FCC RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

7inch tablet-Cubby

ISSUED TO
E-matic

3435 Ocean Park Blvd #107 PMB # 444 Santa Monica CA 90405

Prepared by: Mo Huina
(Reporting Specialist)
Date 2014.09.09

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(Chief Engineer)
Date 2014.09.09

Report No.:	BL-SZ1470002-602
EUT Type:	7inch tablet-Cubby
Model Name:	CUBBY, SPROUT CHANNEL CUBBY
Brand Name:	Ematic
Test Standard:	47 CFR Part 15 Subpart C
FCC ID:	XHWCUBBY
Test conclusion:	PASS
Test Date:	2014.07.04 – 2014.07.17
Date of Issue:	2014.09.09

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Revision History

Version	Issue Date	Revisions
Rev. 01	2014.09.02	Initial Issue
Rev. 01	2014.09.09	The Second Issue

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6683 3402
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. The laboratory has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005. The accreditation certificate number is TL-588. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	15 to 35℃
Ambient Relative Humidity	30 to 60%
Ambient Pressure	86 to106 kPa

1.4 Announce

(1) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(2) The test report is invalid if there is any evidence and/or falsification.

(3) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(4) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant

Applicant	E-matic
Address	3435 Ocean Park Blvd #107 PMB # 444 Santa Monica CA 90405

2.2 Manufacturer

Manufacturer	Shaghal Ltd
Address	2231 Colby Ave. L.A., C.A., 90064 U.S.A.

2.3 General Description for Equipment under Test (EUT)

EUT Type	7inch tablet-Cubby
Model under test	CUBBY
Series Model Name	CUBBY, SPROUT CHANNEL CUBBY
Description of Model name differentiation	The equipment model CUBBY and SPROUT CHANNEL CUBBY are 7inch tablet-Cubby, the electrical parameters and internal structure of circuit are same, only the model name is different.
Hardware Version	N/A
Software Version	N/A
Network and Wireless connectivity	WIFI 802.11b, 802.11g and 802.11n (HT20/40) , Bluetooth
About the Product	The EUT is the 7inch tablet-Cubby, it contains Bluetooth and WIFI Modules operating at 2.4GHz ISM band. Only the WIFI which supports 802.11b, 802.11g and 802.11n (HT20/40) was tested in this report.

2.4 Technical Information

TX/ RX Operating Range	802.11b/g/n(20MHz): 2.412GHz - 2.462GHz f_c = 2412 MHz + (N-1)*5 MHz, where - f_c = “Operating Frequency” in MHz, - N = “Channel Number” with the range from 1 to 11. 802.11n(40MHz): 2.422GHz - 2.452GHz f_c = 2412 MHz + (N-1)*5 MHz, where - f_c = “Operating Frequency” in MHz, - N = “Channel Number” with the range from 3 to 9.
Modulation Type	DSSS, OFDM
Antenna Type	PIFA Antenna
Antenna Gain	0 dBi

Modulation technology	Modulation Type	Transfer Rate (Mbps)	The Frequency Equal to the Transmission Rate of Modulation Signal
DSSS (802.11b)	DBPSK	1	1MHz
	DQPSK	2	
	CCK	5.5/ 11	1.375MHz
OFDM (802.11g)	BPSK	6 / 9	1MHz
	QPSK	12 / 18	
	16QAM	24 / 36	
	64QAM	48 / 54	
OFDM (802.11n-20MHz)	BPSK	6.5	1MHz
	QPSK	13/19.5	
	16QAM	26/39	
	64QAM	52/58.5/65	
OFDM (802.11n-40MHz)	BPSK	13.5	1MHz
	QPSK	27/40.5	
	16QAM	54/81/108	
	64QAM	121.5/135	

Note: Preliminary tests were performed in different data rate in above table to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	
Maximum transmit power	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9
Maximum e.i.r.p. spectral density	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9
Frequency range	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9
Medium Access Protocol	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9
Transmitter spurious emissions	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9
Receiver spurious emissions	11b / 11g/11n20/11n40	11/54/65/135Mbps	1/6/11	3/6/9

Note: The above EUT information in section 2.3 and 2.4 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No	N/A
	Serial No	N/A
	Capacitance	3800mAh
	Rated Voltage	3.7V
	Extreme Voltage	Low: 3.5V / High:4.2V
Ancillary Equipment 2	AC Power Adapter	
	Brand Name	N/A
	Model No	STC-B0502000-Z
	Serial No	(n.a. marked #1 by test site)
	Rated Input	~ 100-240V, 0.3A, 50/60Hz
	Rated Output	⎓ 5V, 2000mA
Ancillary Equipment 3	Stereo Headset	
Ancillary Equipment 4	USB Data Cable	

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C (12-30-13 Edition)	Miscellaneous Wireless Communications Services
2	KDB Publication 558074 D01v03r02	Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247
3	ANSI C63.4-2009	American National Standard for Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
4	ANSI C63.10-2009	American National Standard for Testing Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Antenna Requirement	15.203 15.247(b)	Note1	Pass
2	Output Power	15.247(b)	ANNEX A.1	Pass
3	6dB Bandwidth	15.247(a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247(c)	ANNEX A.3	Pass
5	Conducted Emission	15.207	ANNEX A.4	Pass
6	Radiated Spurious Emission	15.209 15.247(c)	ANNEX A.5	Pass
7	Band Edge	15.247(c)	ANNEX A.6	Pass
8	Power spectral density (PSD)	15.247(d)	ANNEX A.7	Pass
Note 1: Please refer to section 5.1				

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity (%)	30 -60	
Atmospheric Pressure (kPa)	86-106	
Temperature	NT (Normal Temperature)	+20℃ to +25℃
	LT (Low Temperature)	-20℃
	HT (High Temperature)	+55℃
Working Voltage of the EUT	NV (Normal Voltage)	3.7V
	LV (Low Voltage)	3.5V
	HV (High Voltage)	4.2V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	AGILENT	E4440A	MY45304434	2014.07.07	2015.07.06
Spectrum Analyzer	ROHDE&SCHWARZ	FSL3	103640/003	2014.07.07	2015.07.06
Power Splitter	KMW	DCPD-LDC	1305003215	2014.07.07	2015.07.06
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2014.07.07	2015.07.06
Attenuator (20dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2014.07.07	2015.07.06
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2014.07.07	2015.07.06
Test Antenna-Loop(9kHz-30MHz)	SCHWARZBECK	FMZB 1519	1519-037	2013.07.02	2015.07.01
Test Antenna-Bi-Log(30MHz-3GHz)	SCHWARZBECK	VULB 9163	9163-624	2013.07.03	2015.07.02
Test Antenna-Horn(1-18GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2013.07.02	2015.07.01
Test Antenna-Horn(15-26.5GHz)	SCHWARZBECK	BBHA 9170	9170-305	2013.07.02	2015.07.01
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2013.10.07	2015.10.06

4.3 Test Configurations

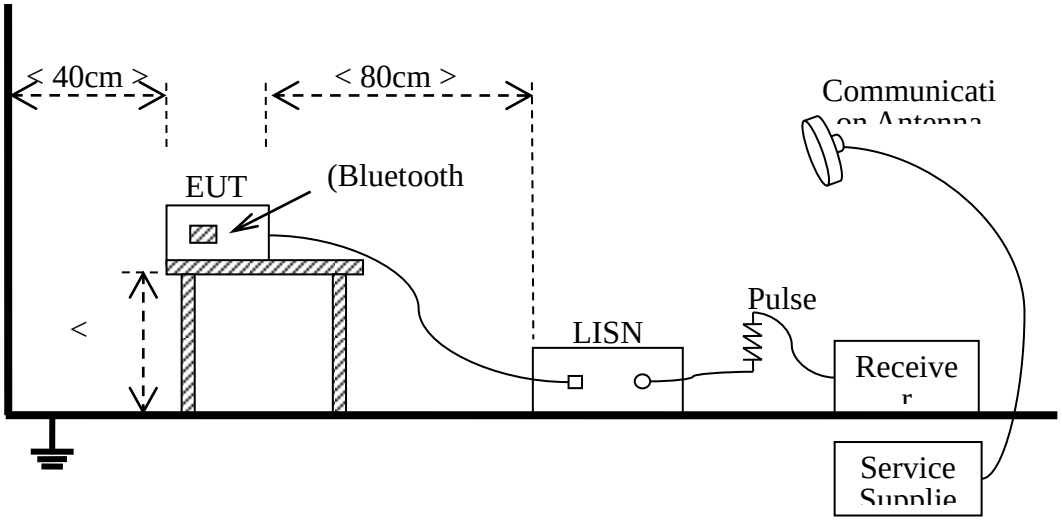
Test Configurations (TC) NO.	Description	
	Signal Description	Operating Frequency
Transmitter		
TC01	DSSS modulation, 802.11b	Ch No. 1/ 2412MHz
TC02	DSSS modulation, 802.11b	Ch No. 6/ 2437MHz
TC03	DSSS modulation, 802.11b	Ch No. 11/ 2462MHz
TC04	OFDM modulation, 802.11g	Ch No. 1/ 2412MHz
TC05	OFDM modulation, 802.11g	Ch No. 6/ 2437MHz
TC06	OFDM modulation, 802.11g	Ch No. 11/ 2462MHz
TC07	OFDM modulation, 802.11n(20MHz)	Ch No. 1/ 2412MHz
TC08	OFDM modulation, 802.11n(20MHz)	Ch No. 6/ 2437MHz
TC09	OFDM modulation, 802.11n(20MHz)	Ch No. 11/ 2462MHz
TC10	OFDM modulation, 802.11n(40MHz)	Ch No. 3/ 2422MHz
TC11	OFDM modulation, 802.11n(40MHz)	Ch No. 6/ 2437MHz
TC12	OFDM modulation, 802.11n(40MHz)	Ch No. 9/ 2452MHz

4.4 Description of Test Setup

4.4.1 For Antenna Port Test

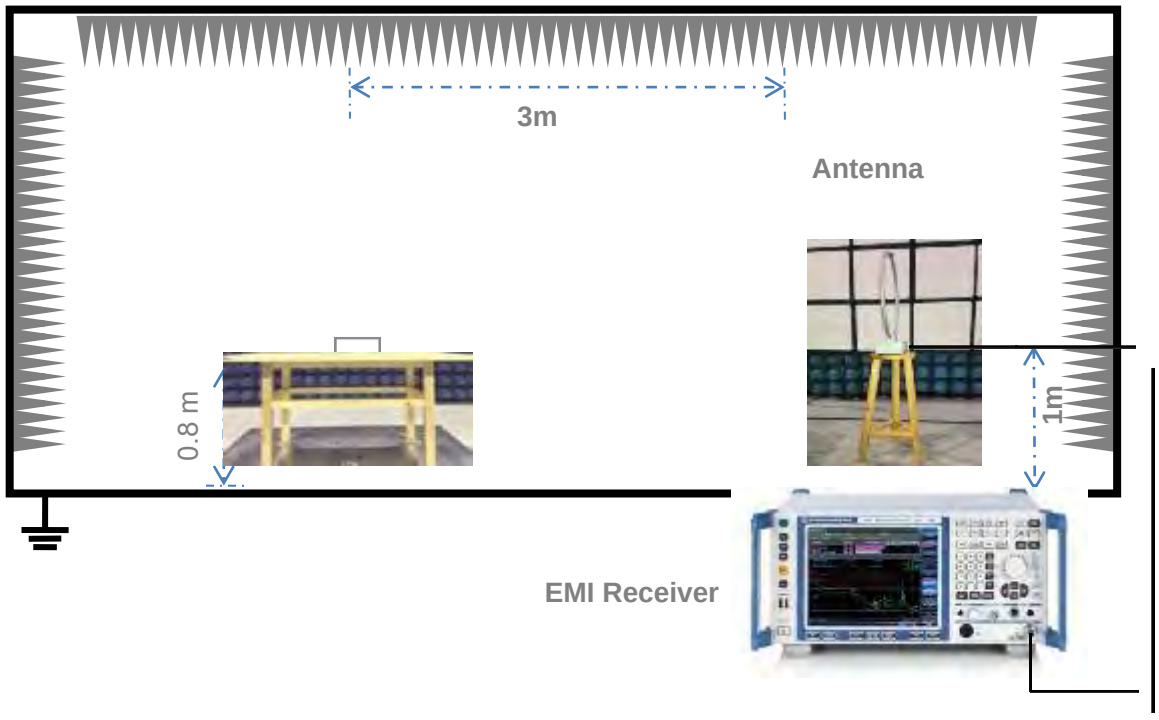
(Diagram 1)

4.4.2 For AC Power Supply Port Test



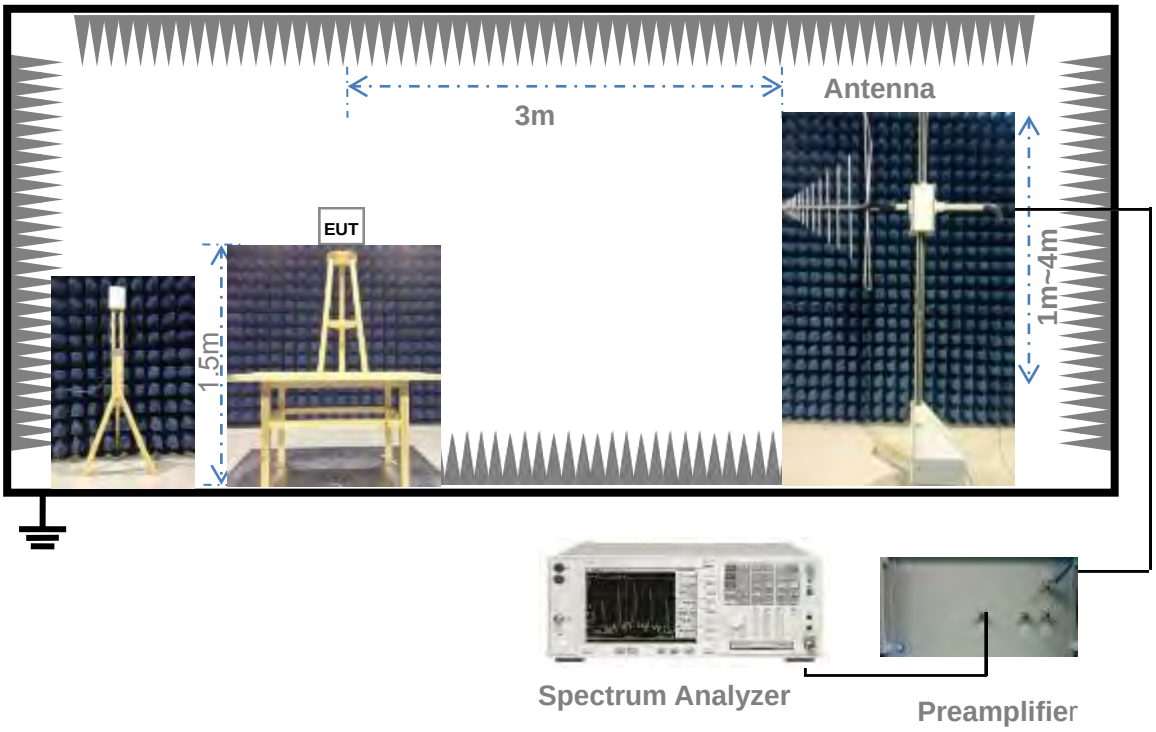
(Diagram 2)

4.4.3 For Radiated Test (Below 30MHz)



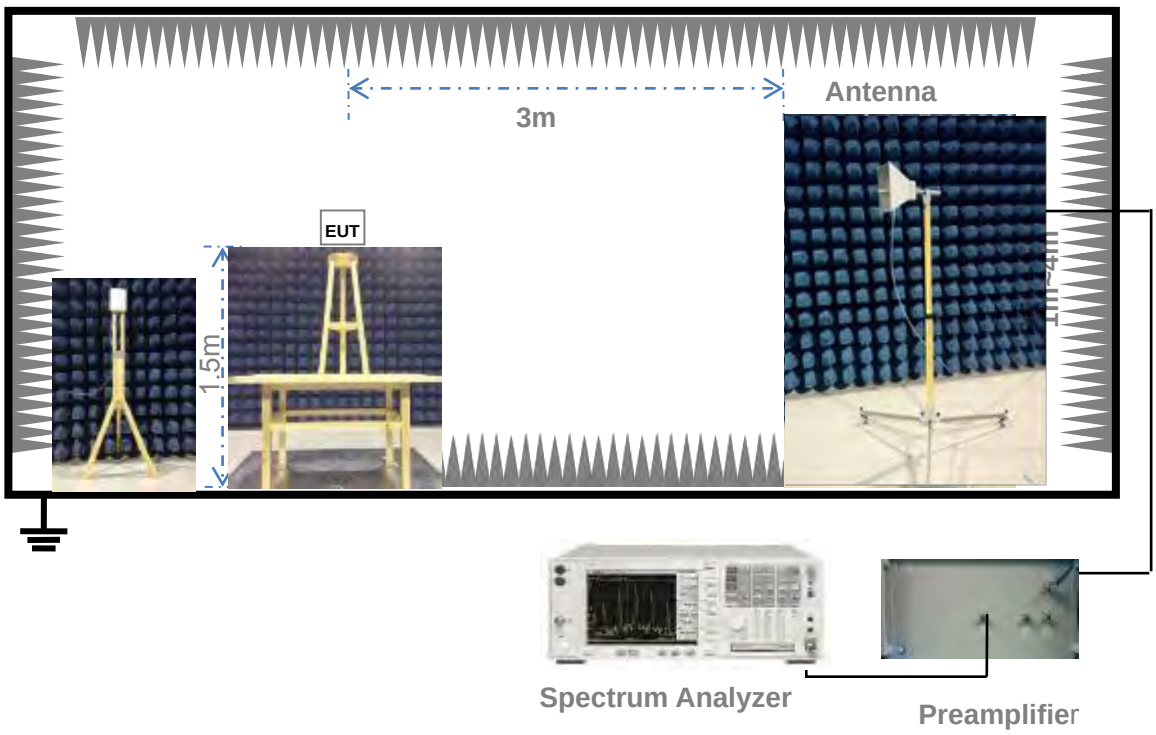
(Diagram 3)

4.4.4 For Radiated Test (30MHz-1GHz)



(Diagram 4)

4.4.5 For Radiated Test (Above 1GHz)



(Diagram 5)

4.5 Test Conditions

Test Case	Test Conditions		
	Test Env.	Test Setup Note 1	Test Configuration Note 2
Peak Output Power	NTNV	Test Setup 1	TC01~TC12
Occupied Bandwidth	NTNV	Test Setup 1	TC01~TC12
Conducted Spurious Emission	NTNV	Test Setup 1	TC01~TC12
Conducted Emission	NTNV	Test Setup 2	TC01~TC12
Radiated Spurious Emission	NTNV	Test Setup 3 Test Setup 4 Test Setup 5	TC01~TC12
Band Edge	NTNV	Test Setup 1	TC01, TC03, TC04, TC06,TC07,TC09, TC10, TC12
Power spectral density (PSD)	NTNV	Test Setup 2	TC01~TC12

Note:
1. Please refer to section 4.4 for test setup details.
2. Please refer to section 4.3 for test setup details.

5 TEST ITEMS

5.1 Antenna Requirements

5.1.1 Standard Applicable

FCC §15.203 & 15.247(b)

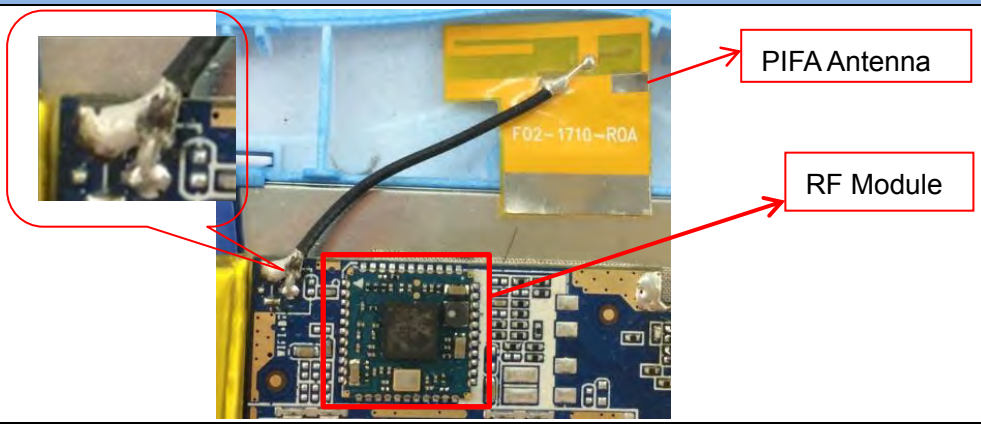
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

5.1.2 Antenna Anti-Replacement Construction

The Antenna Anti-Replacement as following method:

Protected Method	Description
The antenna is An embedded-in	The antenna is welded on the mainboard, can't be replaced by the consumer.

Reference Documents	Item
Photo	

5.1.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.

5.2 Output Power

5.2.1 Test Limit

FCC § 15.247(b)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements.

5.2.2 Test Procedure

Maximum peak conducted output power

This procedure may be used when the maximum available RBW of the measurement instrument is less than the DTS bandwidth.

Set the RBW = 1 MHz

Set the VBW ≥ 3 RBW

Set the span ≥1.5 x DTS bandwidth.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector).

Maximum conducted (average) output power (Reporting Only)

a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

1) The EUT is configured to transmit continuously, or to transmit with a constant duty factor.

2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.

3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

b) If the transmitter does not transmit continuously, measure the duty cycle (x) of the transmitter output signal as described in Section 6.0.

c) Measure the average power of the transmitter. This measurement is an average over both the on and off

periods of the transmitter.

d) Adjust the measurement in dBm by adding 10log (1/x), where x is the duty cycle to the measurement result.

Measurements of duty cycle

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission.

Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value.

Set VBW ≥ RBW. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

5.3 6dB Bandwidth

5.3.1 Limit

FCC §15.247(a)

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW. The 6 dB bandwidth must be greater than 500 kHz.

5.3.2 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ≥ 3 RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.4 Conducted Spurious Emission

5.4.1 Limit

FCC §15.247(c)

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.4.2 Test Procedure

The DTS rules specify that in any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions:

a) If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

b) If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

c) In either case, attenuation to levels below the 15.209 general radiated emissions limits is not required.

The following procedures shall be used to demonstrate compliance to these limits. Note that these procedures can be used in either an antenna-port conducted or radiated test set-up. Radiated tests must conform to the test site requirements and utilize maximization procedures defined herein.

Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to DTS channel center frequency.

Set the span to ≥ 1.5 times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW ≥ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum PSD level.

Emission level measurement

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

Set the RBW = 100 kHz.

Set the VBW ≥ 3 x RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in 11.1 a) or 11.1 b). Report the three highest emissions relative to the limit.

5.5 Conducted Emission

5.5.1 Limit

FCC §15.207

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

5.5.2 Test Procedure

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Refer to recorded points and plots below.

5.6 Radiated Spurious Emission

5.6.1 Limit

FCC §15.209&15.247(c)

Radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

5.6.2 Test Procedure

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

The power of the EUT transmitting frequency should be ignored.

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Use the following spectrum analyzer settings:

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

5.7 Band Edge

5.7.1 Limit

FCC §15.209&15.247(d)

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.7.2 Test Procedure

The following procedures may be used to determine the peak or average field strength or power of an unwanted emission that is within 2 MHz of the authorized band edge. If a peak detector is utilized, use the procedure described in 13.2.1. Use the procedure described in 13.2.2 when using an average detector and the EUT can be configured to transmit continuously (i.e., duty cycle ≥ 98%). Use the procedure described in 13.2.3 when using an average detector and the EUT cannot be configured to transmit continuously but the duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent). Use the procedure described in 13.2.4 when using an average detector for those cases where the EUT cannot be configured to transmit continuously and the duty cycle is not constant (duty cycle variations equal or exceed 2 percent).

When using a peak detector to measure unwanted emissions at or near the band edge (within 2 MHz of the authorized band), the following integration procedure can be used.

Set instrument center frequency to the frequency of the emission to be measured (must be within 2 MHz of the authorized band edge).

Set span to 2 MHz

RBW = 100 kHz.

VBW ≥ 3 x RBW.

Detector = peak.

Sweep time = auto.

Trace mode = max hold.

Allow sweep to continue until the trace stabilizes (required measurement time may increase for low duty cycle applications)

Compute the power by integrating the spectrum over 1 MHz using the analyzer's band power measurement function with band limits set equal to the emission frequency (femission) ± 0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission ± 0.5 MHz.

5.8 Power Spectral density (PSD)

5.8.1 Limit

FCC §15.247(d)

The same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

5.8.2 Test Procedure

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz $\leqslant$ RBW $\leqslant$ 100 kHz.

Set the VBW $\geqslant$ 3 RBW.

Detector = peak.

Sweep time = auto couple.

Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

ANNEX A TEST RESULT

A.1 Output Power

Duty Cycle

Test Mode	Duty Cycle(%)	T(μs)	1/T(kHz)
802.11b	100	N/A	N/A
802.11g	100	N/A	N/A
802.11n HT20	100	N/A	N/A
802.11n HT40	100	N/A	N/A

Note: The EUT was transmitting continuously.

Peak Power Test Data

802.11b Mode:

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	mW	dBm	mW	
Low	2412	19.50	89.13	30	1000	PASS
Middle	2437	19.43	87.70			PASS
High	2462	19.19	82.99			PASS

802.11g Mode:

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	mW	dBm	mW	
Low	2412	19.77	94.84	30	1000	PASS
Middle	2437	19.90	97.72			PASS
High	2462	19.84	96.38			PASS

802.11n-20MHz Mode:

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	mW	dBm	mW	
Low	2412	18.89	77.45	30	1000	PASS
Middle	2437	18.98	79.07			PASS
High	2462	18.86	76.91			PASS

802.11n-40MHz Mode:

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	mW	dBm	mW	
Low	2422	17.71	59.02	30	1000	PASS
Middle	2437	17.70	58.88			PASS
High	2452	17.75	59.57			PASS

Average Power Test Data (Reporting Only)

802.11b Mode:

Channel	Frequency (MHz)	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
			dBm	mW	
Low	2412	0	17.13	51.64	PASS
Middle	2437	0	16.78	47.64	PASS
High	2462	0	16.59	45.60	PASS

802.11g Mode:

Channel	Frequency (MHz)	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
			dBm	mW	
Low	2412	0	13.08	20.32	PASS
Middle	2437	0	12.86	19.32	PASS
High	2462	0	12.53	17.91	PASS

802.11n-20MHz Mode:

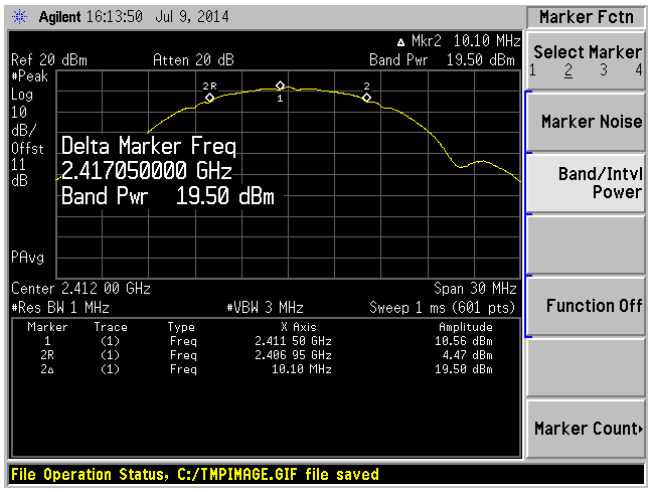
Channel	Frequency (MHz)	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
			dBm	mW	
Low	2412	0	11.57	14.35	PASS
Middle	2437	0	11.32	13.55	PASS
High	2462	0	11.68	14.72	PASS

802.11n-40MHz Mode:

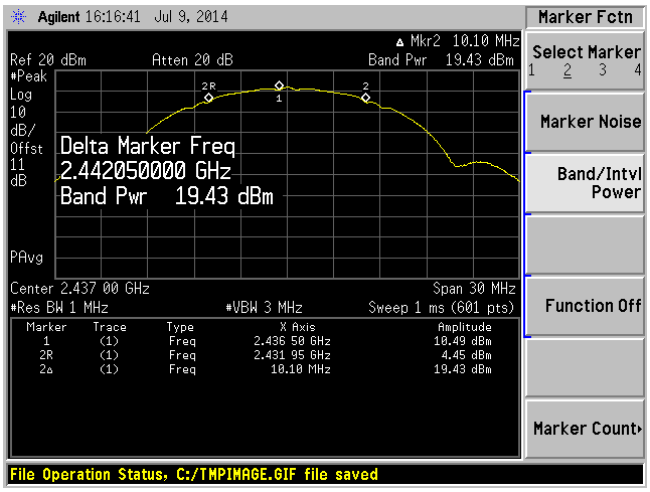
Channel	Frequency (MHz)	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
			dBm	mW	
Low	2422	0	10.36	10.86	PASS
Middle	2437	0	10.24	10.57	PASS
High	2452	0	10.09	10.21	PASS

Peak Power Test Plots

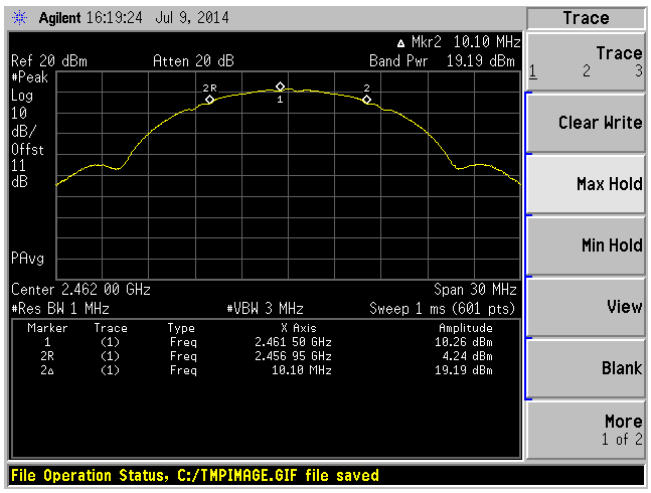
802.11b LOW CHANNEL



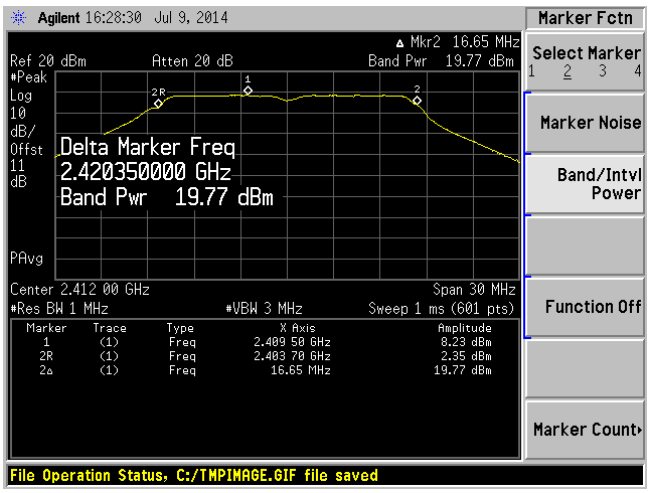
802.11b MID CHANNEL



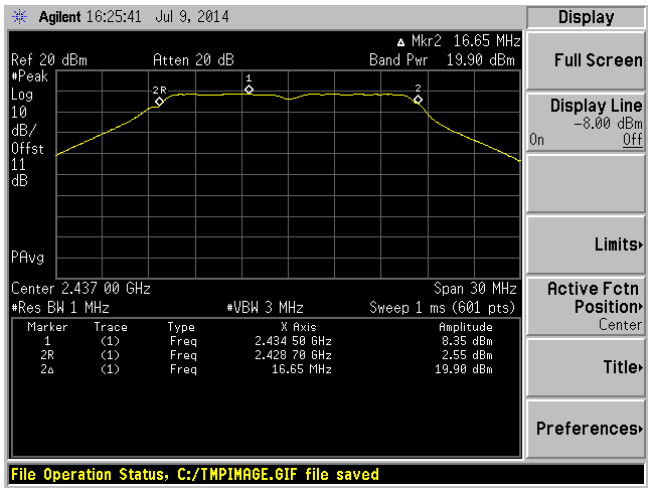
802.11b HIGH CHANNEL



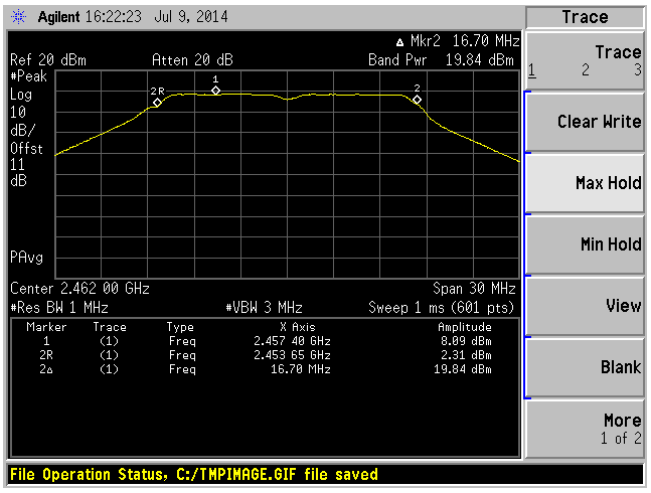
802.11g LOW CHANNEL



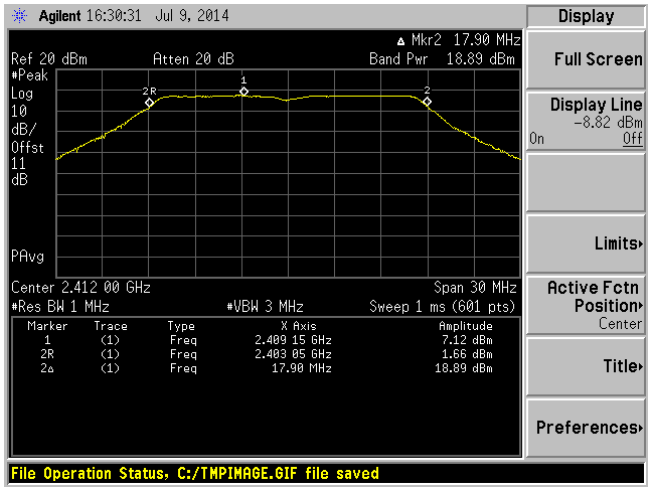
802.11g MID CHANNEL



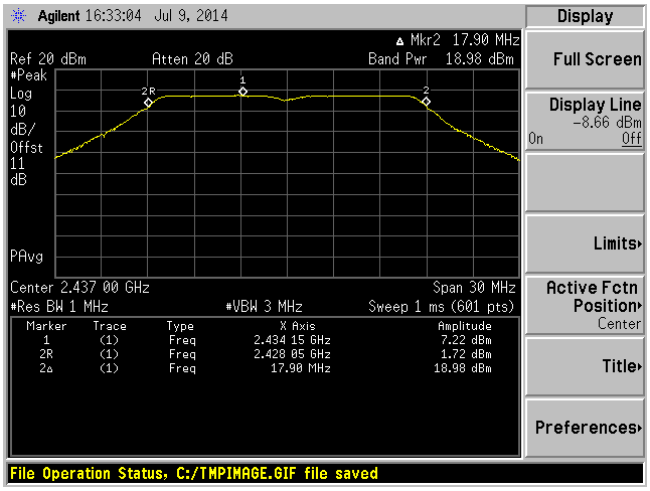
802.11g HIGH CHANNEL



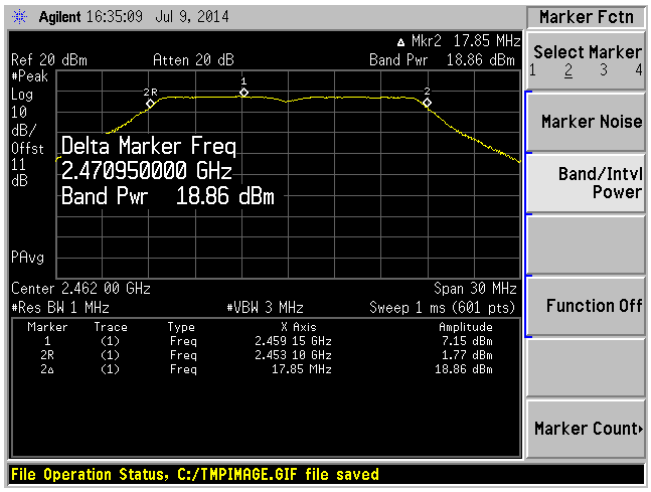
802.11n 20MHz LOW CHANNEL



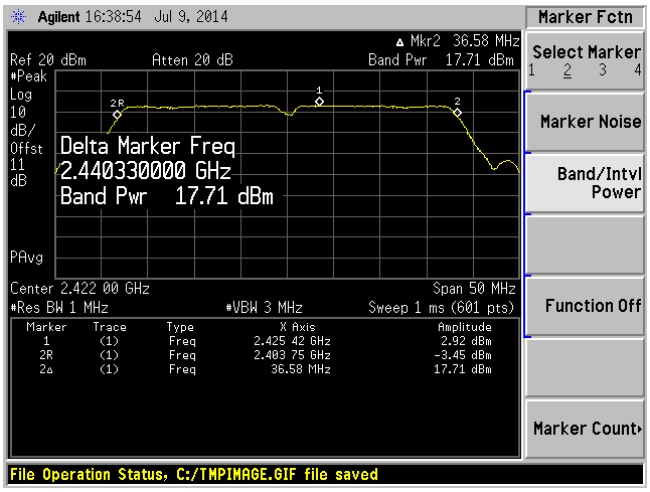
802.11 n 20MHz MID CHANNEL



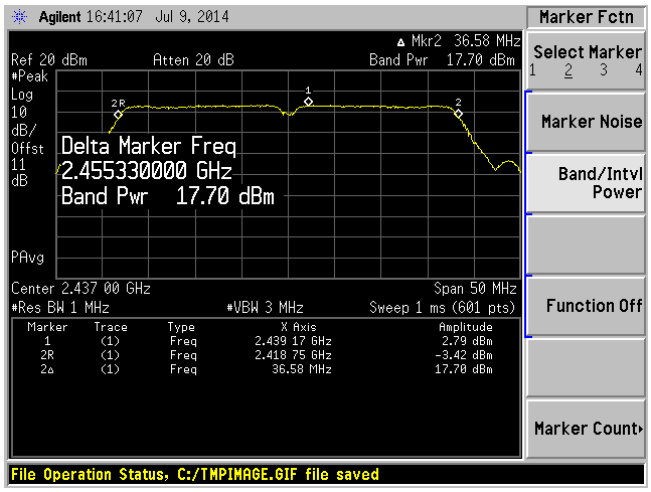
802.11 n 20MHz HIGH CHANNEL



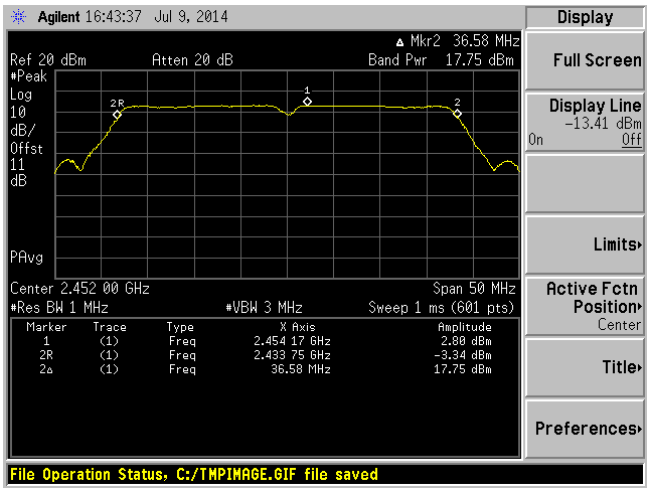
802.11 n 40MHz LOW CHANNEL



802.11 n 40MHz MID CHANNEL



802.11 n 40MHz HIGH CHANNEL



A.2 Bandwidth

Test Data

802.11b Mode:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)
Low	2412	10.10	⩾500
Middle	2437	10.10	⩾500
High	2462	10.10	⩾500

802.11g Mode:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)
Low	2412	16.65	⩾500
Middle	2437	16.65	⩾500
High	2462	16.70	⩾500

802.11n-20MHz Mode:

