FCC RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

Smart Phone

ISSUED TO
Infinity System S.L.

Crtra A-2, Km 48.5, Pol. Ind. De Cabanillas, Parcela 12B, 19171, Guadalajara, Spain.

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Date Sep 24, 2014

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Date Sep 24. 2014

Report No.:	BL-SZ1490064-603
EUT Type:	Smart Phone
Model Name:	TM5QWM
Brand Name:	AIRIS
Test Standard:	47 CFR Part 15 Subpart C
FCC ID:	2AC99-TM5QWM
Test conclusion:	PASS
Test Date:	Sep 15, 2014 ~ Sep 22, 2014
Date of Issue:	Sep 24, 2014

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Revision History

Version	Issue Date	Revisions
Rev. 01	Sep 24, 2014	Initial Issue

TABLE OF CONTENTS

1 ADMINISTRATIVE DATA (GENERAL INFORMATION) 5

1.1 Identification of the Testing Laboratory 5

1.2 Identification of the Responsible Testing Location 5

1.3 Test Environment Condition 5

1.4 Announce 6

2 PRODUCT INFORMATION 7

2.1 Applicant 7

2.2 Manufacturer 7

2.3 General Description for Equipment under Test (EUT) 7

2.4 Technical Information 8

2.5 Ancillary Equipment 9

3 SUMMARY OF TEST RESULTS 10

3.1 Test Standards 10

3.2 Verdict 10

4 GENERAL TEST CONFIGURATIONS 11

4.1 Test Environments 11

4.2 Test Equipment List 11

4.3 Test Configurations 12

4.4 Description of Test Setup 12

4.4.1 For Antenna Port Test 12

4.4.2 For AC Power Supply Port Test 13

4.4.3 For Radiated Test (Below 30MHz) 13

4.4.4 For Radiated Test (30MHz-1GHz) 14

4.4.5 For Radiated Test (Above 1GHz) 14

4.5 Test Conditions 15
5 TEST ITEMS 16
5.1 Antenna Requirements 16
5.1.1 Standard Applicable 16
5.1.2 Antenna Anti-Replacement Construction 16
5.1.3 Antenna Gain 16
5.2 Output Power 17
5.2.1 Test Limit 17
5.2.2 Test Procedure 17
5.3 6dB Bandwidth 19
5.3.1 Limit 19
5.3.2 Test Procedure 19
5.4 Conducted Spurious Emission 20
5.4.1 Limit 20
5.4.2 Test Procedure 20
5.5 Conducted Emission 22
5.5.1 Limit 22
5.5.2 Test Procedure 22
5.6 Radiated Spurious Emission 23
5.6.1 Limit 23
5.6.2 Test Procedure 23
5.7 Band Edge 24
5.7.1 Limit 24
5.7.2 Test Procedure 24
5.8 Power Spectral density (PSD) 25
5.8.1 Limit 25
5.8.2 Test Procedure 25
ANNEX A TEST RESULT 26
A.1 Output Power 26
A.2 Bandwidth 30
A.3 Conducted Spurious Emissions 33

A.4 Conducted Emissions 46
A.5 Radiated Emission 48
A.6 Band Edge 98
A.7 Power Spectral Density (PSD) 101
ANNEX B TEST SETUP PHOTOS 104
B.1. Conducted Test Photo 104
B.2. Conducted Emissions Test Photo 104
B.3. Radiated Test Photo 105
ANNEX C EUT PHOTOS 107
C.1 Appearance of the EUT 107
C.2 Inside of the EUT 112

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	Infinity System S.L.
Address	Crtra A-2, Km 48.5, Pol. Ind. De Cabanillas, Parcela 12B, 19171, Guadalajara, Spain.

2.2 Manufacturer

Manufacturer	REVO TECHNOLOGY (HK) LIMITED
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, HK

2.3 General Description for Equipment under Test (EUT)

EUT Type	Smart Phone
Model Name	TM5QWM
Hardware Version	N/A
Software Version	HCT-K56MB-A2
Network and Wireless connectivity	WIFI 802.11b, 802.11g and 802.11n (HT20/40), Bluetooth 3.0, Bluetooth 4.0 Low Energy (BLE)
About the Product	The equipment is Smart Phone, 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	0dBi

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	AIRIS
	Model No	T5QWMCH
	Serial No	(N/A. marked #1 by test site)
	Capacitance	2000mAh
	Rated Voltage	3.7V
	Extreme Voltage	Low: 3.5V / High: 4.2V
Ancillary Equipment 2	AC Adapter	
	Brand Name	AIRIS
	Model No	T5QWMCH
	Serial No	(N/A. marked #1 by test site)
	Rated Input	~ 220V, 200mA, 60Hz, 5W
	Rated Output	⎓ 5V, 1000mA, 5W, 60Hz
Ancillary Equipment 3	Earphone	
Ancillary Equipment 4	USB 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)	3.7 V
	LV (Low Voltage)	3.5 V
	HV (High Voltage)	4.2 V

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	2013.07.03	2015.07.02
Test Antenna-Bi-Log(30MHz-3GHz)	SCHWARZBECK	VULB 9163	9163-624	2013.07.02	2015.07.01
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	2014.10.06

4.3 Test Configurations

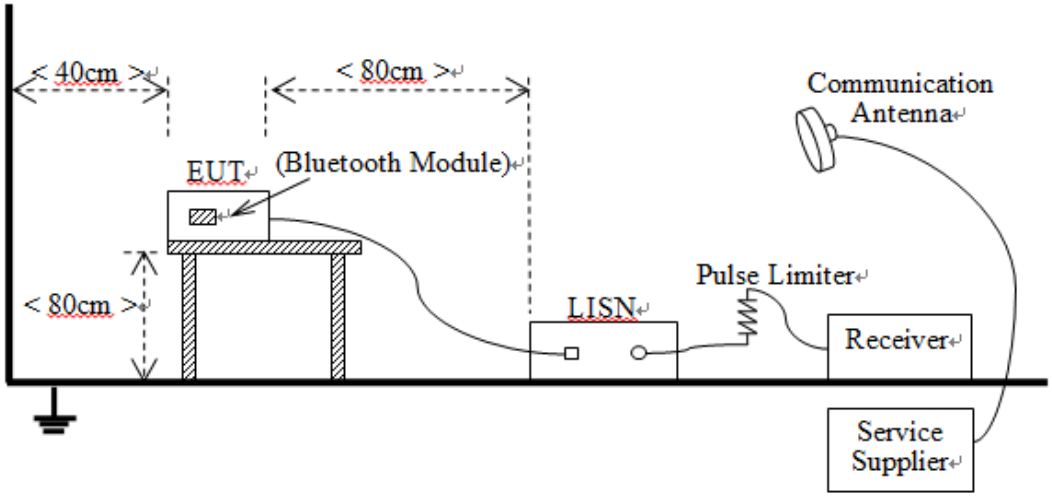
Test Configurations (TC) NO.	Description	
	Signal Description	Operating Frequency
Transmitter		
TC01	DSSS modulation, 802.11b	Ch No. 1/ 2412MHz
TC02	DSSS modulation, 802.11b	Ch No. 6/ 2437MHz
TC03	DSSS modulation, 802.11b	Ch No. 11/ 2462MHz
TC04	OFDM modulation, 802.11g	Ch No. 1/ 2412MHz
TC05	OFDM modulation, 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

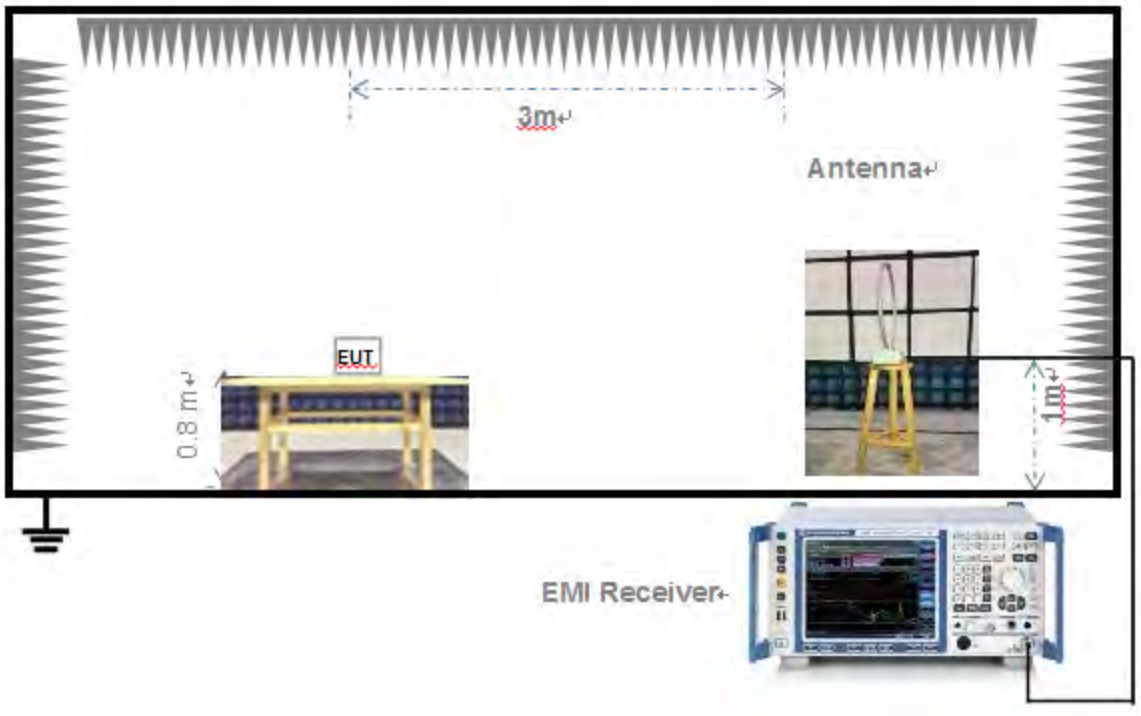
(Diagram 1)

4.4.2 For AC Power Supply Port Test



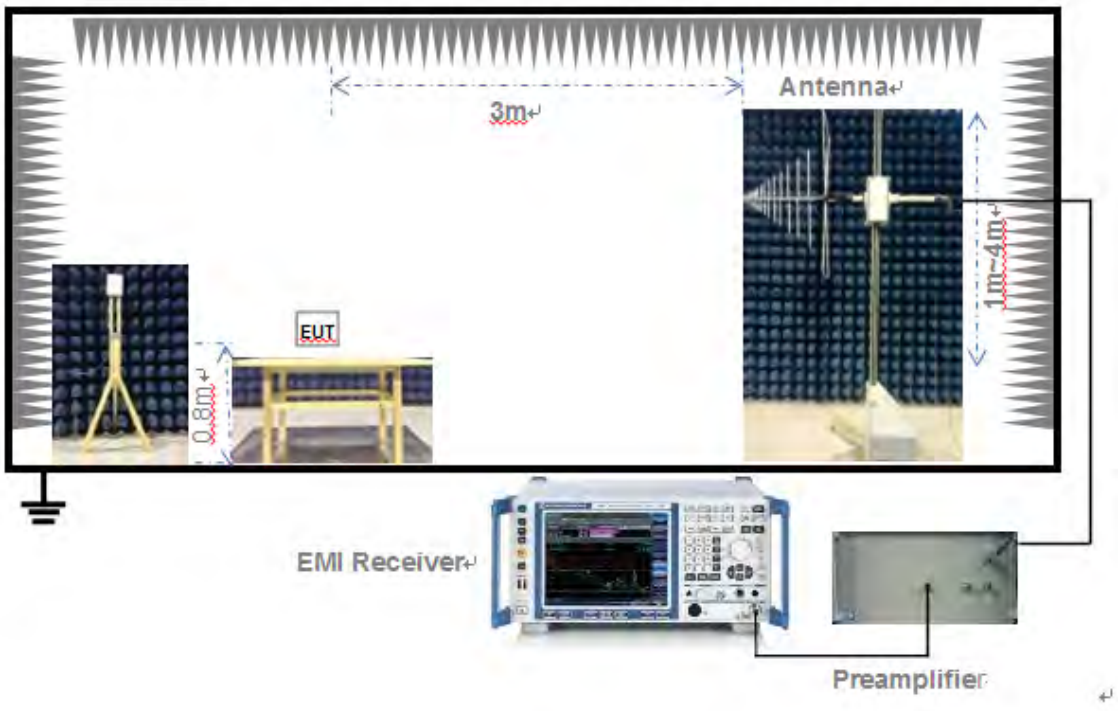
(Diagram 2)

4.4.3 For Radiated Test (Below 30MHz)



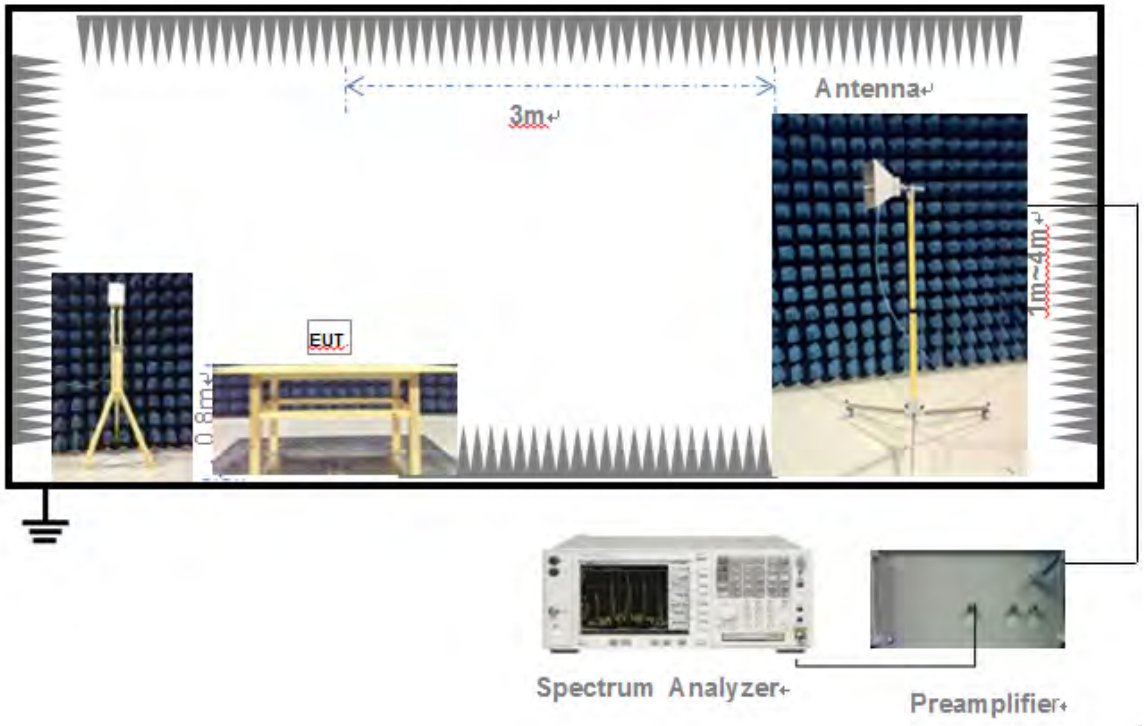
(Diagram 3)

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)

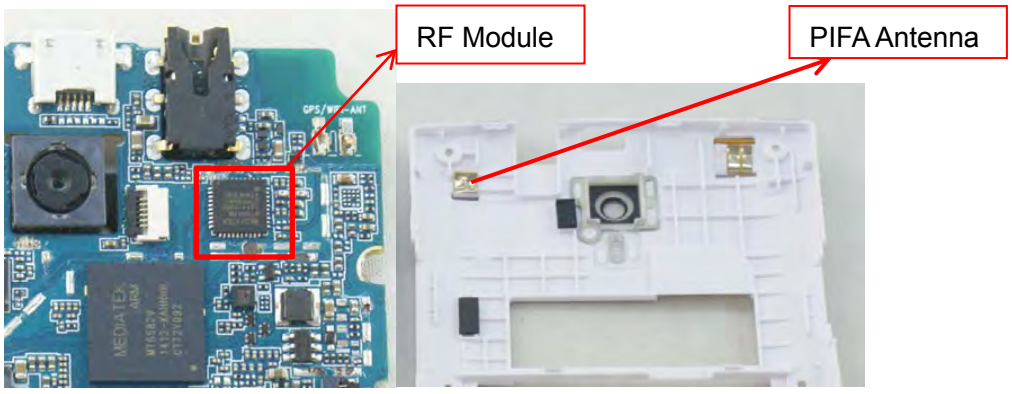
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply 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	An embedded-in antenna design is used.

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(ms)	1/T(kHz)
802.11b	84.8	0.933	1.072
802.11g	50.5	0.175	5.714
802.11n HT20	48.7	0.163	6.135
802.11n HT40	88.5	1.390	0.719

Peak Power Test Data

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.55	179.89	30	1000	PASS
Middle	22.42	174.58			PASS
High	22.68	185.35			PASS

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	20.76	119.12	30	1000	PASS
Middle	21.54	142.56			PASS
High	21.11	129.12			PASS

802.11n-20MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	21.12	129.42	30	1000	PASS
Middle	21.71	148.25			PASS
High	20.77	119.40			PASS

802.11n-40MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.06	63.97	30	1000	PASS
Middle	20.99	125.60			PASS
High	18.60	72.44			PASS

Average Power Test Data (Reporting Only)

802.11b Mode:

Channel	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
		dBm	mW	
Low	0.71	15.94	39.26	PASS
Middle	0.71	16.05	40.27	PASS
High	0.71	16.12	40.93	PASS

802.11g Mode:

Channel	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
		dBm	mW	
Low	2.97	11.88	15.42	PASS
Middle	2.97	13.13	20.56	PASS
High	2.97	12.49	17.74	PASS

802.11n-20MHz Mode:

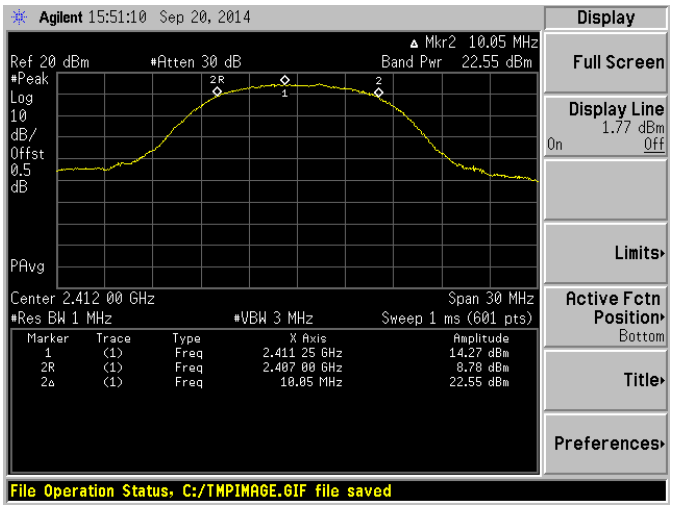
Channel	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
		dBm	mW	
Low	3.12	11.91	15.52	PASS
Middle	3.12	13.24	21.09	PASS
High	3.12	12.58	18.11	PASS

802.11n-40MHz Mode:

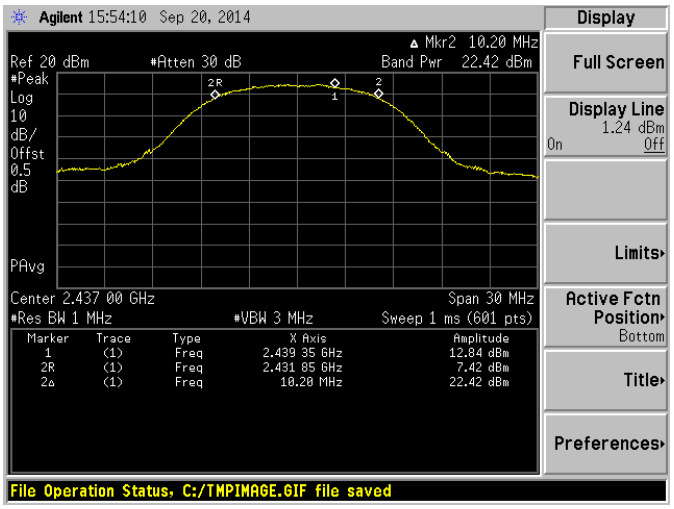
Channel	Duty Factor(10 log (1/x))	Measured Output Average Power		Verdict
		dBm	mW	
Low	0.53	9.91	9.79	PASS
Middle	0.53	12.98	19.86	PASS
High	0.53	10.59	11.46	PASS

Peak Power Test Plots

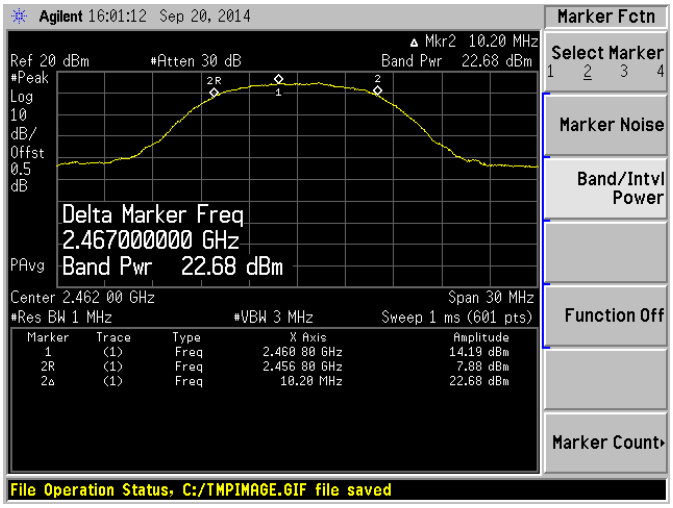
802.11b LOW CHANNEL



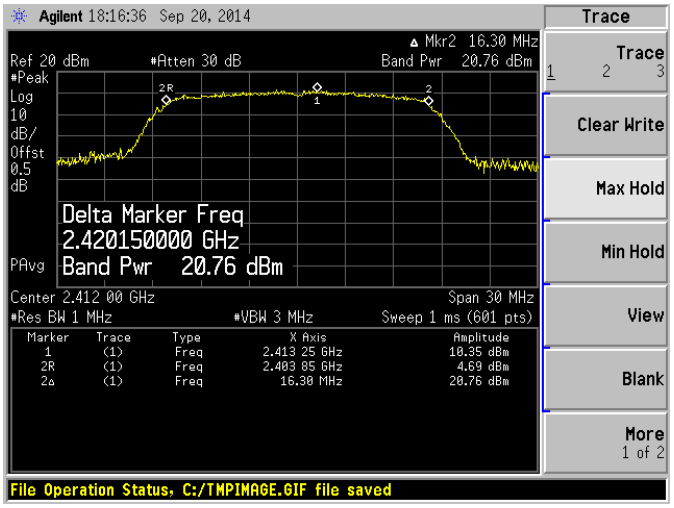
802.11b MID CHANNEL



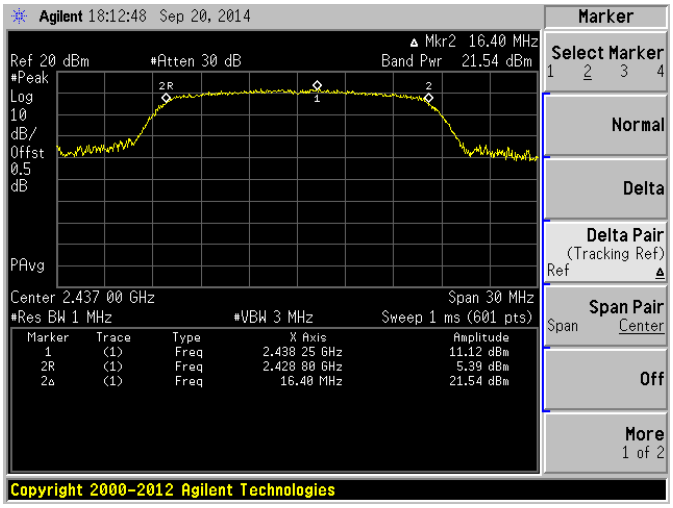
802.11b HIGH CHANNEL



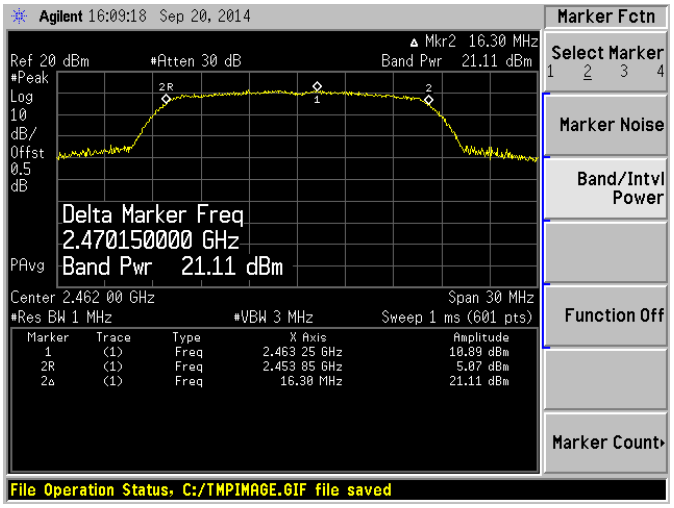
802.11g LOW CHANNEL



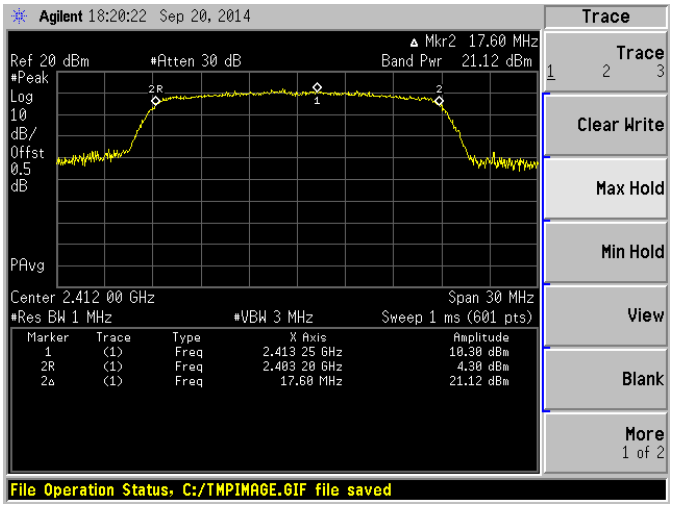
802.11g MID CHANNEL



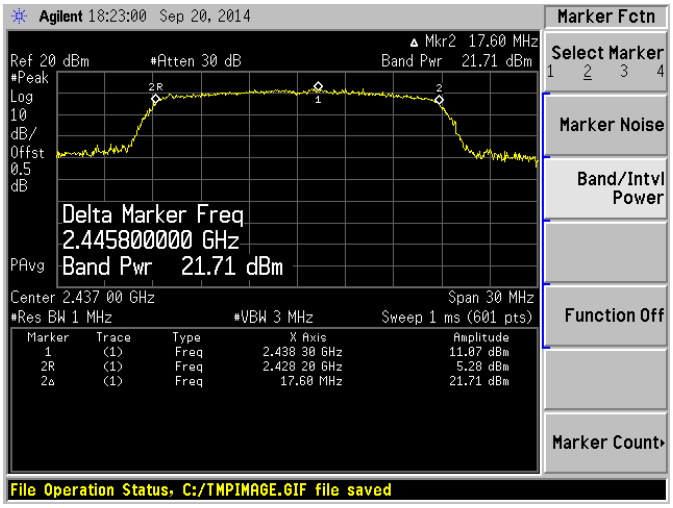
802.11g HIGH CHANNEL



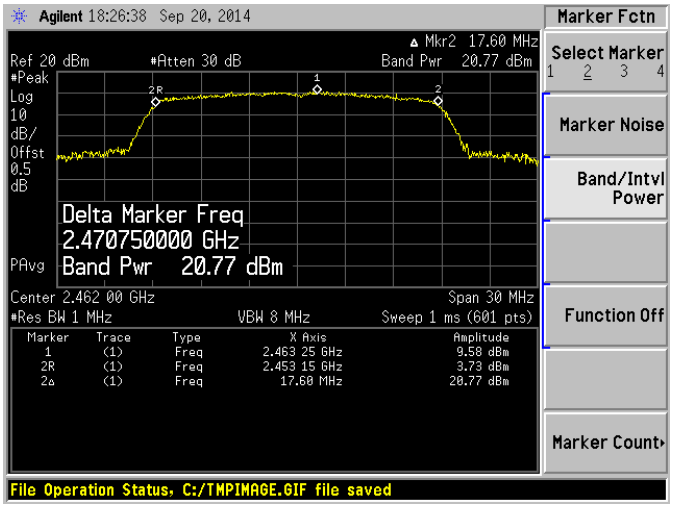
802.11n 20MHz LOW CHANNEL



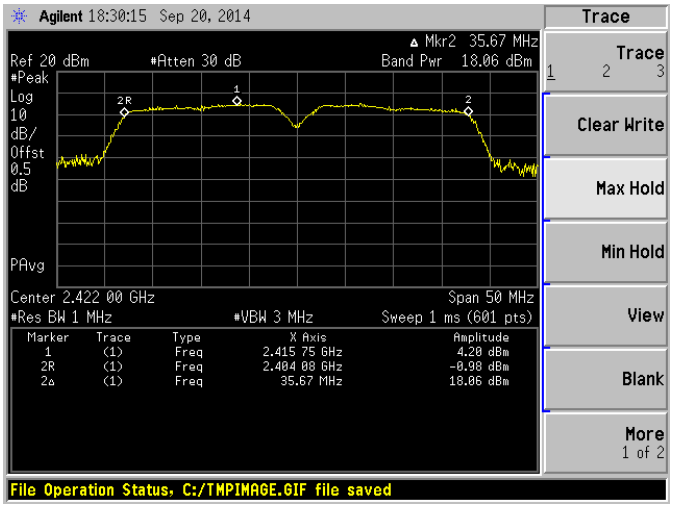
802.11 n 20MHz MID CHANNEL



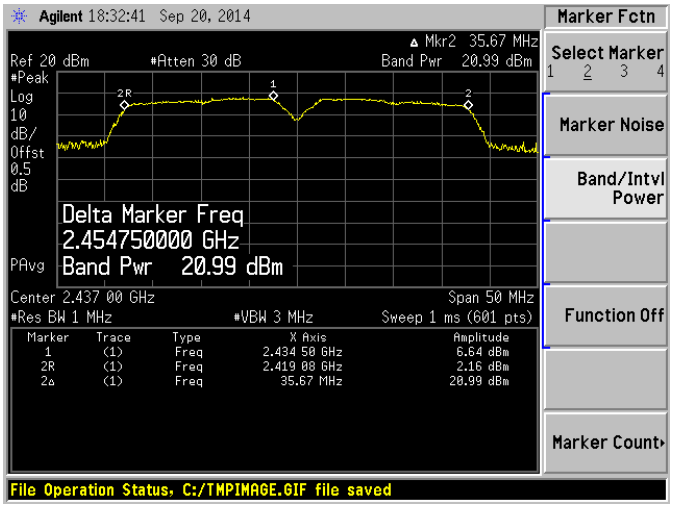
802.11 n 20MHz HIGH CHANNEL



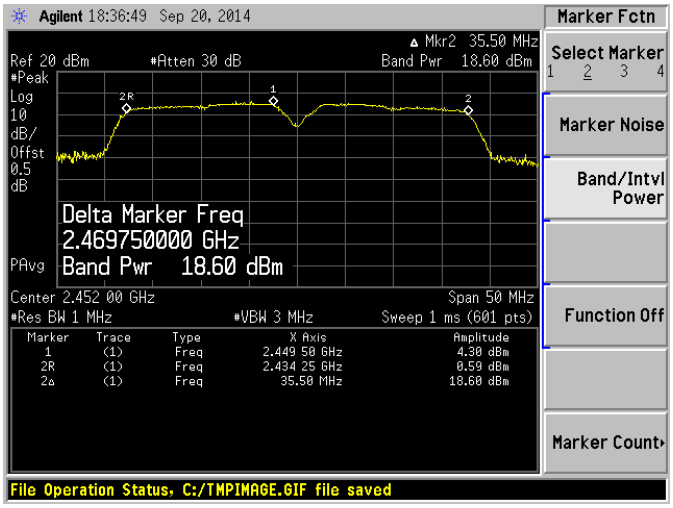
802.11 n 40MHz LOW CHANNEL



802.11 n 40MHz MID CHANNEL



802.11 n 40MHz HIGH CHANNEL



A.2 Bandwidth

Test Data

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	Limits (kHz)
Low	10.05	⩾500
Middle	10.20	⩾500
High	10.20	⩾500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	Limits (kHz)
Low	16.30	⩾500
Middle	16.40	⩾500
High	16.30	⩾500

