

Prüfbericht-Nr.: <i>Test report No.:</i>	50066659 001	Auftrags-Nr.: <i>Order No.:</i>	164070746	Seite 1 von 23 <i>Page 1 of 23</i>	
Kunden-Referenz-Nr.: <i>Client reference No.:</i>	N/A	Auftragsdatum: <i>Order date.:</i>	04.08.2016		
Auftraggeber: <i>Client:</i>	Binatone Electronics International Ltd. Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong				
Prüfgegenstand: <i>Test item:</i>	Smart Nursery Humidifier+				
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	MBP83SN (Trade Mark: motorola)				
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval				
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 RSS-247 Issue 1 May 2015 CFR47 FCC Part 15: Subpart C Section 15.207 RSS-Gen Issue 4 November 2014 CFR47 FCC Part 15: Subpart C Section 15.209 ICES-003 Issue 6 January 2016 CFR47 FCC Part 15: Subpart B Section 15.107 RSS-102 Issue 5 March 2015 CFR47 FCC Part 15: Subpart B Section 15.109 CFR47 FCC Part 2: Section 2.1091				
Wareneingangsdatum: <i>Date of receipt:</i>	04.08.2016	Please refer to photo documents			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000403732 001-003				
Prüfzeitraum: <i>Testing period:</i>	05.08.2016 - 14.12.2016				
Ort der Prüfung: <i>Place of testing:</i>	Shenzhen Huatongwei International Insp. Co., Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von / tested by:		kontrolliert von / reviewed by:			
05.01.2017	Ryan Yang / Senior Project Engineer	05.01.2017	Winnie Hou / Technical Certifier		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges / Other: FCC ID: VLJ-MBP83SN IC: 4522A-MBP83SN HVIN: MBP83SN					
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>			Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested					
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					

V04

Test Summary

5.1.1 ANTENNA REQUIREMENT*RESULT: Pass***5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER***RESULT: Pass***5.1.3 CONDUCTED POWER SPECTRAL DENSITY***RESULT: Pass***5.1.4 6dB BANDWIDTH***RESULT: Pass***5.1.5 99% BANDWIDTH***RESULT: Pass***5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH***RESULT: Pass***5.1.7 RADIATED SPURIOUS EMISSION***RESULT: Pass***5.1.8 CONDUCTED EMISSION ON AC MAINS***RESULT: Pass***5.1.9 RADIATED EMISSION***RESULT: Pass***6.1.1 ELECTROMAGNETIC FIELDS***RESULT: Pass*

Contents

1	GENERAL REMARKS	4
1.1	COMPLEMENTARY MATERIALS	4
2	TEST SITES	4
2.1	TEST FACILITIES	4
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS.....	5
2.3	TRACEABILITY	6
2.4	CALIBRATION	6
2.5	MEASUREMENT UNCERTAINTY.....	6
2.6	LOCATION OF ORIGINAL DATA.....	6
2.7	STATUS OF FACILITY USED FOR TESTING.....	6
3	GENERAL PRODUCT INFORMATION	7
3.1	PRODUCT FUNCTION AND INTENDED USE.....	7
3.2	RATINGS AND SYSTEM DETAILS	7
3.3	INDEPENDENT OPERATION MODES	8
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS.....	8
3.5	SUBMITTED DOCUMENTS.....	8
4	TEST SET-UP AND OPERATION MODES	9
4.1	PRINCIPLE OF CONFIGURATION SELECTION	9
4.2	TEST OPERATION AND TEST SOFTWARE.....	9
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT.....	9
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE.....	9
4.5	TEST SETUP DIAGRAM.....	10
5	TEST RESULTS	12
5.1	TRANSMITTER REQUIREMENT & TEST SUITES	12
5.1.1	<i>Antenna Requirement</i>	<i>12</i>
5.1.2	<i>Maximum Peak Conducted Output Power.....</i>	<i>13</i>
5.1.3	<i>Conducted Power Spectral Density</i>	<i>14</i>
5.1.4	<i>6dB Bandwidth</i>	<i>15</i>
5.1.5	<i>99% Bandwidth</i>	<i>16</i>
5.1.6	<i>Conducted Spurious Emissions Measured in 100 kHz Bandwidth</i>	<i>17</i>
5.1.7	<i>Radiated Spurious Emission</i>	<i>18</i>
5.1.8	<i>Conducted Emission on AC Mains.....</i>	<i>19</i>
5.1.9	<i>Radiated Emission</i>	<i>20</i>
6	SAFETY HUMAN EXPOSURE	21
6.1	RADIO FREQUENCY EXPOSURE COMPLIANCE	21
6.1.1	<i>Electromagnetic Fields.....</i>	<i>21</i>
7	PHOTOGRAPHS OF THE TEST SET-UP	23
8	LIST OF TABLES.....	23

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Wi-Fi 802.11b/g/n of Conducted Testing

Appendix C: Test Results of Wi-Fi 802.11b/g/n of Radiated Testing

2 Test Sites

2.1 Test Facilities

Shenzhen Huatongwei International Insp. Co., Ltd.

Bldg3, Hongfa Hi-tech Industrial Park, Genyu Road, Shenzhen, China

FCC Registration No.: 317478

Test site Industry Canada No.: 5377B

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Shenzhen Huatongwei International Insp. Co., Ltd.

Radio Spectrum Test				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Spectrum Analyzer	Kysight	N9030A	ATO-67098	18.07.2017
Spurious Emission, Below 1GHz				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESCI	101247	30.10.2017
Rod Ant	R&S	HFH2-Z6	A0805563	03.07.2017
Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	538	07.11.2017
Pre-amplifier	SCHWARZBECK	BBV 9743	9743-0022	30.10.2017
Turntable	Maturo Germany	TT2.0-1T	N/A	N/A
Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A
Spurious Emission, Above 1GHz				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	546	07.11.2017
Double-Ridged-Waveguide Horn Antenna	SCHWARZBECK	9120D	1011	07.11.2017
Spectrum Analyzer	R&S	FSP40	100597	30.10.2017
Pre-amplifier	SCHWARZBECK	BBV 9743	9743-0022	30.10.2017
Broadband Preampfier	SCHWARZBECK	BBV 9718	9718-248	30.10.2017
Turntable	Maturo Germany	TT2.0-1T	N/A	N/A
Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A
Conducted Emission on AC Mains				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESCI	101247	30.10.2017
Artificial Mains	SCHWARZBECK	NNLK 8121	573	30.10.2017
Pulse Limiter	R&S	ESH3-Z2	101488	30.10.2017

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

Item	Extended Uncertainty
Conducted Emission	± 3.39 dB
Radiated Emission (30-1000MHz)	Field strength (dB μ V/m) U=4.24dB, k=2, σ =95%
Radiated Emission (above 1000MHz)	Field strength (dB μ V/m) U=5.16dB, k=2, σ =95%
Radio Spectrum	± 0.57 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B & C of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Shenzhen Huatongwei International Insp. Co., Ltd. Test facility located at Bldg3, Hongfa Hi-tech Industrial Park, Genyu Road, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Smart Nursery Humidifier+ device, it supports Wi-Fi 802.11 b/g/n wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Smart Nursery Humidifier+
Type Designation	MBP83SN
Trade Mark	motorola
FCC ID	VLJ-MBP83SN
IC / HVIN	4522A-MBP83SN / MBP83SN
Operating Temperature Range	-10 °C ~ +50 °C
Operating Voltage	DC 24.0V 1.5A input via AC/DC adapter
Testing Voltage	AC 120V, 60Hz
AC/DC Adapter	Model: BLJ36W240150P-U Input: AC 100-240V~50/60Hz 1.2A Output: DC 24.0V~1.5A
Technical Specification of Wi-Fi 802.11 b/g/n	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 Mbps for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Integral Antenna
Gain	0 dBi

Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20)	802.11 n(HT40)
	Frequency (MHz)	Frequency (MHz)
01	2412	/
02	2417	/
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447
09	2452	2452
10	2457	/
11	2462	/

Test frequencies are lowest channel: 2412 MHz, middle channel: 2437 MHz and highest channel: 2462 MHz for 802.11b/g/n(HT20)

Test frequencies are lowest channel: 2422 MHz, middle channel: 2437 MHz and highest channel: 2452 MHz for 802.11n(HT40)

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, Wi-Fi transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. On, Wi-Fi connecting mode
- C. On, Humidifying mode
- D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- FCC/IC Label and Location Info
- Operation Description
- Photo Document
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

According to clause 3.1, all tests were performed on model MBP83SN in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating
Laptop	DELL	Laititude E6420	N/A	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

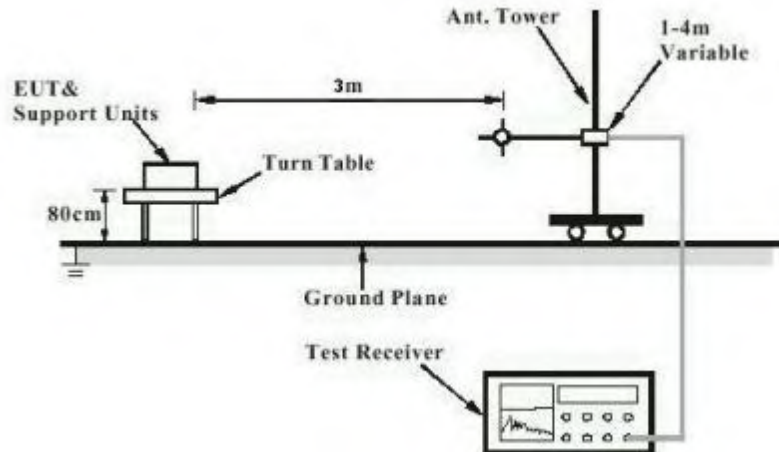


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

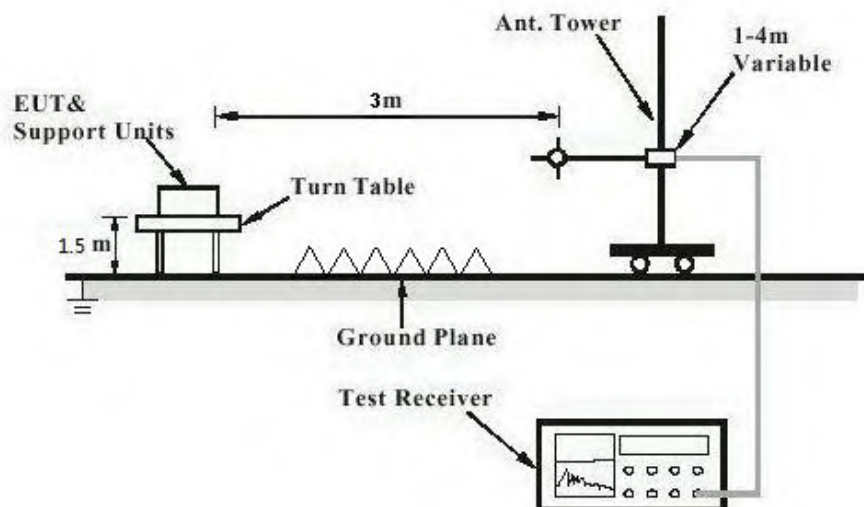


Diagram of Measurement Configuration for Mains Conduction Measurement

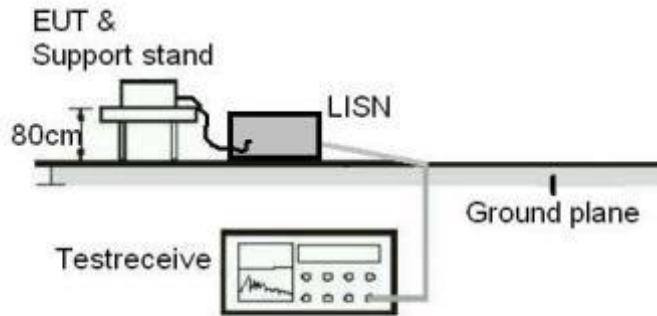
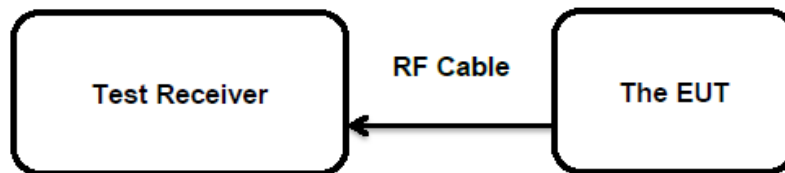


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 0 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Peak Conducted Output Power

RESULT:**Pass****Test Specification**

Test standard	:	FCC Part 15.247(b)(3) RSS-247 Clause 5.4(4)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	22.09.2016
Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Test channel	:	Low / Middle / High
Ambient temperature	:	25 °C
Relative humidity	:	56 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 5: Test Result of Maximum Peak Conducted Output Power

Test Mode	Data Rate	Frequency (MHz)	Measured Power		Limit
			dBm	3W	
802.11b	1 Mbps	2412	15.56	0.03597	< 1W(30dBm)
		2437	15.63	0.03656	
		2462	15.25	0.03350	
802.11g	6 Mbps	2412	14.23	0.02649	
		2437	14.70	0.02951	
		2462	14.31	0.02698	
802.11n (HT20)	MCS0 Mbps	2412	13.85	0.02427	
		2437	13.63	0.02307	
		2462	13.79	0.02393	
802.11n (HT40)	MCS0 Mbps	2422	13.28	0.02128	
		2437	13.28	0.02128	
		2452	13.28	0.02128	
Maximum Measured Value			15.63	0.03656	

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix B.

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(e) RSS-247 Clause 5.2(2)
Basic standard	: ANSI C63.10: 2013
Limits	: 8 dBm / 3kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 22.09.2016
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 6: Test Result of Power Spectral Density

Test Mode	Data Rate	Frequency (MHz)	Measured Peak Power Spectral Density (dBm/3KHz)
802.11b	1 Mbps	2412	-8.931
		2437	-8.790
		2462	-9.050
802.11g	6 Mbps	2412	-13.982
		2437	-12.969
		2462	-13.305
802.11n (HT20)	MCS0 Mbps	2412	-14.733
		2437	-14.918
		2462	-14.777
802.11n (HT40)	MCS0 Mbps	2422	-18.111
		2437	-17.851
		2452	-17.935
Maximum Measured Value			-8.790

Note: The cable loss 0.3 dB is taken into account in results.

For the measurement records, refer to the appendix B.

5.1.4 6dB Bandwidth

RESULT:
Pass
Test Specification

Test standard : FCC Part 15.247(a)(2)
 RSS-247 Clause 5.2(1)
 Basic standard : ANSI C63.10: 2013
 Limits : > 500 KHz
 Kind of test site : Shielded Room

Test Setup

Date of testing : 22.09.2016
 Input voltage : AC 120V, 60Hz
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 7: Test Result of 6dB Bandwidth

Test Mode	Data Rate	Frequency (MHz)	-6dB Bandwidth (MHz)	Limit (kHz)
802.11b	1 Mbps	2412	8.768	> 500
		2437	8.744	
		2462	8.753	
802.11g	6 Mbps	2412	16.450	
		2437	16.450	
		2462	16.450	
802.11n (HT20)	MCS0 Mbps	2412	17.590	
		2437	17.570	
		2462	17.580	
802.11n (HT40)	MCS0 Mbps	2422	35.790	
		2437	35.790	
		2452	35.790	
Minimum Measured Value			8.744	

For the measurement records, refer to the appendix B.

5.1.5 99% Bandwidth

RESULT:
Pass
Test Specification

Test standard : RSS-Gen Clause 6.6
 Basic standard : ANSI C63.10: 2013
 Kind of test site : Shielded Room

Test Setup

Date of testing : 22.09.2016
 Input voltage : AC 120V, 60Hz
 Operation mode : A
 Test channel : Low / Middle / High
 Ambient temperature : 25 °C
 Relative humidity : 56 %
 Atmospheric pressure : 101 kPa

For details refer to following test result.

Table 8: Test Result of 99% Bandwidth

Test Mode	Data Rate	Frequency (MHz)	99% Bandwidth (MHz)	Limit (kHz)
802.11b	1 Mbps	2412	13.426	/
		2437	13.436	
		2462	13.415	
802.11g	6 Mbps	2412	16.446	
		2437	16.448	
		2462	16.446	
802.11n (HT20)	MCS0 Mbps	2412	17.591	
		2437	17.590	
		2462	17.590	
802.11n (HT40)	MCS0 Mbps	2422	36.072	
		2437	36.070	
		2452	36.078	
Maximum Measured Value			36.078	

For the measurement records, refer to the appendix B.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass****Test Specification**

Test standard	: FCC Part 15.247(d) RSS-247 Clause 5.5
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 22.09.2016
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 25 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

5.1.7 Radiated Spurious Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(d) & FCC Part 15.205 RSS-247 Clause 3.3
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d) RSS-Gen Table 4 & Table 5
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: Refer to test result
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 24 °C
Relative humidity	: 48 %
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix C.

5.1.8 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a) & FCC Part 15.107(a) RSS-Gen Clause 8.8 & ICES-003
Basic standard	: ANSI C63.10: 2013 & ANSI C63.4: 2014
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a) & FCC Part 15.107(a) RSS-Gen Table 3 & ICES-003 Table 2
Kind of test site	: Shielded Room

Test Setup

Date of testing	: Refer to test result
Input voltage	: AC 120V, 60Hz
Operation mode	: B, C
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative humidity	: 53 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix C.

5.1.9 Radiated Emission

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.109(a) ICES-003
Basic standard	: ANSI C63.4: 2014
Frequency range	: 30 - 6000MHz
Classification	: Class B
Limits	: FCC Part 15.109(a) ICES-003 Table 5 & Table 7
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: Refer to test result
Input voltage	: AC 120V, 60Hz
Operation mode	: C
Earthing	: Not connected
Ambient temperature	: 24 °C
Relative humidity	: 48 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix C.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:

Pass

Test Specification

Test standard : CFR47 FCC Part 2: Section 2.1091
CFR47 FCC Part 1: Section 1.1310
FCC KDB Publication 447498 v06
FCC KDB Publication 865664 D02 v01r02
OET Bulletin 65 (Edition 97-01)
RSS-102 Issue 5 March 2015

➤ FCC requirements

FCC requirement: Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

MPE Calculation Method according to OET Bulletin 65

Power Density: $S_{(mW/cm^2)} = PG/4\pi R^2$ or $EIRP/4\pi R^2$

Where:

S = power density (mW/cm²)

P = power input to the antenna (mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (cm)

The nominal maximum conducted output power specified:

802.11b/g/n: 16.00 dBm

From the peak RF output power, the minimum mobile separation distance, d=20 cm, as well as the antenna gain (Max. 0.0 dBi for 802.11b/g/n), the RF power density can be calculated as below:

For 802.11b/g/n: $S_{(mW/cm^2)} = PG/4\pi R^2 = 0.013$ mW/cm²

Limits for Maximum Permissible Exposure (MPE) according to FCC Part 1.1310:

1.0 mW/cm²

➤ **IC requirements:** The EUT shall comply with the requirement of RSS-102 section 2.5.2.

Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- RF exposure evaluation exempted power for 802.11b/g/n: 2.684 W

The nominal maximum conducted output power specified:

802.11b/g/n: 16.00 dBm

Antenna Gain: 0.0 dBi for 802.11b/g/n

The Max. e.i.r.p. for 802.11b/g/n = 18.00 dBm \approx 0.063 W is less than the RF exposure evaluation exempted power. So RF exposure evaluation is not required.

“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

8 List of Tables

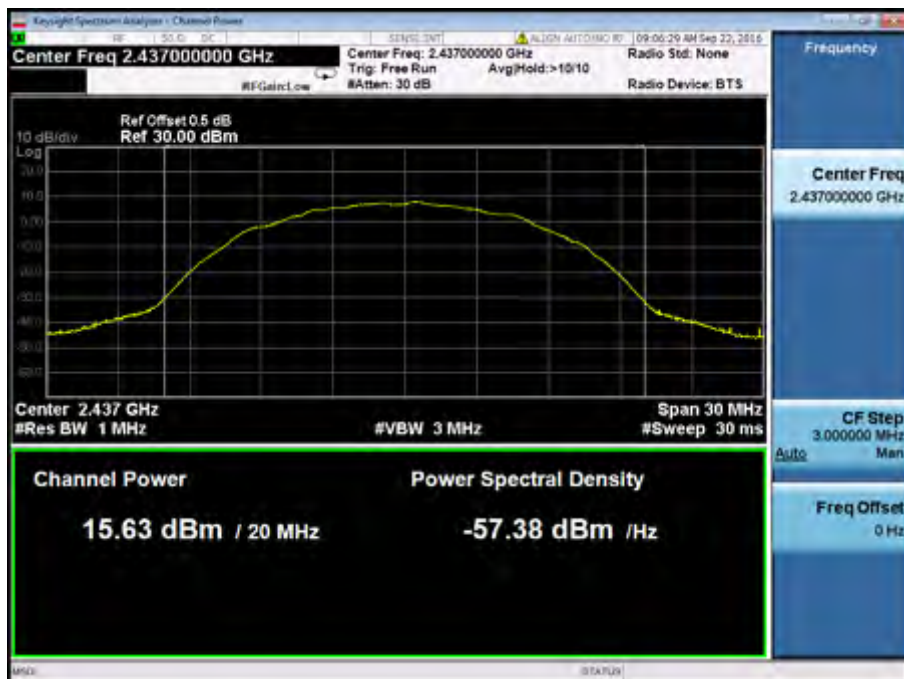
Table 1: List of Test and Measurement Equipment.....	5
Table 2: Technical Specification of EUT	7
Table 3: RF Channel and Frequency of Wi-Fi 802.11 b/g/n	8
Table 4: List of Accessories and Auxiliary Equipment.....	9
Table 5: Test Result of Maximum Peak Conducted Output Power.....	13
Table 6: Test Result of Power Spectral Density	14
Table 7: Test Result of 6dB Bandwidth	15
Table 8: Test Result of 99% Bandwidth	16

Appendix B: Test Results of Conducted Testing

APPENDIX B: TEST RESULTS OF CONDUCTED TESTING	1
APPENDIX B.1: MAXIMUM PEAK CONDUCTED OUTPUT POWER	2
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	2
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	3
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	5
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	6
APPENDIX B.2: CONDUCTED POWER SPECTRAL DENSITY	8
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	8
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	9
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	11
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	12
APPENDIX B.3: 6DB BANDWIDTH & 99% BANDWIDTH	14
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	14
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	15
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	17
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	18
APPENDIX B.4: CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH	20
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	20
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	23
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	26
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	29
<i>Wi-Fi 802.11 b mode, Band Edge</i>	32
<i>Wi-Fi 802.11 g mode, Band Edge</i>	33
<i>Wi-Fi 802.11 n(HT20) mode, Band Edge</i>	34
<i>Wi-Fi 802.11 n(HT40) mode, Band Edge</i>	35

Appendix B.1: Maximum Peak Conducted Output Power

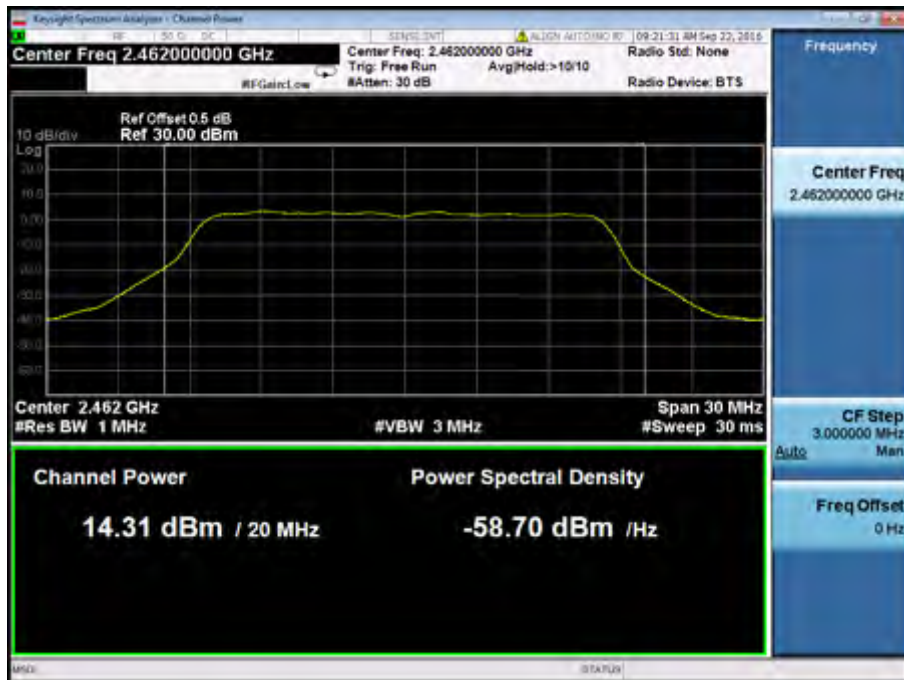
Wi-Fi 802.11 b mode, 1 Mbps



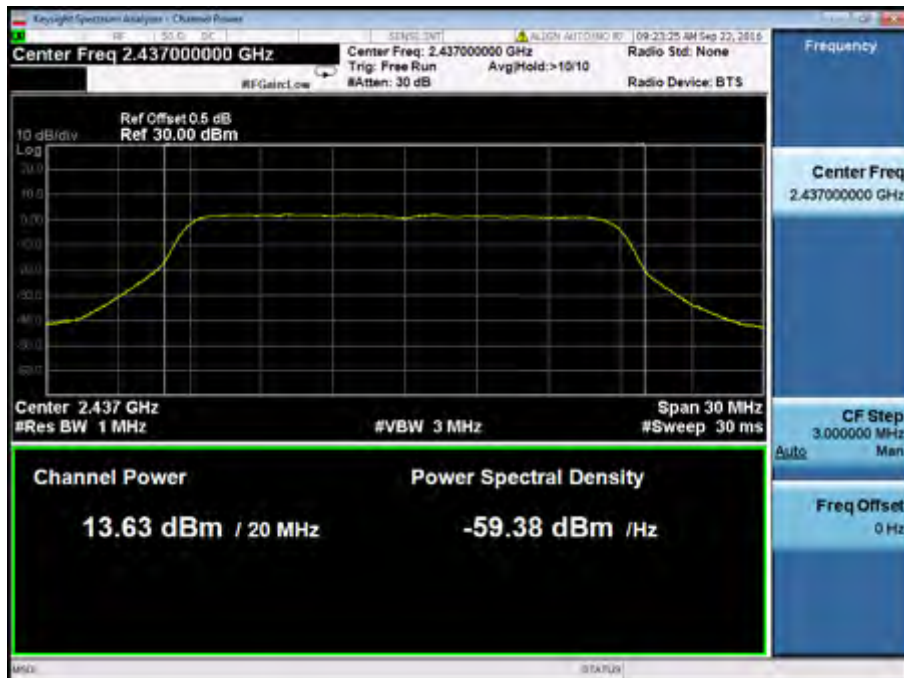


Wi-Fi 802.11 g mode, 6 Mbps



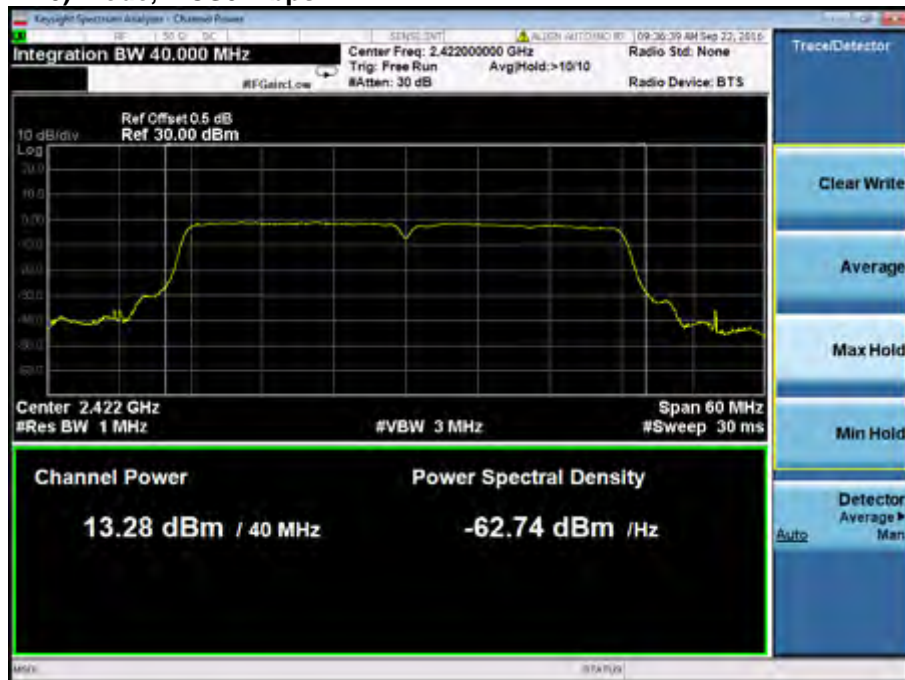


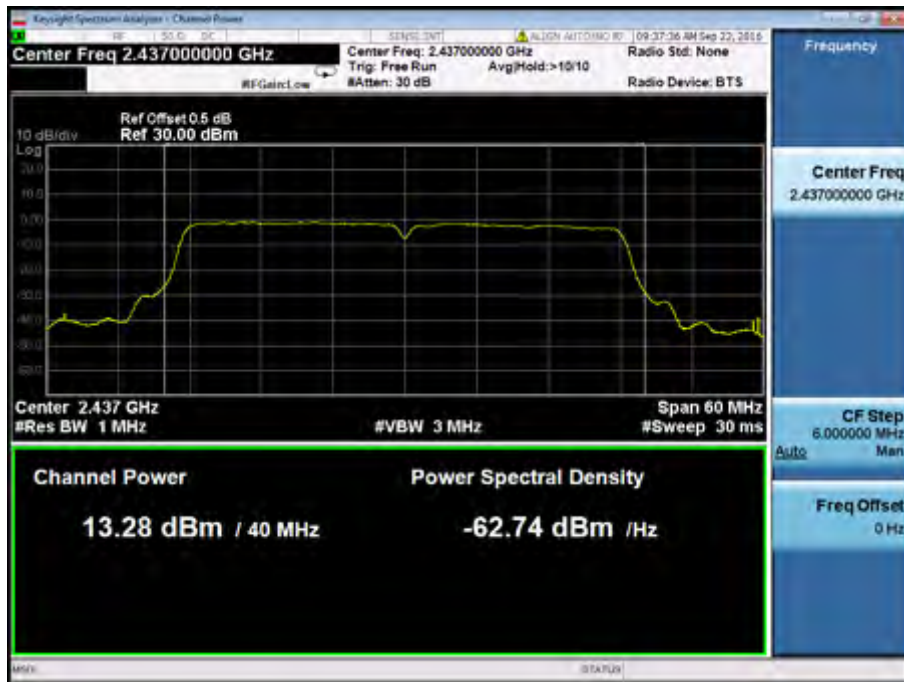
Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps