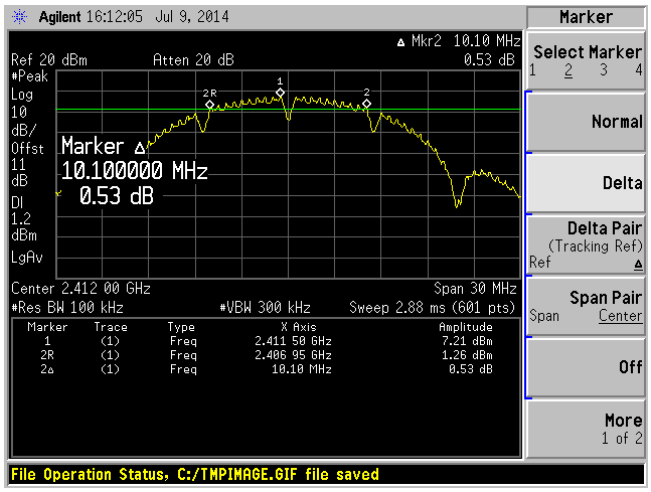
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)
Low	2412	17.90	⩾500
Middle	2437	17.90	⩾500
High	2462	17.85	⩾500

802.11n-40MHz Mode:

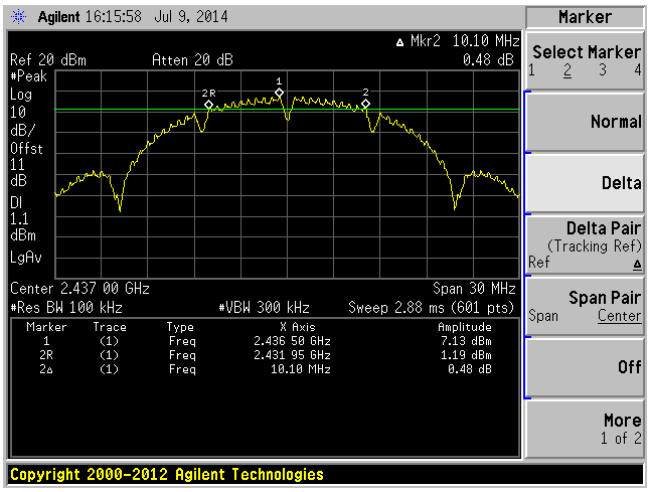
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limits (kHz)
Low	2422	36.58	⩾500
Middle	2437	36.58	⩾500
High	2452	36.58	⩾500

Test plots

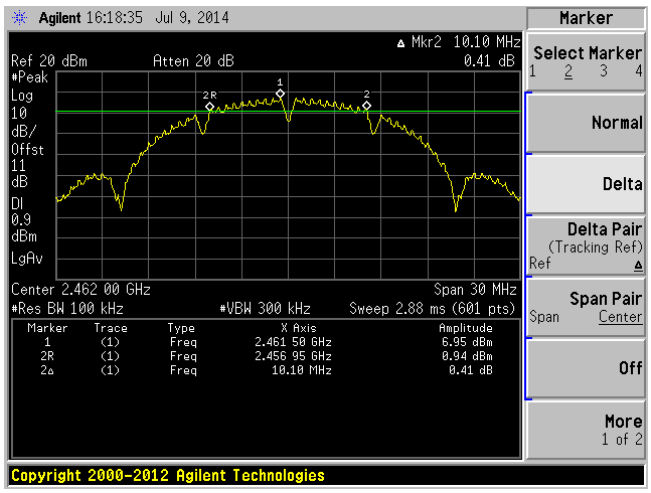
802.11b LOW CHANNEL



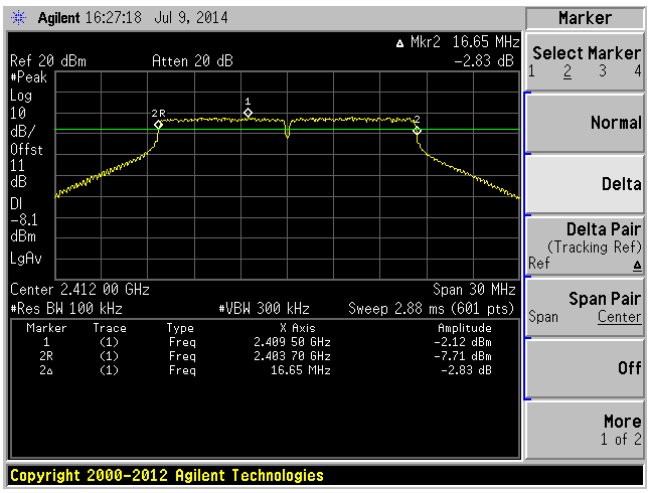
802.11b MID CHANNEL



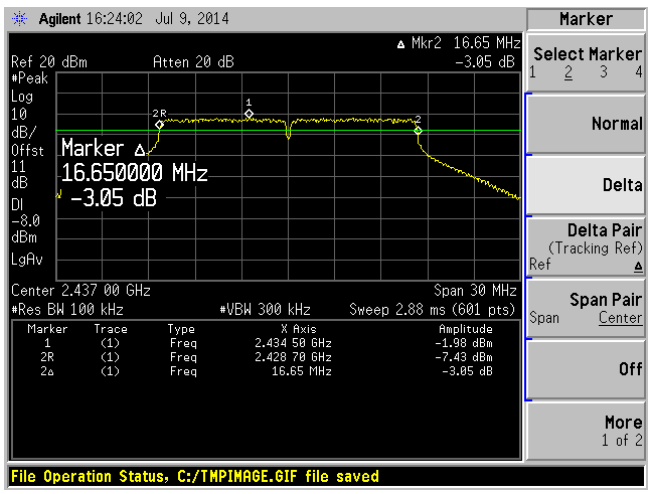
802.11b HIGH CHANNEL



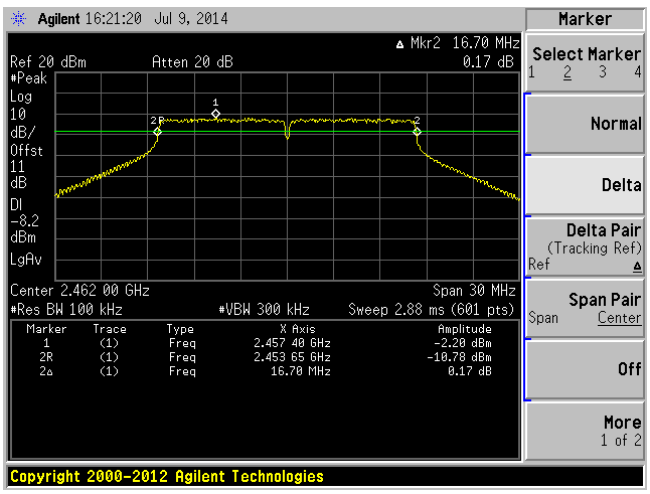
802.11g LOW CHANNEL



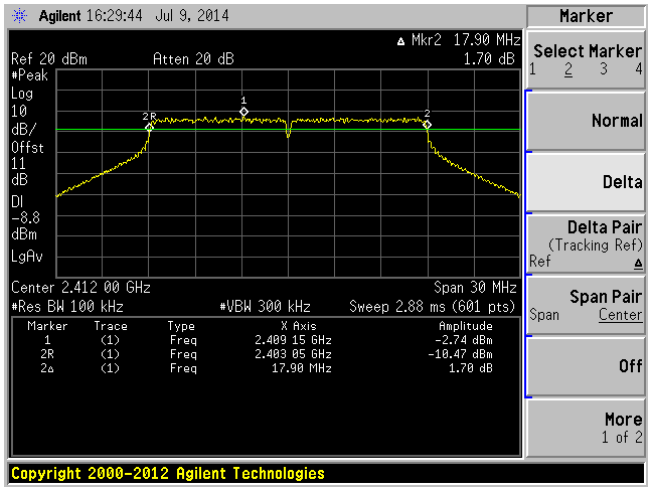
802.11g MID CHANNEL



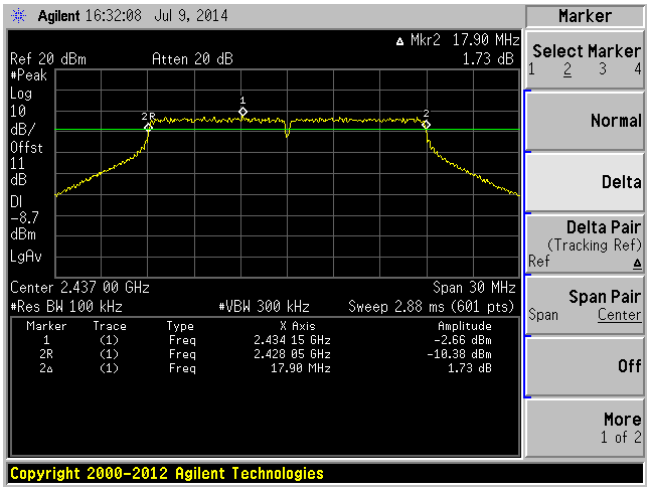
802.11g HIGH CHANNEL



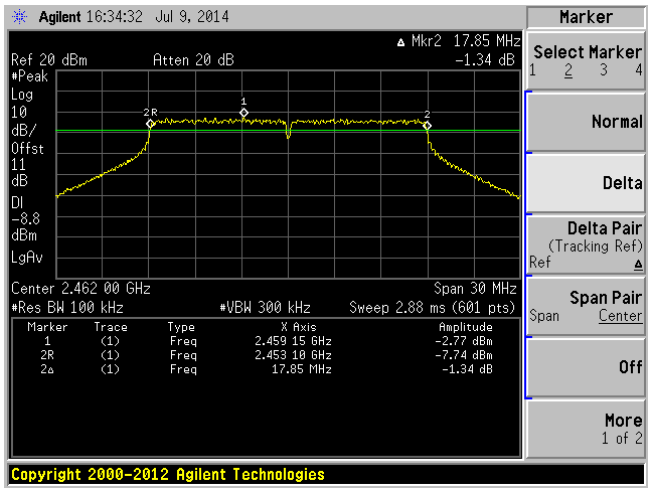
802.11n-20MHz LOW CHANNEL



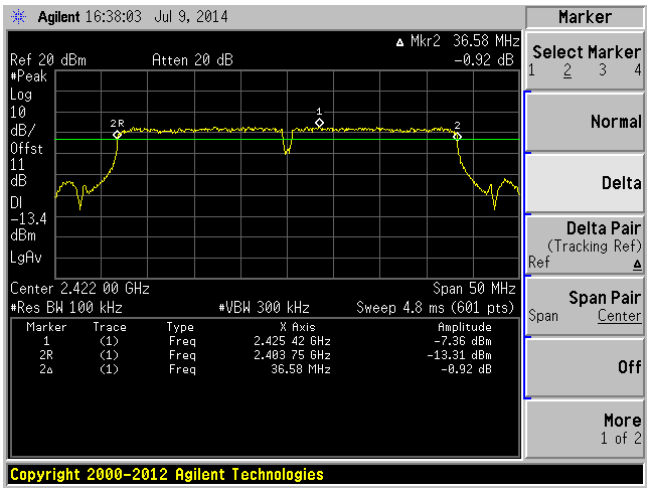
802.11 n-20MHz MID CHANNEL



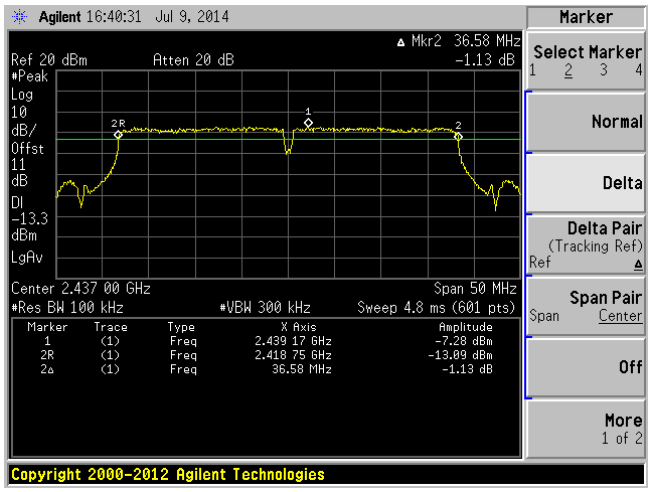
802.11n-20MHz HIGH CHANNEL



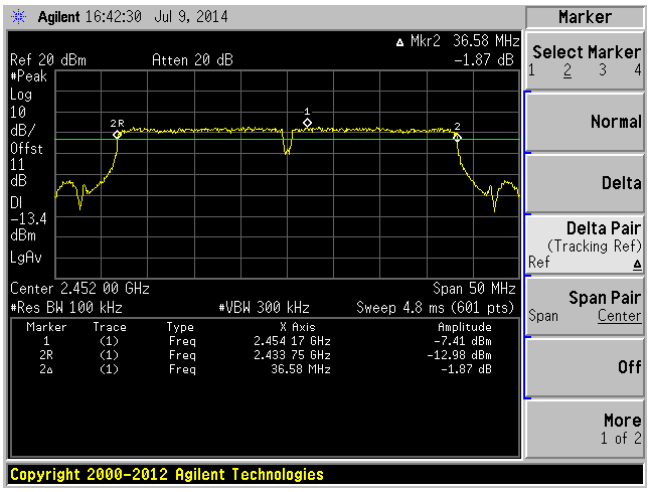
802.11n-40MHz LOW CHANNEL



802.11n-40MHz MID CHANNEL



802.11n-40MHz HIGH CHANNEL



A.3 Conducted Spurious Emissions

Test Data

802.11b Mode:

Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated 20 dBc Limit	
Low	2412	-45.82	6.89	-13.1	PASS
Middle	2437	-46.50	6.77	-13.2	PASS
High	2462	-47.58	6.72	-13.3	PASS

802.11g Mode:

Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated 20 dBc Limit	
Low	2412	-51.24	-2.23	-22.2	PASS
Middle	2437	-50.83	-2.03	-22.0	PASS
High	2462	-50.79	-1.98	-22.0	PASS

802.11n-20MHz Mode:

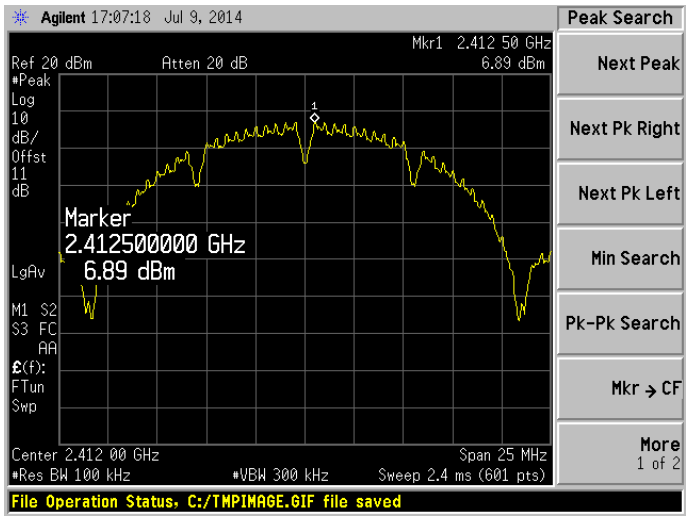
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated 20 dBc Limit	
Low	2412	-50.53	-2.90	-22.9	PASS
Middle	2437	-51.77	-2.92	-22.9	PASS
High	2462	-51.59	-2.92	-22.9	PASS

802.11n-40MHz Mode:

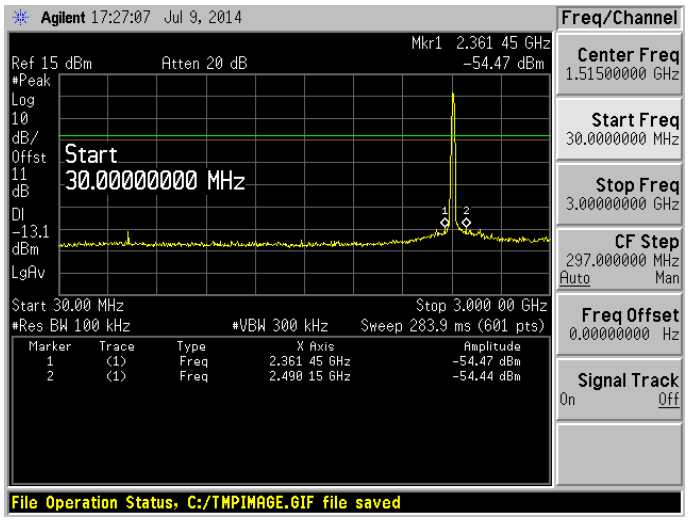
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated 20 dBc Limit	
Low	2422	-53.56	-7.35	-27.4	PASS
Middle	2437	-55.02	-7.22	-27.2	PASS
High	2452	-54.77	-7.16	-27.2	PASS

Test Plots

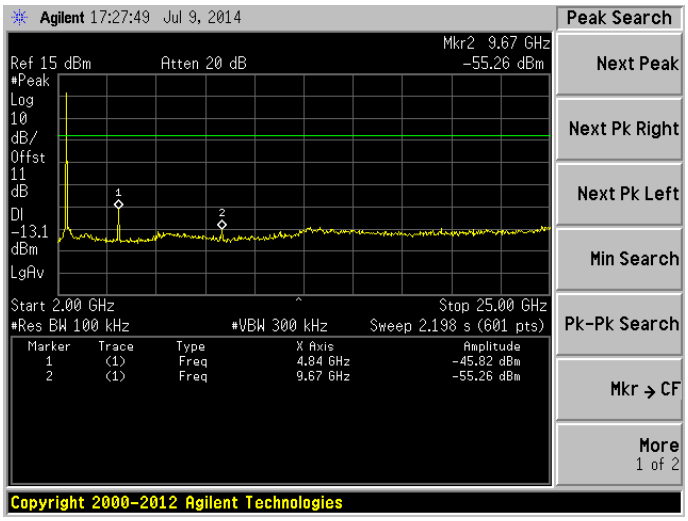
802.11b LOW CHANNEL CARRIER LEVEL



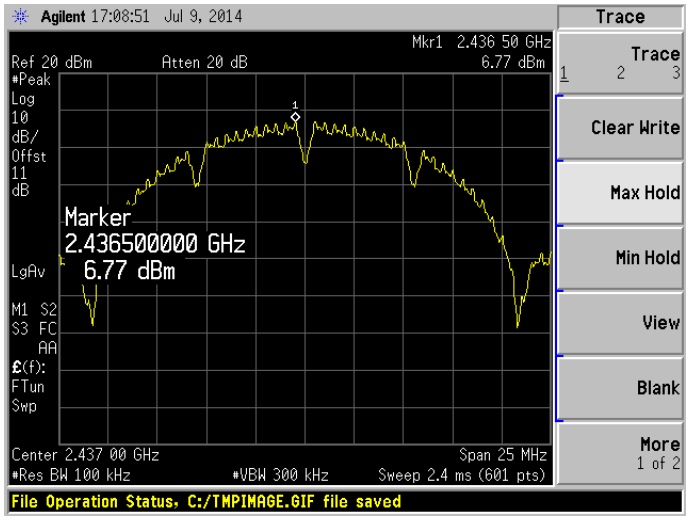
802.11b LOW CHANNEL, SPURIOUS 30MHz~3GHz



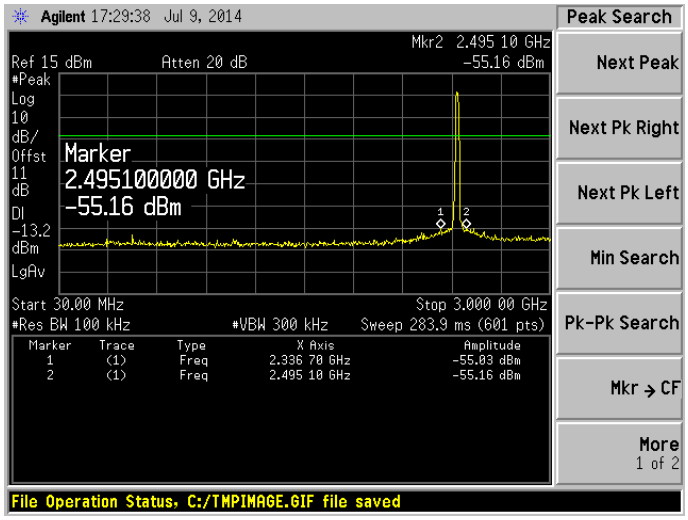
802.11b LOW CHANNEL, SPURIOUS 2GHz~25GHz



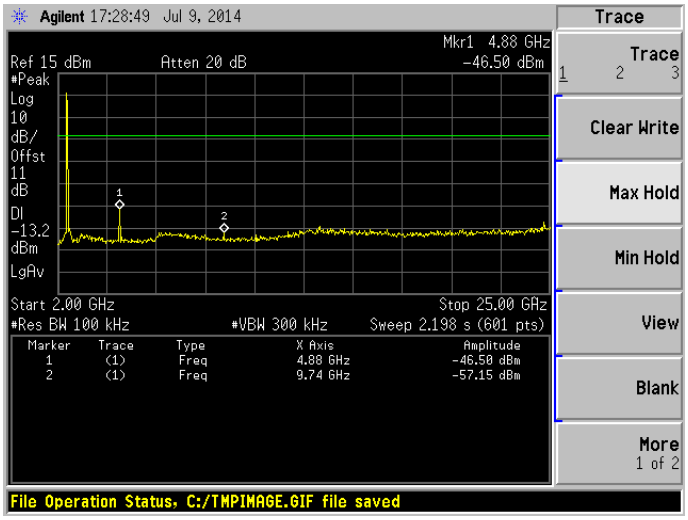
802.11b MID CHANNEL CARRIER LEVEL



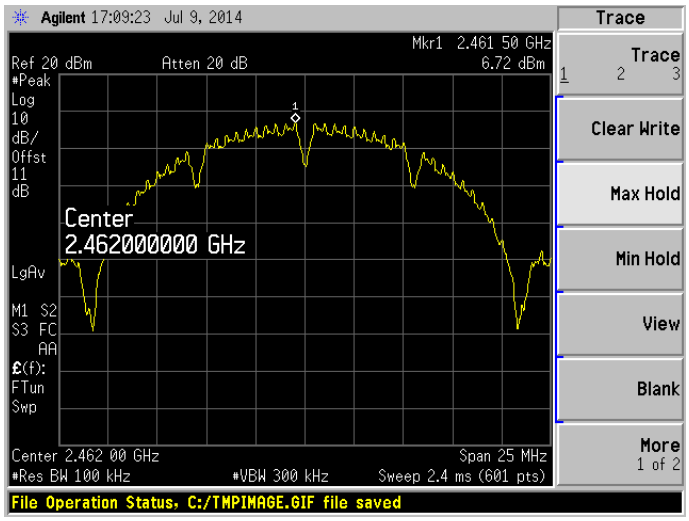
802.11b MID CHANNEL, SPURIOUS 30MHz~3GHz



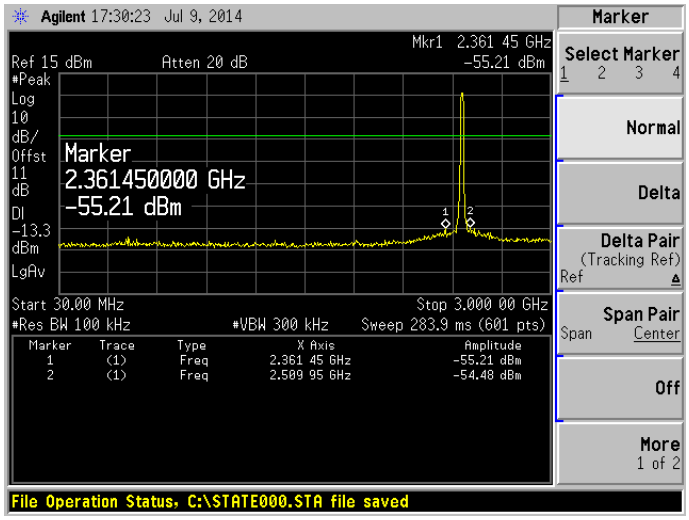
802.11b MID CHANNEL, SPURIOUS 2GHz~25GHz



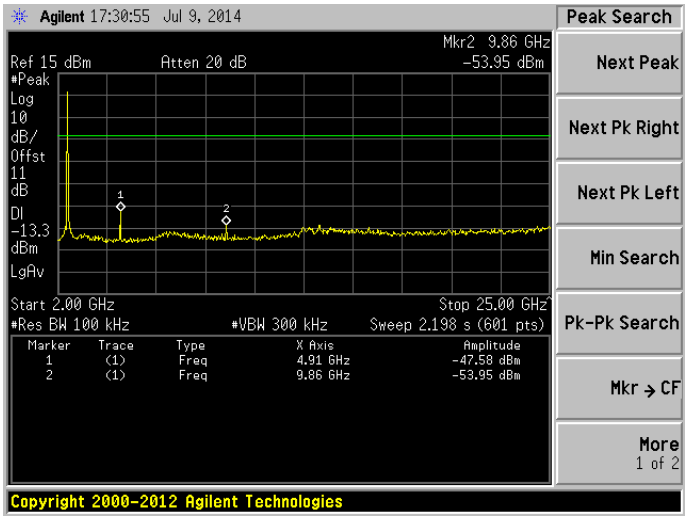
802.11b HIGH CHANNEL CARRIER LEVEL



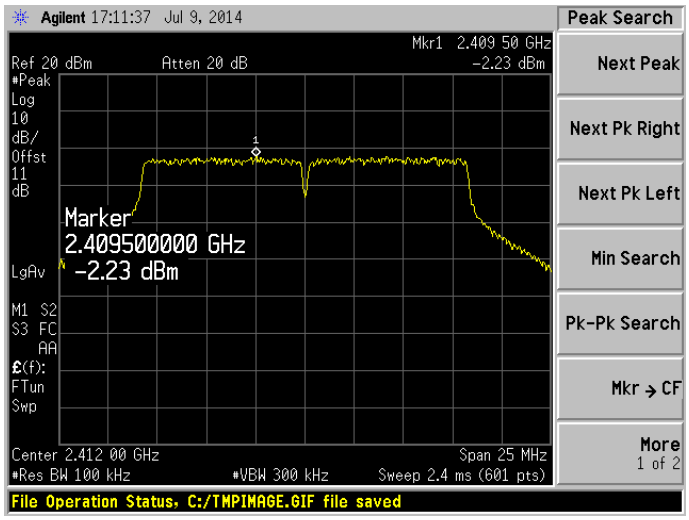
802.11b HIGH CHANNEL, SPURIOUS 30MHz~3GHz



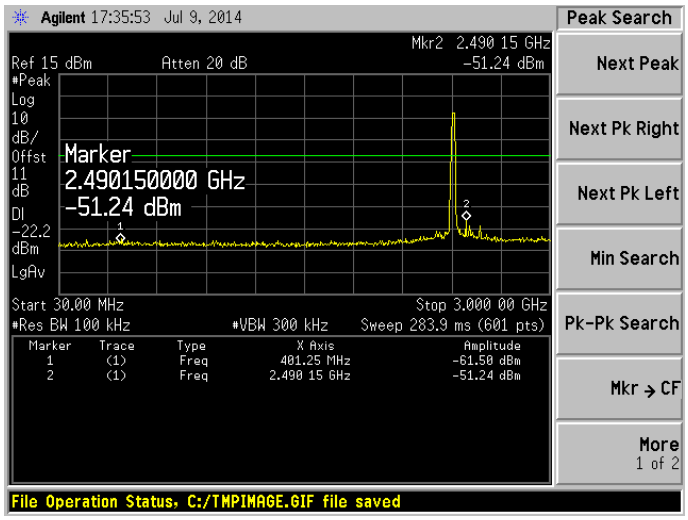
802.11b HIGH CHANNEL, SPURIOUS 2GHz~25GHz



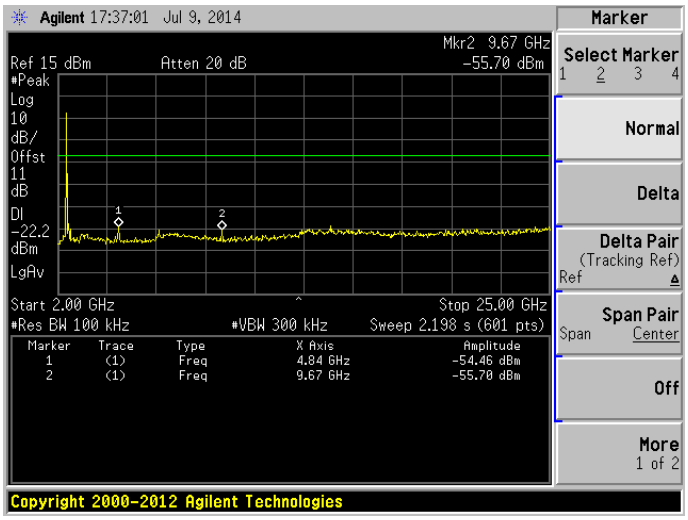
802.11g LOW CHANNEL CARRIER LEVEL



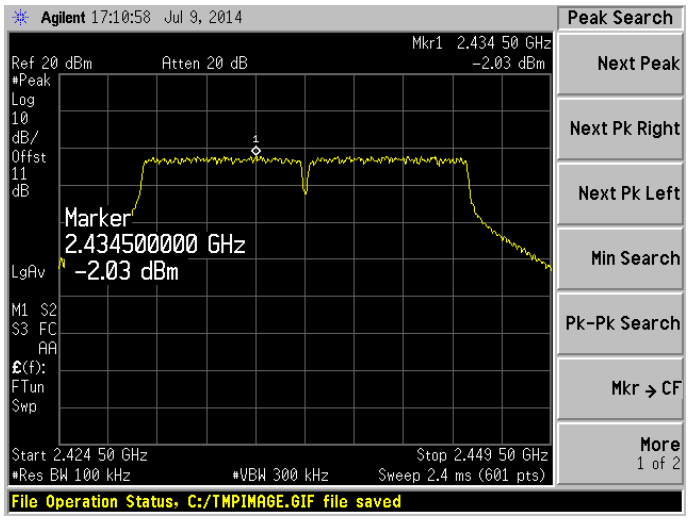
802.11g LOW CHANNEL, SPURIOUS 30MHz~3GHz



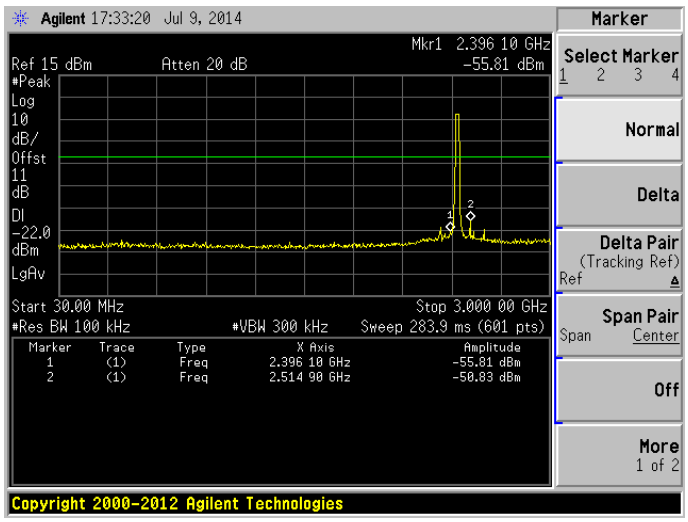
802.11g LOW CHANNEL, SPURIOUS 2GHz~25GHz



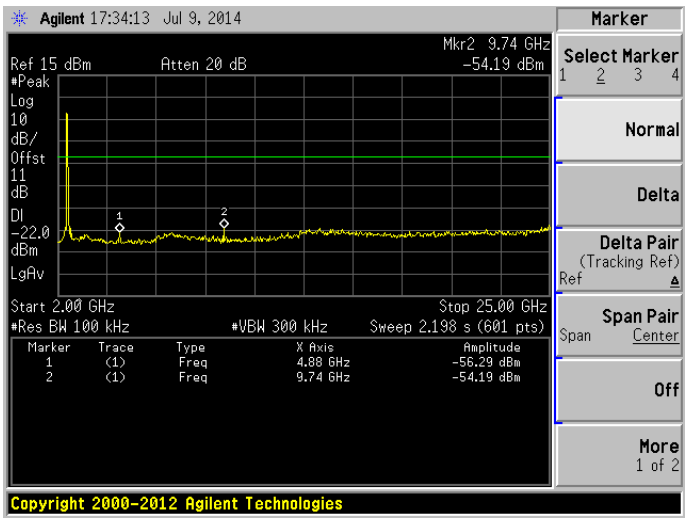
802.11g MID CHANNEL CARRIER LEVEL



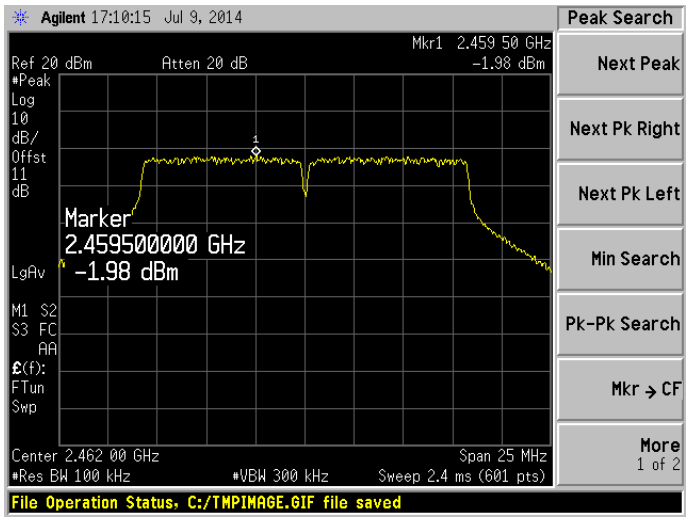
802.11g MID CHANNEL, SPURIOUS 30MHz~3GHz



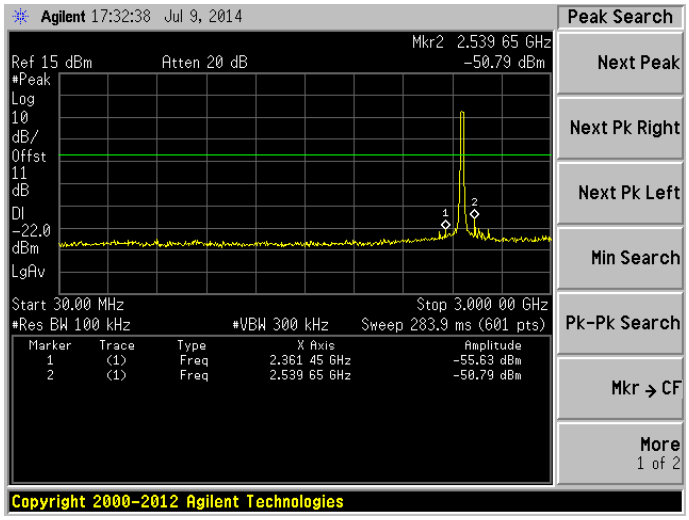
802.11g MID CHANNEL, SPURIOUS 2GHz~25GHz



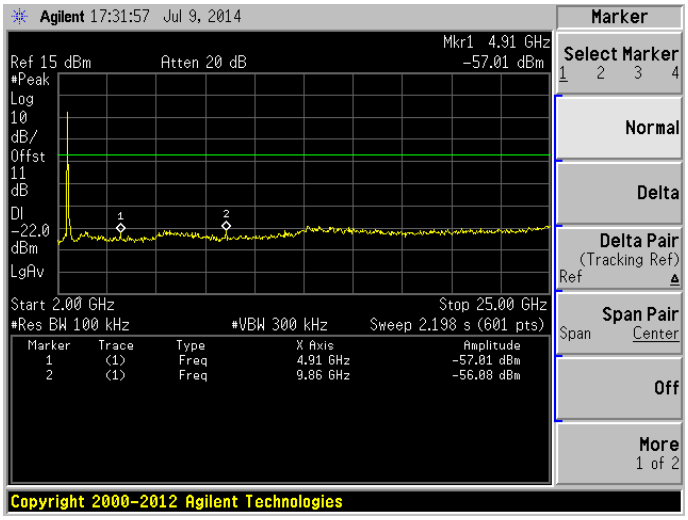
802.11g HIGH CHANNEL CARRIER LEVEL



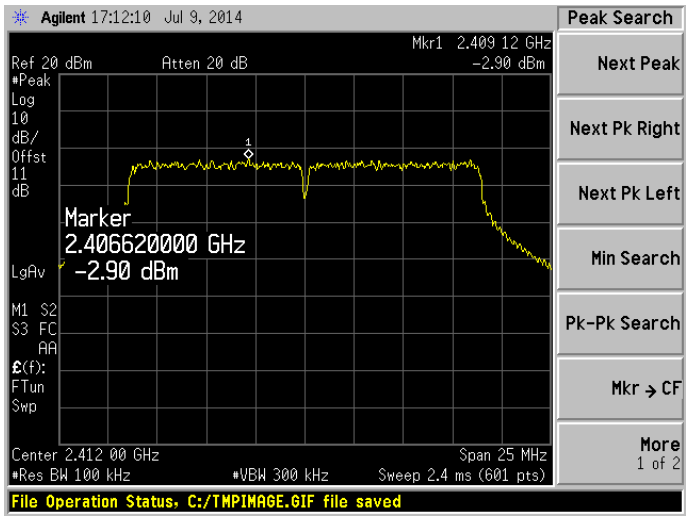
802.11g HIGH CHANNEL, SPURIOUS 30MHz~3GHz



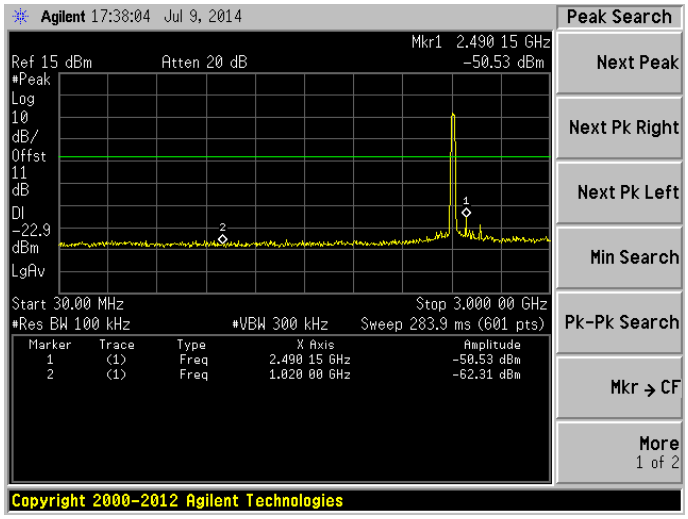
802.11g HIGH CHANNEL, SPURIOUS 2GHz~25GHz



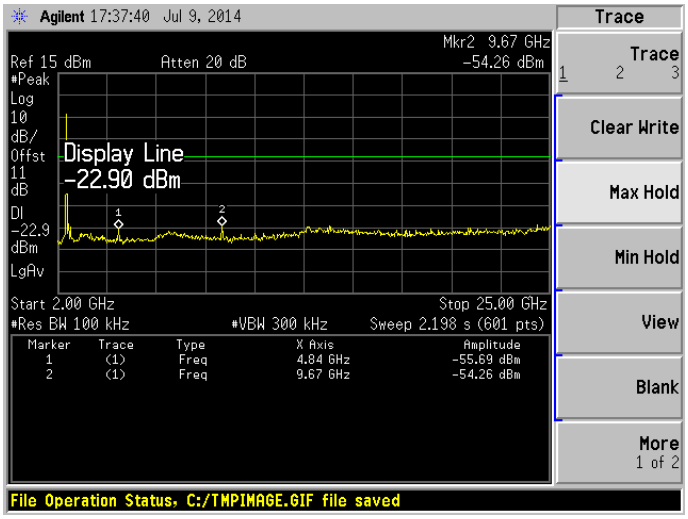
802.11n 20MHz LOW CHANNEL CARRIER LEVEL



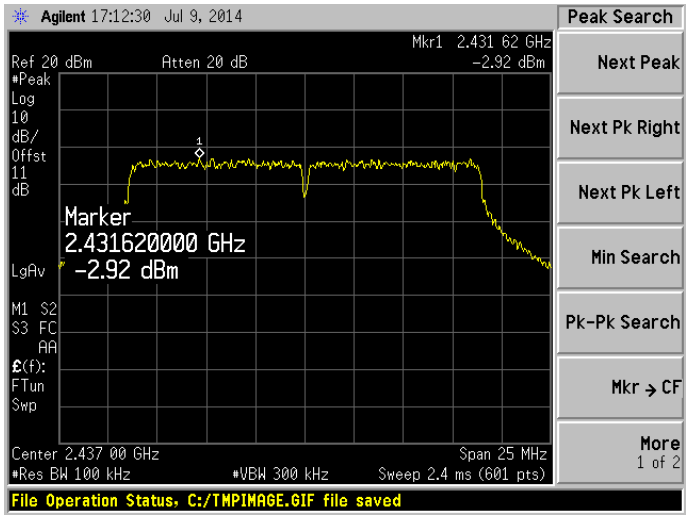
802.11 n 20MHz LOW CHANNEL, SPURIOUS 30MHz~3GHz