802.11n-20MHz Mode:

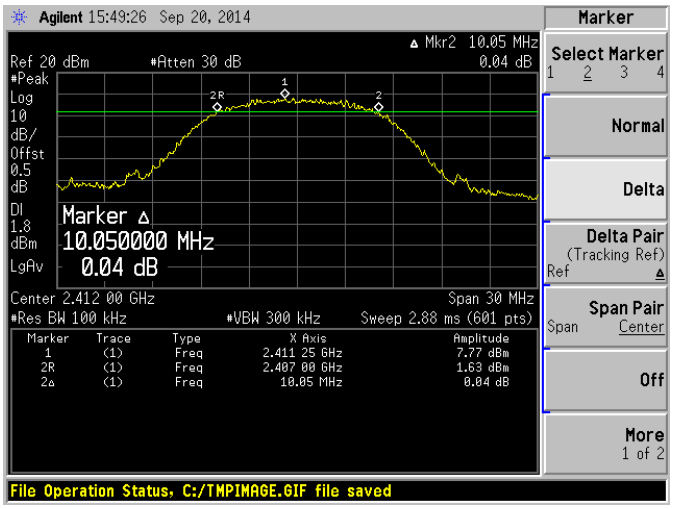
Channel	6 dB Bandwidth (MHz)	Limits (kHz)
Low	17.60	⩾500
Middle	17.60	⩾500
High	17.60	⩾500

802.11n-40MHz Mode:

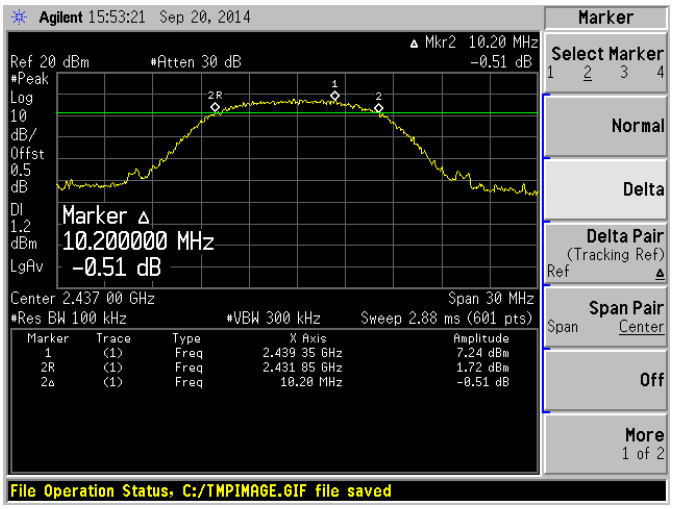
Channel	6 dB Bandwidth (MHz)	Limits (kHz)
Low	35.67	⩾500
Middle	35.67	⩾500
High	35.50	⩾500

Test plots

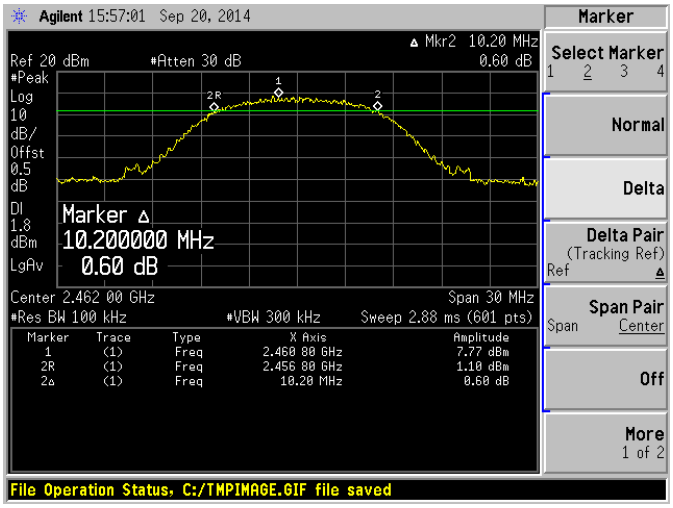
802.11b LOW CHANNEL



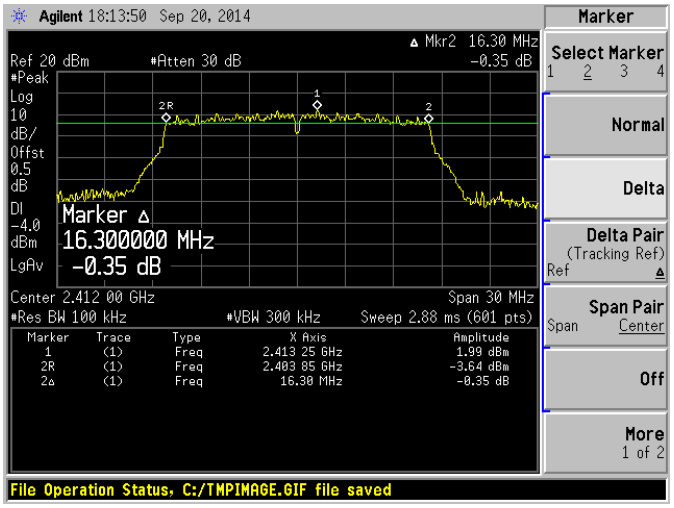
802.11b MID CHANNEL



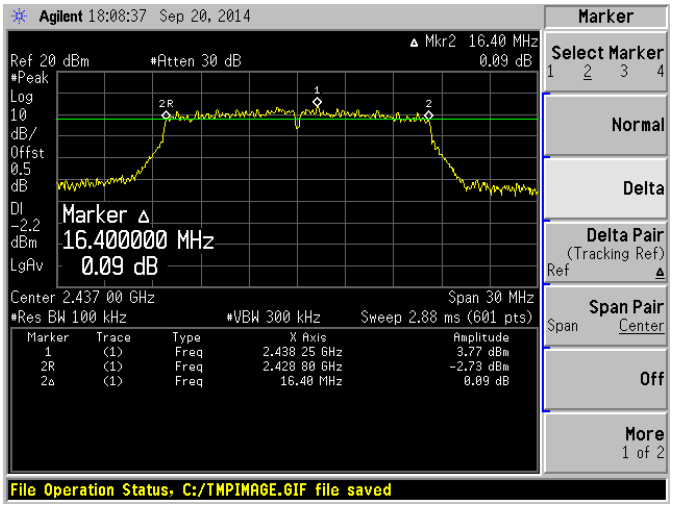
802.11b HIGH CHANNEL



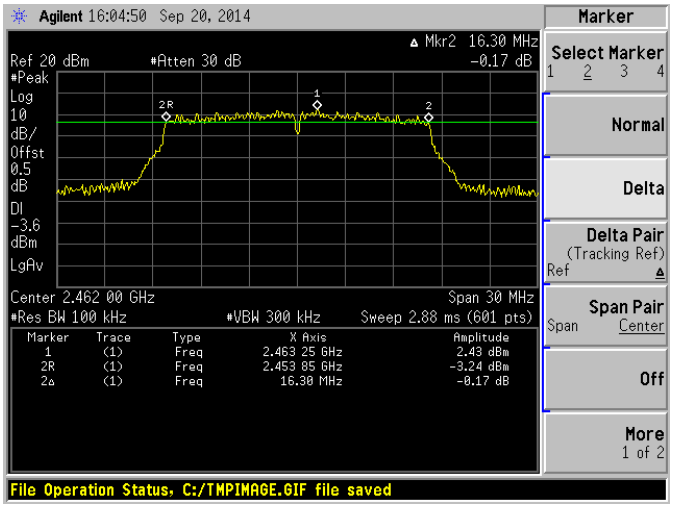
802.11g LOW CHANNEL



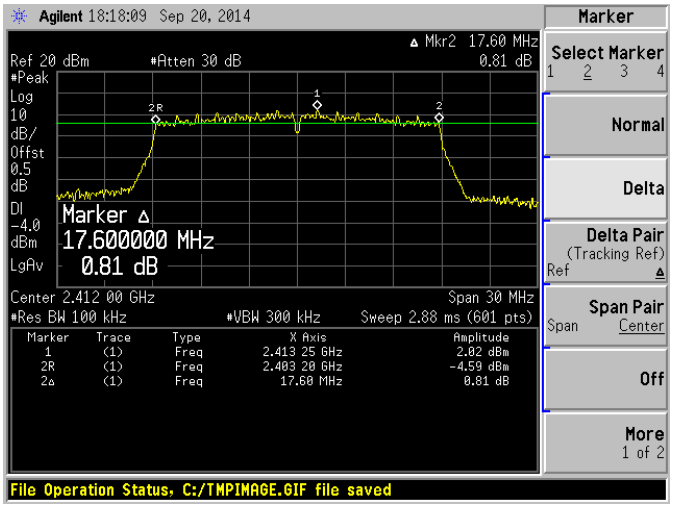
802.11g MID CHANNEL



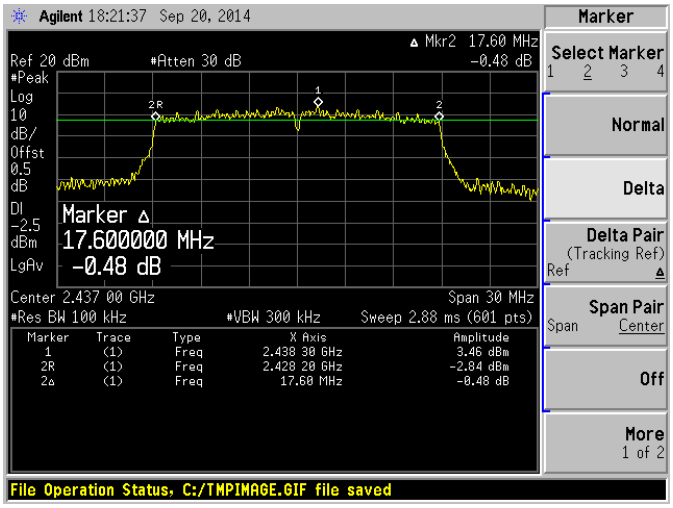
802.11g HIGH CHANNEL



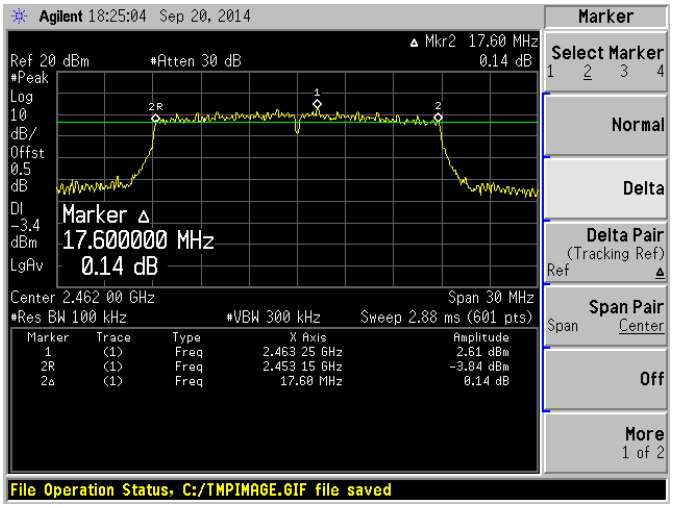
802.11n-20MHz LOW CHANNEL



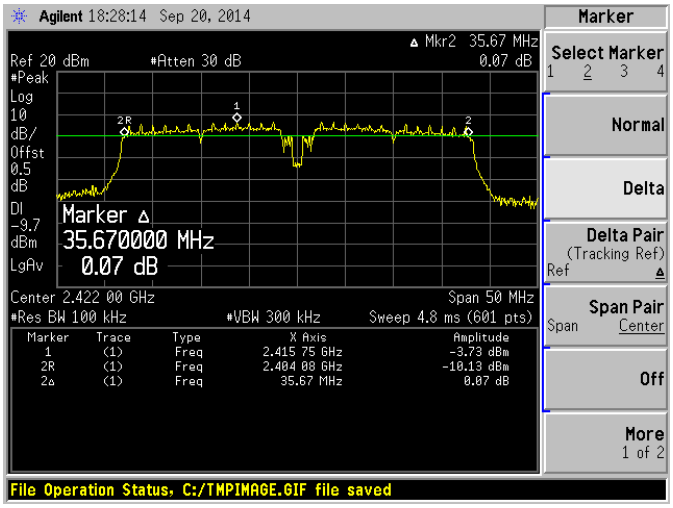
802.11 n-20MHz MID CHANNEL



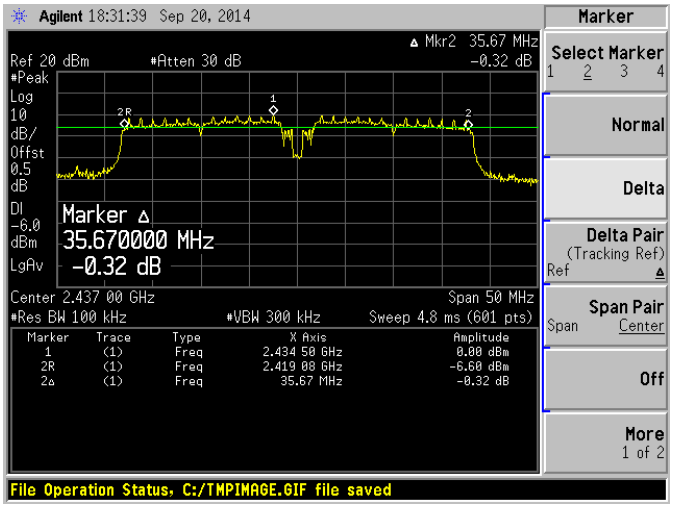
802.11n-20MHz HIGH CHANNEL



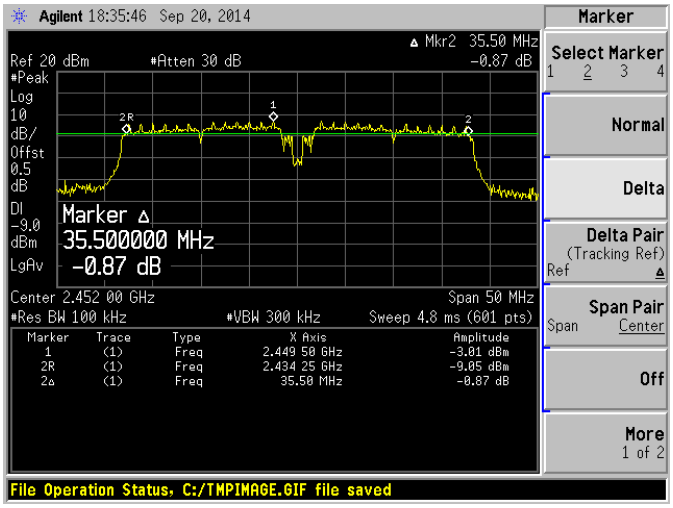
802.11n-40MHz LOW CHANNEL



802.11n-40MHz MID CHANNEL



802.11n-40MHz HIGH CHANNEL



A.3 Conducted Spurious Emissions

Test Data

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-22.91	7.77	-12.2	PASS
Middle	-23.92	7.79	-12.2	PASS
High	-24.43	7.83	-12.2	PASS

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-42.22	2.34	-17.7	PASS
Middle	-38.30	3.19	16.8	PASS
High	-41.70	2.41	-17.6	PASS

802.11n-20MHz Mode:

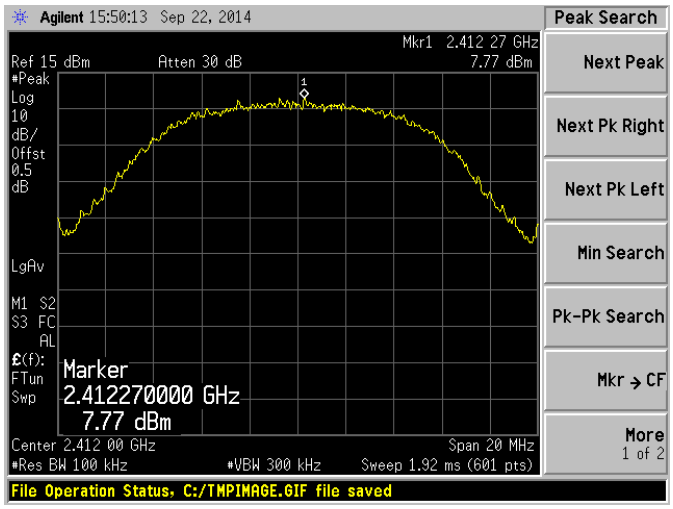
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-40.99	2.34	-17.7	PASS
Middle	-40.44	3.20	16.8	PASS
High	-42.06	2.66	17.3	PASS

802.11n-40MHz Mode:

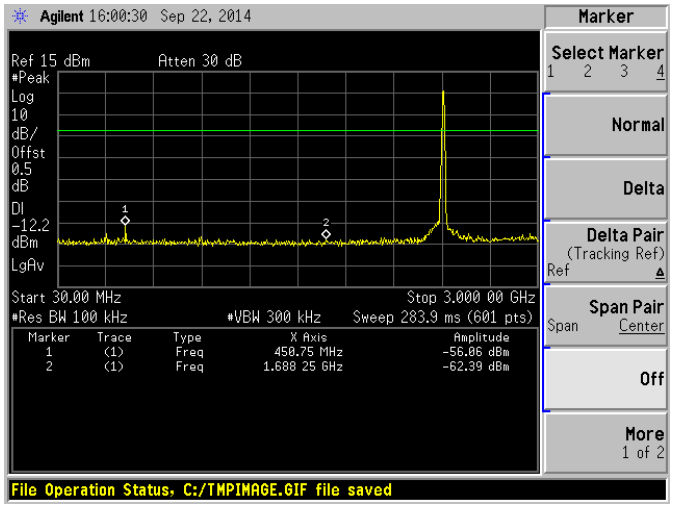
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-43.91	-2.88	-22.9	PASS
Middle	-42.40	0.28	-19.7	PASS
High	-42.19	-2.97	-23.0	PASS

Test Plots

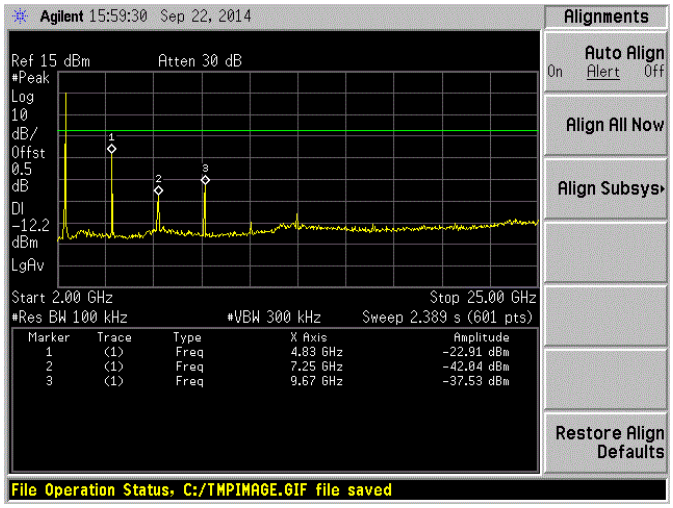
802.11b LOW CHANNEL CARRIER LEVEL



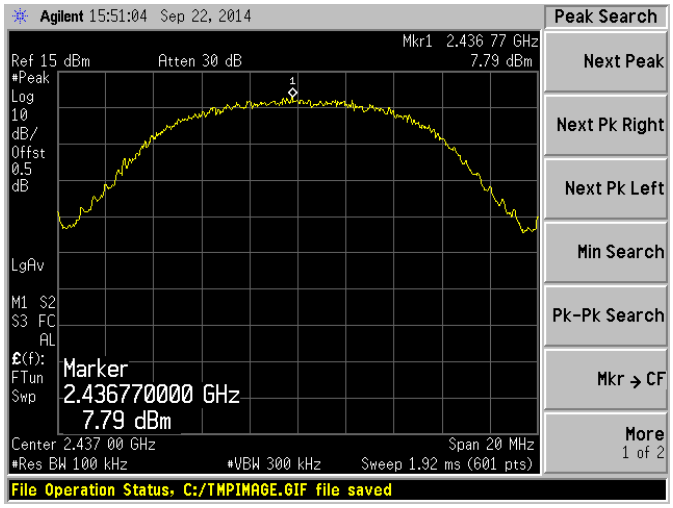
802.11b LOW CHANNEL, SPURIOUS 30MHz~3GHz



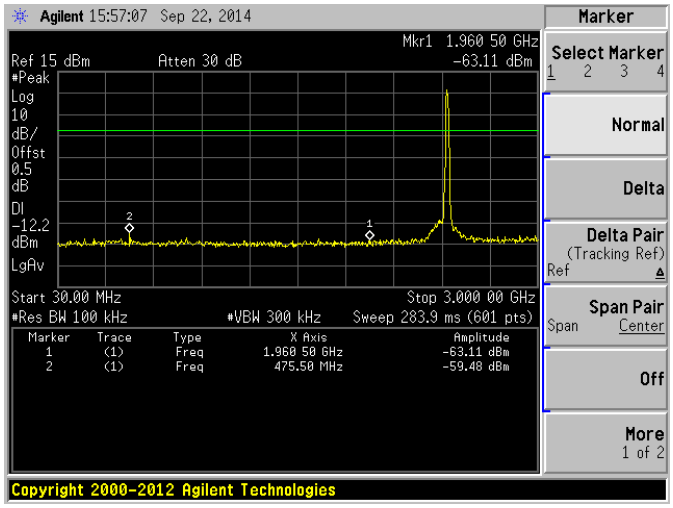
802.11b LOW CHANNEL, SPURIOUS 2GHz~25GHz



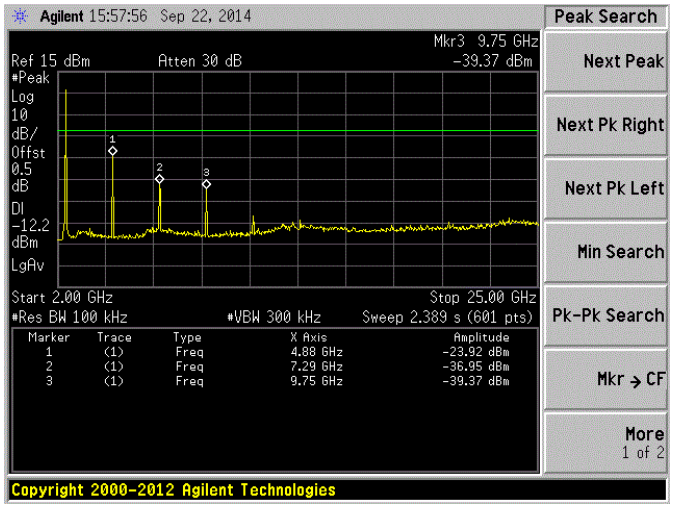
802.11b MID CHANNEL CARRIER LEVEL



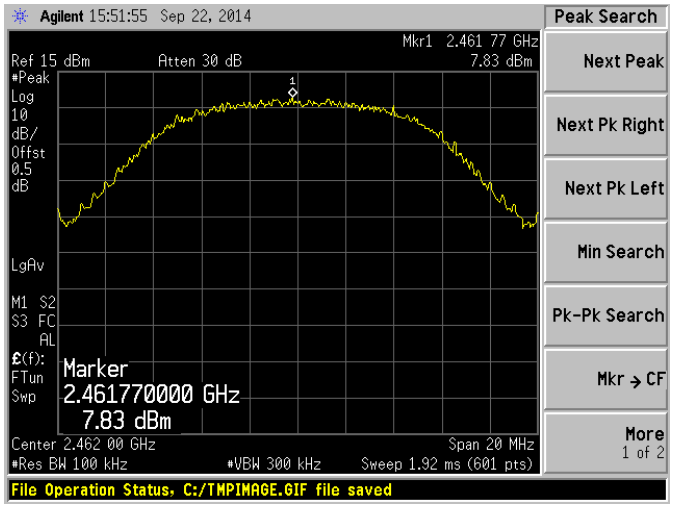
802.11b MID CHANNEL, SPURIOUS 30MHz~3GHz



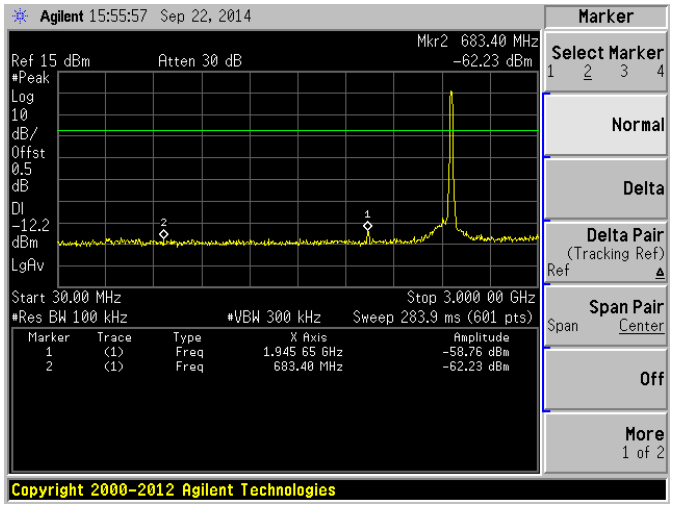
802.11b MID CHANNEL, SPURIOUS 2GHz~25GHz



