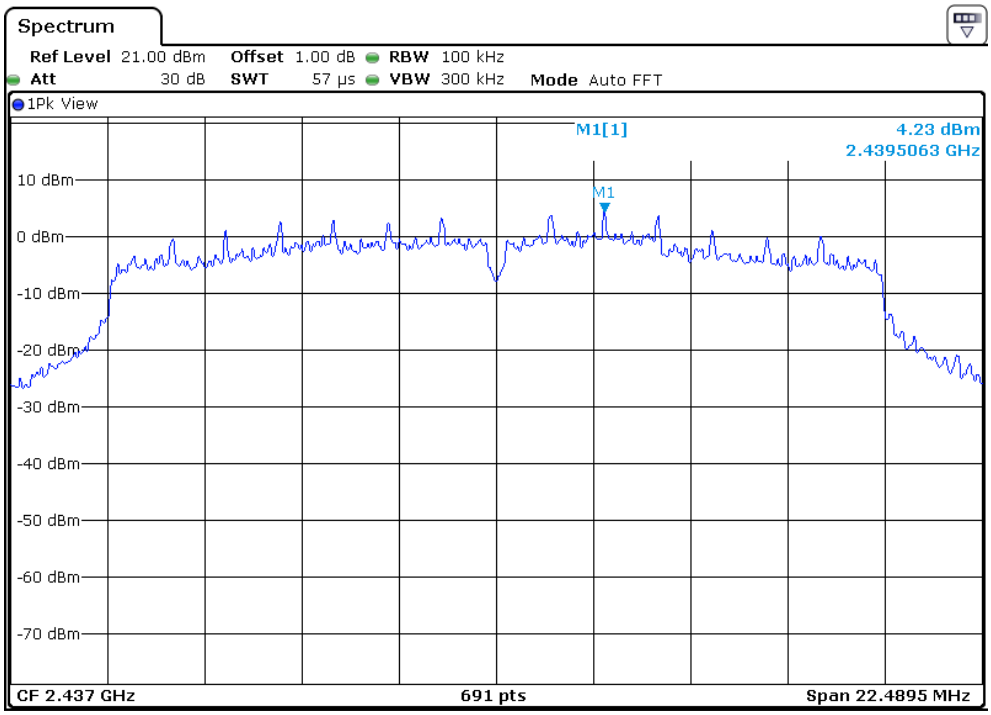

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 57 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.29 dBm
2.4082585 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.412 GHz
691 pts
Span 22.479 MHz

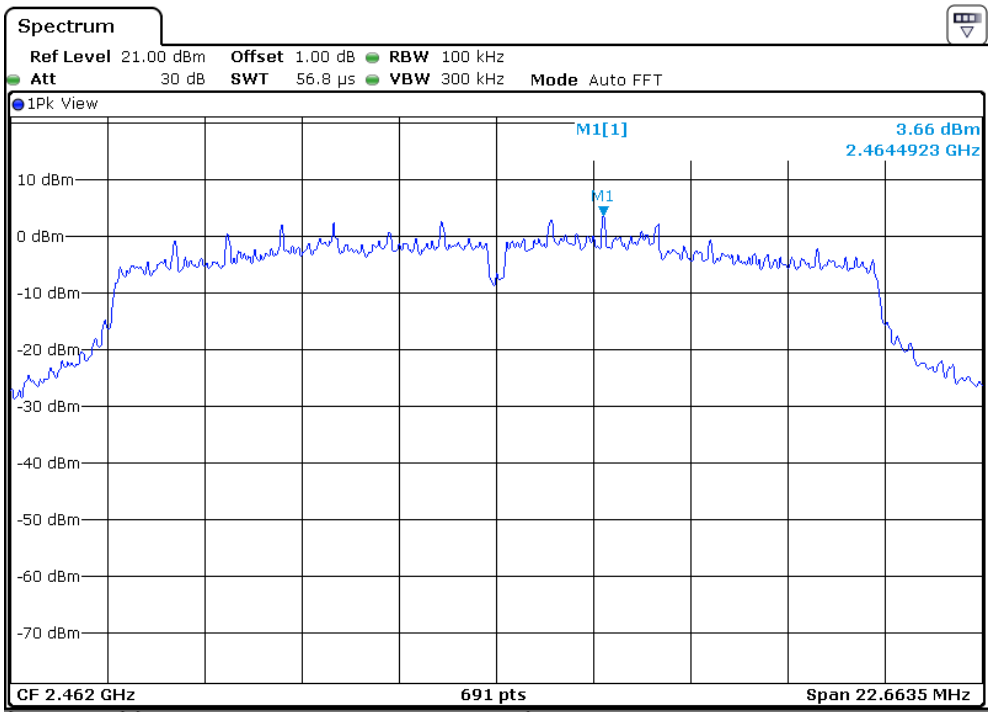

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.17 dBm
2.4394818 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.437 GHz
691 pts
Span 22.5645 MHz


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.41 dBm
2.4645025 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 20.835 MHz

802.11n-HT20


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.32 dBm
2.4145158 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.412 GHz
691 pts
Span 22.5765 MHz


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 57 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1] 4.23 dBm
2.4395063 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
CF 2.437 GHz
691 pts
Span 22.4895 MHz


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 56.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
M1[1]
3.66 dBm
2.4644923 GHz
M1
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.462 GHz
691 pts
Span 22.6635 MHz

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.4 Out of Band Conducted Emissions, FCC Rule 15.247(d)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator 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. The Measurement Procedure was set according to the FCC KDB 558074.

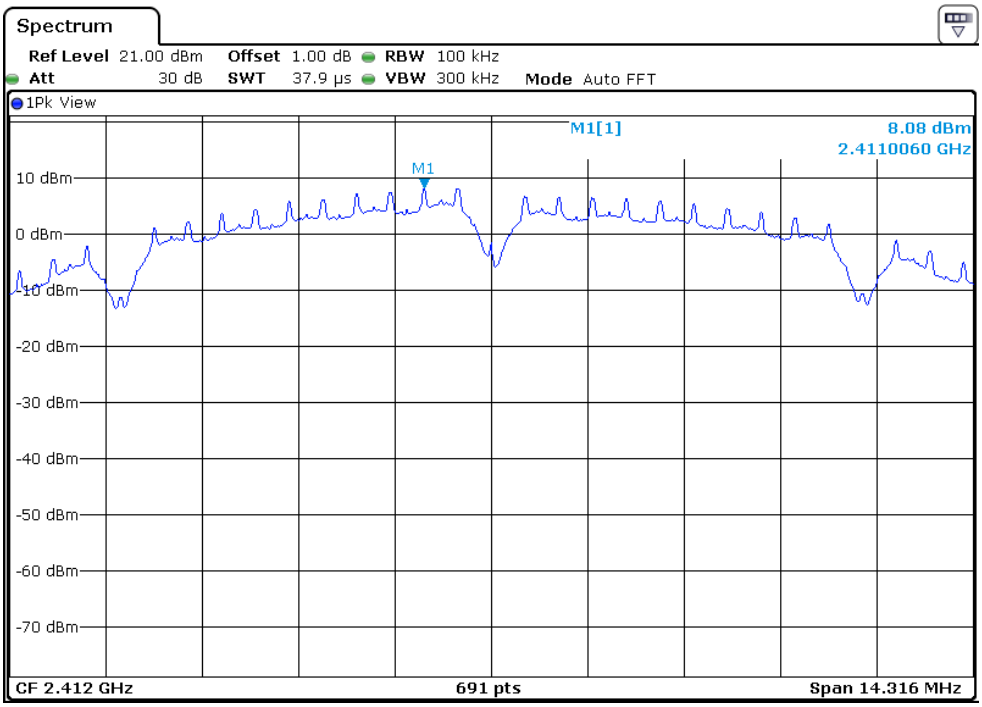
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the passband.

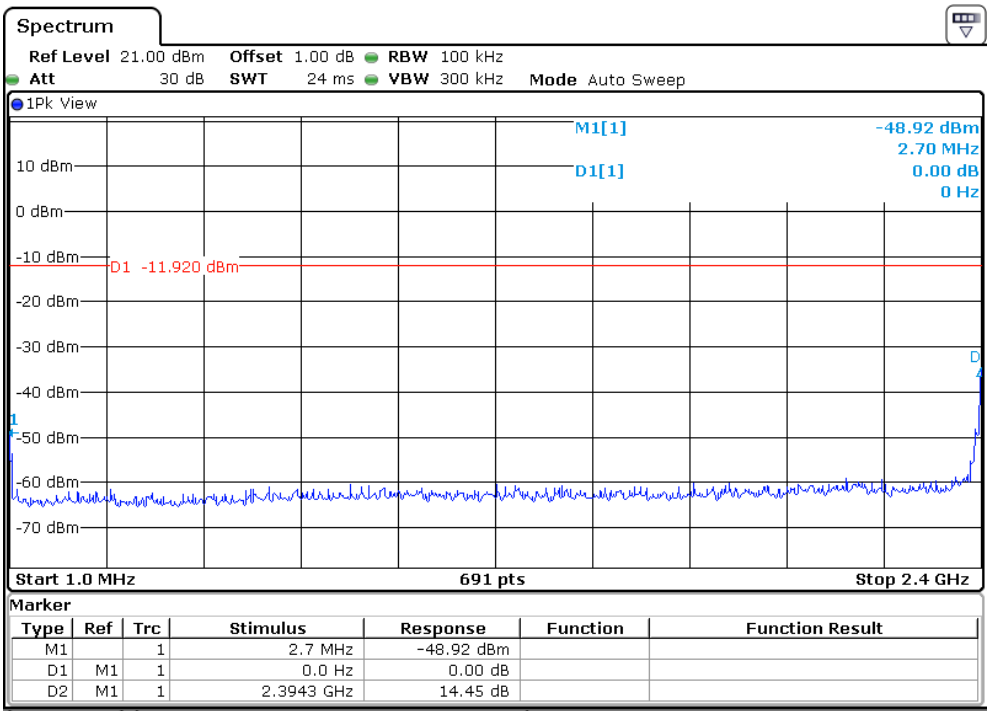
Refer to the attached test plots for out of band conducted emissions data with rate of 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n-HT20.