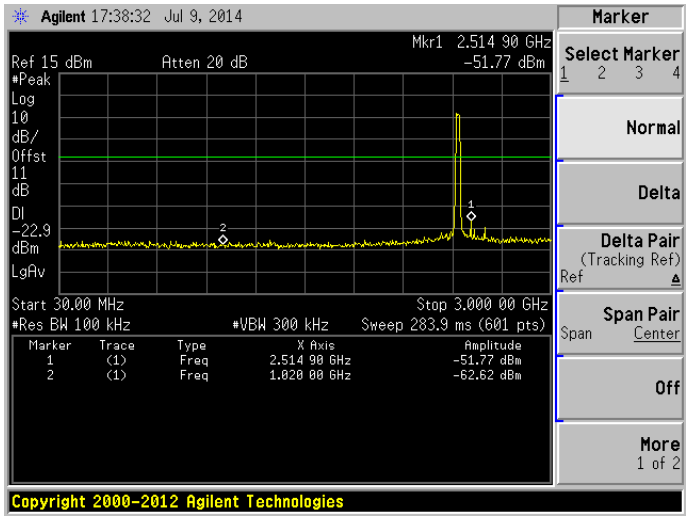
802.11 n 20MHz LOW CHANNEL, SPURIOUS 2GHz~25GHz



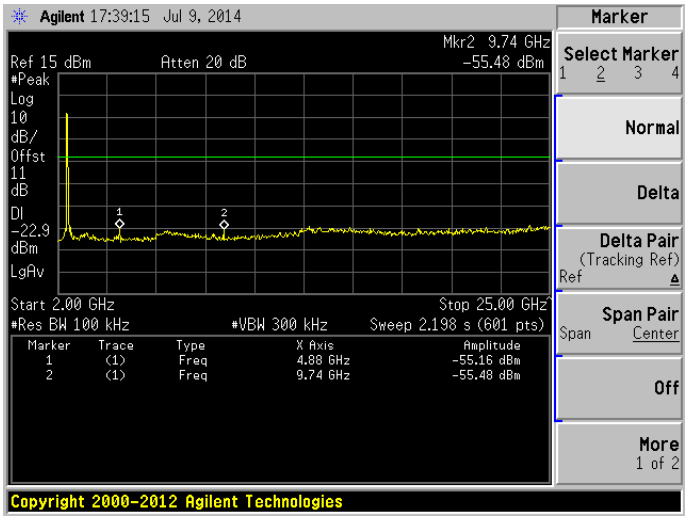
802.11 n 20MHz MID CHANNEL CARRIER LEVEL



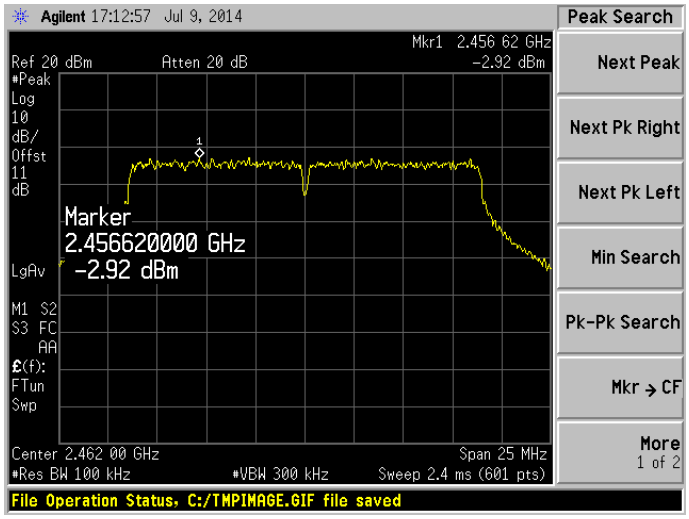
802.11 n 20MHz MID CHANNEL, SPURIOUS 30MHz~3GHz



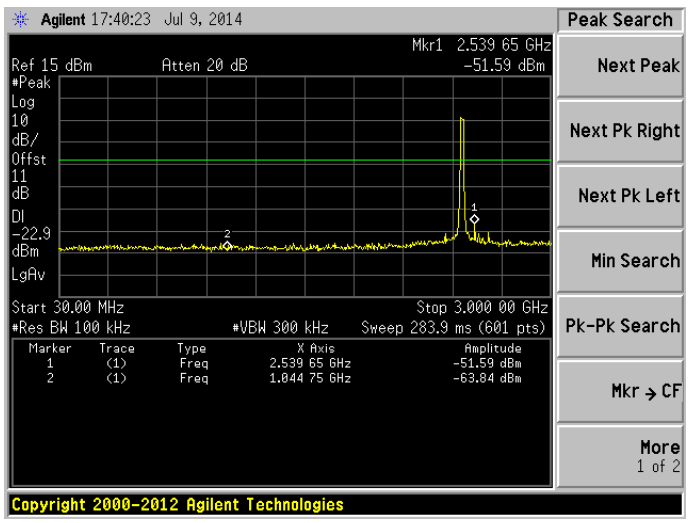
802.11 n 20MHz MID CHANNEL, SPURIOUS 2GHz~25GHz



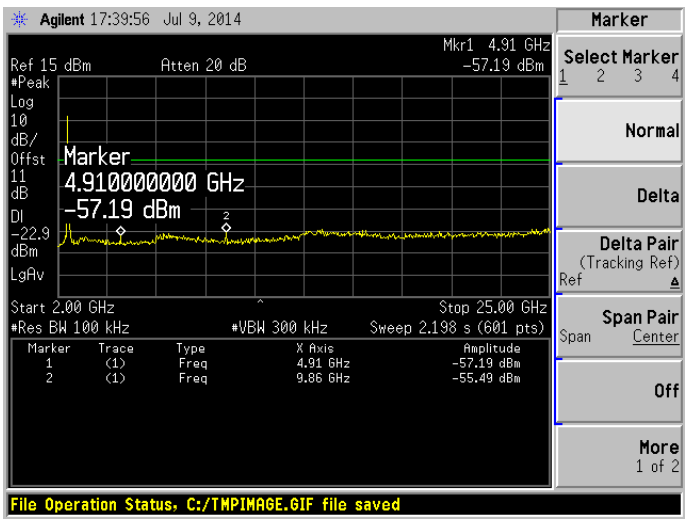
802.11 n 20MHz HIGH CHANNEL CARRIER LEVEL



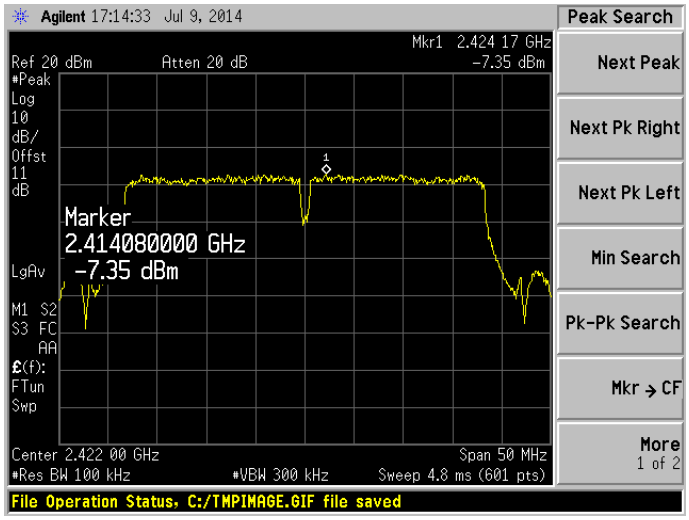
802.11 n 20MHz HIGH CHANNEL, SPURIOUS 30MHz~3GHz



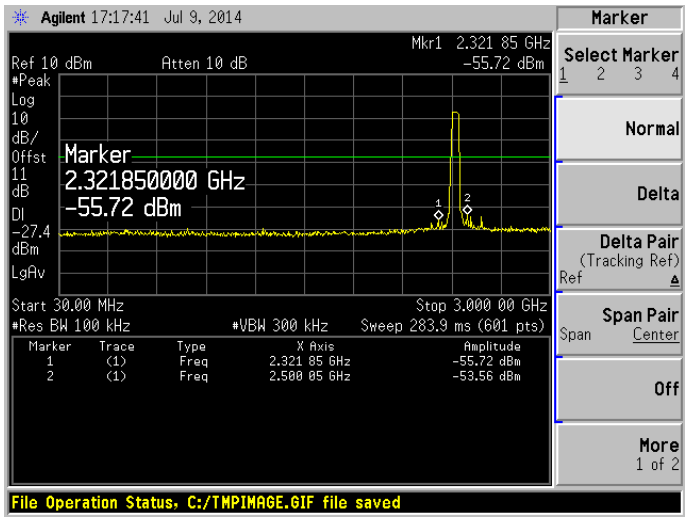
802.11 n 20MHz HIGH CHANNEL, SPURIOUS 2GHz~25GHz



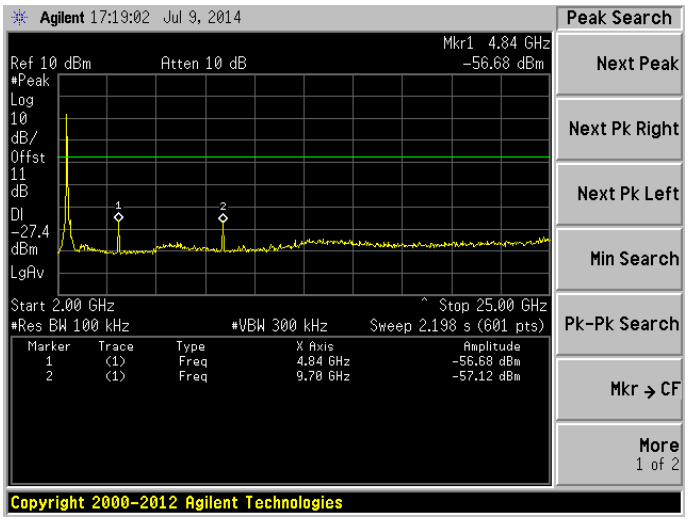
802.11n 40MHz LOW CHANNEL CARRIER LEVEL



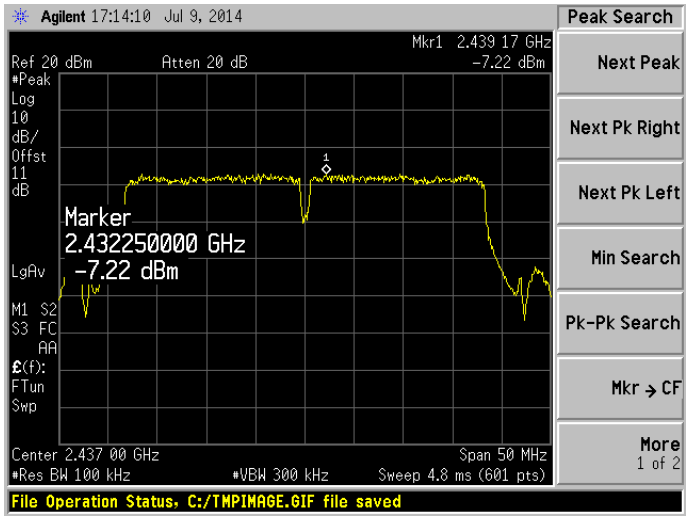
802.11 n 40MHz LOW CHANNEL, SPURIOUS 30MHz~3GHz



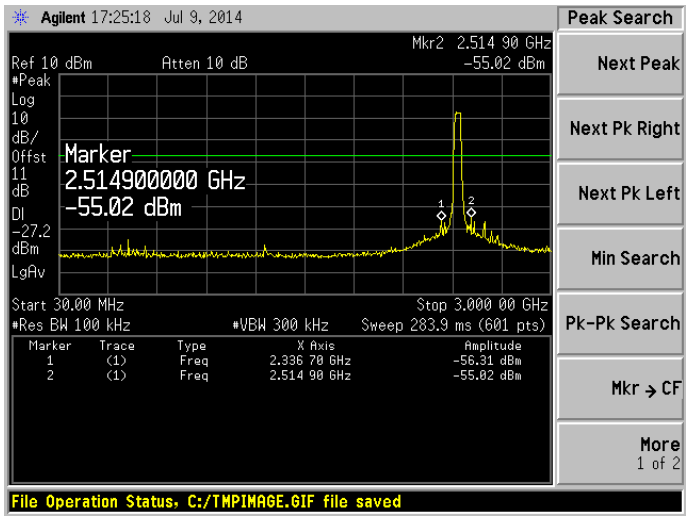
802.11 n 40MHz LOW CHANNEL, SPURIOUS 2GHz~25GHz



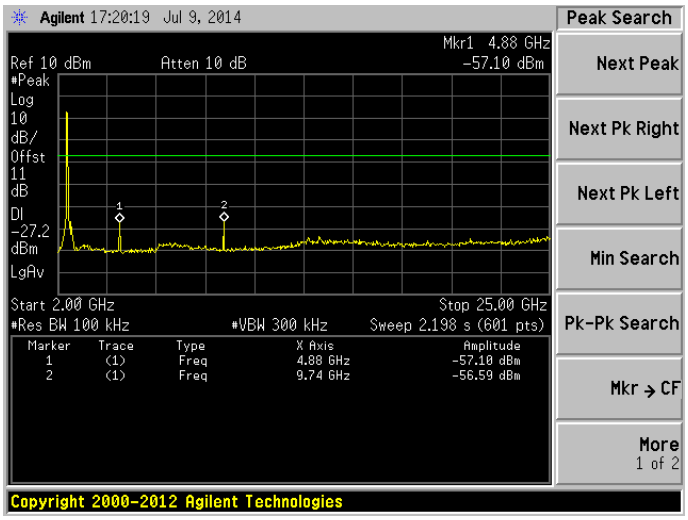
802.11 n 40MHz MID CHANNEL CARRIER LEVEL



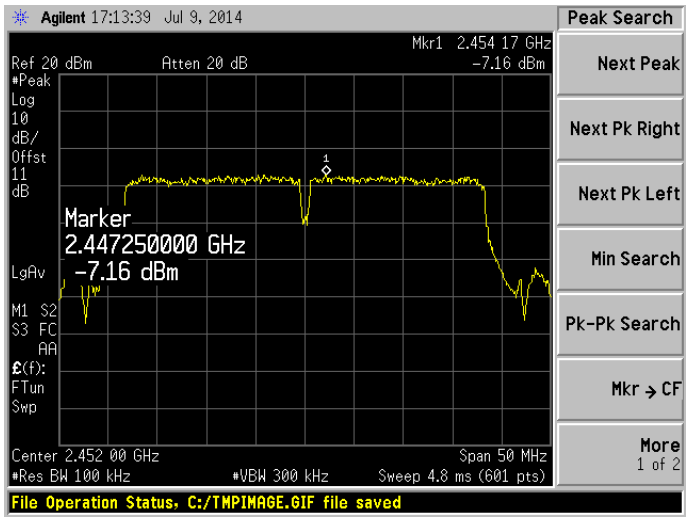
802.11 n 40MHz MID CHANNEL, SPURIOUS 30MHz~3GHz



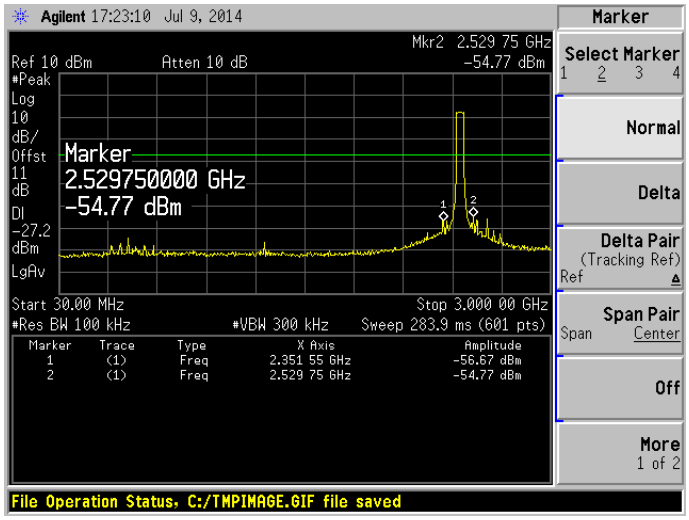
802.11 n 40MHz MID CHANNEL, SPURIOUS 2GHz~25GHz



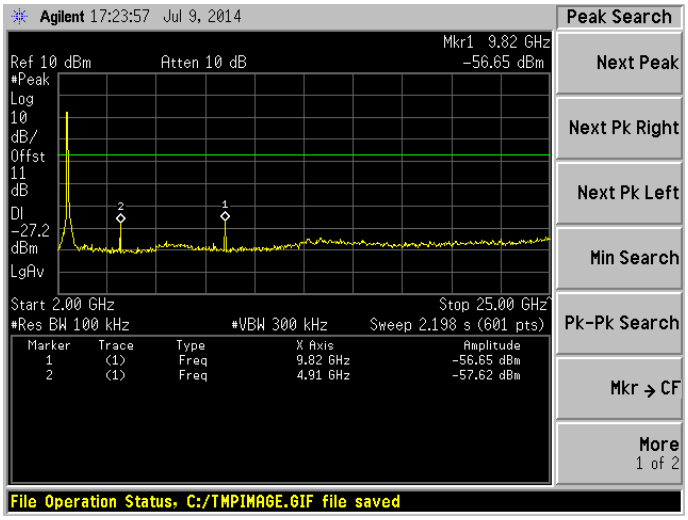
802.11 n 40MHz HIGH CHANNEL CARRIER LEVEL



802.11 n 40MHz HIGH CHANNEL, SPURIOUS 30MHz~3GHz



802.11 n 40MHz HIGH CHANNEL, SPURIOUS 2GHz~25GHz



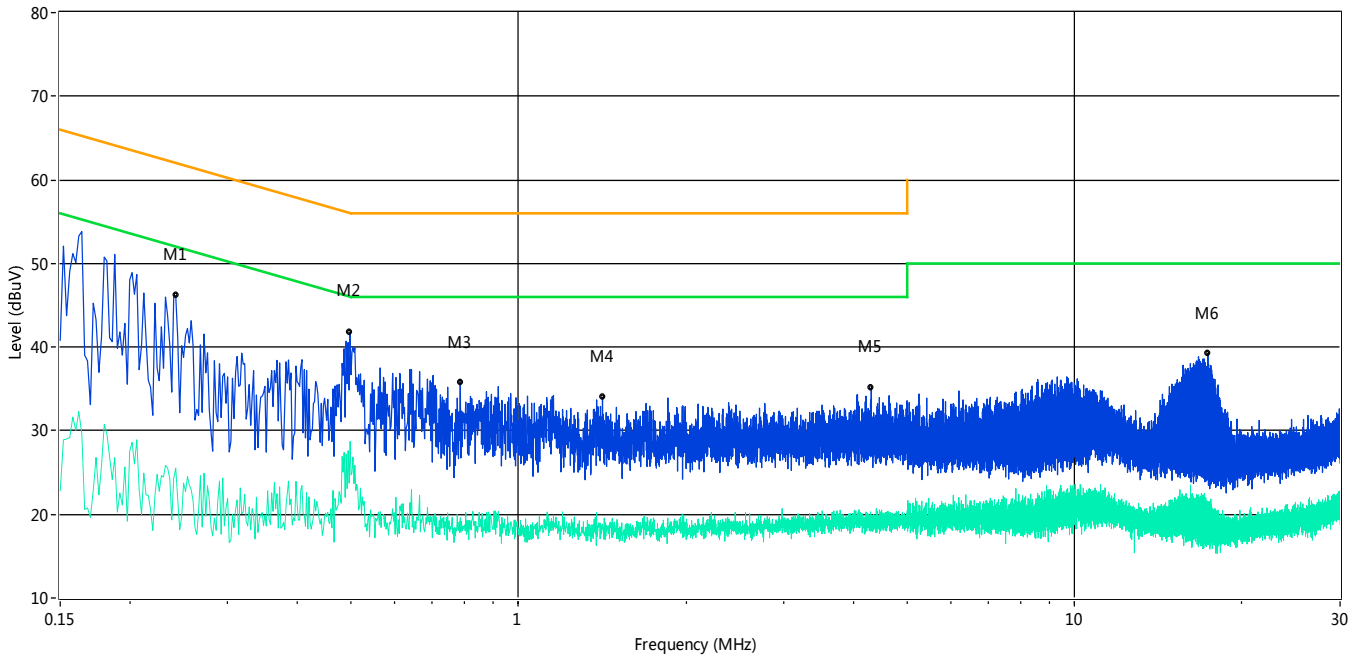
A.4 Conducted Emissions

Test Data

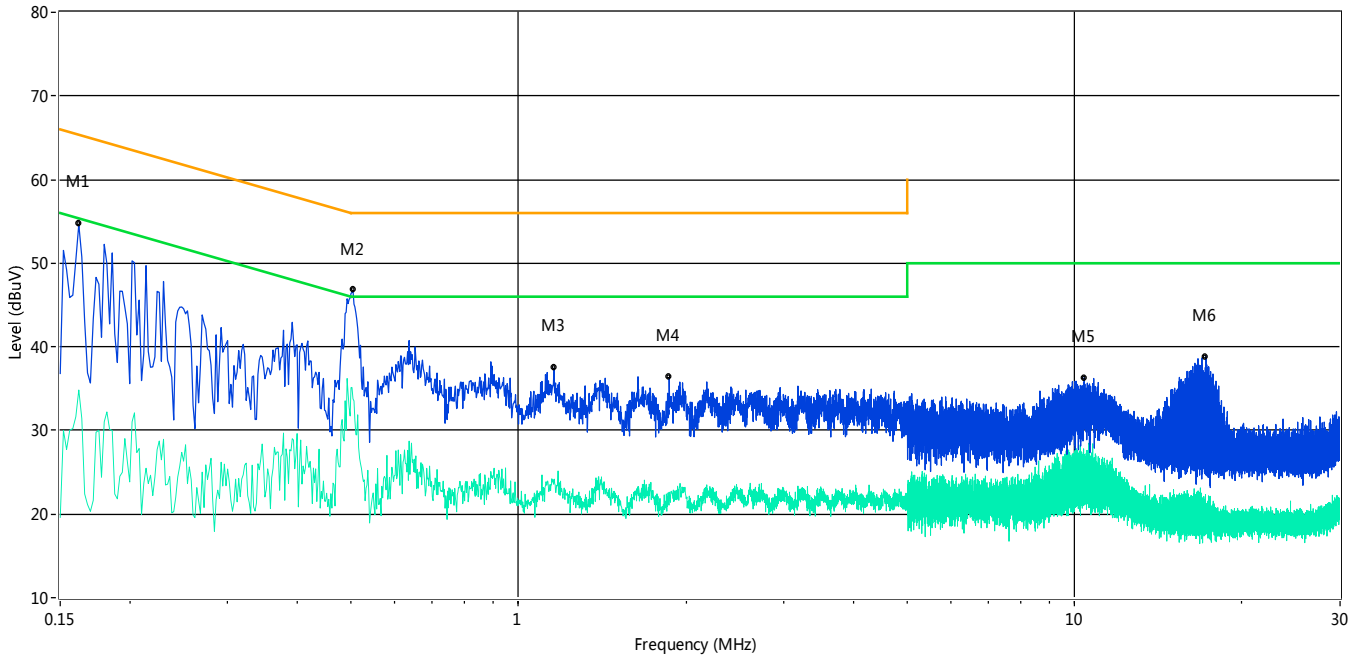
Frequency (MHz)	Peak	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit(dBuV)	AV Limit(dBuV)	Margin (dB)	Line	Verdict
0.24	46.1	--	25.5	10.00	63.4	53.4	27.90	L Line	PASS
0.50	41.8	--	28.7	10.00	56.1	46.1	17.40	L Line	PASS
0.79	35.8	--	19.6	10.00	56.0	46.0	26.40	L Line	PASS
1.42	34.0	--	18.8	10.00	56.0	46.0	27.20	L Line	PASS
4.31	35.1	--	19.3	10.00	56.0	46.0	26.70	L Line	PASS
17.36	39.2	--	20.6	10.00	60.0	50.0	29.40	L Line	PASS
Frequency (MHz)	Peak	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit(dBuV)	AV Limit(dBuV)	Margin (dB)	Line	Verdict
0.16	54.6	--	34.8	10.00	65.7	55.7	20.90	N Line	PASS
0.50	46.8	--	33.8	10.00	56.0	46.0	12.20	N Line	PASS
1.16	37.4	--	24.1	10.00	56.0	46.0	21.90	N Line	PASS
1.87	36.3	--	22.6	10.00	56.0	46.0	23.40	N Line	PASS
10.40	36.3	--	24.8	10.00	60.0	50.0	25.20	N Line	PASS
17.22	38.8	--	21.0	10.00	60.0	50.0	29.00	N Line	PASS

Test Plots

PHASE L



PHASE N

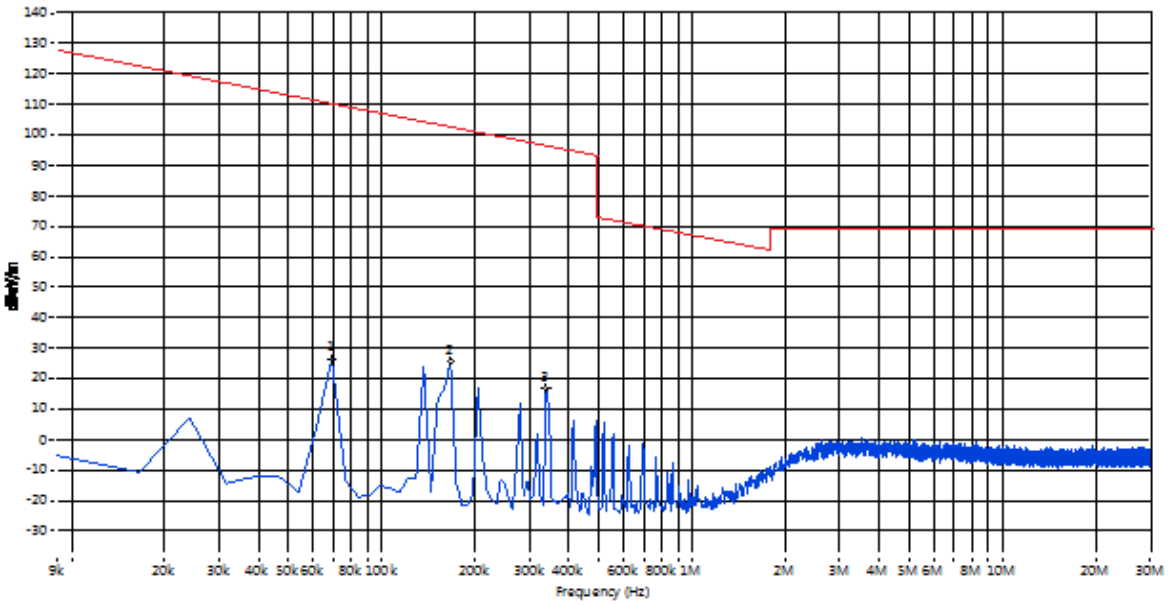


A.5 Radiated Emission

Note: The marked spikes near 2400MHz with circle should be ignored because they are Fundamental signa.

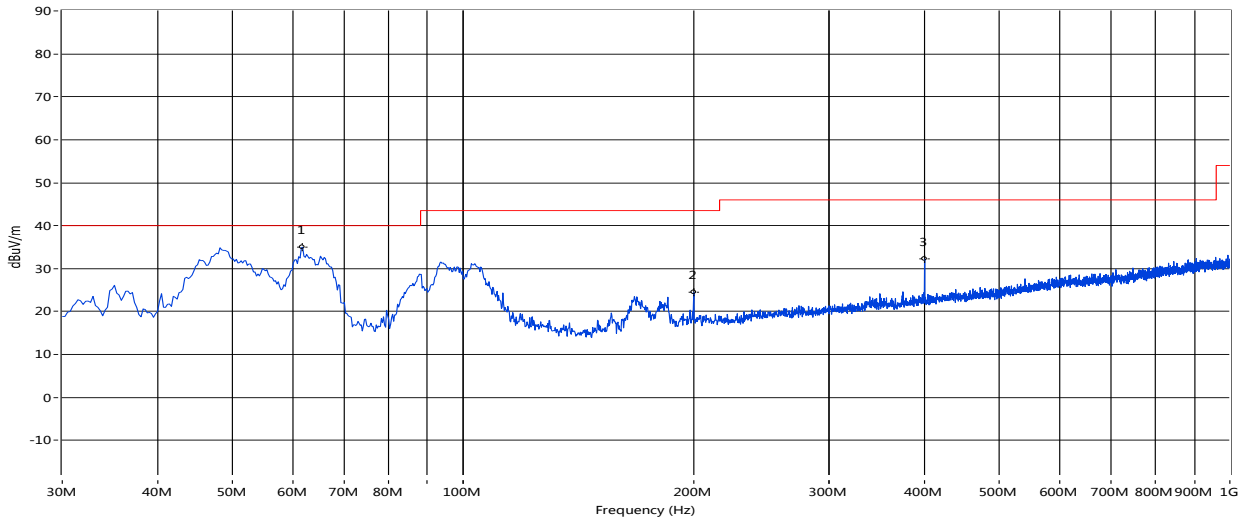
Test Data and Plots

Below 30MHz



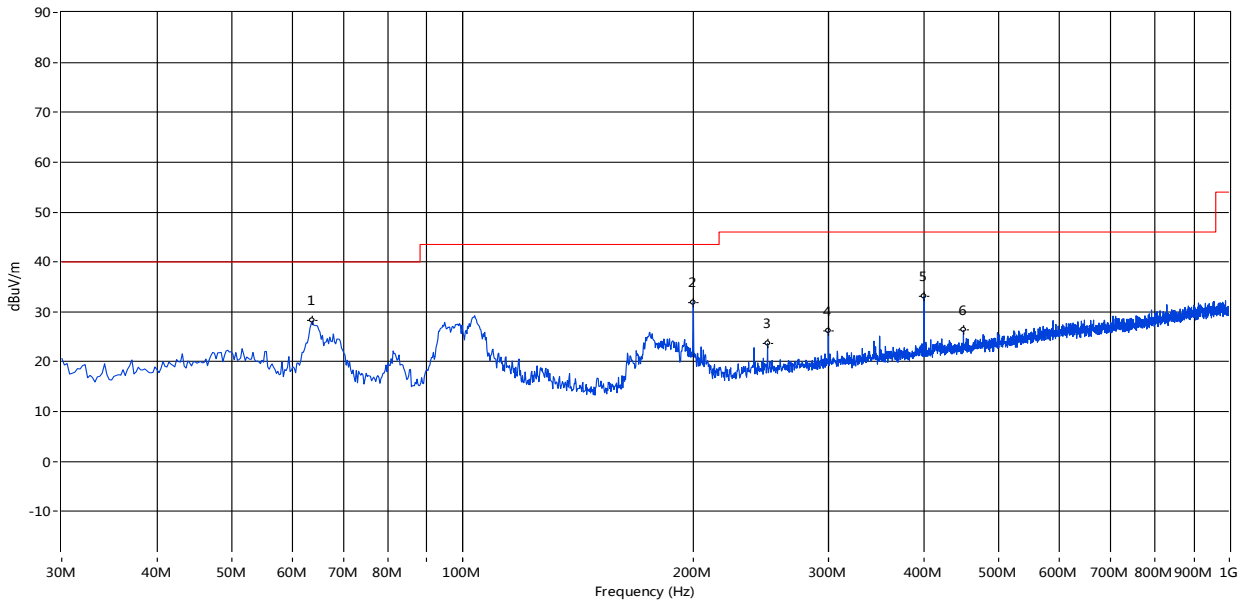
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Verdict
0.069	30.18	--	--	--	110.8	--	--	PASS
0.166	27.43	--	--	--	103.2	--	--	PASS
0.339	17.50	--	--	--	97.0	--	--	PASS

30MHz to 1GHz, ANT V



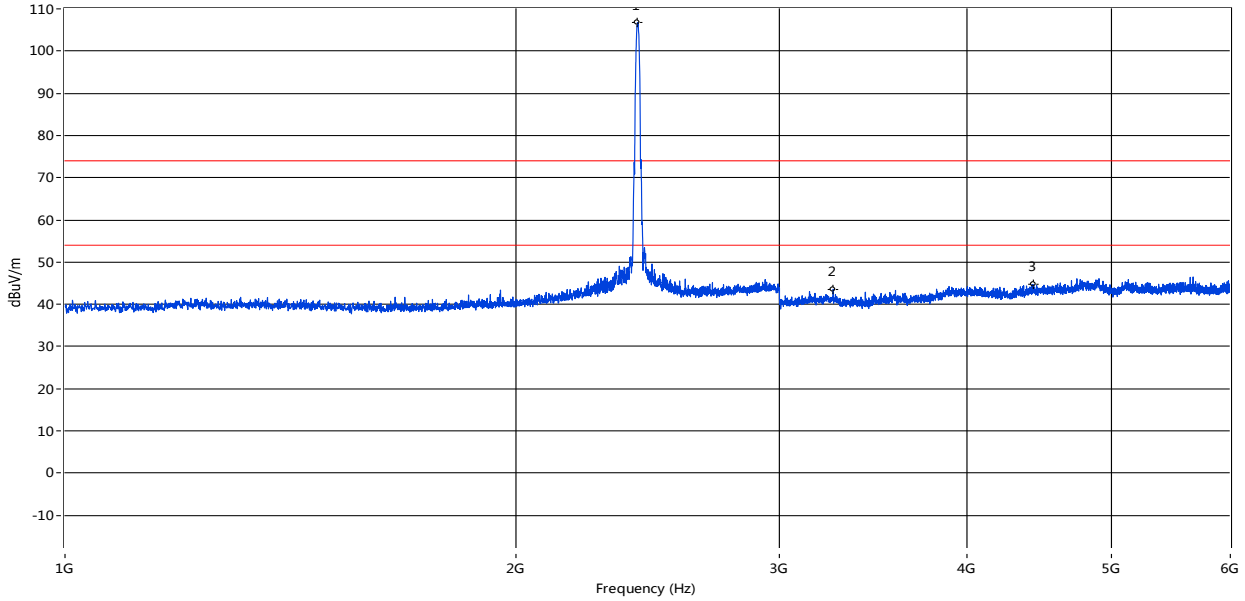
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
61.760	34.98	--	--	--	40.0	--	2.9	Vertical	Pass
199.950	24.40	--	--	--	43.5	--	102.8	Vertical	Pass
399.963	32.21	--	--	--	46.0	--	0.5	Vertical	Pass

30MHz to 1GHz, ANT H



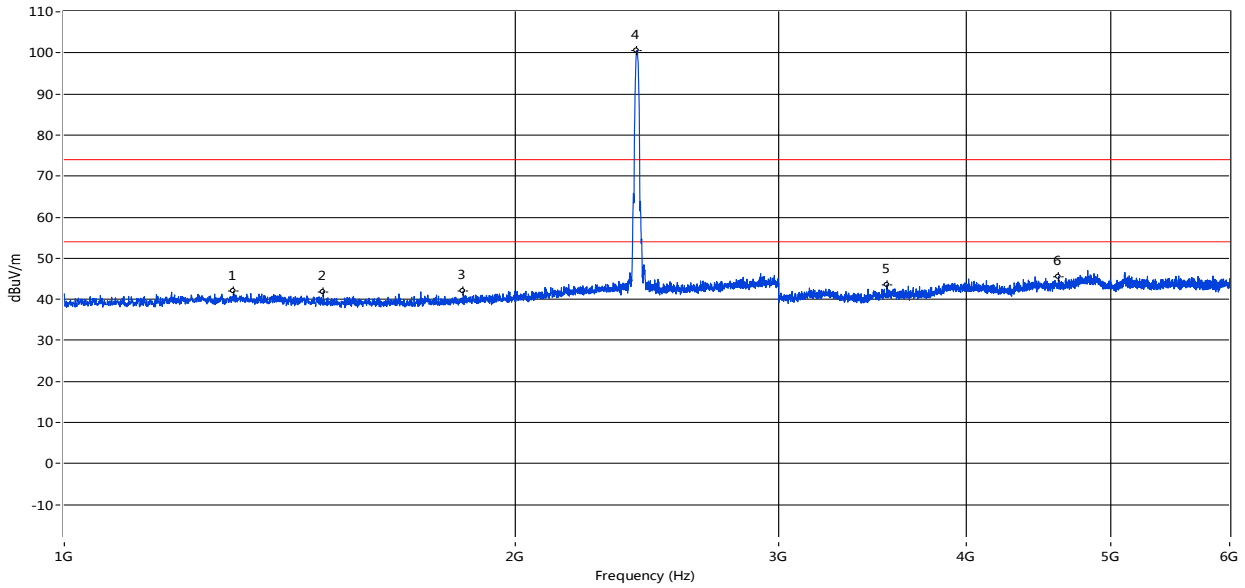
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
63.699	28.18	--	--	--	40.0	--	175.7	Horizontal	Pass
199.950	31.95	--	--	--	43.5	--	59.1	Horizontal	Pass
249.893	23.68	--	--	--	46.0	--	57.2	Horizontal	Pass
299.835	26.14	--	--	--	46.0	--	30.8	Horizontal	Pass
399.963	33.14	--	--	--	46.0	--	180.9	Horizontal	Pass
449.905	26.31	--	--	--	46.0	--	217.2	Horizontal	Pass

802.11b LOW CHANNEL 1GHz to 6GHz, ANT V



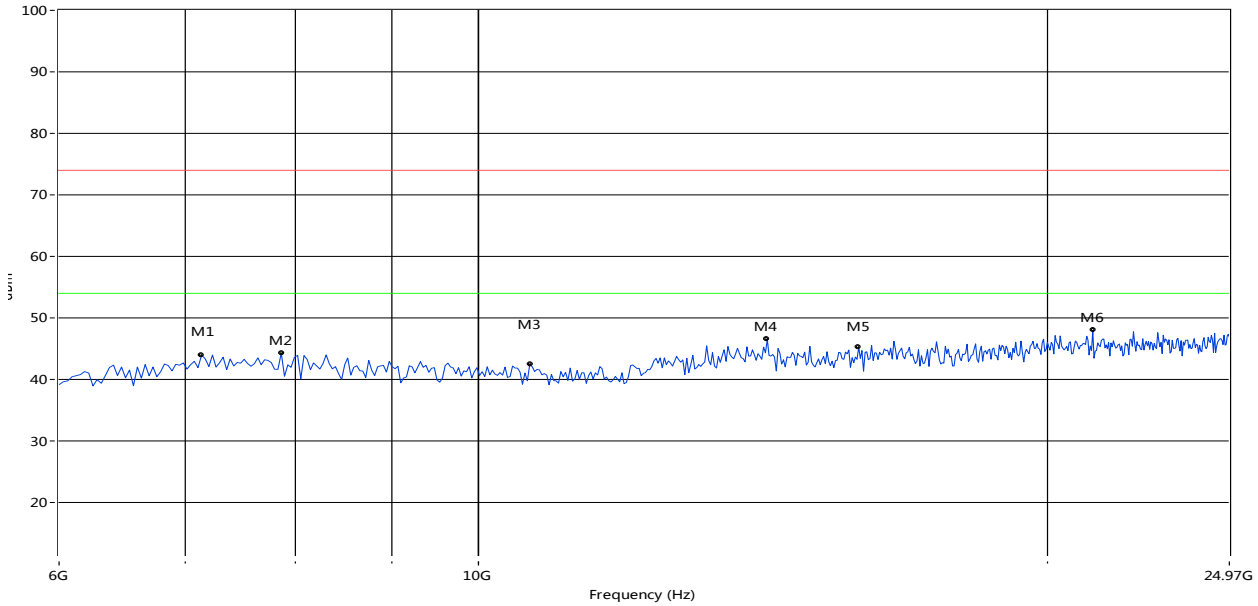
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2411.147	106.69	--	--	N/A	--	N/A	288.6	Vertical	N/A
3257.936	43.58	--	--	74.0	--	54.0	131.1	Vertical	Pass
4429.893	44.70	--	--	74.0	--	54.0	347.4	Vertical	Pass