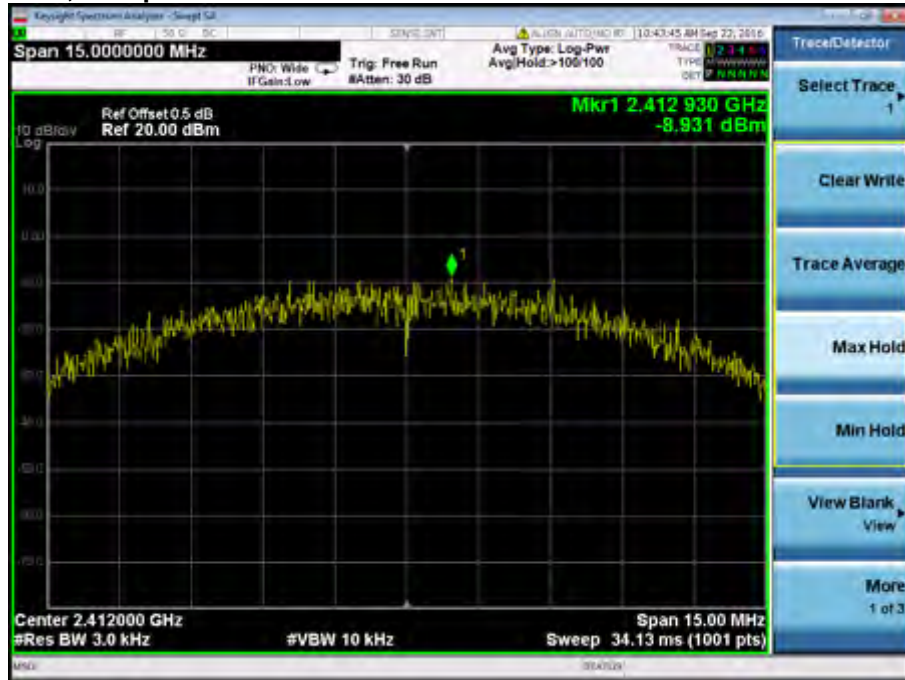
Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps

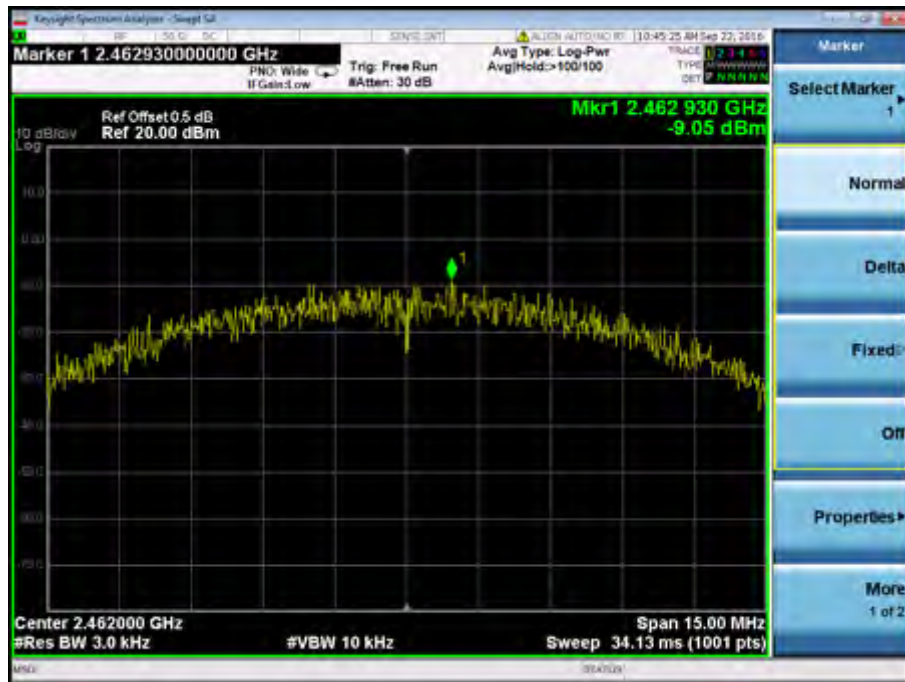




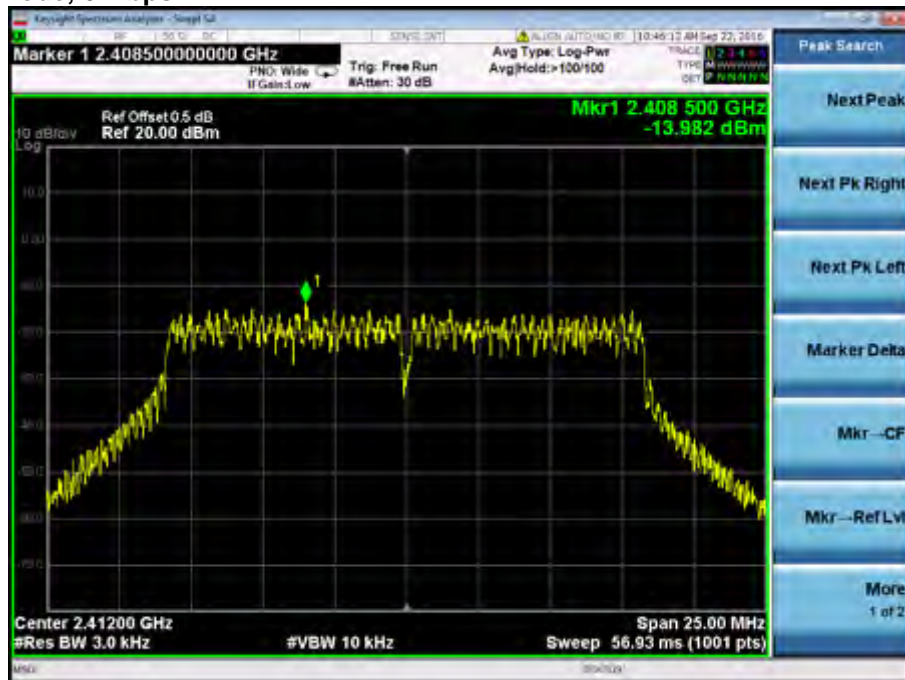
Appendix B.2: Conducted Power Spectral Density

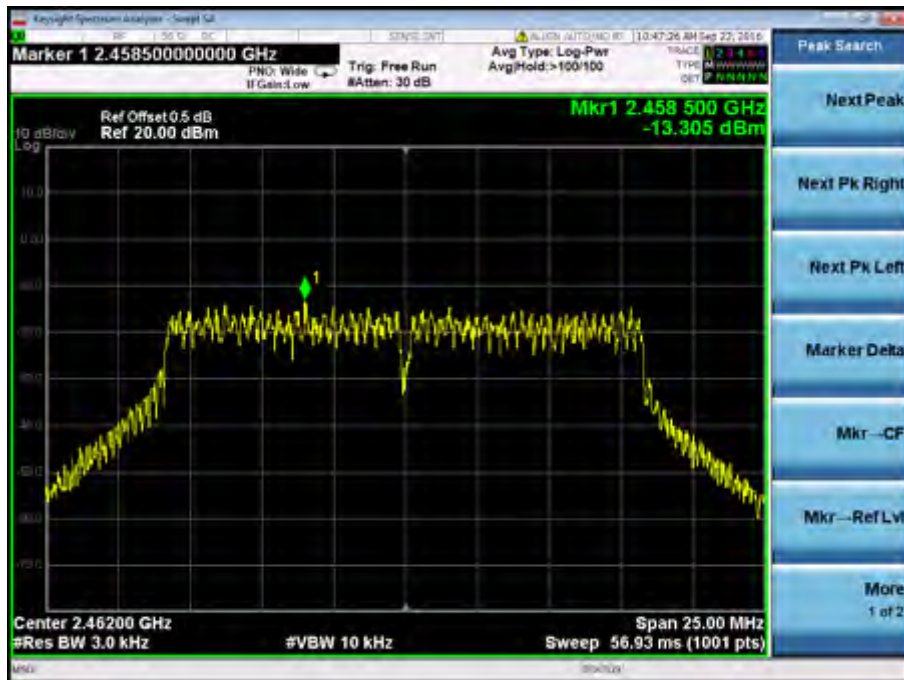
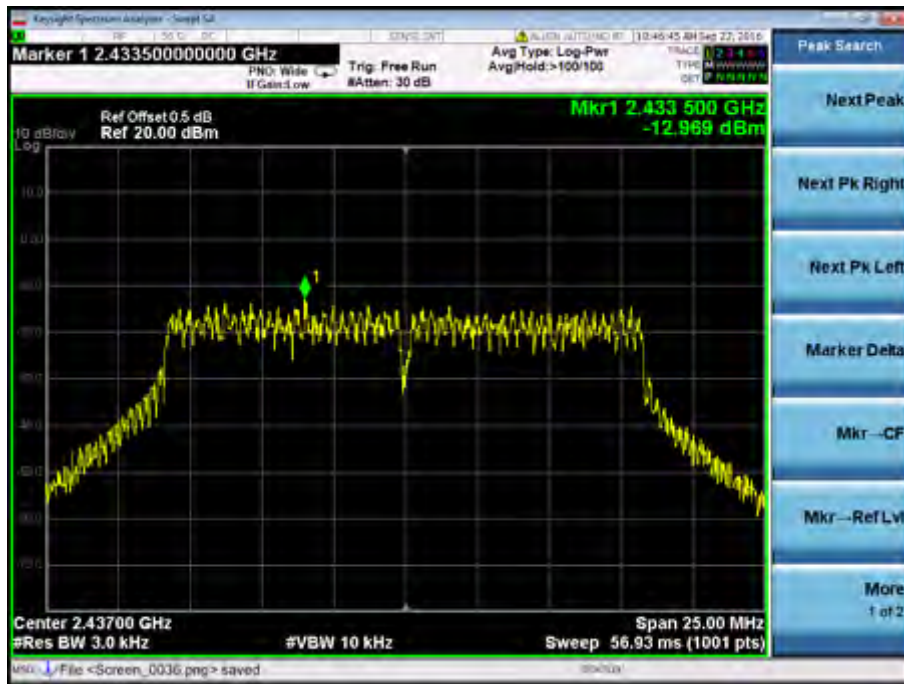
Wi-Fi 802.11 b mode, 1 Mbps



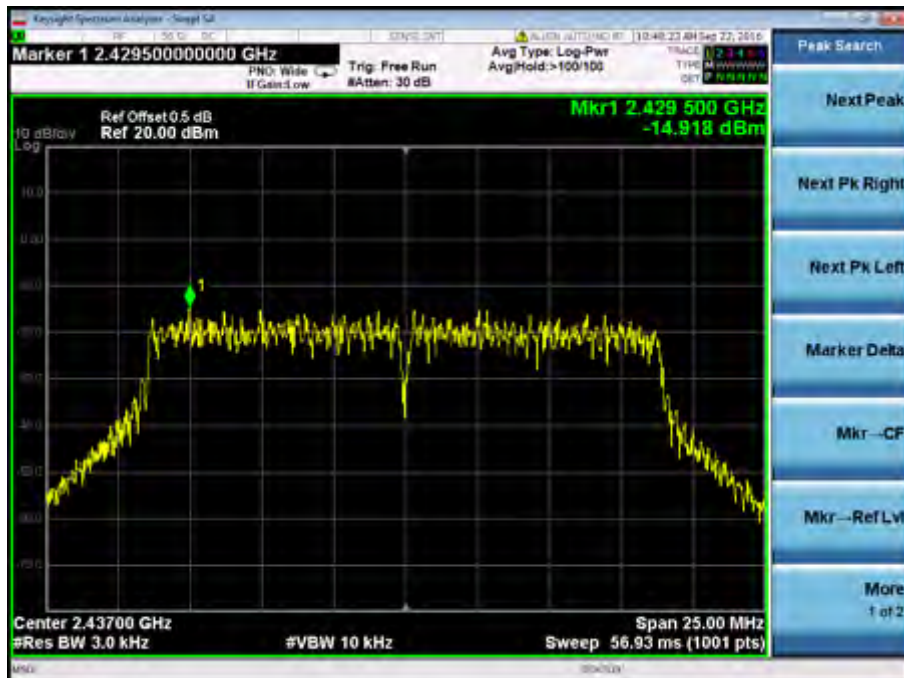
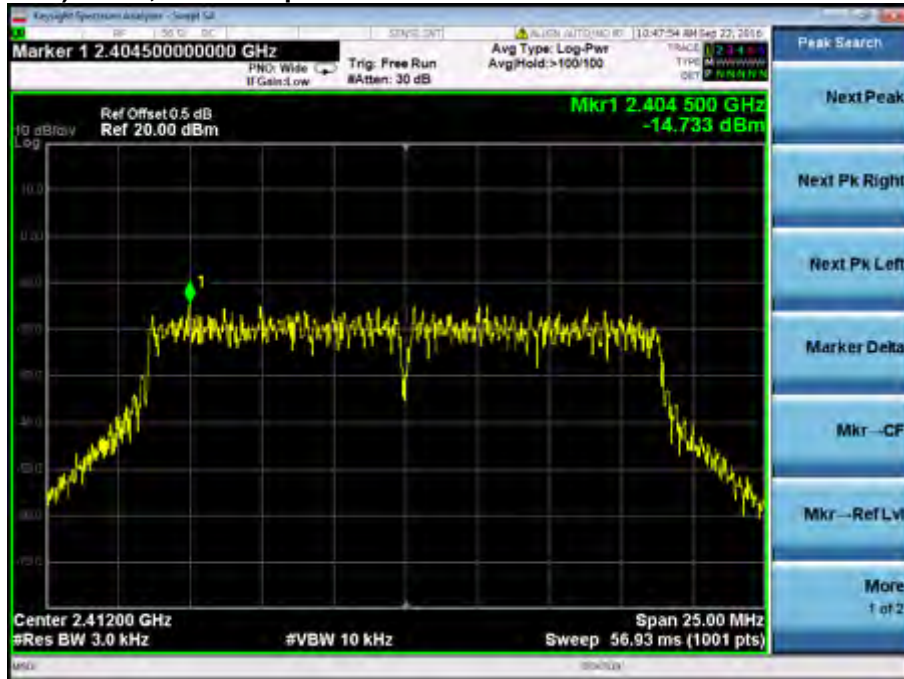


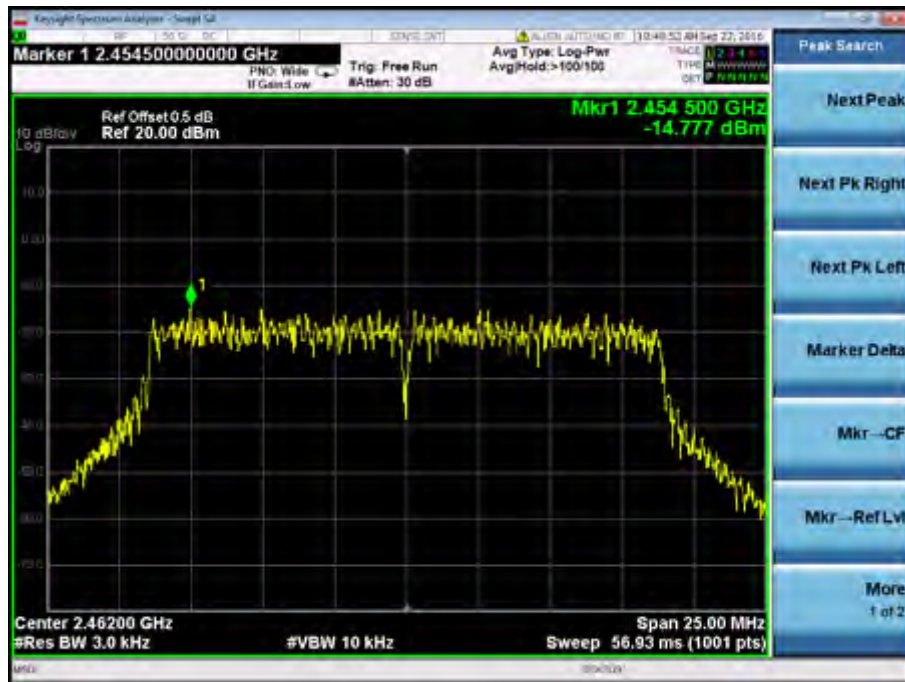
Wi-Fi 802.11 g mode, 6 Mbps



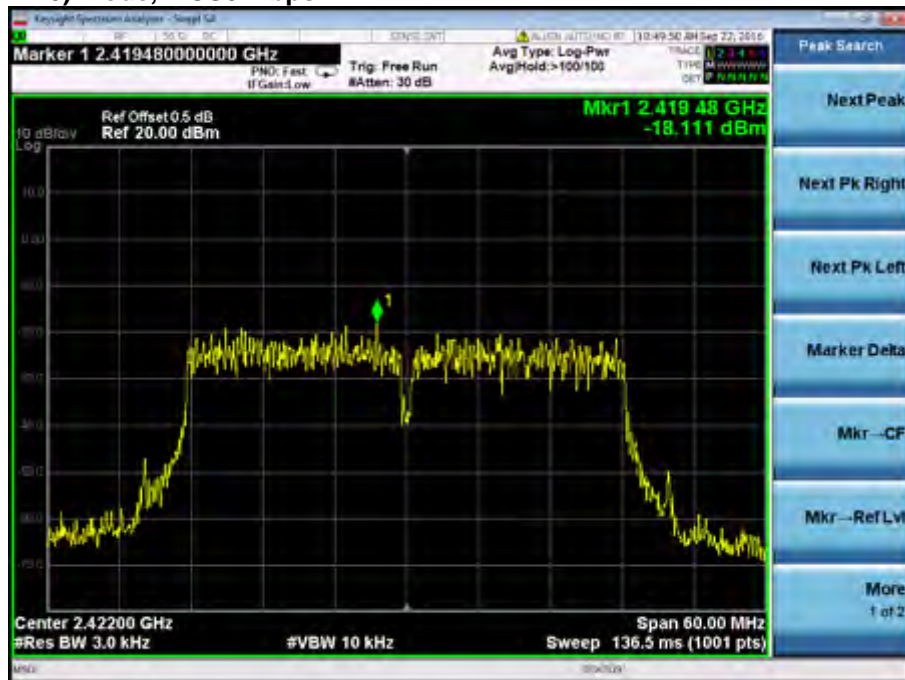


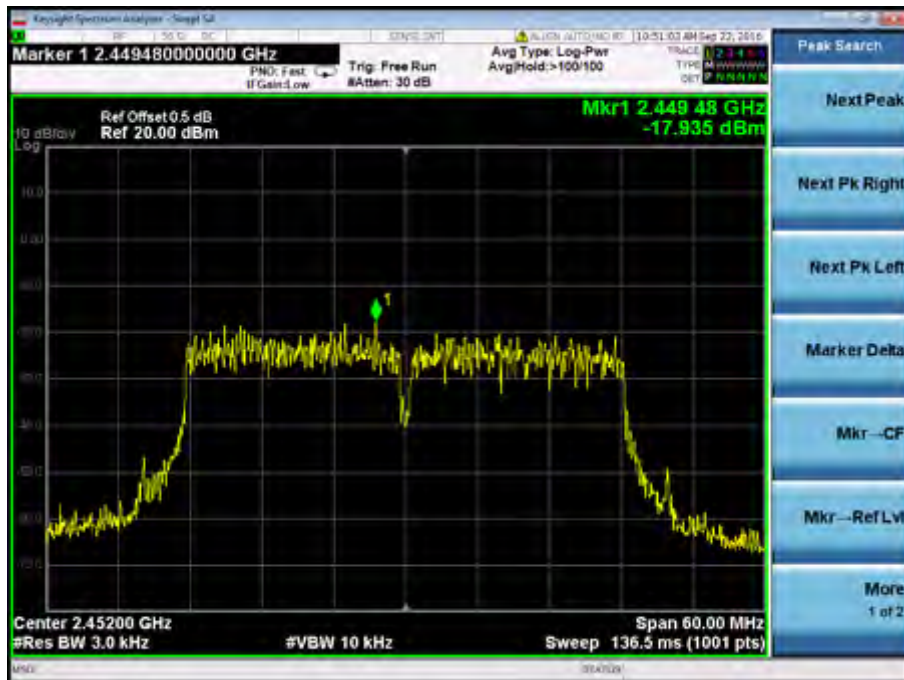
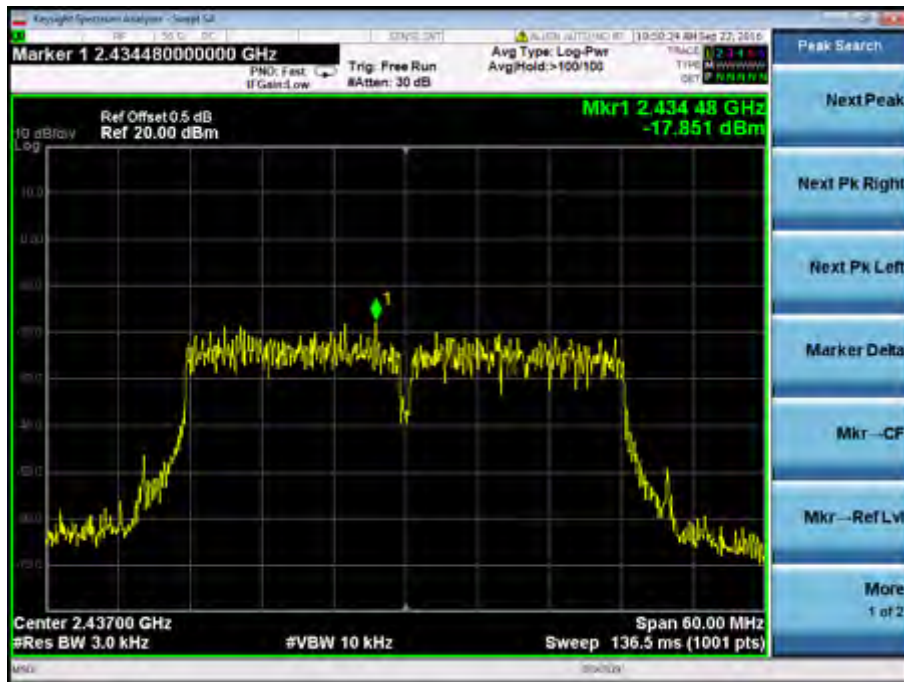
Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps





Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps





Appendix B.3: 6dB Bandwidth & 99% Bandwidth

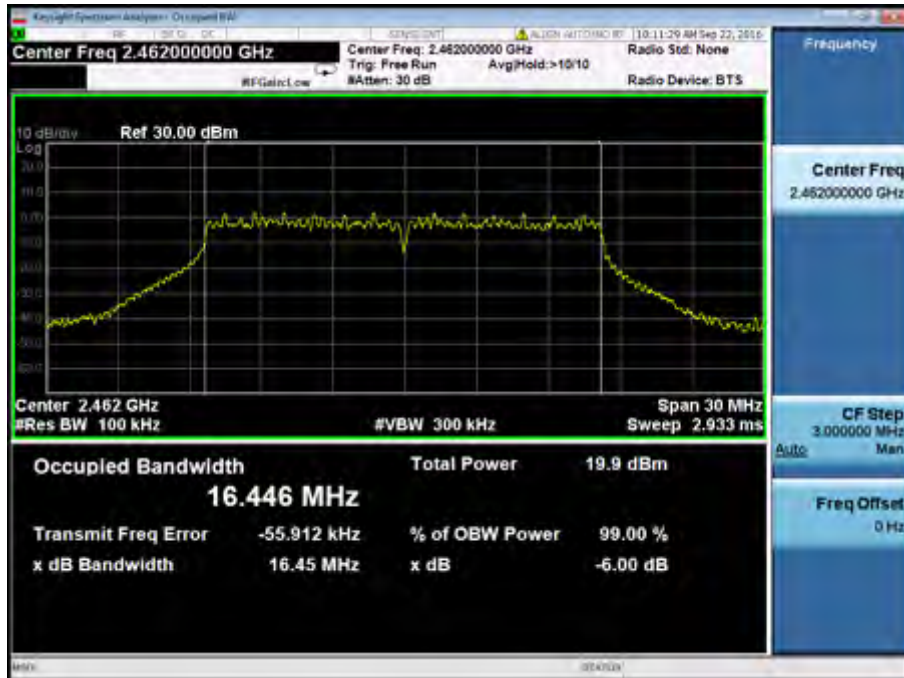
Wi-Fi 802.11 b mode, 1 Mbps



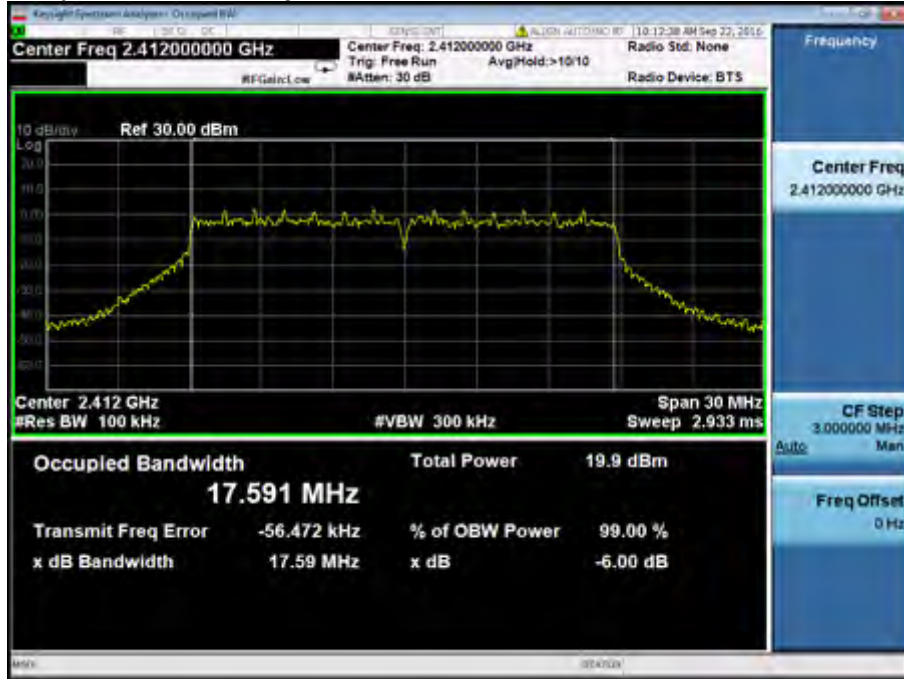


Wi-Fi 802.11 g mode, 6 Mbps



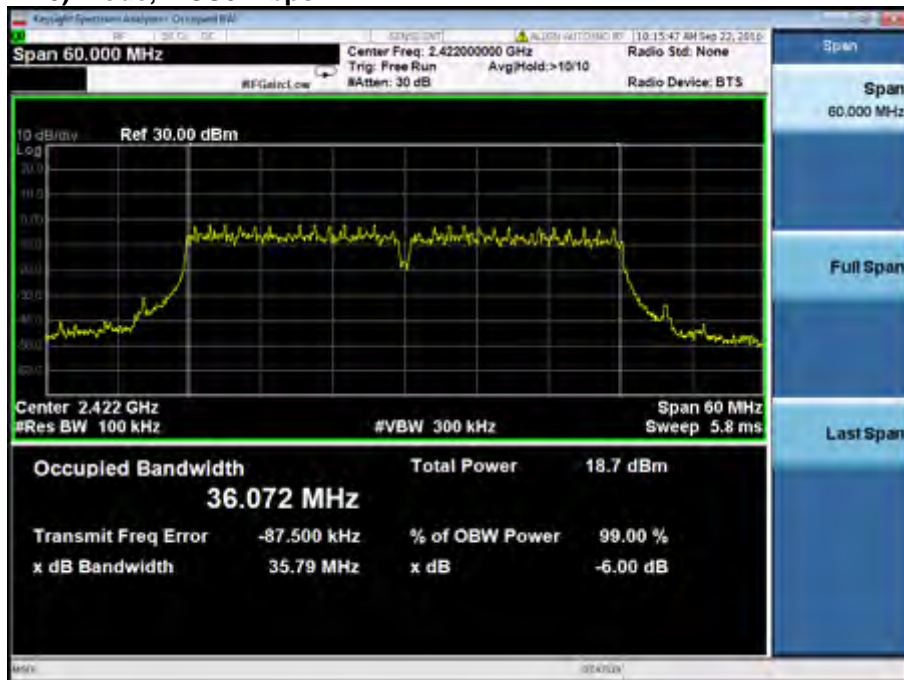


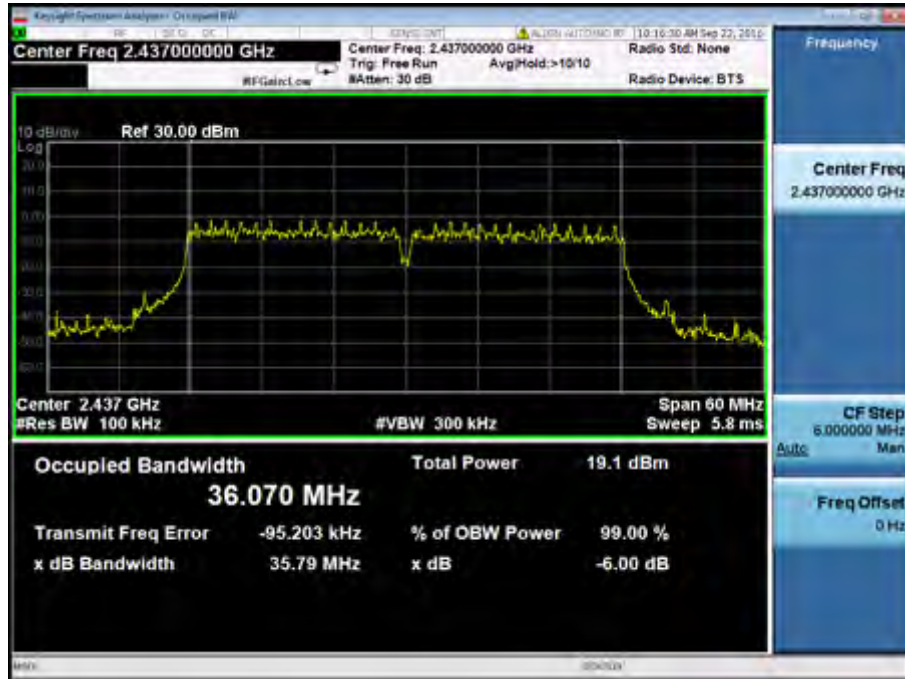
Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps



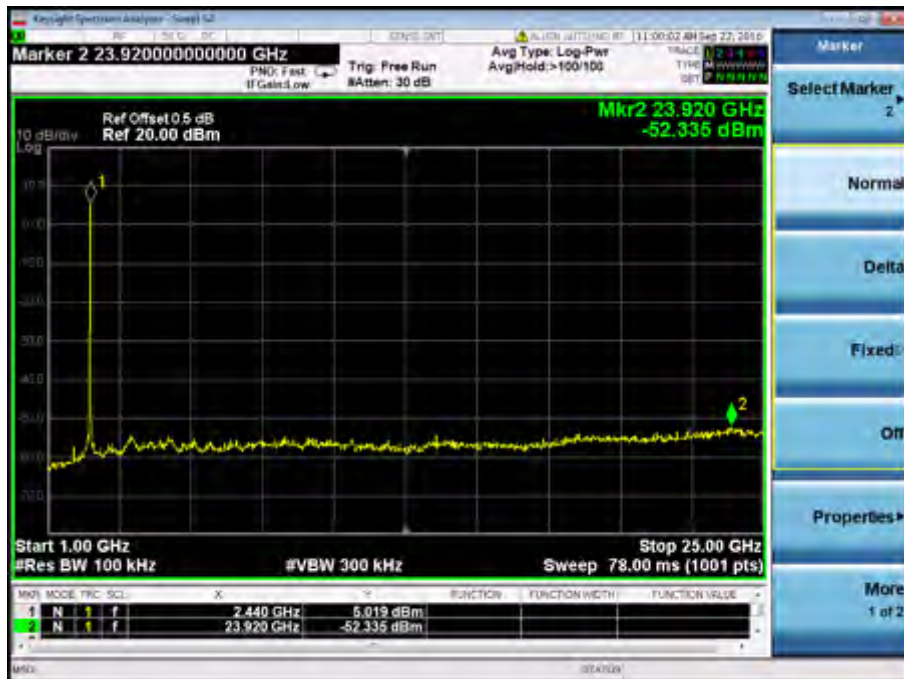
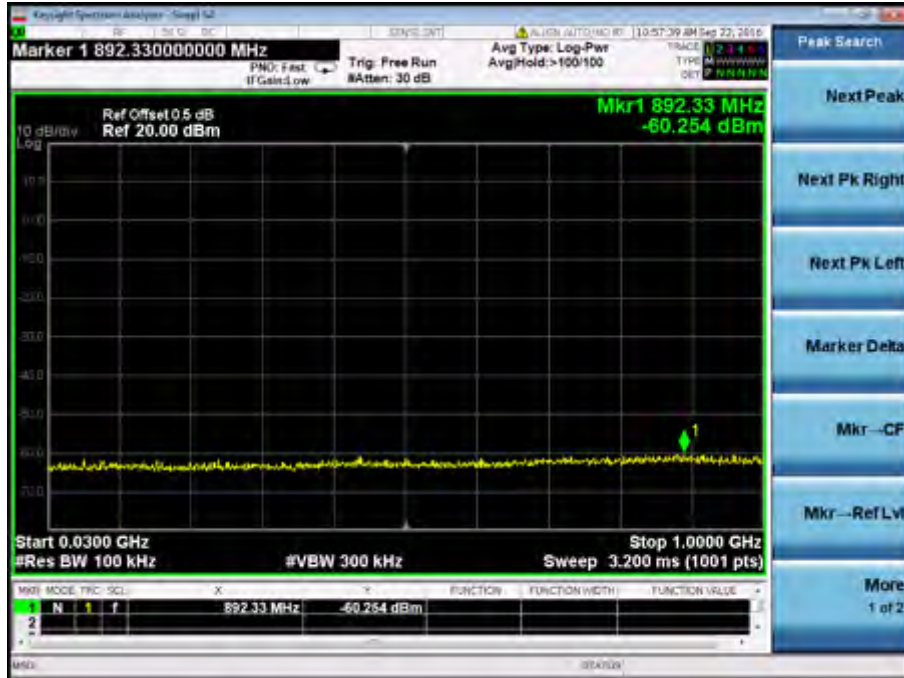


Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps

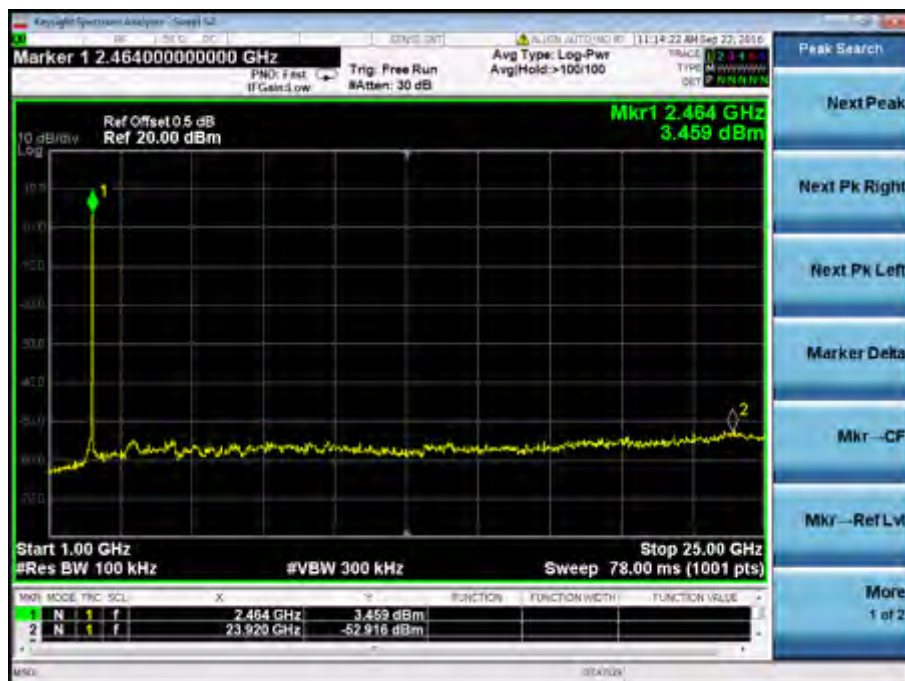




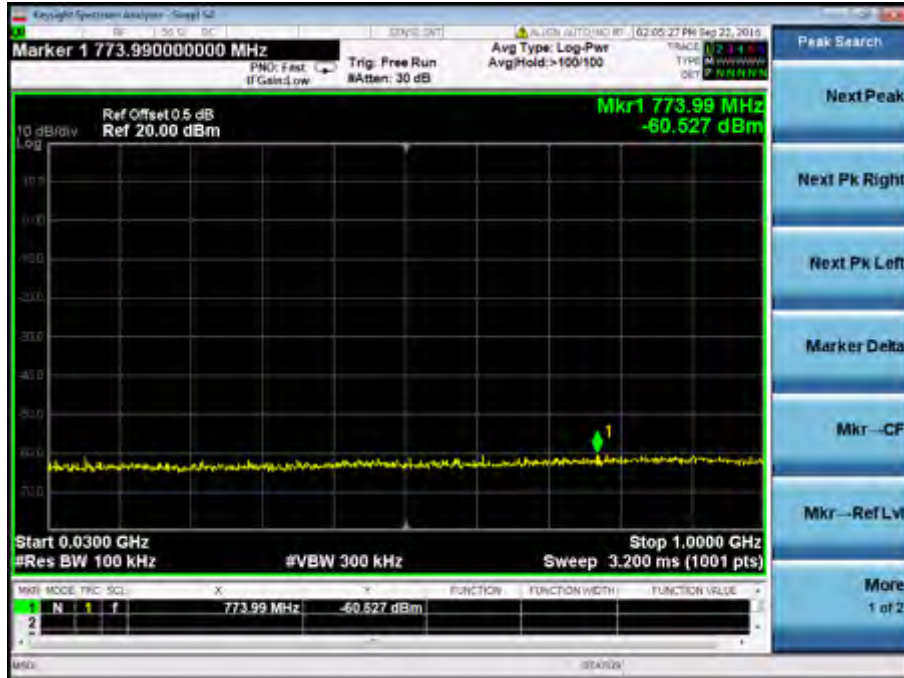
Middle Channel



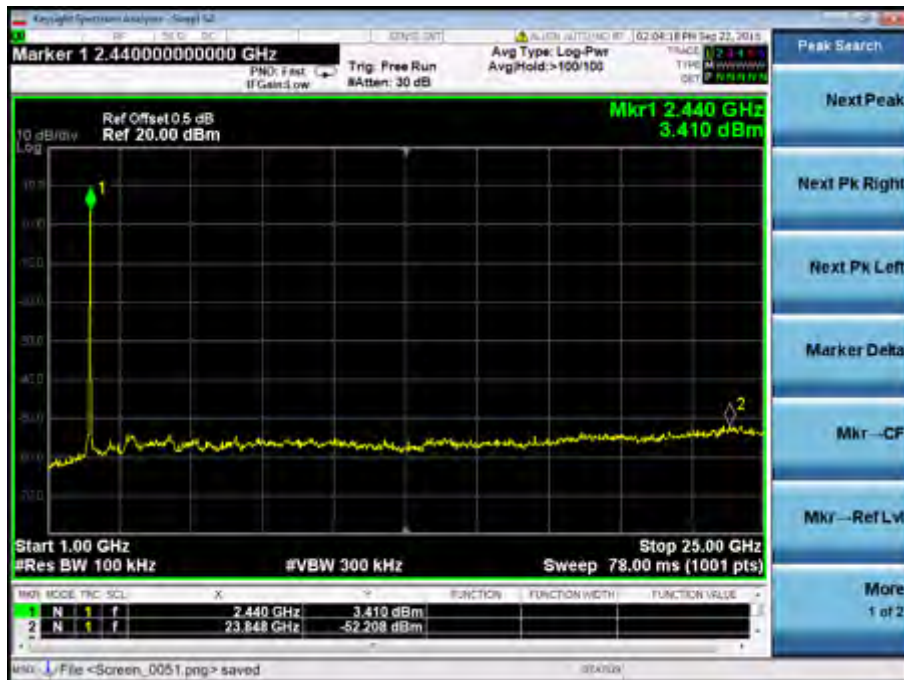
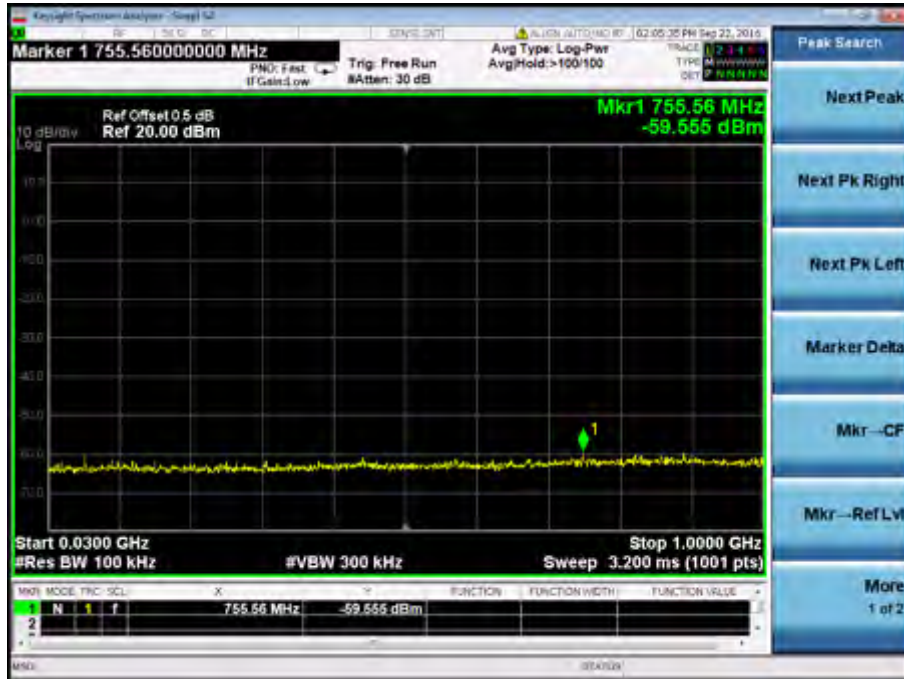
High Channel



Wi-Fi 802.11 g mode, 6 Mbps
Low Channel



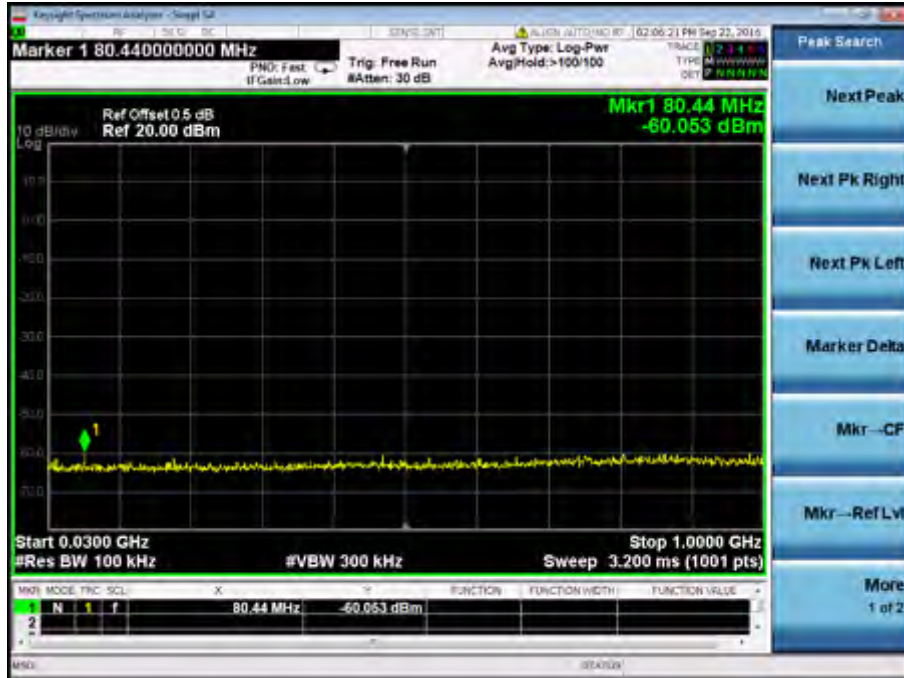
Middle Channel



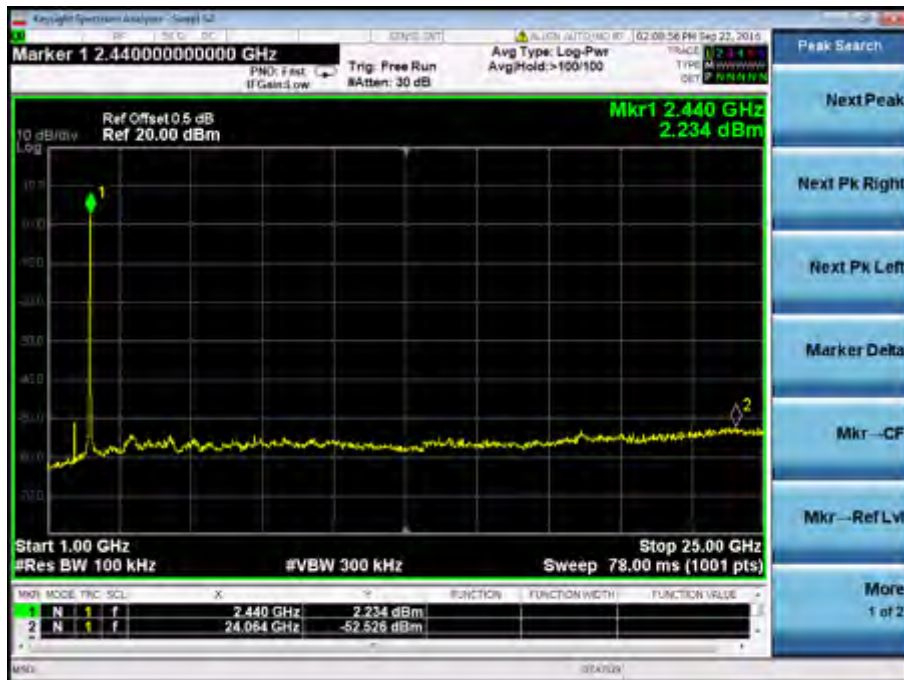
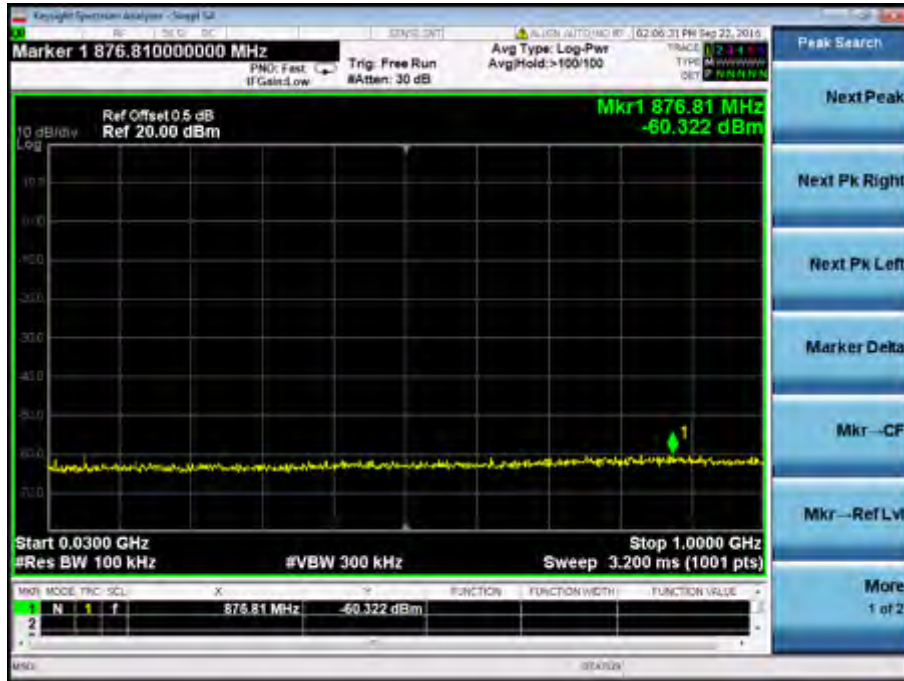
High Channel



Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps
Low Channel



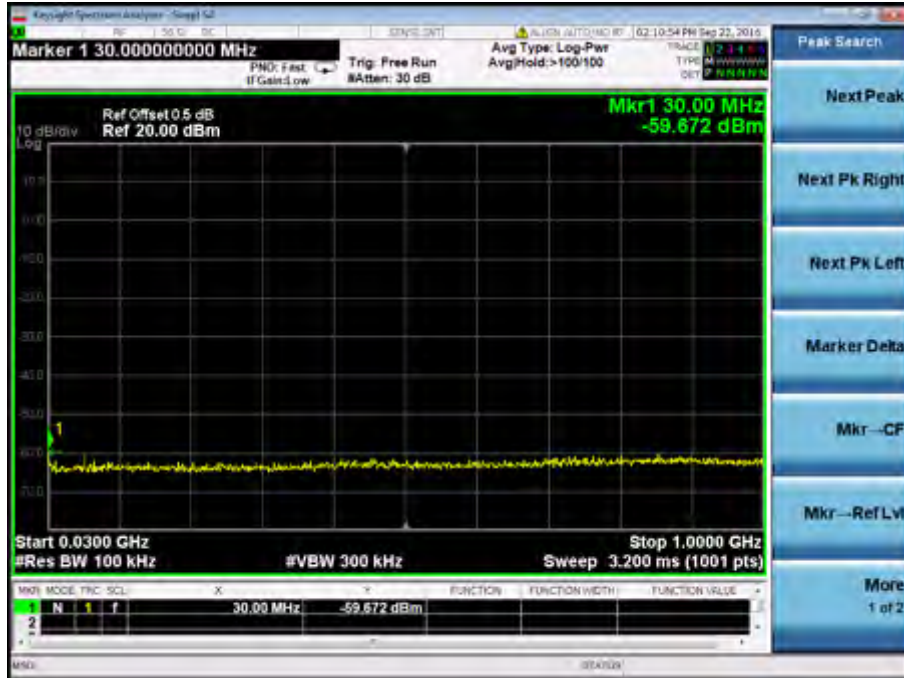
Middle Channel



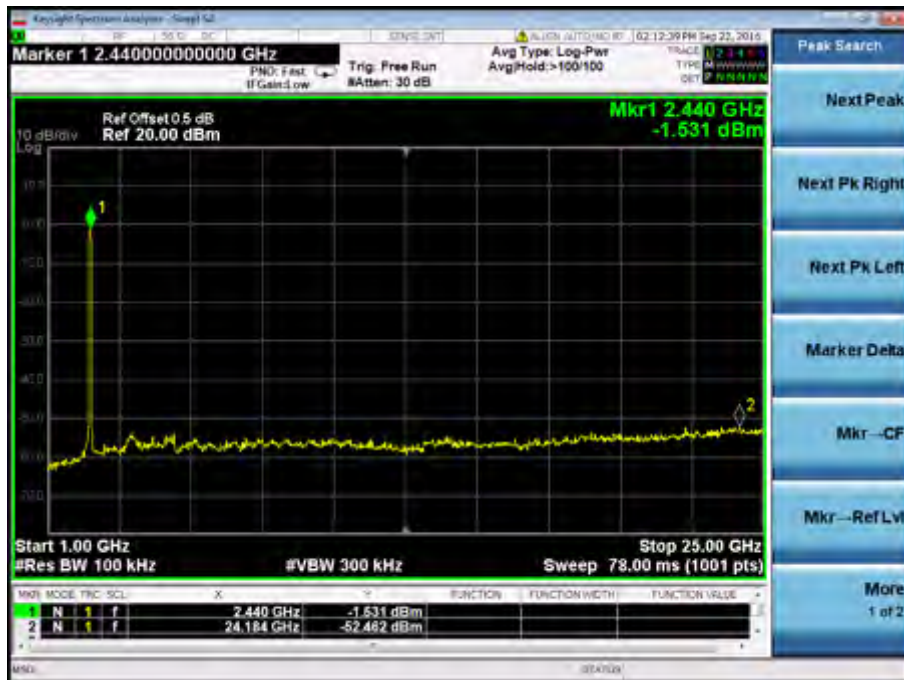
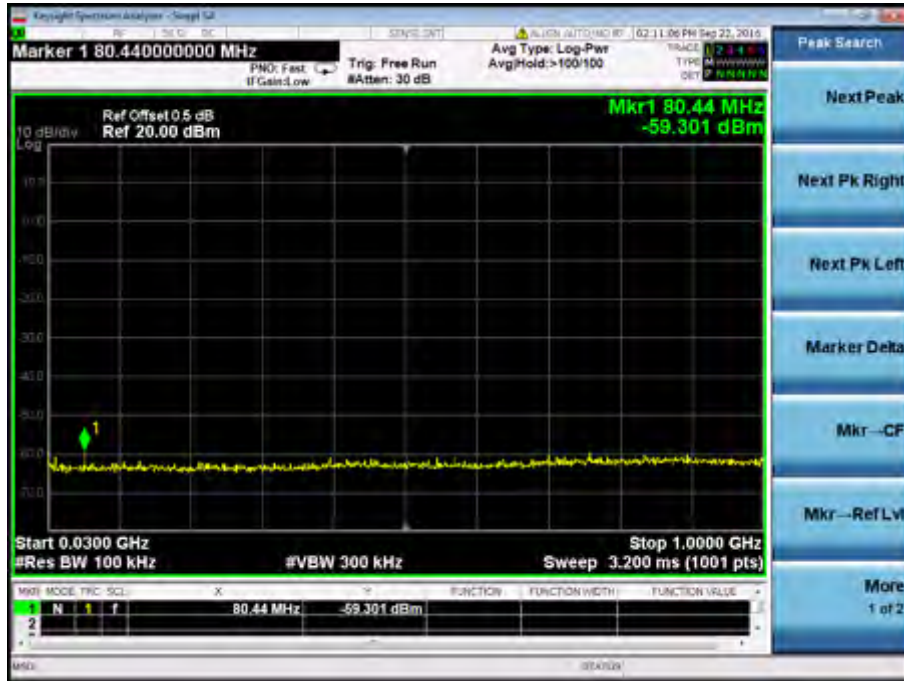
High Channel



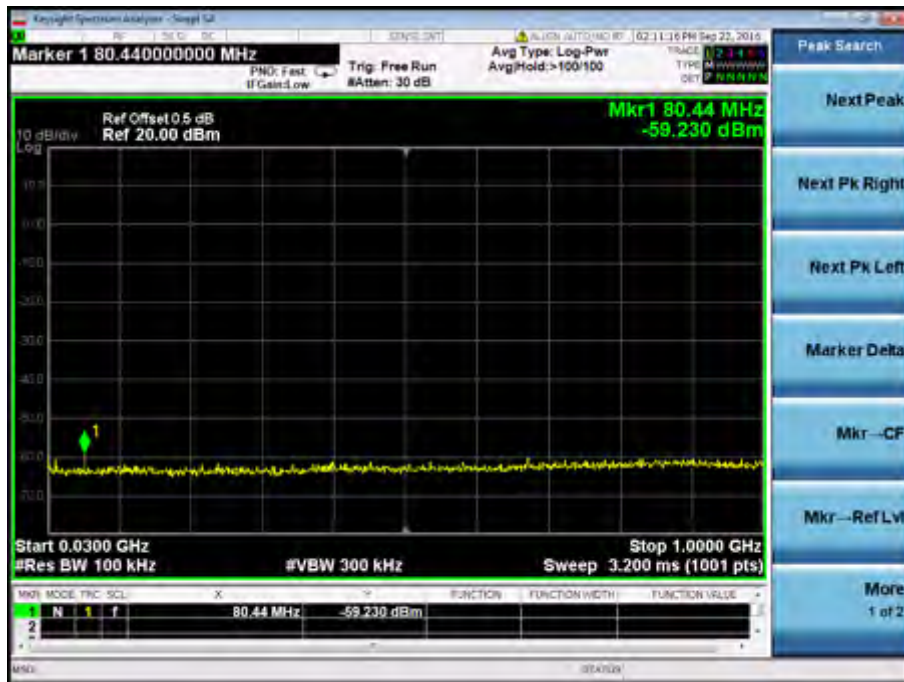
Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps
Low Channel



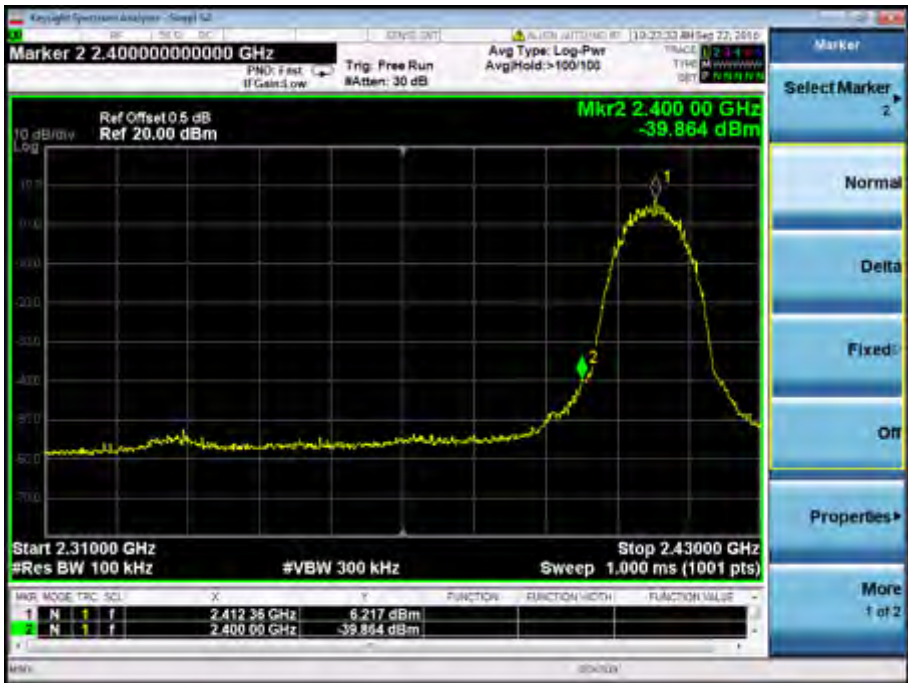
Middle Channel



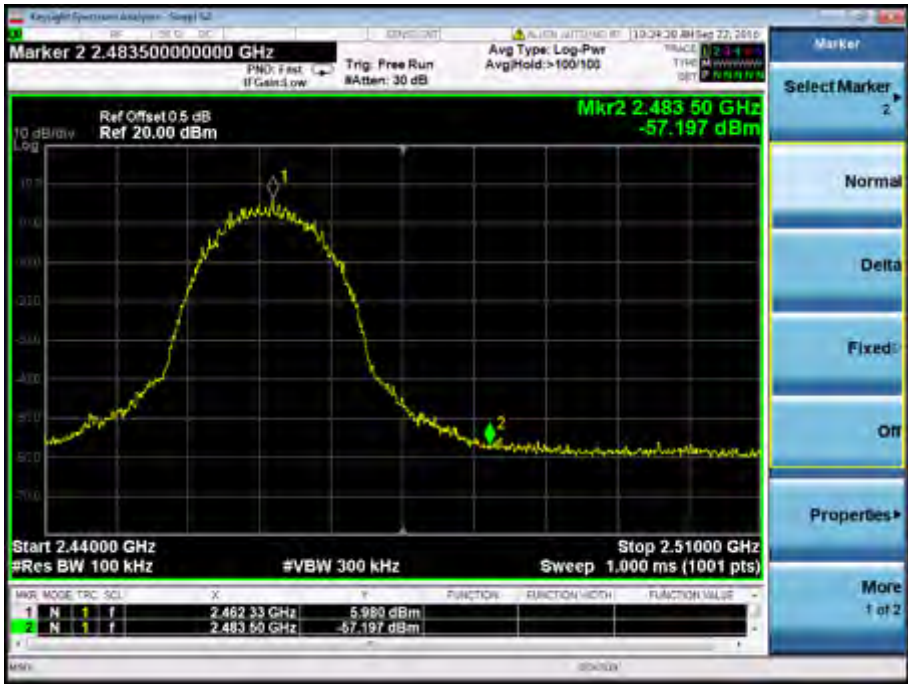
High Channel



Wi-Fi 802.11 b mode, Band Edge
Low Channel



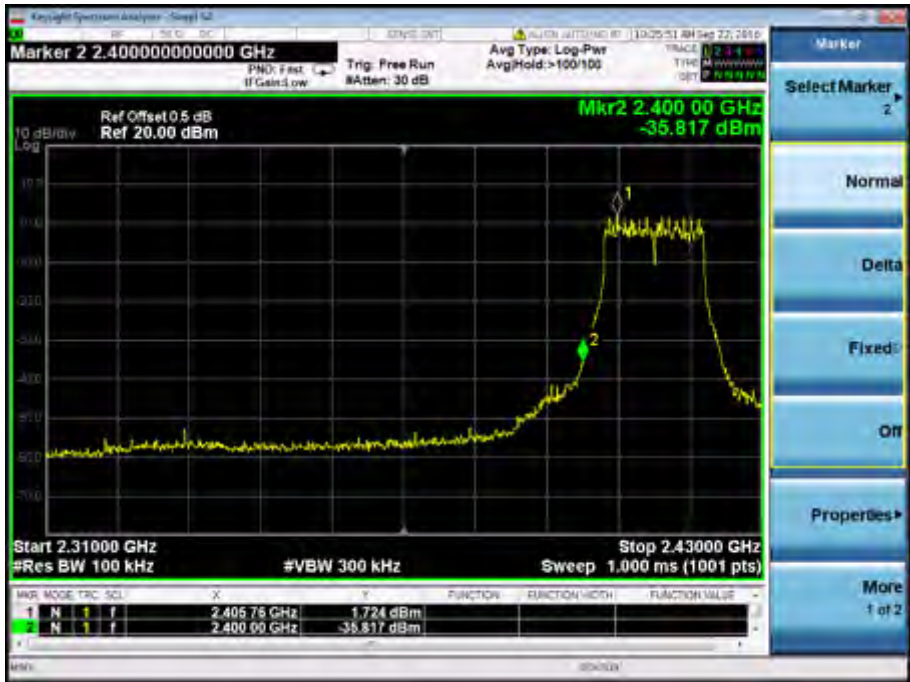
High Channel



Wi-Fi 802.11 g mode, Band Edge
Low Channel



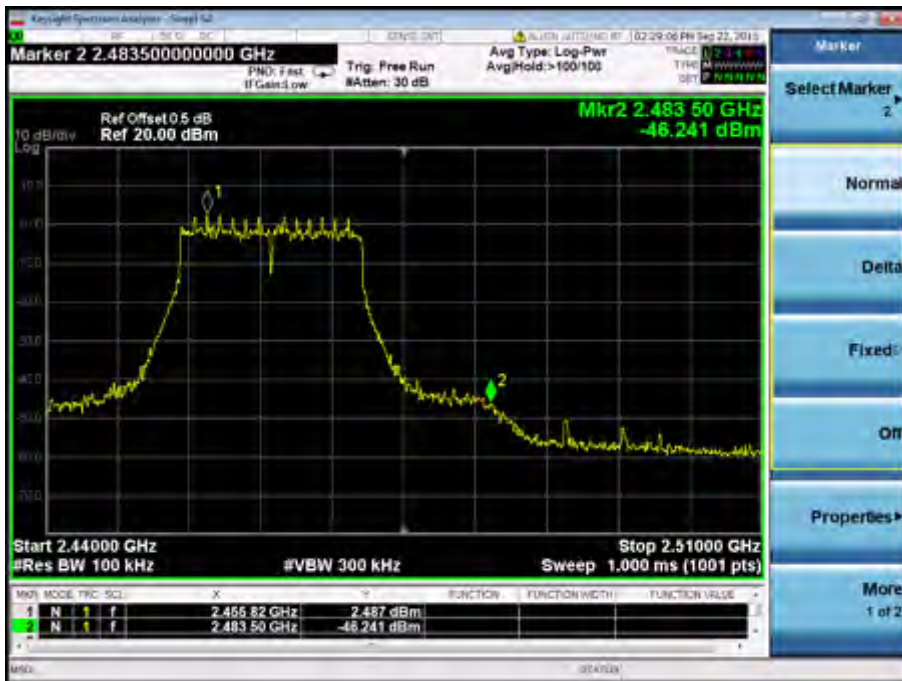
High Channel



Wi-Fi 802.11 n(HT20) mode, Band Edge
Low Channel



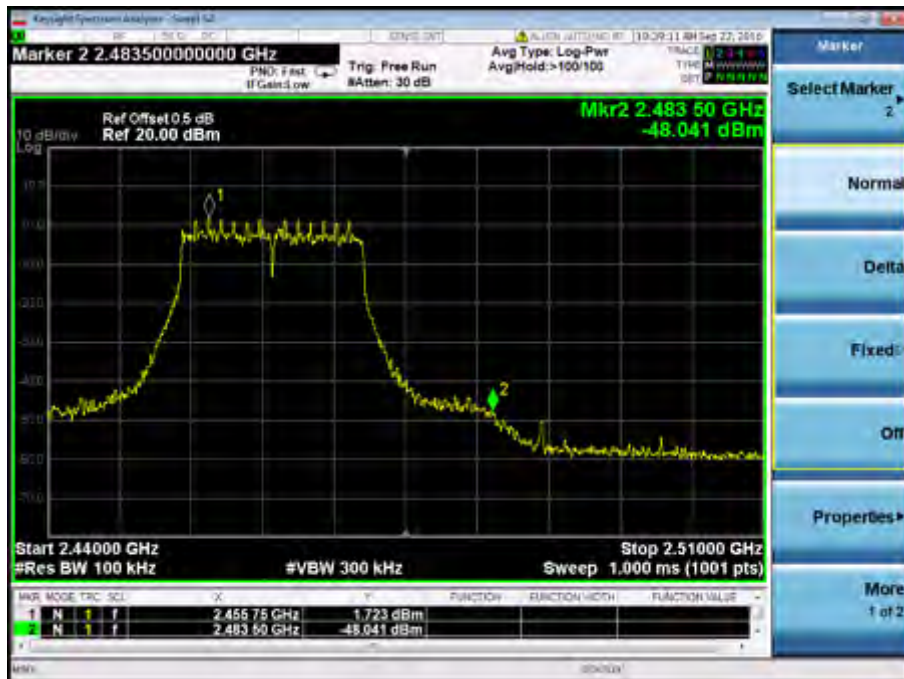
High Channel



Wi-Fi 802.11 n(HT40) mode, Band Edge
Low Channel



High Channel



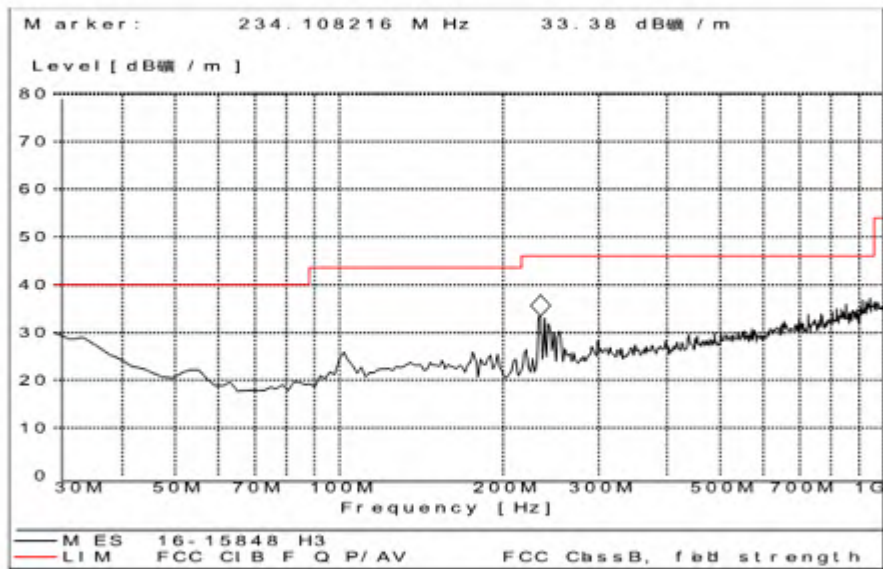
Appendix C: Test Results of Radiated Testing

APPENDIX C: TEST RESULTS OF RADIATED TESTING	1
APPENDIX C.1: TEST RESULTS OF RADIATED SPURIOUS EMISSIONS	2
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	2
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	14
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	26
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	38
APPENDIX C.2: TEST RESULTS OF RADIATED EMISSIONS IN RESTRICTED BANDS	50
<i>Wi-Fi 802.11 b mode, 1 Mbps</i>	50
<i>Wi-Fi 802.11 g mode, 6 Mbps</i>	52
<i>Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps</i>	54
<i>Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps</i>	56
APPENDIX C.3: TEST RESULTS OF CONDUCTED EMISSION ON AC MAINS	58
<i>Part 15C, B mode</i>	58
<i>Part 15B, C mode</i>	60
APPENDIX C.4: TEST RESULTS OF RADIATED EMISSION	62
<i>Part 15B, C mode, Below 1GHz</i>	62
<i>Part 15B, C mode, Above 1GHz</i>	64

Note: Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

Appendix C.1: Test Results of Radiated Spurious Emissions
Wi-Fi 802.11 b mode, 1 Mbps
 Low channel

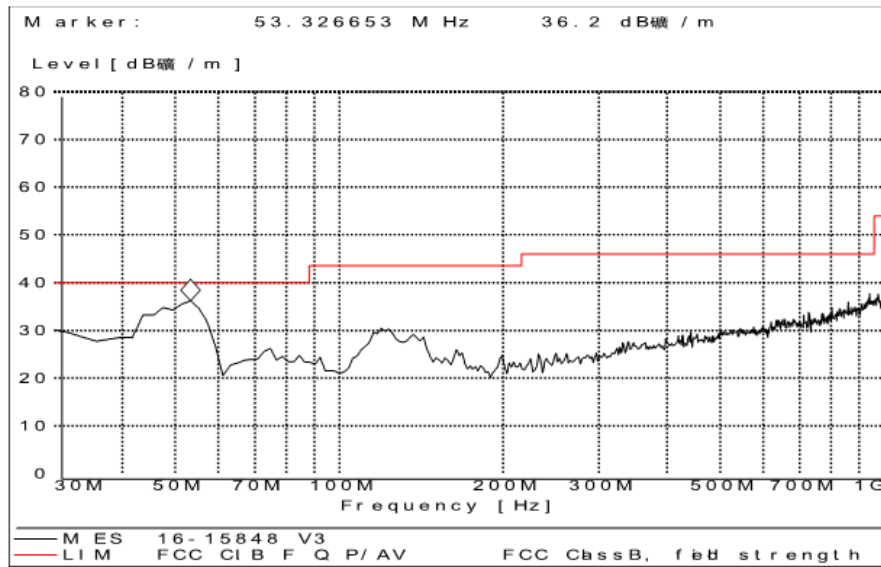
EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

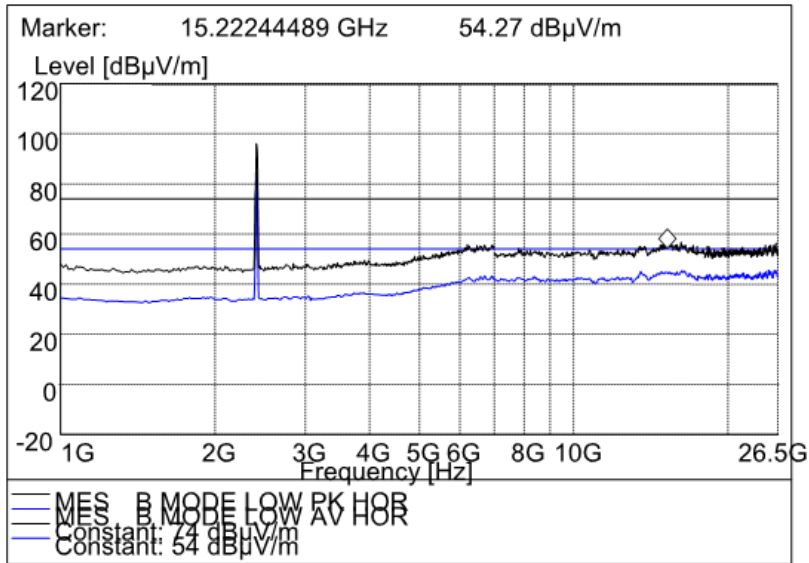
Frequency MHz	Level dBμV/m	Limit dBμV/m
30.000000	27.86	40.0
103.580000	24.12	43.5
234.220000	31.74	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.88	40.0
54.690000	33.56	40.0
131.250000	29.17	43.5



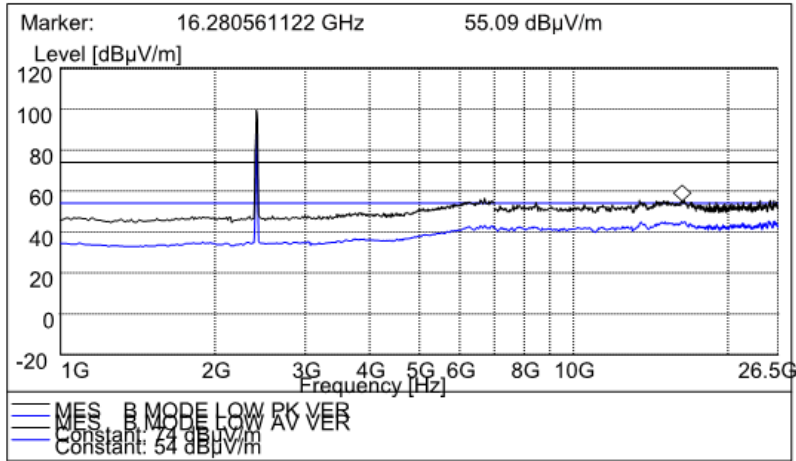
EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.5968000	55.89	74.00	43.68	54.00
13.4745000	55.04	74.00	44.35	54.00
15.2224000	54.27	74.00	44.58	54.00

2016/12/14 07:51nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

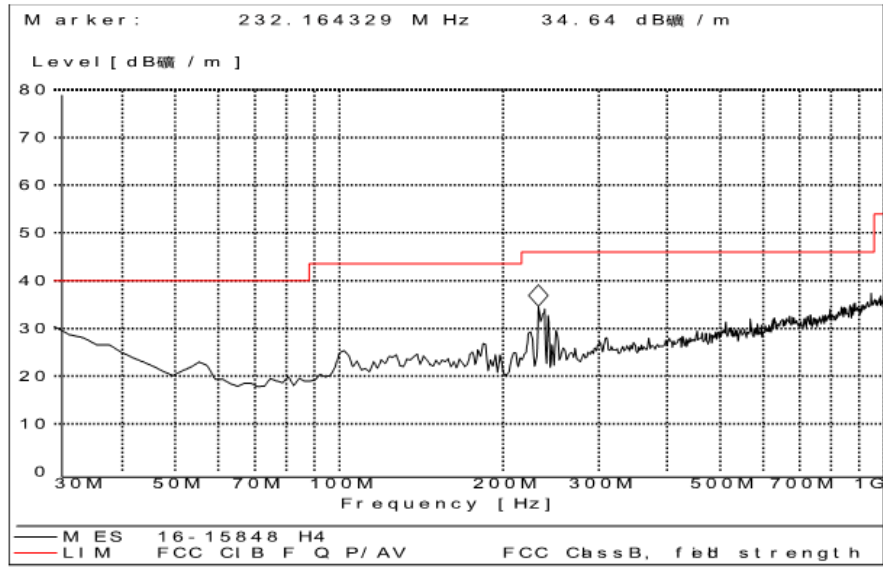
MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.6993000	56.51	74.00	42.97	54.00
13.4368000	55.54	74.00	43.65	54.00
16.2805000	55.09	74.00	44.43	54.00