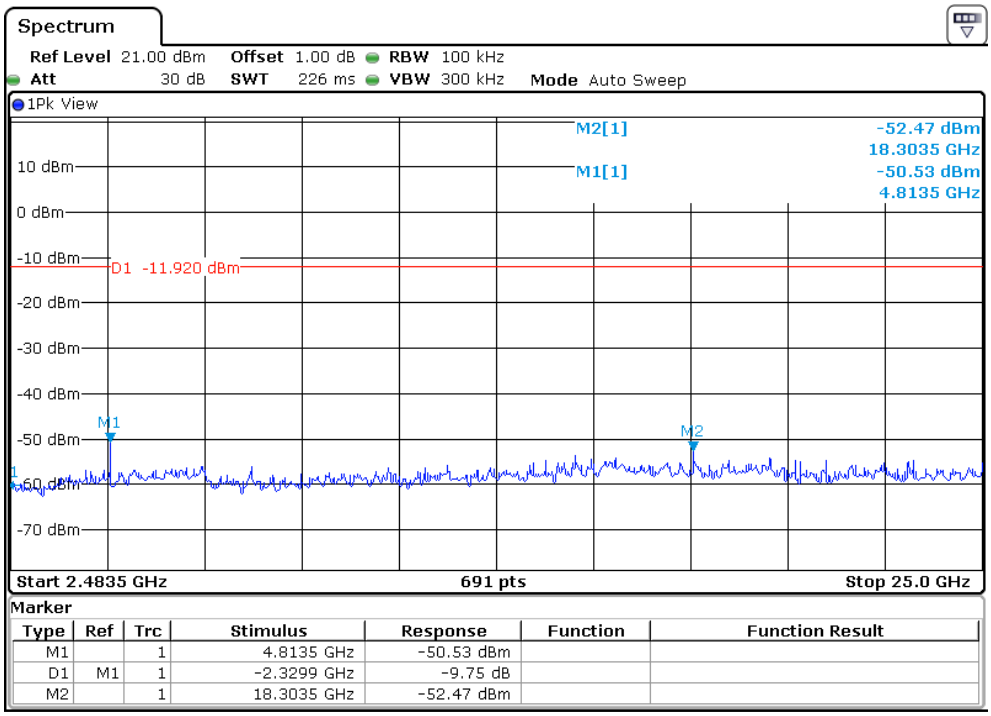
The test plots showed all spurious emission up to the tenth harmonic were measured and they were found to be at least 20 dB below the highest level of the desired power in the passband.

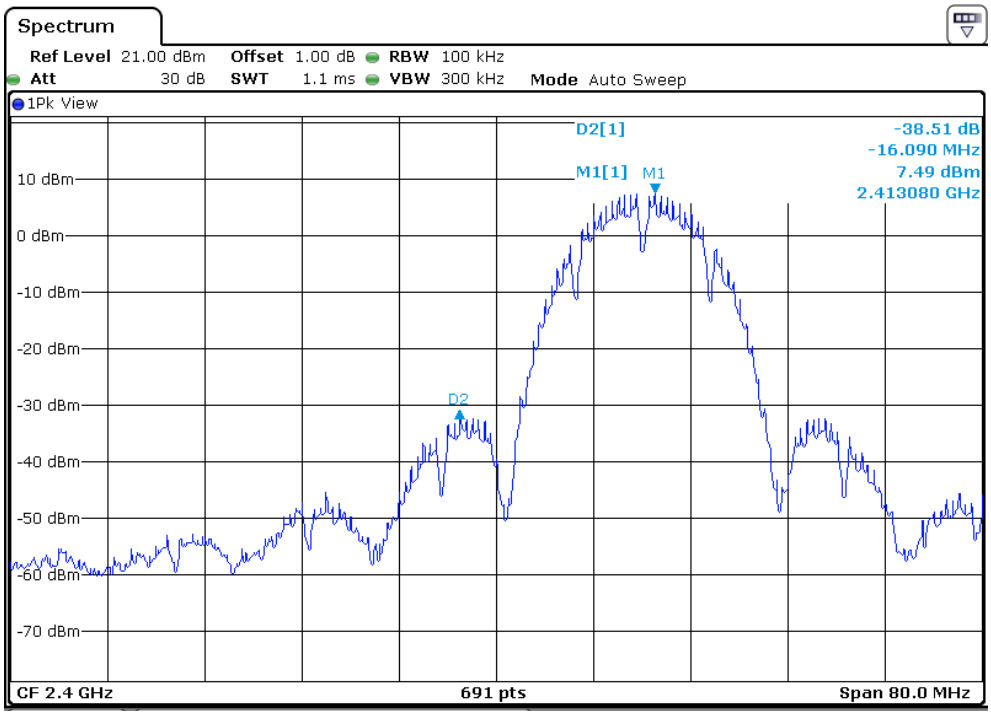
The test plots are attached as below.

802.11b
Channel 01 (2412MHz) Reference Level: 8.08dBm

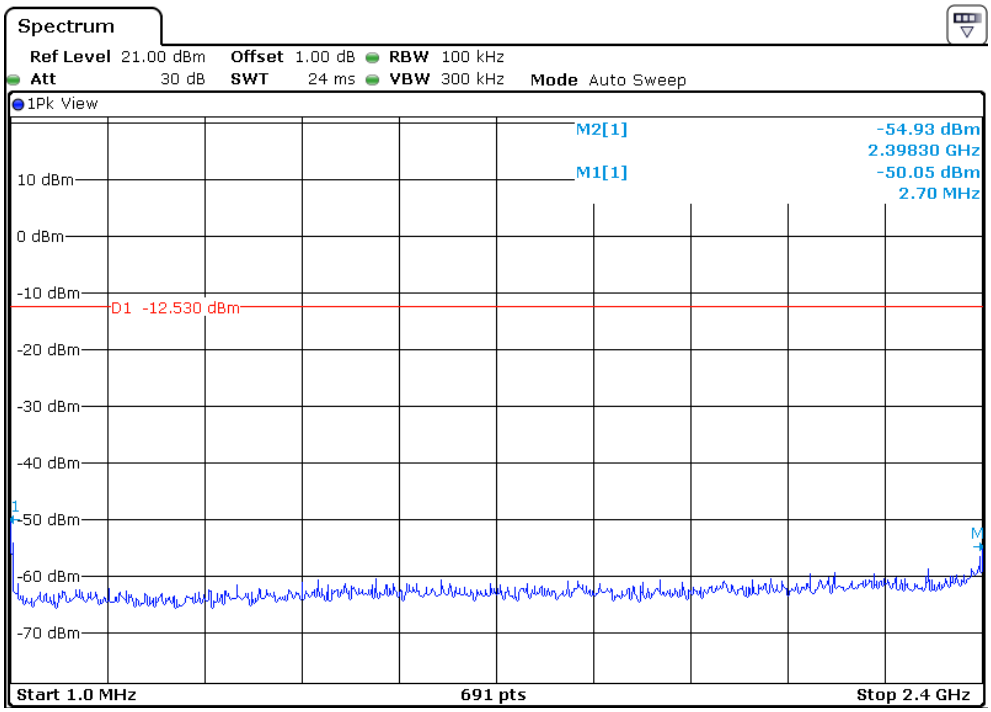


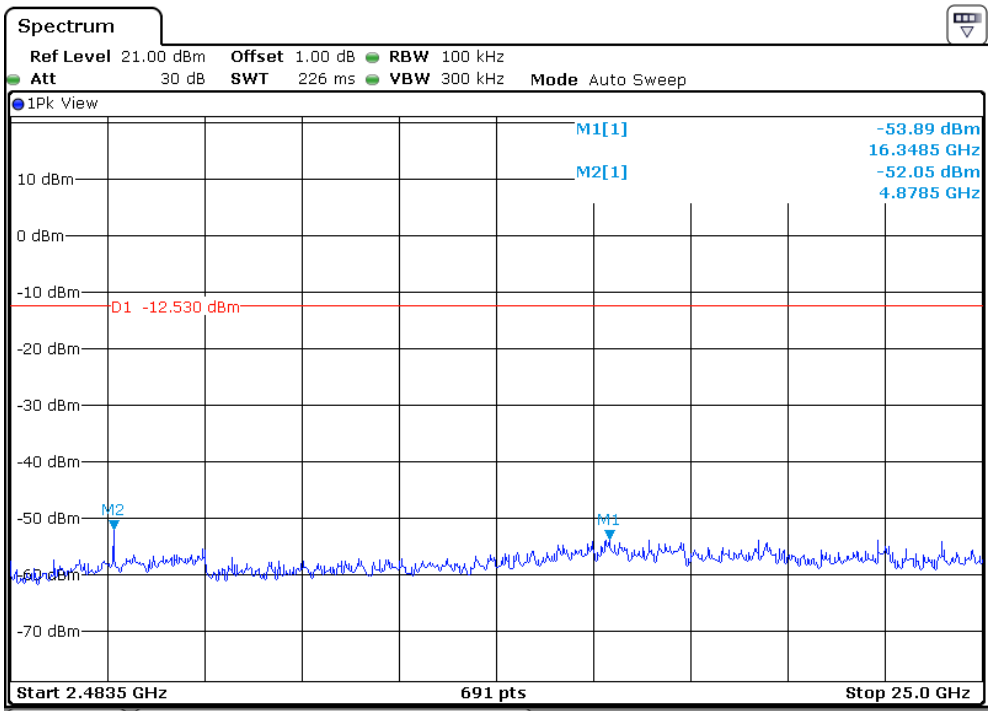



Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 226 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M2[1] -52.47 dBm
18.3035 GHz
M1[1] -50.53 dBm
4.8135 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
D1 -11.920 dBm
M1
M2
Start 2.4835 GHz
691 pts
Stop 25.0 GHz
Marker
Type Ref Trc Stimulus Response Function Function Result
M1 1 4.8135 GHz -50.53 dBm
D1 M1 1 -2.3299 GHz -9.75 dB
M2 1 18.3035 GHz -52.47 dBm