802.11b LOW CHANNEL 1GHz to 6GHz, ANT H



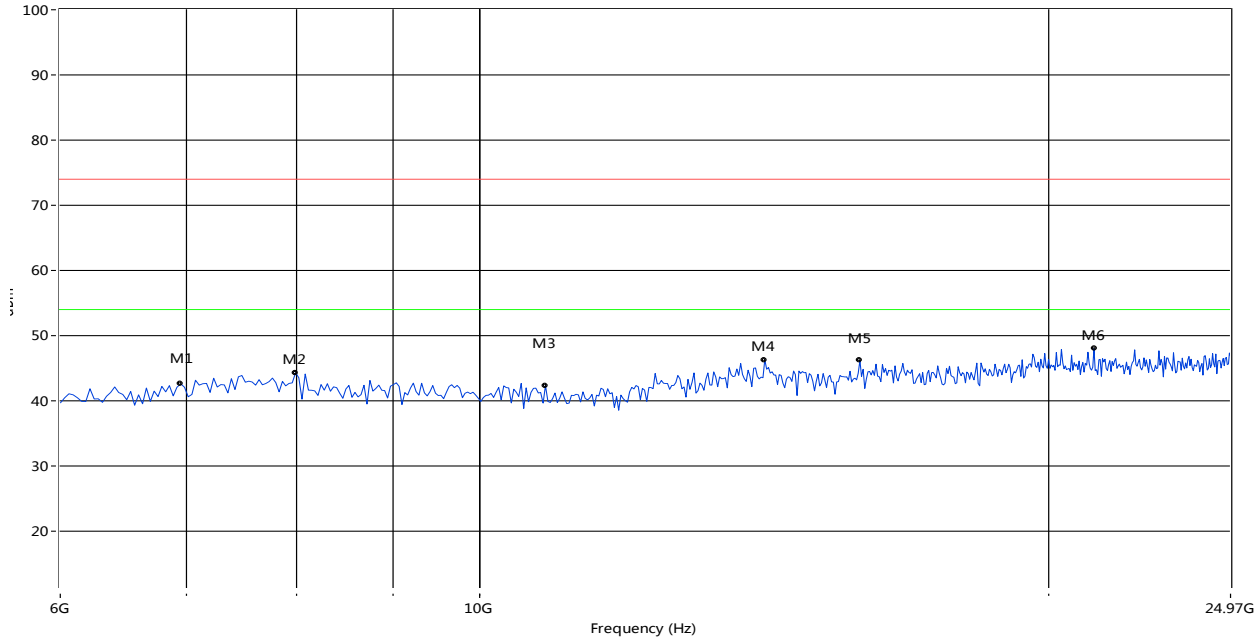
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1297.426	42.03	--	--	74.0	--	54.0	2.0	Horizontal	Pass
1489.378	41.90	--	--	74.0	--	54.0	354.1	Horizontal	Pass
1846.788	42.06	--	--	74.0	--	54.0	101.5	Horizontal	Pass
2411.147	100.61	--	--	N/A	--	N/A	275.7	Horizontal	N/A
3542.864	43.46	--	--	74.0	--	54.0	62.8	Horizontal	Pass
4612.097	45.60	--	--	74.0	--	54.0	5.0	Horizontal	Pass

802.11b LOW CHANNEL 6GHz to 25GHz, ANT V



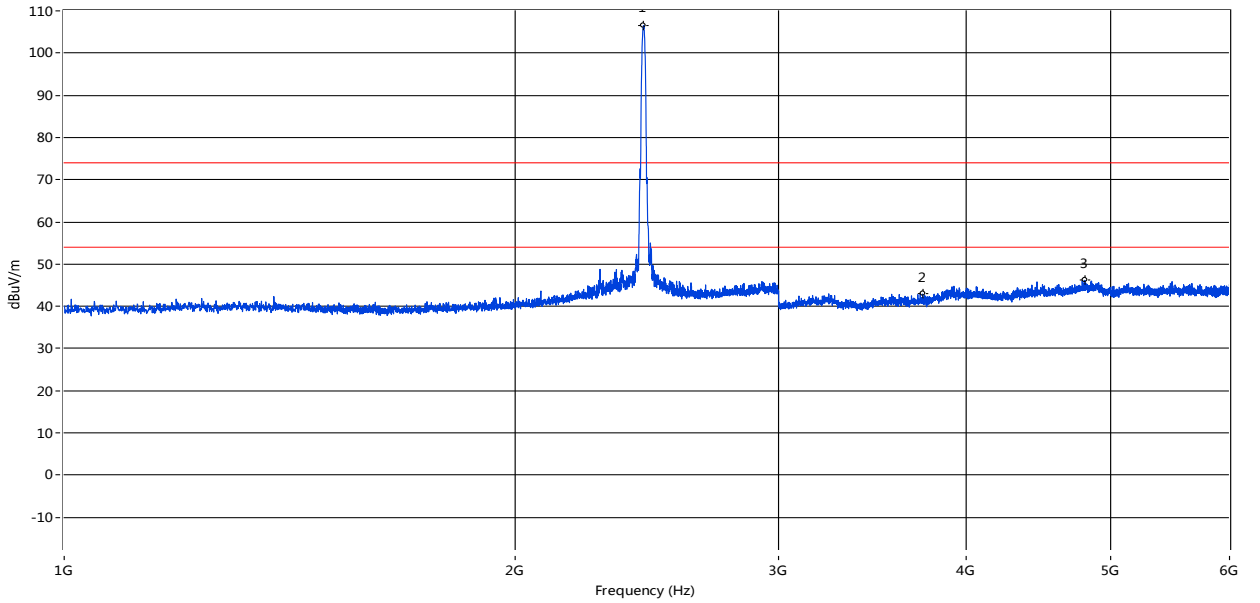
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7138.10	43.96	--	--	74.0	--	54.0	30.04	201	Vertical	PASS
7865.22	44.28	--	--	74.0	--	54.0	29.72	294	Vertical	PASS
10647.25	42.50	--	--	74.0	--	54.0	31.50	94	Vertical	PASS

802.11b LOW CHANNEL 6GHz to 25GHz, ANT H



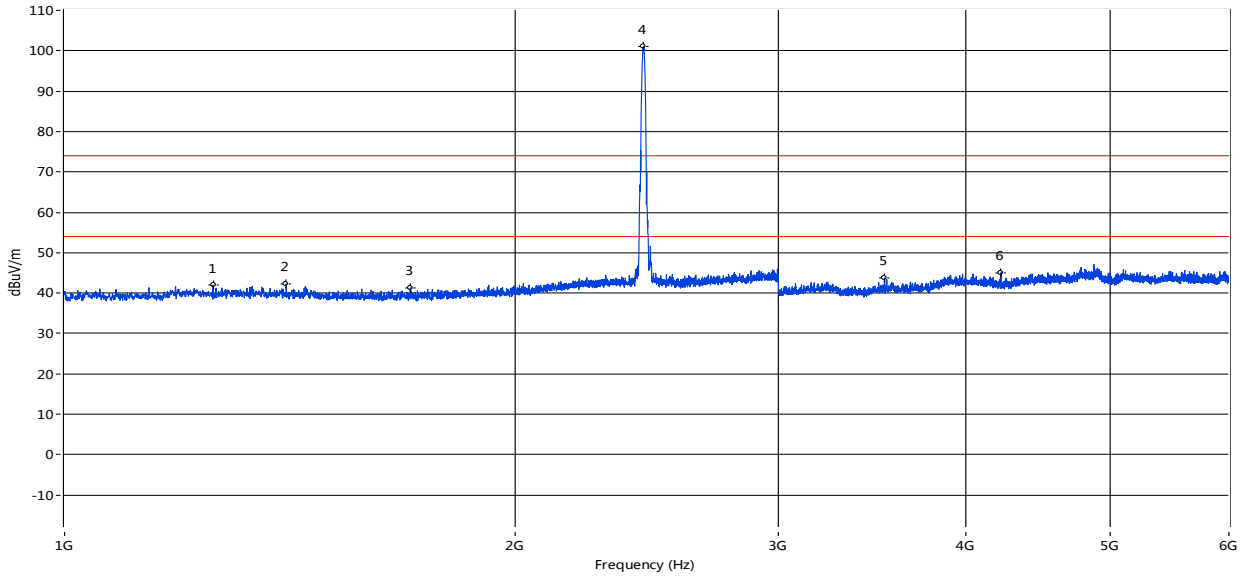
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
6948.42	42.61	--	--	74.0	--	54.0	31.39	221	Horizontal	PASS
7991.68	44.30	--	--	74.0	--	54.0	29.70	219	Horizontal	PASS
10836.94	42.34	--	--	74.0	--	54.0	31.66	27	Horizontal	PASS
14156.41	46.31	--	--	74.0	--	54.0	27.69	284	Horizontal	PASS
15895.17	46.19	--	--	74.0	--	54.0	27.81	222	Horizontal	PASS
21143.09	48.01	--	--	74.0	--	54.0	25.99	344	Horizontal	PASS

802.11b MID CHANNEL 1GHz to 6GHz, ANT V



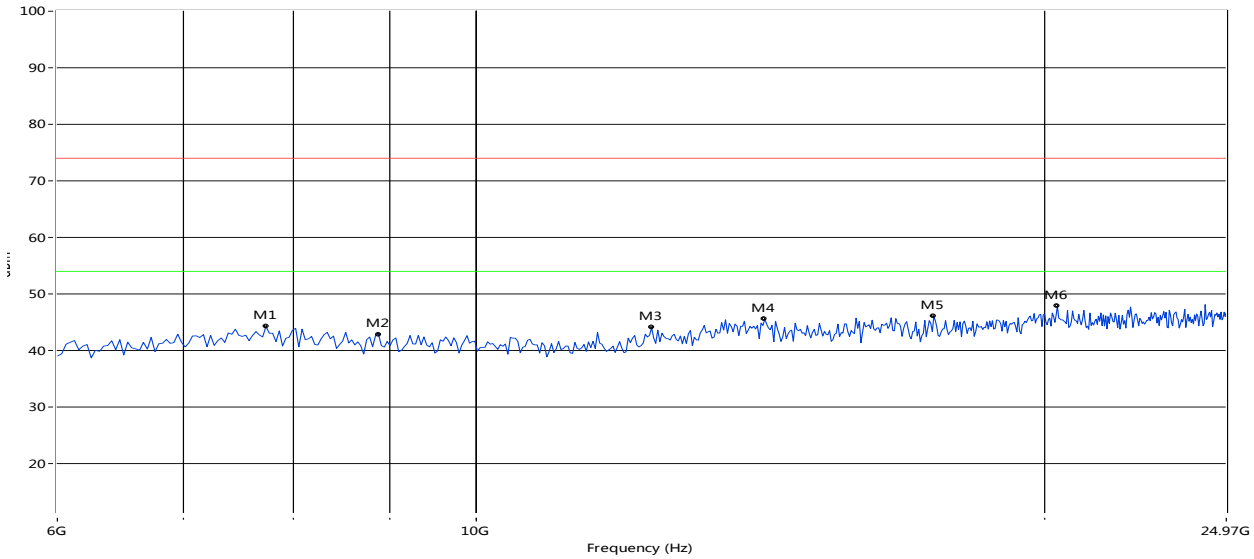
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2436.641	106.48	--	--	N/A	--	N/A	282.6	Vertical	N/A
3743.064	42.91	--	--	74.0	--	54.0	98.9	Vertical	PASS
4802.549	46.16	--	--	74.0	--	54.0	359.6	Vertical	PASS

802.11b MID CHANNEL 1GHz to 6GHz, ANT H



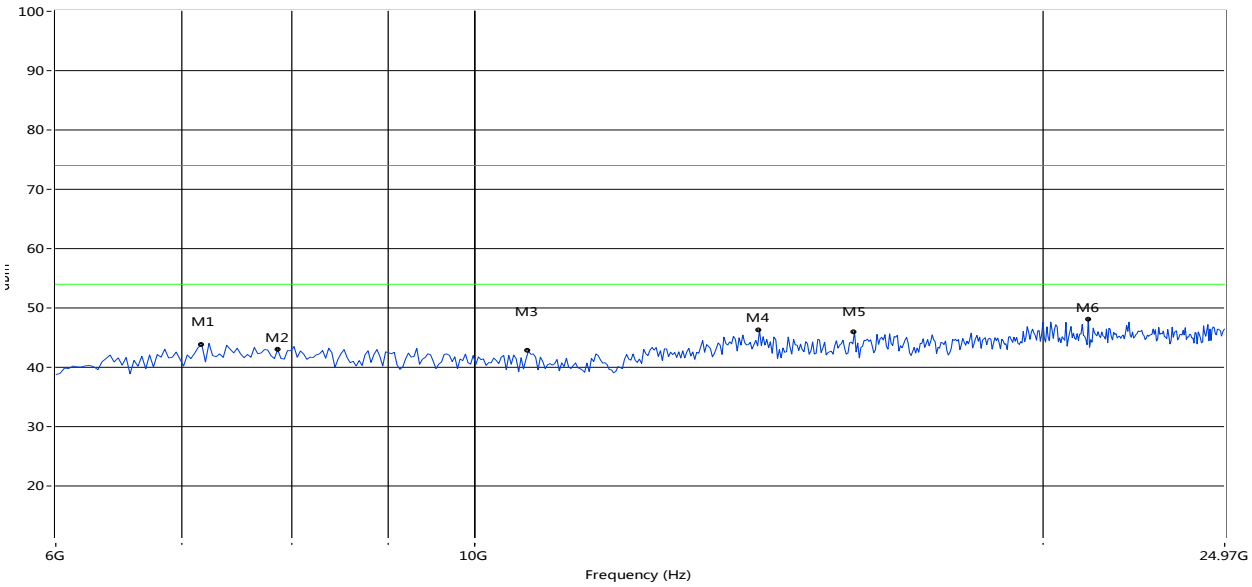
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1256.936	42.00	--	--	74.0	--	54.0	116.7	Horizontal	PASS
1406.398	42.33	--	--	74.0	--	54.0	232.5	Horizontal	PASS
1702.824	41.32	--	--	74.0	--	54.0	163.5	Horizontal	PASS
2436.141	100.98	--	--	N/A	--	N/A	274.7	Horizontal	N/A
3532.367	43.73	--	--	74.0	--	54.0	359.8	Horizontal	PASS
4225.194	45.08	--	--	74.0	--	54.0	238.3	Horizontal	PASS

802.11b MID CHANNEL 6GHz to 25GHz, ANT V



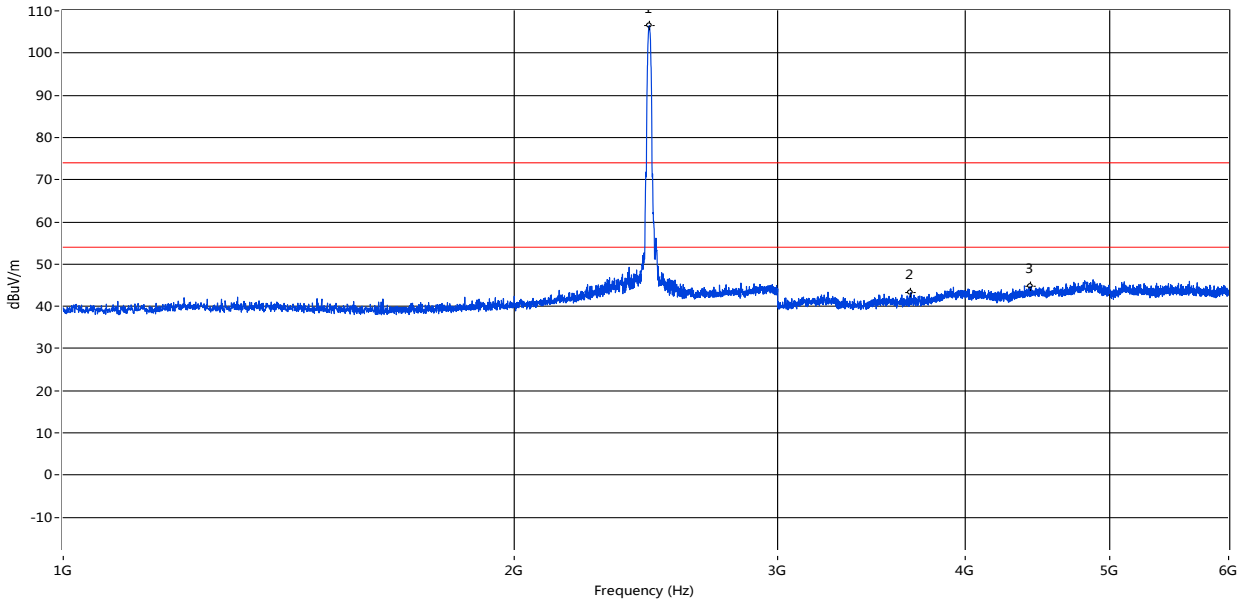
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7738.77	44.24	--	--	74.0	--	54.0	29.76	46	Vertical	PASS
8876.87	42.84	--	--	74.0	--	54.0	31.16	242	Vertical	PASS
12386.02	44.03	--	--	74.0	--	54.0	29.97	69	Vertical	PASS
14219.63	45.59	--	--	74.0	--	54.0	28.41	57	Vertical	PASS

802.11b MID CHANNEL 6GHz to 25GHz, ANT H



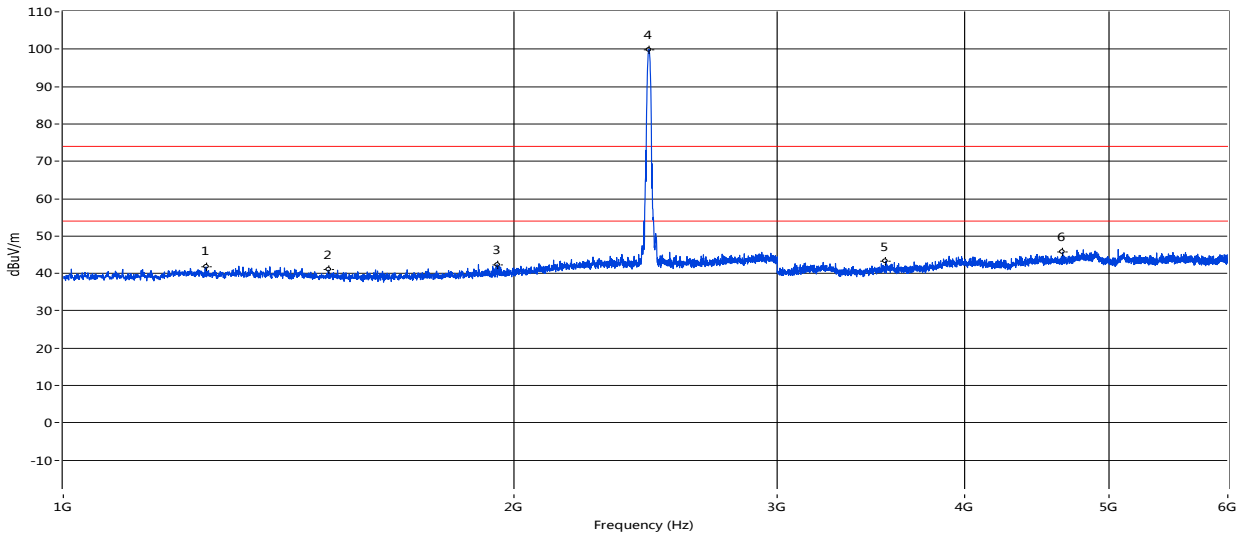
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.79	--	--	74.0	--	54.0	30.21	27	Horizontal	PASS
7865.22	42.99	--	--	74.0	--	54.0	31.01	327	Horizontal	PASS
10678.87	42.74	--	--	74.0	--	54.0	31.26	328	Horizontal	PASS
14156.41	46.24	--	--	74.0	--	54.0	27.76	201	Horizontal	PASS
15895.17	45.98	--	--	74.0	--	54.0	28.02	312	Horizontal	PASS
21143.09	48.05	--	--	74.0	--	54.0	25.95	194	Horizontal	PASS

802.11b HIGH CHANNEL 1GHz to 6GHz, ANT V



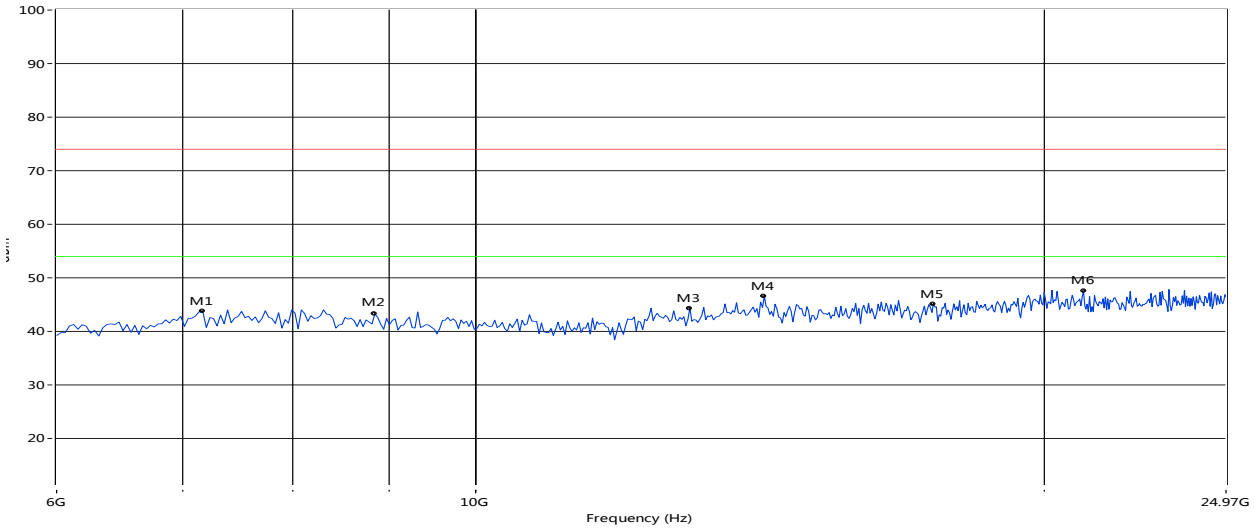
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2462.134	106.47	--	--	N/A	--	N/A	287.2	Vertical	N/A
3681.580	43.27	--	--	74.0	--	54.0	67.0	Vertical	PASS
4421.645	44.69	--	--	74.0	--	54.0	84.4	Vertical	PASS

802.11b HIGH CHANNEL 1GHz to 6GHz, ANT H



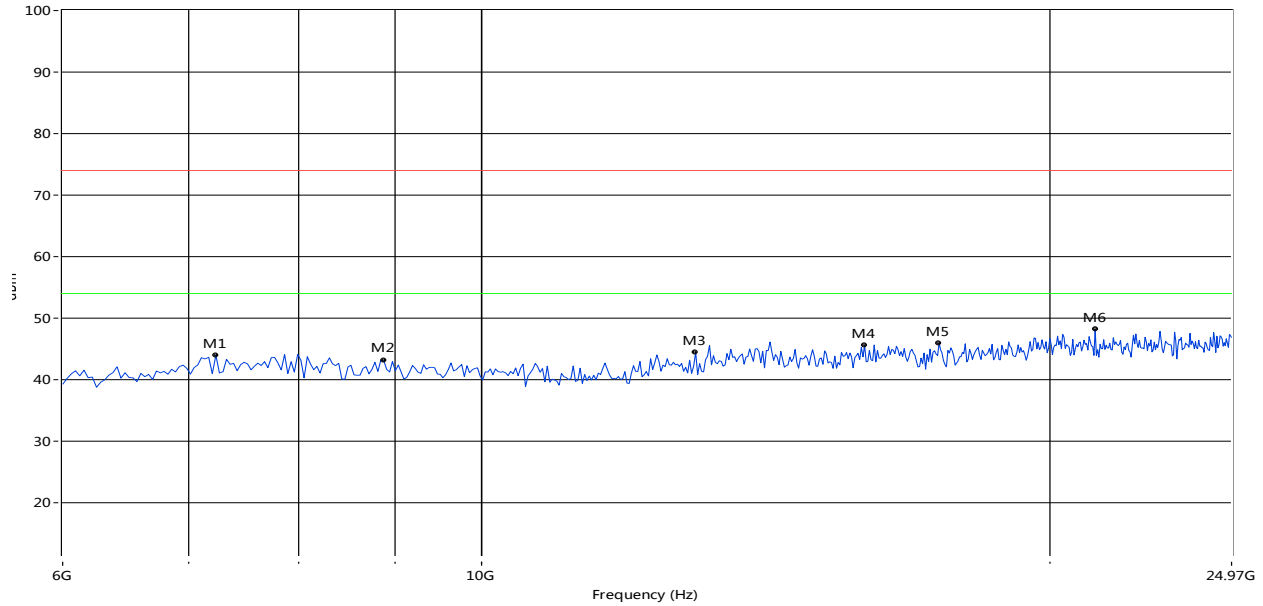
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1245.939	41.71	--	--	74.0	--	54.0	140.8	Horizontal	PASS
1503.374	40.92	--	--	74.0	--	54.0	283.7	Horizontal	PASS
1949.263	42.34	--	--	74.0	--	54.0	231.3	Horizontal	PASS
2461.135	99.80	--	--	N/A	--	N/A	274.5	Horizontal	N/A
3545.864	43.31	--	--	74.0	--	54.0	359.6	Horizontal	PASS
4654.086	45.70	--	--	74.0	--	54.0	76.1	Horizontal	PASS

802.11b HIGH CHANNEL 6GHz to 25GHz, ANT V



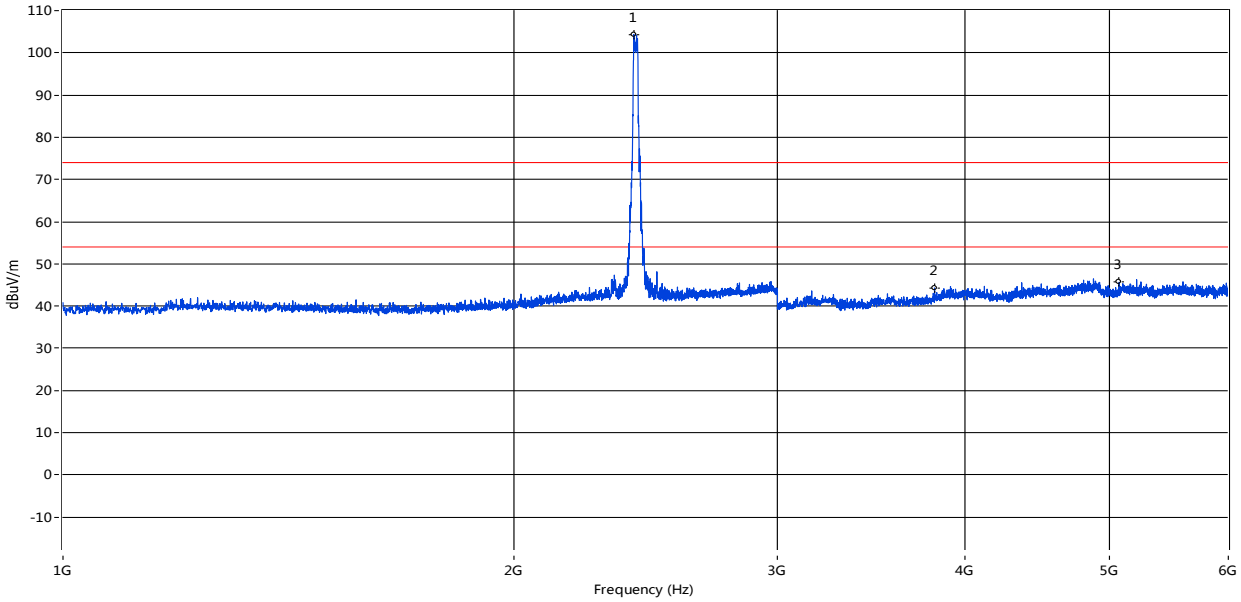
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.72	--	--	74.0	--	54.0	30.28	296	Vertical	PASS
8845.26	43.30	--	--	74.0	--	54.0	30.70	290	Vertical	PASS
12986.69	44.30	--	--	74.0	--	54.0	29.70	52	Vertical	PASS
14219.63	46.62	--	--	74.0	--	54.0	27.38	100	Vertical	PASS
17475.87	45.14	--	--	74.0	--	54.0	28.86	84	Vertical	PASS
20985.02	47.58	--	--	74.0	--	54.0	26.42	153	Vertical	PASS

802.11b HIGH CHANNEL 6GHz to 25GHz, ANT H



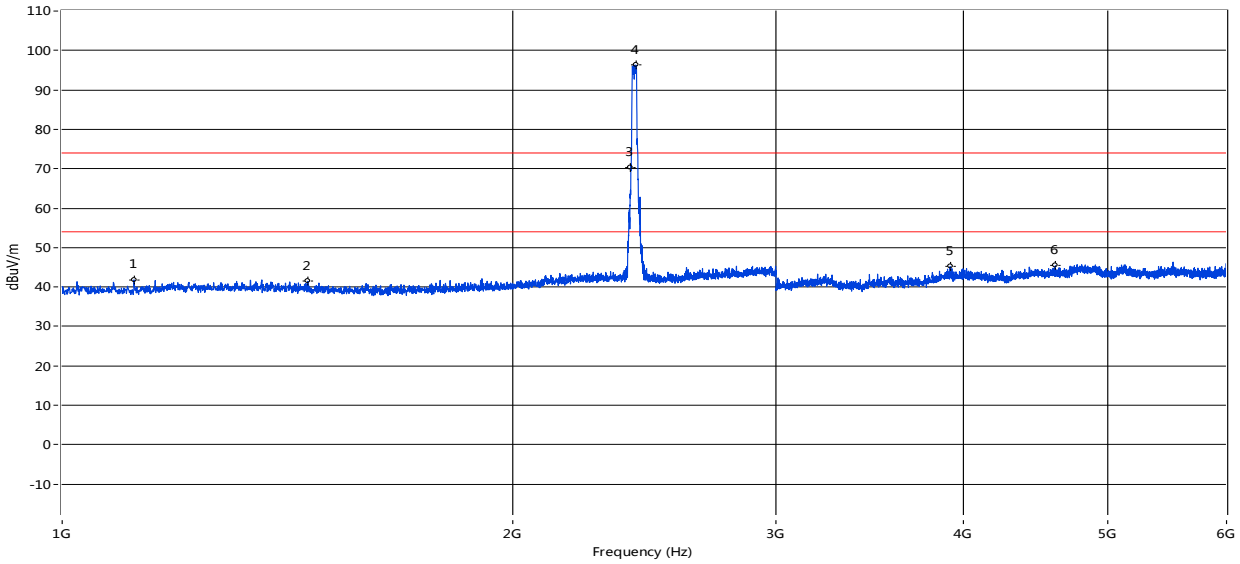
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7232.95	43.95	--	--	74.0	--	54.0	30.05	239	Horizontal	PASS
8876.87	43.08	--	--	74.0	--	54.0	30.92	325	Horizontal	PASS
12986.69	44.48	--	--	74.0	--	54.0	29.52	170	Horizontal	PASS

\ 802.11g LOW CHANNEL 1GHz to 6GHz, ANT V



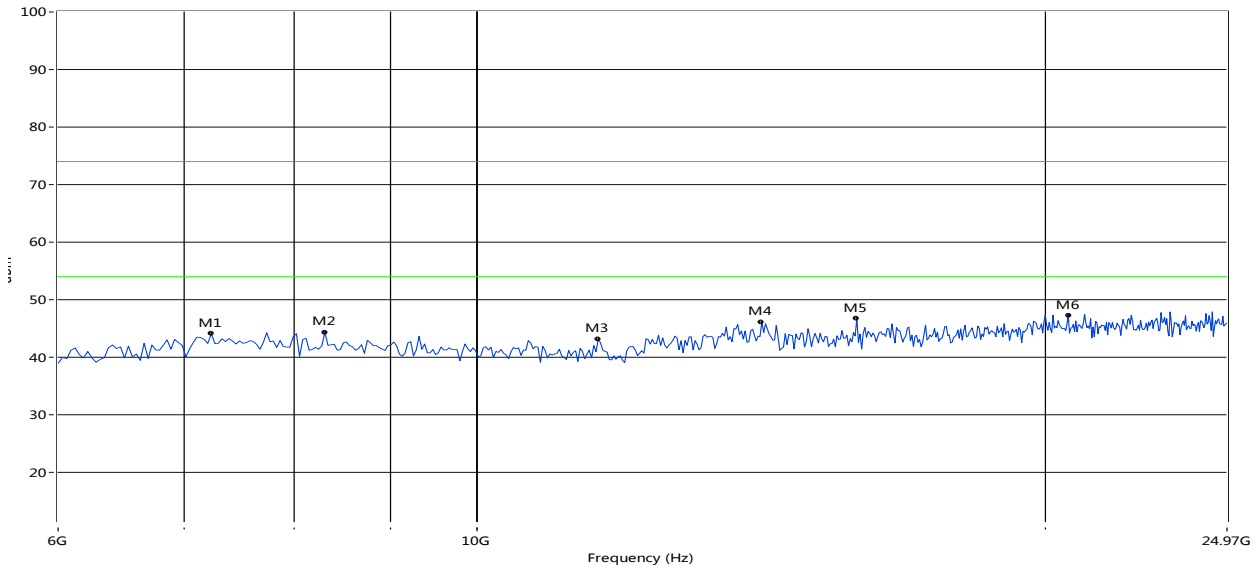
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2405.649	104.36	--	--	N/A	--	N/A	287.5	Vertical	N/A
3819.545	44.30	--	--	74.0	--	54.0	343.9	Vertical	PASS
5072.482	45.63	--	--	74.0	--	54.0	256.4	Vertical	PASS

802.11g LOW CHANNEL 1GHz to 6GHz, ANT H



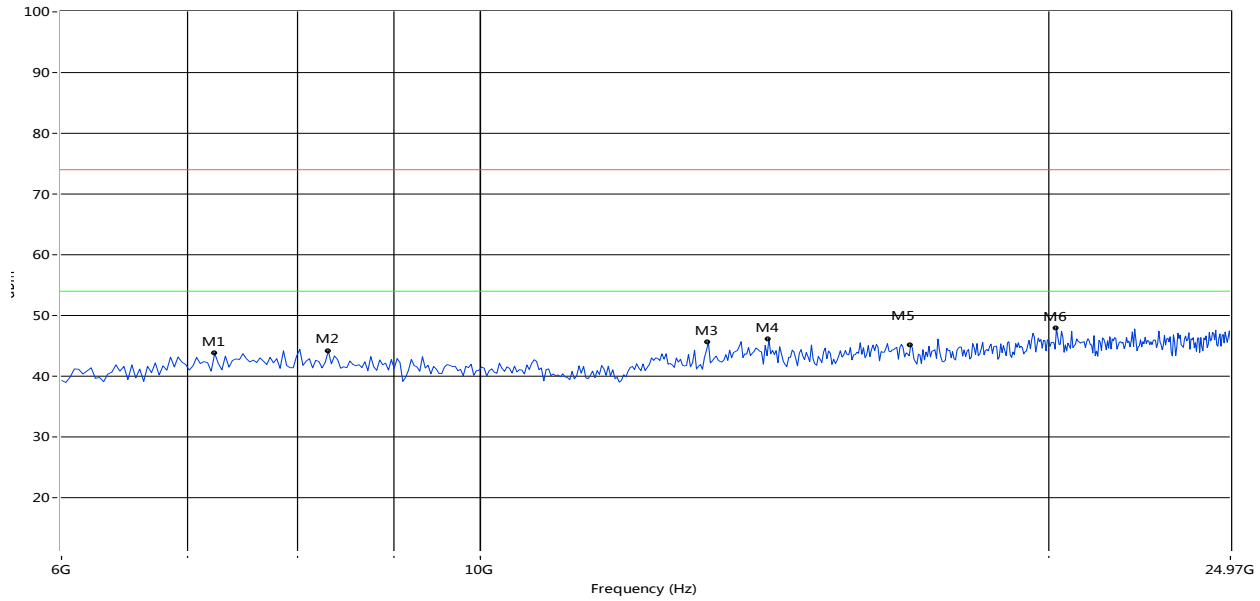
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1116.971	41.82	--	--	74.0	--	54.0	39.1	Horizontal	PASS
1459.385	41.48	--	--	74.0	--	54.0	15.0	Horizontal	PASS
2399.150	70.30	--	--	74.0	--	54.0	0.7	Horizontal	PASS
2419.145	96.25	--	--	N/A	--	N/A	1.0	Horizontal	N/A
3921.520	45.21	--	--	74.0	--	54.0	140.1	Horizontal	PASS
4610.597	45.39	--	--	74.0	--	54.0	197.5	Horizontal	PASS

802.11g LOW CHANNEL 6GHz to 25GHz, ANT V



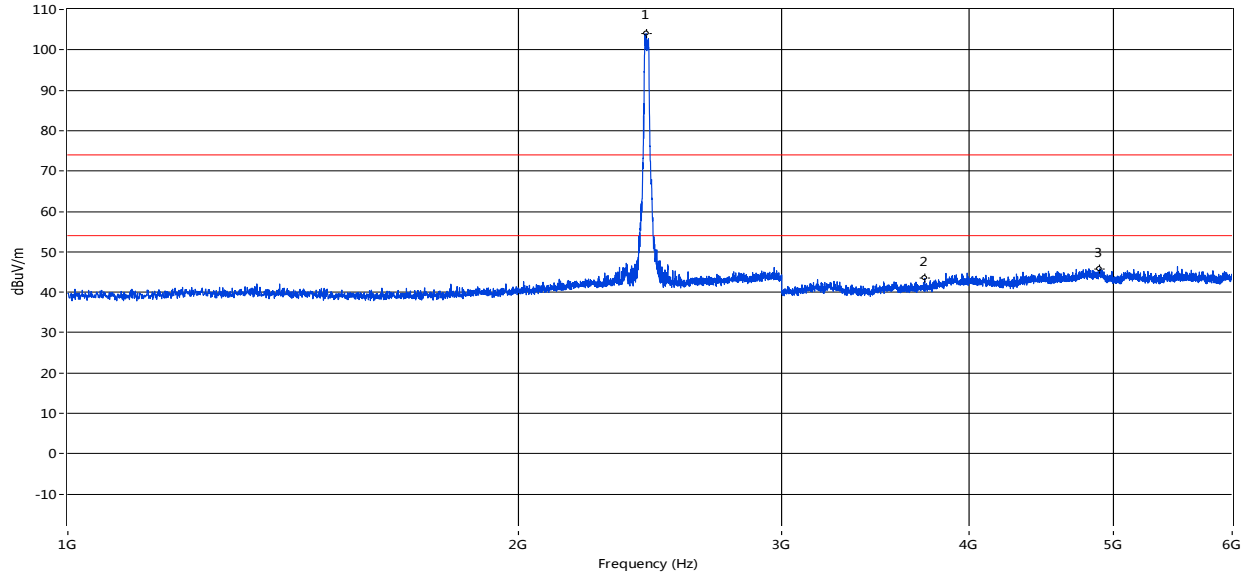
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7232.95	44.10	--	--	74.0	--	54.0	29.90	254	Vertical	PASS
8307.82	44.31	--	--	74.0	--	54.0	29.69	131	Vertical	PASS
11595.67	43.11	--	--	74.0	--	54.0	30.89	20	Vertical	PASS

802.11g LOW CHANNEL 6GHz to 25GHz, ANT H



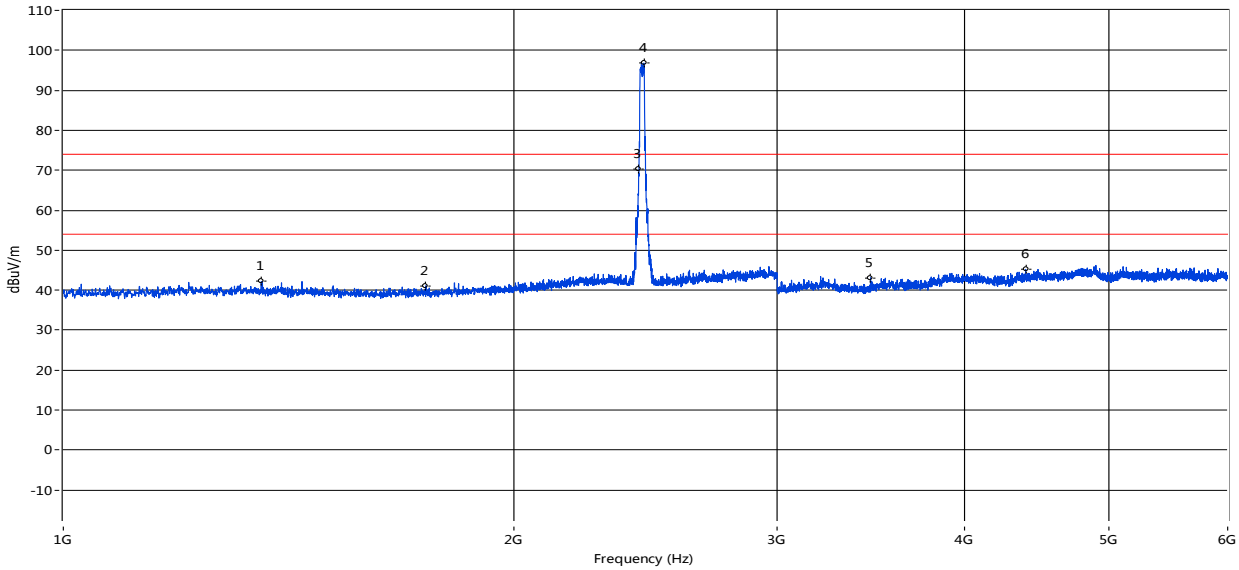
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarizatio n	Verdict
7232.95	43.73	--	--	74.0	--	54.0	30.27	303	Horizontal	PASS
8307.82	44.13	--	--	74.0	--	54.0	29.87	313	Horizontal	PASS
13207.99	45.59	--	--	74.0	--	54.0	28.41	250	Horizontal	PASS