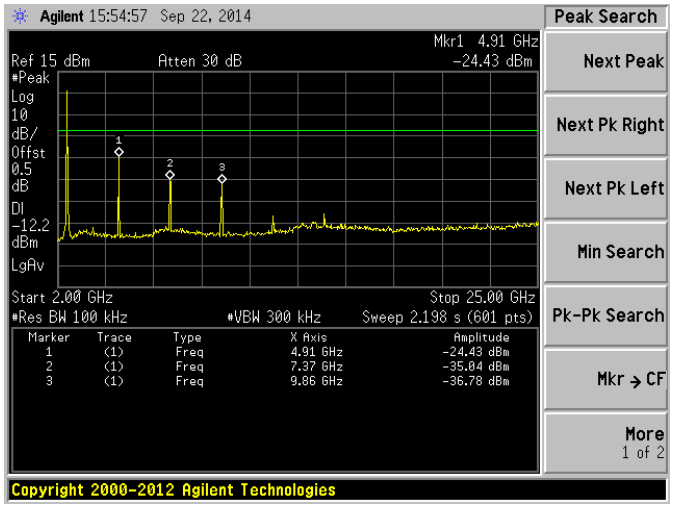
802.11b HIGH CHANNEL CARRIER LEVEL



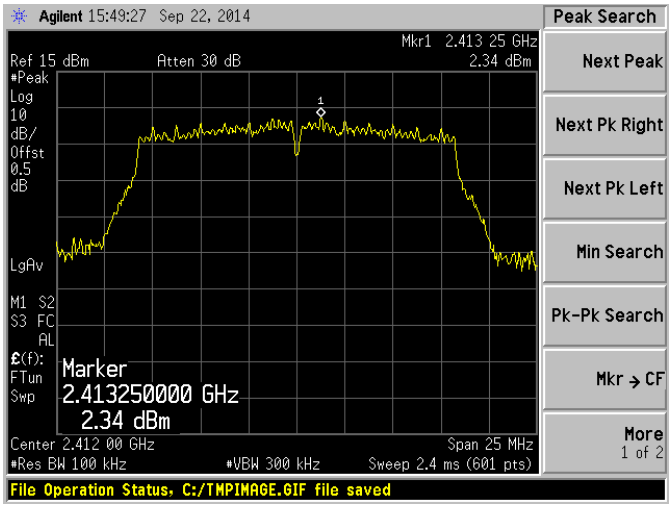
802.11b HIGH CHANNEL, SPURIOUS 30MHz~3GHz



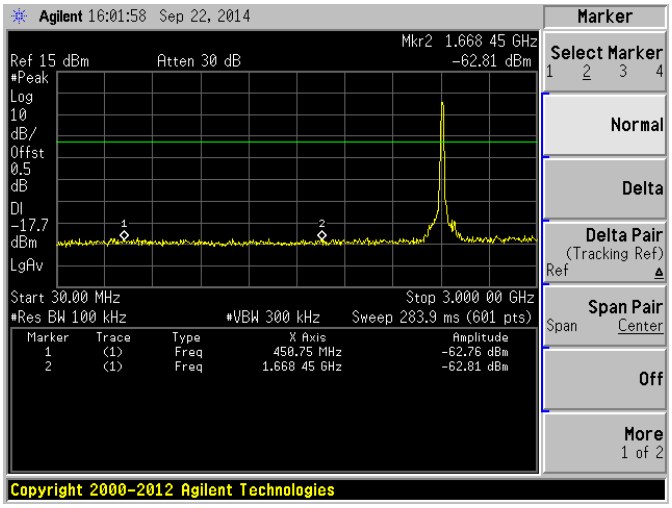
802.11b HIGH CHANNEL, SPURIOUS 2GHz~25GHz



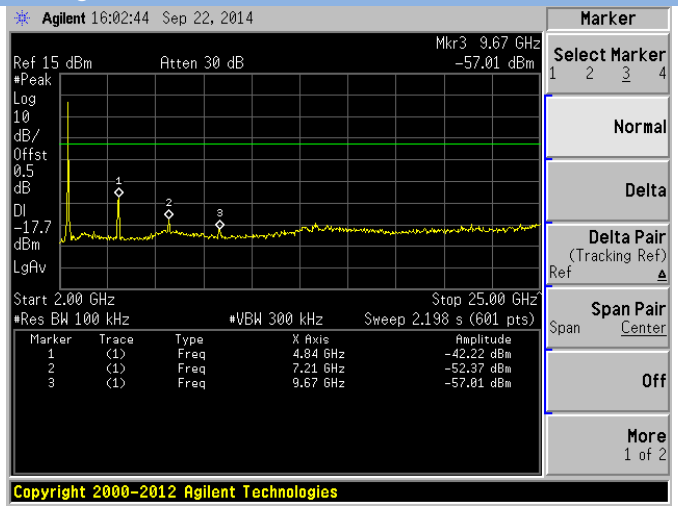
802.11g LOW CHANNEL CARRIER LEVEL



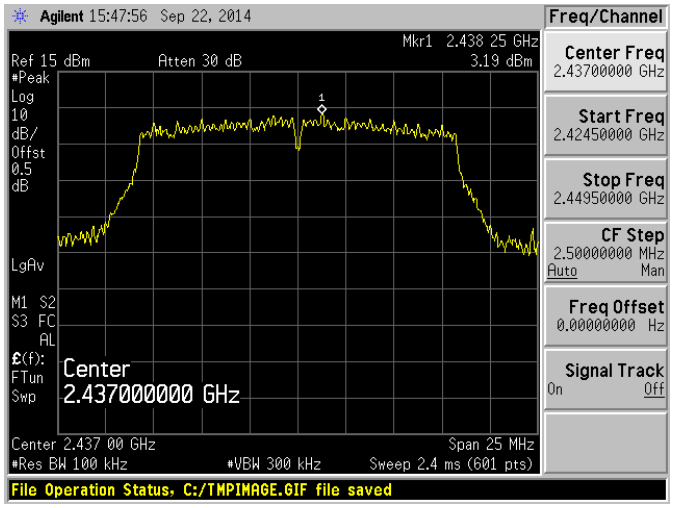
802.11g LOW CHANNEL, SPURIOUS 30MHz~3GHz



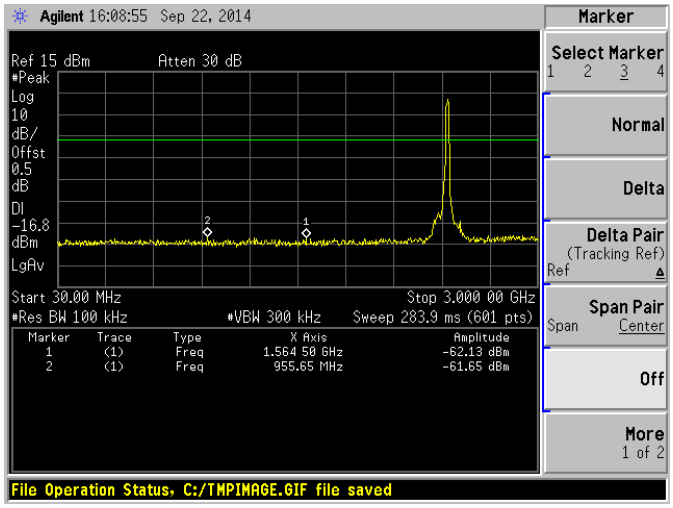
802.11g LOW CHANNEL, SPURIOUS 2GHz~25GHz



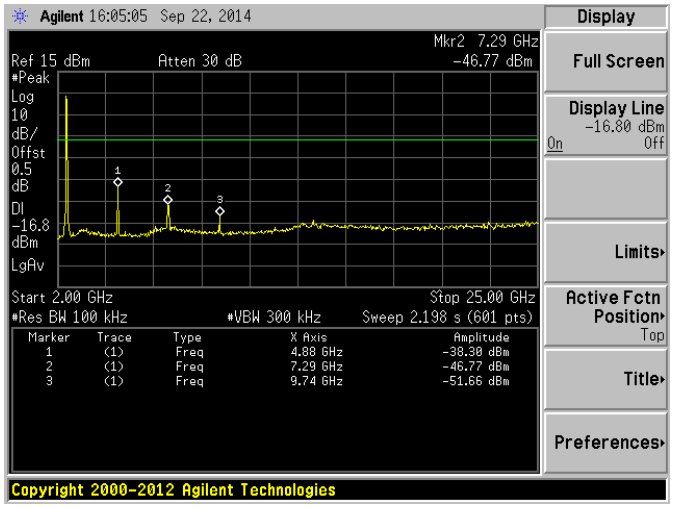
802.11g MID CHANNEL CARRIER LEVEL



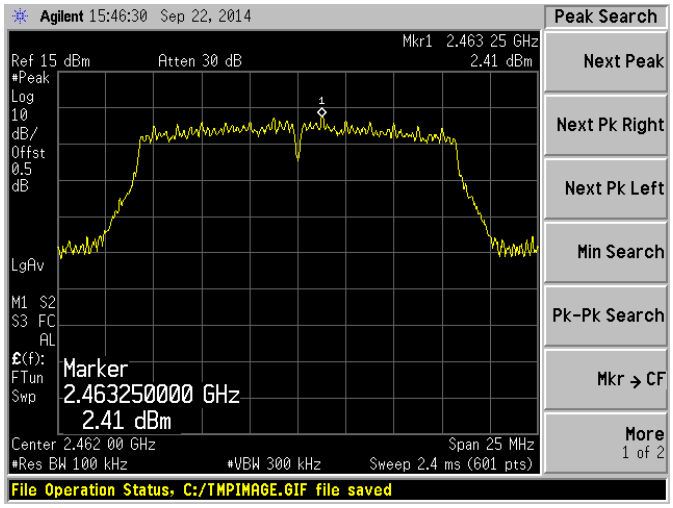
802.11g MID CHANNEL, SPURIOUS 30MHz~3GHz



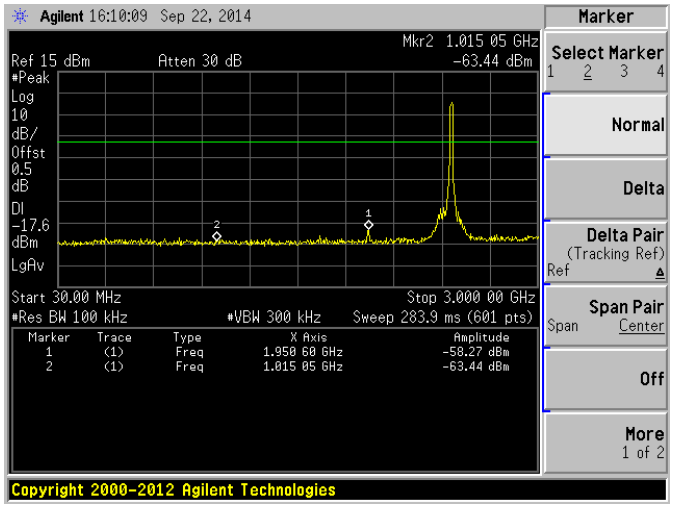
802.11g MID CHANNEL, SPURIOUS 2GHz~25GHz



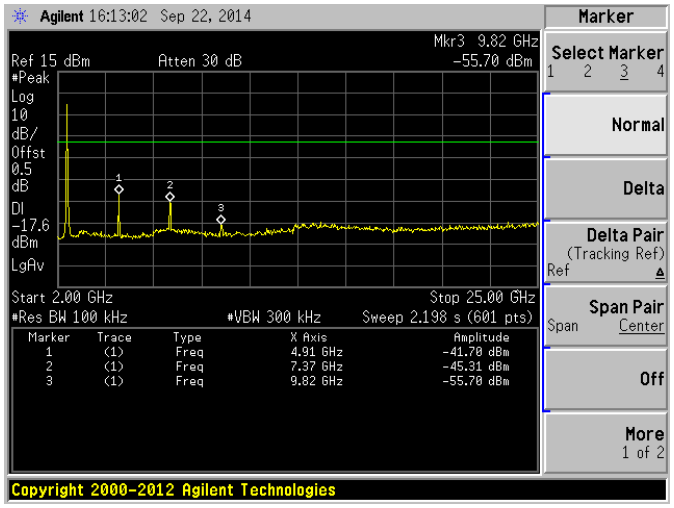
802.11g HIGH CHANNEL CARRIER LEVEL



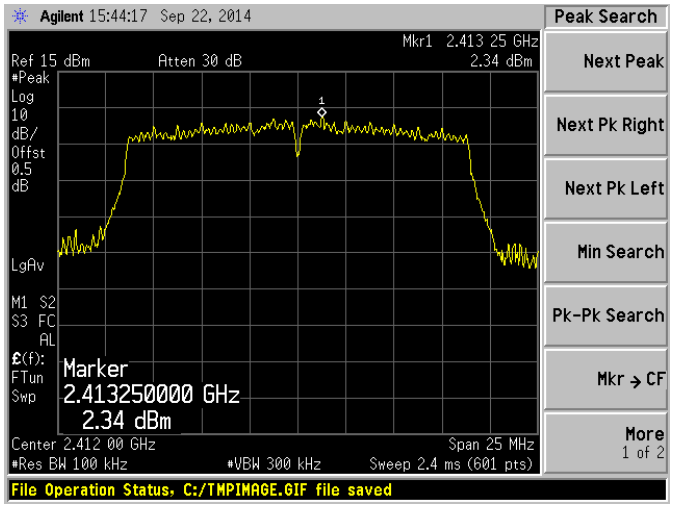
802.11g HIGH CHANNEL, SPURIOUS 30MHz~3GHz



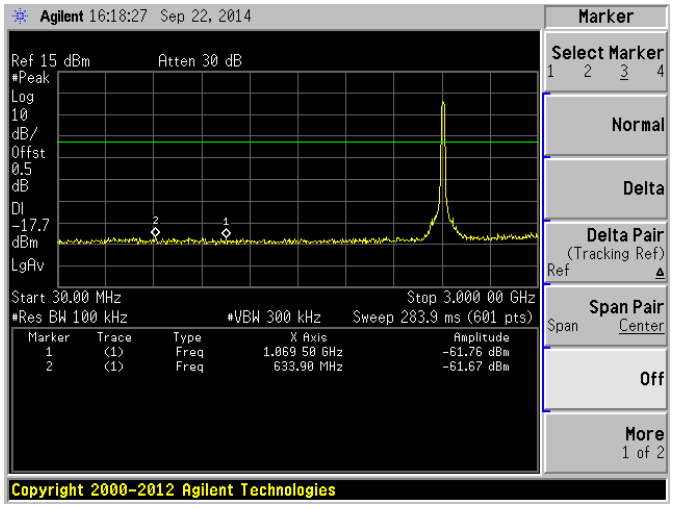
802.11g HIGH CHANNEL, SPURIOUS 2GHz~25GHz



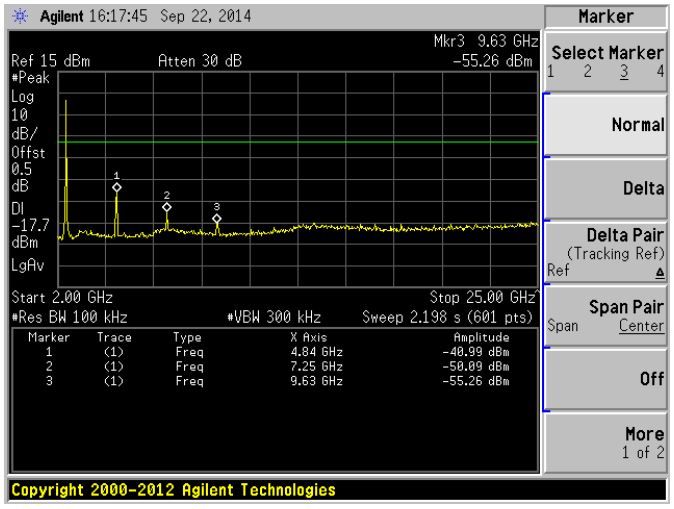
802.11n 20MHz LOW CHANNEL CARRIER LEVEL



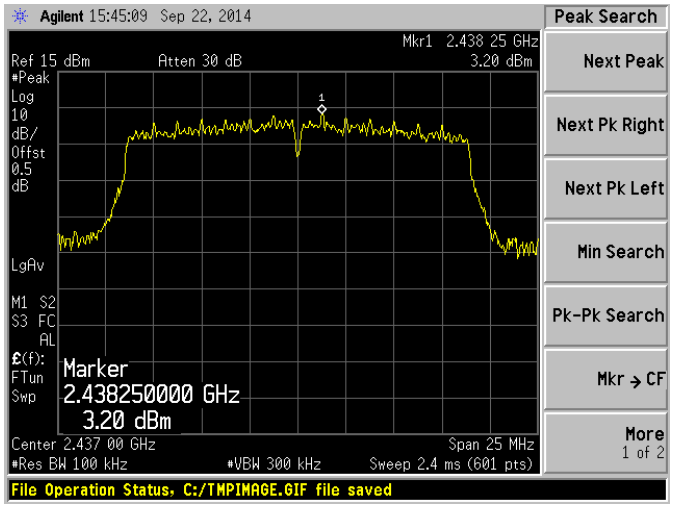
802.11 n 20MHz LOW CHANNEL, SPURIOUS 30MHz~3GHz



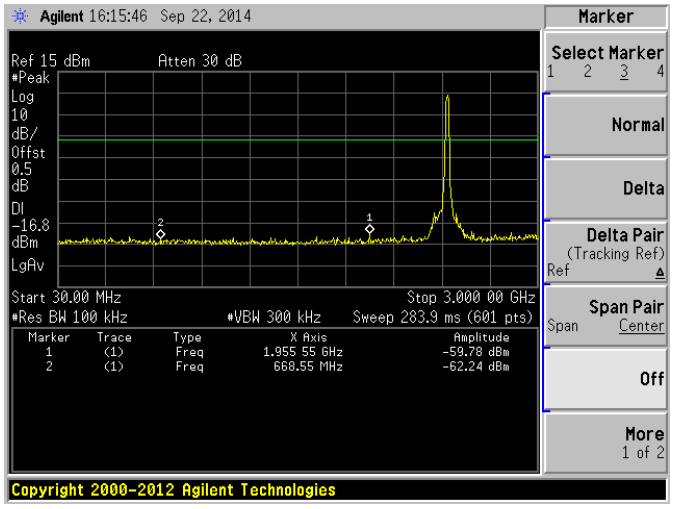
802.11 n 20MHz LOW CHANNEL, SPURIOUS 2GHz~25GHz



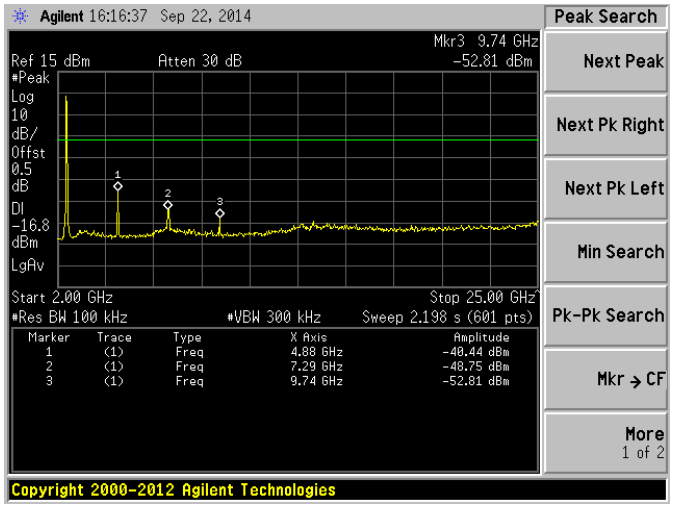
802.11 n 20MHz MID CHANNEL CARRIER LEVEL



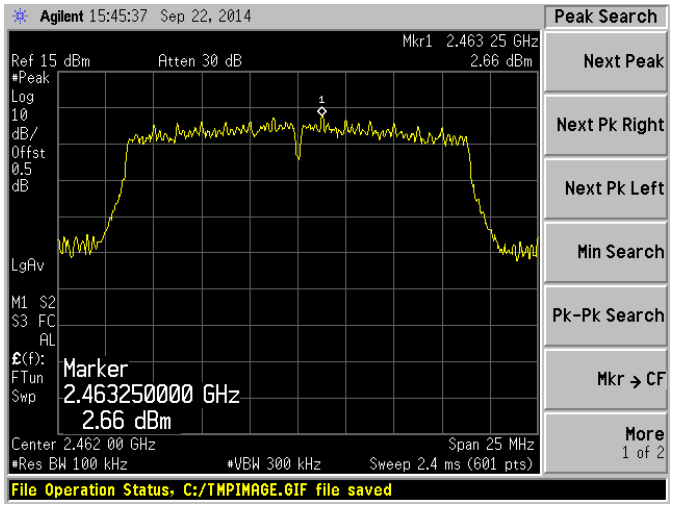
802.11 n 20MHz MID CHANNEL, SPURIOUS 30MHz~3GHz



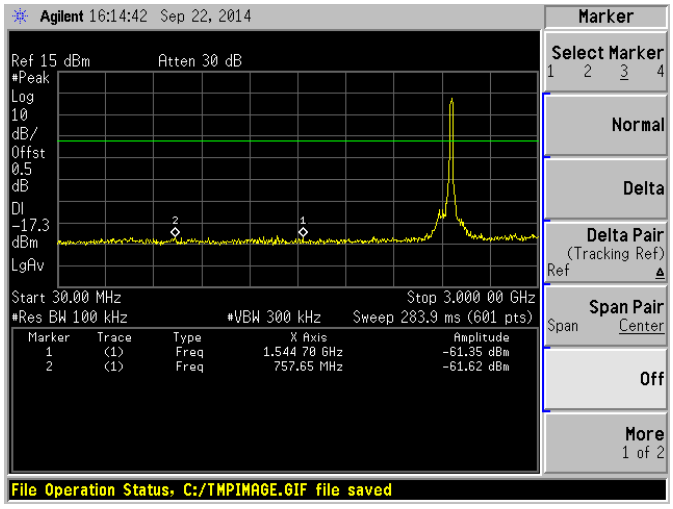
802.11 n 20MHz MID CHANNEL, SPURIOUS 2GHz~25GHz



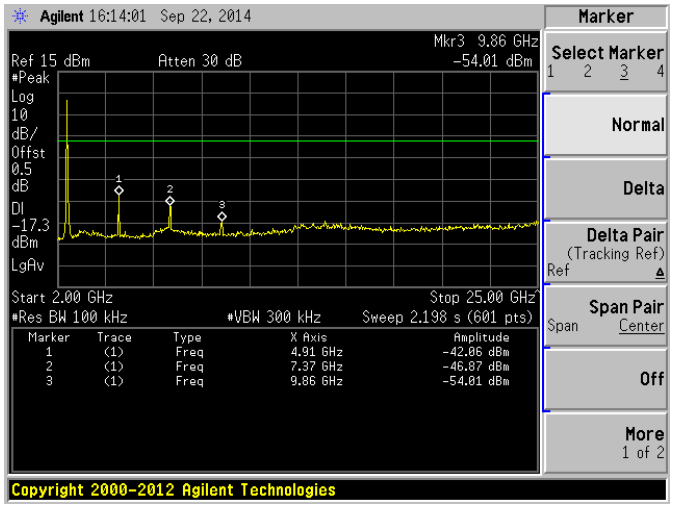
802.11 n 20MHz HIGH CHANNEL CARRIER LEVEL



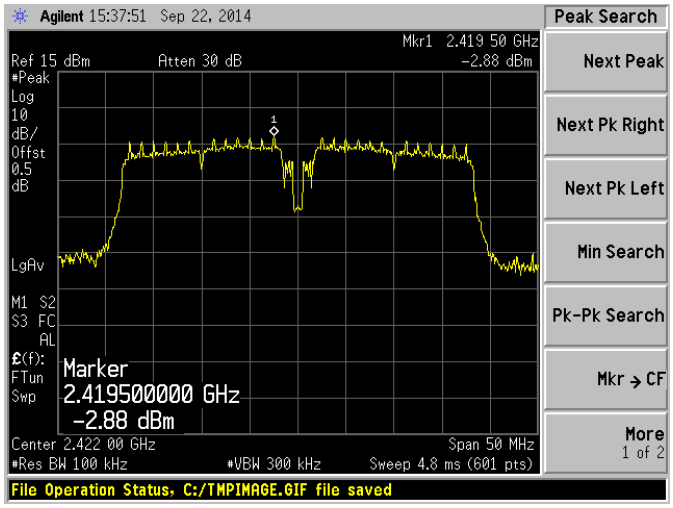
802.11 n 20MHz HIGH CHANNEL, SPURIOUS 30MHz~3GHz



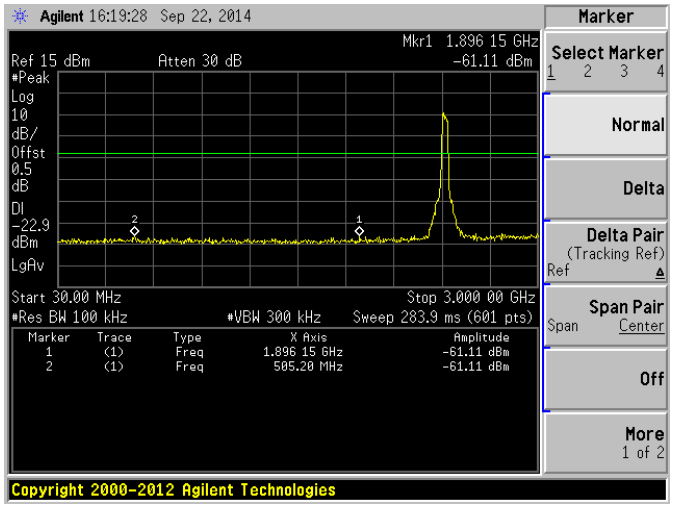
802.11 n 20MHz HIGH CHANNEL, SPURIOUS 2GHz~25GHz



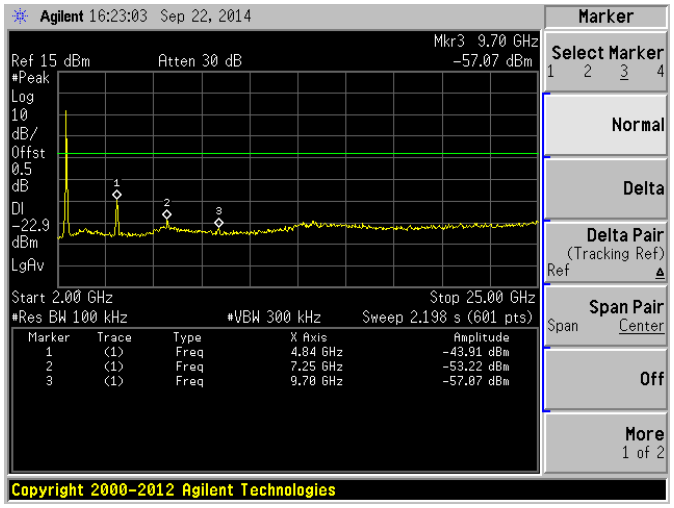
802.11n 40MHz LOW CHANNEL CARRIER LEVEL



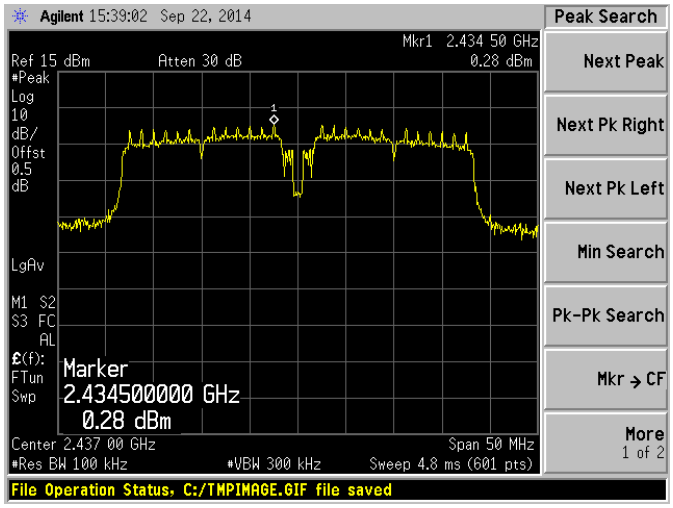
802.11 n 40MHz LOW CHANNEL, SPURIOUS 30MHz~3GHz