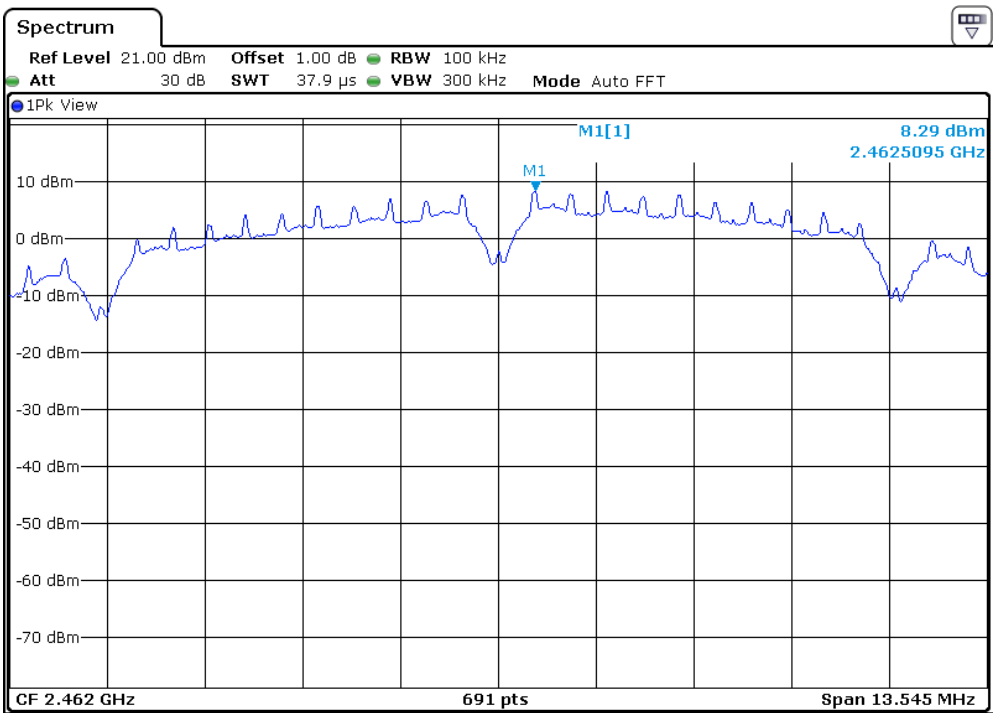

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -38.51 dB
-16.090 MHz
M1[1] 7.49 dBm
2.413080 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D2
CF 2.4 GHz
691 pts
Span 80.0 MHz

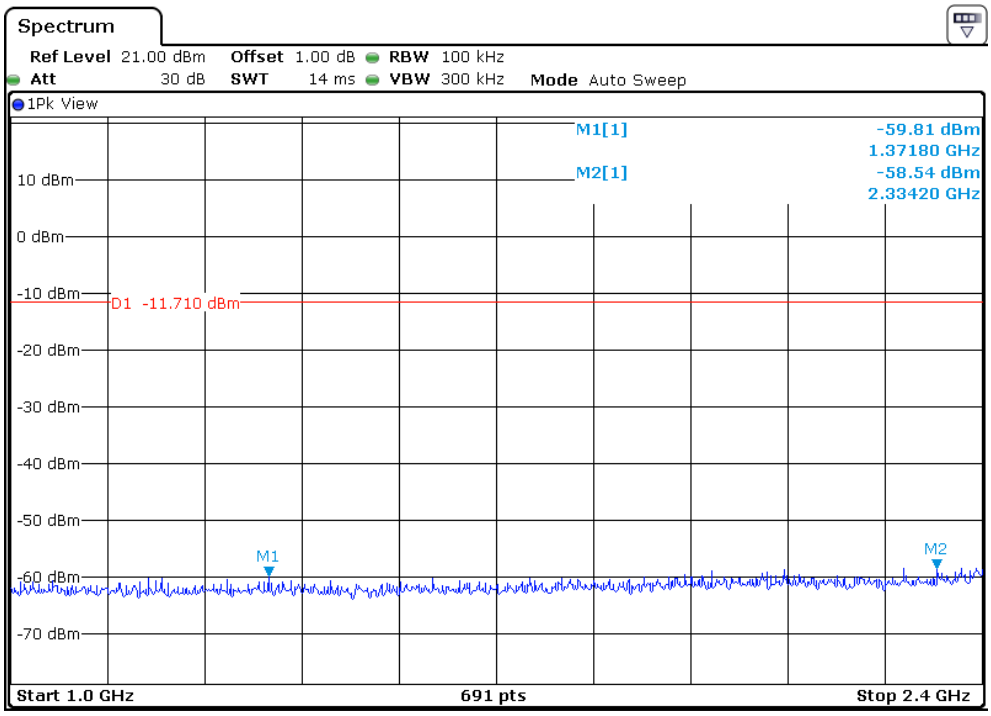
Channel 06 (2437MHz) Reference Level: 7.47dBm