802.11g MID CHANNEL 1GHz to 6GHz, ANT V



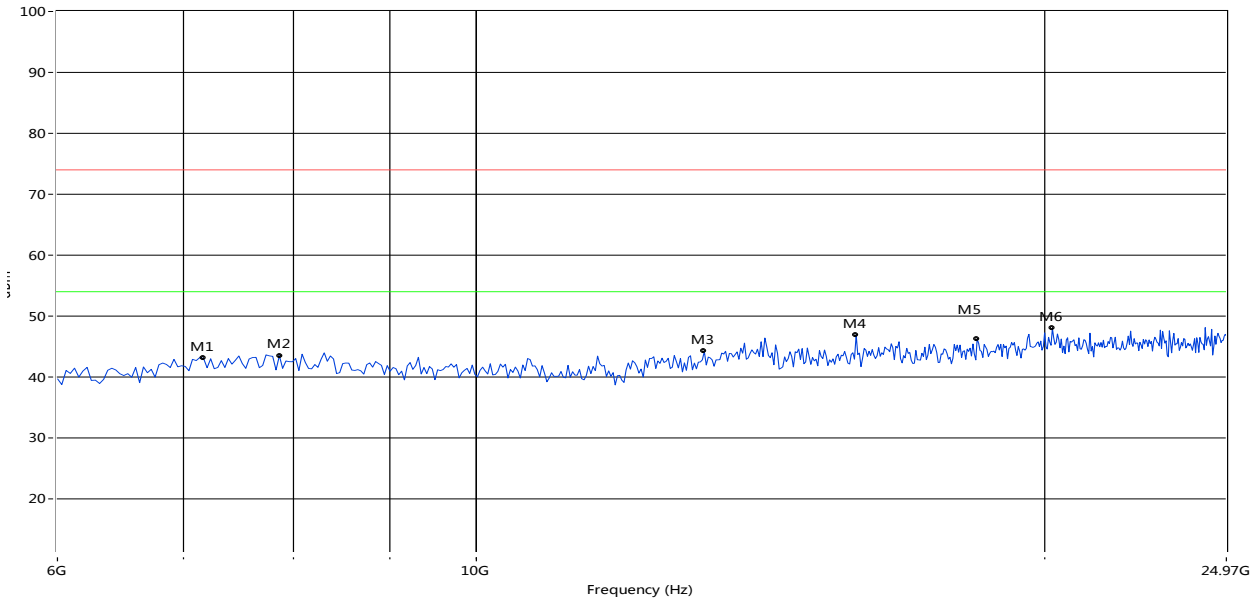
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2434.641	104.05	--	--	N/A	--	N/A	283.8	Vertical	N/A
3737.816	43.44	--	--	74.0	--	54.0	353.5	Vertical	PASS
4894.026	45.66	--	--	74.0	--	54.0	359.9	Vertical	PASS

802.11g MID CHANNEL 1GHz to 6GHz, ANT H



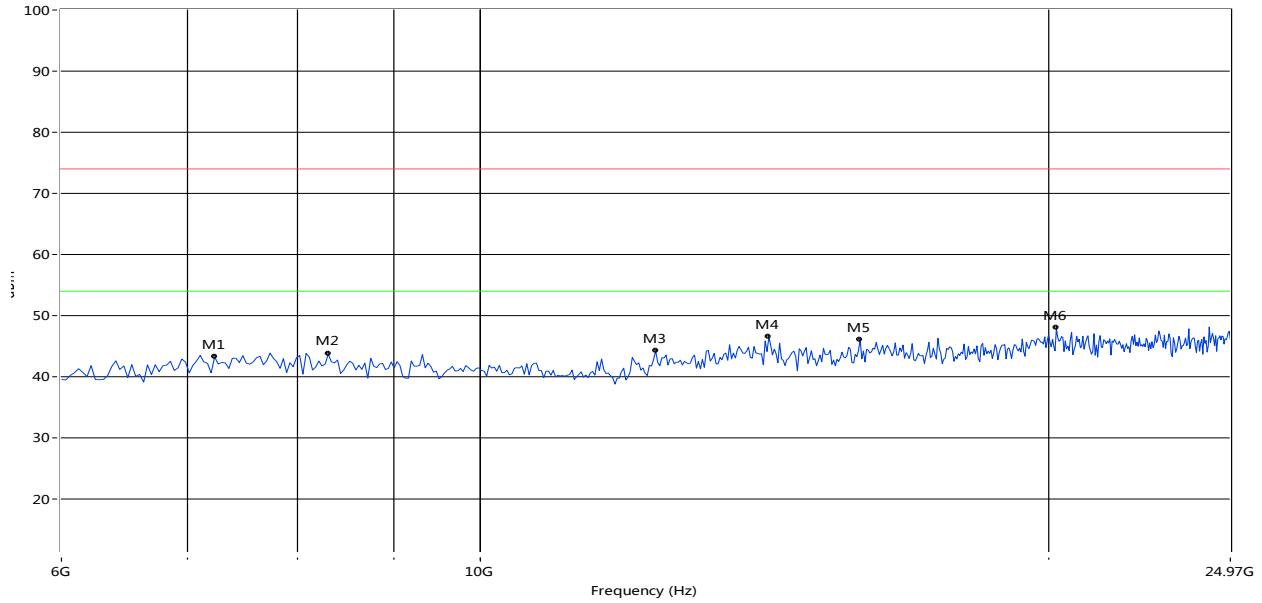
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1356.411	42.15	--	--	74.0	--	54.0	67.9	Horizontal	PASS
1746.813	41.06	--	--	74.0	--	54.0	0.1	Horizontal	PASS
2425.144	70.27	--	--	74.0	--	54.0	267.5	Horizontal	PASS
2443.139	96.81	--	--	N/A	--	N/A	273.8	Horizontal	N/A
3463.384	43.11	--	--	74.0	--	54.0	359.3	Horizontal	PASS
4396.901	45.22	--	--	74.0	--	54.0	261.7	Horizontal	PASS

802.11g MID CHANNEL 6GHz to 25GHz, ANT V



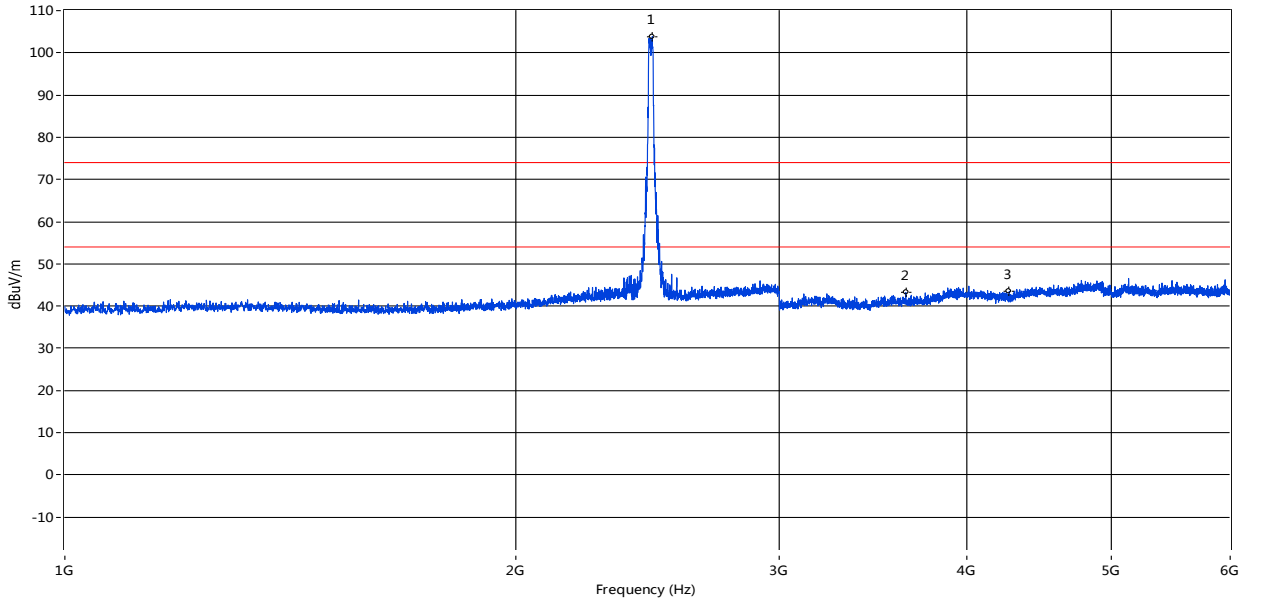
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.08	--	--	74.0	--	54.0	30.92	279	Vertical	PASS
7865.22	43.50	--	--	74.0	--	54.0	30.50	80	Vertical	PASS
13207.99	44.20	--	--	74.0	--	54.0	29.80	308	Vertical	PASS

802.11g MID CHANNEL 6GHz to 25GHz, ANT H



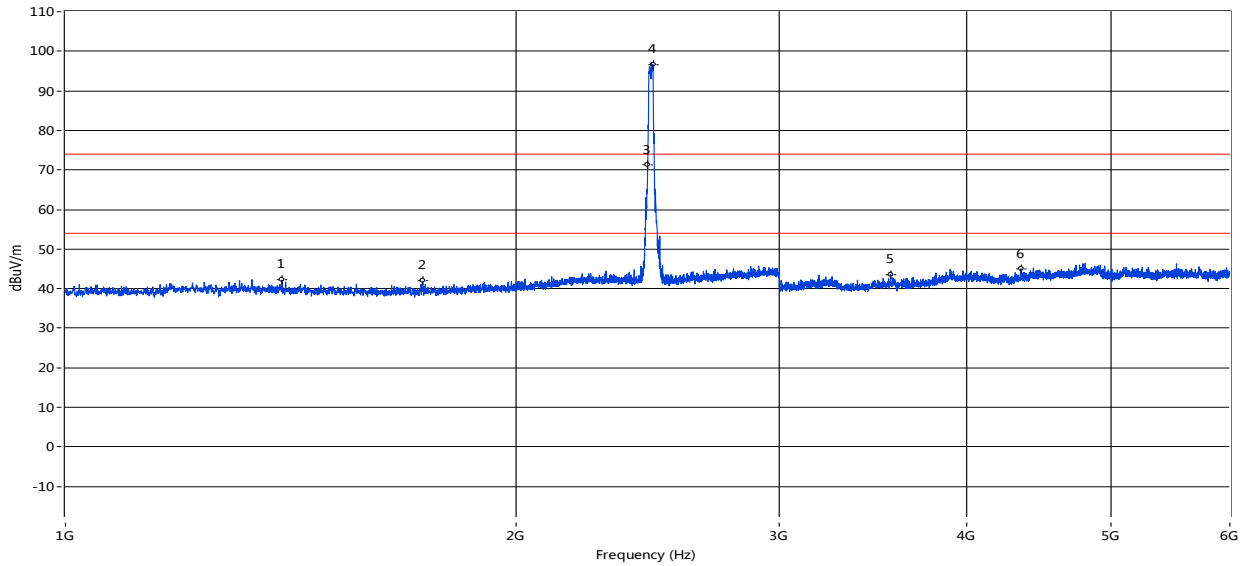
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7232.95	43.23	--	--	74.0	--	54.0	30.77	242	Horizontal	PASS
8307.82	43.70	--	--	74.0	--	54.0	30.30	51	Horizontal	PASS
12386.02	44.25	--	--	74.0	--	54.0	29.75	59	Horizontal	PASS

802.11g HIGH CHANNEL 1GHz to 6GHz, ANT V



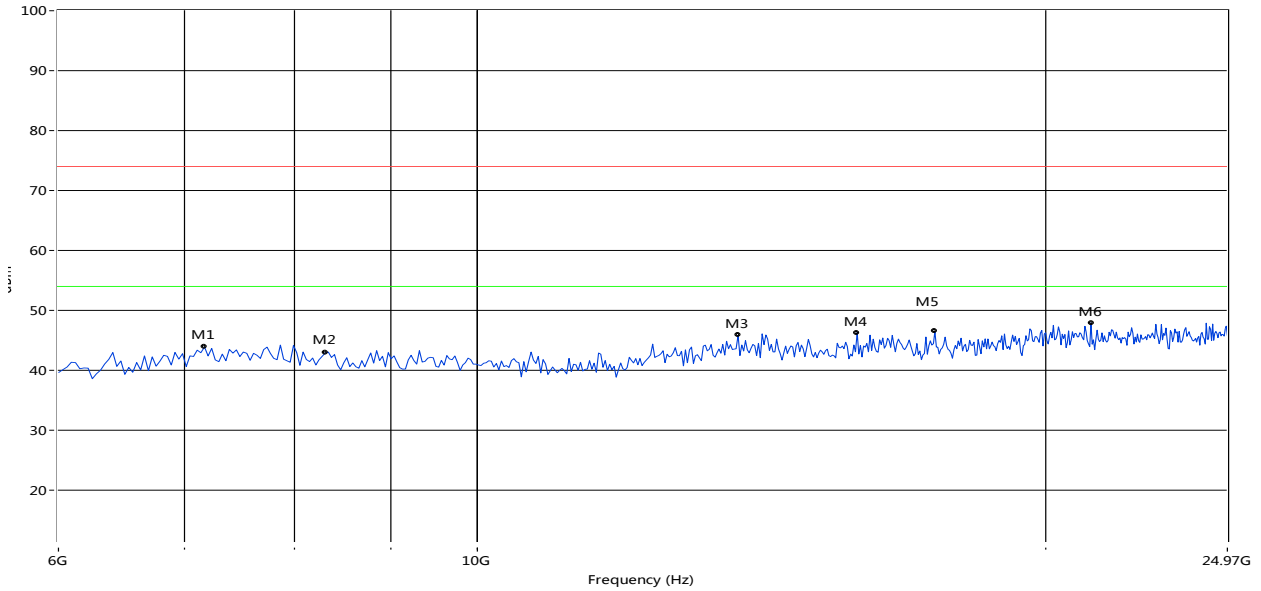
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2467.633	103.84	--	--	N/A	--	N/A	300.1	Vertical	N/A
3644.089	43.22	--	--	74.0	--	54.0	290.5	Vertical	PASS
4271.682	43.43	--	--	74.0	--	54.0	188.3	Vertical	PASS

802.11g HIGH CHANNEL 1GHz to 6GHz, ANT H



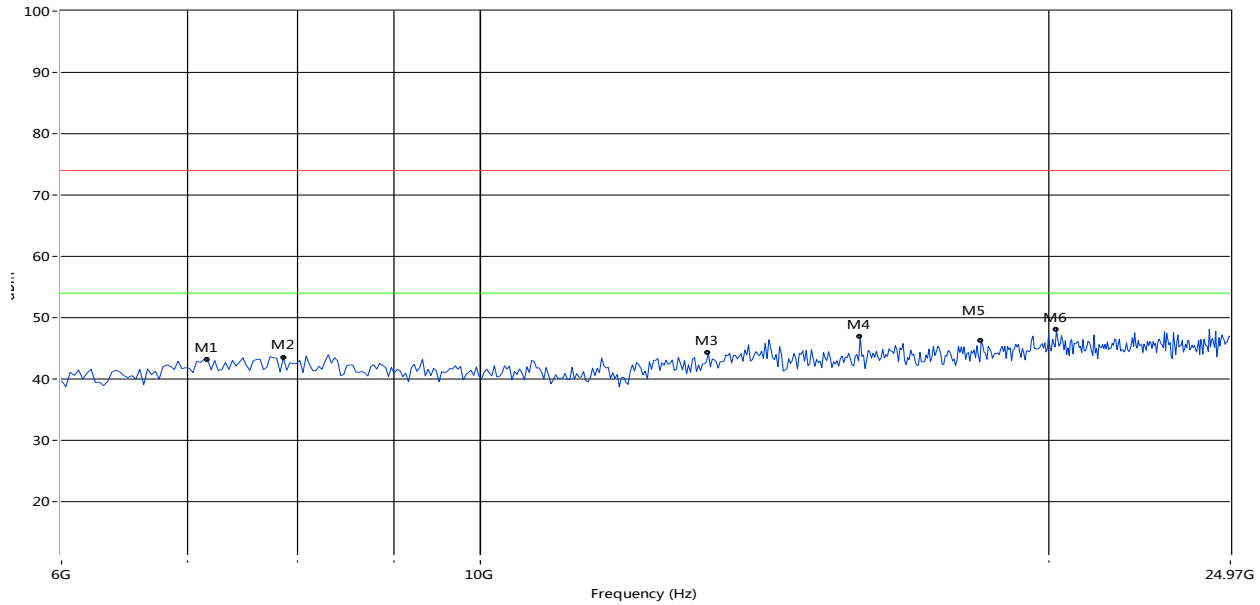
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1395.401	42.17	--	--	74.0	--	54.0	105.3	Horizontal	PASS
1732.317	41.91	--	--	74.0	--	54.0	1.1	Horizontal	PASS
2450.137	71.20	--	--	74.0	--	54.0	360.1	Horizontal	PASS
2469.633	96.68	--	--	N/A	--	N/A	289.6	Horizontal	N/A
3560.110	43.58	--	--	74.0	--	54.0	81.2	Horizontal	PASS
4351.162	45.01	--	--	74.0	--	54.0	128.3	Horizontal	PASS

802.11g HIGH CHANNEL 6GHz to 25GHz, ANT V



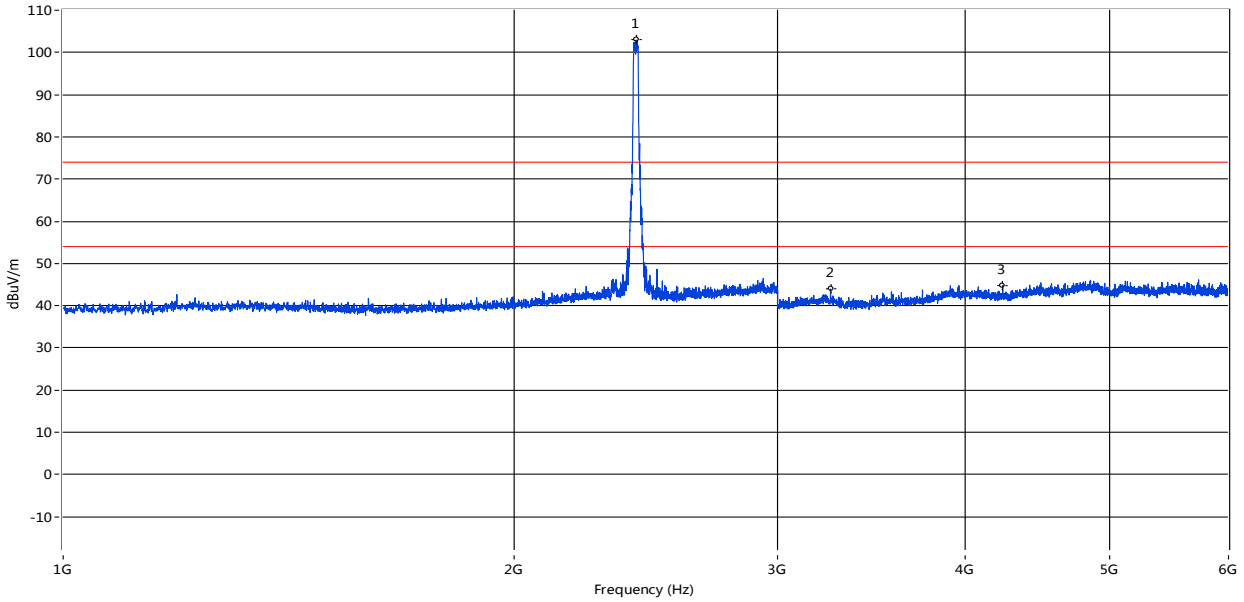
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.88	--	--	74.0	--	54.0	30.12	15	Vertical	PASS
8307.82	42.88	--	--	74.0	--	54.0	31.12	40	Vertical	PASS
13745.42	45.86	--	--	74.0	--	54.0	28.14	182	Vertical	PASS

802.11g HIGH CHANNEL 6GHz to 25GHz, ANT H



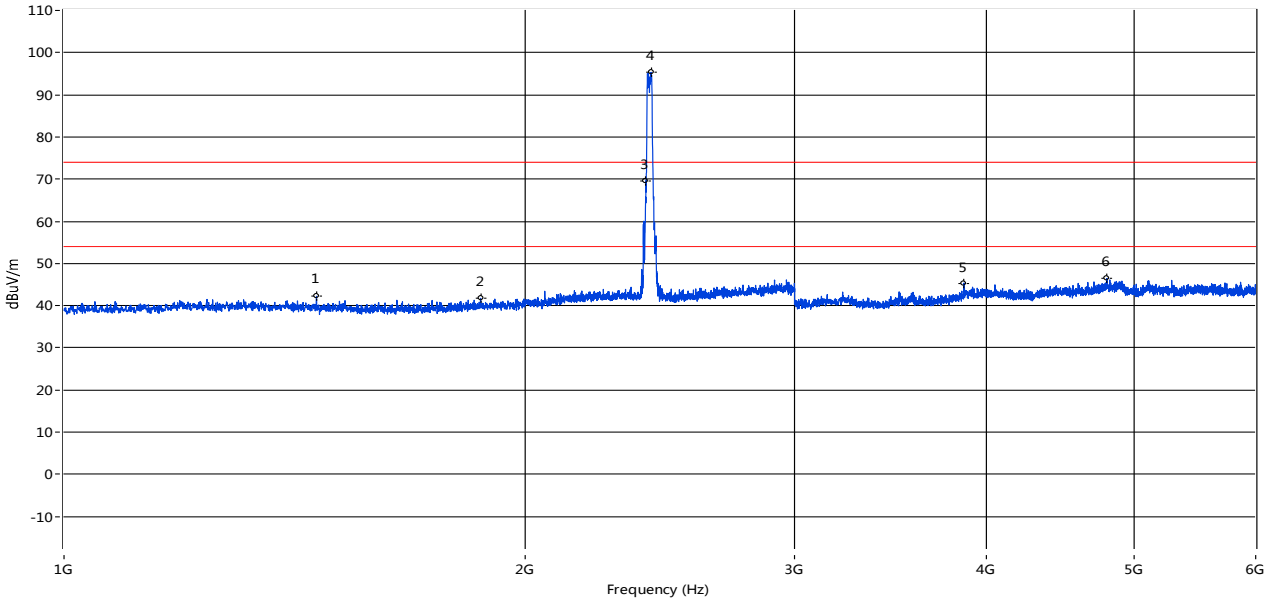
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.08	--	--	74.0	--	54.0	30.92	254	Horizontal	PASS
7865.22	43.50	--	--	74.0	--	54.0	30.50	321	Horizontal	PASS
13207.99	44.20	--	--	74.0	--	54.0	29.80	211	Horizontal	PASS

802.11n-20MHz LOW CHANNEL 1GHz to 6GHz, ANT V



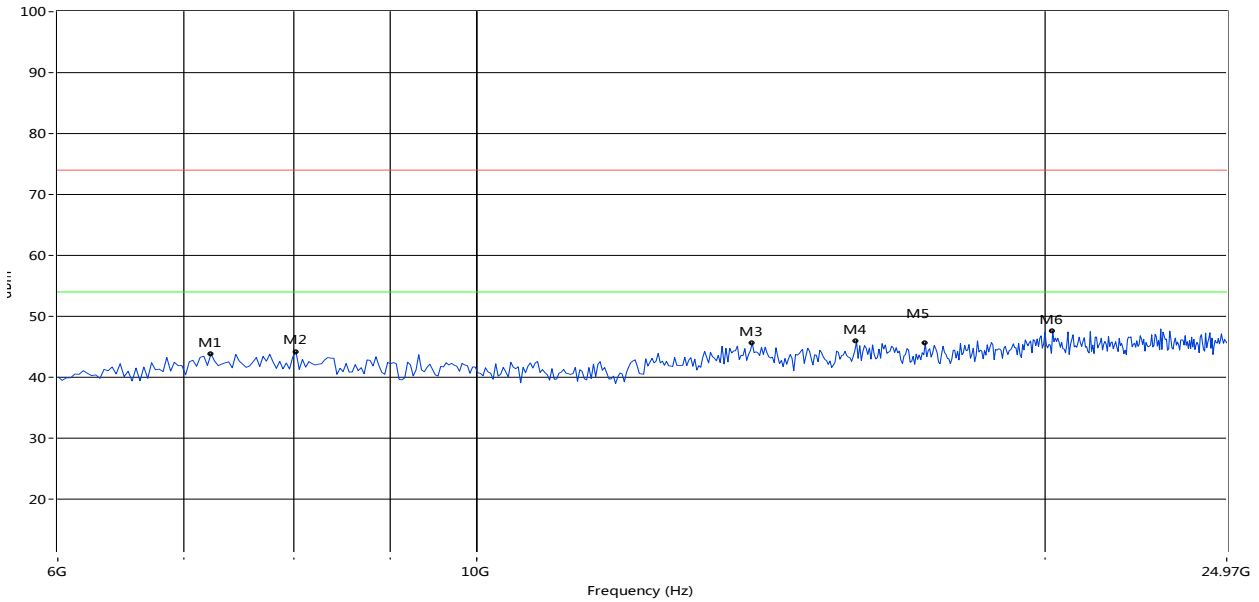
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2413.147	102.94	--	--	N/A	--	N/A	281.5	Vertical	N/A
3254.186	43.95	--	--	74.0	--	54.0	143.5	Vertical	PASS
4239.440	44.83	--	--	74.0	--	54.0	268.1	Vertical	PASS

802.11n-20MHz LOW CHANNEL 1GHz to 6GHz, ANT H



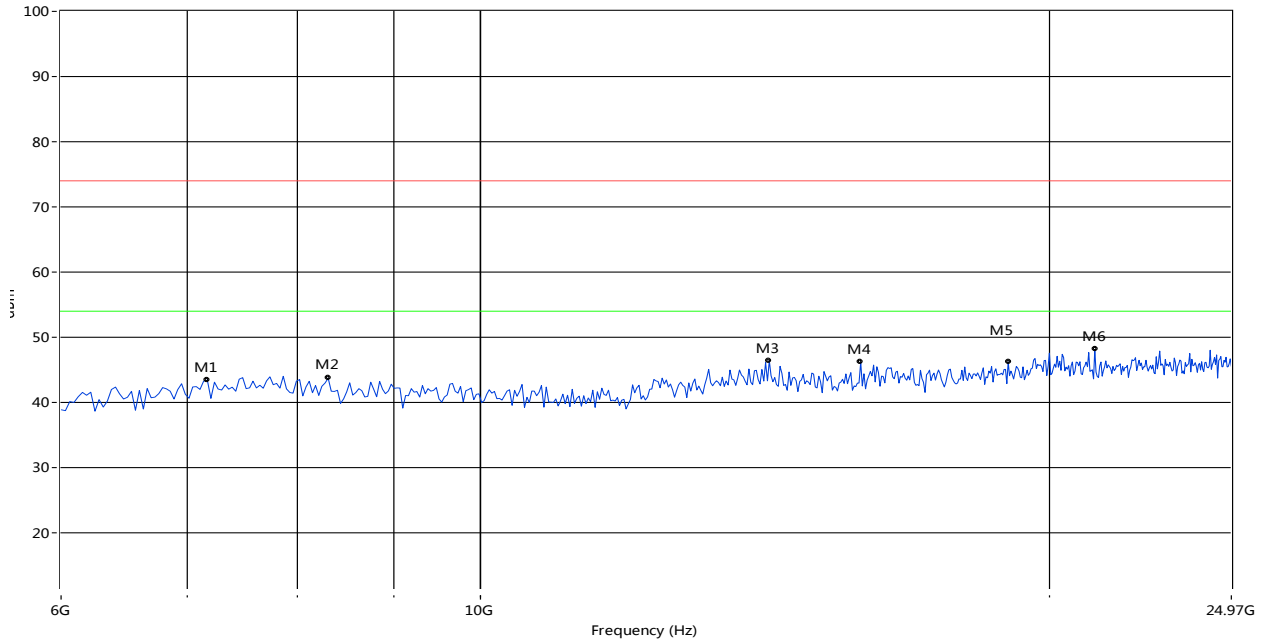
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1461.885	42.25	--	--	74.0	--	54.0	101.1	Horizontal	PASS
1870.782	41.75	--	--	74.0	--	54.0	7.5	Horizontal	PASS
2399.150	69.62	--	--	74.0	--	54.0	0.0	Horizontal	PASS
2418.145	95.34	--	--	N/A	--	N/A	270.5	Horizontal	N/A
3869.783	45.37	--	--	74.0	--	54.0	1.0	Horizontal	PASS
4795.051	46.40	--	--	74.0	--	54.0	164.9	Horizontal	PASS

802.11n-20MHz LOW CHANNEL 6GHz to 25GHz, ANT V



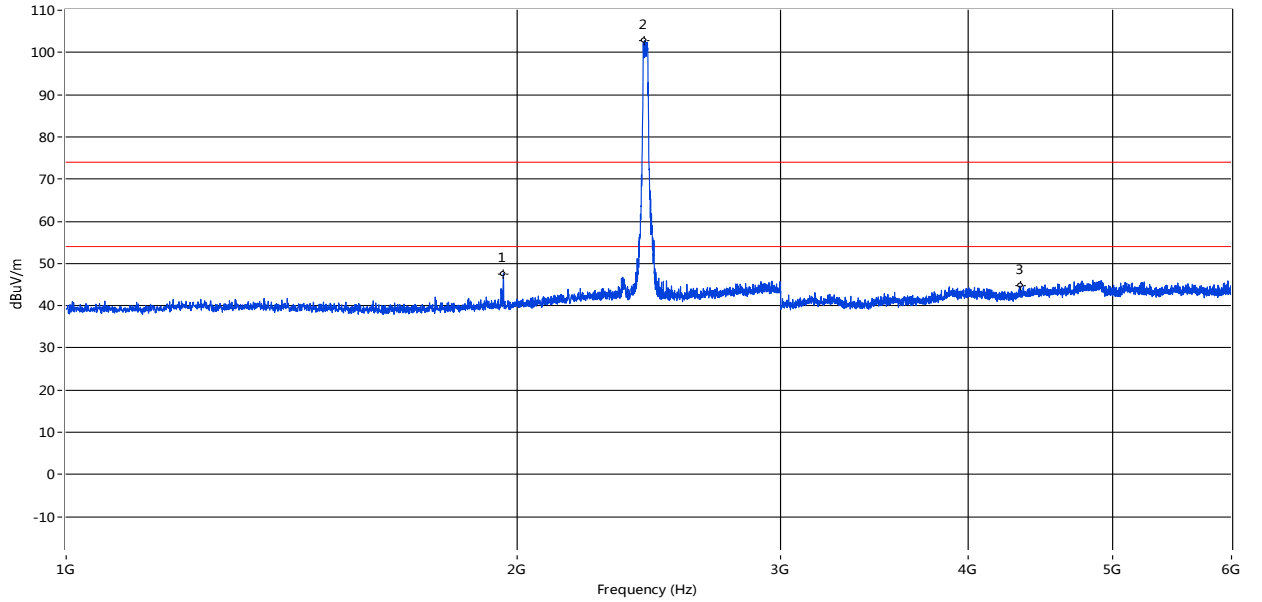
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7232.95	43.83	--	--	74.0	--	54.0	30.17	257	Vertical	PASS
8023.29	44.10	--	--	74.0		54.0	29.90	316	Vertical	PASS
13998.34	45.60	--	--	74.0	--	54.0	28.40	186	Vertical	PASS

802.11n-20MHz LOW CHANNEL 6GHz to 25GHz, ANT H



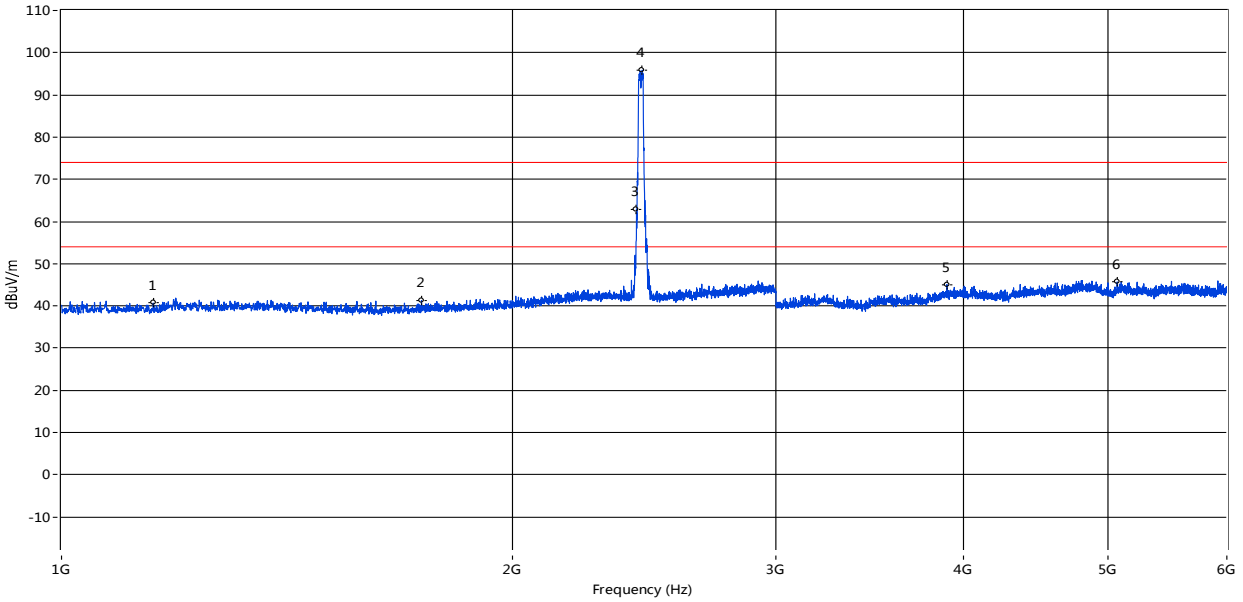
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7169.72	43.45	--	--	74.0	--	54.0	30.55	109	Horizontal	PASS
8307.82	43.72	--	--	74.0	--	54.0	30.28	79	Horizontal	PASS
14219.63	46.40	--	--	74.0	--	54.0	27.60	123	Horizontal	PASS

802.11n-20MHz MID CHANNEL 1GHz to 6GHz, ANT V



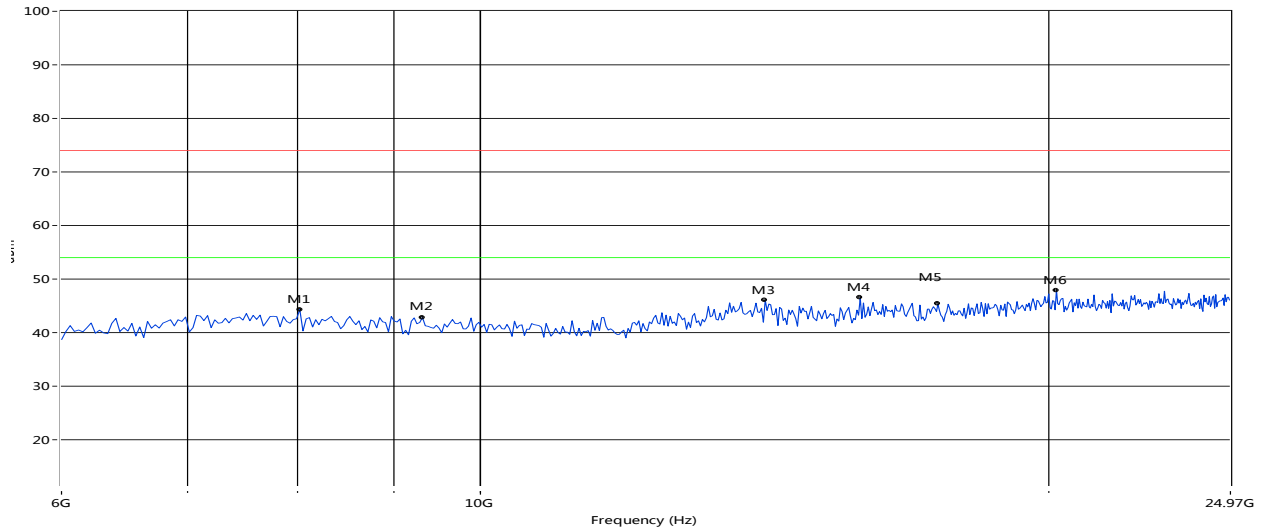
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1958.760	47.59	--	--	74.0	--	54.0	351.7	Vertical	PASS
2433.642	102.83		--	N/A	--	N/A	297.8	Vertical	N/A
4334.666	44.69	--	--	74.0	--	54.0	101.2	Vertical	PASS

802.11n-20MHz MID CHANNEL 1GHz to 6GHz, ANT H



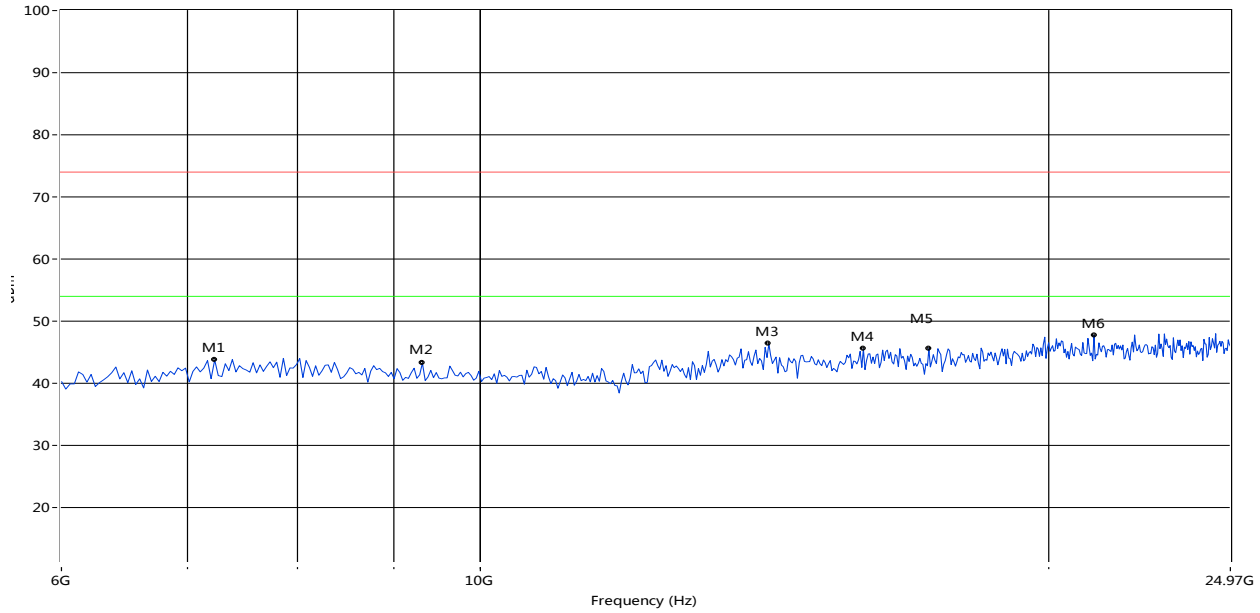
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1151.462	40.68	--	--	74.0	--	54.0	161.2	Horizontal	PASS
1739.315	41.25	--	--	74.0	--	54.0	6.6	Horizontal	PASS
2420.645	62.93	--	--	74.0	--	54.0	0.9	Horizontal	PASS
2442.139	95.89	--	--	N/A	--	N/A	277.5	Horizontal	N/A
3901.275	45.07	--	--	74.0	--	54.0	157.2	Horizontal	PASS
5068.733	45.70	--	--	74.0	--	54.0	148.7	Horizontal	PASS