Middle channel

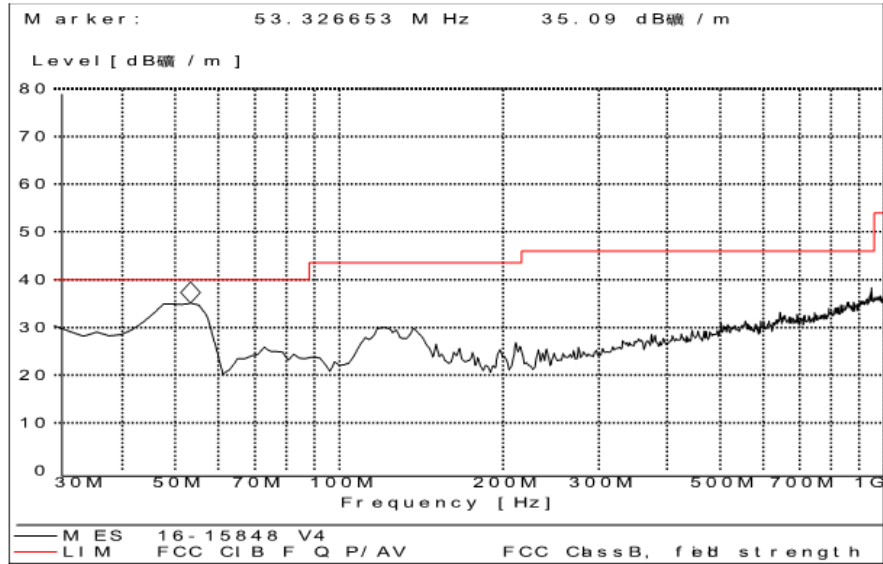
EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

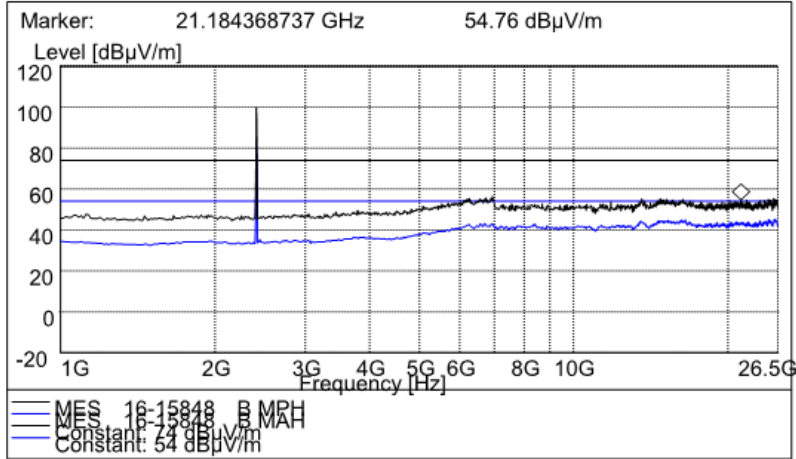
Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.91	40.0
101.800000	23.65	43.5
232.210000	33.03	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.43	40.0
54.396000	32.69	40.0
126.520000	29.33	43.5

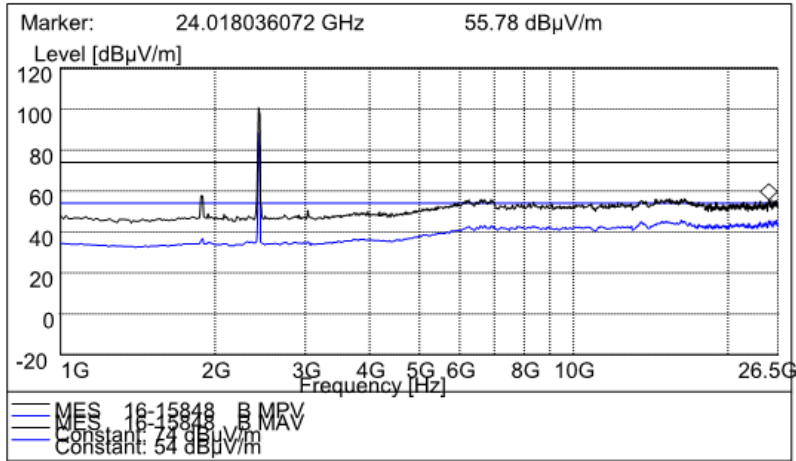


EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/12 07:42nm

Frequency MHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6254.5000	55.41	74.00	41.06	54.00
13569.1000	55.21	74.00	42.78	54.00
21184.4000	54.73	74.00	41.06	54.00



EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

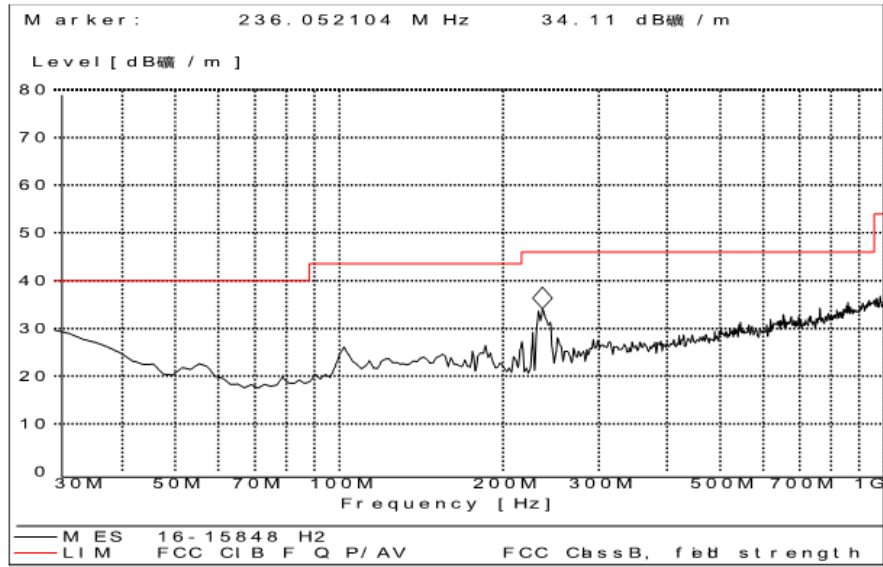
MEASUREMENT RESULT: "result3"

2016/12/08 08:09

Frequency MHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6615.2000	55.91	74.00	42.44	54.00
14517.0000	55.98	74.00	42.53	54.00
24018.0000	55.78	74.00	43.25	54.00

High channel

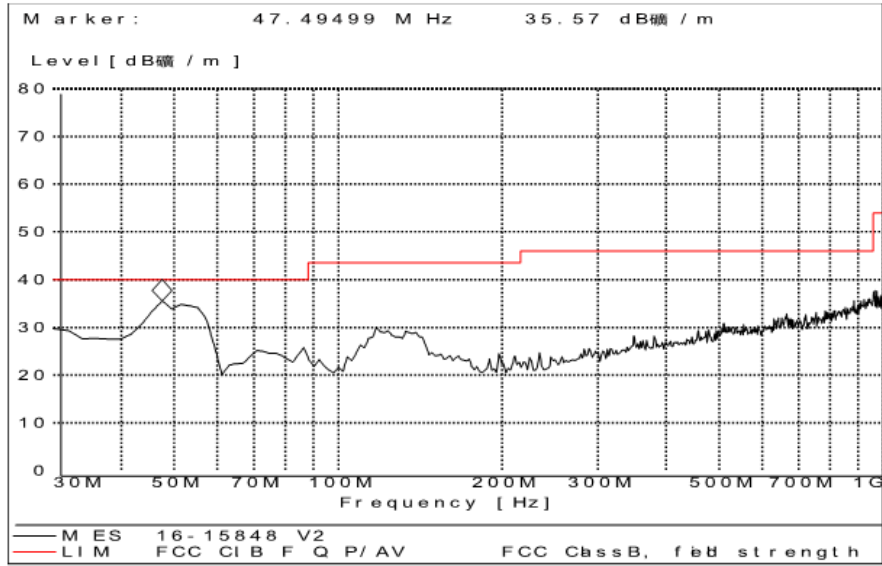
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Manufacturer:
Operating Condition: B MODE-HIGH Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR
Comment:



MEASUREMENT RESULT: "QuasiPeak"

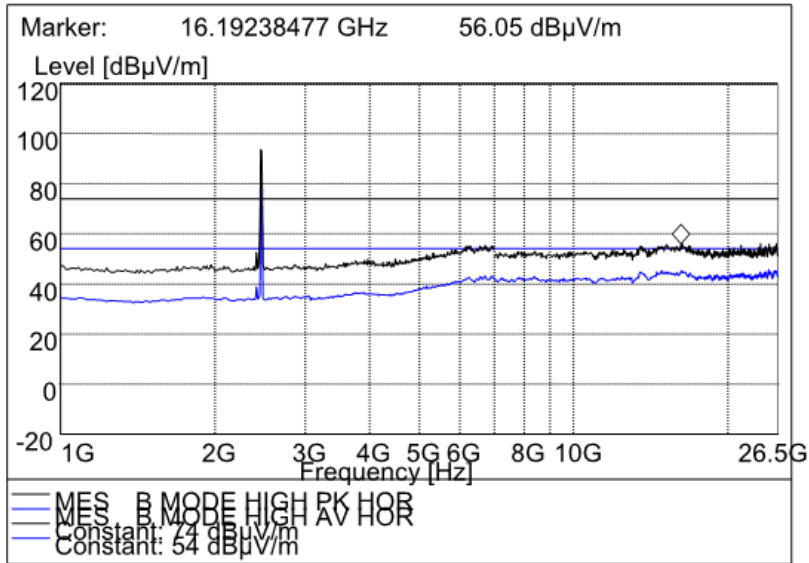
Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.59	40.0
102.250000	23.96	43.5
236.050000	32.20	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.46	40.0
47.490000	33.69	40.0
121.180000	29.04	43.5



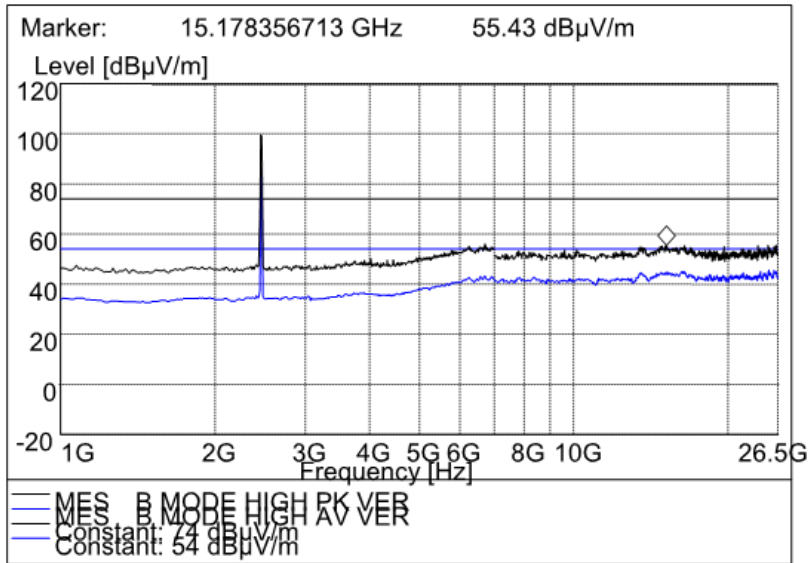
EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.4968000	56.13	74.00	43.33	54.00
13.7854000	55.84	74.00	43.55	54.00
16.1923000	56.05	74.00	43.98	54.00

2016/12/14 07:58nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: B MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

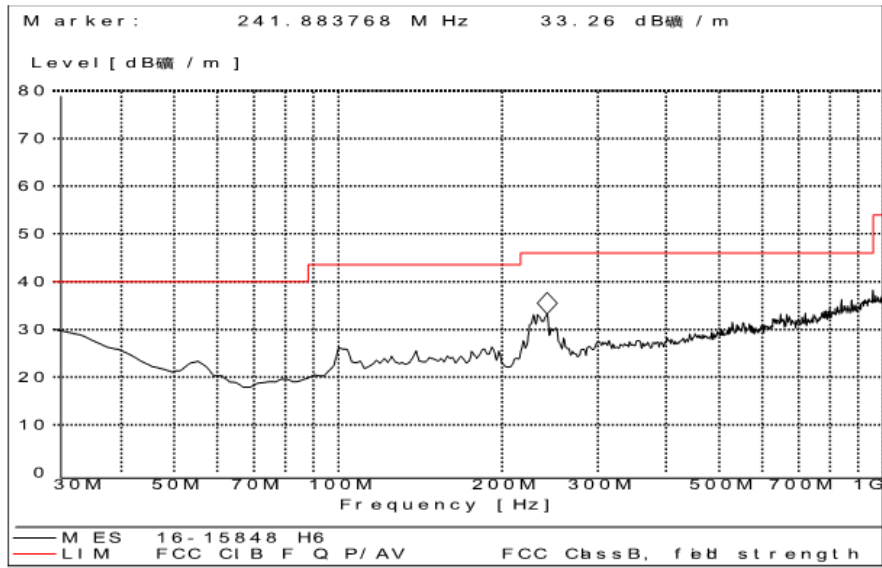
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.4325000	55.74	74.00	43.41	54.00
14.5312000	54.86	74.00	43.28	54.00
15.1783000	55.43	74.00	44.52	54.00

2016/12/14 07:59nm

Wi-Fi 802.11 g mode, 6 Mbps
Low channel

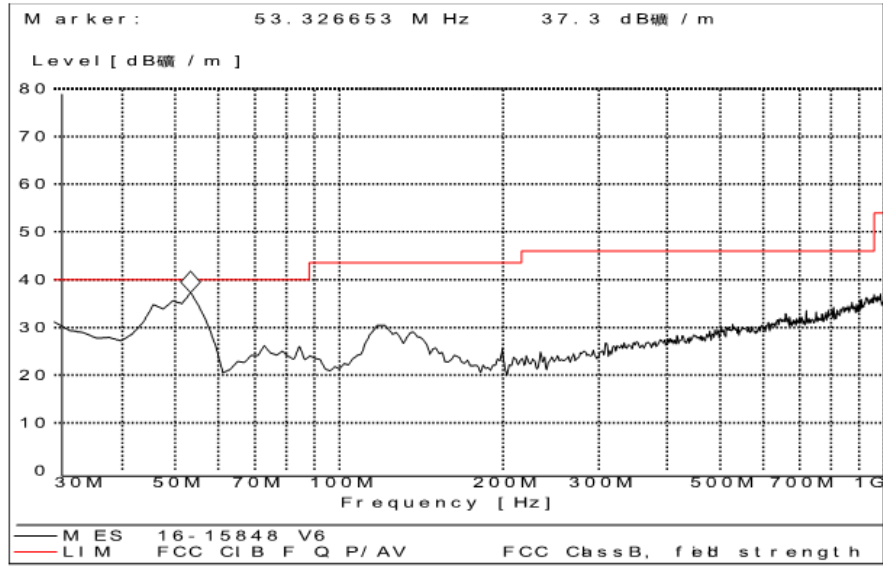
EUT: MBP83SN
Manufacturer:
Operating Condition: G MODE-LOW Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR
Comment:



MEASUREMENT RESULT: "QuasiPeak"

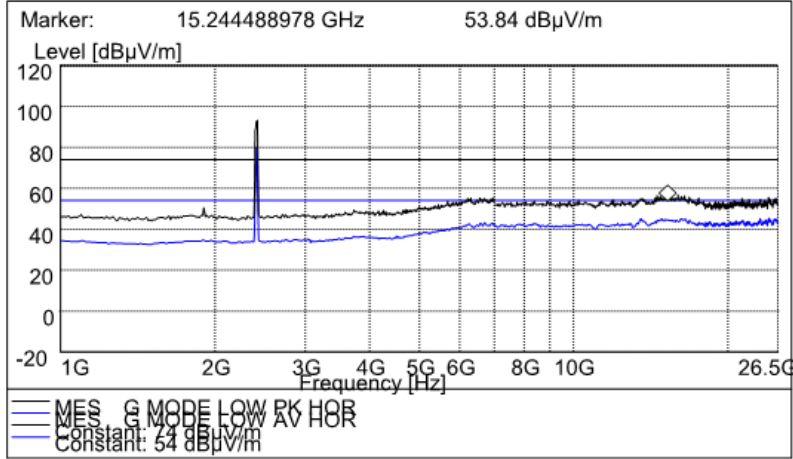
Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.59	40.0
106.840000	24.52	43.5
239.960000	31.46	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	29.78	40.0
54.690000	34.19	40.0
126.350000	29.77	43.5



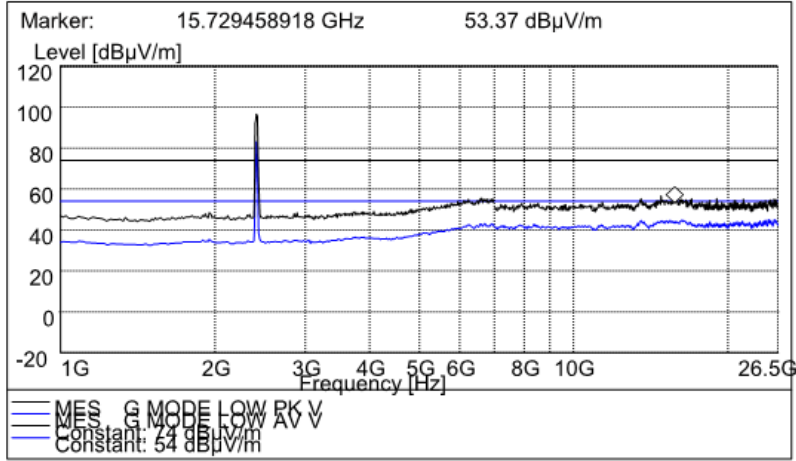
EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.6874000	55.13	74.00	42.97	54.00
13.4809000	54.29	74.00	44.97	54.00
15.2449000	53.84	74.00	44.41	54.00

2016/12/14 08:13nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

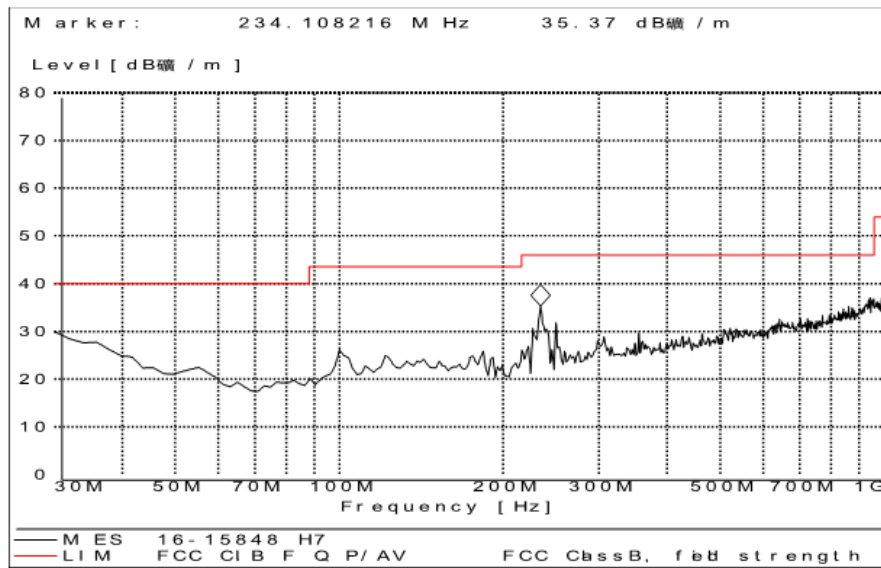
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.2425000	53.87	74.00	42.58	54.00
13.5250000	55.36	74.00	44.63	54.00
15.7294000	54.37	74.00	43.38	54.00

2016/12/14 08:15nm

Middle channel

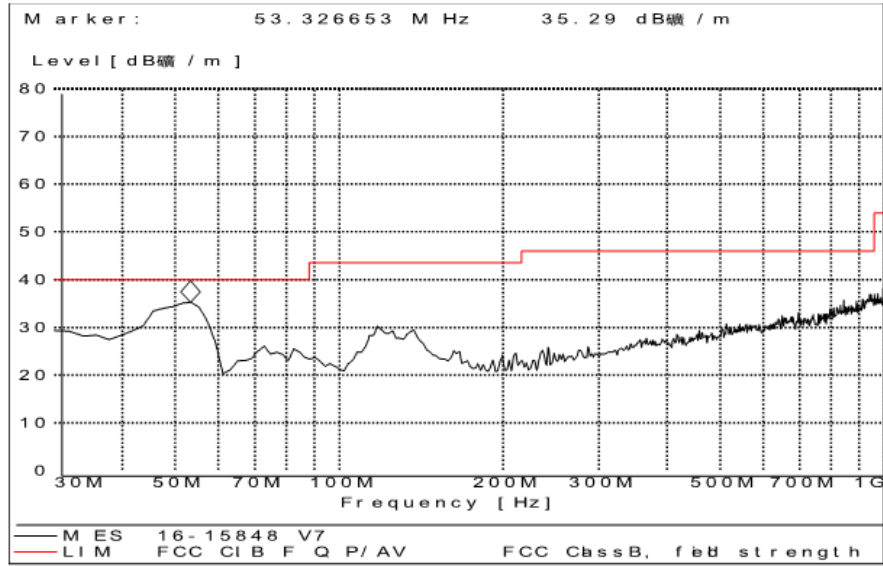
EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

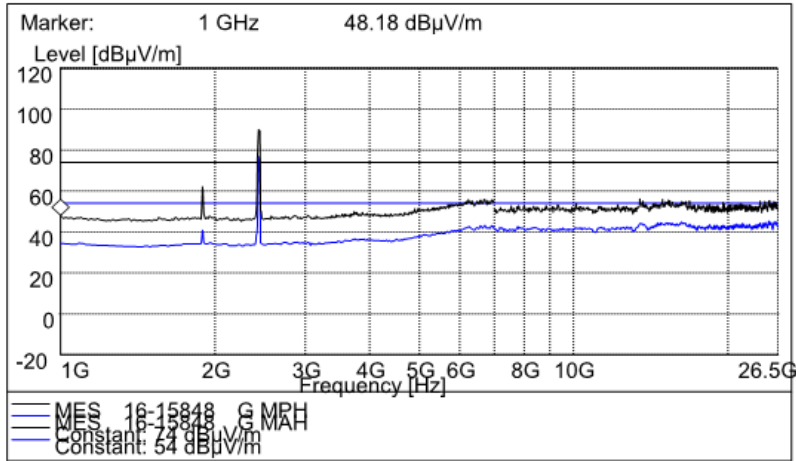
Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.88	40.0
100.350000	23.69	43.5
234.520000	33.72	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.56	40.0
54.690000	32.55	40.0
120.240000	28.51	43.5



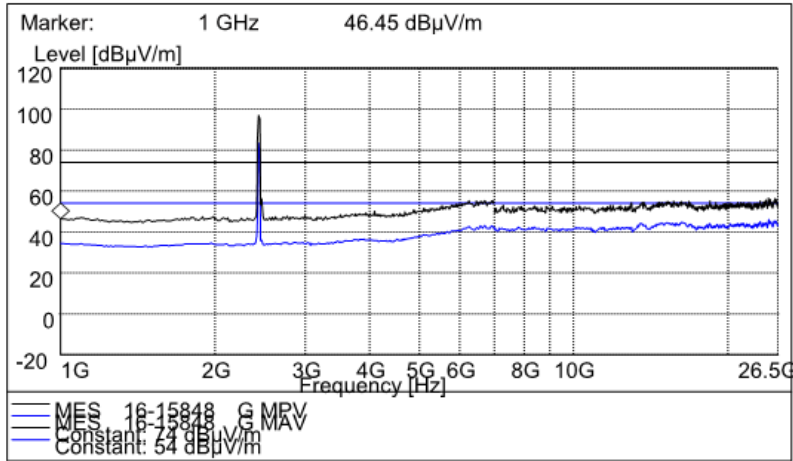
EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/12 07:42nm

Frequency MHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6232.5000	50.41	74.00	40.05	54.00
14581.1000	50.21	74.00	42.79	54.00
28659.2000	49.32	74.00	41.23	54.00

2016/12/12 07:47nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

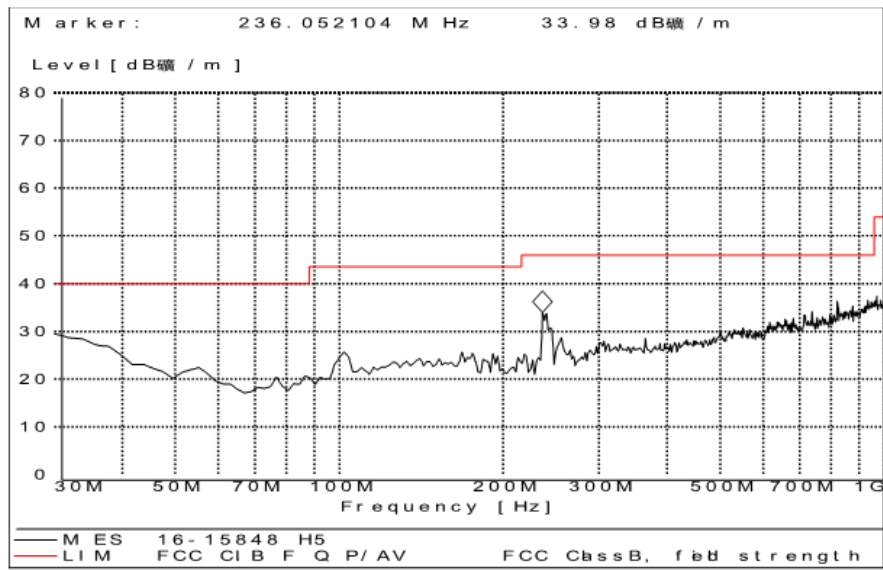
2016/12/12 07:42nm

Frequency MHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6265.0500	49.66	74.00	40.85	54.00
14525.1000	49.64	74.00	41.72	54.00
28650.2000	50.31	74.00	41.32	54.00

2016/12/12 07:50nm

High channel

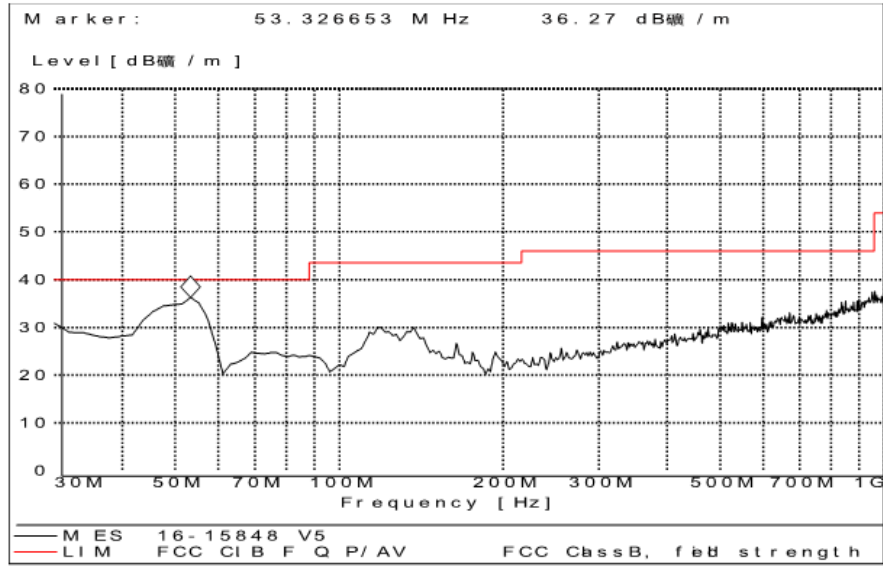
EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