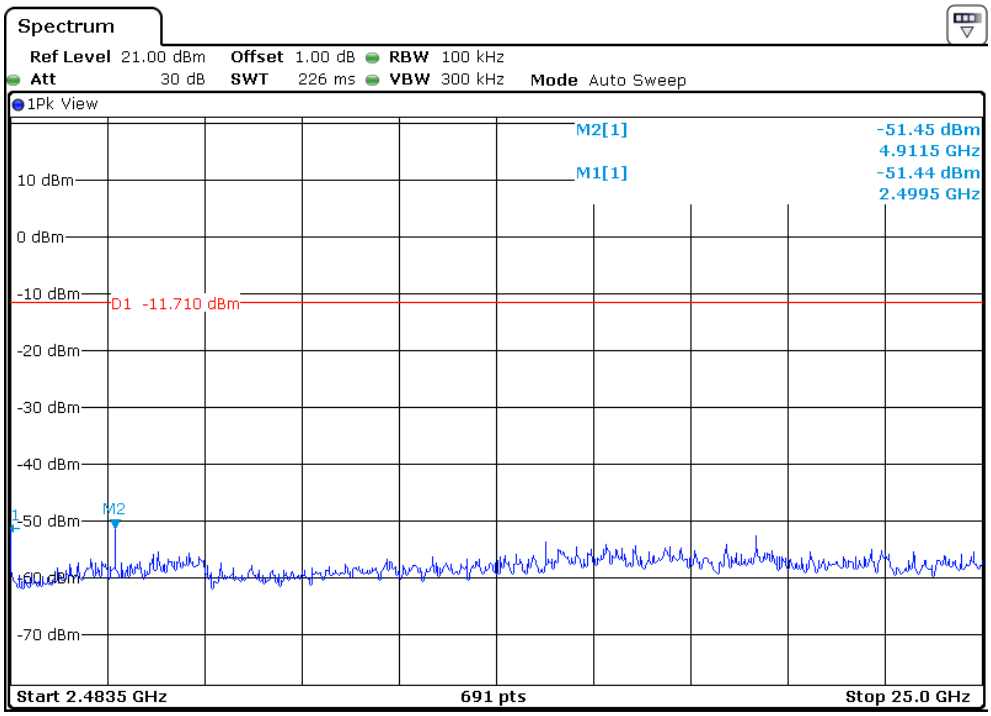


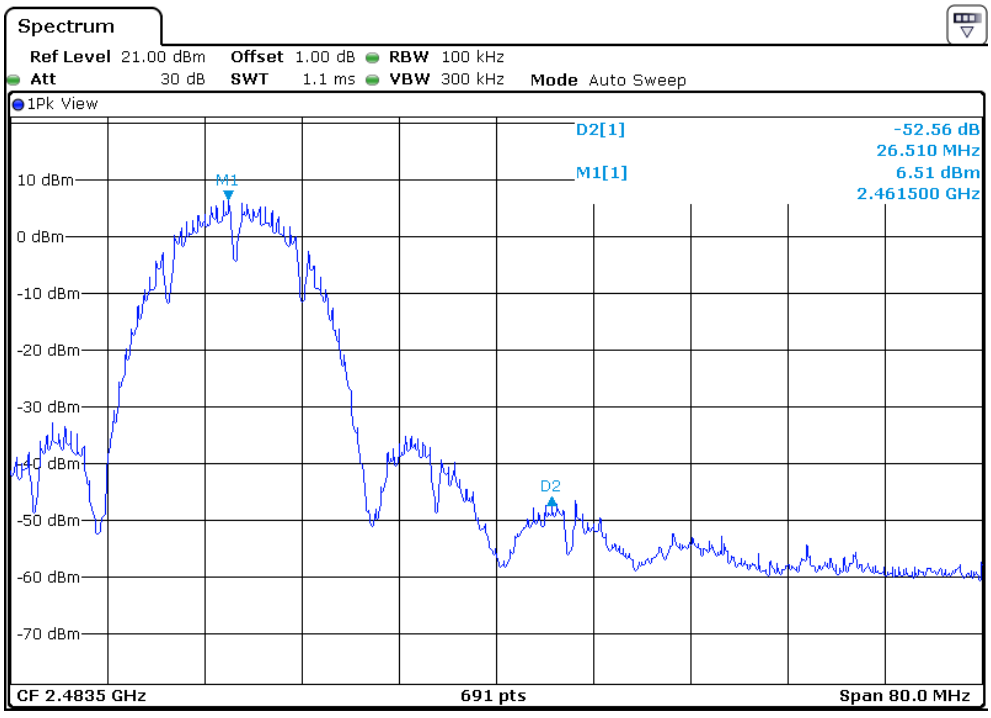


Channel 11 (2462MHz) Reference Level: 8.29dBm

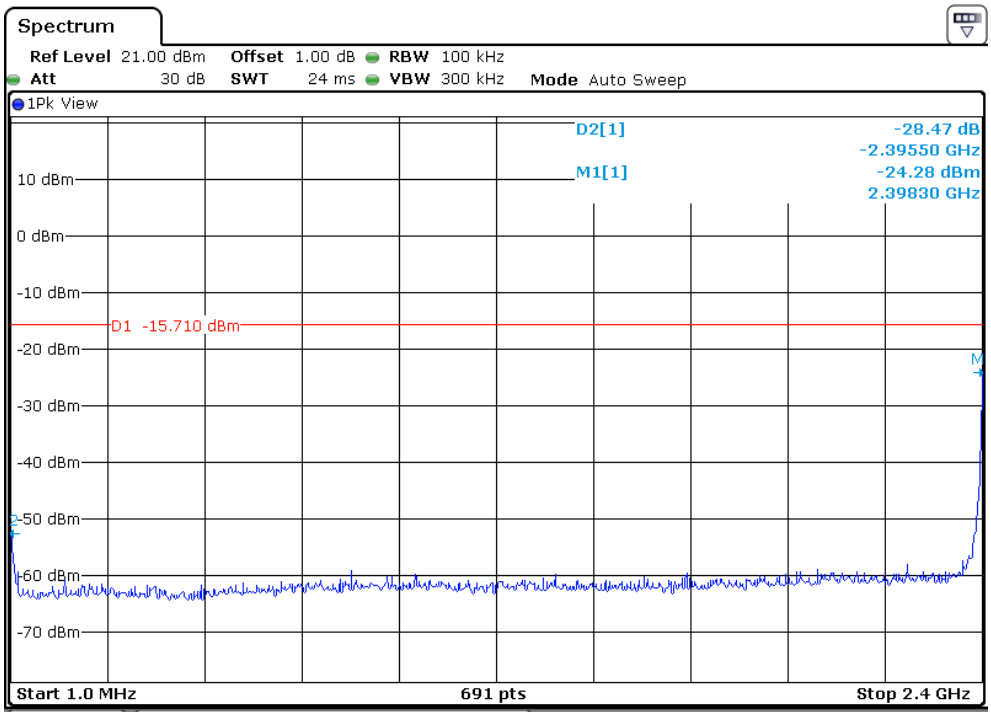


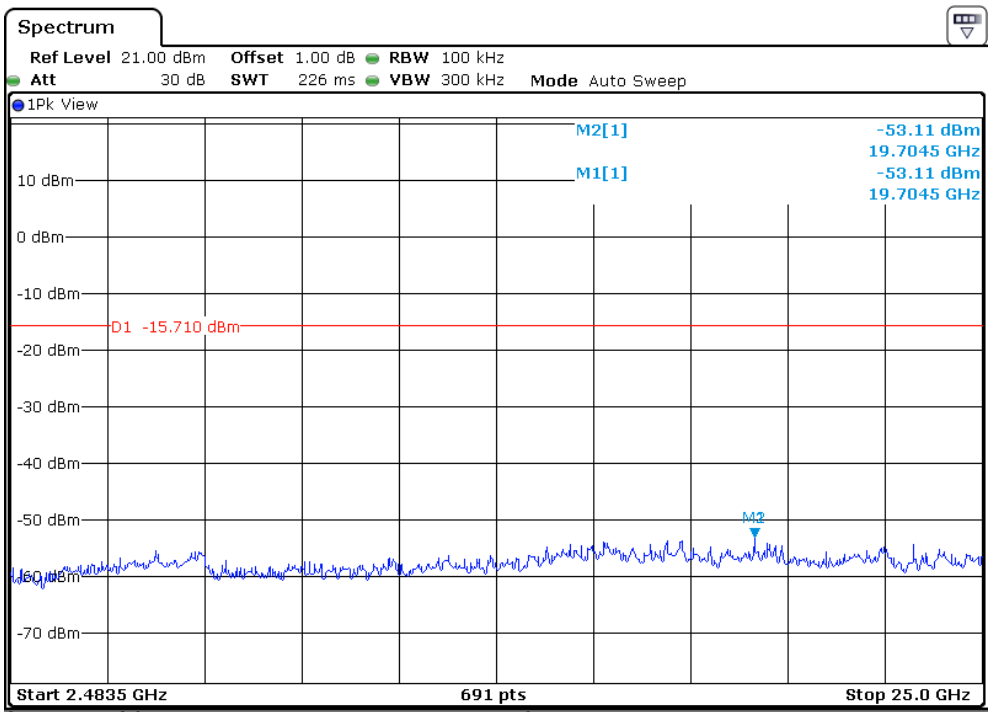


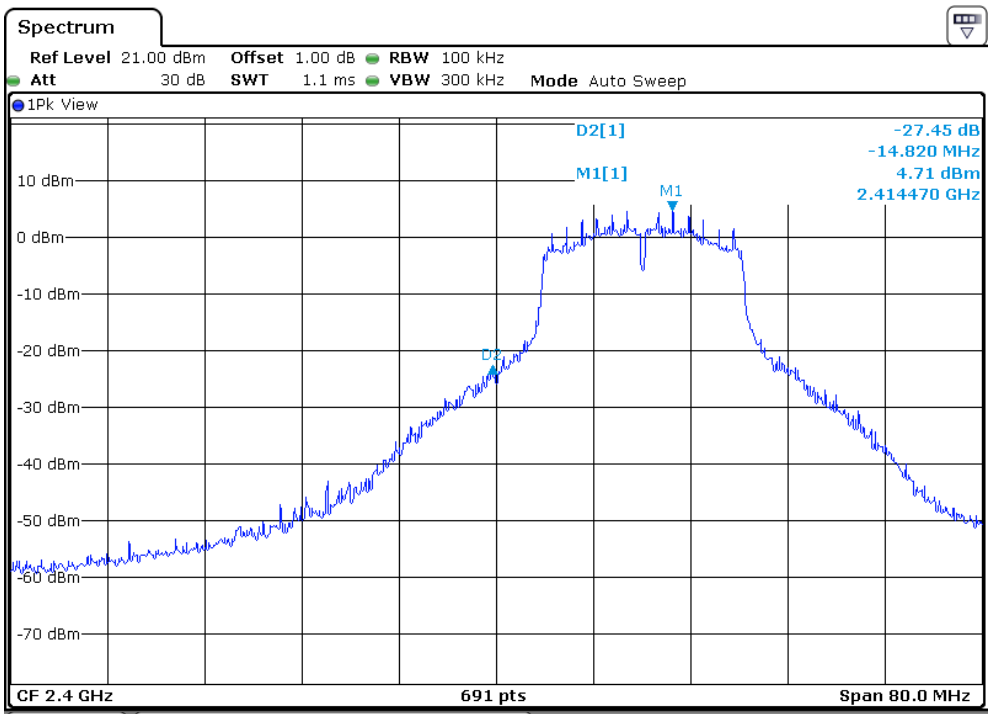

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 226 ms VBW 300 kHz Mode Auto Sweep
1Pk View
M2[1] -51.45 dBm
4.9115 GHz
M1[1] -51.44 dBm
2.4995 GHz
10 dBm
0 dBm
-10 dBm
D1 -11.710 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M2
Start 2.4835 GHz
691 pts
Stop 25.0 GHz


Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -52.56 dB
26.510 MHz
M1[1] 6.51 dBm
2.461500 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D2
CF 2.4835 GHz
691 pts
Span 80.0 MHz

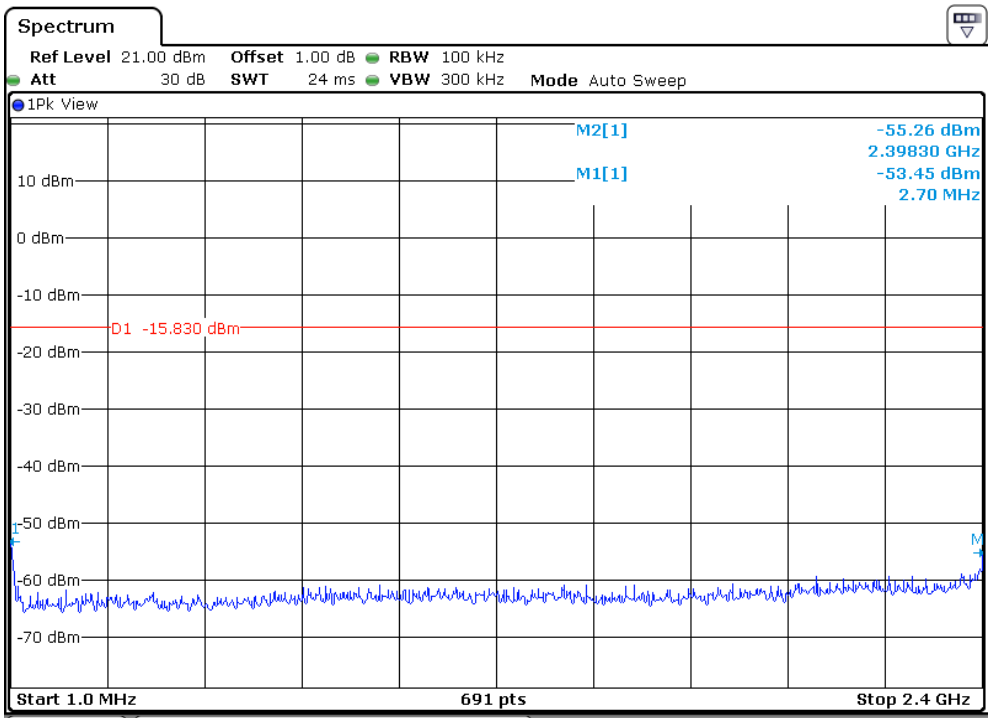
802.11g
Channel 01 (2412MHz) Reference Level: 4.29dBm