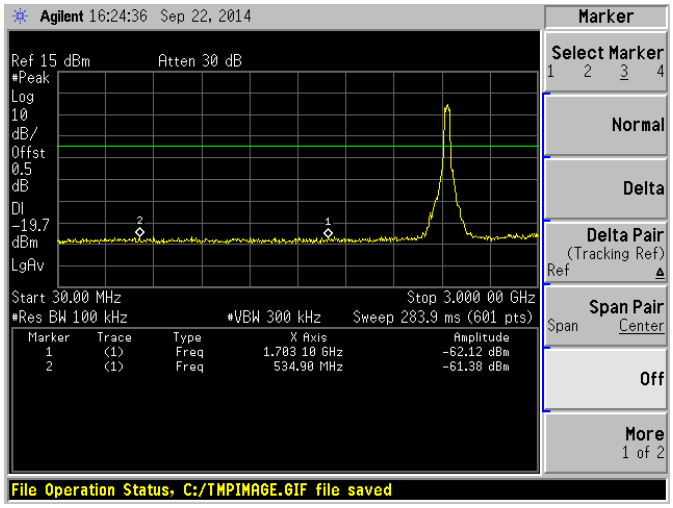
802.11 n 40MHz LOW CHANNEL, SPURIOUS 2GHz~25GHz



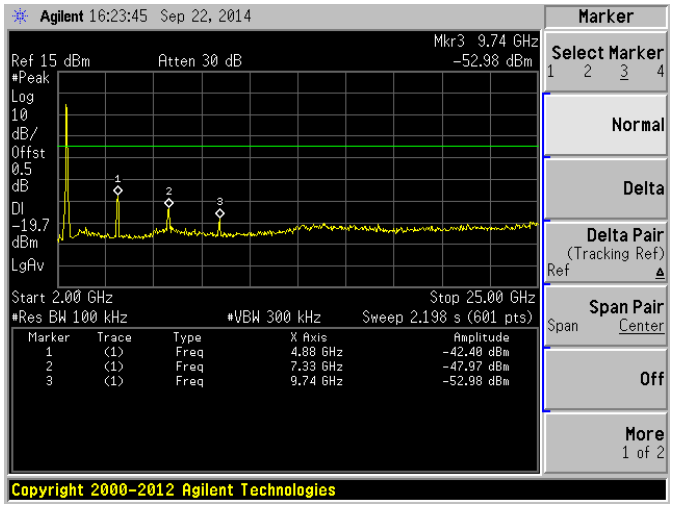
802.11 n 40MHz MID CHANNEL CARRIER LEVEL



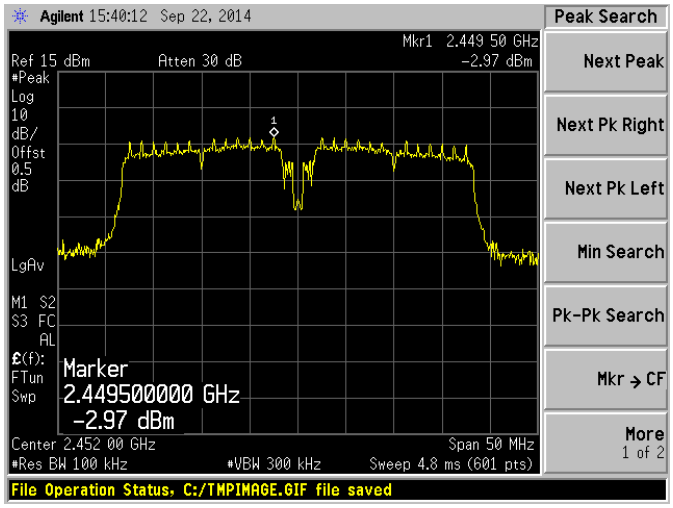
802.11 n 40MHz MID CHANNEL, SPURIOUS 30MHz~3GHz



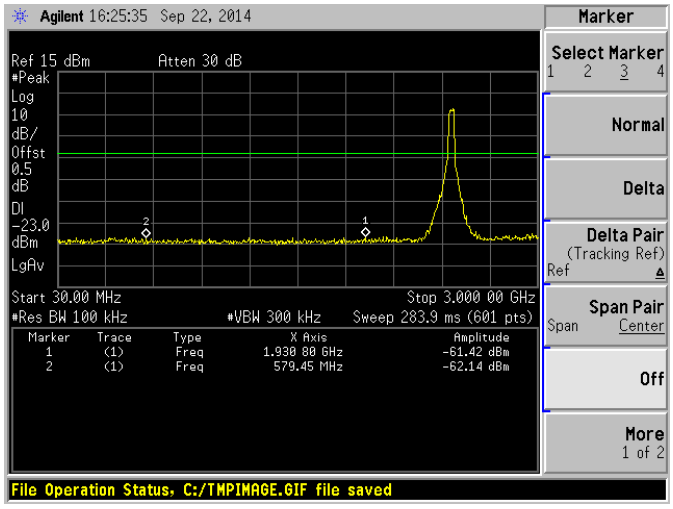
802.11 n 40MHz MID CHANNEL, SPURIOUS 2GHz~25GHz



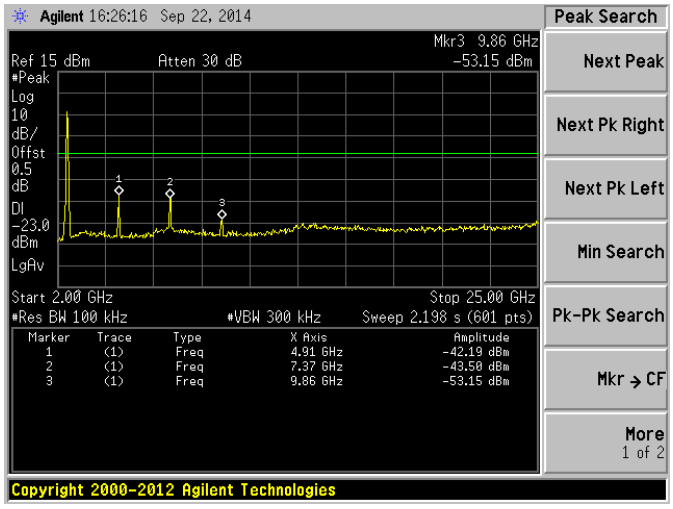
802.11 n 40MHz HIGH CHANNEL CARRIER LEVEL



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



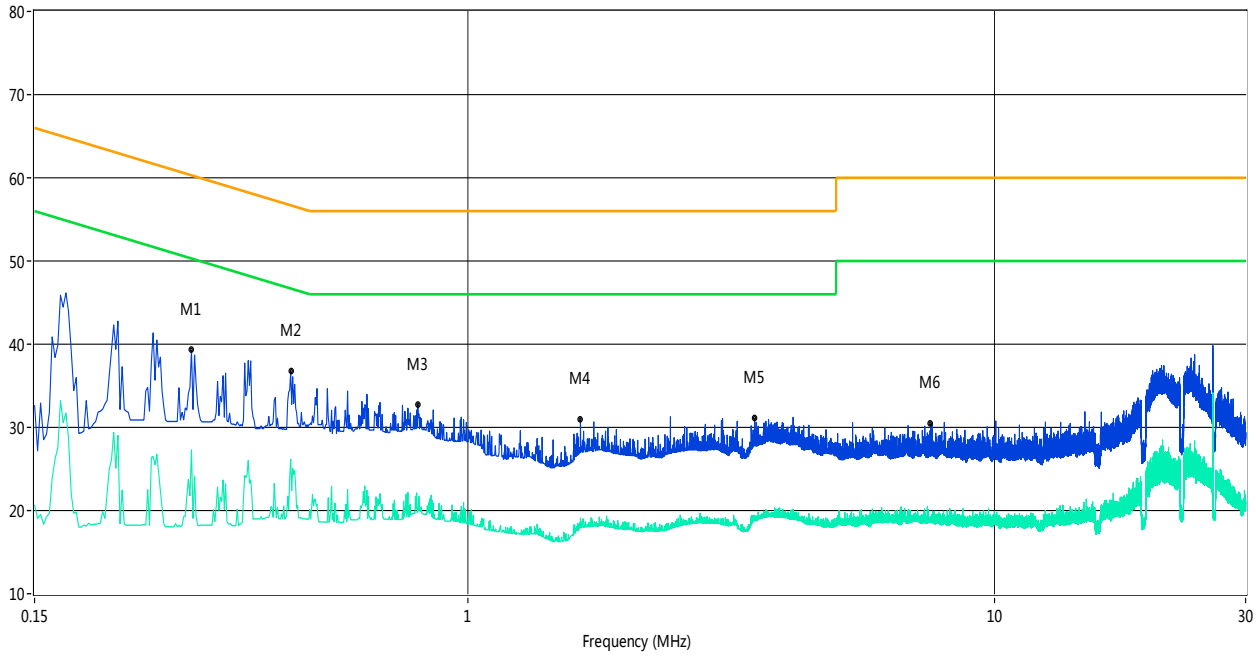
802.11 n 40MHz HIGH CHANNEL, SPURIOUS 2GHz~25GHz



A.4 Conducted Emissions

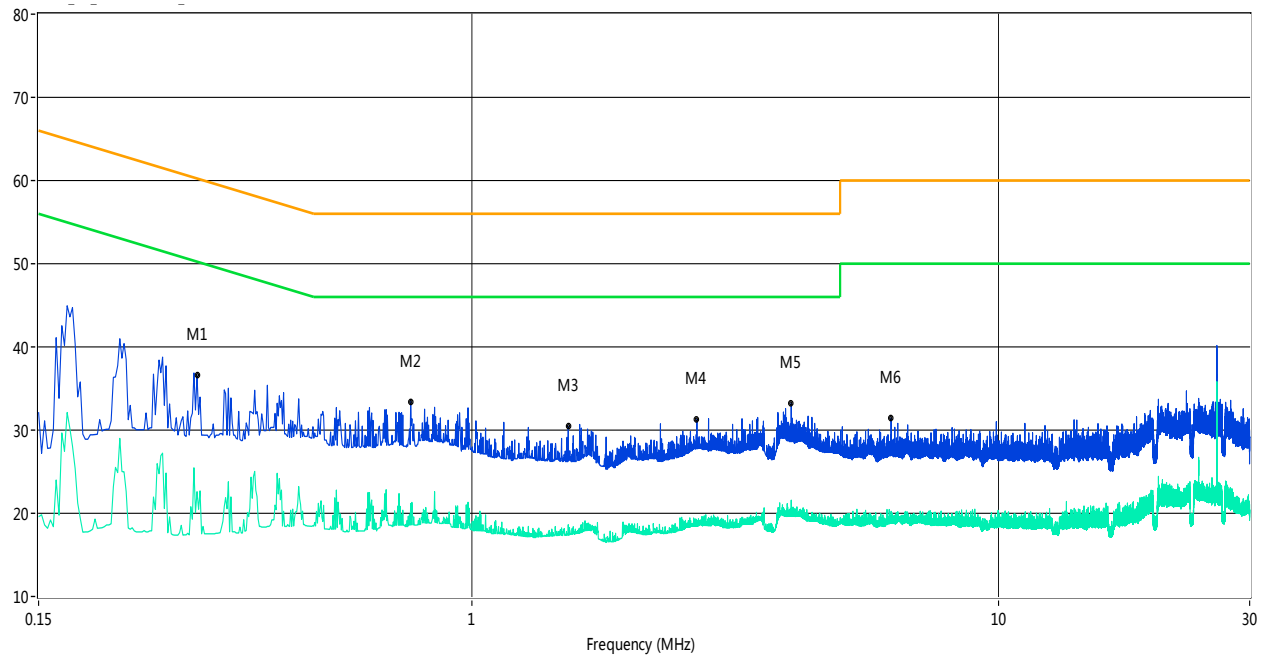
Test Data and Plots

PHASE L



Frequency (MHz)	Peak (dBm)	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.30	--	39.3	27.3	10.00	61.8	51.8	24.50	L Line	PASS
0.46	--	36.7	26.2	10.00	57.1	47.1	20.90	L Line	PASS
0.80	--	32.8	20.2	10.00	56.0	46.0	25.80	L Line	PASS
1.63	--	31.0	19.1	10.00	56.0	46.0	26.90	L Line	PASS
3.50	--	31.1	19.4	10.00	56.0	46.0	26.60	L Line	PASS
7.56	--	30.4	18.5	10.00	60.0	50.0	31.50	L Line	PASS

PHASE L



Frequency (MHz)	Peak (dBm)	Q-peak (dBuV)	Average (dBuV)	Factor (dB)	QP Limit (dBuV)	AV Limit (dBuV)	Margin (dB)	Line	Verdict
0.30	--	36.5	22.6	10.00	61.7	51.7	29.10	N Line	PASS
0.76	--	33.4	21.2	10.00	56.0	46.0	24.80	N Line	PASS
1.52	--	30.4	18.6	10.00	56.0	46.0	27.40	N Line	PASS
2.67	--	31.3	18.6	10.00	56.0	46.0	27.40	N Line	PASS
4.04	--	33.3	21.6	10.00	56.0	46.0	24.40	N Line	PASS
6.25	--	31.5	20.2	10.00	60.0	50.0	29.80	N Line	PASS

A.5 Radiated Emission

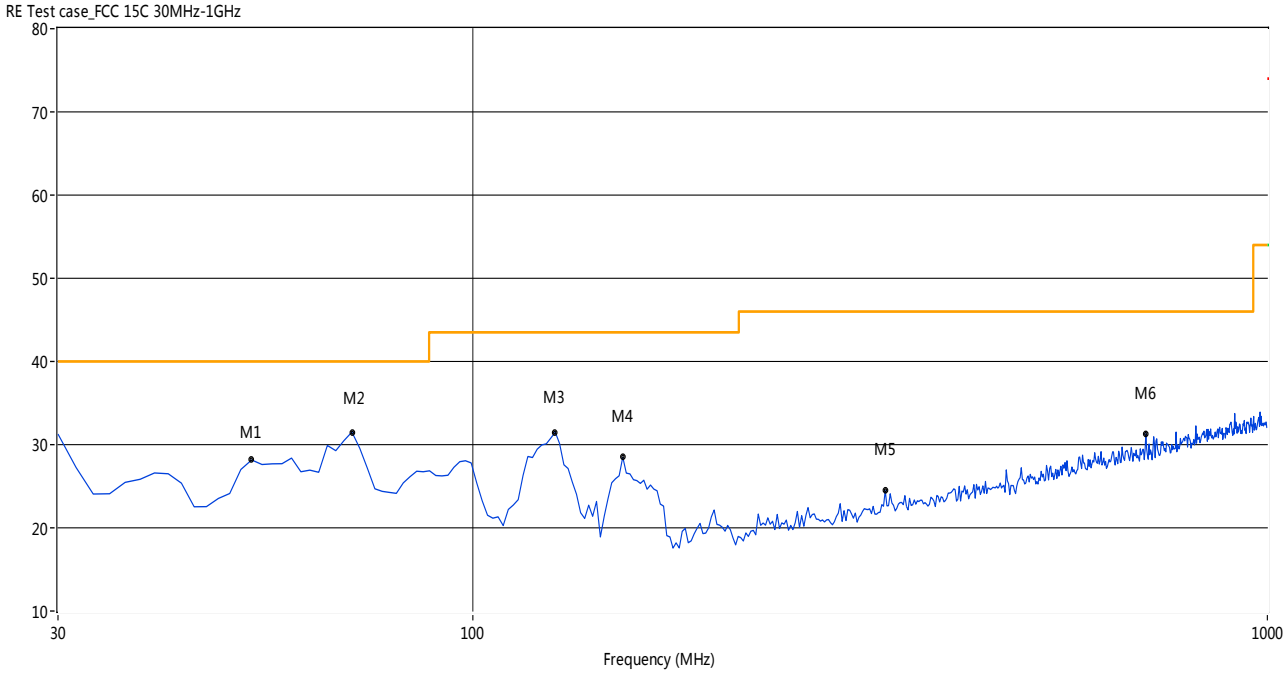
Note 1: The symbol of "--" in the table which means not application.

Note 2: For the test data above 1GHz，According the ANSI C63.4-2009, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note 3: The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

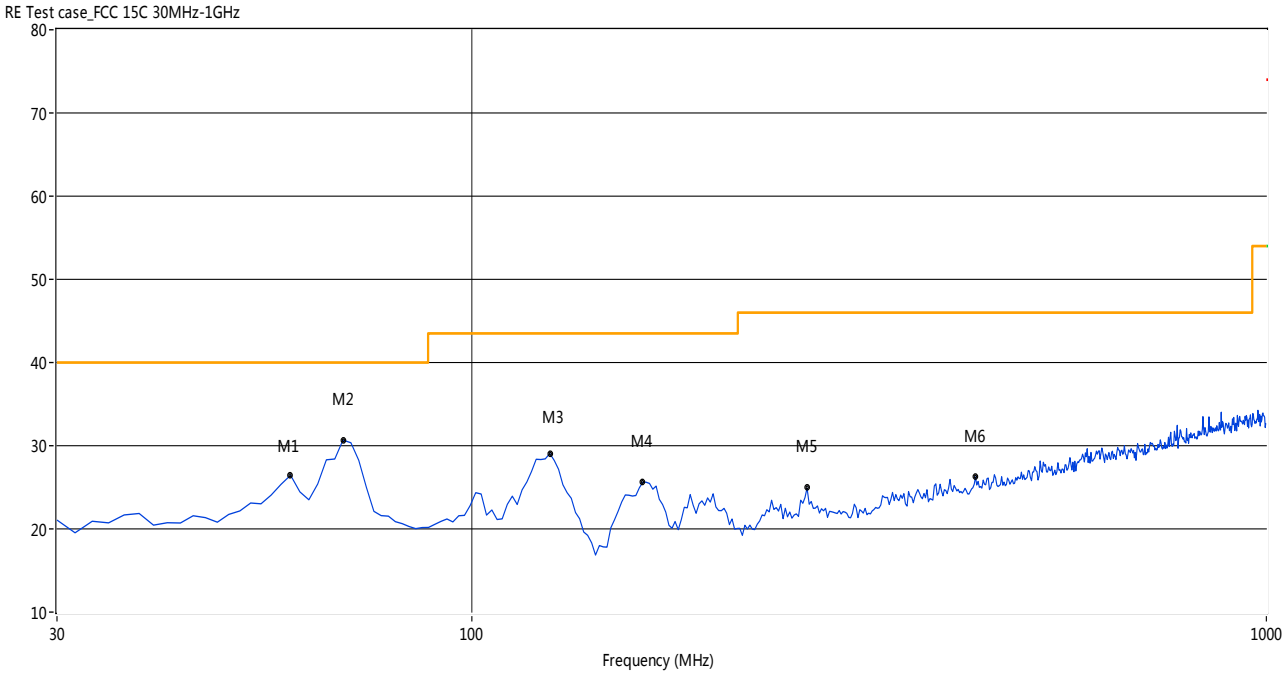
The worst data of 30 MHz to 1GHz

30MHz to 1GHz, ANT V



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
52.60		28.16		-18.02	--	40.0	--	11.84	107.20	100	Vertical	PASS
70.35		31.51		-22.18	--	40.0	--	8.49	240.30	100	Vertical	PASS
126.84		31.49		-22.22	--	43.5	--	12.01	42.30	100	Vertical	PASS
154.28		28.50		-22.80	--	43.5	--	15.00	0.30	100	Vertical	PASS
330.20		24.47		-16.18	--	46.0	--	21.53	250.30	100	Vertical	PASS
703.03		31.31		-8.73	--	46.0	--	14.69	107.20	100	Vertical	PASS

30MHz to 1GHz, ANT H

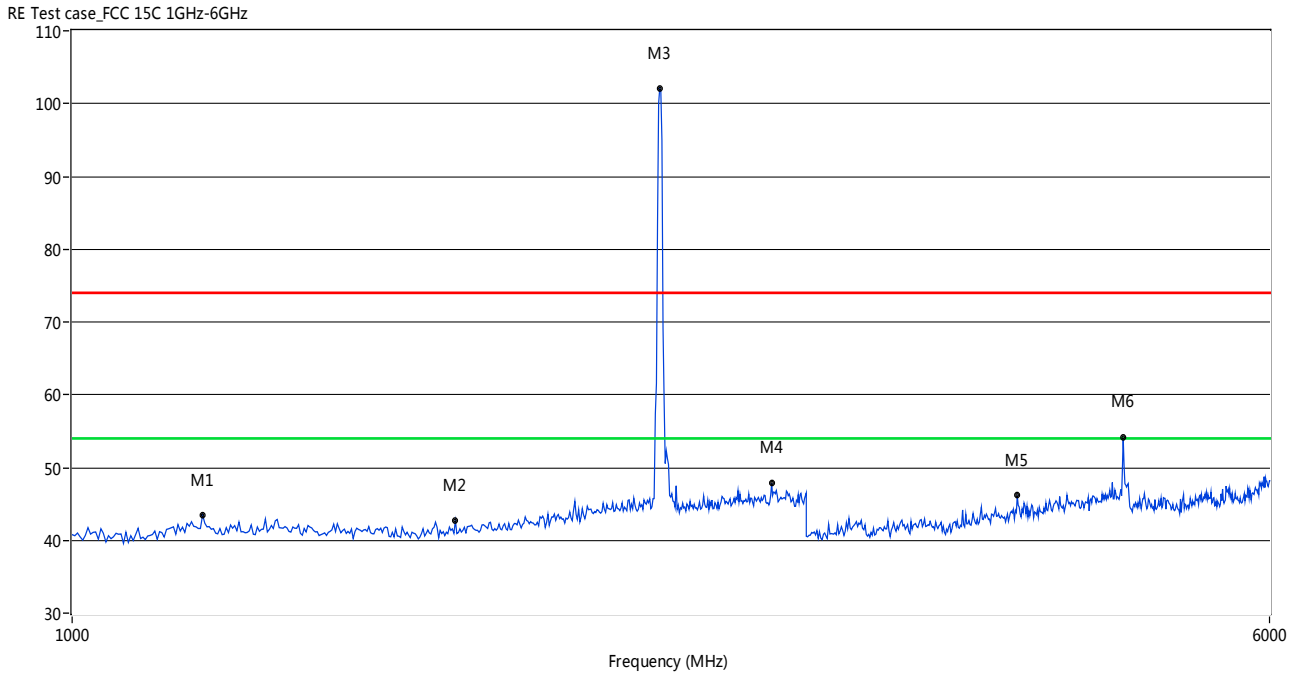


Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
59.05		26.45		-19.31	--	40.0	--	13.55	359.20	100	Horizontal	PASS
68.74		30.68		-21.51	--	40.0	--	9.32	18.00	100	Horizontal	PASS
125.22		29.07		-22.00	--	43.5	--	14.43	358.70	100	Horizontal	PASS
163.96		25.61		-22.28	--	43.5	--	17.89	352.20	100	Horizontal	PASS
264.03		24.92		-18.02	--	46.0	--	21.08	111.20	100	Horizontal	PASS
430.27		26.26		-13.90	--	46.0	--	19.74	22.80	100	Horizontal	PASS

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

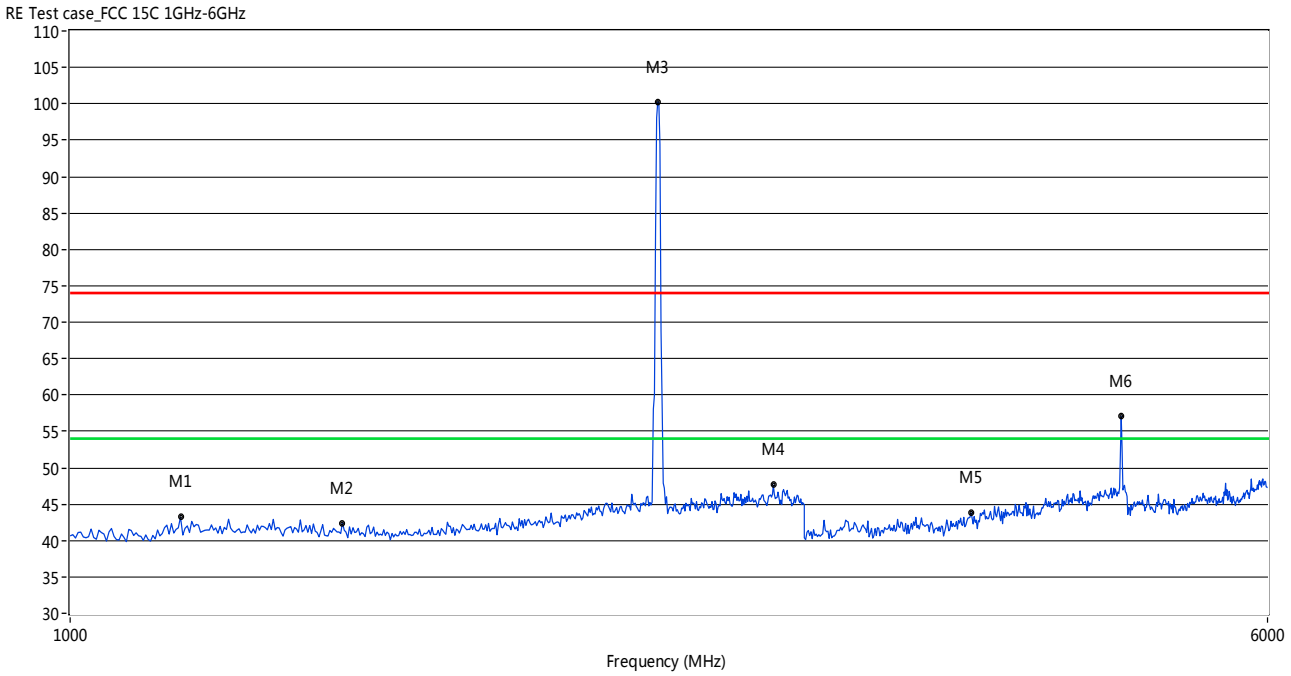
Test Data and Plots

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



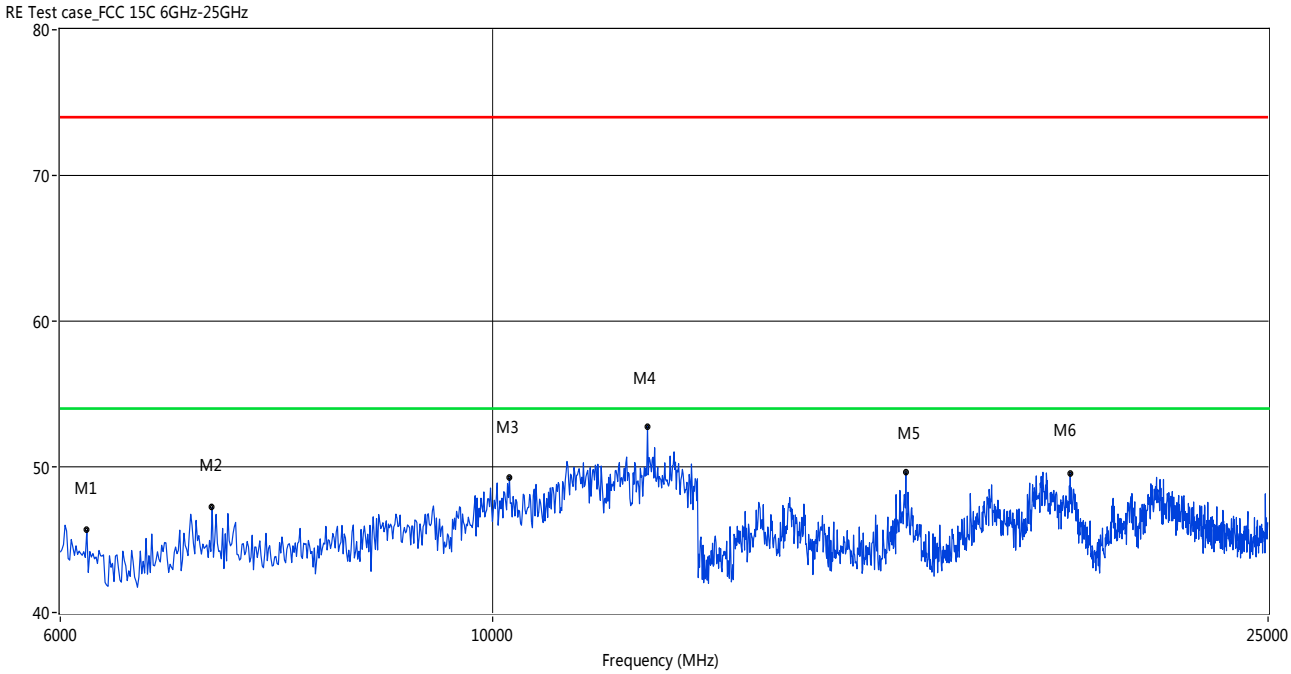
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1215.57	43.50			-3.79	74.0	--	54.0	10.50	248.20	100	Vertical	PASS
1774.45	42.69			-3.35	74.0	--	54.0	11.31	53.00	100	Vertical	PASS
2409.18	102.10			0.00	74.0	--	54.0	-48.10	24.90	100	Vertical	N/A
2848.30	47.87			3.41	74.0	--	54.0	6.13	176.00	100	Vertical	PASS
4113.77	46.15			9.99	74.0	--	54.0	7.85	50.10	100	Vertical	PASS
4820.36	54.16		40.63	12.57	74.0	--	54.0	13.37	261.00	101.00	Vertical	PASS