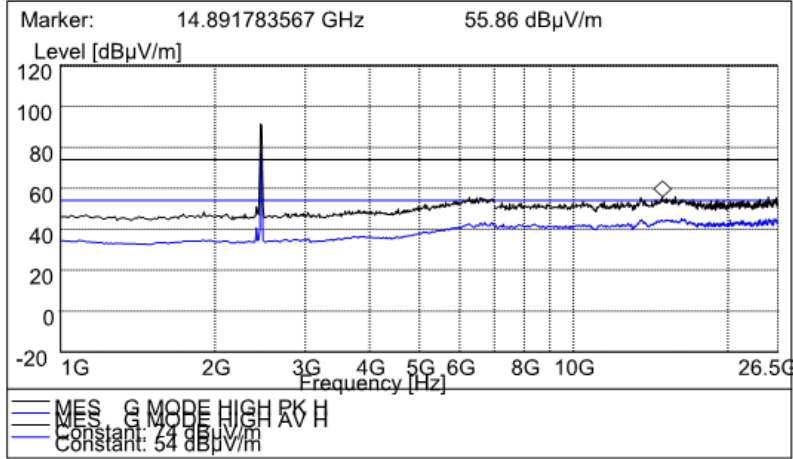
Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.81	40.0
102.540000	24.03	43.5
236.060000	32.41	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	29.73	40.0
54.960000	33.26	40.0
119.810000	27.89	43.5



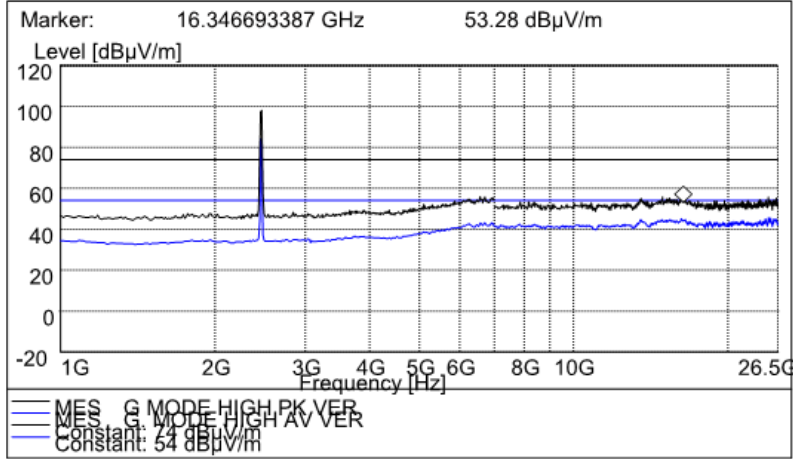
EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.6633000	54.63	74.00	42.13	54.00
13.5030000	55.41	74.00	44.36	54.00
14.8918000	55.86	74.00	44.27	54.00

2016/12/14 08:03nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: G MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

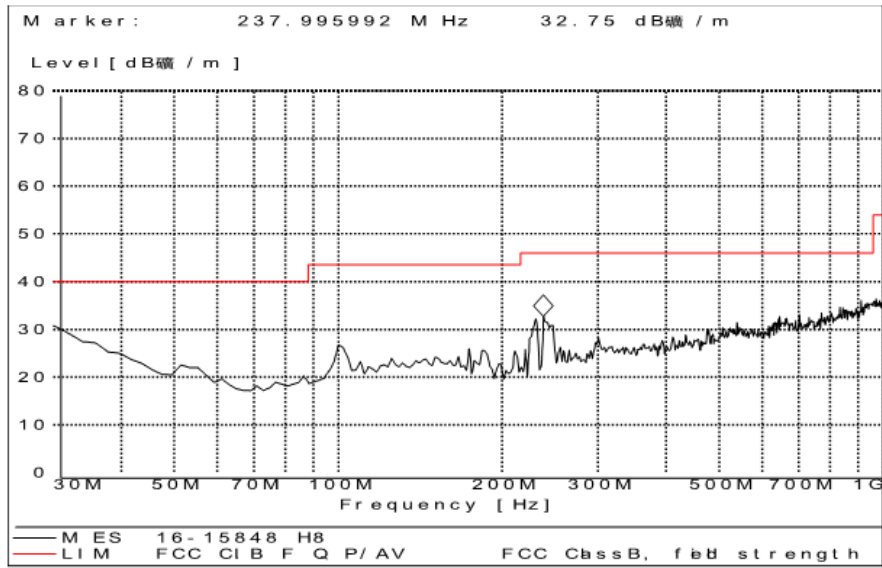
MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2305000	54.61	74.00	42.32	54.00
13.4809000	53.49	74.00	44.51	54.00
16.3467000	53.28	74.00	44.27	54.00

Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps
Low channel

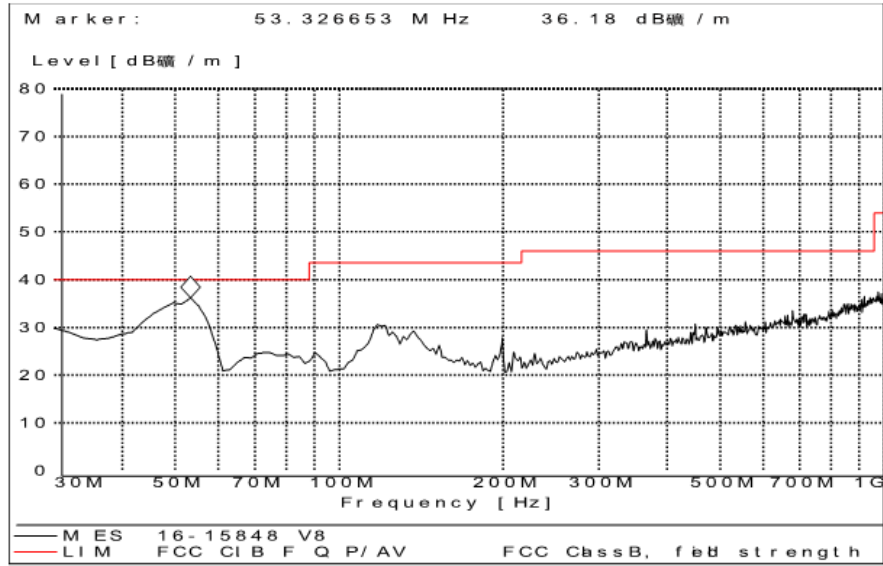
EUT: MBP83SN
Manufacturer:
Operating Condition: N20 MODE-LOW Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR
Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	29.11	40.0
102.040000	25.99	43.5
239.520000	30.45	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

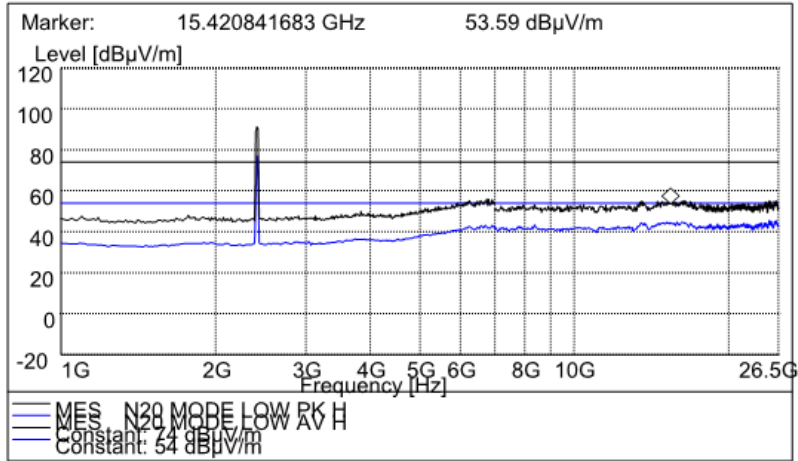


MEASUREMENT RESULT: "QuasiPeak"

2016-12-9 9:03

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.91	40.0
54.090000	33.18	40.0
119.850000	28.84	43.5

2016-12-9 9:03



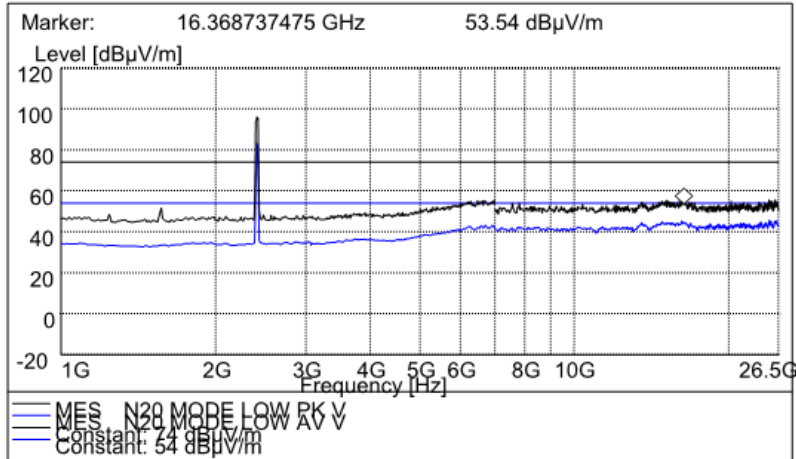
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2785000	53.99	74.00	42.11	54.00
13.5250000	53.90	74.00	44.40	54.00
15.4208000	53.59	74.00	44.16	54.00

2016/12/14 08:19nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

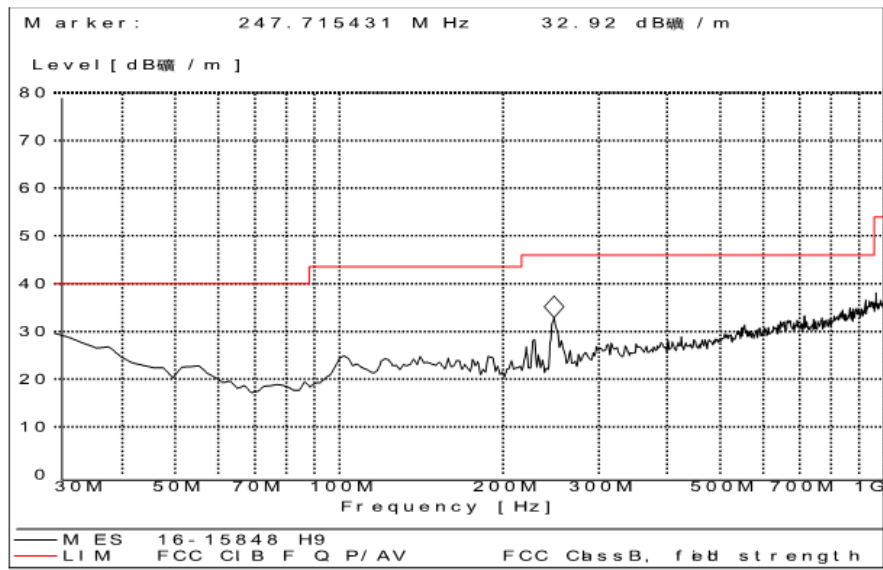
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2785000	54.95	74.00	42.11	54.00
13.5471000	52.96	74.00	44.18	54.00
16.3687000	54.54	74.00	44.21	54.00

2016/12/14 08:17nm

Middle channel

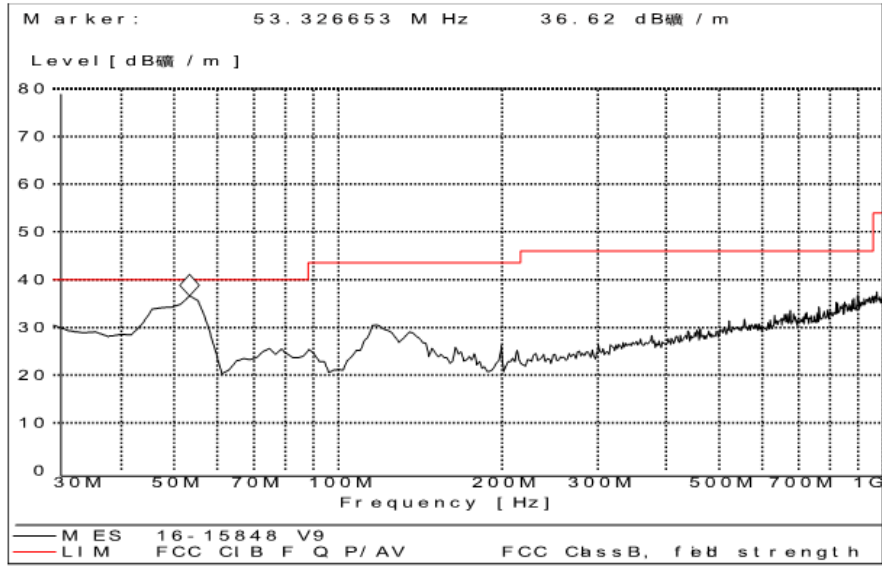
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.77	40.0
101.440000	23.24	43.5
247.270000	31.46	46.0

EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

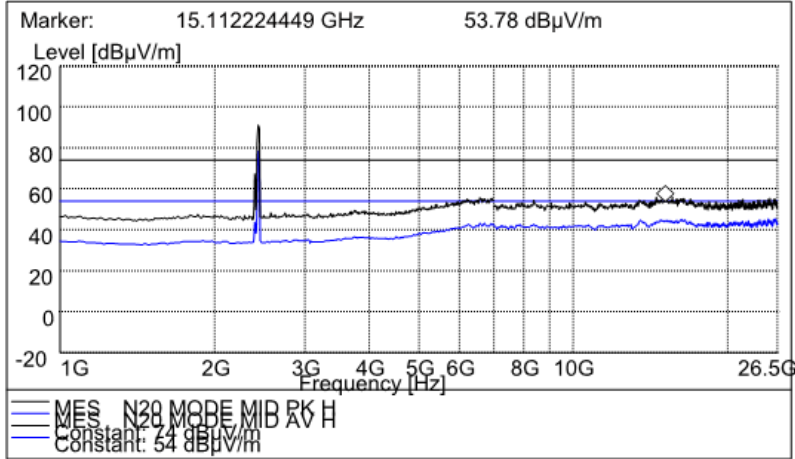


MEASUREMENT RESULT: "QuasiPeak"

2016-12-9 9:06

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	29.16	40.0
54.690000	35.05	40.0
119.870000	28.43	43.5

2016-12-9 9:06



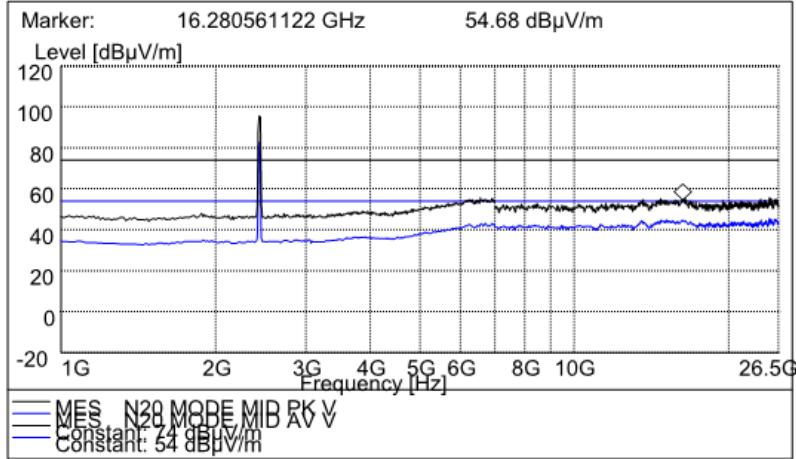
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.2305000	54.24	74.00	42.57	54.00
13.4809000	53.86	74.00	44.27	54.00
15.1122000	53.78	74.00	43.99	54.00

2016/12/14 08:29nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

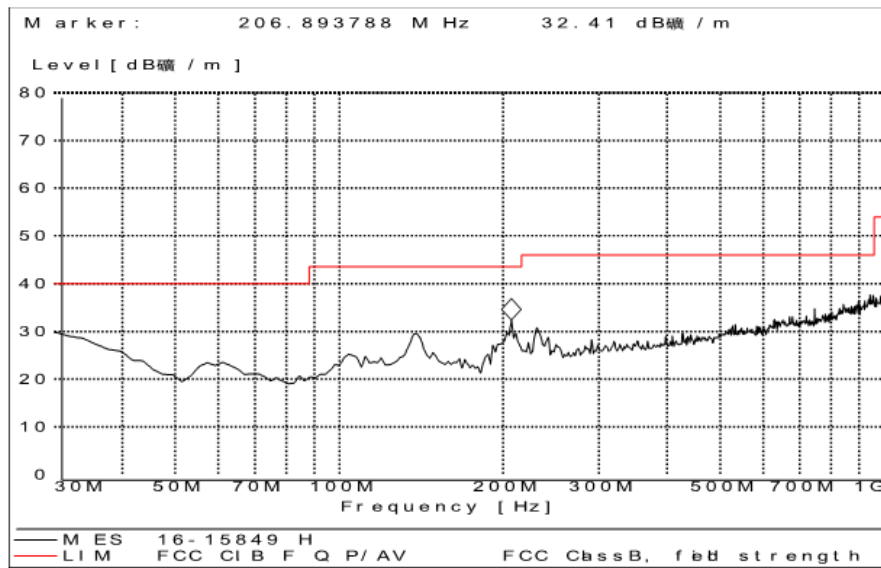
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.2305000	54.24	74.00	42.57	54.00
13.5471000	53.60	74.00	43.93	54.00
16.2816000	54.68	74.00	44.31	54.00

2016/12/14 08:28nm

High channel

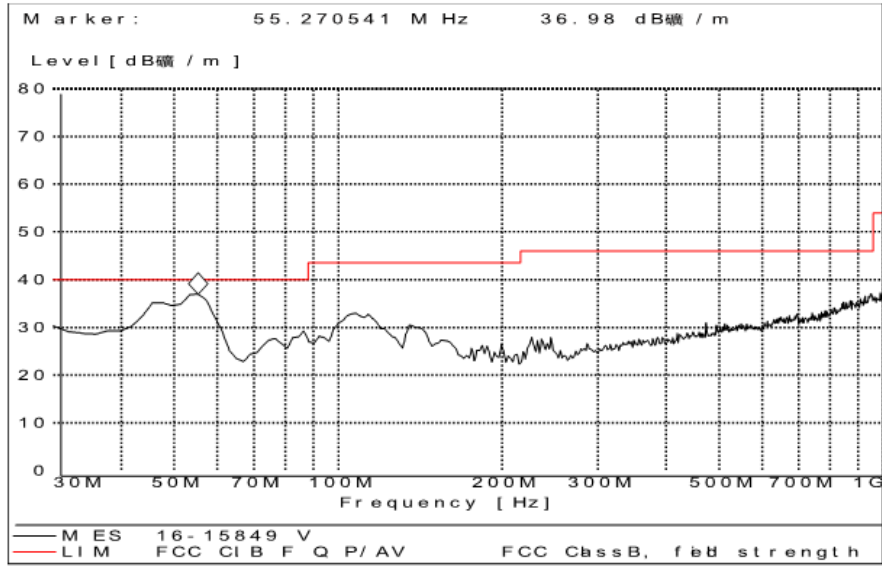
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.69	40.0
148.230000	27.36	43.5
206.850000	31.09	43.5

EUT: MBP83SN
Manufacturer:
Operating Condition: N20 MODE-HIGH Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: VER
Comment:

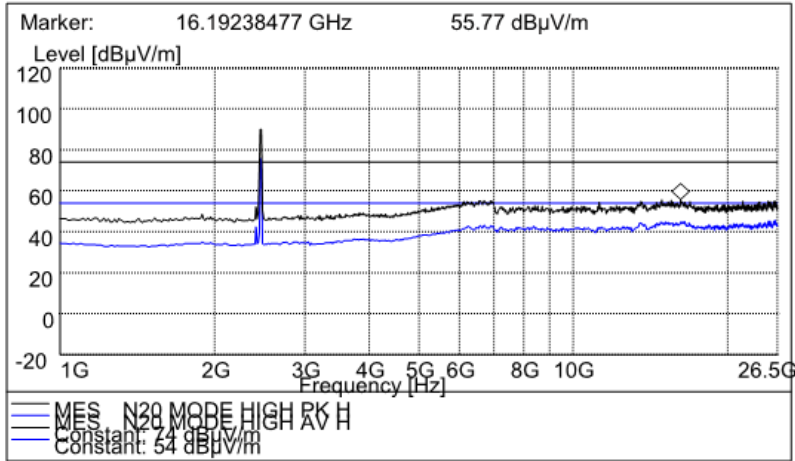


MEASUREMENT RESULT: "QuasiPeak"

2016-10-26 10:49

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.59	40.0
56.280000	33.16	40.0
114.250000	29.62	43.5

2016-10-26 10:49

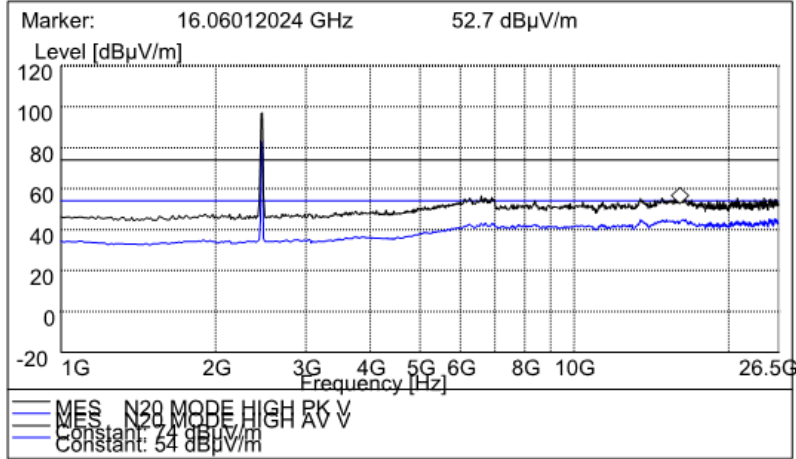


EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.1840000	53.74	74.00	42.58	54.00
13.5471000	54.88	74.00	44.30	54.00
16.1924000	55.77	74.00	44.79	54.00



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N20 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

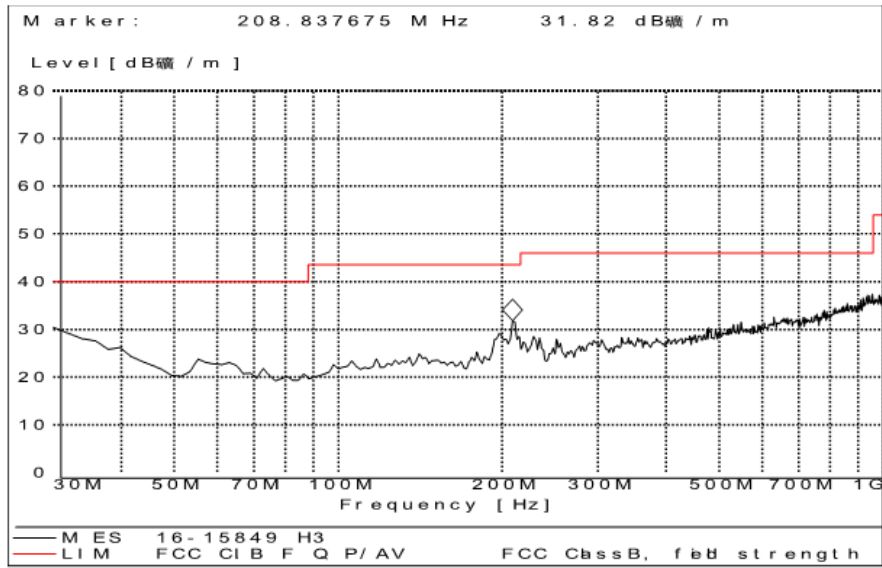
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.1824000	53.84	74.00	42.86	54.00
13.4589550	55.25	74.00	44.94	54.00
16.0822000	53.83	74.00	44.77	54.00

2016/12/14 08:25nm

Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps
Low channel

EUT: MBP83SN
Manufacturer:
Operating Condition: N40 MODE-LOW Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR
Comment:

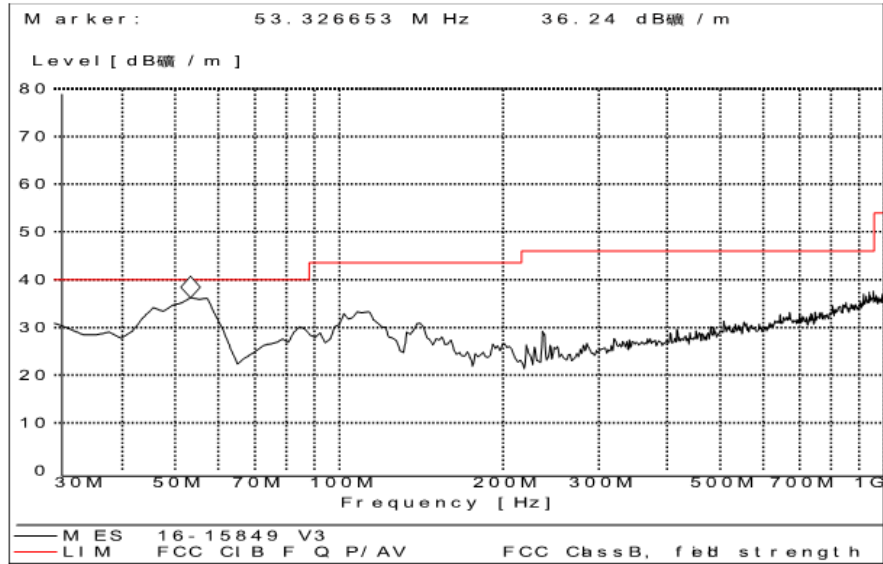


MEASUREMENT RESULT: "QuasiPeak"

2016-10-26 10:58

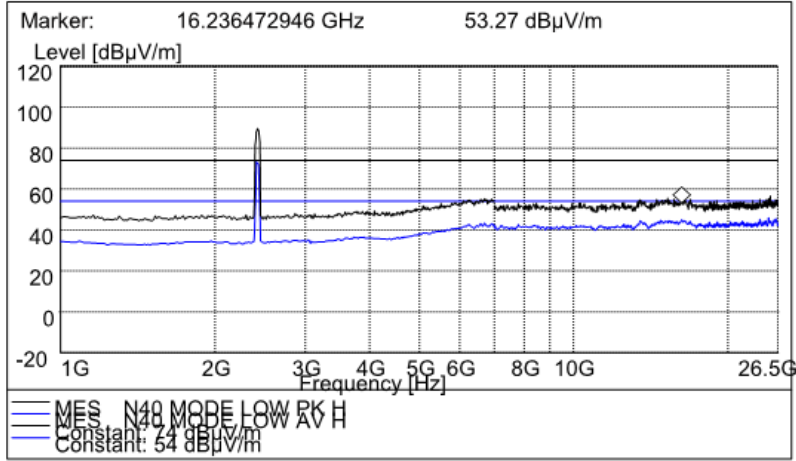
Frequency MHz	Level dB μ /m	Limit dB μ /m
30.000000	28.44	40.0
146.250000	23.53	43.5
208.560000	28.49	43.5

EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	29.87	40.0
54.060000	33.84	40.0
108.220000	30.69	43.5