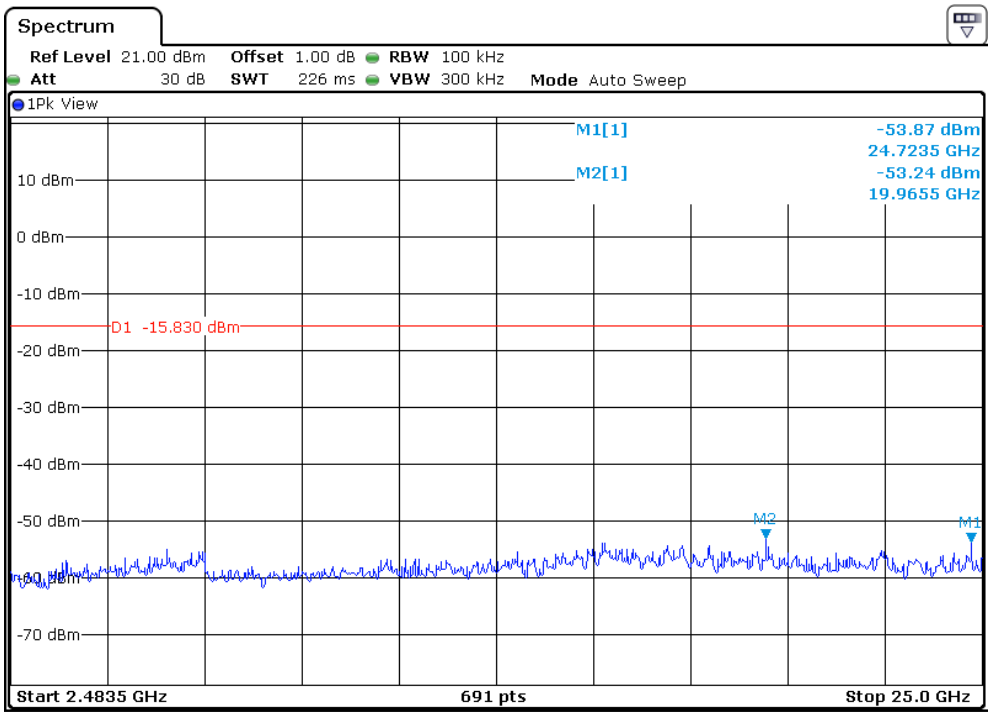




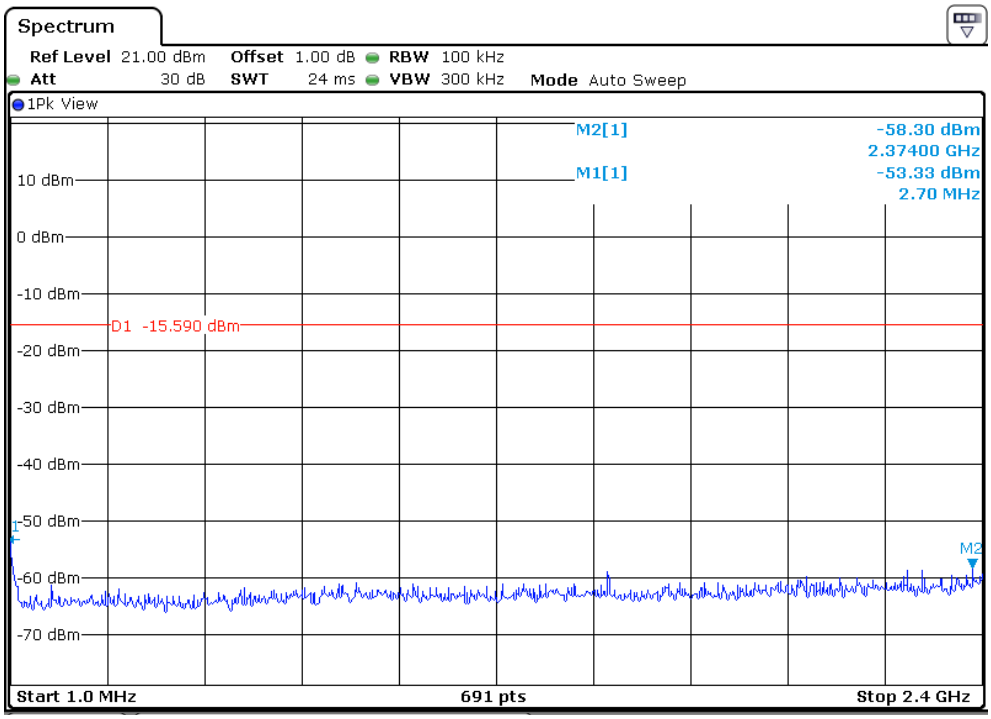

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -27.45 dB
-14.820 MHz
M1[1] 4.71 dBm
2.414470 GHz
M1
D2
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4 GHz
691 pts
Span 80.0 MHz

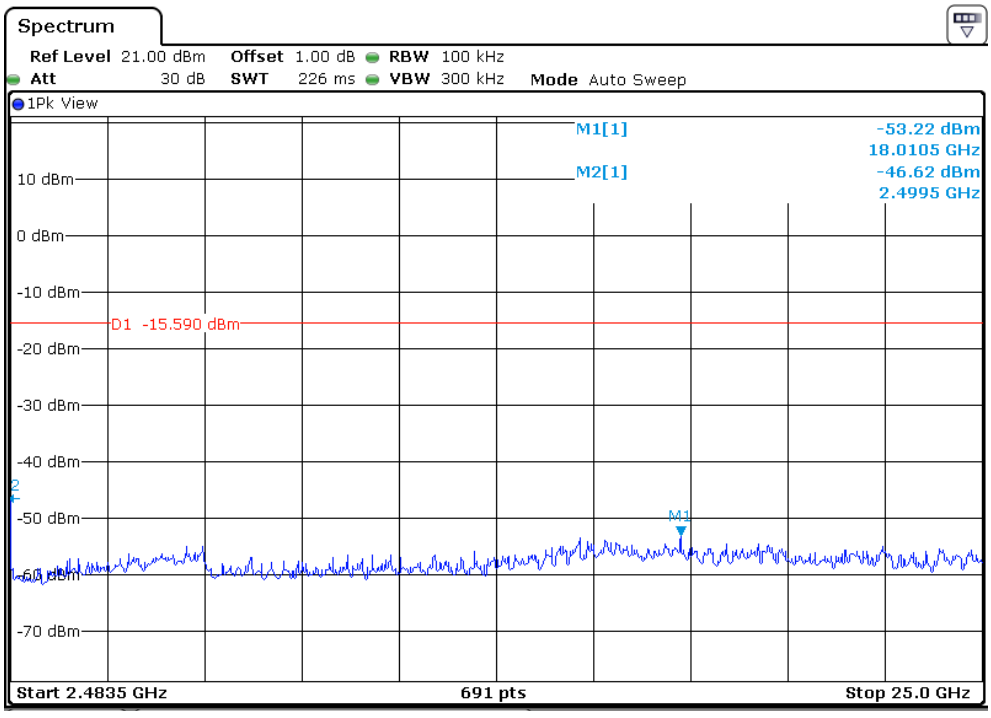
Channel 06 (2437MHz) Reference Level: 4.17dBm

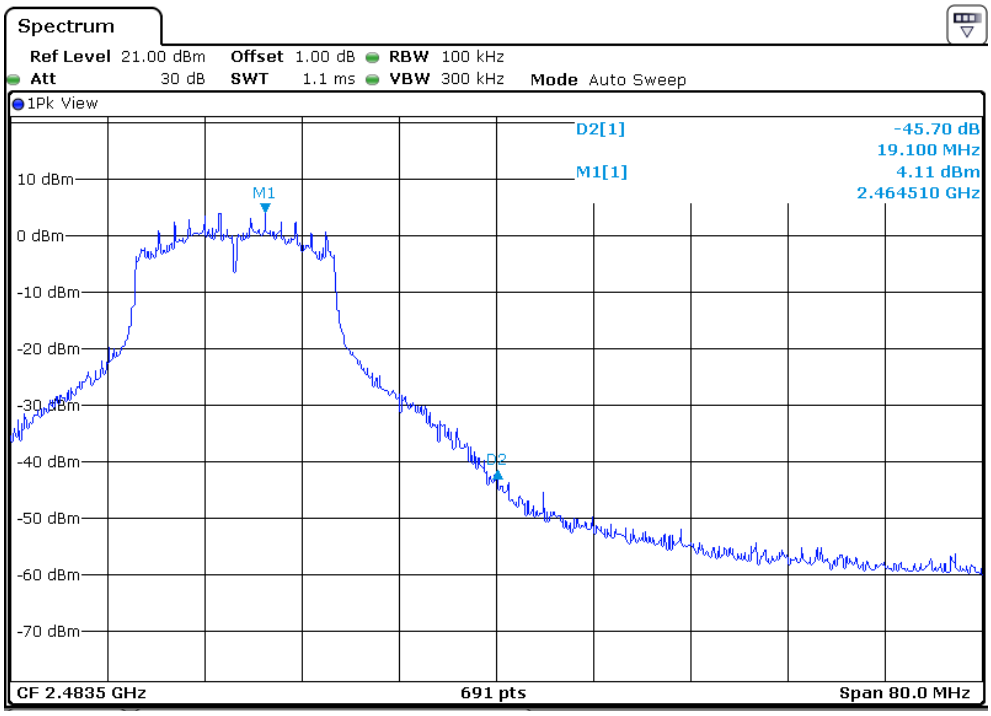




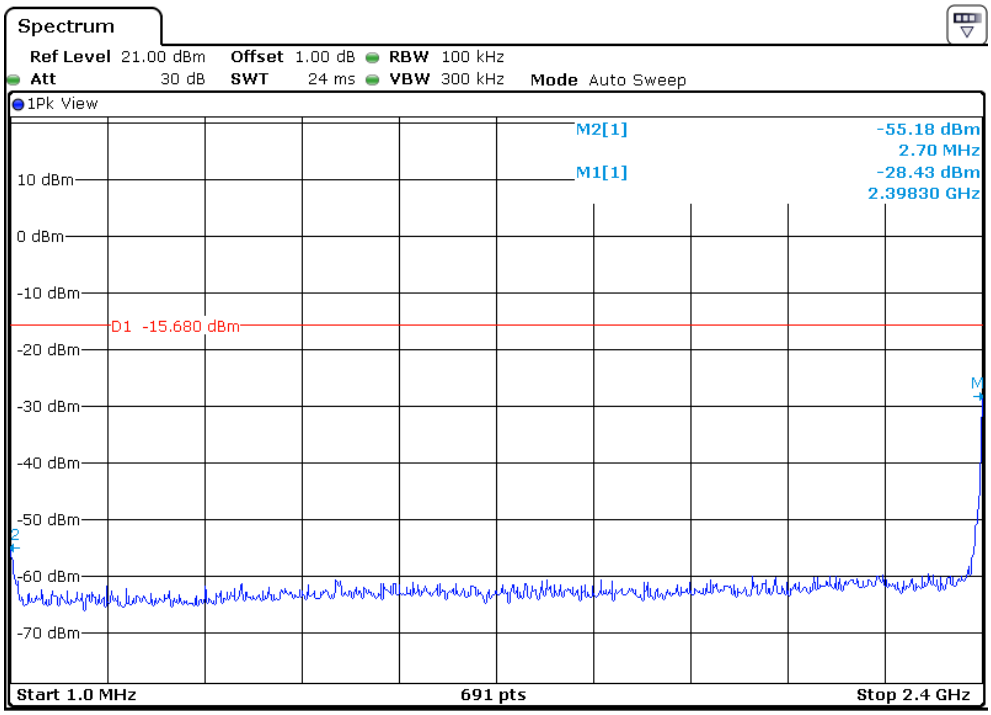
Channel 11 (2462MHz) Reference Level: 4.41dBm