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



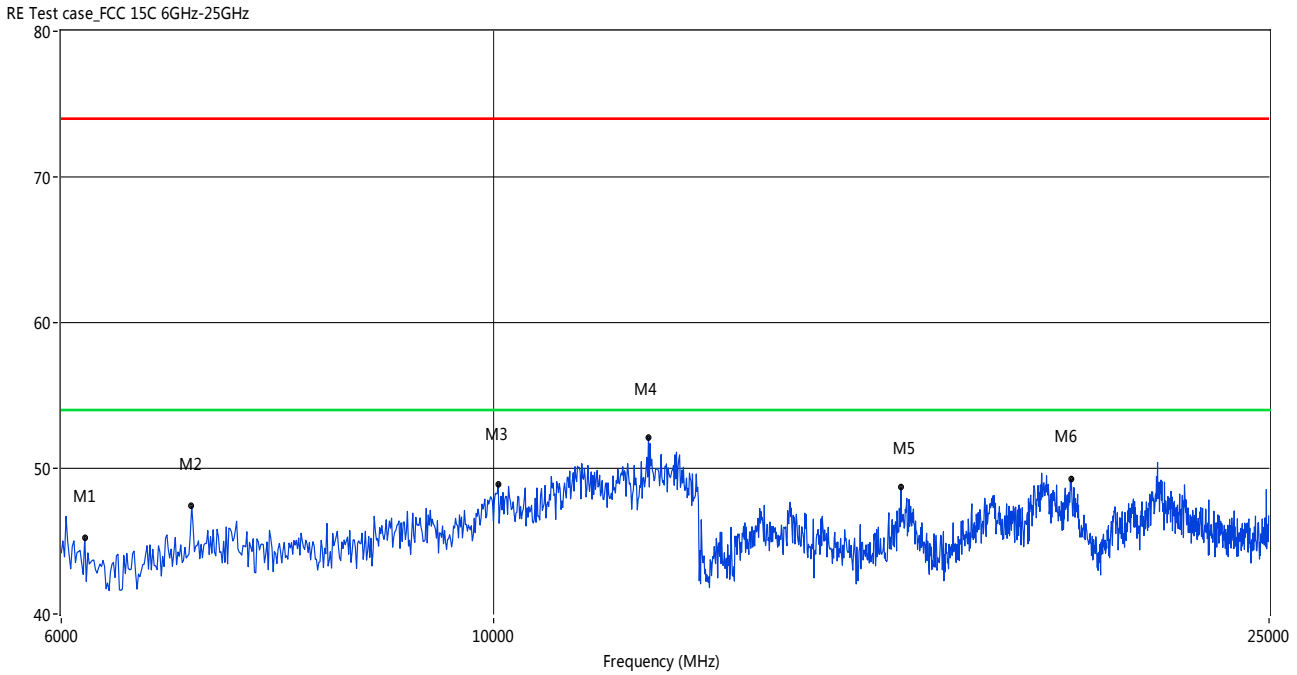
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1179.64	43.21			-4.15	74.0	--	54.0	10.79	139.40	100	Horizontal	PASS
1502.99	42.43			-3.81	74.0	--	54.0	11.57	360.00	100	Horizontal	PASS
2409.18	100.26			0.00	74.0	--	54.0	-46.26	16.30	100	Horizontal	N/A
2864.27	47.60			3.20	74.0	--	54.0	6.40	360.00	100	Horizontal	PASS
3850.30	43.81			9.98	74.0	--	54.0	10.19	117.40	100	Horizontal	PASS
4820.36	57.02		43.58	12.57	74.0	--	54.0	10.42	81.50	100	Horizontal	PASS

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



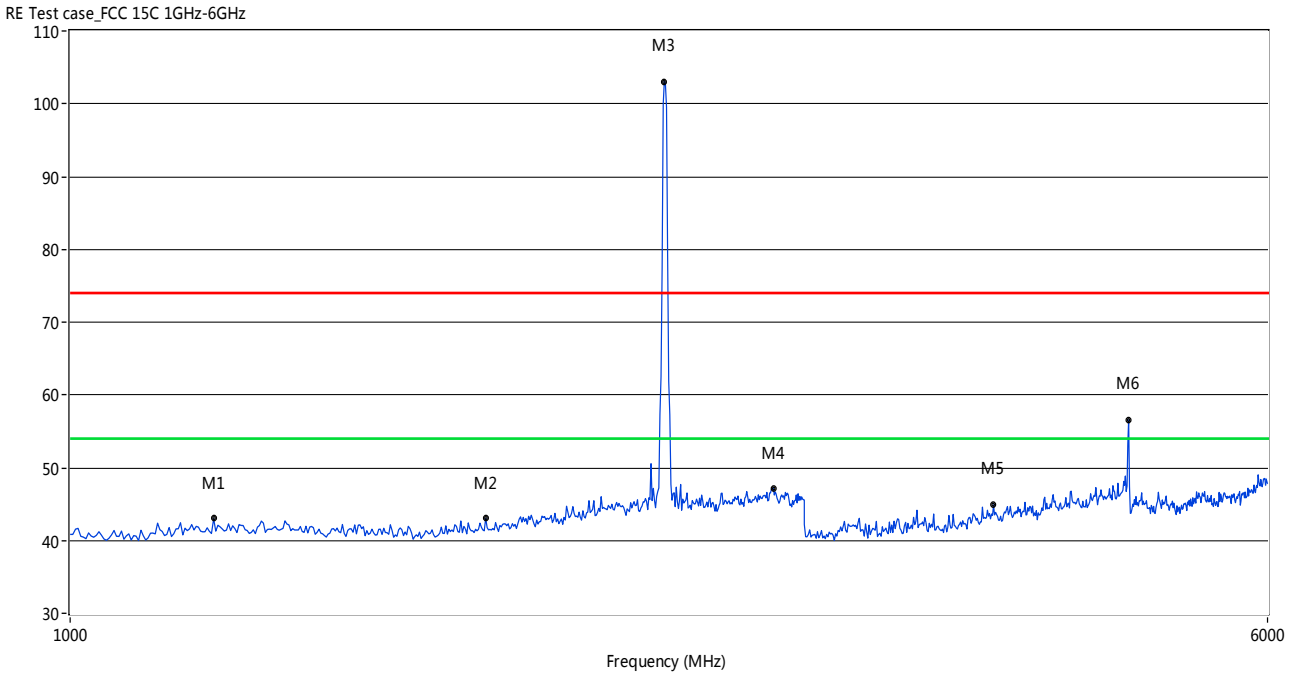
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6190.93	45.66			11.59	74.0	--	54.0	8.34	269.60	100	Vertical	PASS
7179.28	47.22			14.19	74.0	--	54.0	6.78	235.20	100	Vertical	PASS
10200.50	49.25			19.26	74.0	--	54.0	4.75	166.50	100	Vertical	PASS
12008.74	52.79			8.64	74.0	--	54.0	1.21	125.00	100	Vertical	PASS
16296.17	49.65			11.38	74.0	--	54.0	4.35	263.10	100	Vertical	PASS
19788.69	49.55			12.19	74.0	--	54.0	4.45	292.30	100	Vertical	PASS

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



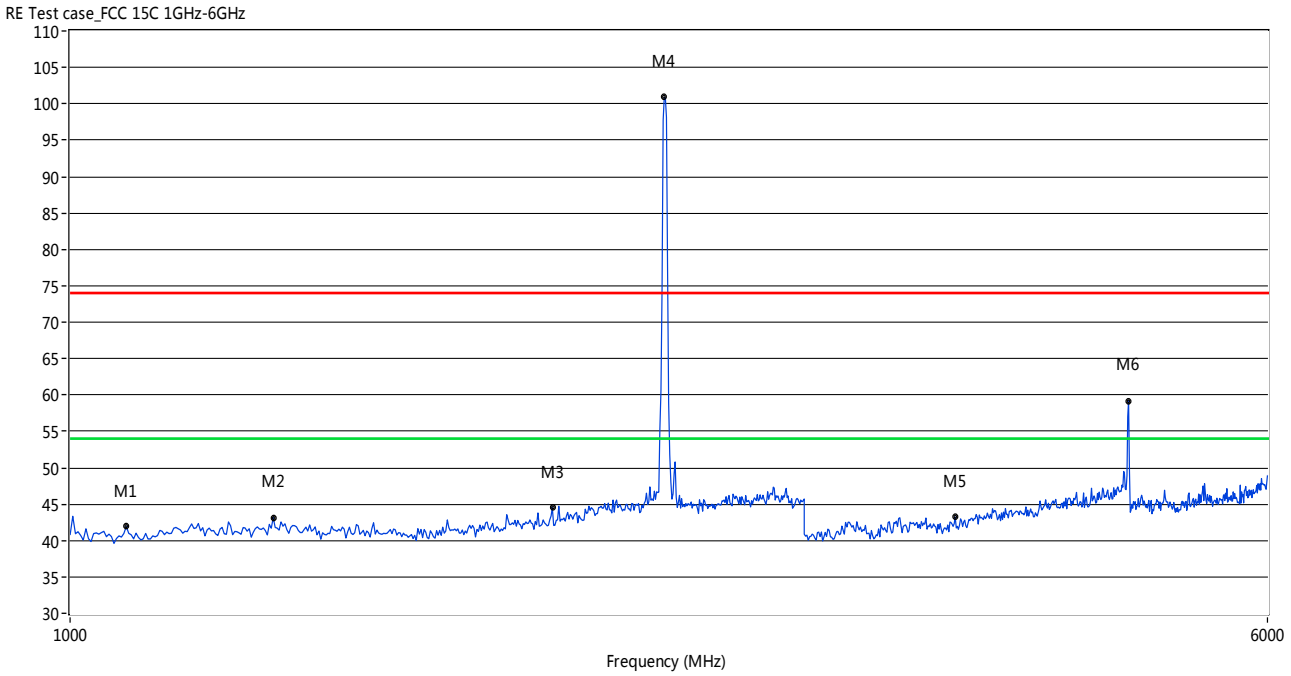
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6168.47	45.24			11.72	74.0	--	54.0	8.76	276.20	100	Horizontal	PASS
6999.58	47.42			13.49	74.0	--	54.0	6.58	179.90	100	Horizontal	PASS
10054.49	48.89			19.61	74.0	--	54.0	5.11	56.20	100	Horizontal	PASS
12008.74	52.79			9.38	74.0	--	54.0	1.21	5.90	100	Horizontal	PASS
16181.78	48.70			10.67	74.0	--	54.0	5.30	121.50	100	Horizontal	PASS
19788.69	49.55			11.9	74.0	--	54.0	4.45	244.00	100	Horizontal	PASS

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



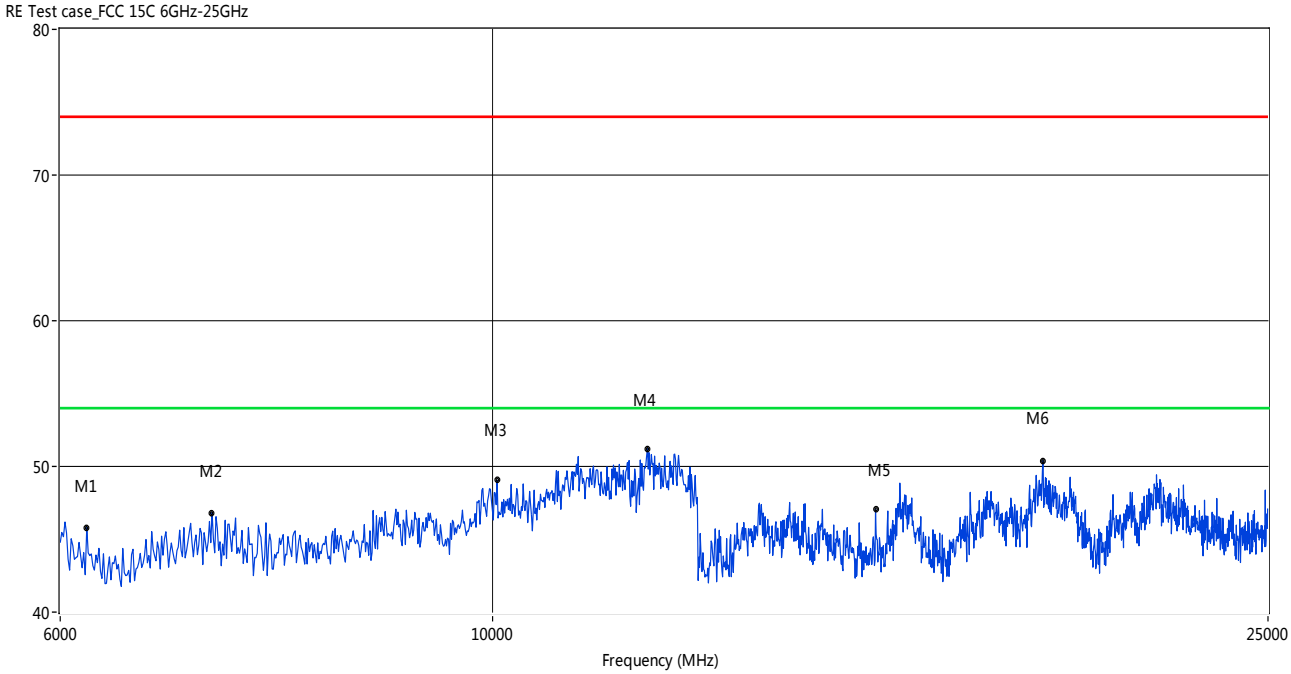
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1239.52	43.00			-3.82	74.0	--	54.0	11.00	17.70	100	Vertical	PASS
1862.28	43.05			-2.63	74.0	--	54.0	10.95	254.90	100	Vertical	PASS
2433.13	103.07			0.03	74.0	--	54.0	-49.07	28.40	100	Vertical	N/A
2864.27	47.19			3.20	74.0	--	54.0	6.81	50.60	100	Vertical	PASS
3982.04	44.89			10.17	74.0	--	54.0	9.11	274.40	100	Vertical	PASS
4874.25	56.56	--	44.82	12.30	74.0	--	54.0	9.18	144.20	166.40	Vertical	PASS

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



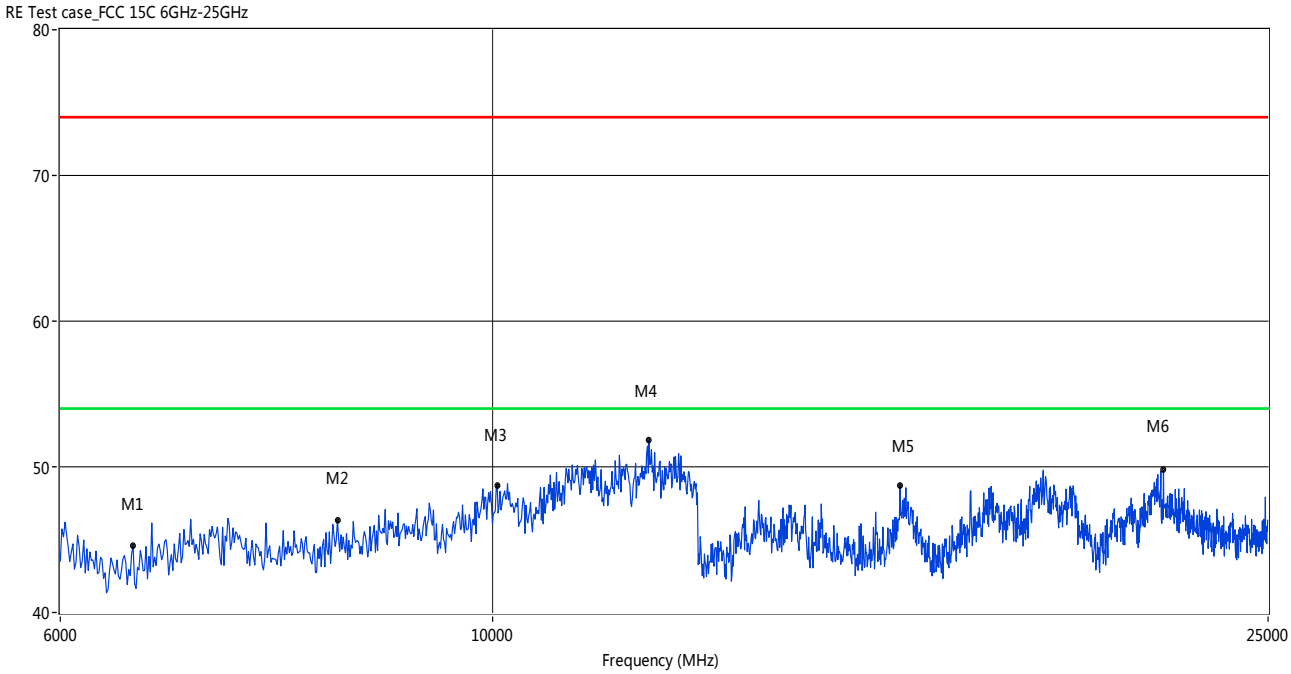
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1087.82	41.92			-4.78	74.0	--	54.0	12.08	10.40	100	Horizontal	PASS
1355.29	43.14			-3.85	74.0	--	54.0	10.86	71.90	100	Horizontal	PASS
2057.88	44.53			-1.64	74.0	--	54.0	9.47	235.20	100	Horizontal	PASS
2433.13	100.88			0.03	74.0	--	54.0	-46.88	6.70	100	Horizontal	N/A
3760.48	43.24			9.13	74.0	--	54.0	10.76	353.30	100	Horizontal	PASS
4874.25	59.20		48.09	12.30	74.0	--	54.0	5.91	297.10	133.80	Horizontal	PASS

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



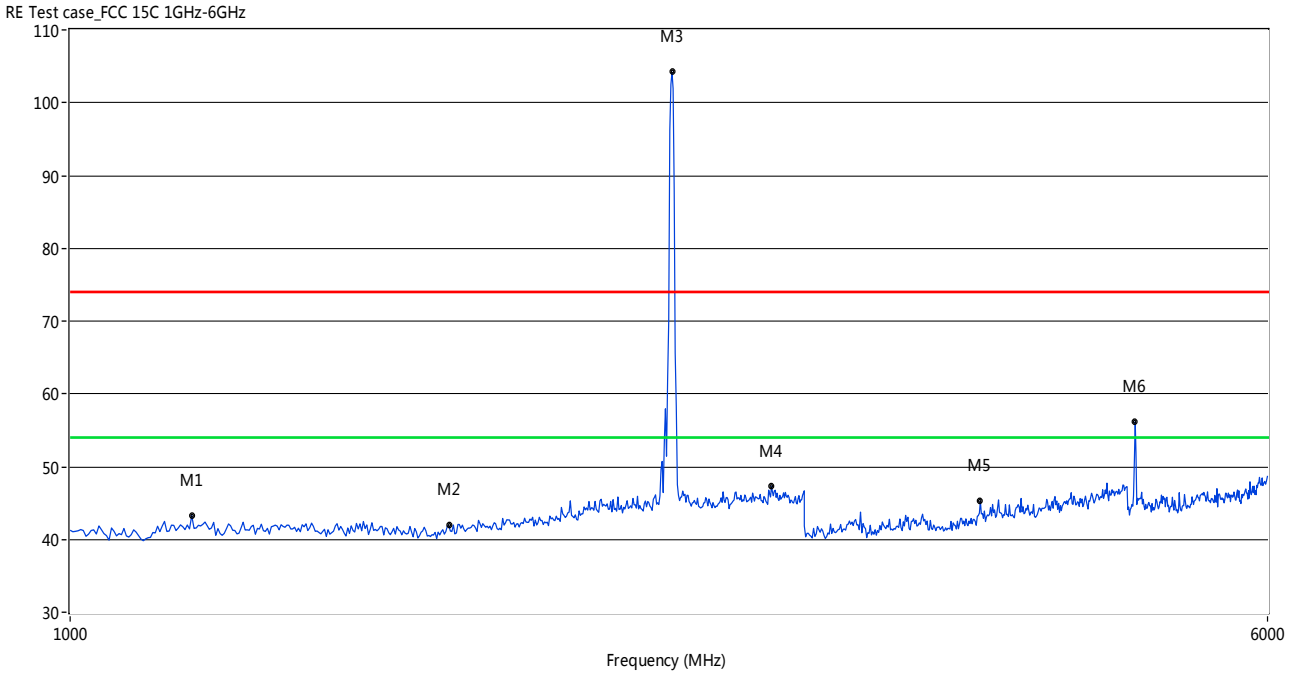
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6190.93	45.81			11.06	74.0	--	54.0	8.19	277.70	100	Vertical	PASS
7179.28	46.83			13.97	74.0	--	54.0	7.17	284.80	100	Vertical	PASS
10054.49	48.89			19.22	74.0	--	54.0	5.11	58.10	100	Vertical	PASS
12008.74	52.79			9.08	74.0	--	54.0	1.21	291.80	100	Vertical	PASS
15724.21	47.08			11.41	74.0	--	54.0	6.92	115.70	100	Vertical	PASS
19159.73	50.40			12.31	74.0	--	54.0	3.60	246.50	100	Vertical	PASS

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



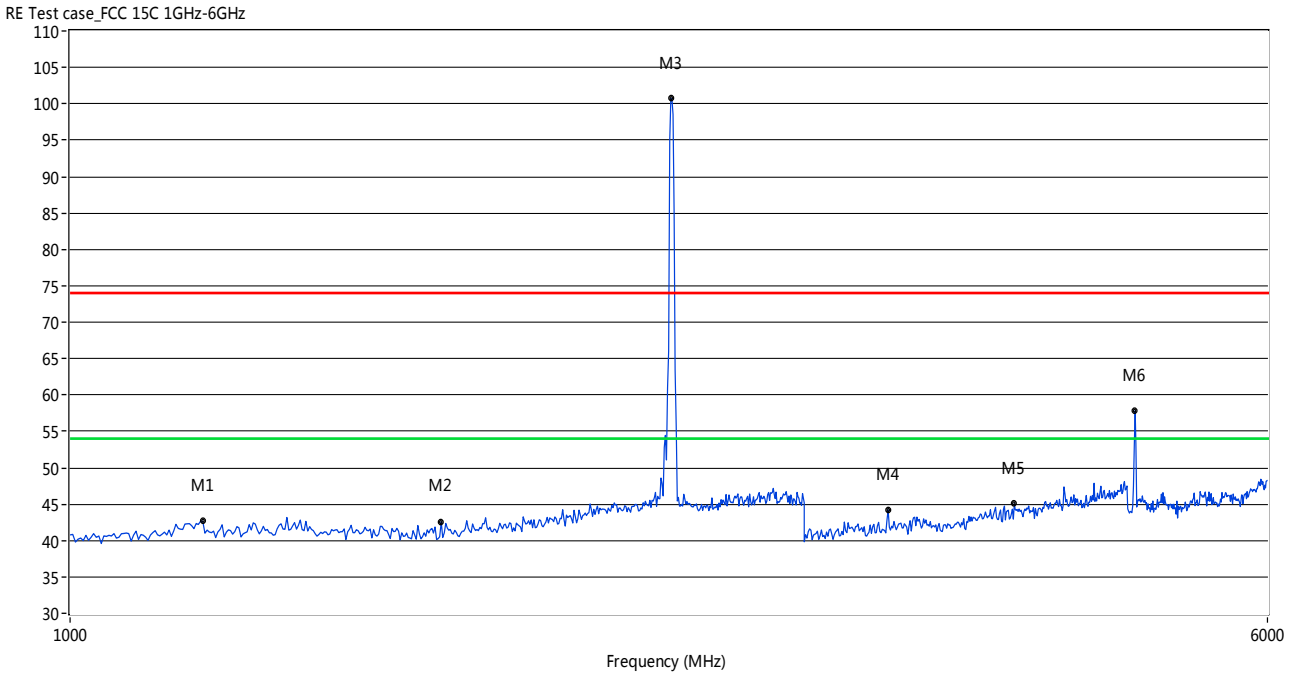
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6539.10	44.59			11.23	74.0	--	54.0	9.41	286.30	100	Horizontal	PASS
8324.87	46.35			13.91	74.0	--	54.0	7.65	311.60	100	Horizontal	PASS
10054.49	48.89			20.16	74.0	--	54.0	5.11	28.40	100	Horizontal	PASS
12031.20	51.85			9.23	74.0	--	54.0	2.15	2.90	100	Horizontal	PASS
16181.78	48.73			10.77	74.0	--	54.0	5.27	39.60	100	Horizontal	PASS
22094.84	49.78			12.01	74.0	--	54.0	4.22	268.00	100	Horizontal	PASS

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



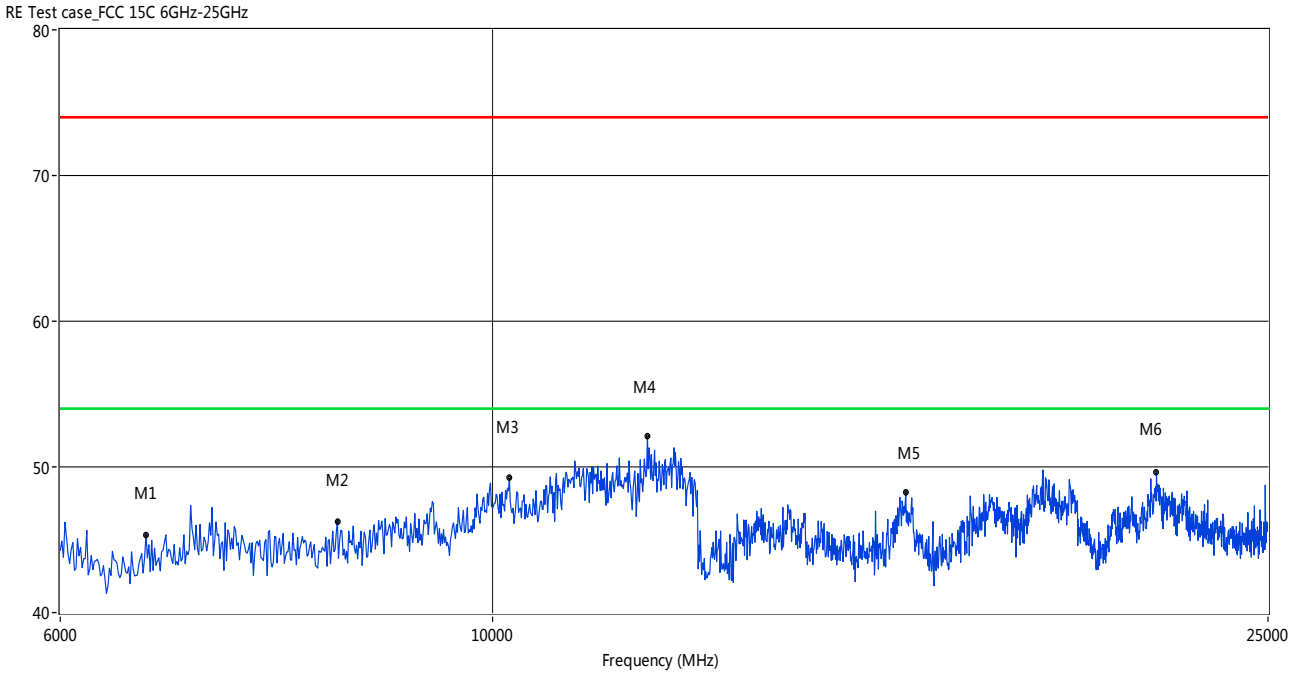
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1199.60	43.26			-3.75	74.0	--	54.0	10.74	105.30	100	Vertical	PASS
1762.48	41.91			-3.10	74.0	--	54.0	12.09	239.20	100	Vertical	PASS
2461.08	104.21			0.72	74.0	--	54.0	-50.21	38.30	100	Vertical	N/A
2856.29	47.29			3.56	74.0	--	54.0	6.71	358.30	100	Vertical	PASS
3904.19	45.29			10.07	74.0	--	54.0	8.71	192.10	100	Vertical	PASS
4922.16	56.18		43.29	12.88	74.0	--	54.0	10.71	13.00	197.20	Vertical	PASS