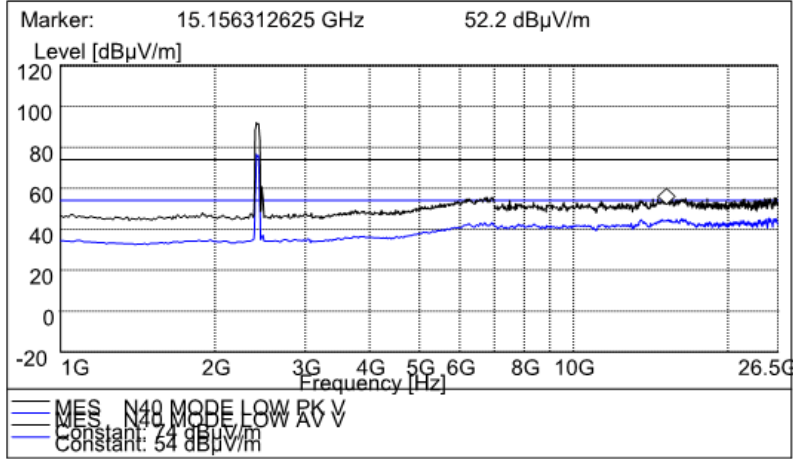
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
6.2425000	54.32	74.00	42.59	54.00
13.4589000	53.03	74.00	44.27	54.00
16.2365000	53.27	74.00	45.05	54.00

2016/12/14 08:31nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-LOW Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

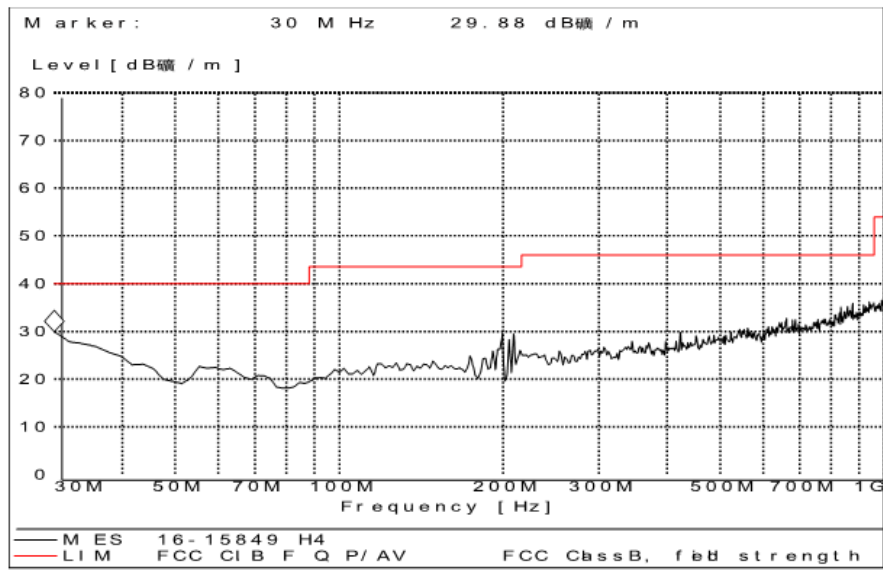
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2665000	54.61	74.00	42.38	54.00
13.5692000	53.52	74.00	43.97	54.00
15.1563000	52.20	74.00	44.17	54.00

2016/12/14 08:32nm

Middle channel

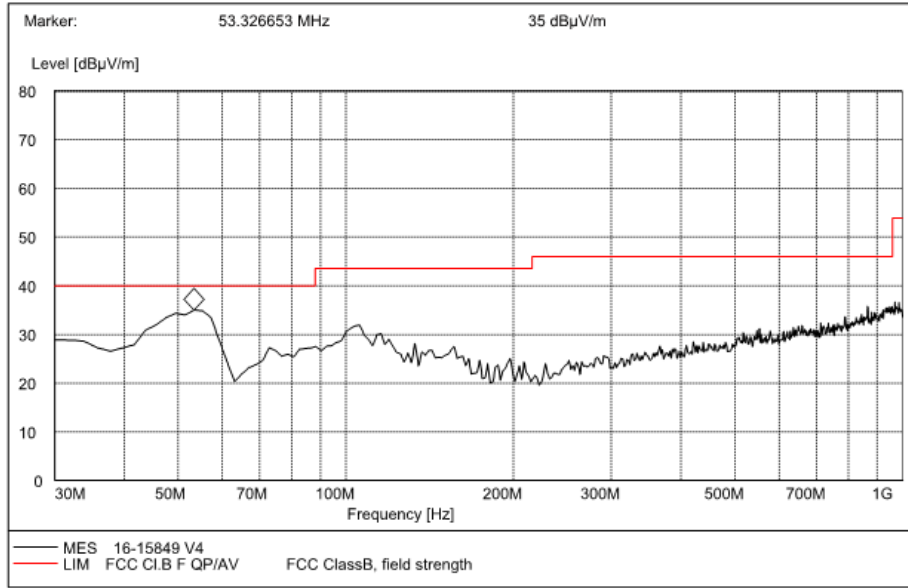
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.47	40.0
199.850000	28.95	43.5
208.700000	29.14	43.5

EUT: MBP83SN
Manufacturer:
Operating Condition: N40 MODE-MID Channel
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: VER
Comment:

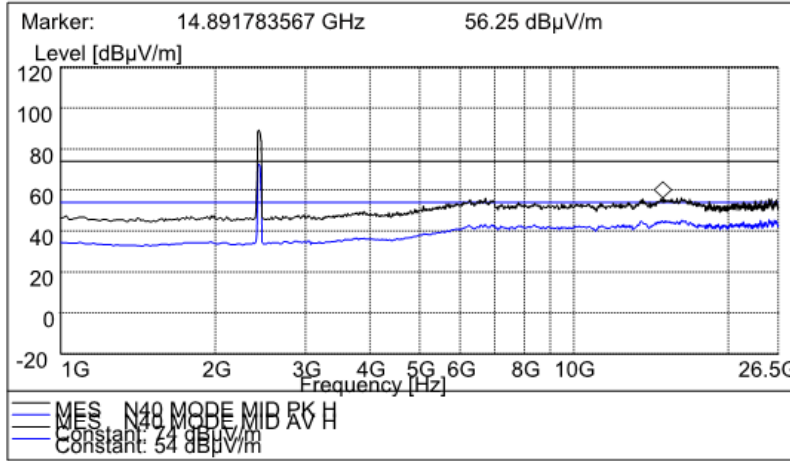


MEASUREMENT RESULT: "QuasiPeak"

2016-10-26 11:00

Frequency MHz	Level dBµV/m	Limit dBµV/m
30.000000	27.13	40.0
54.250000	32.86	40.0
106.860000	28.66	43.5

2016-10-26 11:01



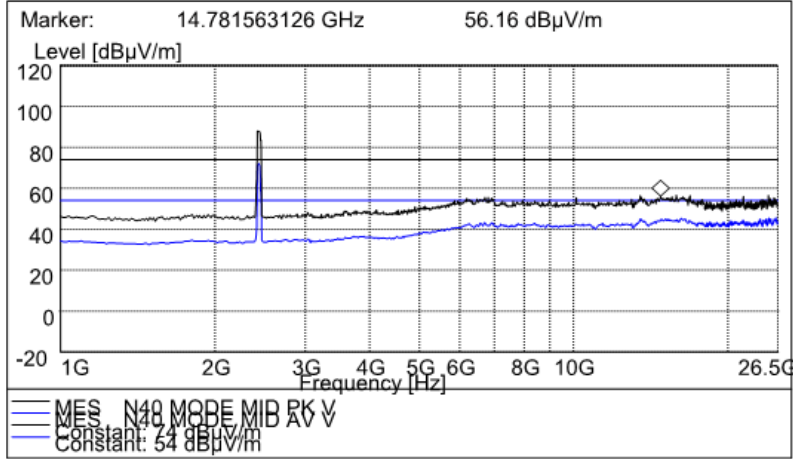
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2545000	54.41	74.00	42.62	54.00
13.5471000	54.67	74.00	44.65	54.00
14.8918000	56.25	74.00	44.70	54.00

2016/12/14 08:42nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-MID Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

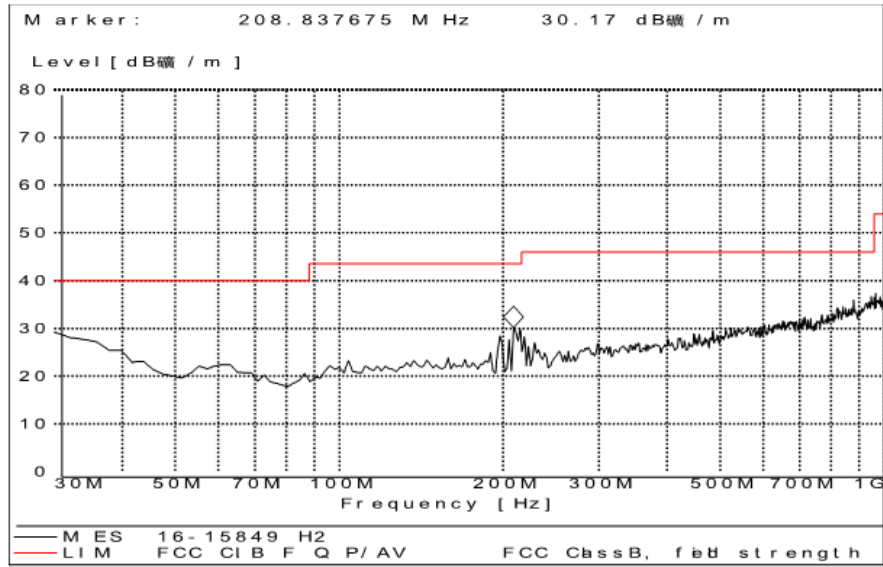
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2184000	54.06	74.00	42.34	54.00
13.4806000	56.35	74.00	44.27	54.00
14.7816000	56.16	74.00	44.50	54.00

2016/12/14 08:44nm

High channel

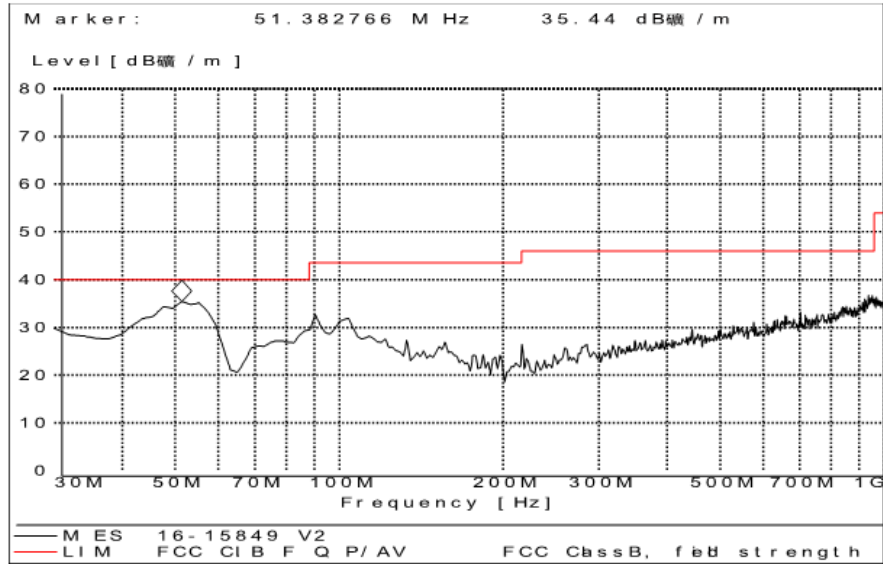
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:



MEASUREMENT RESULT: "QuasiPeak"

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.10	40.0
196.680000	27.55	43.5
208.850000	29.67	43.5

EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

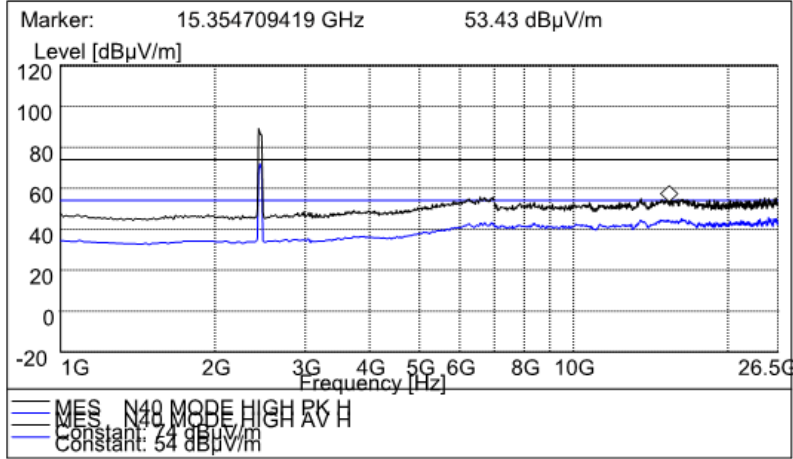


MEASUREMENT RESULT: "QuasiPeak"

2016-10-26 10:53

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	27.80	40.0
52.140000	32.69	40.0
91.250000	30.56	43.5

2016-10-26 10:53



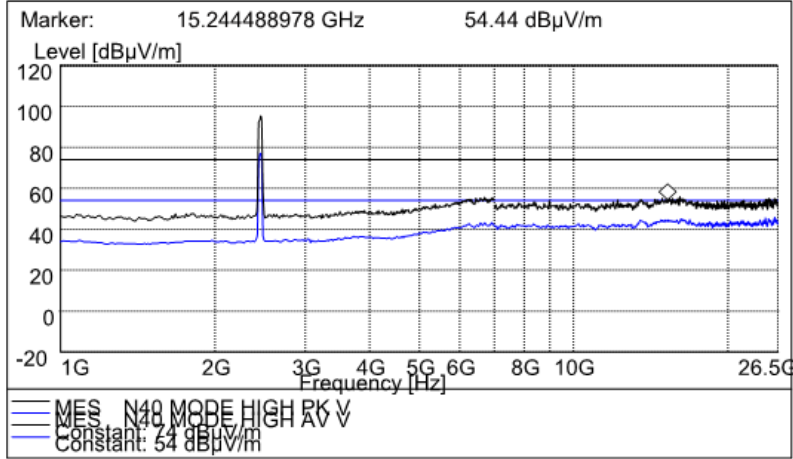
EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: HOR
 Comment:

MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2545000	54.60	74.00	42.62	54.00
13.5251000	54.95	74.00	44.28	54.00
15.3547000	53.43	74.00	44.11	54.00

2016/12/14 08:40nm



EUT: MBP83SN
 Manufacturer:
 Operating Condition: N40 MODE-HIGH Channel
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER
 Comment:

MEASUREMENT RESULT: "result3"

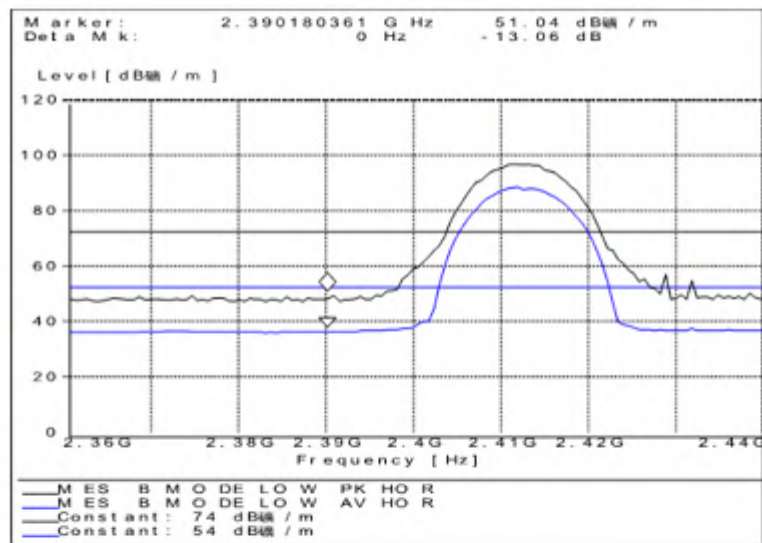
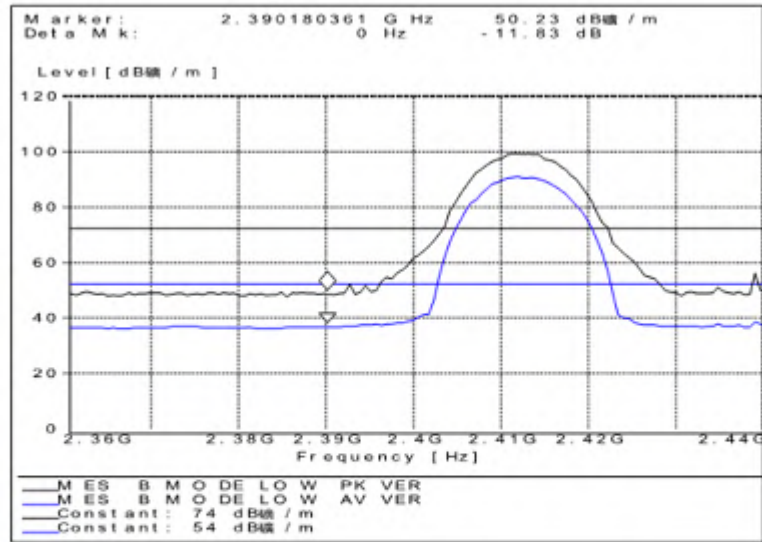
2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dBµV/m	AV Level dBµV/m	AV Limit dBµV/m
6.2785000	53.63	74.00	42.11	54.00
13.5471000	53.60	74.00	43.93	54.00
15.2449000	54.44	74.00	43.61	54.00

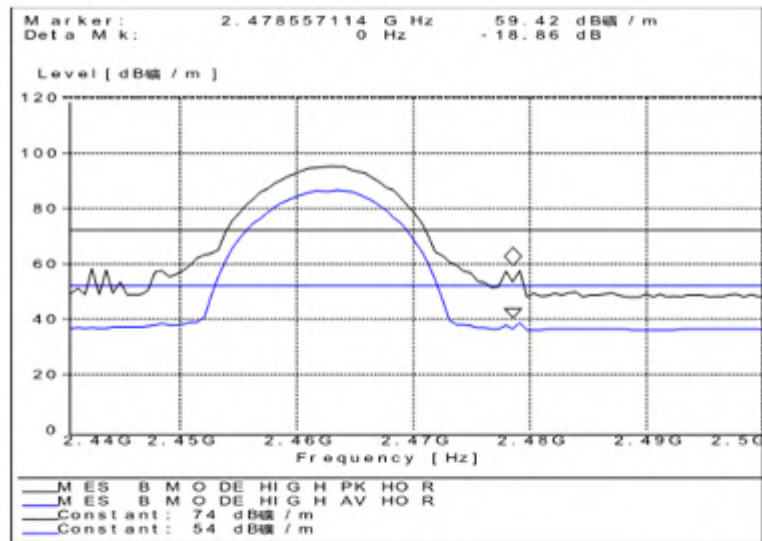
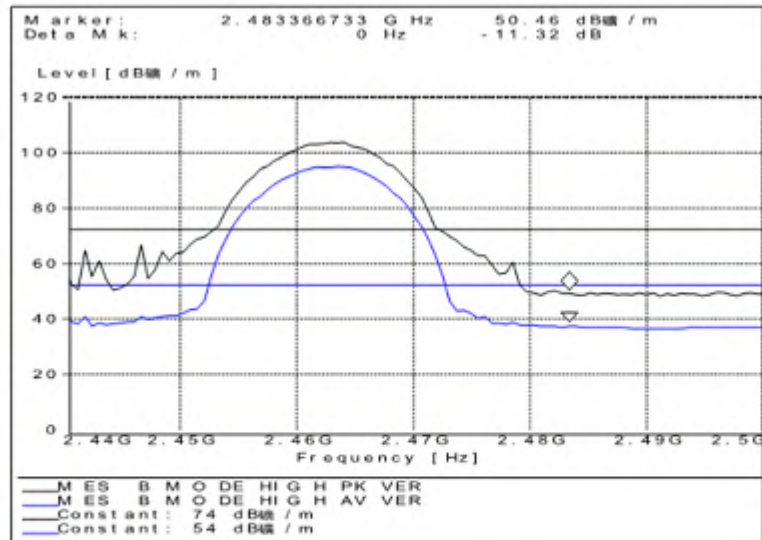
2016/12/14 08:39nm

Appendix C.2: Test Results of Radiated Emissions in Restricted Bands Wi-Fi 802.11 b mode, 1 Mbps

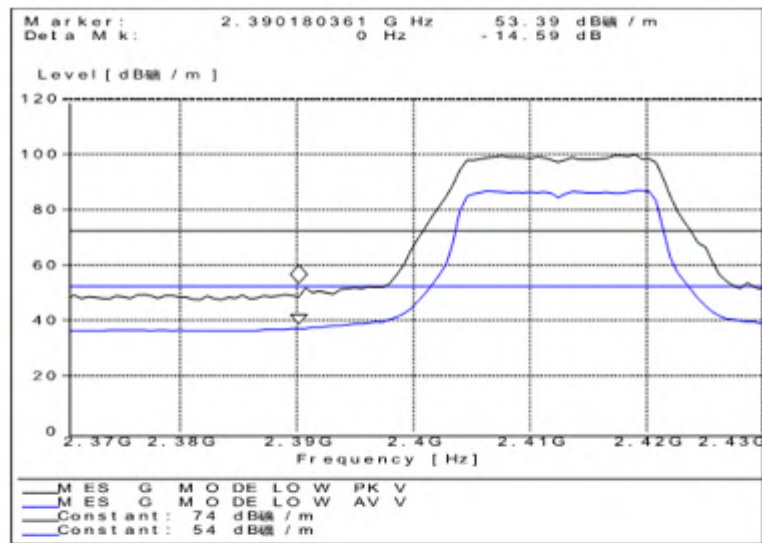
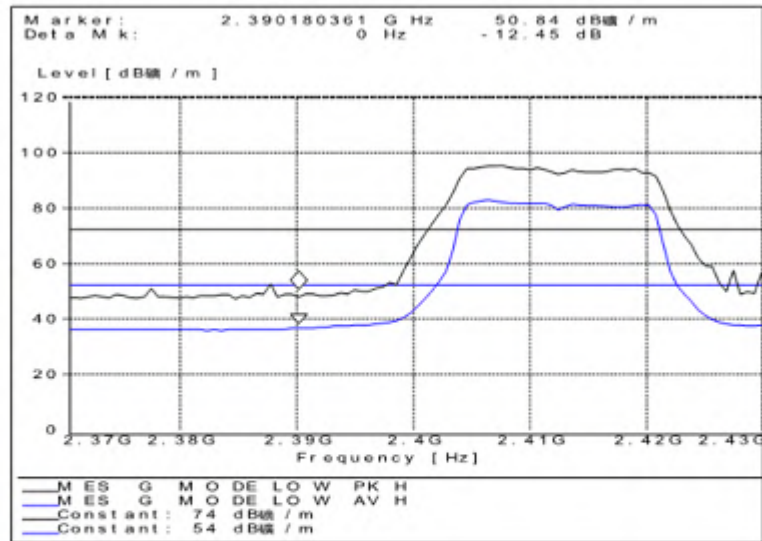
Low channel



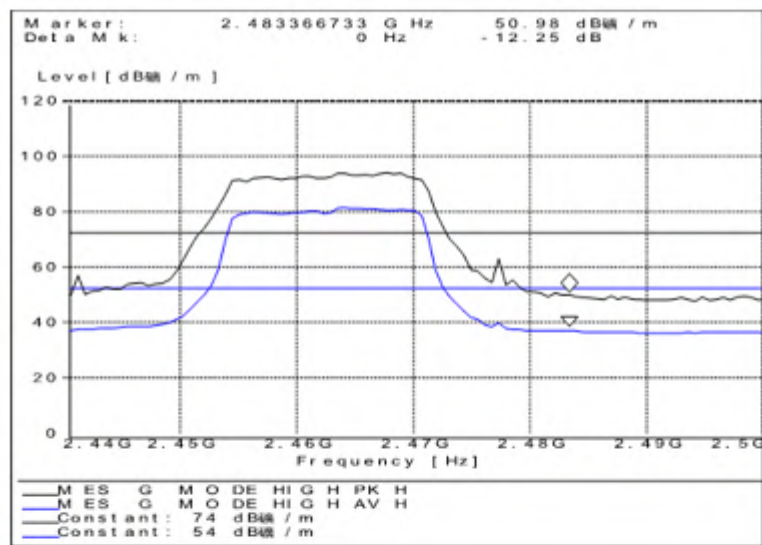
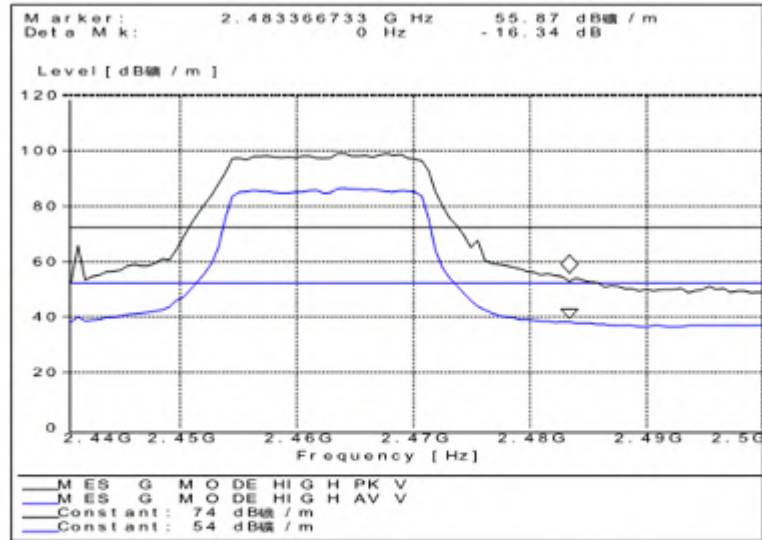
High channel