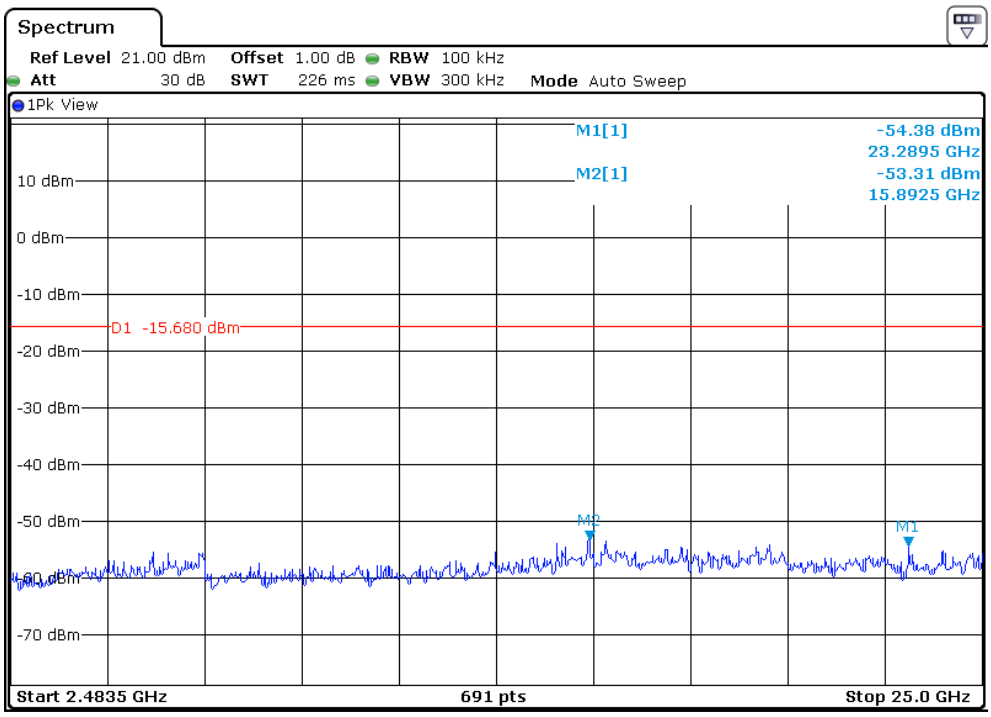


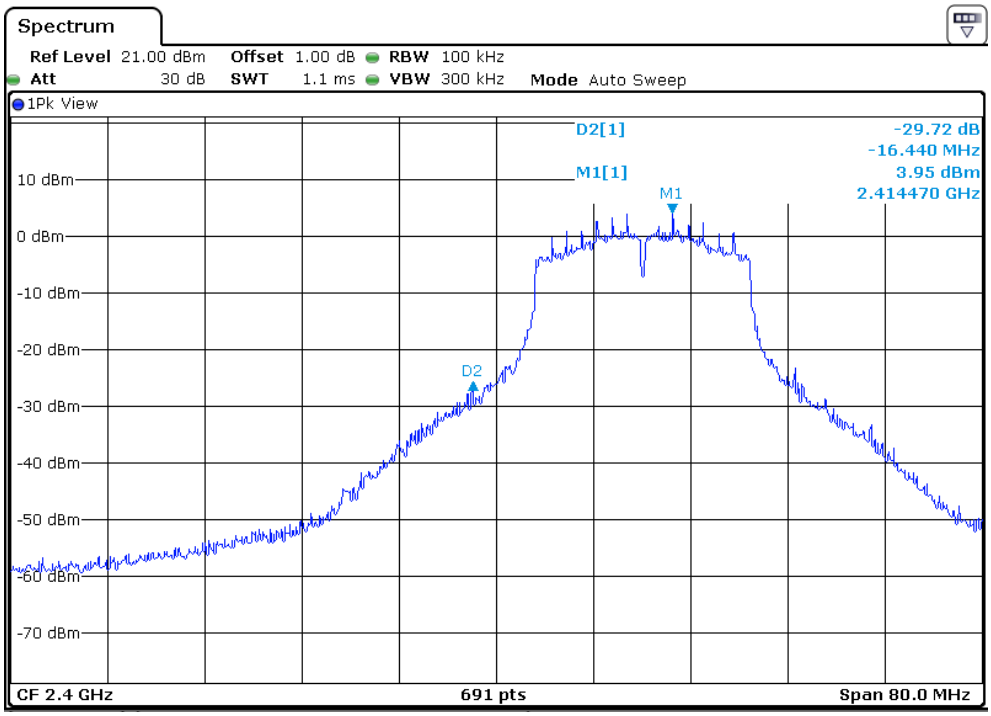



Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -45.70 dB
19.100 MHz
M1[1] 4.11 dBm
2.464510 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D2
CF 2.4835 GHz
691 pts
Span 80.0 MHz

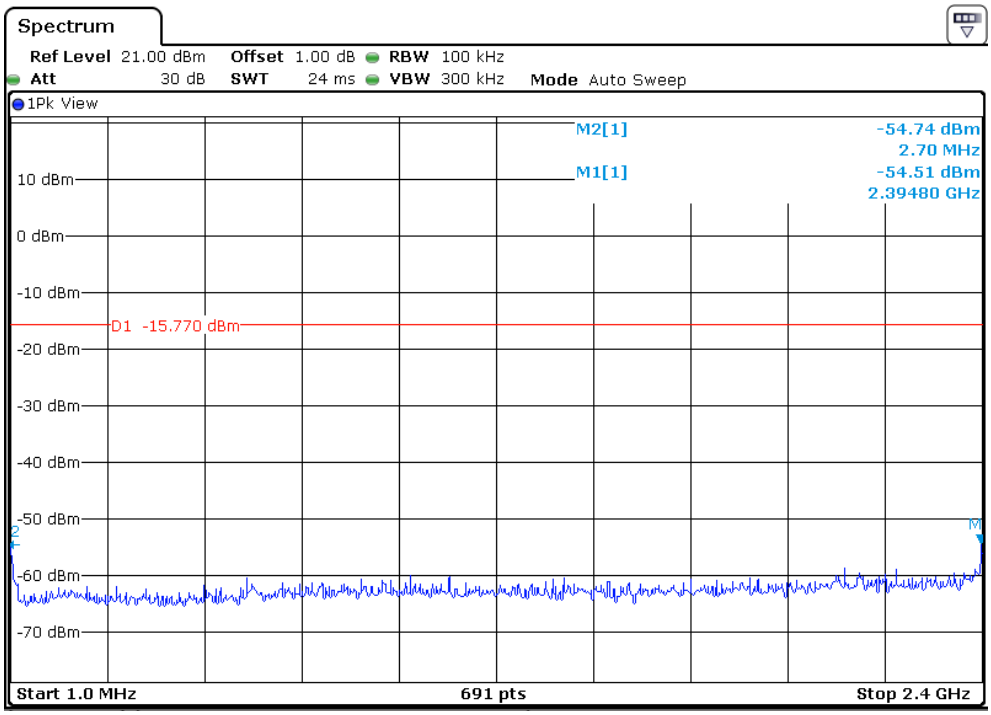
802.11n-HT20
Channel 01 (2412MHz) Reference Level: 4.32dBm

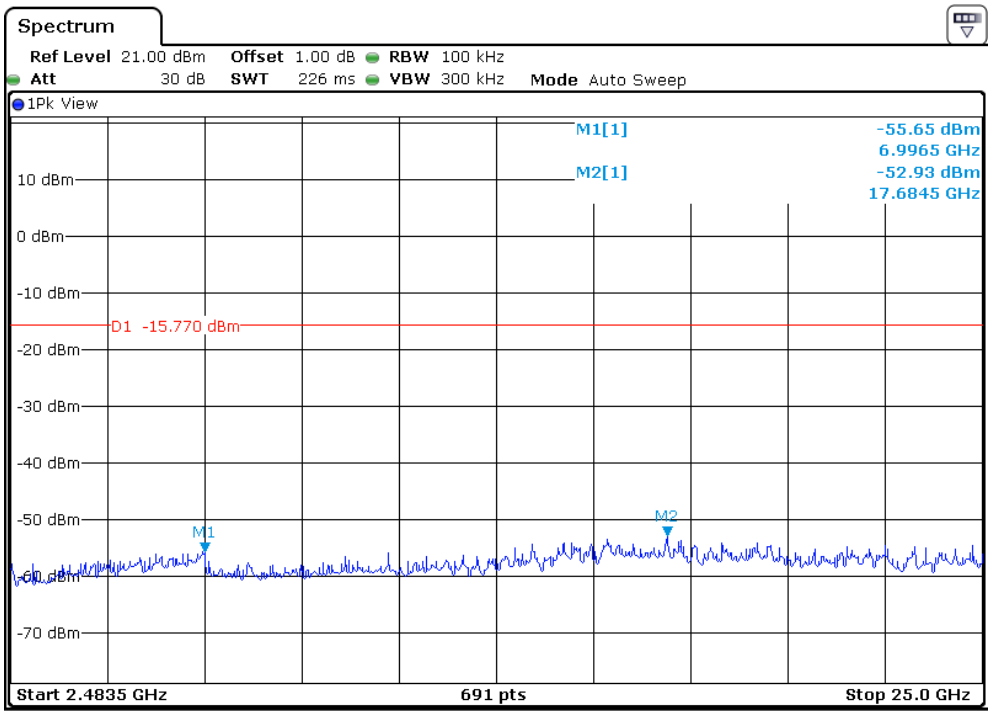




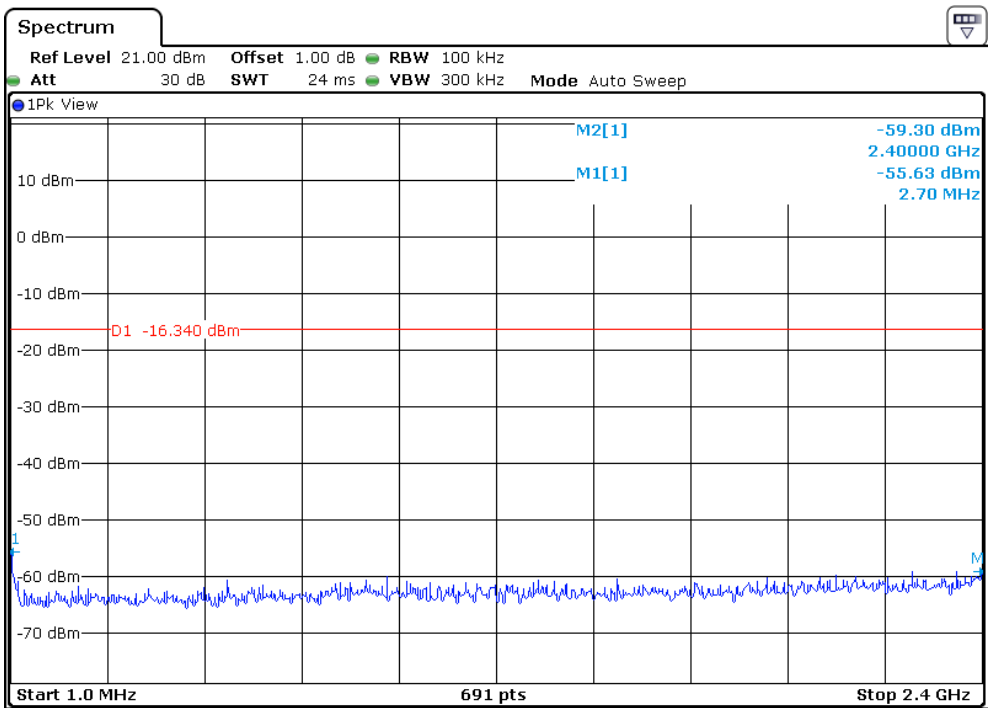

Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 1.1 ms VBW 300 kHz Mode Auto Sweep
1Pk View
D2[1] -29.72 dB
-16.440 MHz
M1[1] 3.95 dBm
2.414470 GHz
M1
D2
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 2.4 GHz
691 pts
Span 80.0 MHz