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



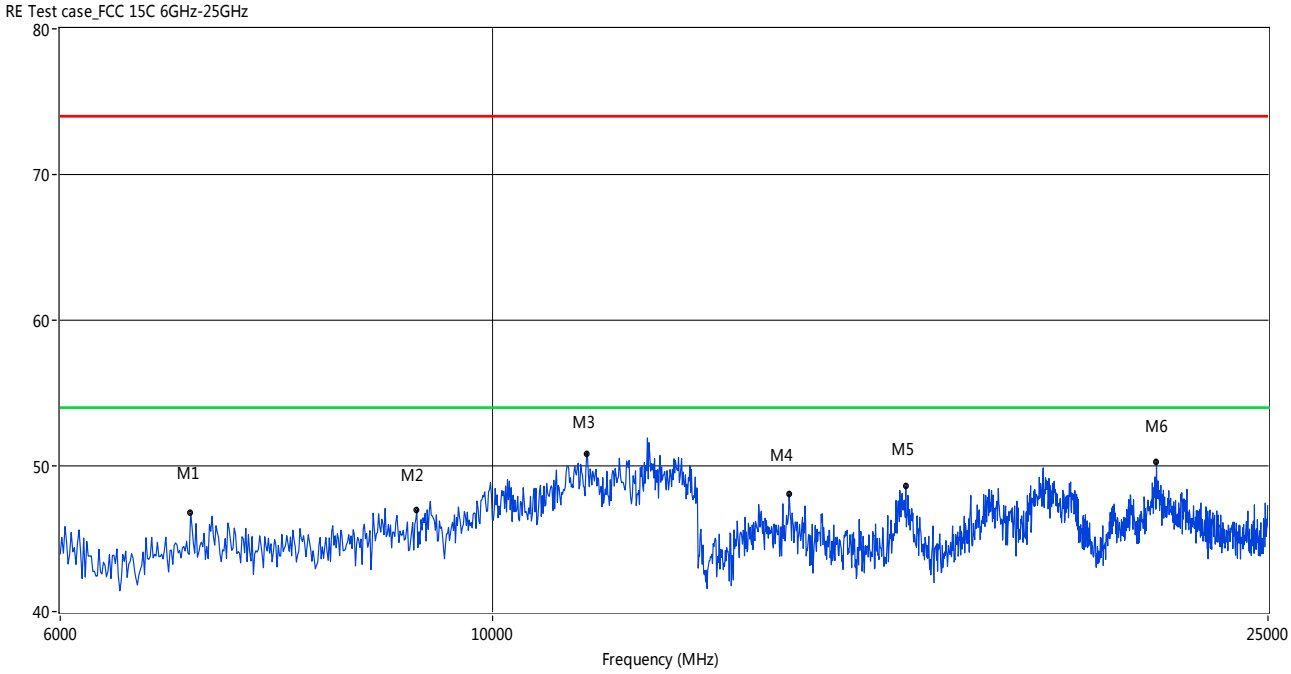
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1219.56	42.64			-3.87	74.0	--	54.0	11.36	25.90	100	Horizontal	PASS
1742.51	42.53			-3.45	74.0	--	54.0	11.47	48.10	100	Horizontal	PASS
2457.09	100.73			0.75	74.0	--	54.0	-46.73	5.40	100	Horizontal	N/A
3401.20	44.20			8.16	74.0	--	54.0	9.80	130.60	100	Horizontal	PASS
4107.78	45.04			9.90	74.0	--	54.0	8.96	-0.70	100	Horizontal	PASS
4922.16	57.84		44.73	12.88	74.0	--	54.0	9.27	300.80	117.20	Horizontal	PASS

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



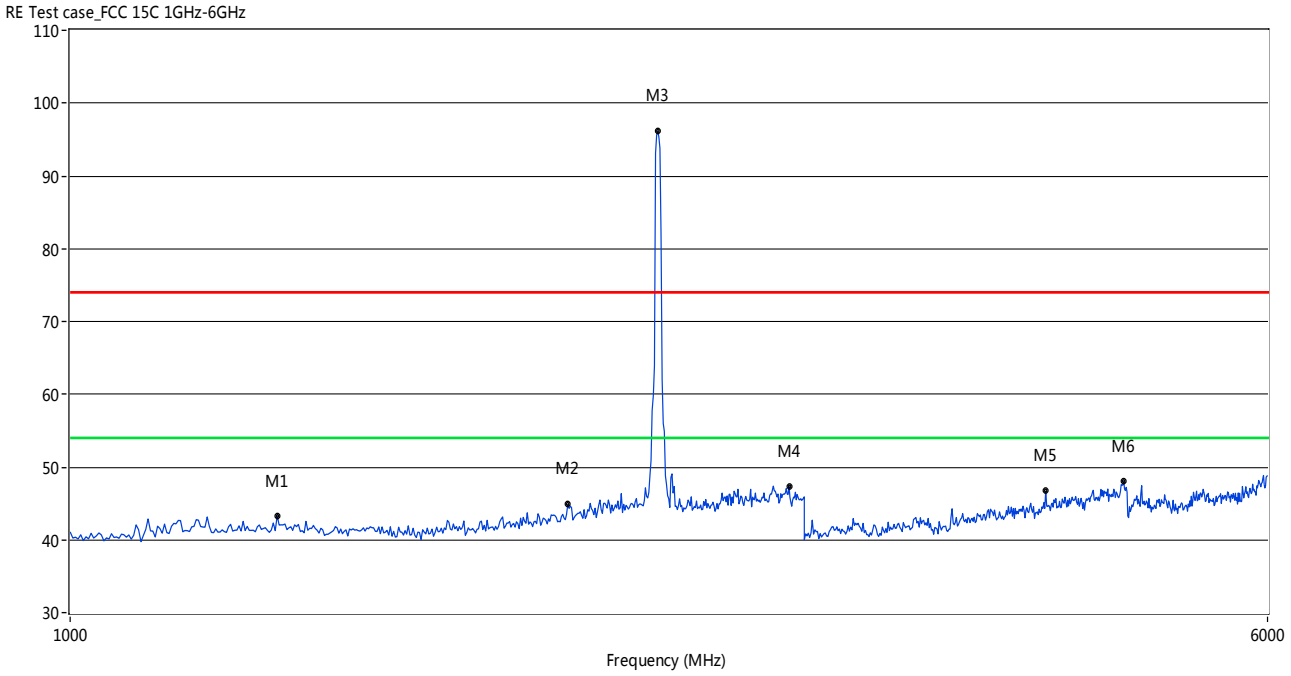
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6640.18	45.34			11.73	74.0	--	54.0	8.66	98.00	100	Vertical	PASS
8324.87	46.35			13.92	74.0	--	54.0	7.65	284.20	100	Vertical	PASS
10200.50	49.23			20.15	74.0	--	54.0	4.77	84.30	100	Vertical	PASS
12008.74	52.07			8.67	74.0	--	54.0	1.93	98.00	100	Vertical	PASS
16296.17	48.25			10.91	74.0	--	54.0	5.75	270.70	100	Vertical	PASS
21915.14	49.61			11.69	74.0	--	54.0	4.39	295.90	100	Vertical	PASS

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



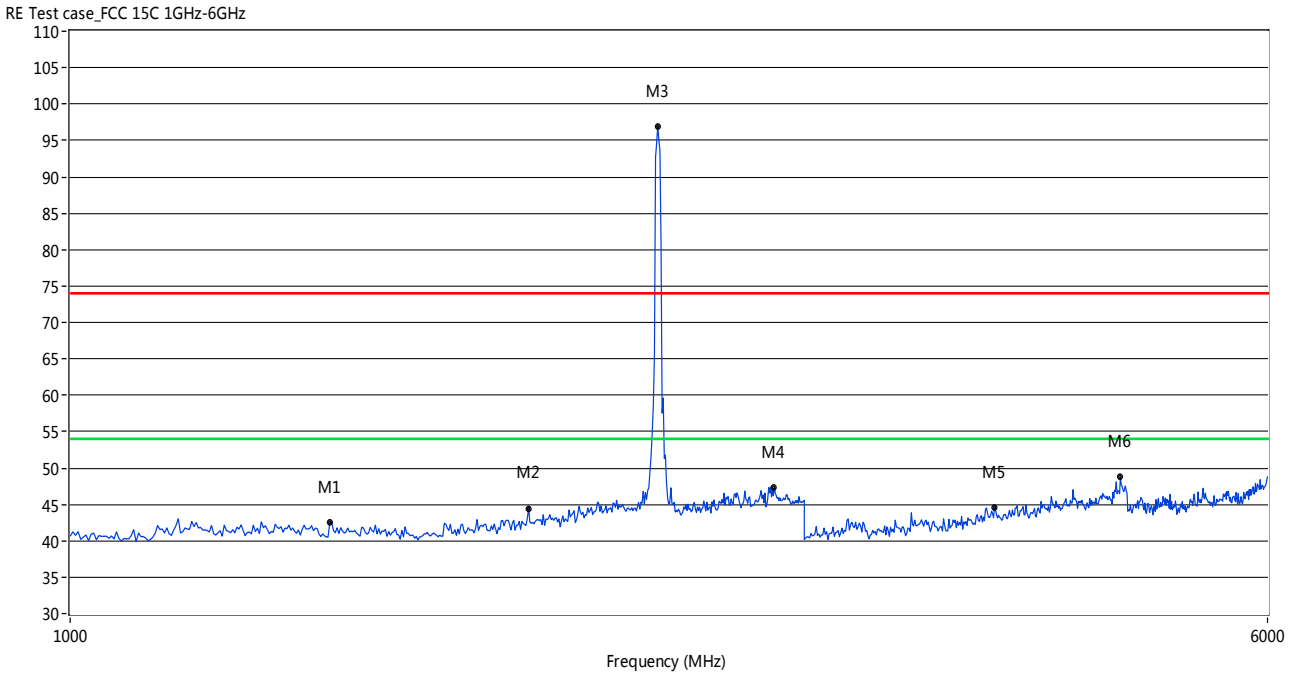
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	46.76			11.34	74.0	--	54.0	7.24	153.90	100	Horizontal	PASS
9144.76	46.94			14.22	74.0	--	54.0	7.06	352.20	100	Horizontal	PASS
11177.62	50.88			19.62	74.0	--	54.0	3.12	325.70	100	Horizontal	PASS
14195.51	48.05			9.62	74.0	--	54.0	5.95	4.80	100	Horizontal	PASS
16296.17	48.58			10.86	74.0	--	54.0	5.42	1.10	100	Horizontal	PASS
21915.14	50.26			11.72	74.0	--	54.0	3.74	10.10	100	Horizontal	PASS

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



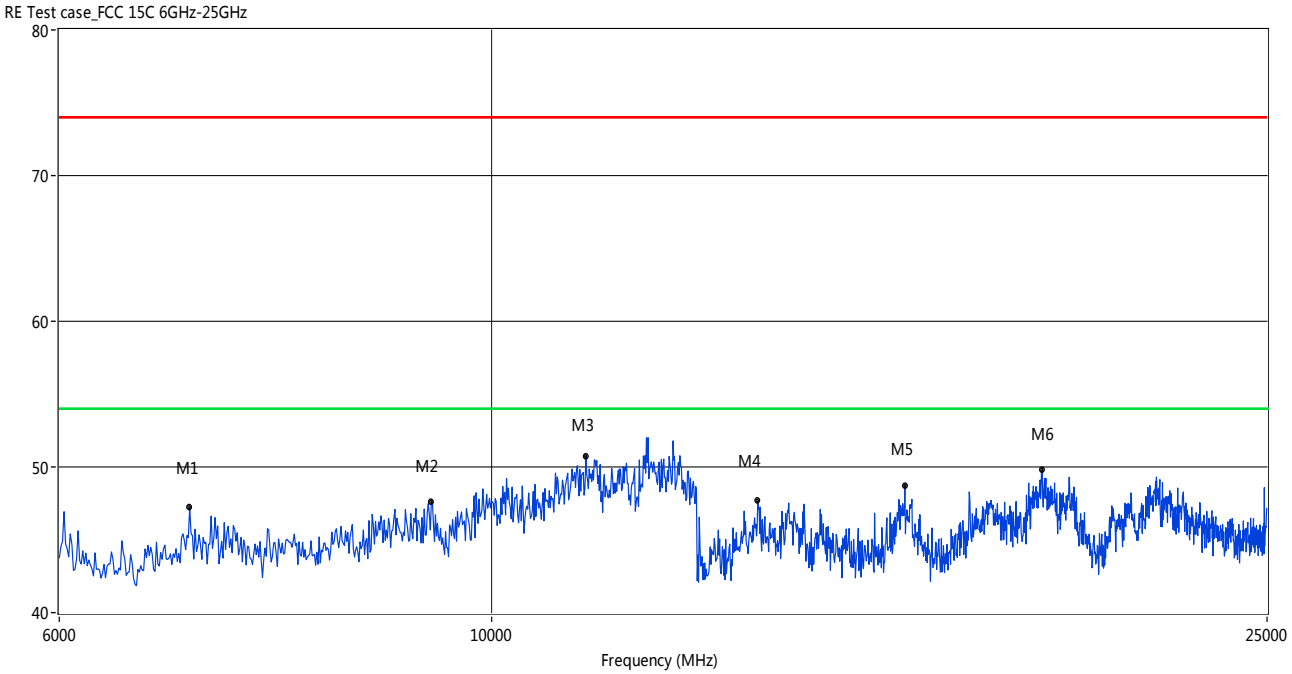
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1363.27	43.32			-3.72	74.0	--	54.0	10.68	198.30	100	Vertical	PASS
2105.79	44.84			-1.28	74.0	--	54.0	9.16	220.20	100	Vertical	PASS
2409.18	96.15			0.00	74.0	--	54.0	-42.15	203.50	100	Vertical	N/A
2932.14	47.39			3.01	74.0	--	54.0	6.61	27.00	100	Vertical	PASS
4305.39	46.71			10.88	74.0	--	54.0	7.29	262.20	100	Vertical	PASS
4838.32	48.07			13.06	74.0	--	54.0	5.93	248.50	100	Vertical	PASS

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



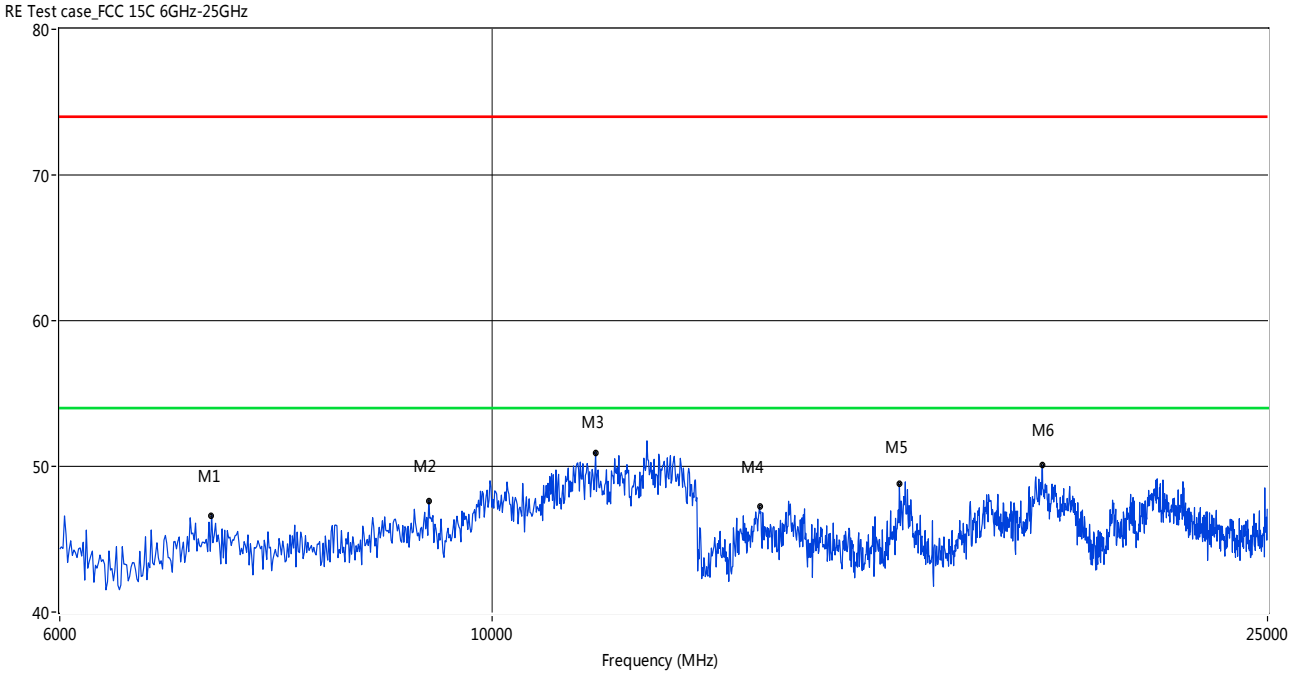
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1475.05	42.55			-3.84	74.0	--	54.0	11.45	272.20	100	Horizontal	PASS
1986.03	44.41			-1.93	74.0	--	54.0	9.59	239.30	100	Horizontal	PASS
2409.18	96.96			0.00	74.0	--	54.0	-42.96	10.10	100	Horizontal	N/A
2868.26	47.37			2.92	74.0	--	54.0	6.63	356.90	100	Horizontal	PASS
3988.02	44.54			10.16	74.0	--	54.0	9.46	14.00	100	Horizontal	PASS
4814.37	48.77			12.45	74.0	--	54.0	5.23	357.80	100	Horizontal	PASS

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



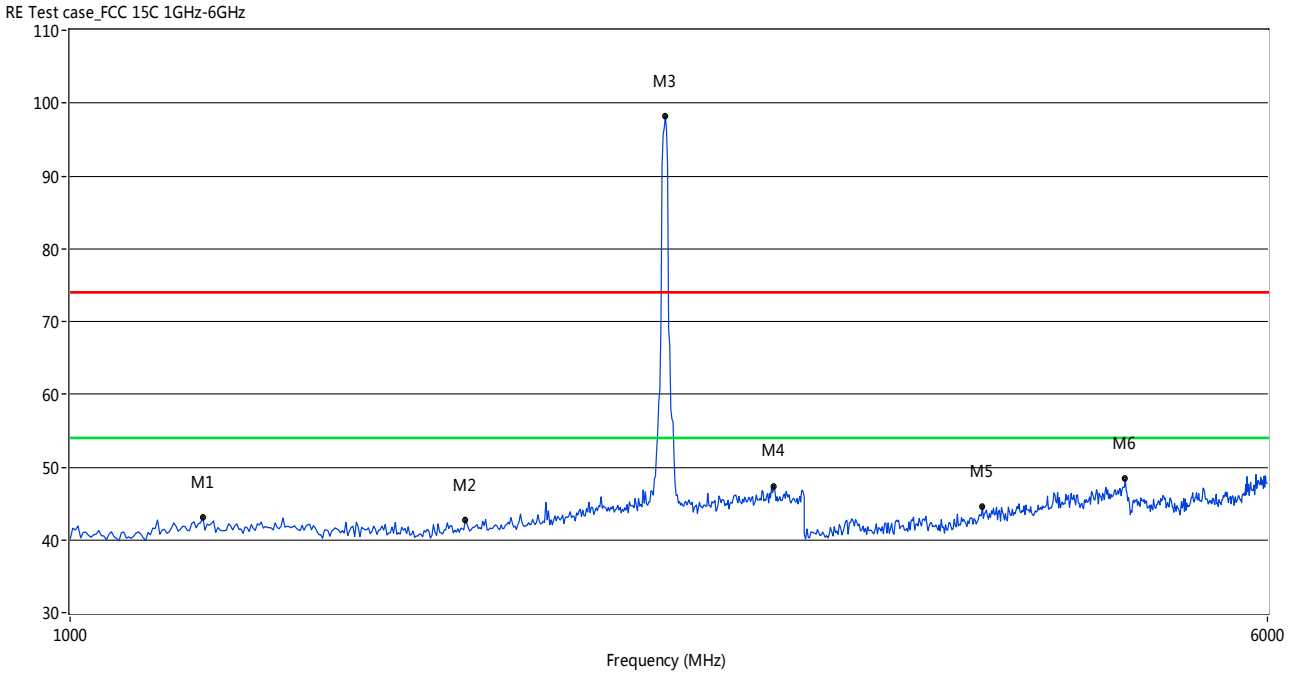
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	47.23			11.41	74.0	--	54.0	6.77	284.70	100	Vertical	PASS
9313.23	47.62			13.94	74.0	--	54.0	6.38	180.90	100	Vertical	PASS
11177.62	50.72			19.73	74.0	--	54.0	3.28	98.30	100	Vertical	PASS
13696.34	47.68			9.23	74.0	--	54.0	6.32	149.00	100	Vertical	PASS
16296.17	48.74			11.46	74.0	--	54.0	5.26	91.60	100	Vertical	PASS
19169.72	49.81			12.31	74.0	--	54.0	4.19	124.60	100	Vertical	PASS

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



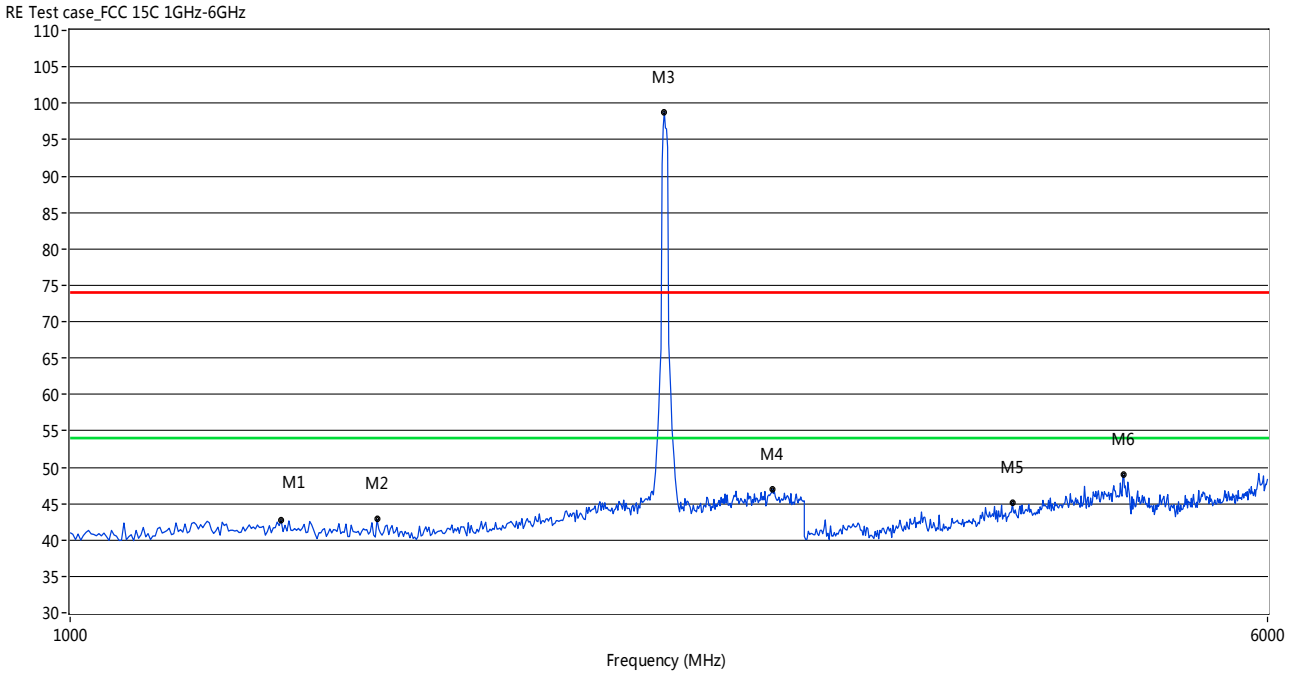
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7179.28	46.62			11.47	74.0	--	54.0	7.38	296.80	100	Horizontal	PASS
9279.53	47.66			13.11	74.0	--	54.0	6.34	283.00	100	Horizontal	PASS
11301.17	50.95			20.08	74.0	--	54.0	3.05	337.80	100	Horizontal	PASS
13717.14	47.26			9.23	74.0	--	54.0	6.74	33.50	100	Horizontal	PASS
16181.78	48.79			10.91	74.0	--	54.0	5.21	19.80	100	Horizontal	PASS
19159.73	50.05			12.44	74.0	--	54.0	3.95	-0.00	100	Horizontal	PASS

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



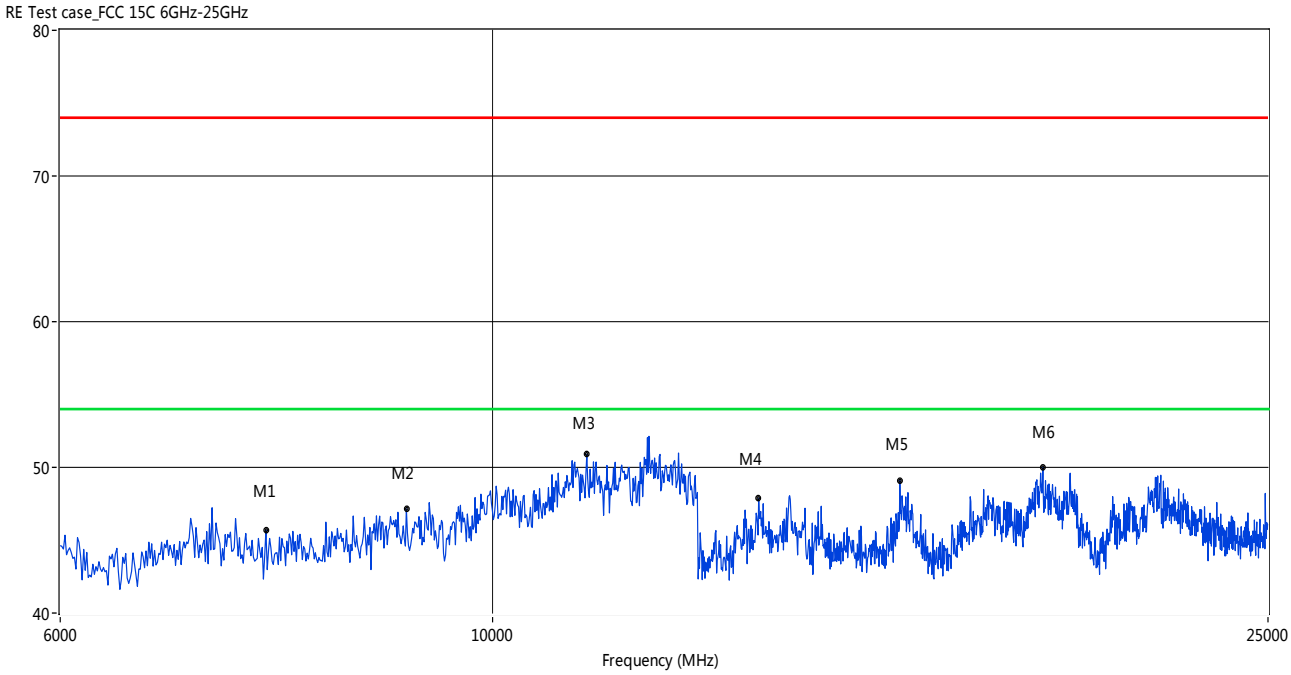
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1219.56	43.13			-3.87	74.0	--	54.0	10.87	1.40	100	Vertical	PASS
1806.39	42.66			-3.29	74.0	--	54.0	11.34	239.60	100	Vertical	PASS
2437.13	98.26			-0.08	74.0	--	54.0	-44.26	205.90	100	Vertical	N/A
2868.26	47.41			2.92	74.0	--	54.0	6.59	228.10	100	Vertical	PASS
3916.17	44.58			10.18	74.0	--	54.0	9.42	336.80	100	Vertical	PASS
4850.30	48.42			12.79	74.0	--	54.0	5.58	124.90	100	Vertical	PASS