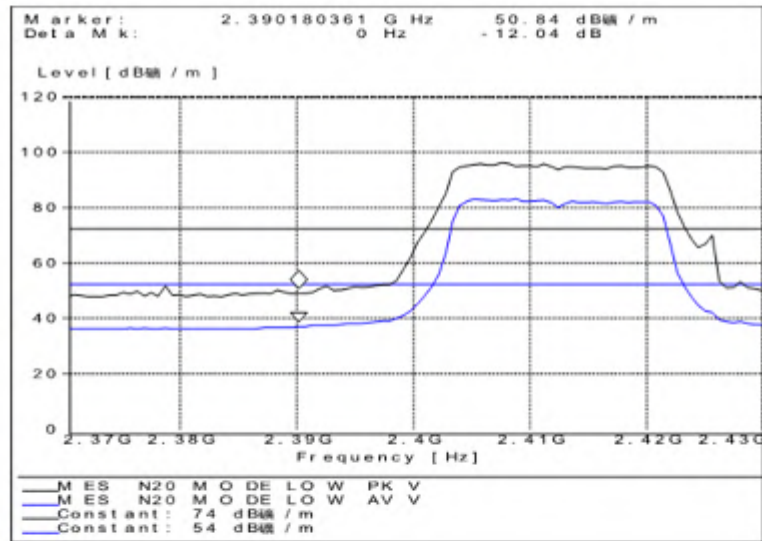
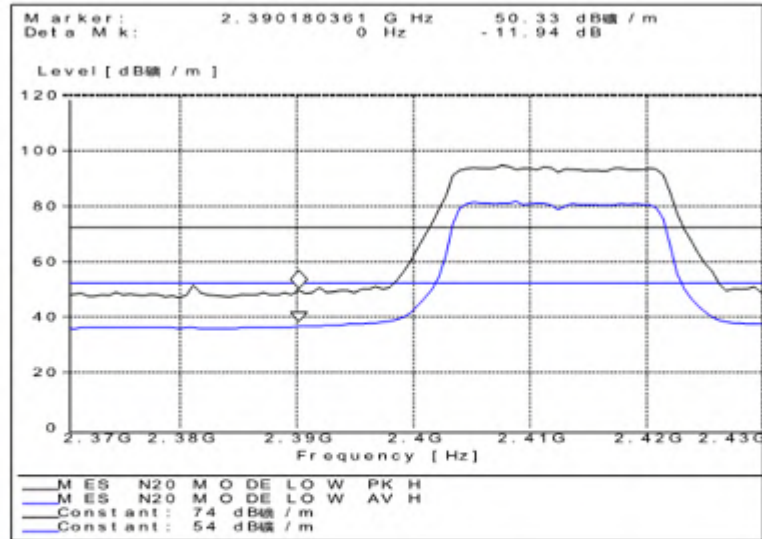
Wi-Fi 802.11 g mode, 6 Mbps
Low channel



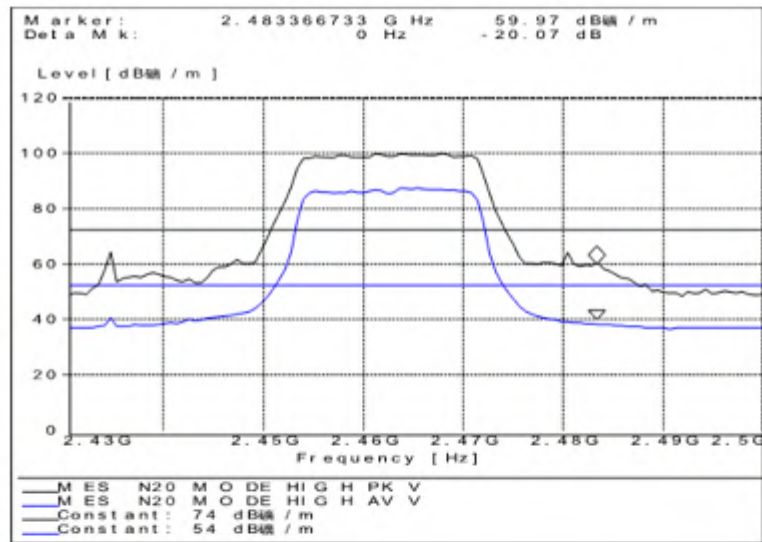
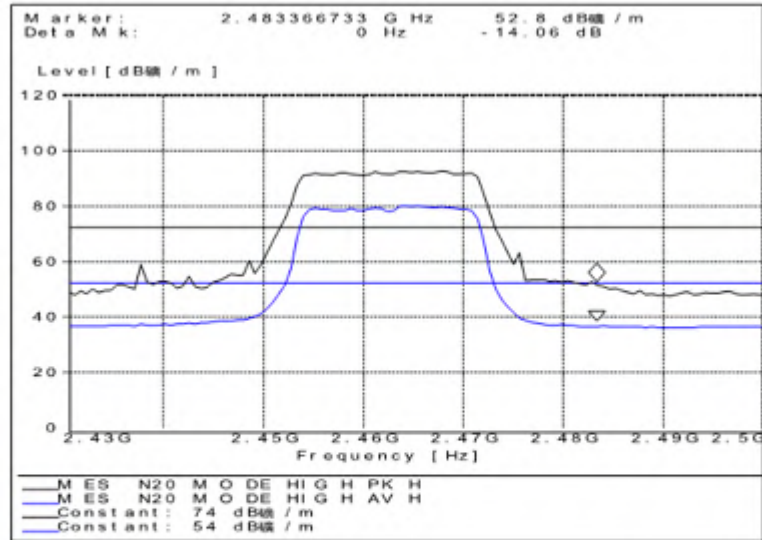
High channel



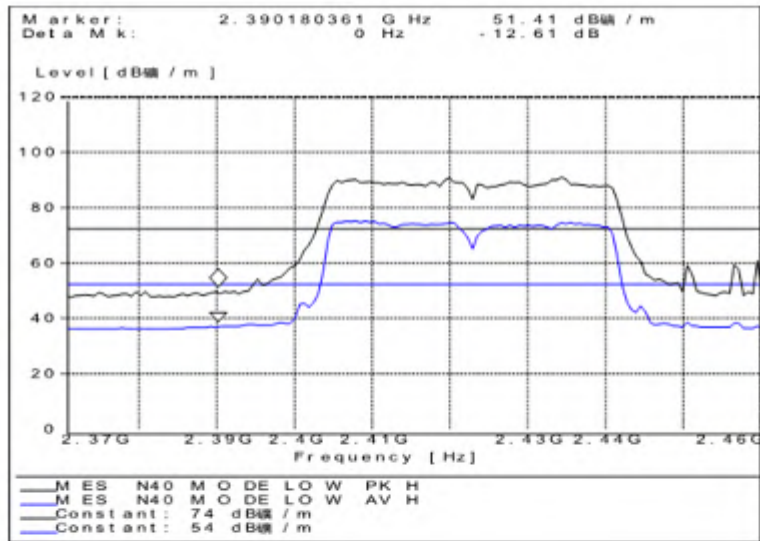
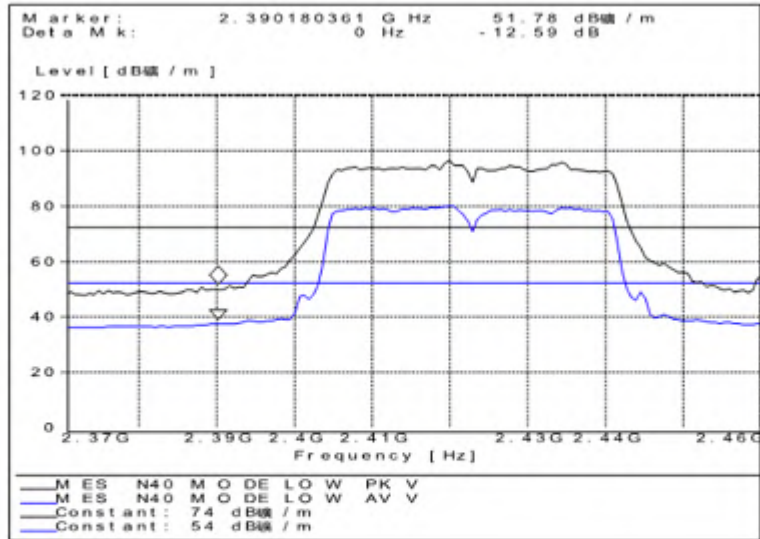
Wi-Fi 802.11 n(HT20) mode, MCS0 Mbps
Low channel



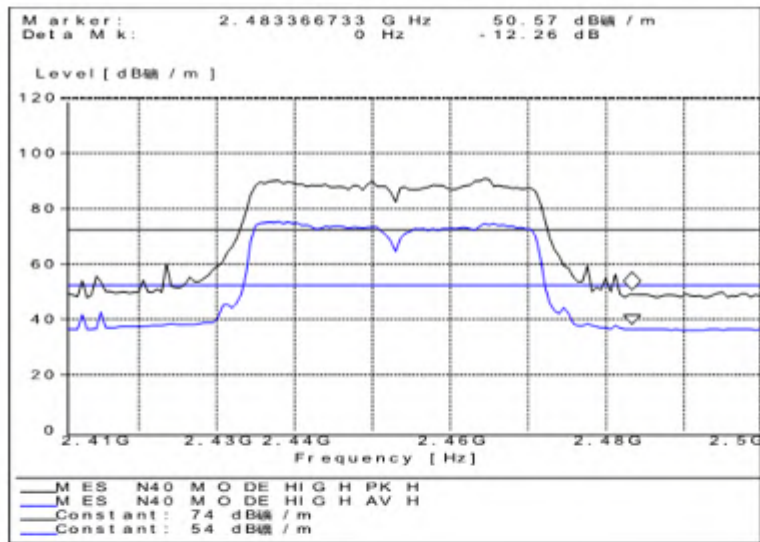
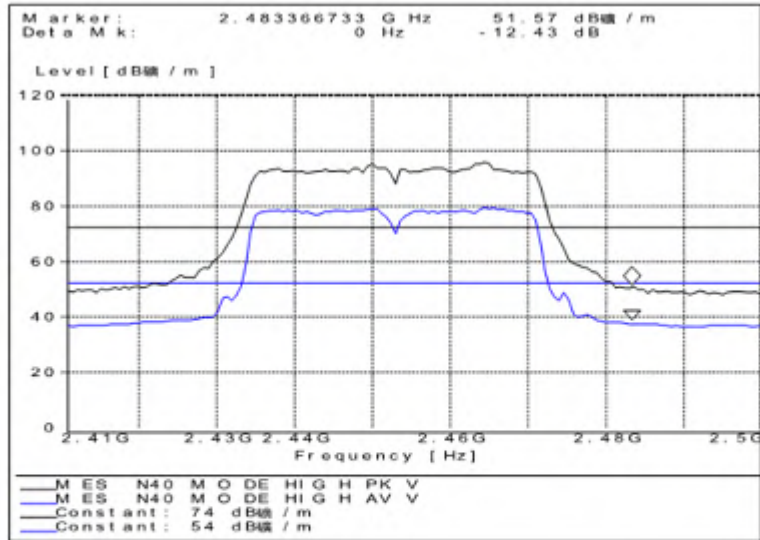
High channel



Wi-Fi 802.11 n(HT40) mode, MCS0 Mbps
Low channel



High channel



Appendix C.3: Test Results of Conducted Emission on AC Mains Part 15C, B mode

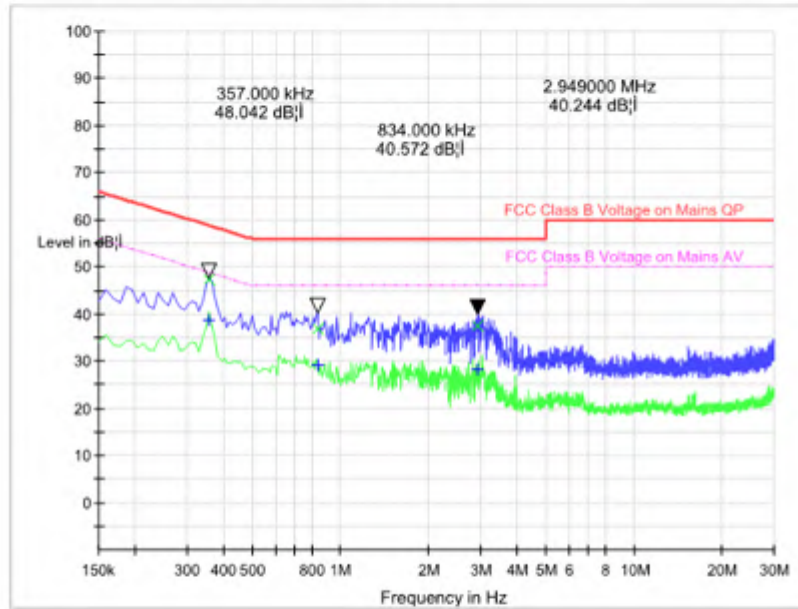
16-15848 L2

EMC32 Report

Common Information

Test Description: EMC32 Standard Report Setup
 Operating Conditions: Wi-Fi Connecting mode
 Operator Name:
 EUT: MBP83SN

FCC Class B Voltage Test



Limit and Margin

Frequency (MHz)	MaxPeak (dB µV)	QuasiPeak (dB µV)	Average (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin - QPK (dB)
0.357000	---	47.16	38.76	1000.0	9.000	L1	OFF	10.1	11.64
0.834000	---	36.98	29.28	1000.0	9.000	L1	OFF	10.0	19.02
2.949000	---	37.46	28.28	1000.0	9.000	L1	OFF	9.9	18.54

(continuation of the "Limit and Margin" table from column 15 ...)

Frequency (MHz)	Limit - QPK (dB µV)	Comment
0.357000	58.8	
0.834000	56.0	
2.949000	56.0	

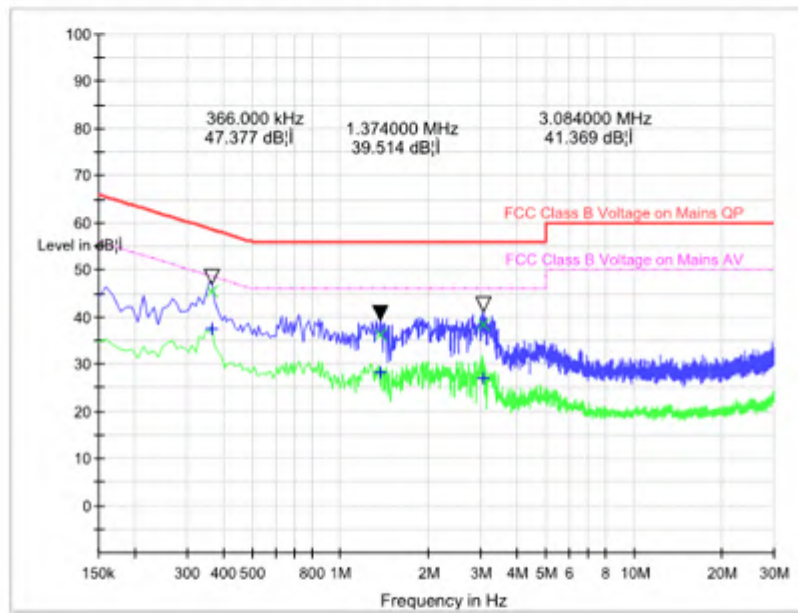
16-15848 N2

EMC32 Report

Common Information

Test Description: EMC32 Standard Report Setup
 Operating Conditions: Wi-Fi Connecting mode
 Operator Name:
 EUT: MBP83SN

FCC Class B Voltage Test



Limit and Margin

Frequency (MHz)	MaxPeak (dB µV)	QuasiPeak (dB µV)	Average (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin - QPK (dB)
0.366000	---	45.47	37.56	1000.0	9.000	N	OFF	10.1	13.12
1.374000	---	36.22	28.35	1000.0	9.000	N	OFF	10.0	19.78
3.084000	---	38.28	27.10	1000.0	9.000	N	OFF	9.9	17.72

(continuation of the "Limit and Margin" table from column 15 ...)

Frequency (MHz)	Limit - QPK (dB µV)	Comment
0.366000	58.6	
1.374000	56.0	
3.084000	56.0	

Part 15B, C mode

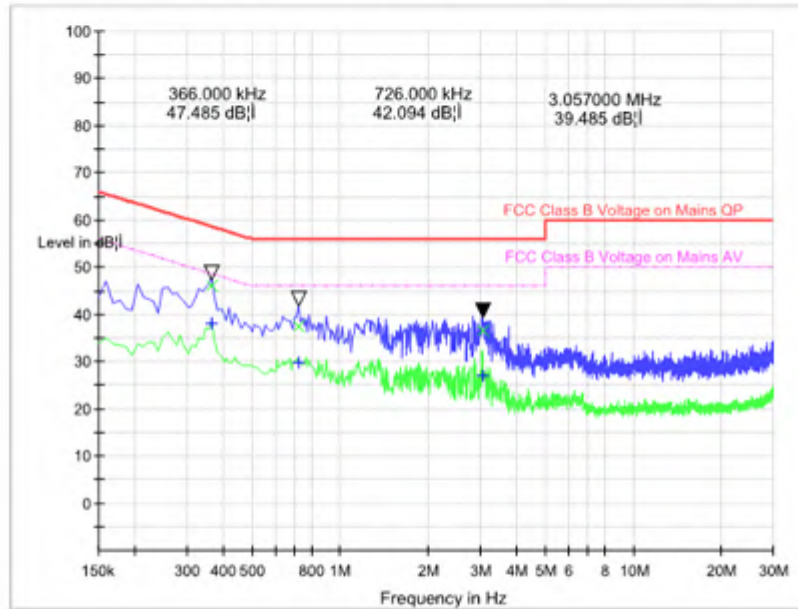
16-15848 L

EMC32 Report

Common Information

Test Description:	EMC32 Standard Report Setup
Operating Conditions:	Humidifying mode
Operator Name:	
EUT:	MBP835N

FCC Class B Voltage Test



Limit and Margin

Frequency (MHz)	MaxPeak (dB µV)	QuasiPeak (dB µV)	Average (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin - QPK (dB)
0.366000	---	46.13	38.18	1000.0	9.000	L1	OFF	10.1	12.46
0.726000	---	37.55	29.71	1000.0	9.000	L1	OFF	10.1	18.45
3.057000	---	36.57	26.90	1000.0	9.000	L1	OFF	9.9	19.43

(continuation of the "Limit and Margin" table from column 15 ...)

Frequency (MHz)	Limit - QPK (dB µV)	Comment
0.366000	58.6	
0.726000	56.0	
3.057000	56.0	

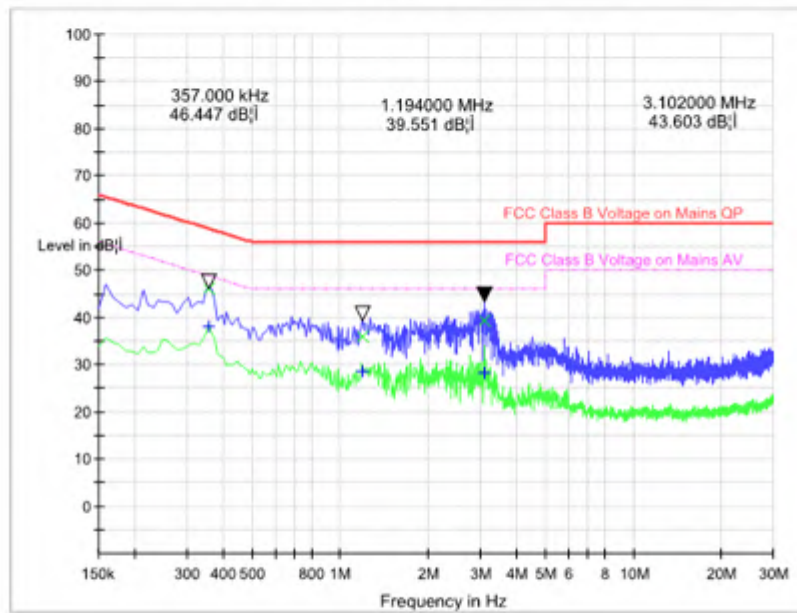
16-15848 N

EMC32 Report

Common Information

Test Description: EMC32 Standard Report Setup
 Operating Conditions: Humidifying mode
 Operator Name:
 EUT: MBP83SN

FCC Class B Voltage Test



Limit and Margin

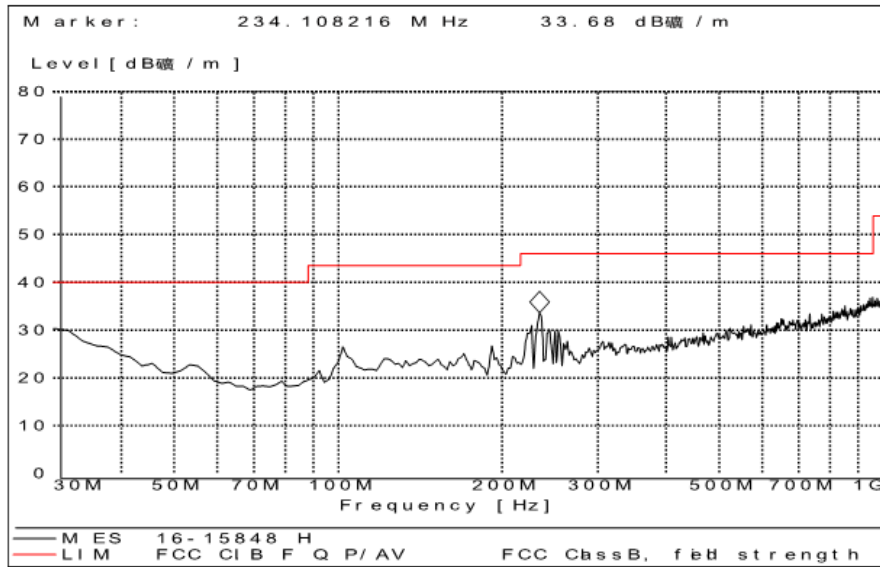
Frequency (MHz)	MaxPeak (dB µV)	QuasiPeak (dB µV)	Average (dB µV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Margin - QPK (dB)
0.357000	---	46.18	37.96	1000.0	9.000	N	OFF	10.1	12.62
1.194000	---	35.91	28.48	1000.0	9.000	N	OFF	10.0	20.09
3.102000	---	39.23	28.12	1000.0	9.000	N	OFF	9.9	16.77

(continuation of the "Limit and Margin" table from column 15 ...)

Frequency (MHz)	Limit - QPK (dB µV)	Comment
0.357000	58.8	
1.194000	56.0	
3.102000	56.0	

Appendix C.4: Test Results of Radiated Emission Part 15B, C mode, Below 1GHz

EUT: MBP83SN
Manufacturer::
Operating Condition: Humidifying mode
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR



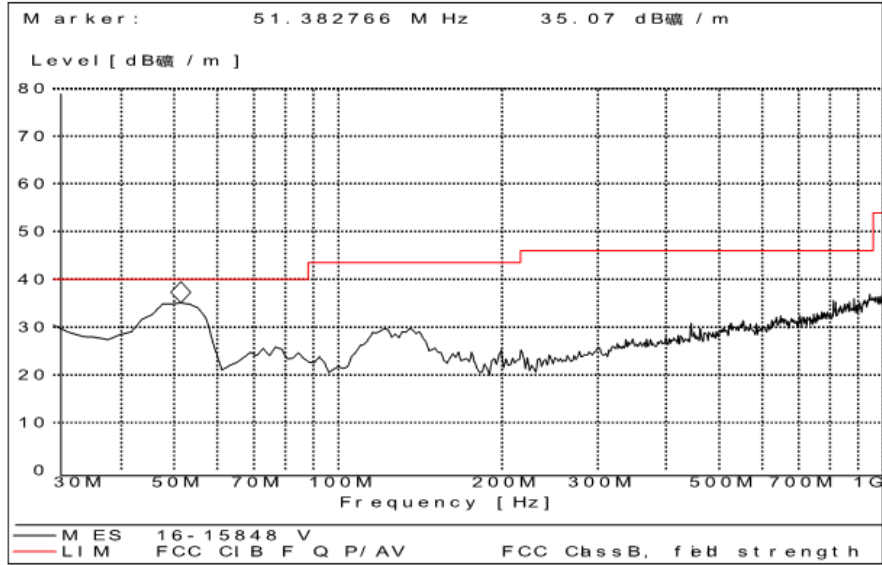
MEASUREMENT RESULT: "QuasiPeak"

2016-12-9 8:41

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.49	40.0
102.280000	25.84	43.5
950.130000	44.72	46.0

2016-12-9 8:45

EUT: MBP83SN
 Manufacturer:
 Operating Condition: Humidifying mode
 Test Site: Shenzhen Huatongwei International Co., Ltd
 Operator:
 Test Specification: VER



MEASUREMENT RESULT: "QuasiPeak"

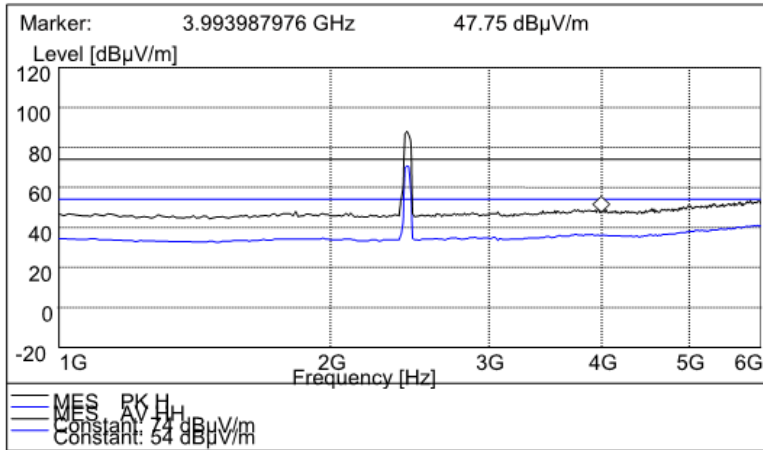
2016-12-9 8:46

Frequency MHz	Level dB μ V/m	Limit dB μ V/m
30.000000	28.75	40.0
52.060000	32.49	40.0
124.250000	27.94	43.5

2016-12-9 8:46

Part 15B, C mode, Above 1GHz

EUT: MBP83SN
Manufacturer::
Operating Condition: Humidifying mode
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: HOR



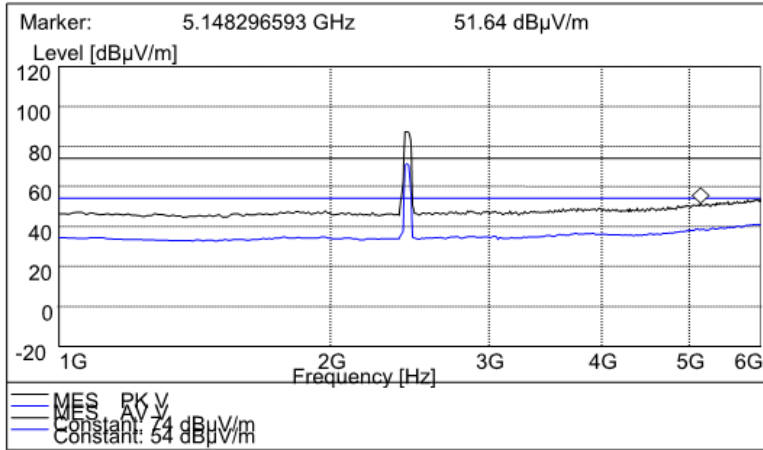
MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
2.1065000	47.18	74.00	34.21	54.00
3.0681000	47.79	74.00	34.41	54.00
3.9940000	47.70	74.00	36.17	54.00

2016/12/14 08:46nm

EUT: MBP83SN
Manufacturer::
Operating Condition: Humidifying mode
Test Site: Shenzhen Huatongwei International Co., Ltd
Operator:
Test Specification: VER



MEASUREMENT RESULT: "result3"

2016/12/14 07:49nm

Frequency GHz	Level dBm	PK Limit dB μ V/m	AV Level dB μ V/m	AV Limit dB μ V/m
2.8397000	47.76	74.00	34.50	54.00
3.7655000	48.98	74.00	36.15	54.00
5.1483000	51.64	74.00	38.38	54.00

2016/12/14 08:45nm