802.11n-20MHz MID CHANNEL 6GHz to 25GHz, ANT V



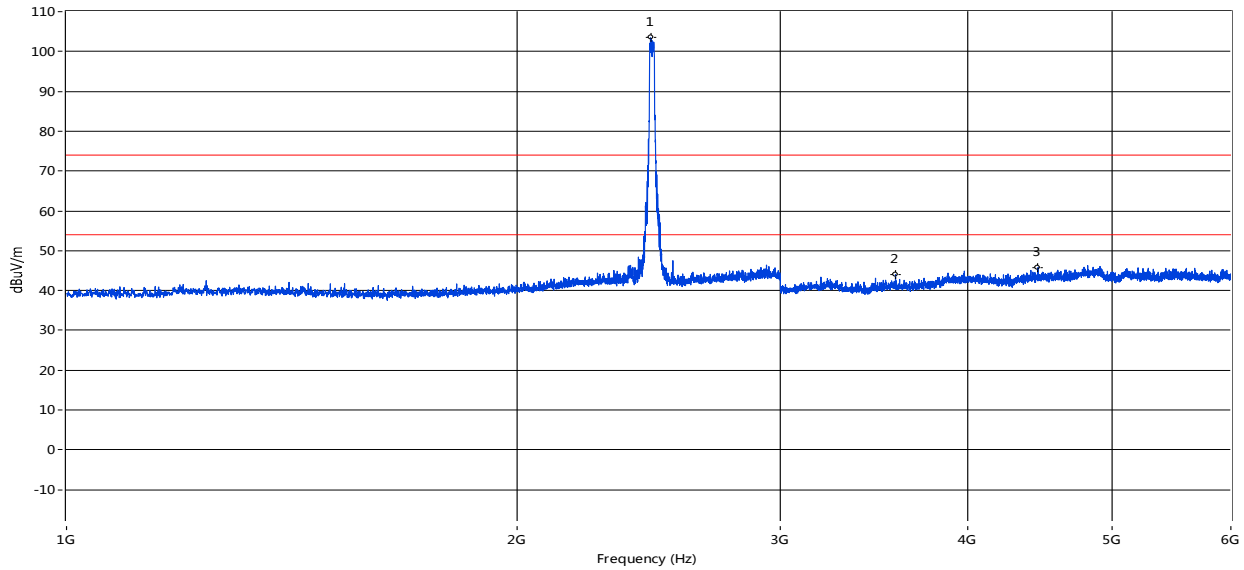
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
8023.29	44.31	--	--	74.0	--	54.0	29.69	4	Vertical	PASS
9319.47	42.84	--	--	74.0	--	54.0	31.16	28	Vertical	PASS
14156.41	46.06	--	--	74.0	--	54.0	27.94	258	Vertical	PASS

802.11n-20MHz MID CHANNEL 6GHz to 25GHz, ANT H



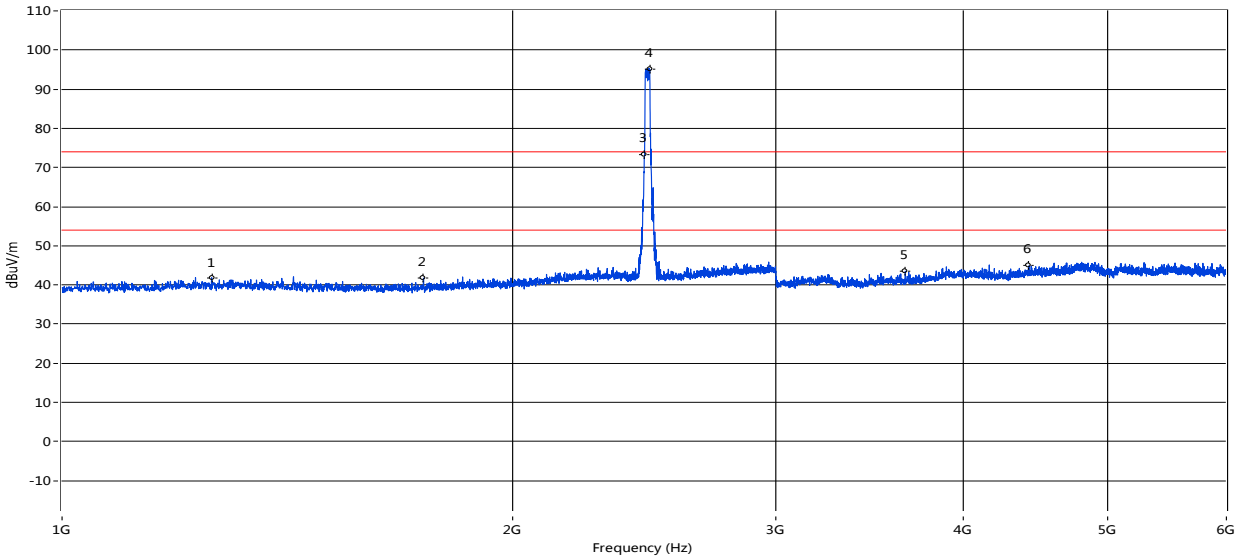
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7232.95	43.75	--	--	74.0	--	54.0	30.25	45	Horizontal	PASS
9319.47	43.26	--	--	74.0	--	54.0	30.74	261	Horizontal	PASS
14219.63	46.32	--	--	74.0	--	54.0	27.68	133	Horizontal	PASS

802.11n-20MHz HIGH CHANNEL 1GHz to 6GHz, ANT V



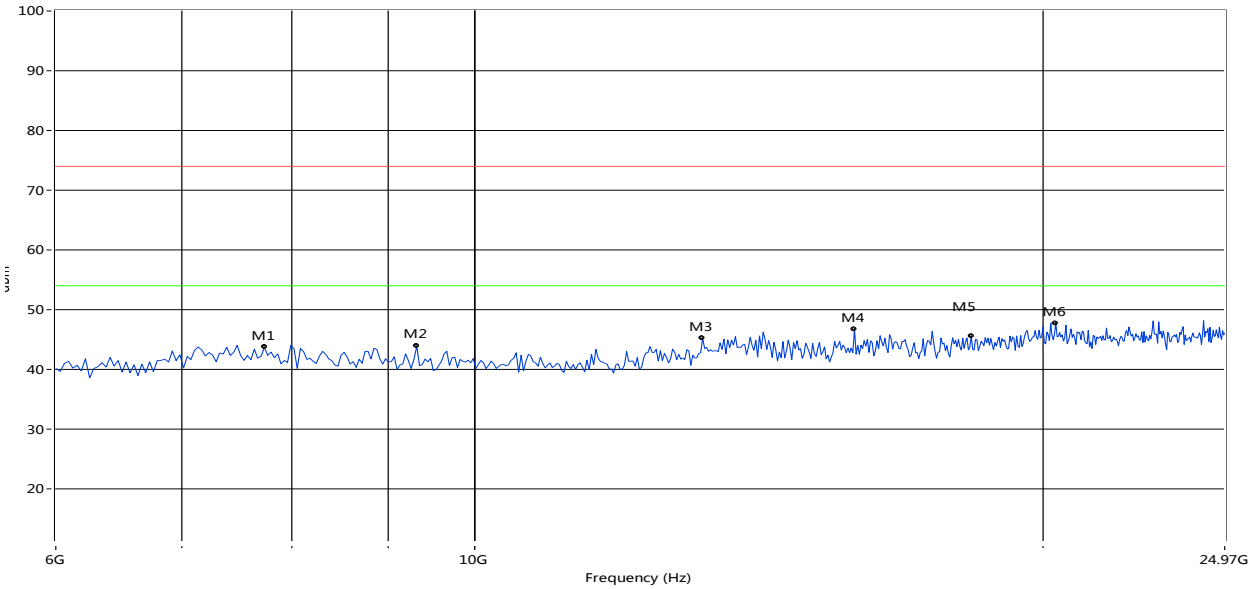
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2456.636	103.45	--	--	N/A	--	N/A	285.3	Vertical	N/A
3581.105	44.06	--	--	74.0	--	54.0	122.8	Vertical	PASS
4459.135	45.75	--	--	74.0	--	54.0	358.2	Vertical	PASS

802.11n-20MHz HIGH CHANNEL 1GHz to 6GHz, ANT H



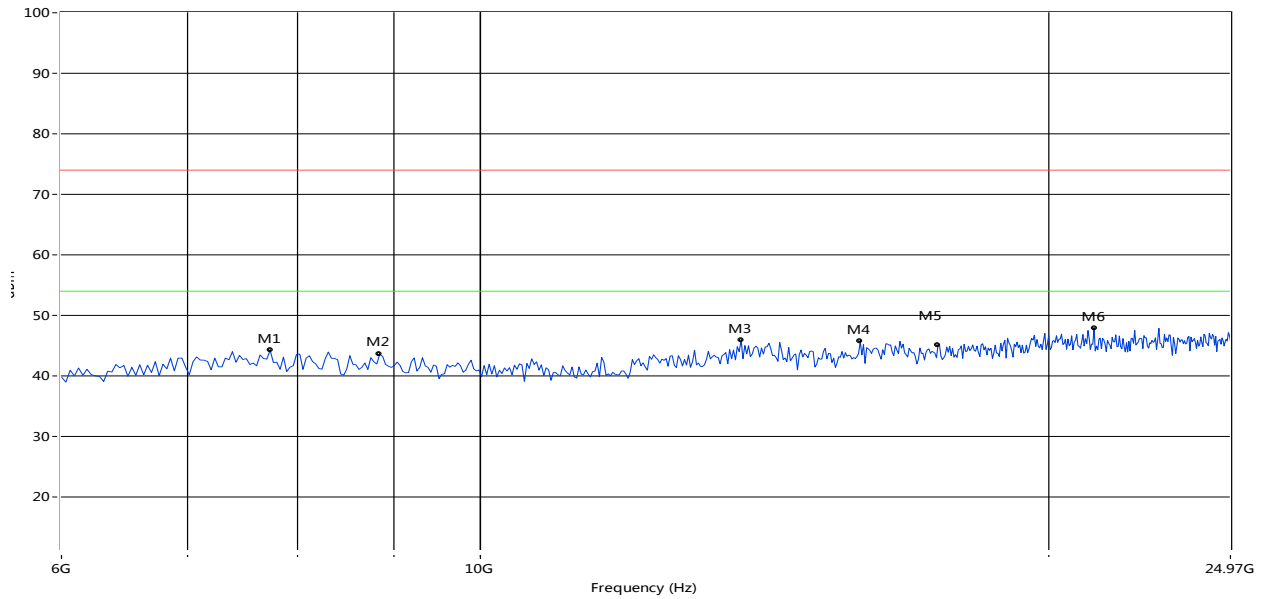
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1258.935	41.84	--	--	74.0	--	54.0	32.8	Horizontal	PASS
1743.814	41.68	--	--	74.0	--	54.0	129.3	Horizontal	PASS
2450.637	73.20	--	--	74.0	--	54.0	348.2	Horizontal	PASS
2470.132	95.09	--	--	N/A	--	N/A	287.4	Horizontal	N/A
3661.335	43.55	--	--	74.0	--	54.0	335.7	Horizontal	PASS
4428.393	44.89	--	--	74.0	--	54.0	-0.8	Horizontal	PASS

802.11n-20MHz HIGH CHANNEL 6GHz to 25GHz, ANT V



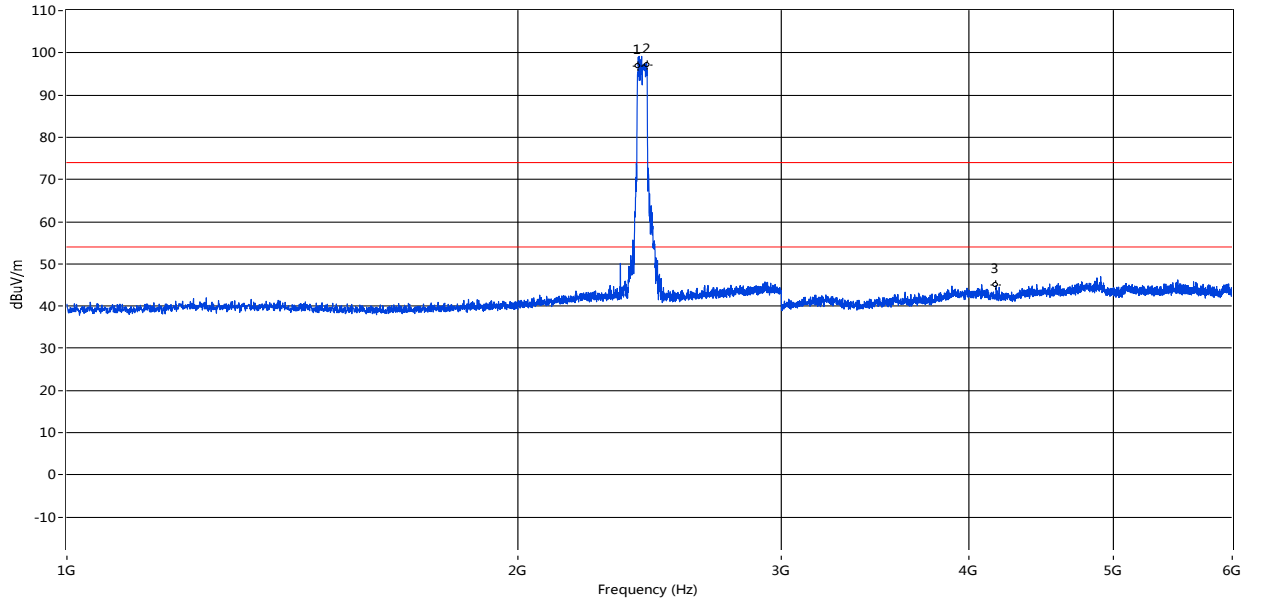
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7738.77	43.71	--	--	74.0	--	54.0	30.29	244	Vertical	PASS
9319.47	43.88	--	--	74.0	--	54.0	30.12	53	Vertical	PASS
13207.99	45.23	--	--	74.0	--	54.0	28.77	159	Vertical	PASS

802.11n-20MHz HIGH CHANNEL 6GHz to 25GHz, ANT H



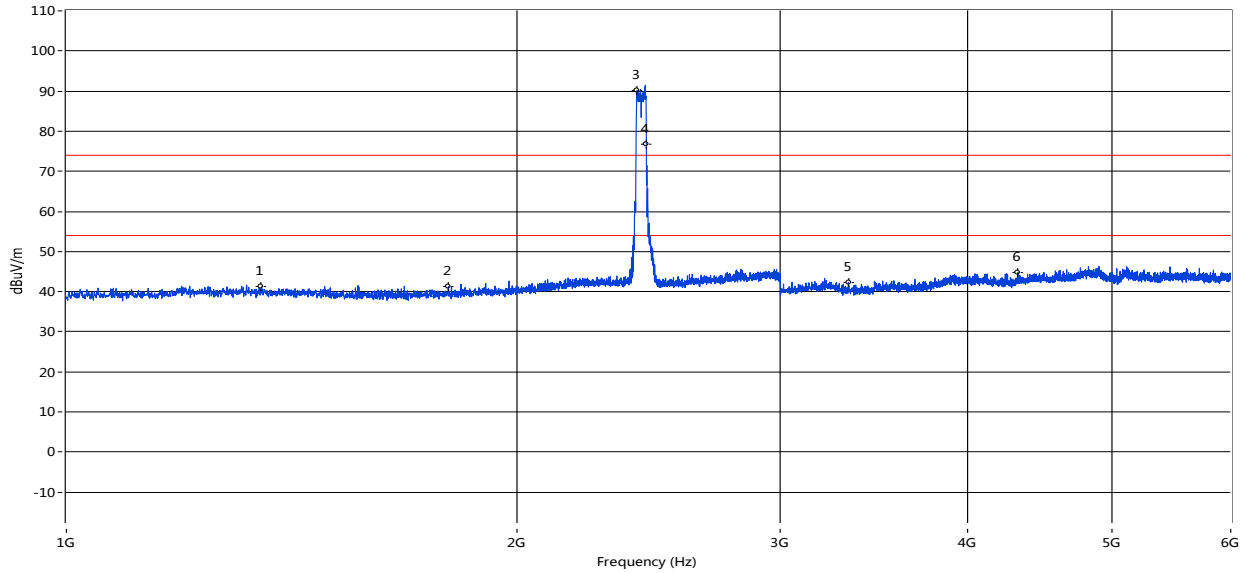
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7738.77	44.22	--	--	74.0	--	54.0	29.78	52	Horizontal	PASS
8845.26	43.58	--	--	74.0	--	54.0	30.42	102	Horizontal	PASS
13745.42	45.86	--	--	74.0	--	54.0	28.14	308	Horizontal	PASS

802.11n-40MHZ LOW MODE 1GHz to 6GHz, ANT V



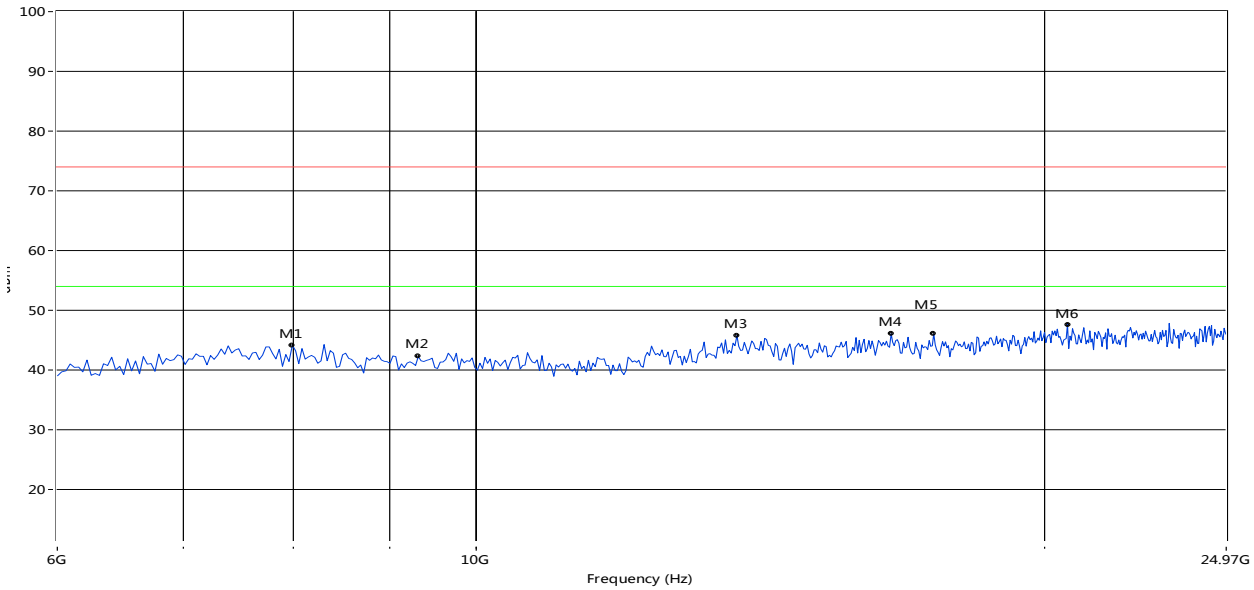
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2407.648	96.89	--	--	N/A	--	N/A	286.3	Vertical	N/A
2438.640	97.17	--	--	N/A	--	N/A	297.5	Vertical	N/A
4173.457	44.91	--	--	74.0	--	54.0	359.3	Vertical	PASS

802.11n-40MHZ LOW MODE 1GHz to 6GHz, ANT H



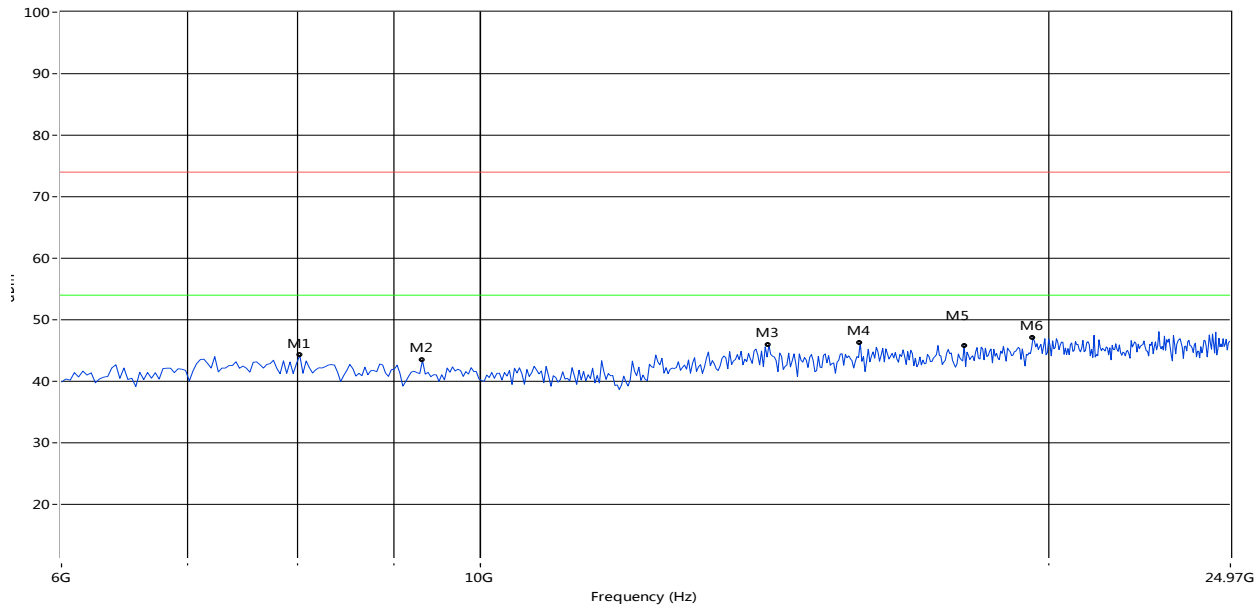
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
1349.913	41.17	--	--	74.0	--	54.0	193.0	Horizontal	PASS
1800.300	41.25	--	--	74.0	--	54.0	353.6	Horizontal	PASS
2441.140	76.84	--	--	N/A	--	N/A	288.6	Horizontal	N/A
3331.417	42.28	--	--	74.0	--	54.0	41.8	Horizontal	PASS
4323.419	44.69	--	--	74.0	--	54.0	352.5	Horizontal	PASS

802.11n-40MHZ LOW MODE 6GHz to 25GHz, ANT V



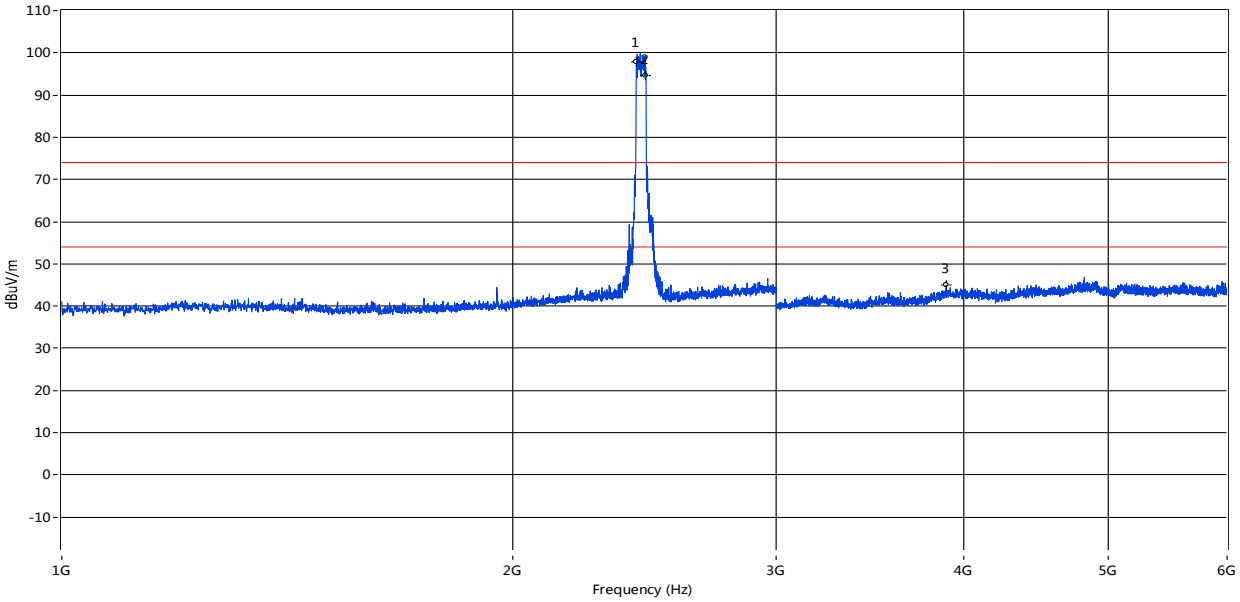
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7991.68	44.17	--	--	74.0	--	54.0	29.83	0	Vertical	PASS
9319.47	42.27	--	--	74.0	--	54.0	31.73	313	Vertical	PASS
13745.42	45.76	--	--	74.0	--	54.0	28.24	187	Vertical	PASS

802.11n-40MHZ LOW MODE 6GHz to 25GHz, ANT H



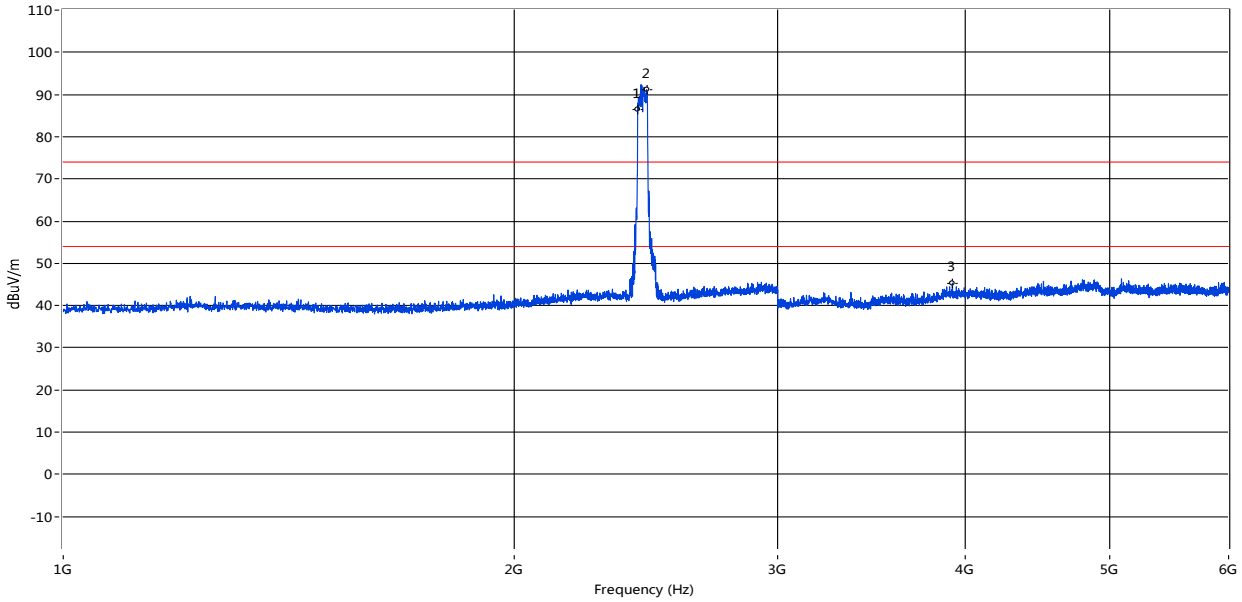
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
8023.29	44.22	--	--	74.0	--	54.0	29.78	49	Horizontal	PASS
9319.47	43.38	--	--	74.0	--	54.0	30.62	131	Horizontal	PASS
14219.63	45.86	--	--	74.0	--	54.0	28.14	233	Horizontal	PASS

802.11n-40MHZ MID MODE 1GHz to 6GHz, ANT V



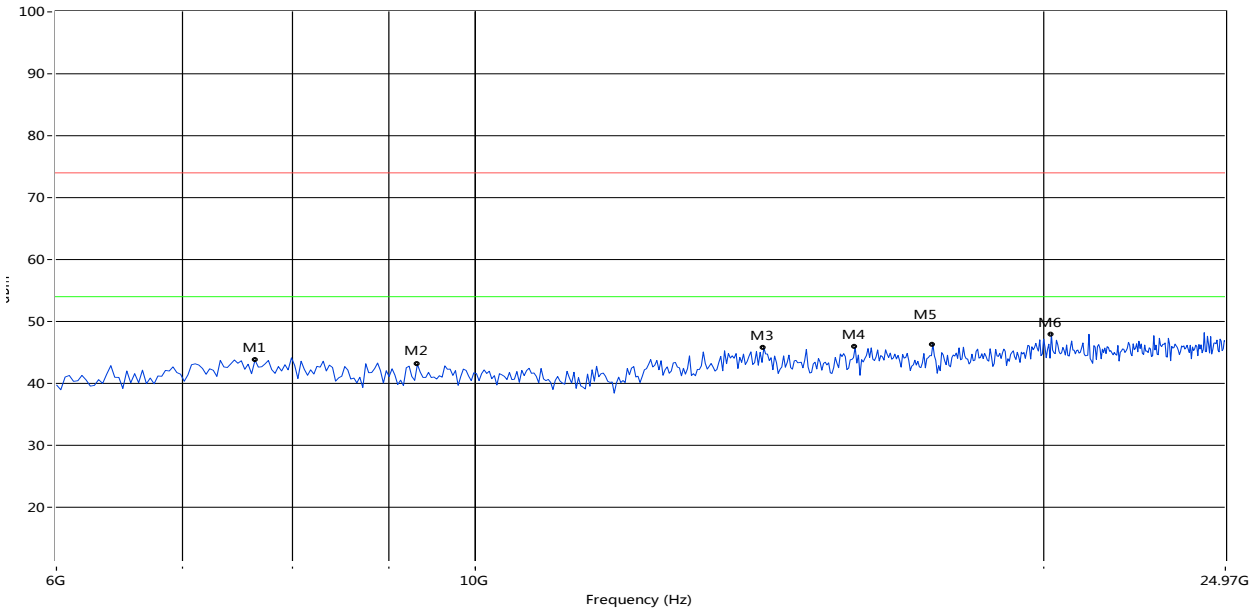
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2420.145	97.80	--	--	N/A	--	N/A	284.8	Vertical	N/A
2455.136	94.52	--	--	N/A	--	N/A	287.4	Vertical	N/A
3896.026	45.00	--	--	74.0	--	54.0	23.7	Vertical	PASS

802.11n-40MHZ MID MODE 1GHz to 6GHz, ANT H



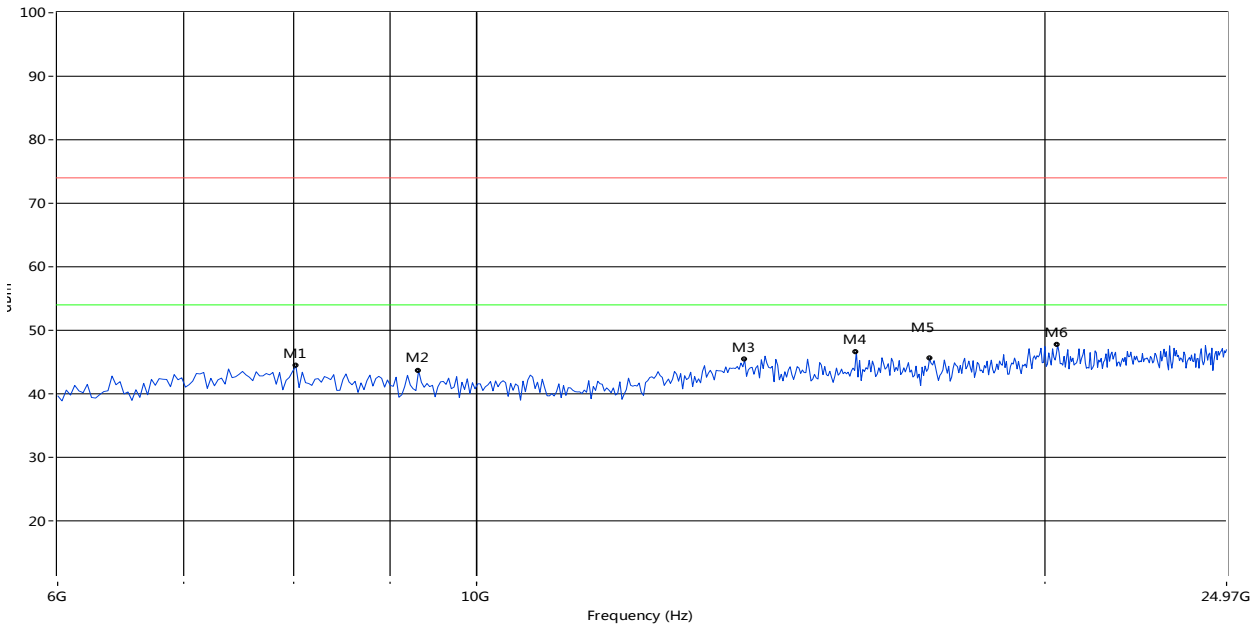
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2420.645	86.42	--	--	N/A	--	N/A	265.3	Horizontal	N/A
2452.637	91.13	--	--	N/A	--	N/A	268.6	Horizontal	N/A
3923.769	45.30	--	--	74.0	--	54.0	158.6	Horizontal	PASS

802.11n-40MHZ MID MODE 6GHz to 25GHz, ANT V



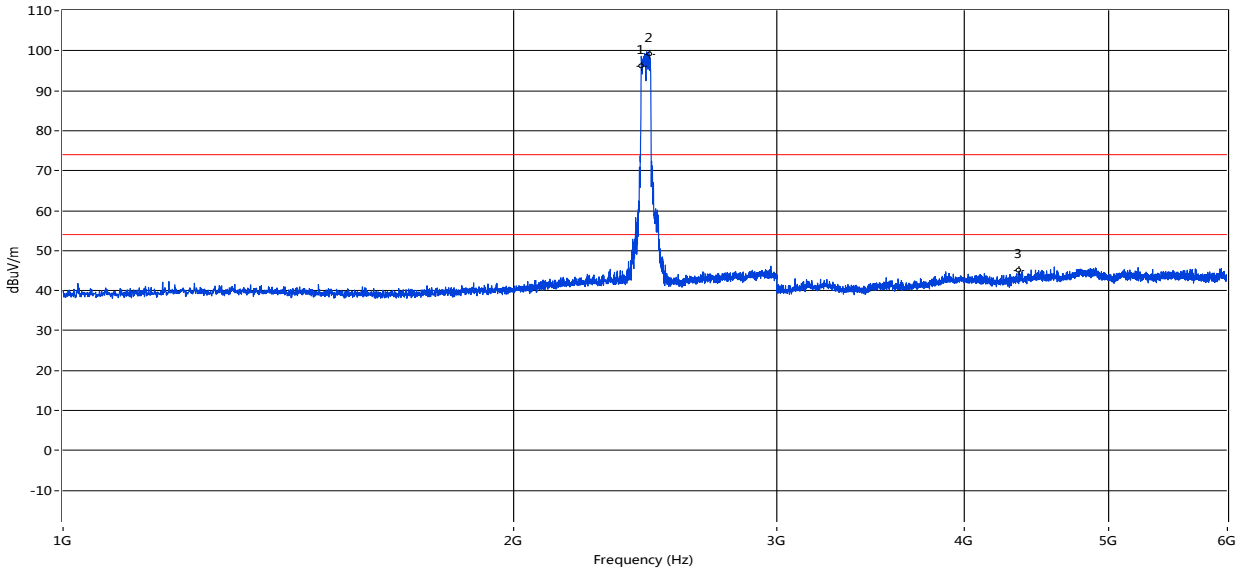
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7643.93	43.76	--	--	74.0	--	54.0	30.24	107	Vertical	PASS
9319.47	43.09	--	--	74.0	--	54.0	30.91	19	Vertical	PASS
14219.63	45.73	--	--	74.0	--	54.0	28.27	345	Vertical	PASS

802.11n-40MHZ MID MODE 6GHz to 25GHz, ANT H



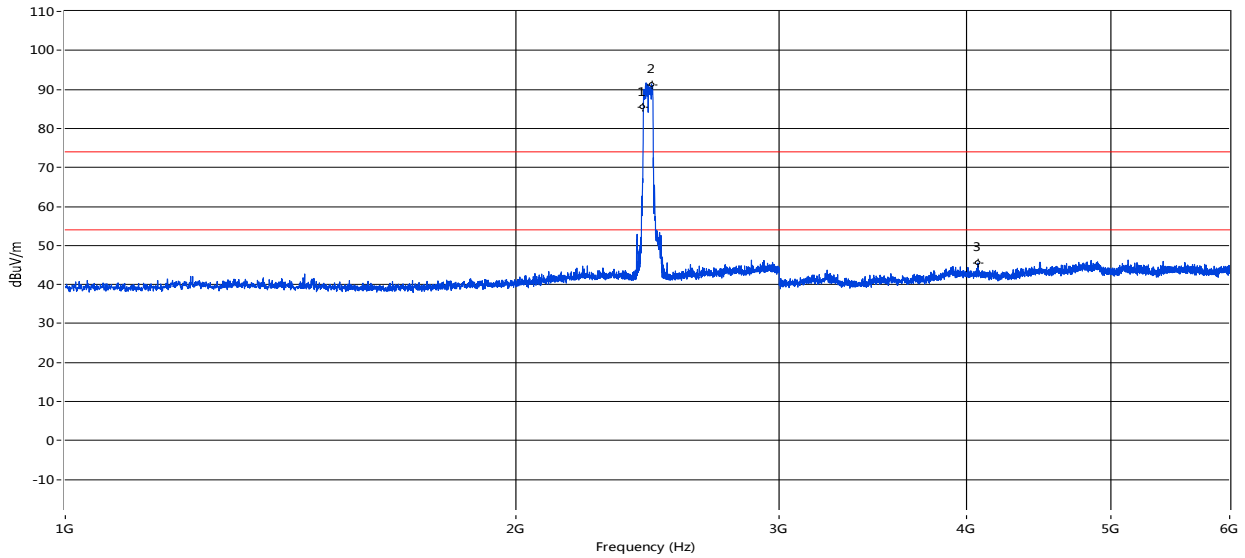
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
8023.29	44.37	--	--	74.0	--	54.0	29.63	156	Horizontal	PASS
9319.47	43.66	--	--	74.0	--	54.0	30.34	166	Horizontal	PASS
13871.88	45.35	--	--	74.0	--	54.0	28.65	66	Horizontal	PASS

802.11n-40MHZ HIGH MODE 1GHz to 6GHz, ANT V



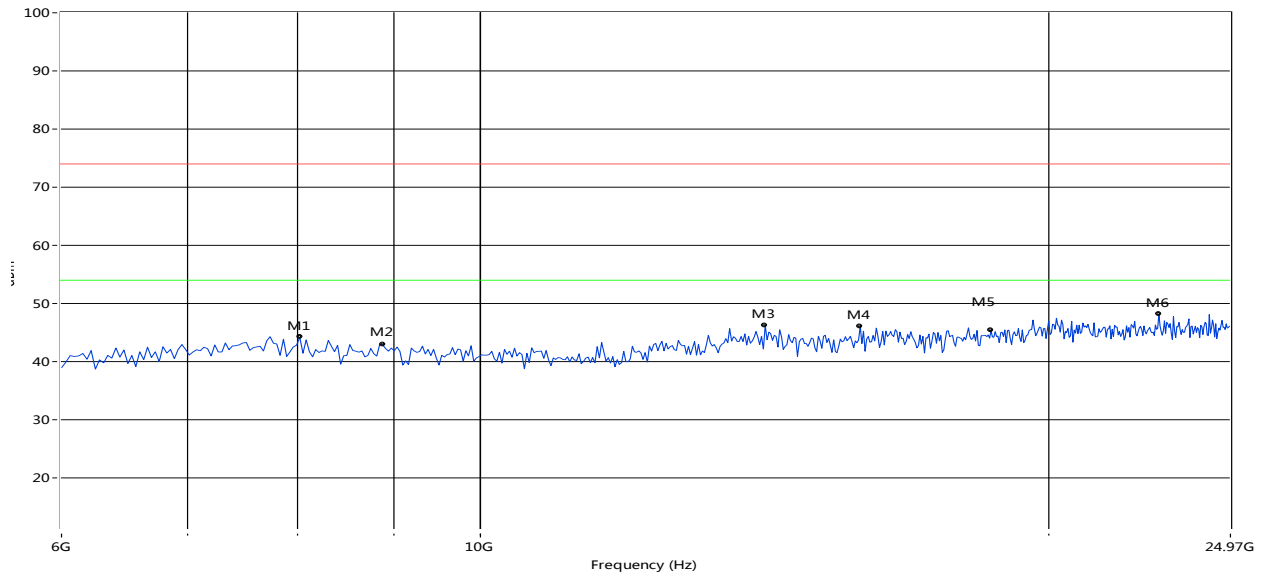
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2436.141	96.03	--	--	N/A	--	N/A	251.9	Vertical	N/A
2465.134	99.10	--	--	N/A	--	N/A	248.9	Vertical	N/A
4355.661	44.94	--	--	74.0	--	54.0	0.4	Vertical	PASS