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



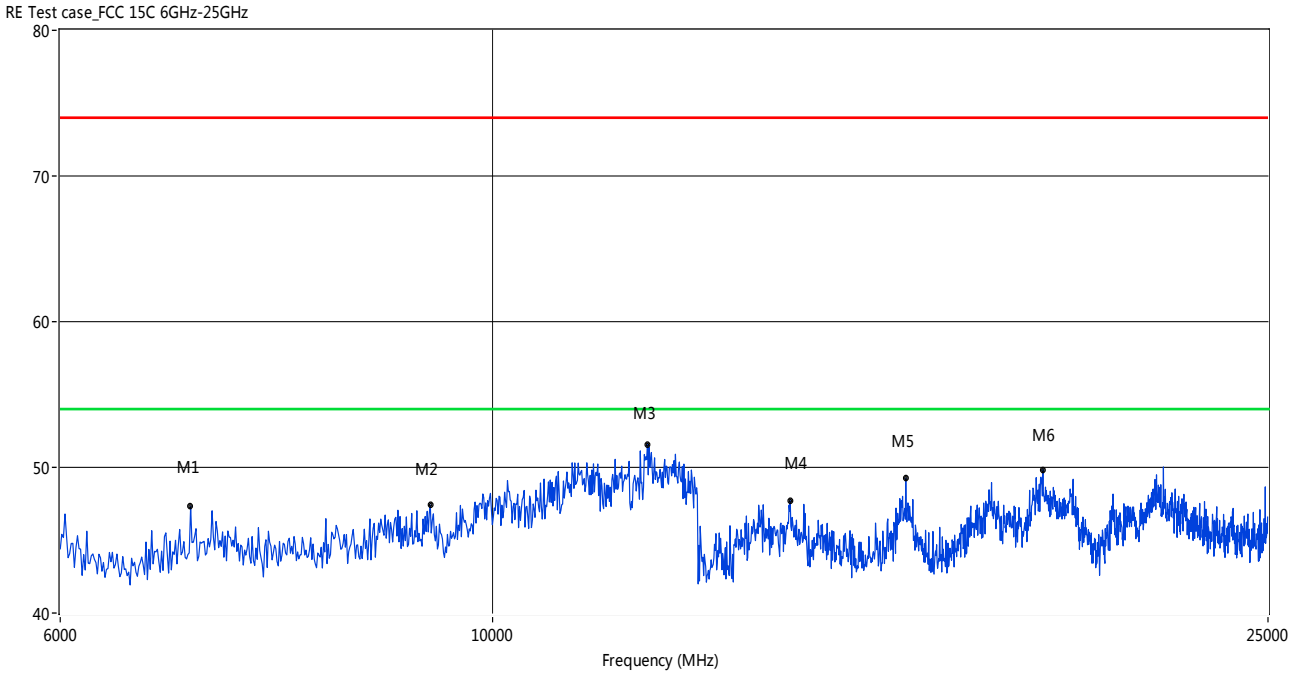
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1371.26	42.68			-3.72	74.0	--	54.0	11.32	348.70	100	Horizontal	PASS
1582.83	42.81			-3.85	74.0	--	54.0	11.19	287.30	100	Horizontal	PASS
2433.13	98.82			0.03	74.0	--	54.0	-44.82	14.50	100	Horizontal	N/A
2860.28	46.92			3.42	74.0	--	54.0	7.08	254.00	100	Horizontal	PASS
4095.81	45.07			10.09	74.0	--	54.0	8.93	319.90	100	Horizontal	PASS
4838.32	48.91			13.06	74.0	--	54.0	5.09	-0.70	100	Horizontal	PASS

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



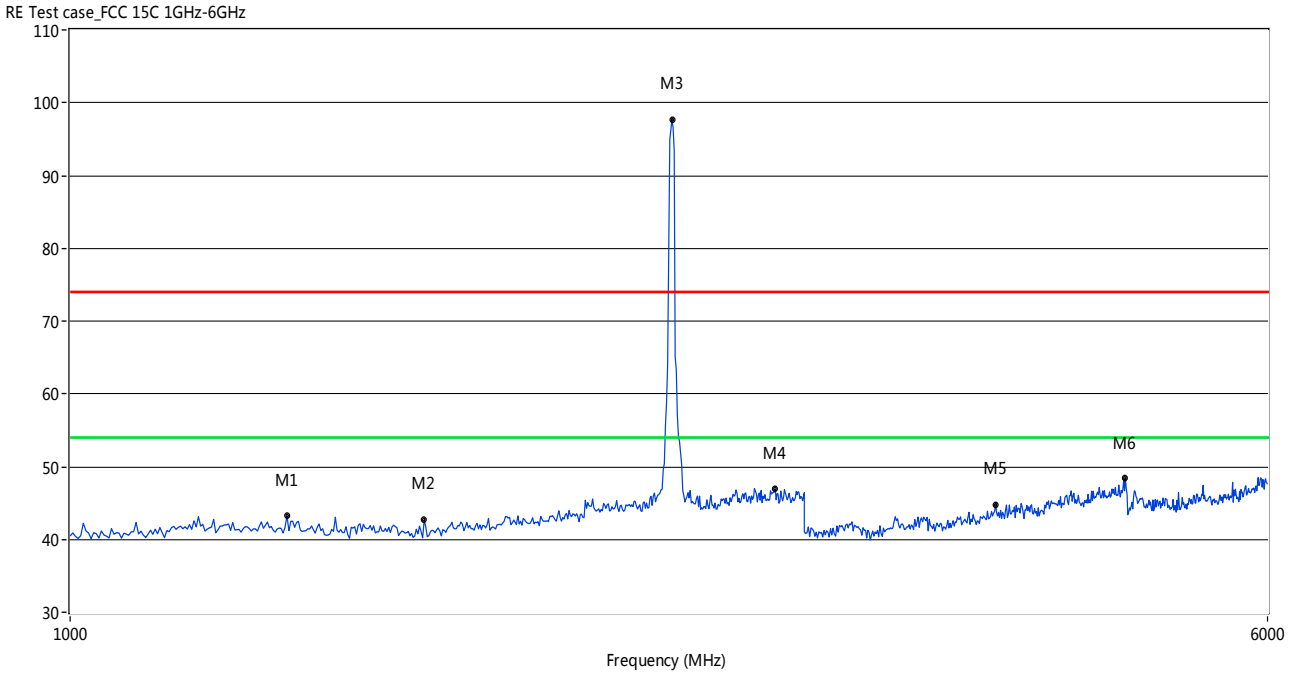
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7651.00	45.70			11.37	74.0	--	54.0	8.30	282.40	100	Vertical	PASS
9032.45	47.15			13.67	74.0	--	54.0	6.85	89.50	100	Vertical	PASS
11177.62	50.88			19.82	74.0	--	54.0	3.12	96.20	100	Vertical	PASS
13696.34	47.87			9.57	74.0	--	54.0	6.13	359.00	100	Vertical	PASS
16181.78	48.79			10.65	74.0	--	54.0	5.21	253.00	100	Vertical	PASS
19159.73	50.05			12.08	74.0	--	54.0	3.95	124.80	100	Vertical	PASS

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



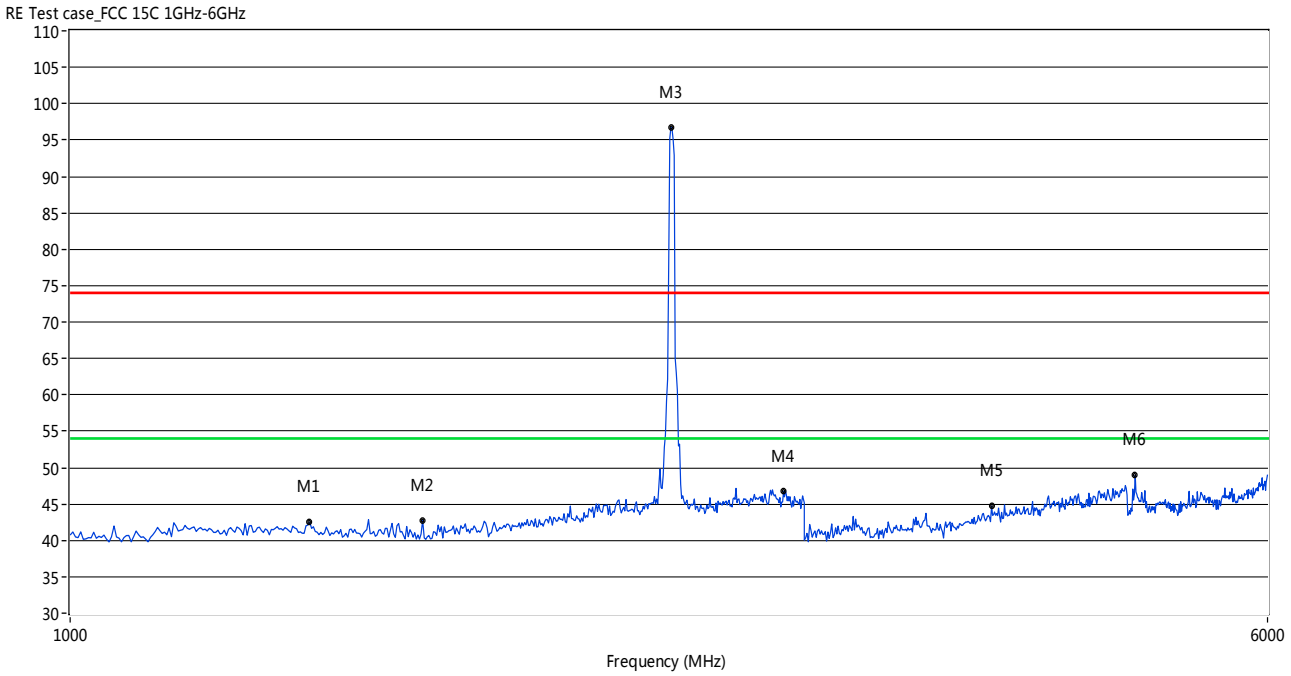
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	47.31	--		10.64	74.0	--	54.0	6.69	247.30	100	Horizontal	PASS
9290.76	47.42	--		14.57	74.0	--	54.0	6.58	27.20	100	Horizontal	PASS
12008.74	51.56	--		19.23	74.0	--	54.0	2.44	40.80	100	Horizontal	PASS
14216.31	47.70	--		9	74.0	--	54.0	6.30	123.10	100	Horizontal	PASS
16296.17	49.26	--		11.18	74.0	--	54.0	4.74	360.70	100	Horizontal	PASS
19159.73	49.85	--		12.01	74.0	--	54.0	4.15	21.10	100	Horizontal	PASS

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



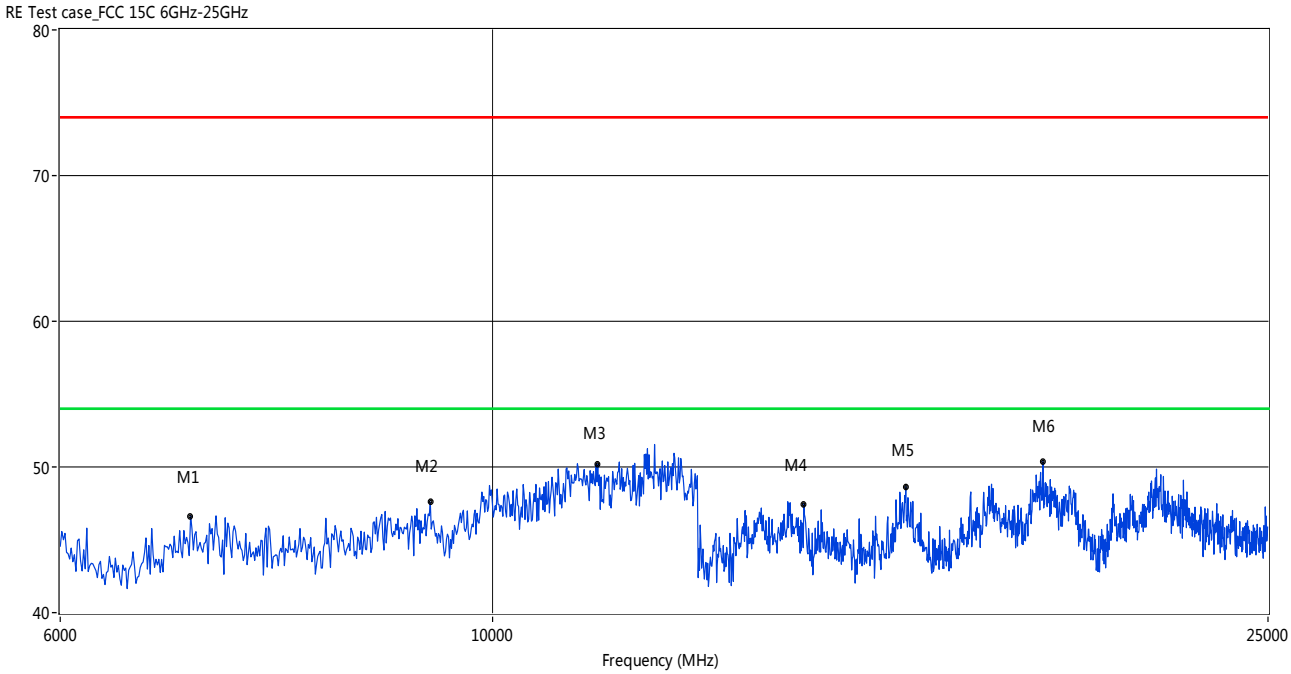
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1383.23	43.27	--		-3.86	74.0	--	54.0	10.73	0.80	100	Vertical	PASS
1698.60	42.73	--		-3.57	74.0	--	54.0	11.27	2.40	100	Vertical	PASS
2461.08	97.73	--		0.72	74.0	--	54.0	-43.73	198.90	100	Vertical	N/A
2872.26	46.88	--		2.70	74.0	--	54.0	7.12	176.30	100	Vertical	PASS
3994.01	44.82	--		10.13	74.0	--	54.0	9.18	2.30	100	Vertical	PASS
4850.30	48.44	--		12.79	74.0	--	54.0	5.56	350.20	100	Vertical	PASS

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



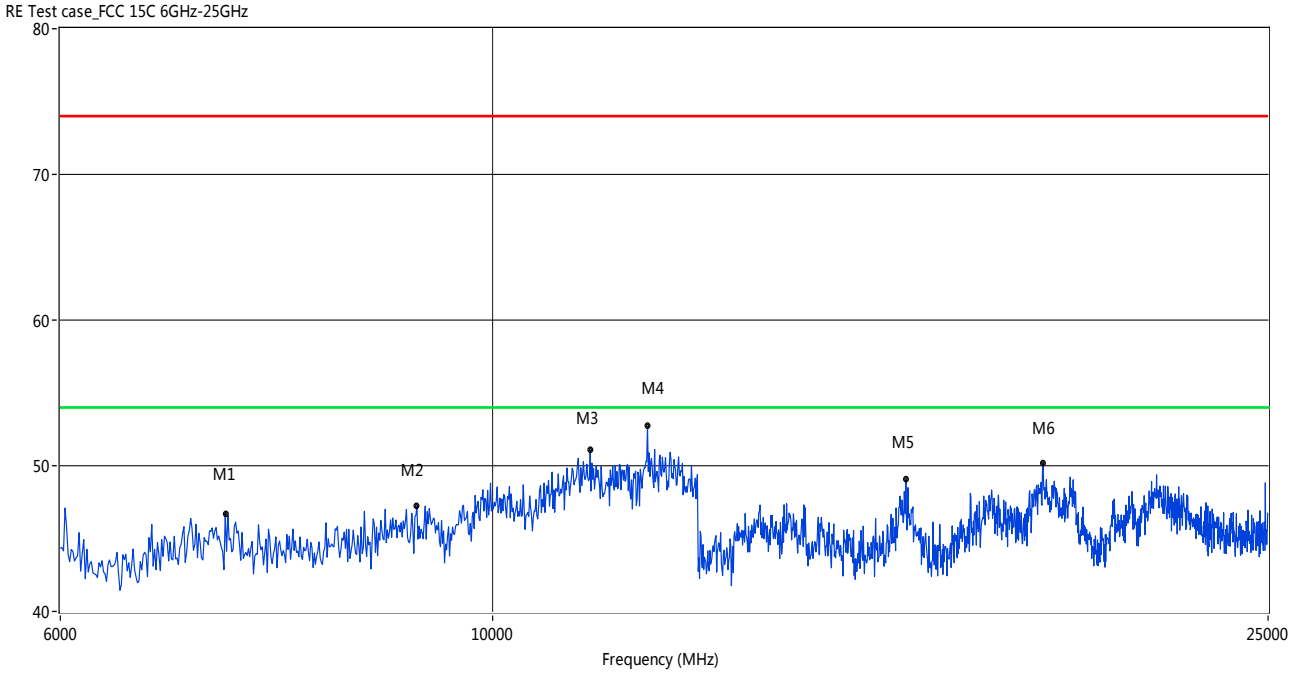
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1431.14	42.51	--		-3.42	74.0	--	54.0	11.49	3.20	100	Horizontal	PASS
1694.61	42.75	--		-3.58	74.0	--	54.0	11.25	37.20	100	Horizontal	PASS
2457.09	96.76	--		0.75	74.0	--	54.0	-42.76	1.80	100	Horizontal	N/A
2908.18	46.70	--		3.37	74.0	--	54.0	7.30	154.90	100	Horizontal	PASS
3970.06	44.72	--		10.01	74.0	--	54.0	9.28	27.70	100	Horizontal	PASS
4922.16	48.95	--		12.88	74.0	--	54.0	5.05	36.60	100	Horizontal	PASS

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



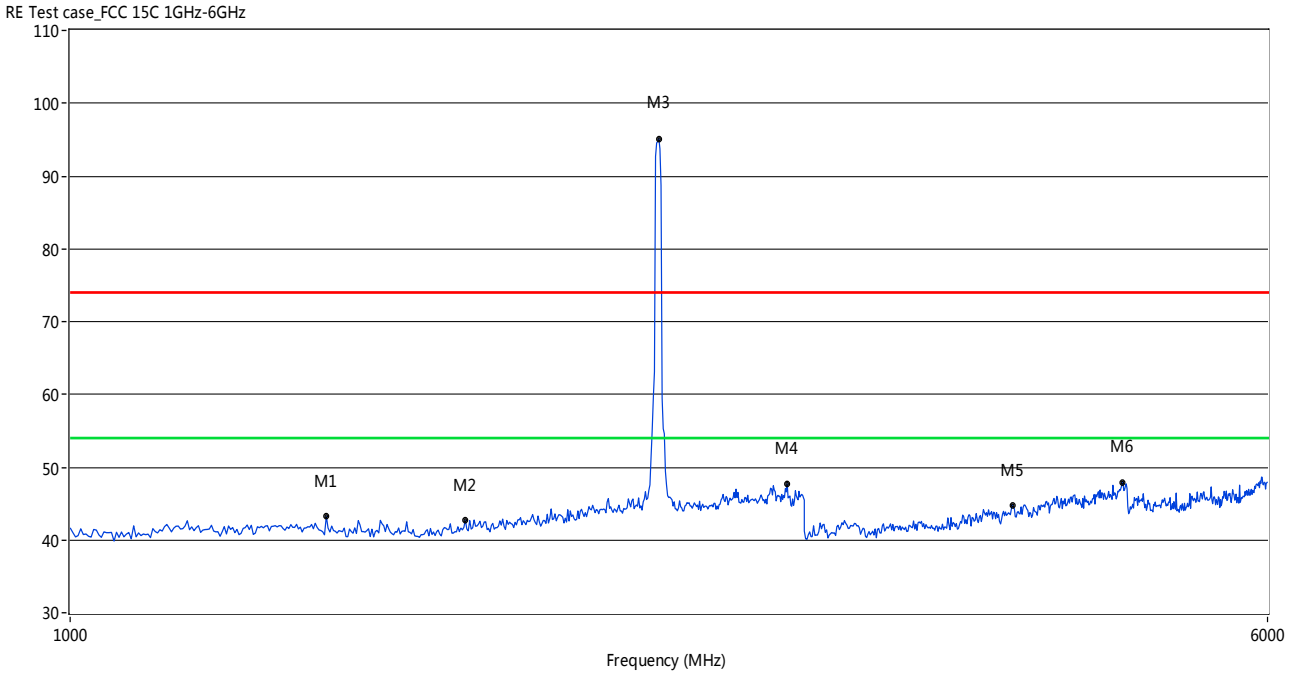
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	46.76	--		11.44	74.0	--	54.0	7.24	71.20	100	Vertical	PASS
9290.76	47.59	--		13.82	74.0	--	54.0	6.41	304.80	100	Vertical	PASS
11323.63	50.18	--		20.09	74.0	--	54.0	3.82	92.00	100	Vertical	PASS
14445.09	47.46	--		9.31	74.0	--	54.0	6.54	98.60	100	Vertical	PASS
16296.17	48.58	--		11.07	74.0	--	54.0	5.42	236.80	100	Vertical	PASS
19159.73	50.37	--		12.31	74.0	--	54.0	3.63	128.40	100	Vertical	PASS

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



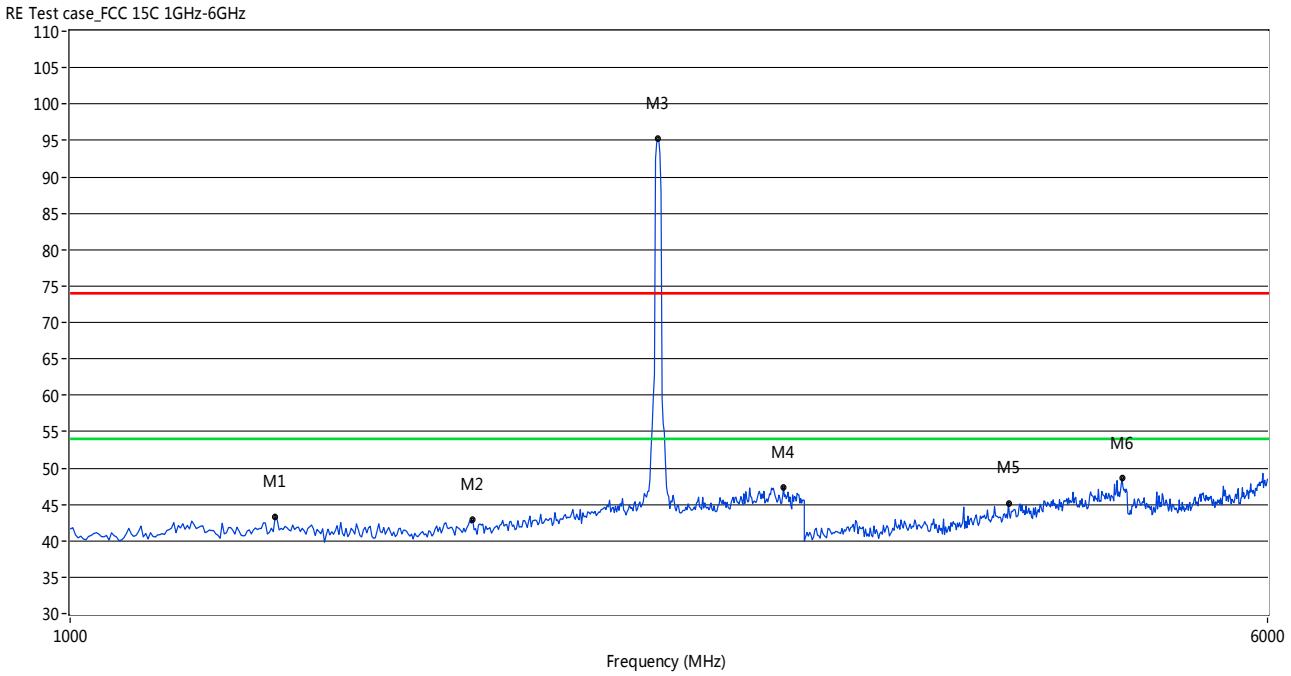
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7291.60	46.72			11.63	74.0	--	54.0	7.28	167.20	100	Horizontal	PASS
9144.76	47.22			14.02	74.0	--	54.0	6.78	332.90	100	Horizontal	PASS
11222.55	51.06			19.92	74.0	--	54.0	2.94	43.30	100	Horizontal	PASS
12008.74	52.72			9.59	74.0	--	54.0	1.28	64.00	100	Horizontal	PASS
16296.17	49.04			10.81	74.0	--	54.0	4.96	-0.00	100	Horizontal	PASS
19159.73	50.37			11.65	74.0	--	54.0	3.63	359.40	100	Horizontal	PASS

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



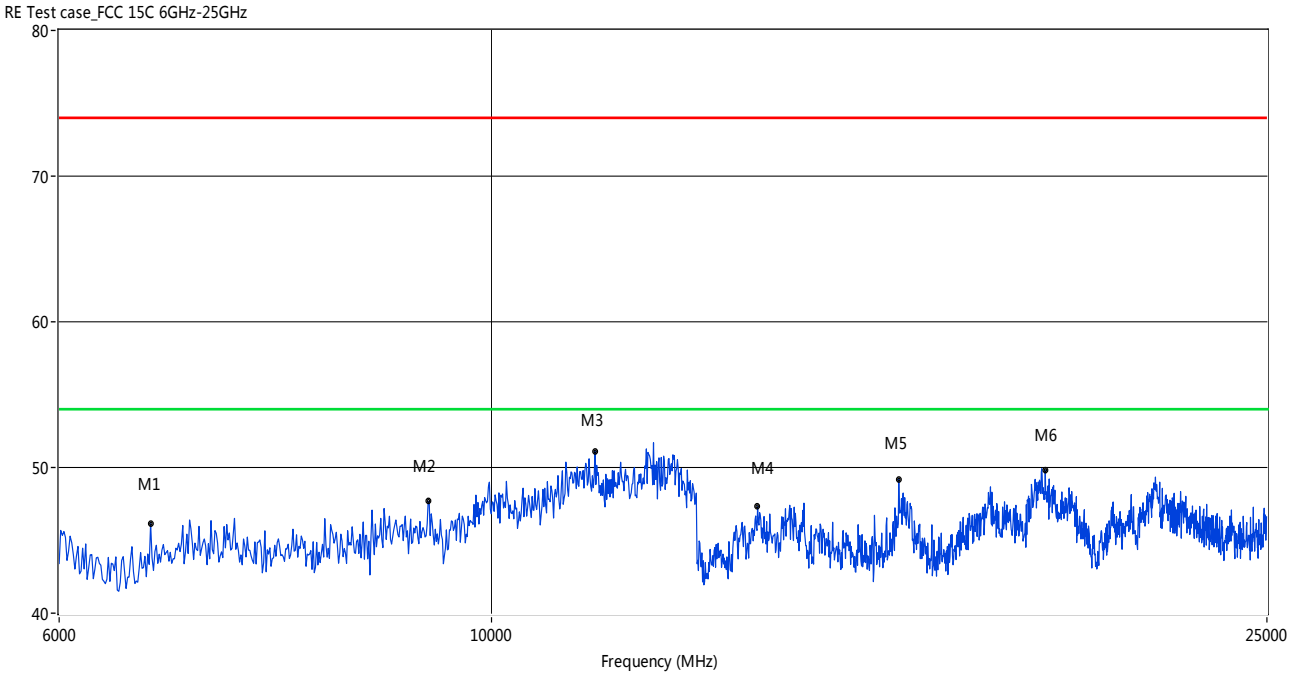
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1467.07	43.24			-3.85	74.0	--	54.0	10.76	227.80	100	Vertical	PASS
1806.39	42.74			-3.29	74.0	--	54.0	11.26	233.30	100	Vertical	PASS
2413.17	95.15			0.21	74.0	--	54.0	-41.15	205.50	100	Vertical	N/A
2924.15	47.71			3.01	74.0	--	54.0	6.29	299.00	100	Vertical	PASS
4095.81	44.83			10.09	74.0	--	54.0	9.17	65.00	100	Vertical	PASS
4832.34	47.97			12.87	74.0	--	54.0	6.03	324.20	100	Vertical	PASS

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



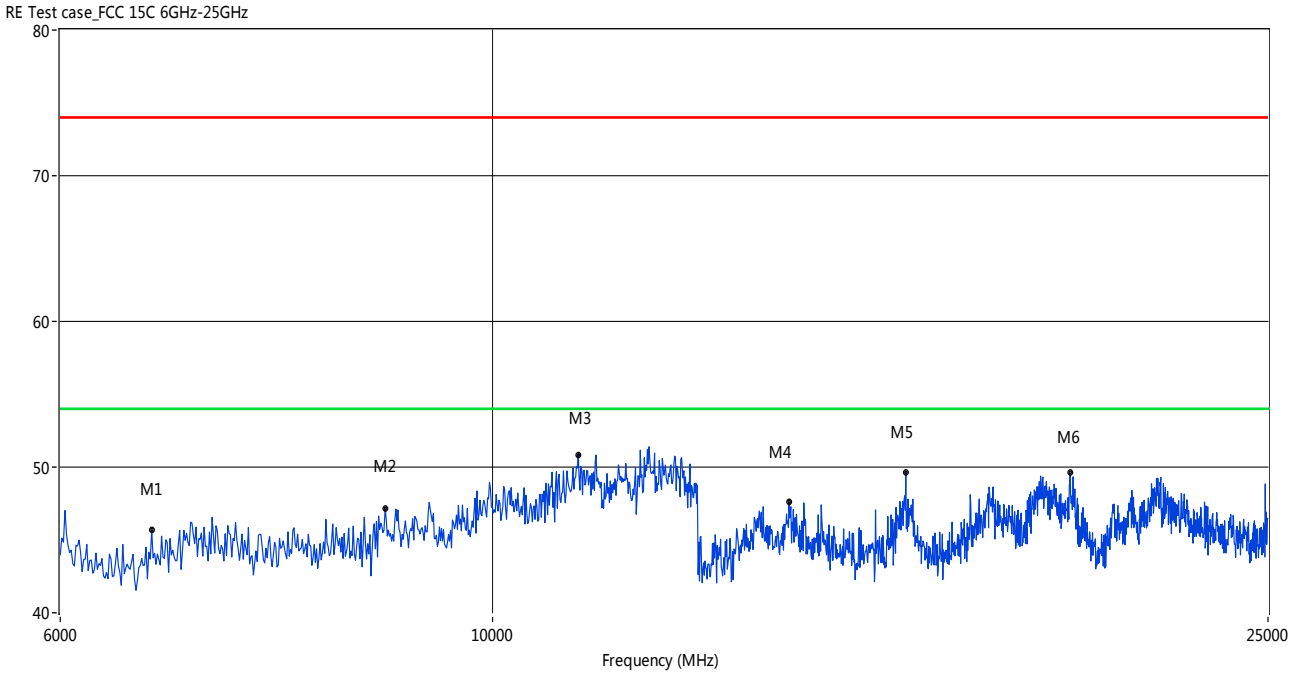
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1359.28	43.29			-3.76	74.0	--	54.0	10.71	192.50	100	Horizontal	PASS
1826.35	42.86			-3.08	74.0	--	54.0	11.14	320.60	100	Horizontal	PASS
2409.18	95.18			0.00	74.0	--	54.0	-41.18	0.30	100	Horizontal	N/A
2908.18	47.28			3.37	74.0	--	54.0	6.72	281.70	100	Horizontal	PASS
4071.86	45.16			10.14	74.0	--	54.0	8.84	145.00	100	Horizontal	PASS
4826.35	48.55			12.69	74.0	--	54.0	5.45	356.80	100	Horizontal	PASS