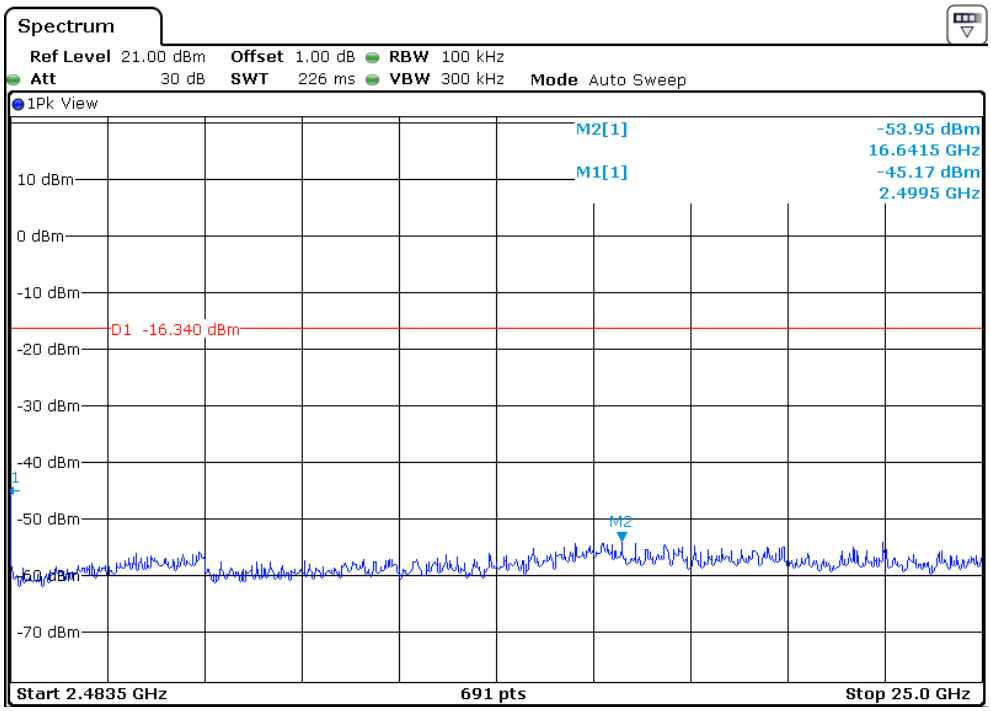
Channel 06 (2437MHz) Reference Level: 4.23dBm

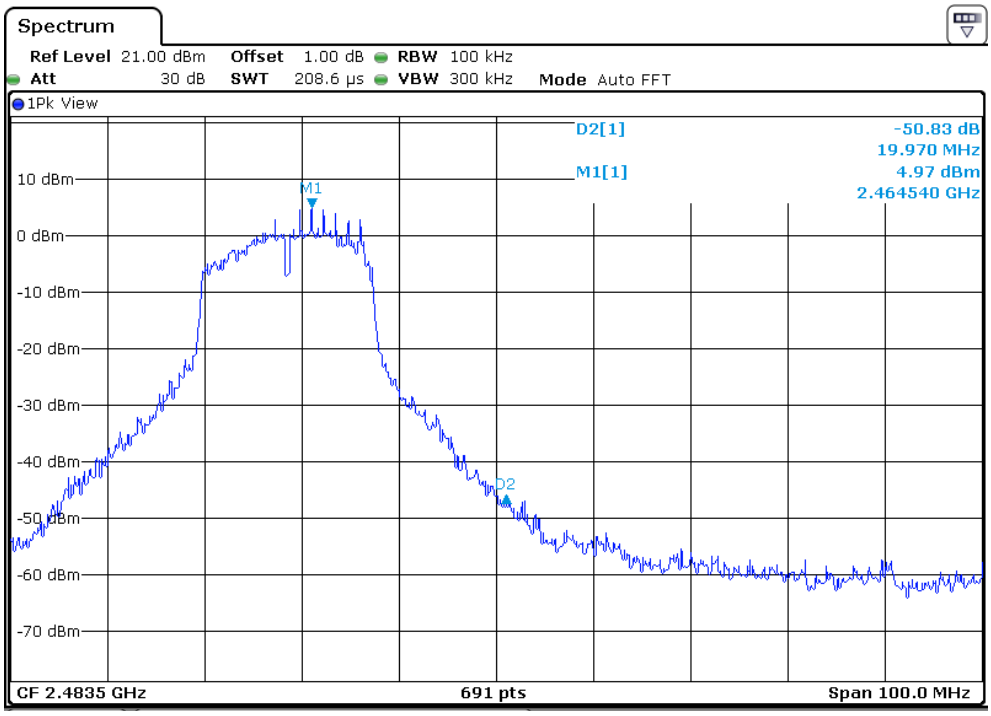




Channel 11 (2462MHz) Reference Level: 3.66dBm






Spectrum
Ref Level 21.00 dBm Offset 1.00 dB RBW 100 kHz
Att 30 dB SWT 208.6 µs VBW 300 kHz Mode Auto FFT
1Pk View
D2[1] -50.83 dB
19.970 MHz
M1[1] 4.97 dBm
2.464540 GHz
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
M1
D2
CF 2.4835 GHz
691 pts
Span 100.0 MHz

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.5 Out of Band Radiated Emissions (for emissions in 4.4 above that are less than 20dB below carrier), FCC Rule 15.247(d):

For out of band emissions that are close to or that exceed the 20dB attenuation requirement described in the specification, radiated measurements were performed at a 3m separation distance to determine whether these emissions complied with the general radiated emission requirement.

[×] Not required, since all emissions are more than 20dB below fundamental
[ ] See attached data sheet

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.6 Transmitter Radiated Emissions in Restricted Bands, FCC Rule 15.35(b), (c):

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included. All measurements were performed with peak detection unless otherwise specified.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.7 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD

Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD

Example
Assume a receiver reading of 62.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 42 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
FS = 62 + 7.4 + 1.6 - 29 + 0 = 42 dBμV/m

Level in mV/m = Common Antilogarithm [(42 dBμV/m)/20] = 125.9 μV/m

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.8 Radiated Spurious Emission

Worst Case Radiated Spurious Emission (802.11n-HT20) at 86.280MHz is passed by 5.6dB margin (The simultaneous transmission was considered).

For the electronic filing, the worst case radiated emission configuration photographs are saved with filename: radiated photos.pdf.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	95.970	31.7	20.0	18.6	30.3	43.5	-13.2
Horizontal	119.997	39.7	20.0	13.5	33.2	43.5	-10.3
Horizontal	211.216	36.8	20.0	17.0	33.8	43.5	-9.7
Vertical	86.280	36.2	20.0	18.2	34.4	40.0	-5.6
Vertical	95.960	48.0	20.0	7.1	35.1	43.5	-8.4
Vertical	210.905	32.1	20.0	22.1	34.2	43.5	-9.3

NOTES: 1. Quasi-Peak detector is used except for others stated.

2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. All emissions are below the QP limit.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11b (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	53.4	36.1	34.2	51.5	74.0	-22.5
Horizontal	*2389.300	64.4	36.7	28.3	56.0	74.0	-18.0

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	45.1	36.1	34.2	43.2	54.0	-10.8
Horizontal	*2389.300	53.1	36.7	28.3	44.7	54.0	-9.3

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11b (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	53.0	36.1	34.6	51.5	74.0	-22.5
Horizontal	*7311.000	54.2	35.6	37.1	55.7	74.0	-18.3

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	43.1	36.1	34.6	41.6	54.0	-12.4
Horizontal	*7311.000	42.2	35.6	37.1	43.7	54.0	-10.3

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11b (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	52.7	36.1	34.6	51.2	74.0	-22.8
Horizontal	*7386.000	55.2	35.6	37.2	56.8	74.0	-17.2
Horizontal	*2483.500	66.8	36.7	28.0	58.1	74.0	-15.9

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	42.1	36.1	34.6	40.6	54.0	-13.4
Horizontal	*7386.000	40.9	35.6	37.2	42.5	54.0	-11.5
Horizontal	*2483.500	51.9	36.7	28.0	43.2	54.0	-10.8

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11g (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	52.6	36.1	34.2	50.7	74.0	-23.3
Horizontal	*2389.400	68.6	36.7	28.2	60.1	74.0	-13.9

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	40.0	36.1	34.2	38.1	54.0	-15.9
Horizontal	*2389.400	53.4	36.7	28.2	44.9	54.0	-9.1

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11g (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	53.0	36.1	34.6	51.5	74.0	-22.5
Horizontal	*7311.000	54.7	35.6	37.1	56.2	74.0	-17.8

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	41.1	36.1	34.6	39.6	54.0	-14.4
Horizontal	*7311.000	40.9	35.6	37.1	42.4	54.0	-11.6

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11g (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	53.4	36.1	34.6	51.9	74.0	-22.1
Horizontal	*7386.000	53.7	35.6	37.2	55.3	74.0	-18.7
Horizontal	*2484.100	72.2	36.7	28.0	63.5	74.0	-10.5

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	40.8	36.1	34.6	39.3	54.0	-14.7
Horizontal	*7386.000	41.6	35.6	37.2	43.2	54.0	-10.8
Horizontal	*2484.100	55.8	36.7	28.0	47.1	54.0	-6.9

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	51.1	36.1	34.2	49.2	74.0	-24.8
Horizontal	*2390.000	70.9	36.7	28.2	62.4	74.0	-11.6

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4824.000	41.5	36.1	34.2	39.6	54.0	-14.4
Horizontal	*2390.000	53.9	36.7	28.2	45.4	54.0	-8.6

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 06)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	52.1	36.1	34.2	50.2	74.0	-23.8
Horizontal	*7311.000	55.4	35.6	37.1	56.9	74.0	-17.1

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4874.000	40.9	36.1	34.2	39.0	54.0	-15.0
Horizontal	*7311.000	42.1	35.6	37.1	43.6	54.0	-10.4

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 11)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Peak Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	52.6	36.1	34.6	51.1	74.0	-22.9
Horizontal	*7386.000	55.6	35.6	37.2	57.2	74.0	-16.8
Horizontal	*2483.900	72.2	36.7	28.0	63.5	74.0	-10.5

Polarization	Frequency (MHz)	Reading (dBµV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBµV/m)	Average Limit at 3m (dBµV/m)	Margin (dB)
Horizontal	*4924.000	40.5	36.1	34.6	39.0	54.0	-15.0
Horizontal	*7386.000	42.2	35.6	37.2	43.8	54.0	-10.2
Horizontal	*2483.900	56.2	36.7	28.0	47.5	54.0	-6.5

NOTES: 1. Peak detector is used, RBW=1MHz/VBW=3MHz for peak value and RBW=1MHz / VBW=10Hz for average value.