802.11n-40MHZ HIGH MODE 1GHz to 6GHz, ANT H



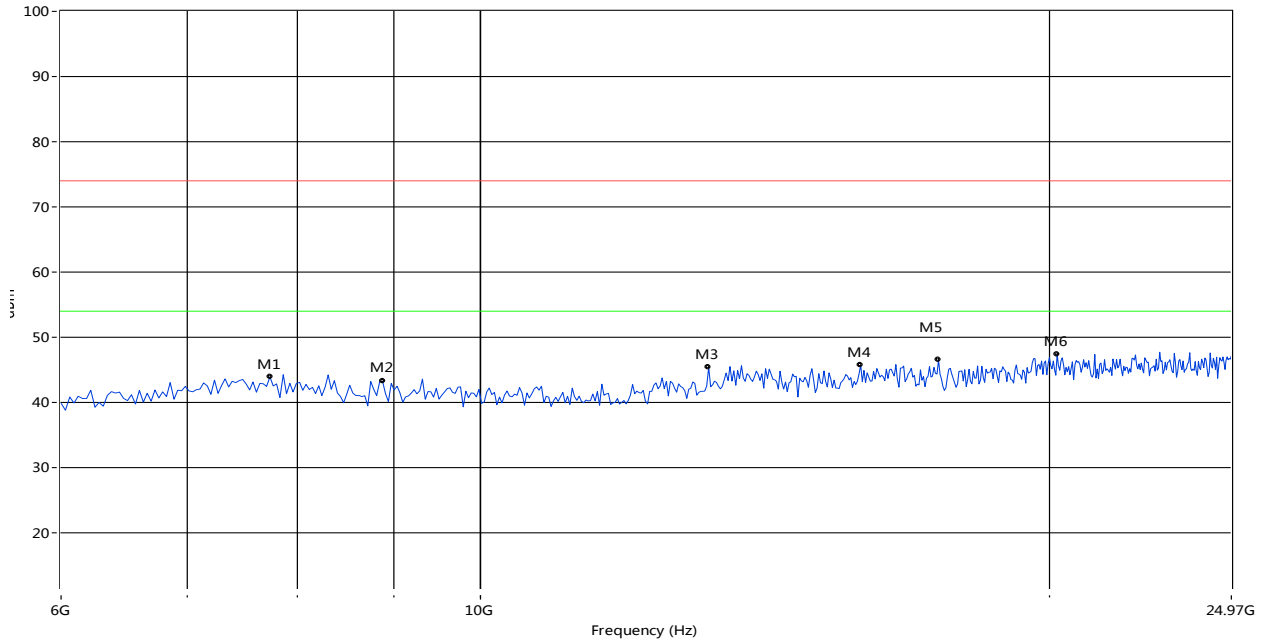
Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Degree (°)	Antenna	Verdict
2434.141	85.32	--	--	N/A	--	N/A	15.1	Horizontal	N/A
2468.633	91.06	--	--	N/A	--	N/A	275.4	Horizontal	N/A
4072.982	45.53	--	--	74.0	--	54.0	98.5	Horizontal	PASS

802.11n-40MHZ HIGH MODE 6GHz to 25GHz, ANT V



Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
8023.29	44.20	--	--	74.0	--	54.0	29.80	283	Vertical	PASS
8876.87	42.90	--	--	74.0	--	54.0	31.10	194	Vertical	PASS
14156.41	46.20	--	--	74.0	--	54.0	27.80	133	Vertical	PASS

802.11n-40MHZ HIGH MODE 6GHz to 25GHz, ANT H



Fre. (MHz)	PK (dBuV/m)	QP (dBuV/m)	AV (dBuV/m)	Limit-PK (dBuV/m)	Limit-QP (dBuV/m)	Limit-AV (dBuV/m)	Margin (dB)	Table (°)	Polarization	Verdict
7738.77	43.92	--	--	74.0	--	54.0	30.08	198	Horizontal	PASS
8876.87	43.25	--	--	74.0	--	54.0	30.75	169	Horizontal	PASS
13207.99	45.39		--	74.0	--	54.0	28.61	300	Horizontal	PASS

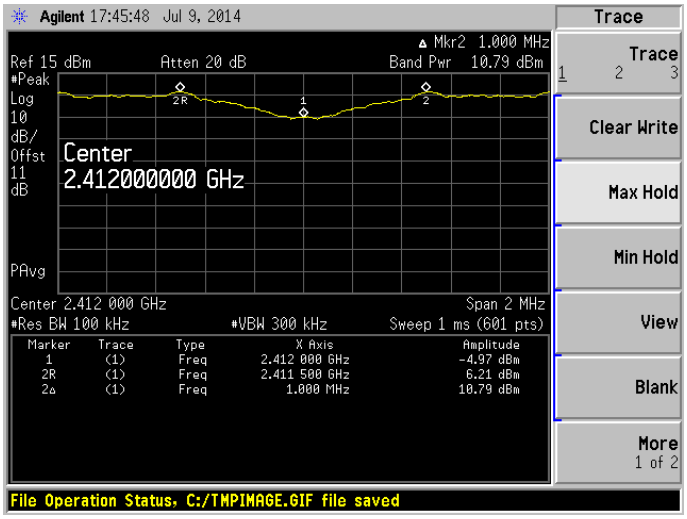
A.6 Band Edge

Test Data

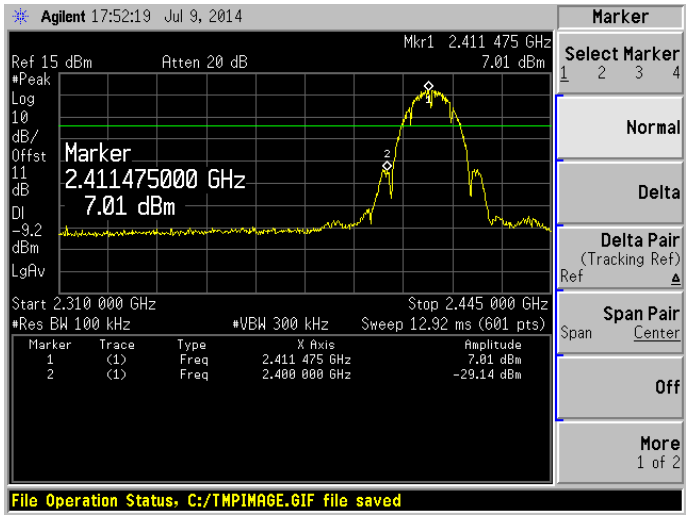
The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Test Plots

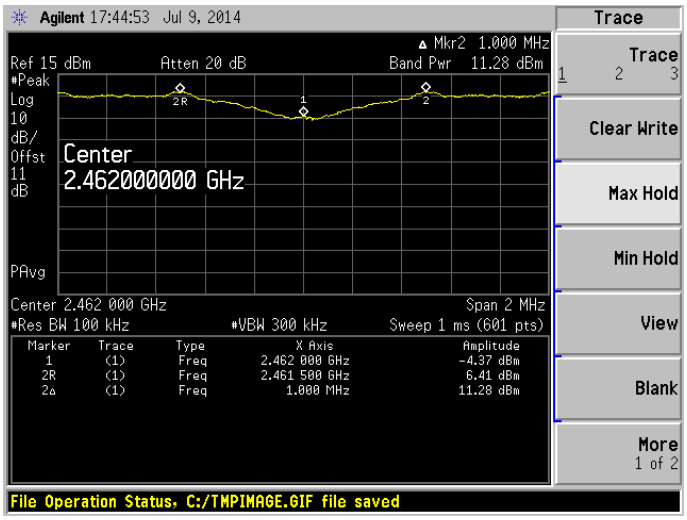
802.11b LOW CHANNEL, Reference level



802.11b LOW CHANNEL, Band Edge

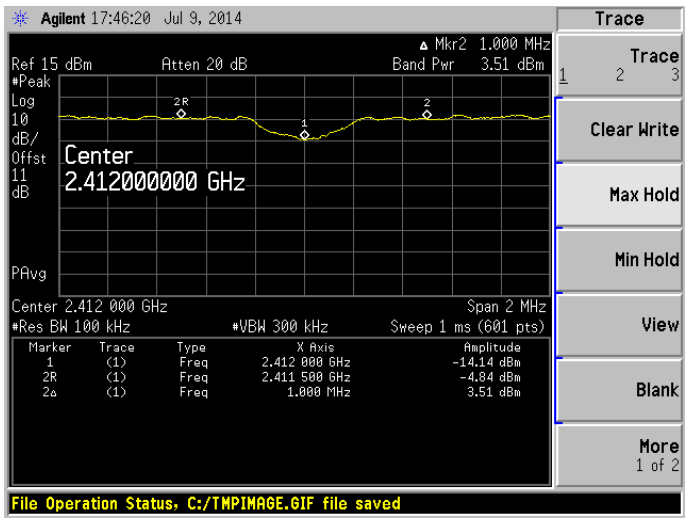


802.11b HIGH CHANNEL, Reference level

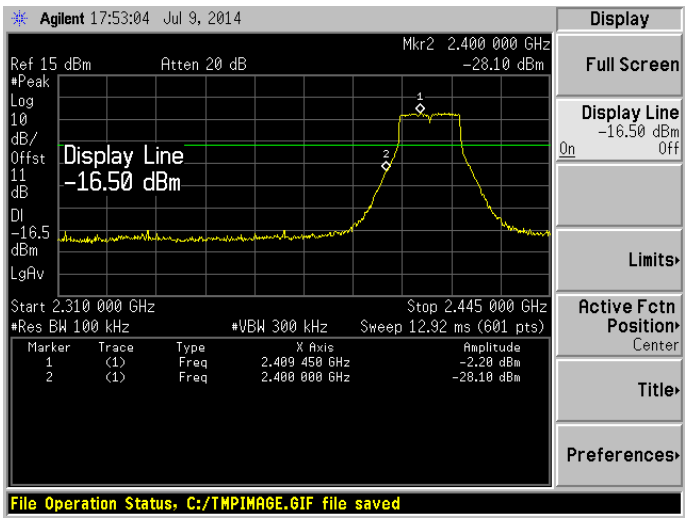


802.11b HIGH CHANNEL, Band Edge

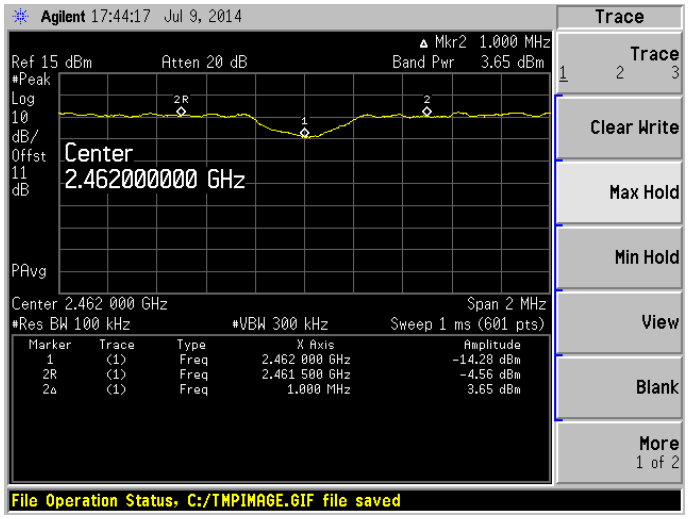
802.11g LOW CHANNEL, Reference level



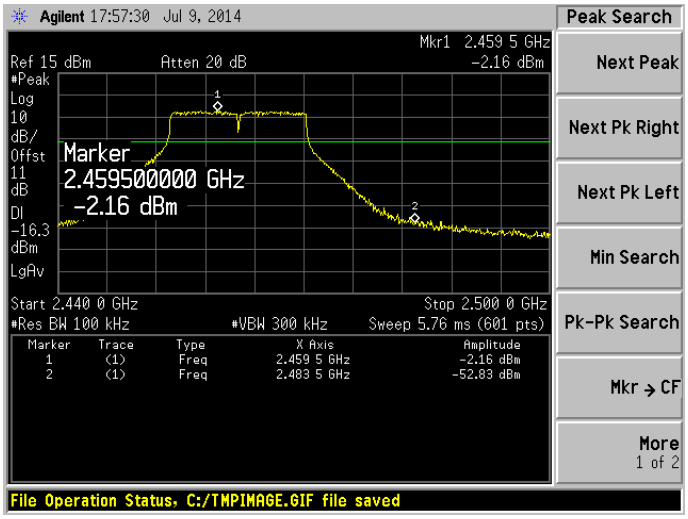
802.11g LOW CHANNEL, Band Edge



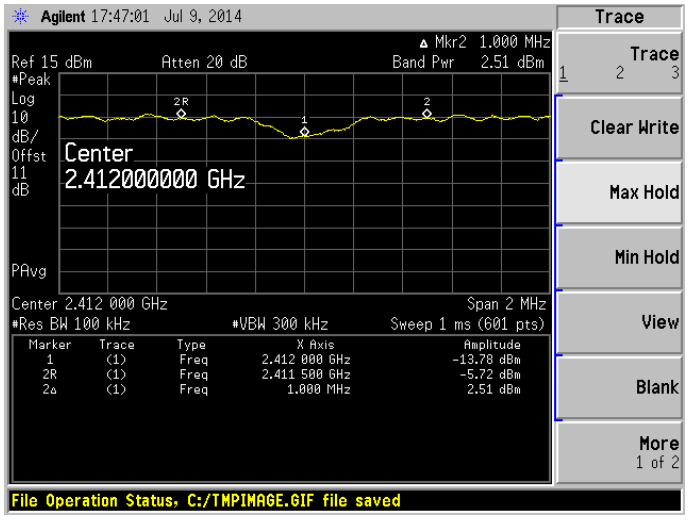
802.11g HIGH CHANNEL, Reference level



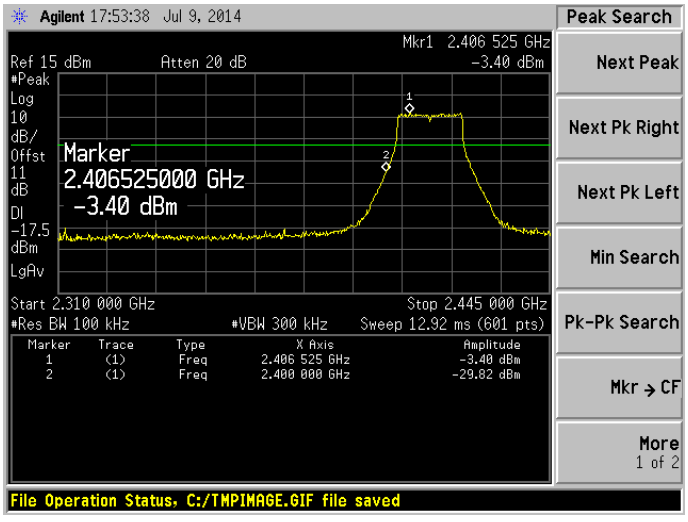
802.11g HIGH CHANNEL, Band Edge



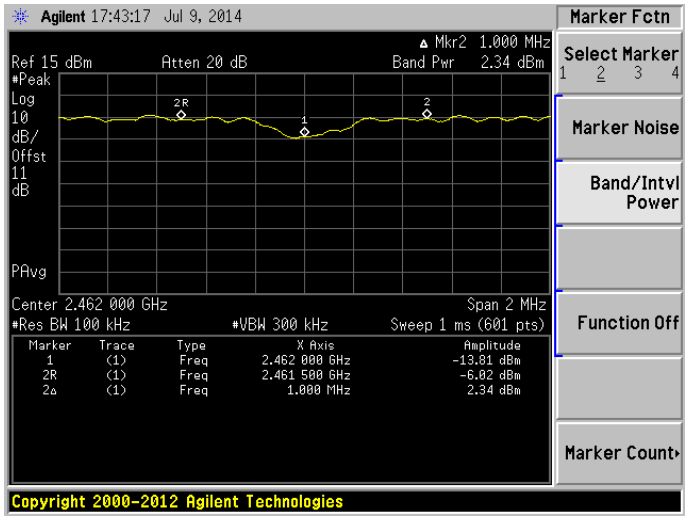
802.11n-20MHz LOW CHANNEL, Reference level



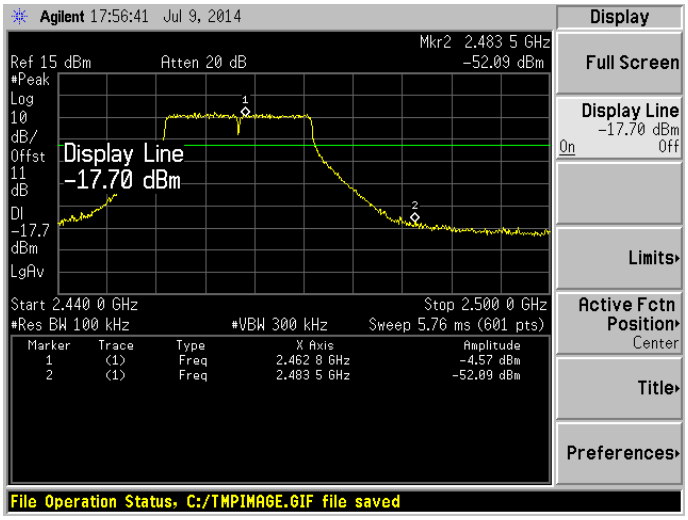
802.11n-20MHz LOW CHANNEL, Band Edge



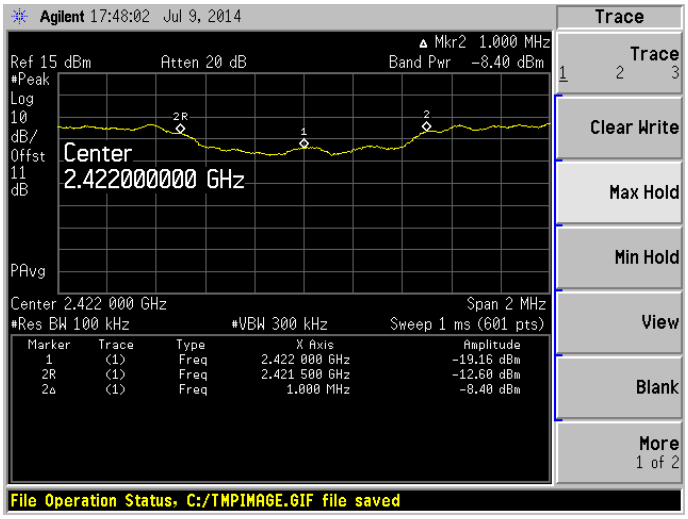
802.11n-20MHz HIGH CHANNEL, Reference level



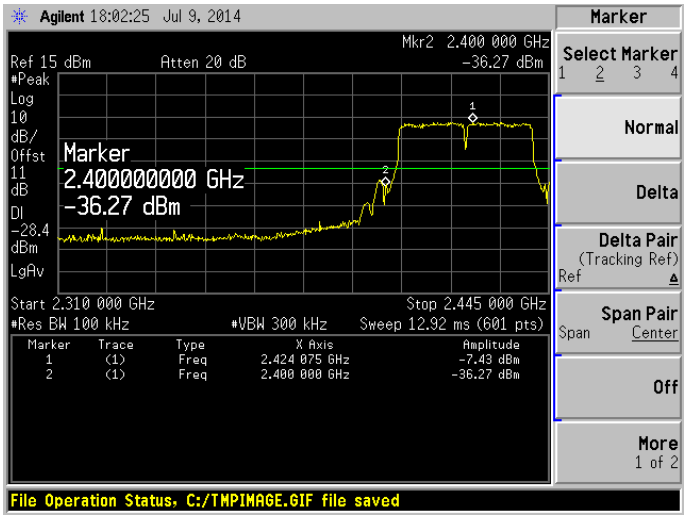
802.11n-20MHz HIGH CHANNEL, Band Edge



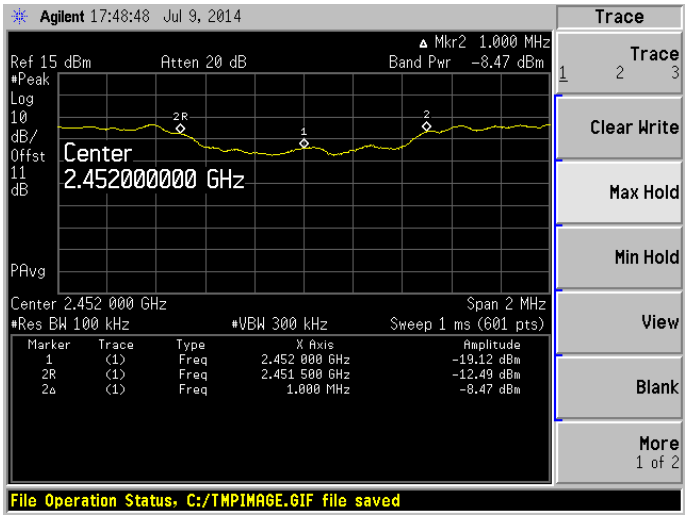
802.11n-40MHz LOW CHANNEL, Reference level



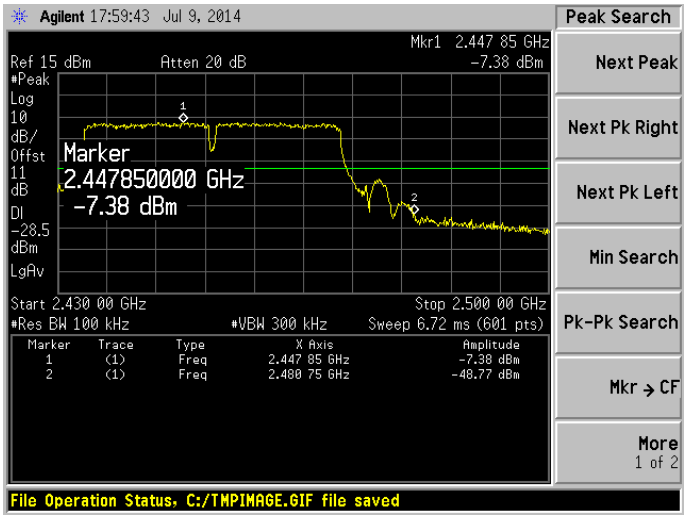
802.11n-40MHz LOW CHANNEL, Band Edge



802.11n-40MHz HIGH CHANNEL, Reference level



802.11n-40MHz HIGH CHANNEL, Band Edge



A.7 Power Spectral Density (PSD)

Test Data

802.11b Mode:

Channel	Frequency (MHz)	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	2412	-12.87	8
Middle	2437	-12.37	8
High	2462	-13.13	8

802.11g Mode:

Channel	Frequency (MHz)	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	2412	-16.28	8
Middle	2437	-16.50	8
High	2462	-16.61	8

802.11n-20MHz Mode:

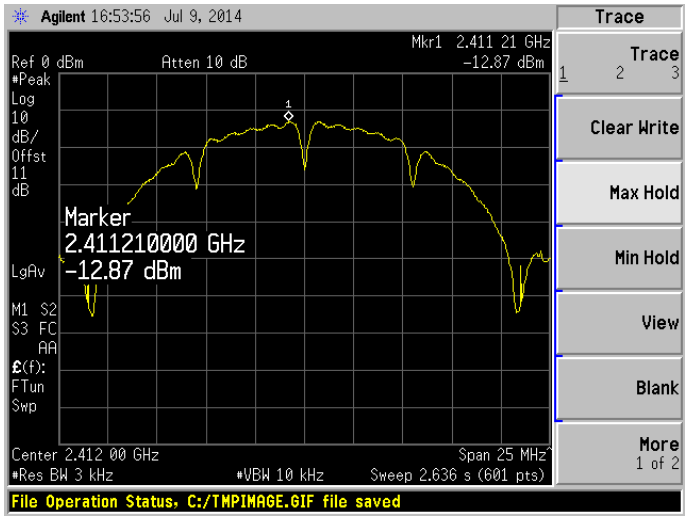
Channel	Frequency (MHz)	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	2412	-16.68	8
Middle	2437	-16.75	8
High	2462	-17.11	8

802.11n-40MHz Mode:

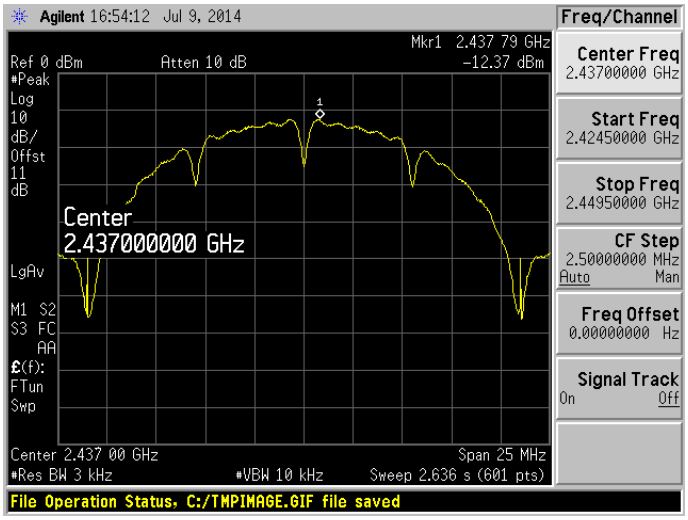
Channel	Frequency (MHz)	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	2422	-19.06	8
Middle	2437	-17.92	8
High	2452	-19.30	8