2. All measurements were made at 3 meters. Radiated emissions not detected at the 3-meter distance were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other radiated emissions than those reported were detected at a test distance of 0.3-meter.

3. Negative value in the margin column shows emission below limit.

4. Horn antenna used for the emission over 1000MHz.

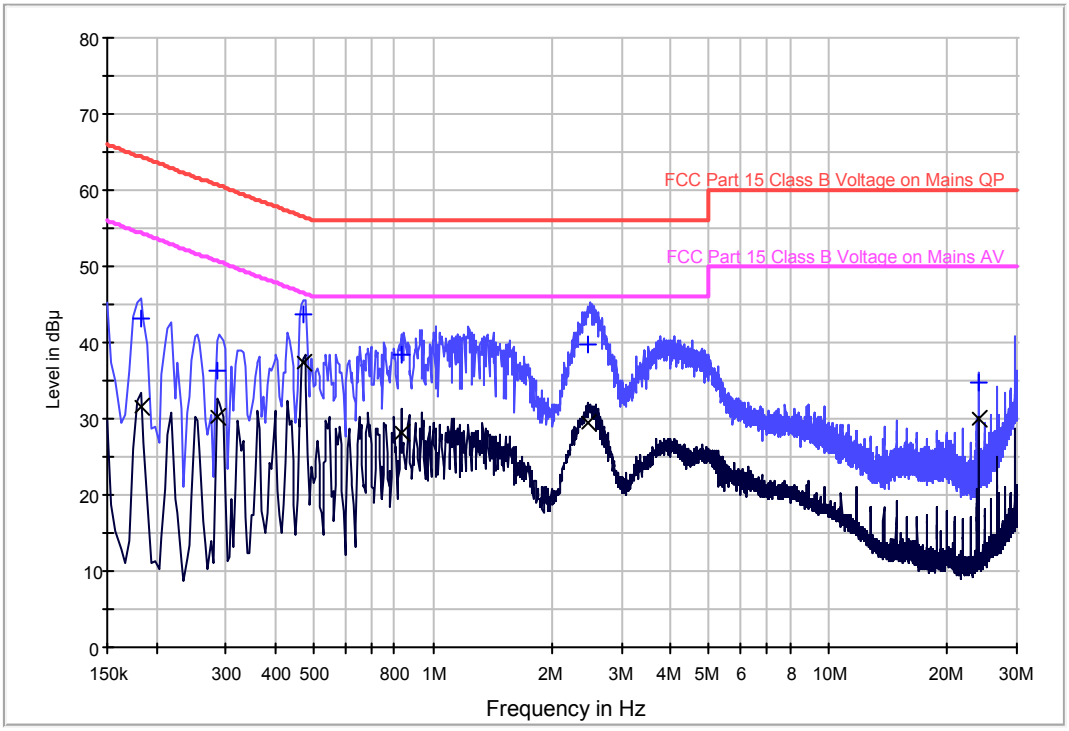
* Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function.

4.9 Conducted Emission

Worst Case Conducted emission at 0.470MHz is Passed by 9.1dB margin

For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Live
Conducted Emission Test - FCC



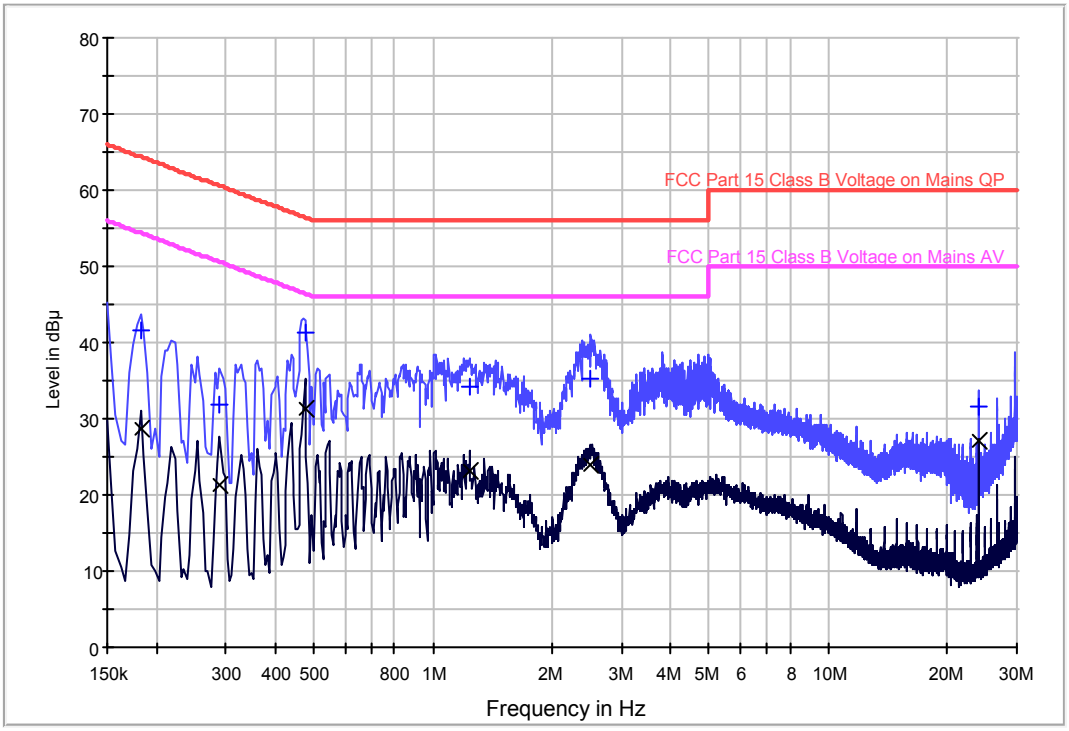
Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	43.2	L1	9.8	21.2	64.4
0.286000	36.4	L1	9.9	24.2	60.6
0.470000	43.8	L1	10.2	12.7	56.5
0.834000	38.5	L1	10.0	17.5	56.0
2.458500	39.8	L1	10.0	16.2	56.0
23.998000	34.7	L1	10.4	25.3	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	31.5	L1	9.8	22.9	54.4
0.286000	30.3	L1	9.9	20.3	50.6
0.470000	37.4	L1	10.2	9.1	46.5
0.834000	28.1	L1	10.0	17.9	46.0
2.458500	29.5	L1	10.0	16.5	46.0
23.998000	29.9	L1	10.4	20.1	50.0

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100
Worst Case Operating Mode: 802.11n-HT20 (TX-Channel 01)
Line: Neutral
Conducted Emission Test - FCC



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	41.7	N	10.1	22.7	64.4
0.290000	32.0	N	10.2	28.5	60.5
0.474000	41.4	N	10.2	15.0	56.4
1.238000	34.1	N	10.3	21.9	56.0
2.510000	35.2	N	10.3	20.8	56.0
24.002000	31.7	N	10.4	28.3	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.182000	28.7	N	10.1	25.7	54.4
0.290000	21.4	N	10.2	29.1	50.5
0.474000	31.4	N	10.2	15.0	46.4
1.238000	23.3	N	10.3	22.7	46.0
2.510000	23.9	N	10.3	22.1	46.0
24.002000	27.1	N	10.4	22.9	50.0

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.10 Radiated Emissions from Digital Section of Transceiver, FCC Ref: 15.109

[ ] Not required - No digital part

[ ] Test results are attached

[x] Included in the separated report.

Applicant: Lenovo (Beijing) Limited
Date of Test: August 10, 2015
Model: C100

4.11 Transmitter Duty Cycle Calculation and Measurements, FCC Rule 15.35(b), (c)

The EUT antenna output port was connected to the input of the spectrum analyzer. The analyzer center frequency was set to EUT RF channel carrier. The SWEP function on the analyzer was set to ZERO SPAN. The Transmitter ON time was determined from the resultant time-amplitude display:

	See attached spectrum analyzer chart (s) for Transmitter timing
	See Transmitter timing diagram provided by manufacturer
x	Not applicable, duty cycle was not used.

EXHIBIT 5

EQUIPMENT PHOTOGRAPHS

5.0 Equipment Photographs

For electronic filing, the photographs are saved with filename: external photos.pdf & internal photos.pdf.

EXHIBIT 6

PRODUCT LABELLING

6.0 Product Labeling

For electronic filing, the FCC ID label artwork and location is saved with filename: label.pdf.

EXHIBIT 7

TECHNICAL SPECIFICATIONS

7.0 Technical Specifications

For electronic filing, the block diagram and circuit diagram are saved with filename: block.pdf and circuit.pdf respectively.

EXHIBIT 8

INSTRUCTION MANUAL

8.0 Instruction Manual

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

EXHIBIT 9

CONFIDENTIALITY REQUEST

9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

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EXHIBIT 10

MISCELLANEOUS INFORMATION

10.0 **Discussion of Pulse Desensitization**

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF.*

Pulse desensitivity is not applicable for this device since the transmitter transmits the RF signal continuously.

EXHIBIT 11

TEST EQUIPMENT LIST

11.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	20-May-2015	20-May-2016
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	20-May-2015	20-May-2016
SZ061-04	BiConiLog Antenna	ETS	3142C	00066460	19-Oct-2014	19-Oct-2015
SZ185-01	EMI Receiver	R&S	ESCI	100547	07-Feb-2015	07-Feb-2016
SZ061-09	Horn Antenna	ETS	3115	00092346	01-Nov-2014	01-Nov-2015
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	01-Sep-2014	01-Sep-2015
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	29-Apr-2015	29-Apr-2016
SZ056-06	Spectrum Analyzer	R&S	FSV40	101101	08-Jul-2015	08-Jul-2016
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	07-Feb-2015	07-Feb-2016
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	19-Apr-2014	19-Apr-2016
SZ062-02	RF Cable	RADIALL	RG 213U	--	30-Jun-2015	30-Dec-2015
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	07-Apr-2015	07-Oct-2015
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	07-Apr-2015	07-Oct-2015
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	20-May-2015	20-May-2016
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	01-Nov-2014	01-Nov-2015
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	01-Nov-2014	01-Nov-2015
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	24-Jun-2015	24-Jun-2016
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-2014	23-Aug-2016