Test plots

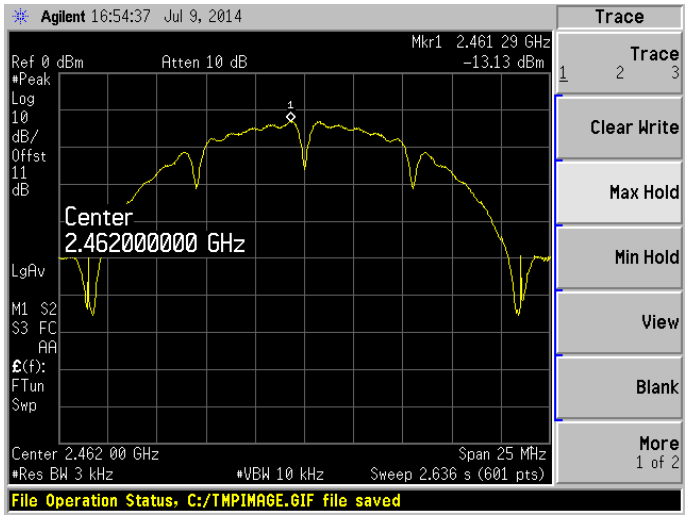
802.11b LOW CHANNEL



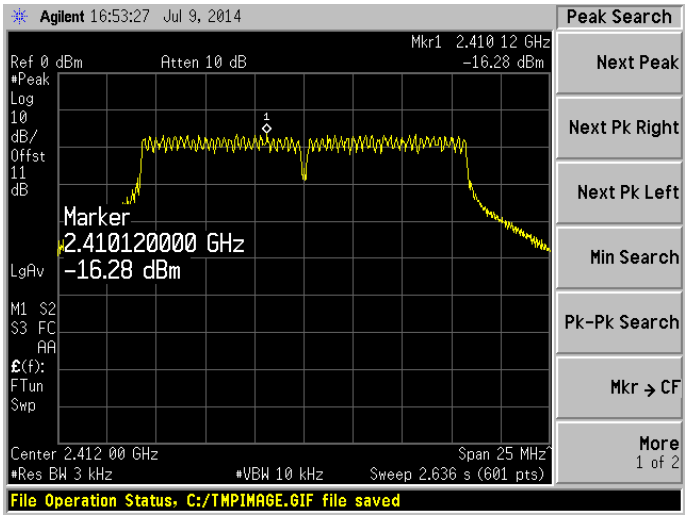
802.11b MID CHANNEL



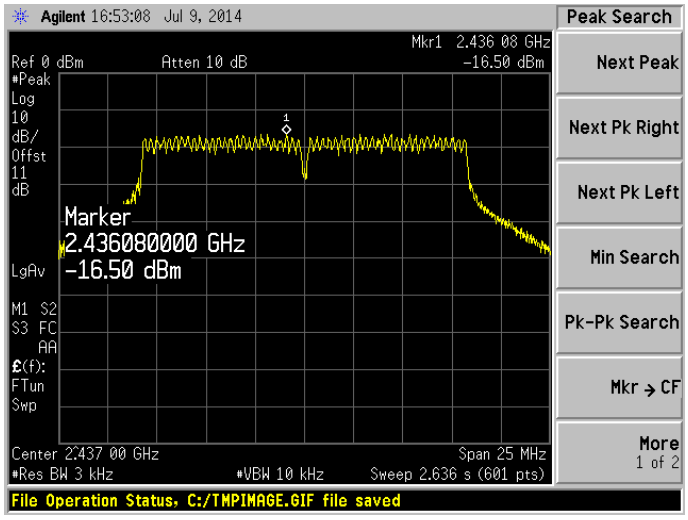
802.11b HIGH CHANNEL



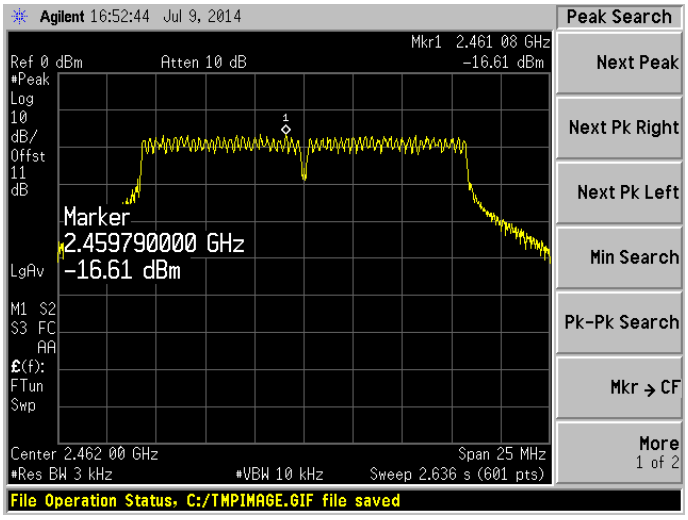
802.11g LOW CHANNEL



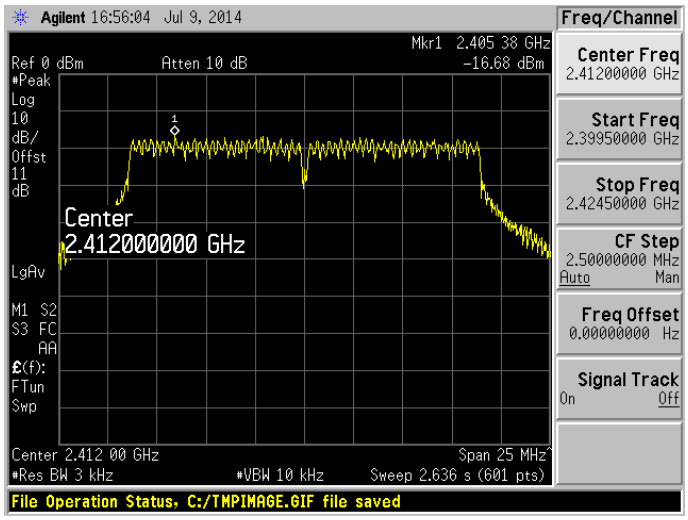
802.11g MID CHANNEL



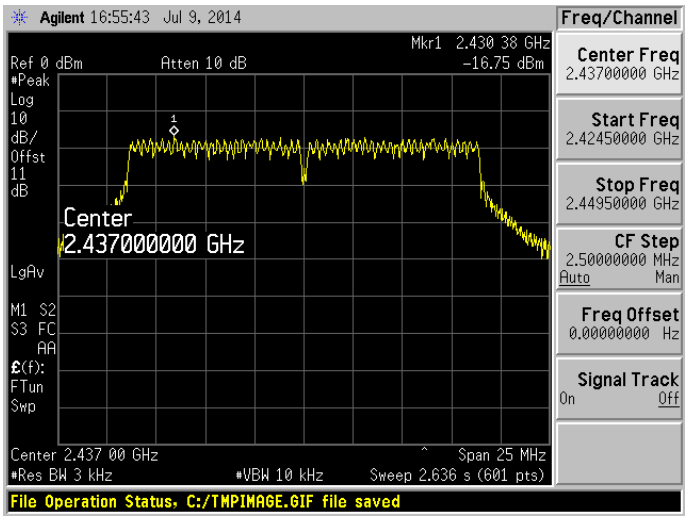
802.11g HIGH CHANNEL



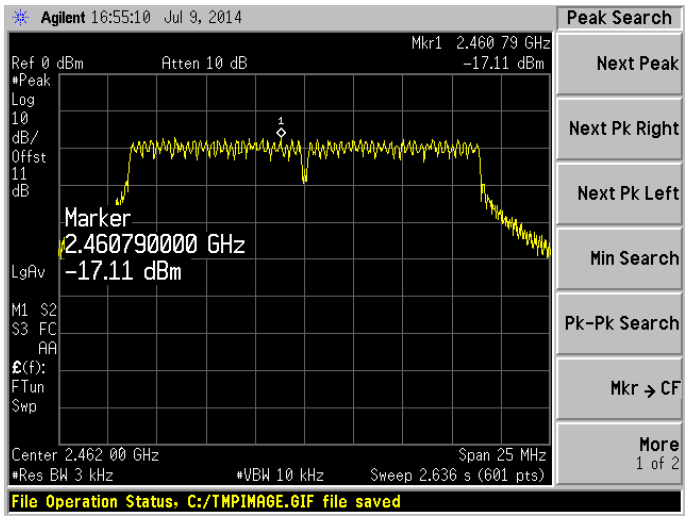
802.11n-20MHz LOW CHANNEL



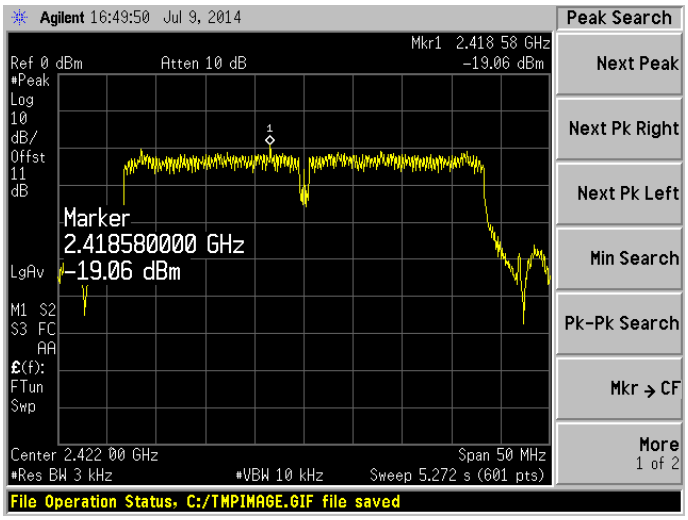
802.11 n-20MHz MID CHANNEL



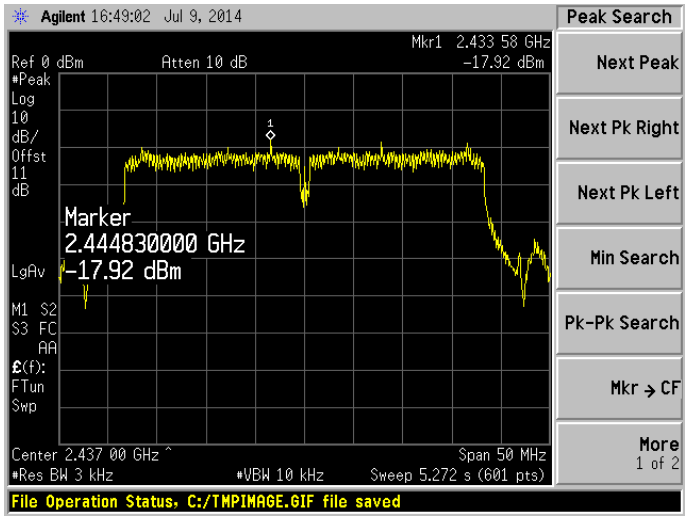
802.11n-20MHz HIGH CHANNEL



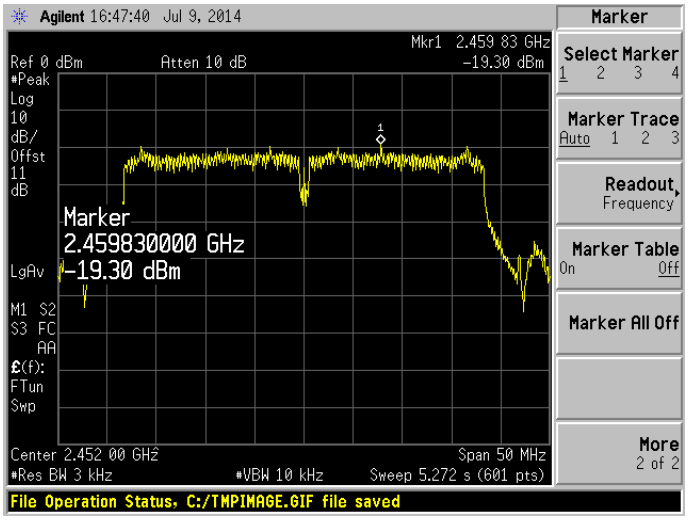
802.11n-40MHz LOW CHANNEL



802.11n-40MHz MID CHANNEL

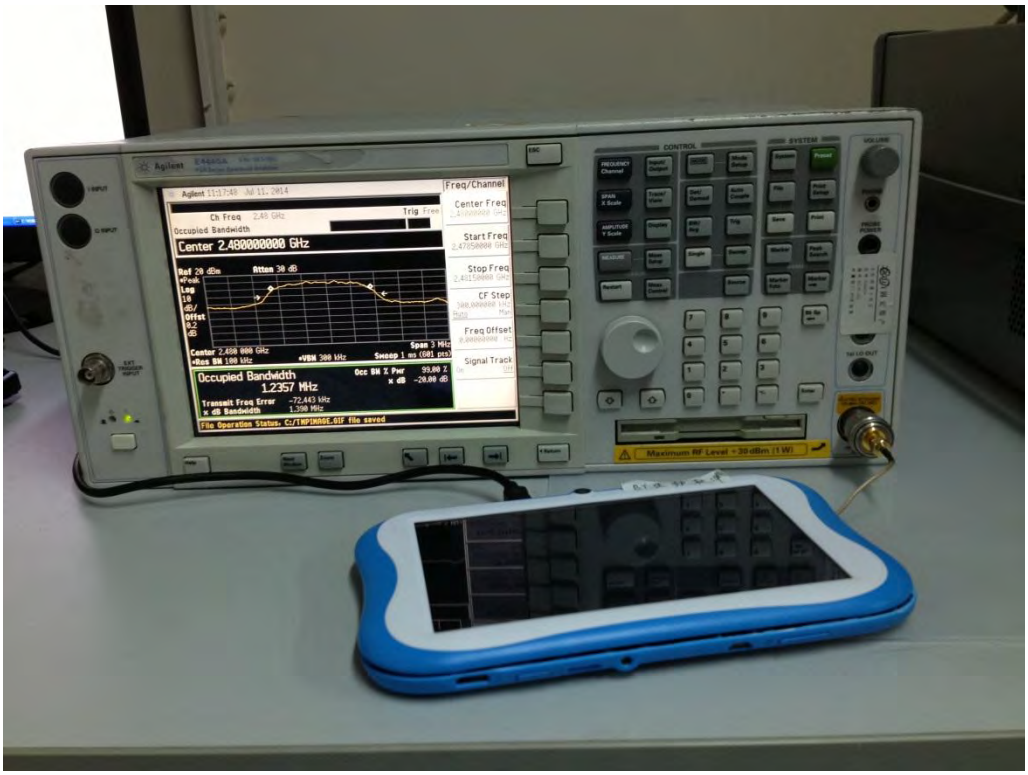


802.11n-40MHz HIGH CHANNEL



ANNEX B TEST SETUP PHOTOS

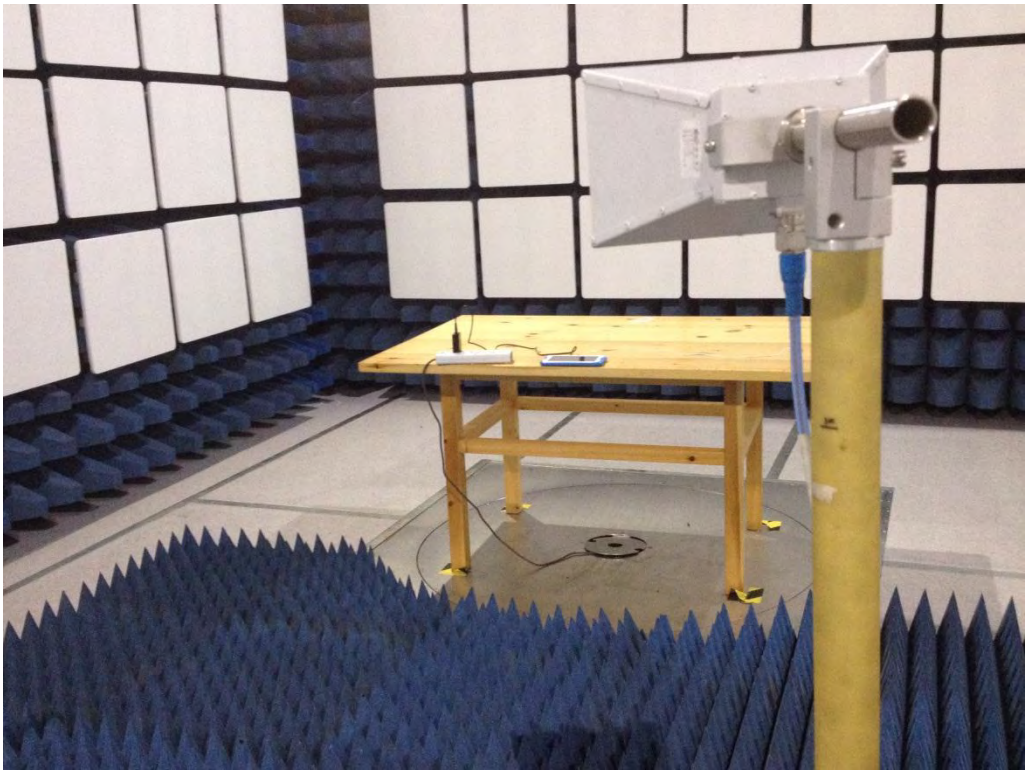
B.1. Conducted Test Photo



B.2. Radiated Test Photo

Below 30MHz

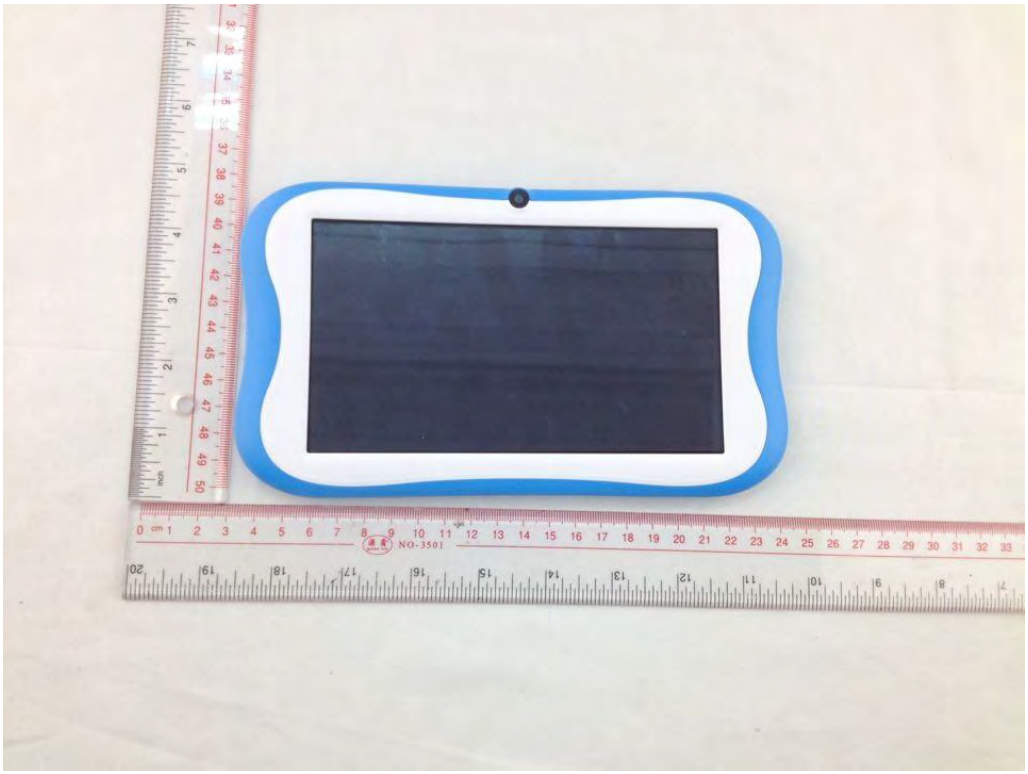
30MHz to 1GHz



Above 1GHz

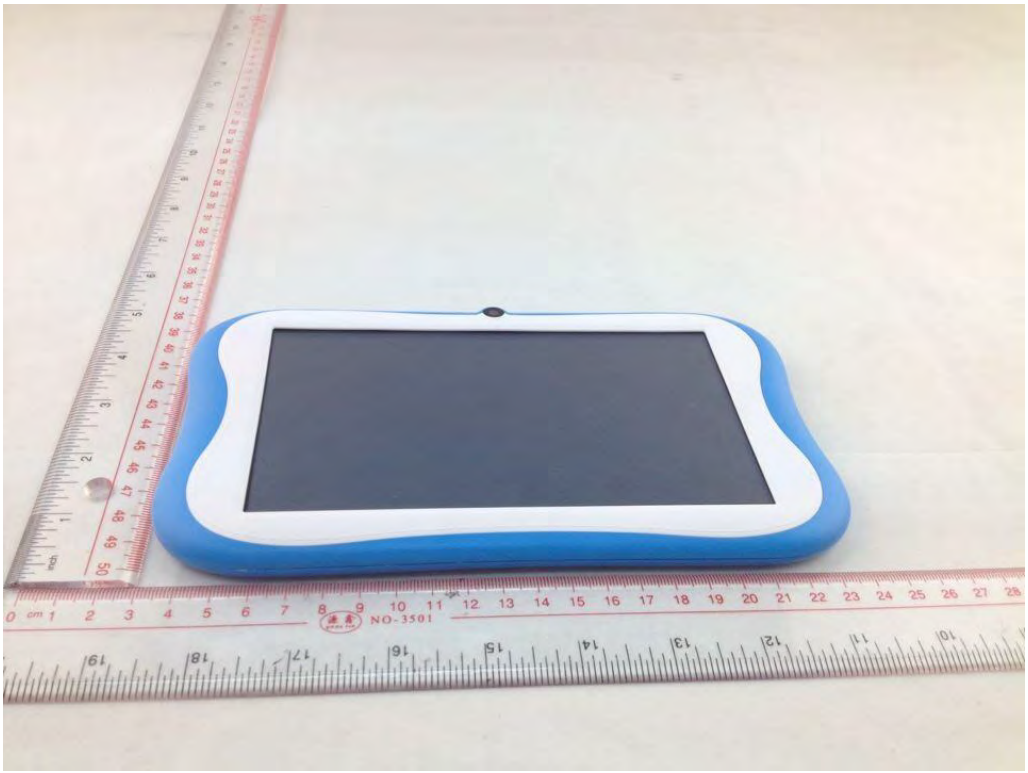
ANNEX C EUT PHOTOS

C.1 Appearance of the EUT

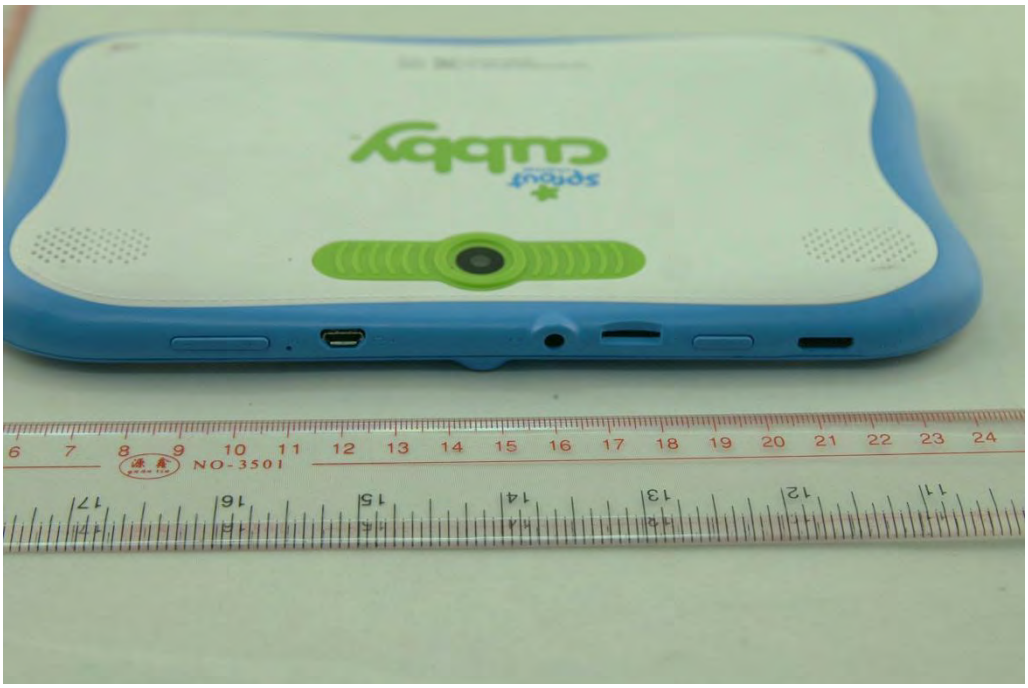


THE FRONT OF EUT

THE BACK OF EUT



THE DOWN OF EUT



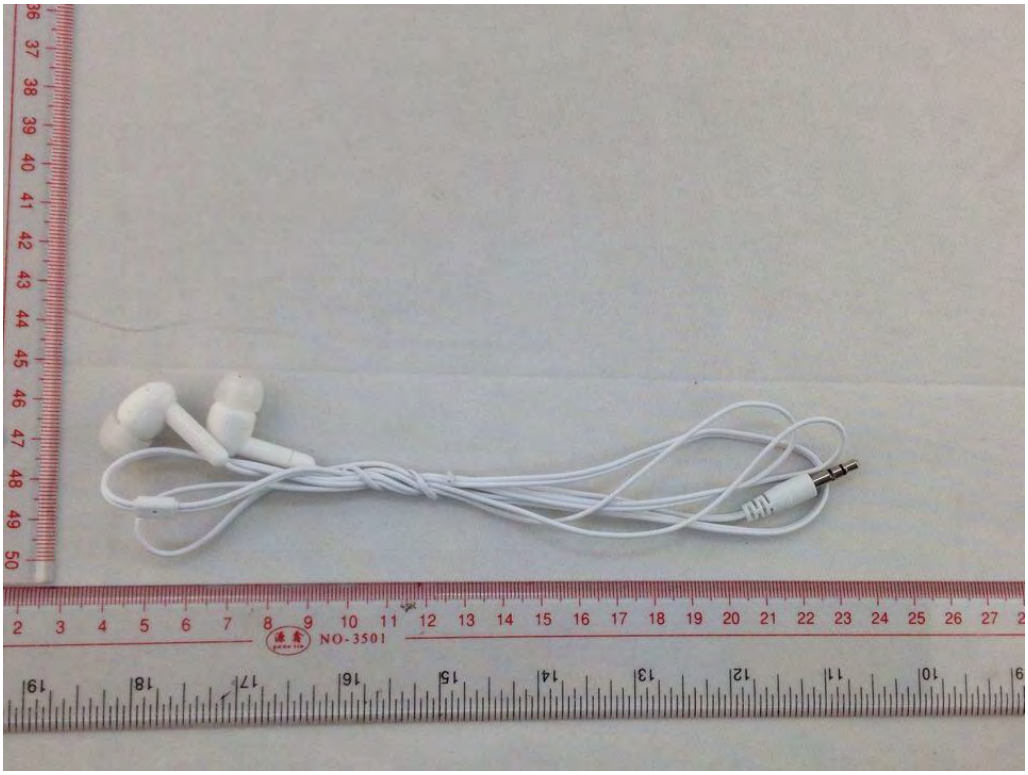
THE UP OF EUT

THE LEFT OF EUT

THE RIGHT OF EUT

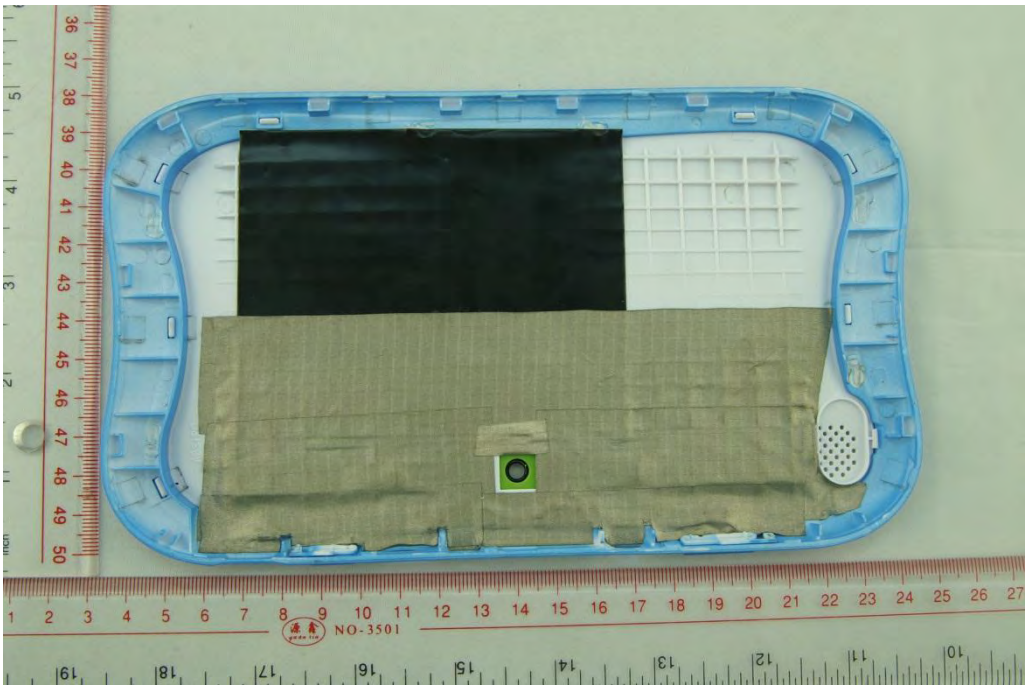
THE CHARGER OF EUT

THE USB DATA CABLE OF EUT

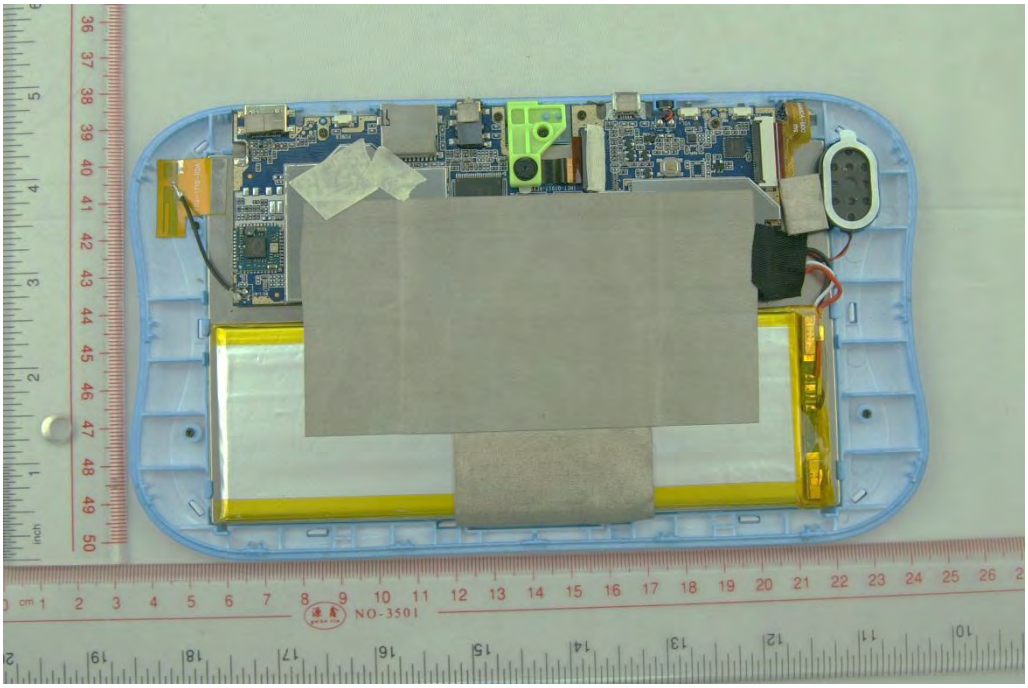


THE STEREO HEADSET OF EUT

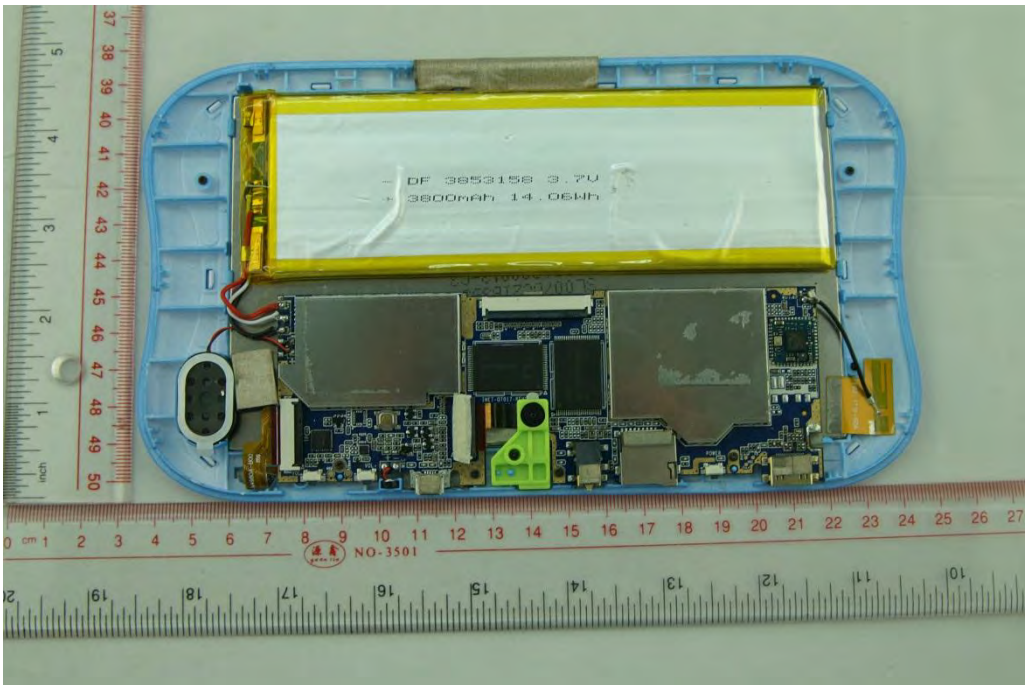
C.2 Inside of the EUT



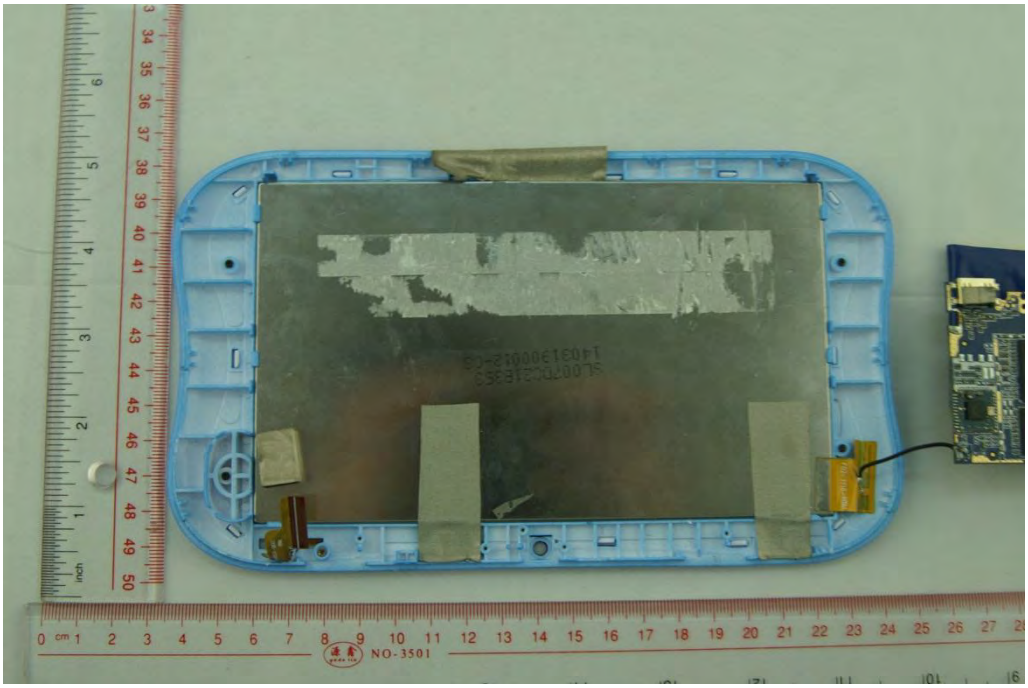
REAR COVER



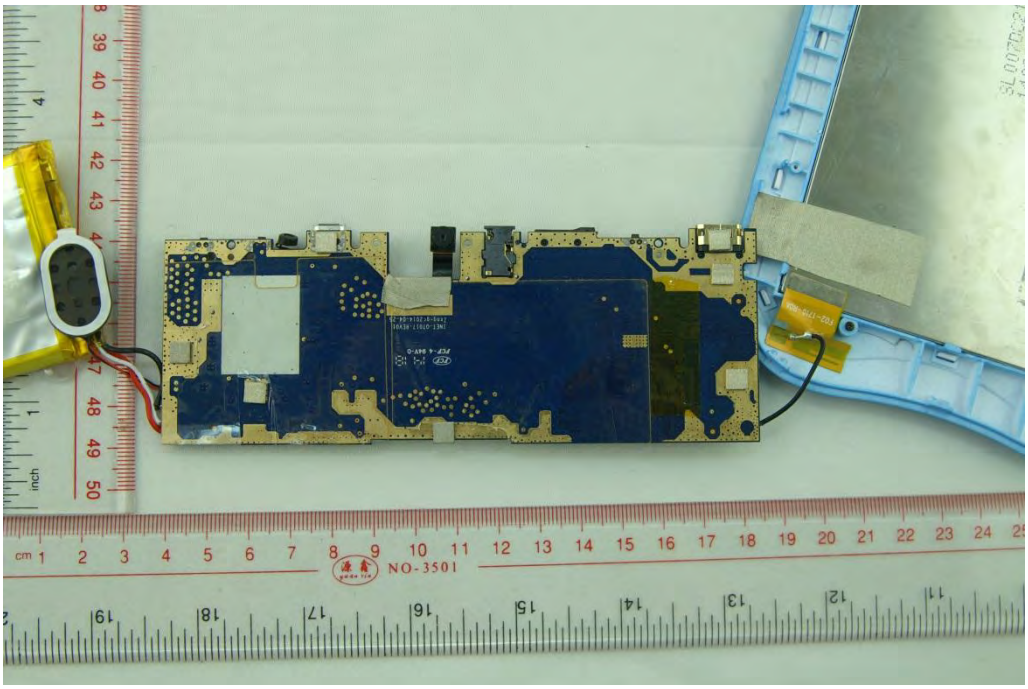
EUT UNCOVER VIEW 1



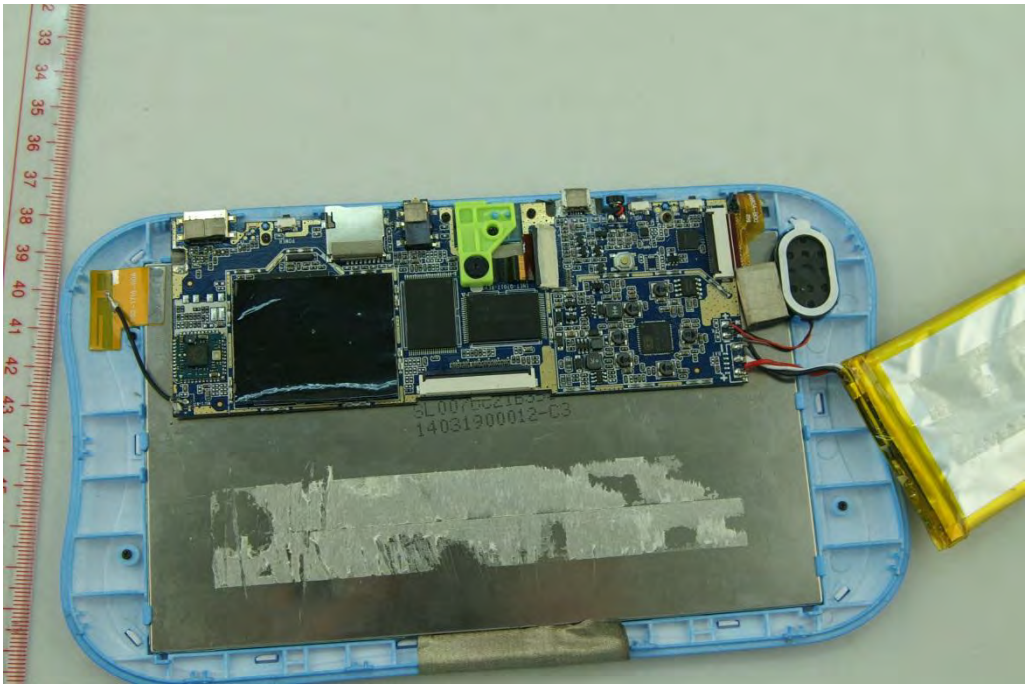
EUT UNCOVER VIEW 2



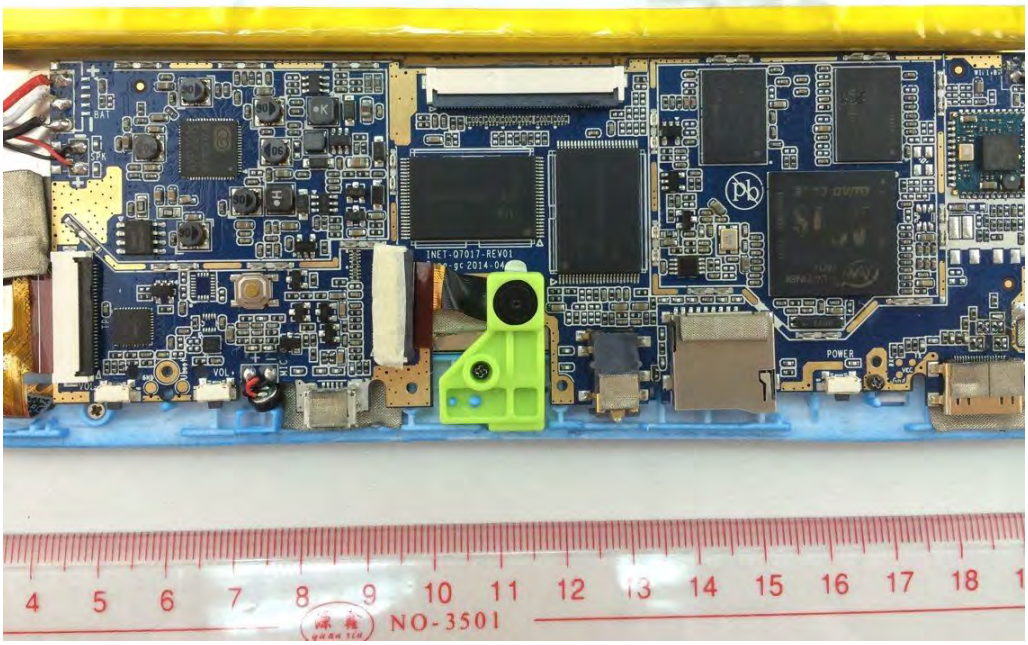
EUT UNCOVER VIEW 3



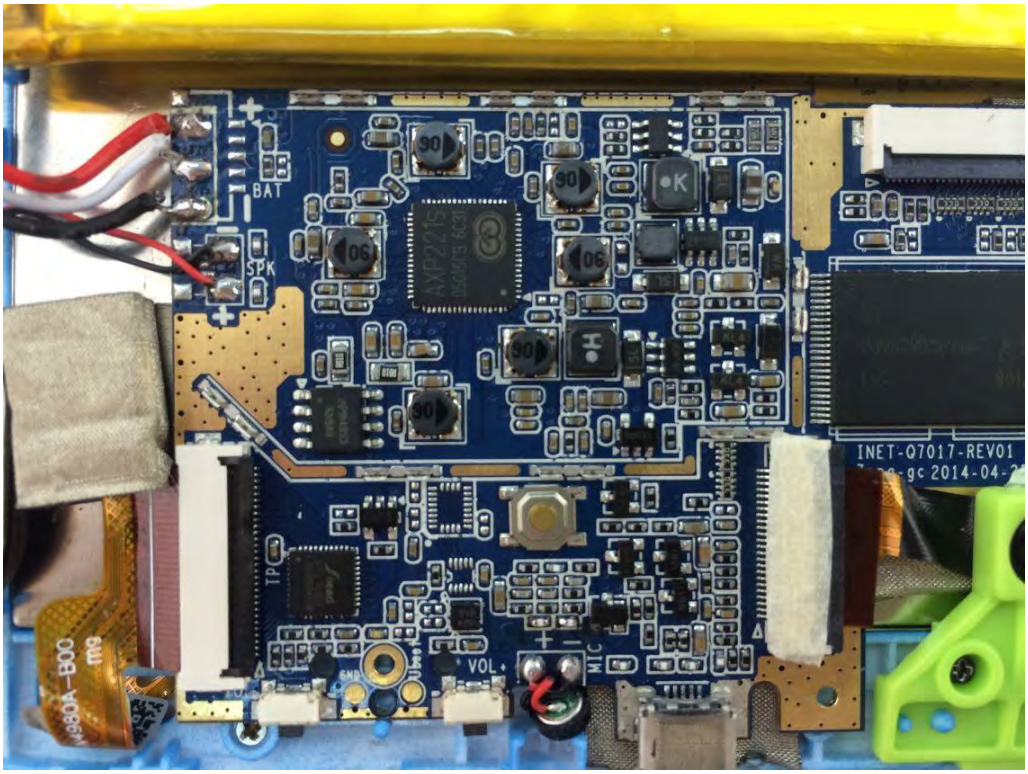
MAIN BOARD TOP VIEW 1



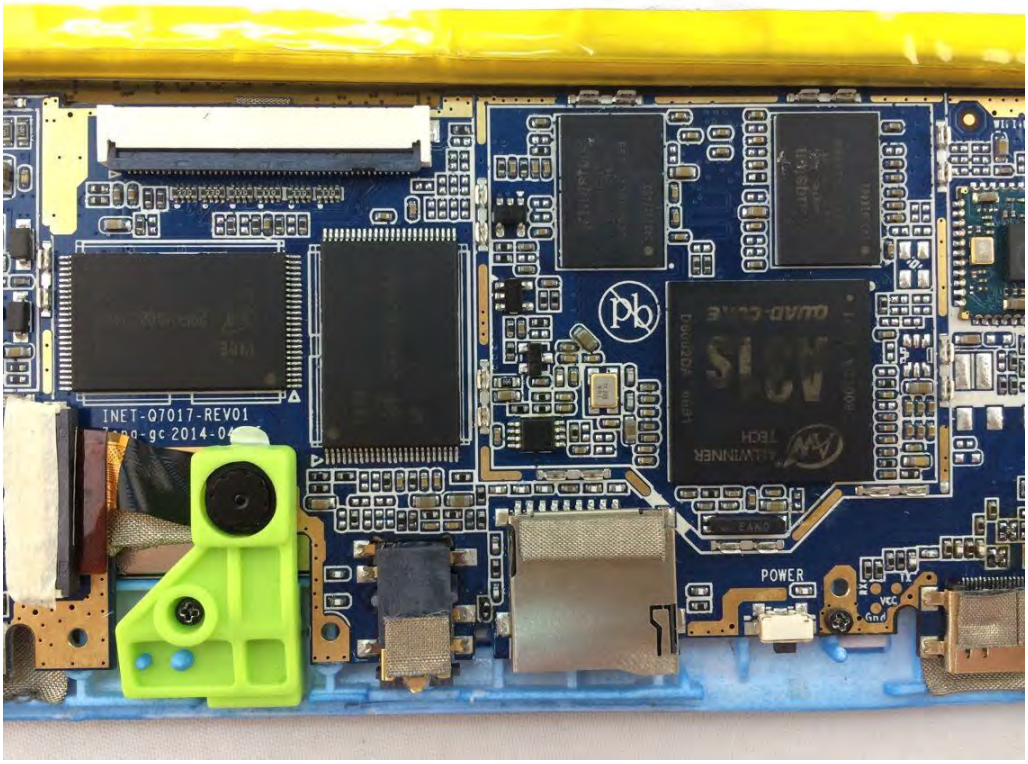
MAIN BOARD TOP VIEW 2



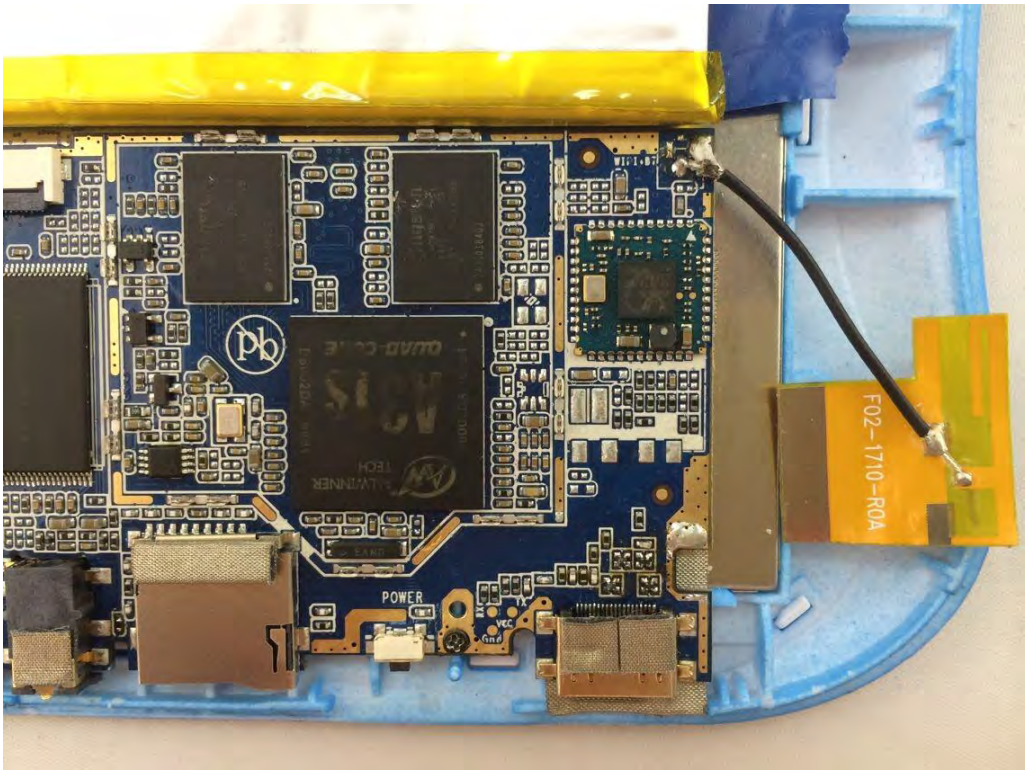
MAIN BOARD TOP VIEW 3



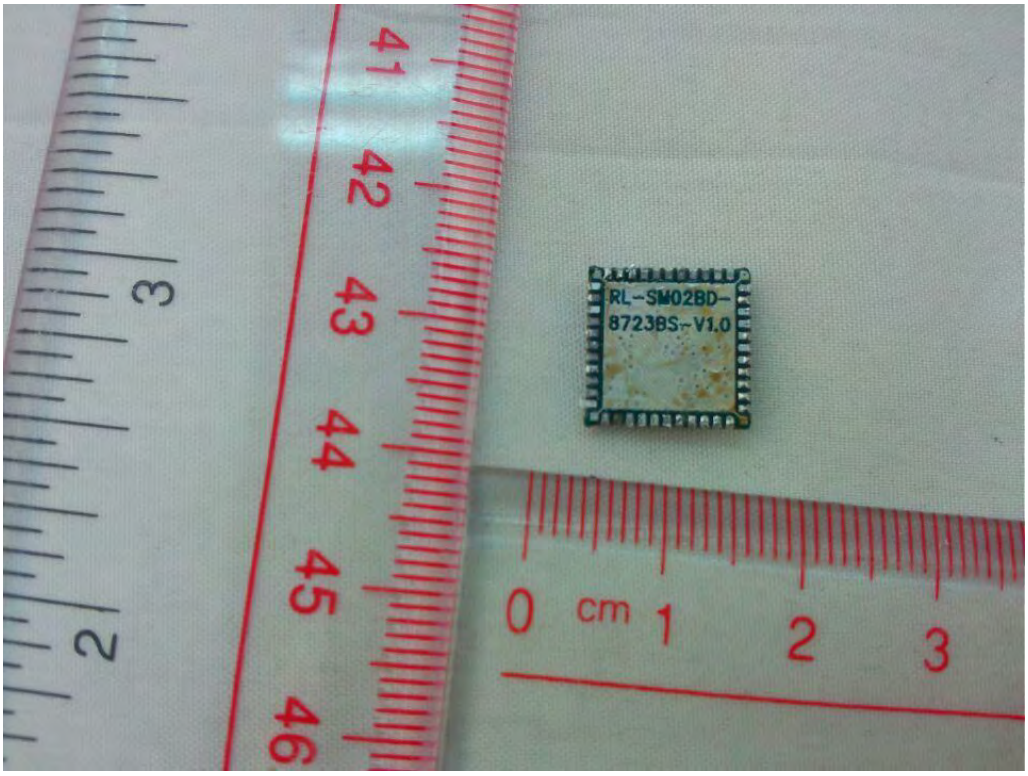
MAIN BOARD CLOSE-UP 1



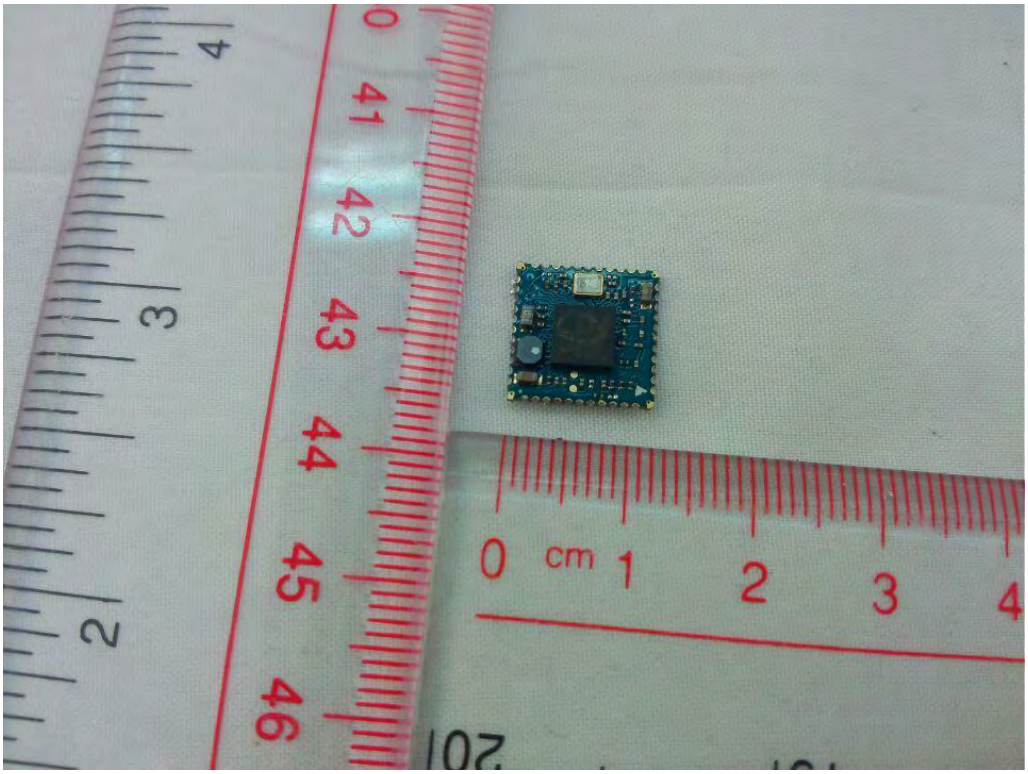
MAIN BOARD CLOSE-UP 2



MAIN BOARD CLOSE-UP 3



RF BOARD 1



RF BOARD 2

--END OF REPORT--