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



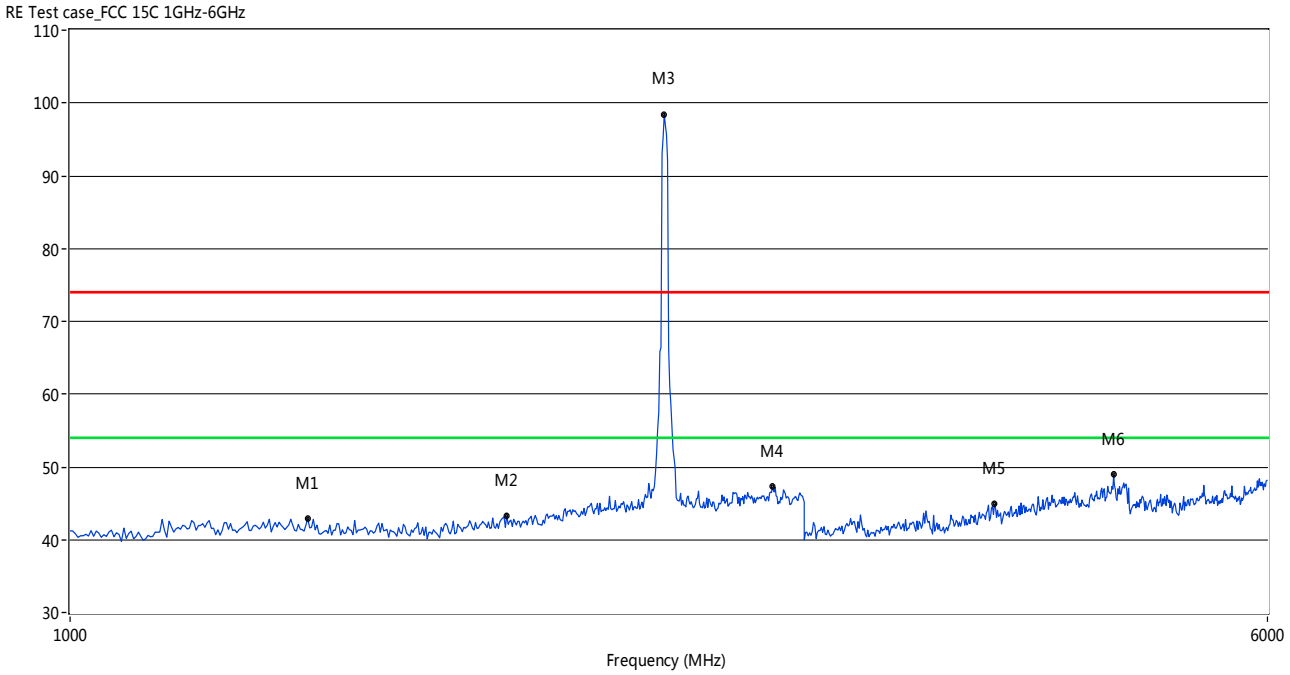
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	46.14			11.03	74.0	--	54.0	7.86	15.50	100	Vertical	PASS
9279.53	47.66			13.85	74.0	--	54.0	6.34	181.40	100	Vertical	PASS
11301.17	51.13			19.46	74.0	--	54.0	2.87	181.40	100	Vertical	PASS
13696.34	47.32			8.96	74.0	--	54.0	6.68	90.80	100	Vertical	PASS
16181.78	49.19			10.9	74.0	--	54.0	4.81	188.40	100	Vertical	PASS
19239.60	49.82			12.13	74.0	--	54.0	4.18	283.70	100	Vertical	PASS

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



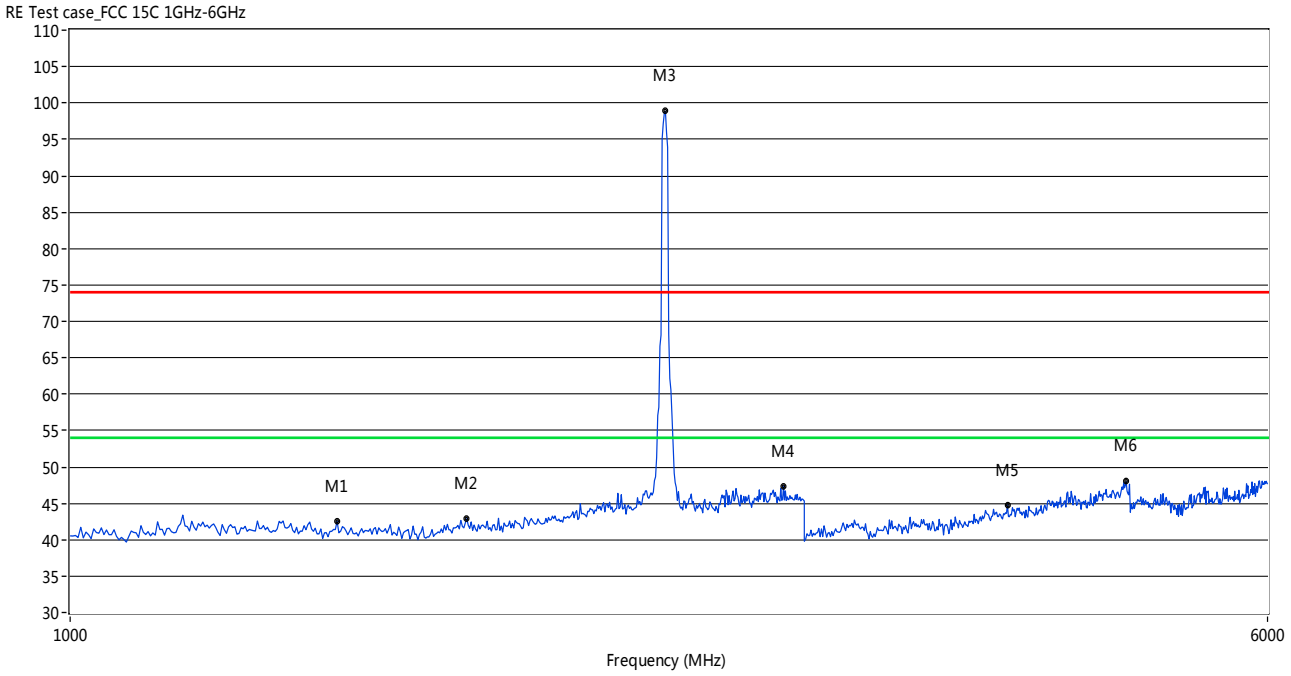
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	45.67			10.92	74.0	--	54.0	8.33	84.10	100	Horizontal	PASS
8807.82	47.16			14.51	74.0	--	54.0	6.84	8.60	100	Horizontal	PASS
11065.31	50.87			19.21	74.0	--	54.0	3.13	1.30	100	Horizontal	PASS
14195.51	47.62			8.95	74.0	--	54.0	6.38	42.50	100	Horizontal	PASS
16296.17	49.67			11.25	74.0	--	54.0	4.33	228.50	100	Horizontal	PASS
19788.69	49.60			12.08	74.0	--	54.0	4.40	357.30	100	Horizontal	PASS

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



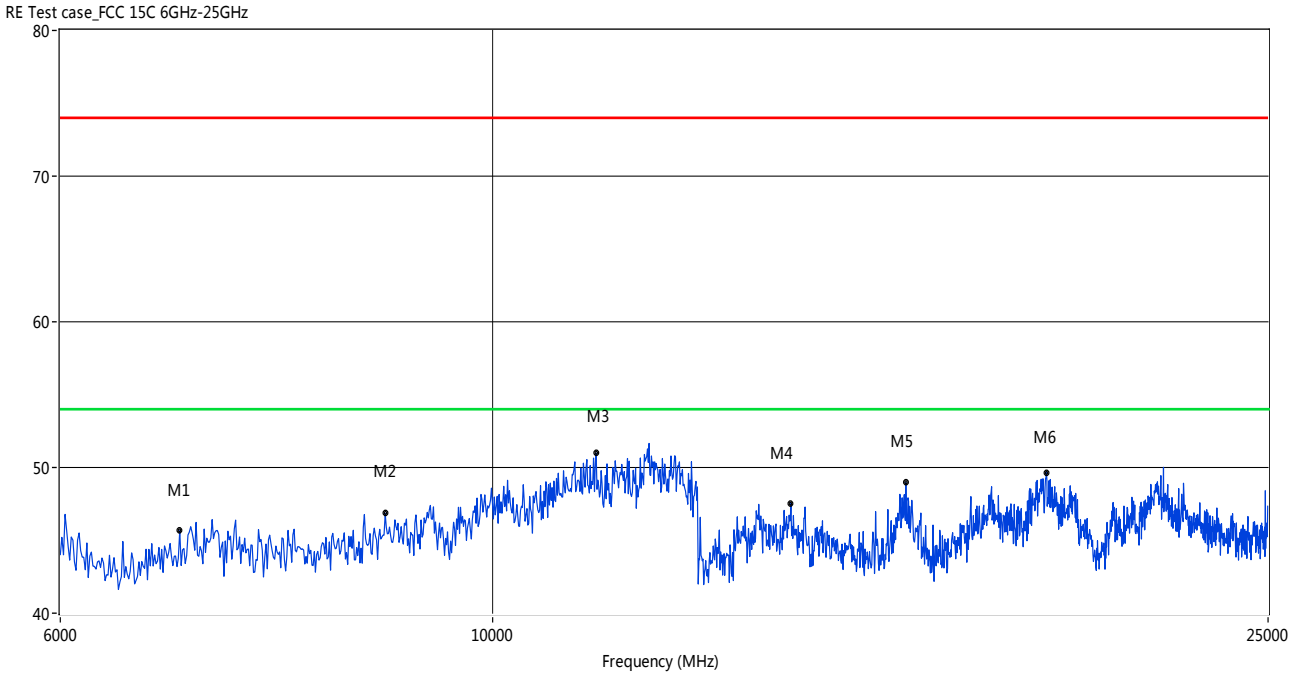
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1427.15	42.92			-3.45	74.0	--	54.0	11.08	266.40	100	Vertical	PASS
1922.16	43.26			-2.16	74.0	--	54.0	10.74	132.80	100	Vertical	PASS
2433.13	98.46			0.03	74.0	--	54.0	-44.46	205.20	100	Vertical	N/A
2860.28	47.25			3.42	74.0	--	54.0	6.75	0.70	100	Vertical	PASS
3988.02	44.87			10.16	74.0	--	54.0	9.13	54.20	100	Vertical	PASS
4766.47	48.93			12.32	74.0	--	54.0	5.07	130.80	100	Vertical	PASS

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



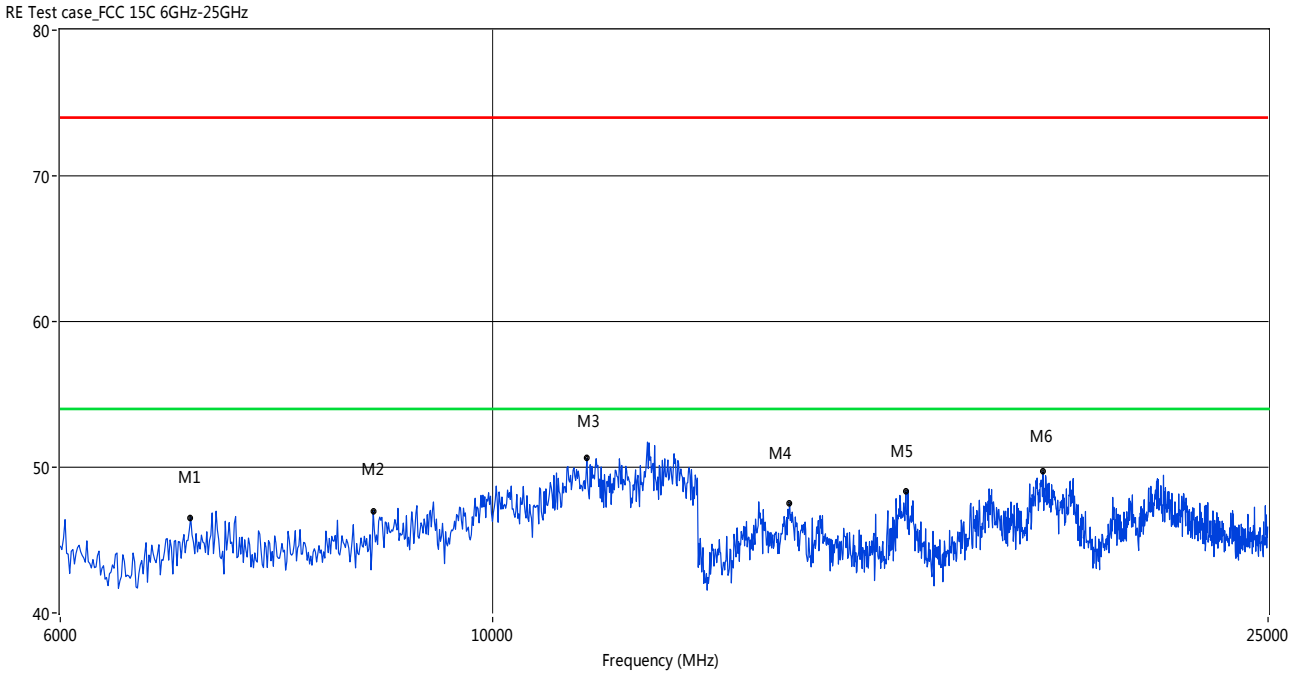
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1491.02	42.54			-3.42	74.0	--	54.0	11.46	5.60	100	Horizontal	PASS
1810.38	42.88			-3.22	74.0	--	54.0	11.12	159.80	100	Horizontal	PASS
2437.13	98.87			-0.08	74.0	--	54.0	-44.87	20.30	100	Horizontal	N/A
2908.18	47.36			3.37	74.0	--	54.0	6.64	9.30	100	Horizontal	PASS
4065.87	44.78			10.09	74.0	--	54.0	9.22	36.70	100	Horizontal	PASS
4856.29	47.98			12.52	74.0	--	54.0	6.02	358.50	100	Horizontal	PASS

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



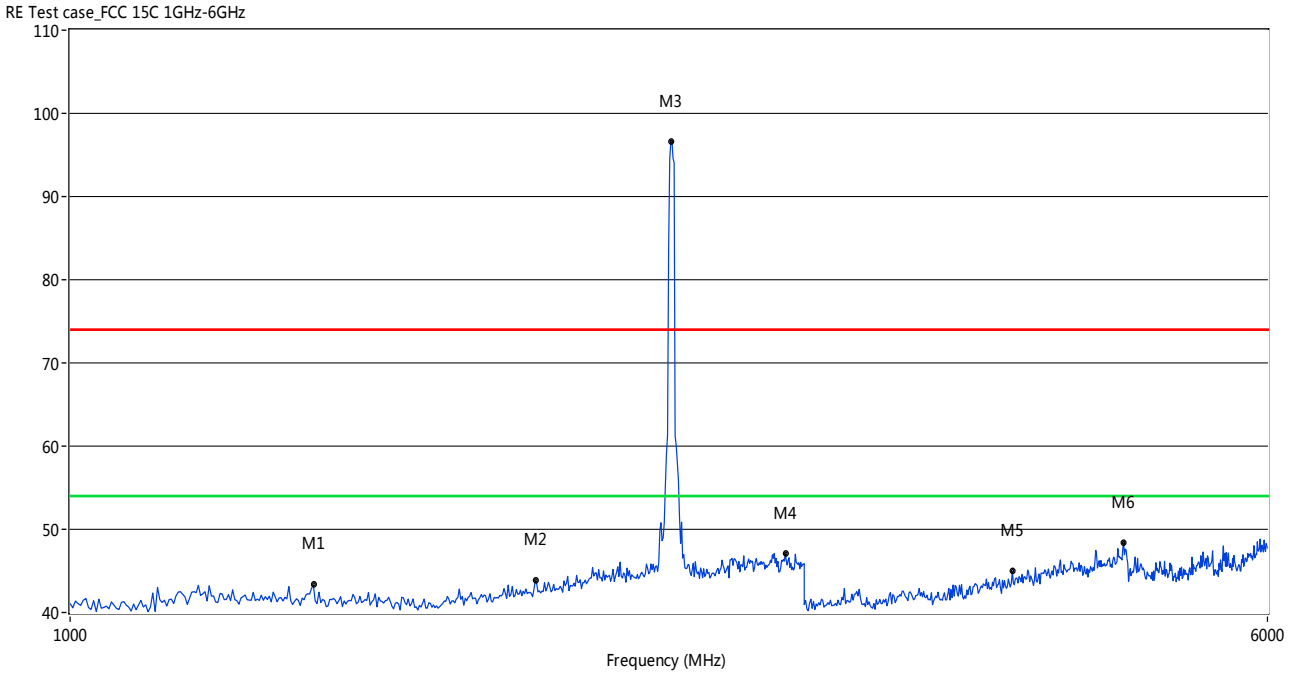
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6909.73	45.66			11.4	74.0	--	54.0	8.34	23.60	100	Vertical	PASS
8807.82	47.16			13.9	74.0	--	54.0	6.84	0.00	100	Vertical	PASS
11301.17	50.99			19.66	74.0	--	54.0	3.01	35.80	100	Vertical	PASS
14226.70	47.54			8.69	74.0	--	54.0	6.46	43.20	100	Vertical	PASS
16296.17	49.67			11.46	74.0	--	54.0	4.33	83.60	100	Vertical	PASS
19239.60	49.67			11.64	74.0	--	54.0	4.33	360.70	100	Vertical	PASS

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



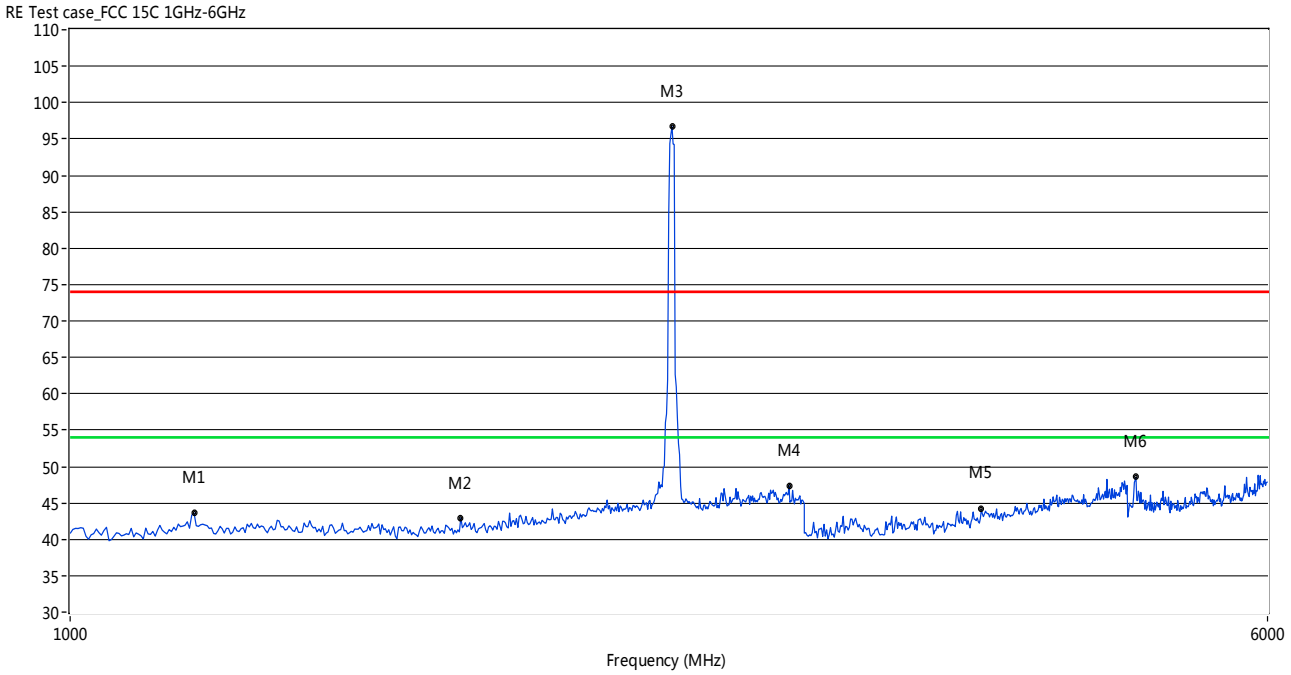
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	46.55			12.24	74.0	--	54.0	7.45	276.50	100	Horizontal	PASS
8684.28	47.00			13.75	74.0	--	54.0	7.00	179.70	100	Horizontal	PASS
11177.62	50.61			19.7	74.0	--	54.0	3.39	96.70	100	Horizontal	PASS
14205.91	47.52			8.98	74.0	--	54.0	6.48	1.50	100	Horizontal	PASS
16296.17	49.67			10.94	74.0	--	54.0	4.33	123.80	100	Horizontal	PASS
19159.73	49.70			11.93	74.0	--	54.0	4.30	30.10	100	Horizontal	PASS

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



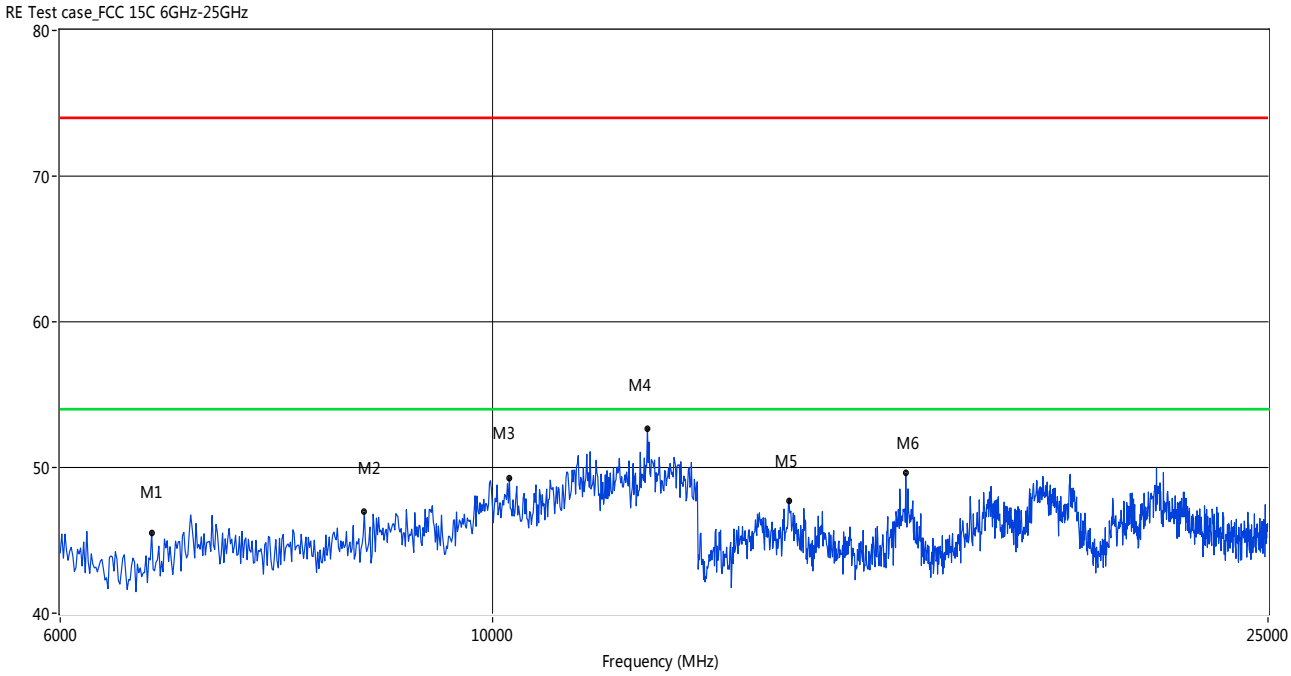
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1439.12	43.32			-3.58	74.0	--	54.0	10.68	209.30	100	Vertical	PASS
2005.99	43.83			-2.19	74.0	--	54.0	10.17	142.30	100	Vertical	PASS
2457.09	96.64			0.75	74.0	--	54.0	-42.64	209.30	100	Vertical	N/A
2916.17	47.12			3.20	74.0	--	54.0	6.88	225.60	100	Vertical	PASS
4095.81	44.94			10.09	74.0	--	54.0	9.06	359.30	100	Vertical	PASS
4838.32	48.42			13.06	74.0	--	54.0	5.58	2.50	100	Vertical	PASS

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



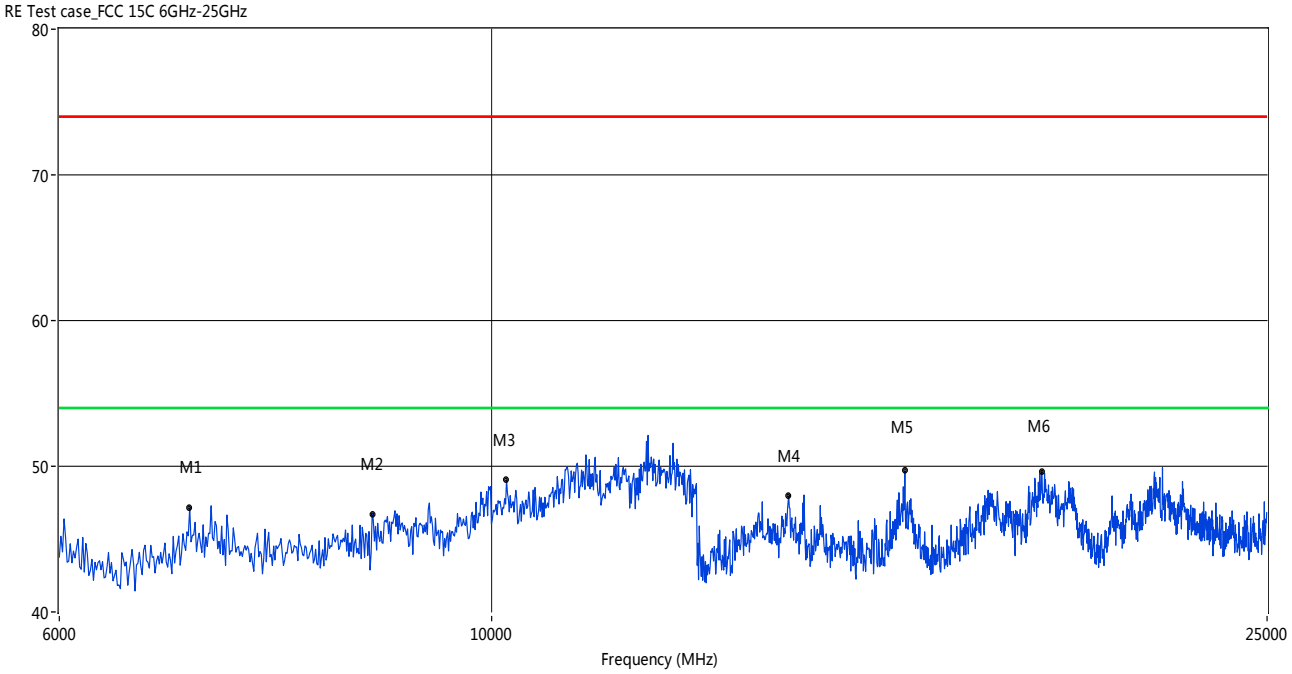
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1203.59	43.59			-3.67	74.0	--	54.0	10.41	249.00	100	Horizontal	PASS
1794.41	42.95			-3.24	74.0	--	54.0	11.05	0.00	100	Horizontal	PASS
2461.08	96.69			0.72	74.0	--	54.0	-42.69	20.50	100	Horizontal	N/A
2932.14	47.36			3.01	74.0	--	54.0	6.64	199.10	100	Horizontal	PASS
3910.18	44.10			10.18	74.0	--	54.0	9.90	270.30	100	Horizontal	PASS
4928.14	48.54			12.70	74.0	--	54.0	5.46	306.30	100	Horizontal	PASS

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



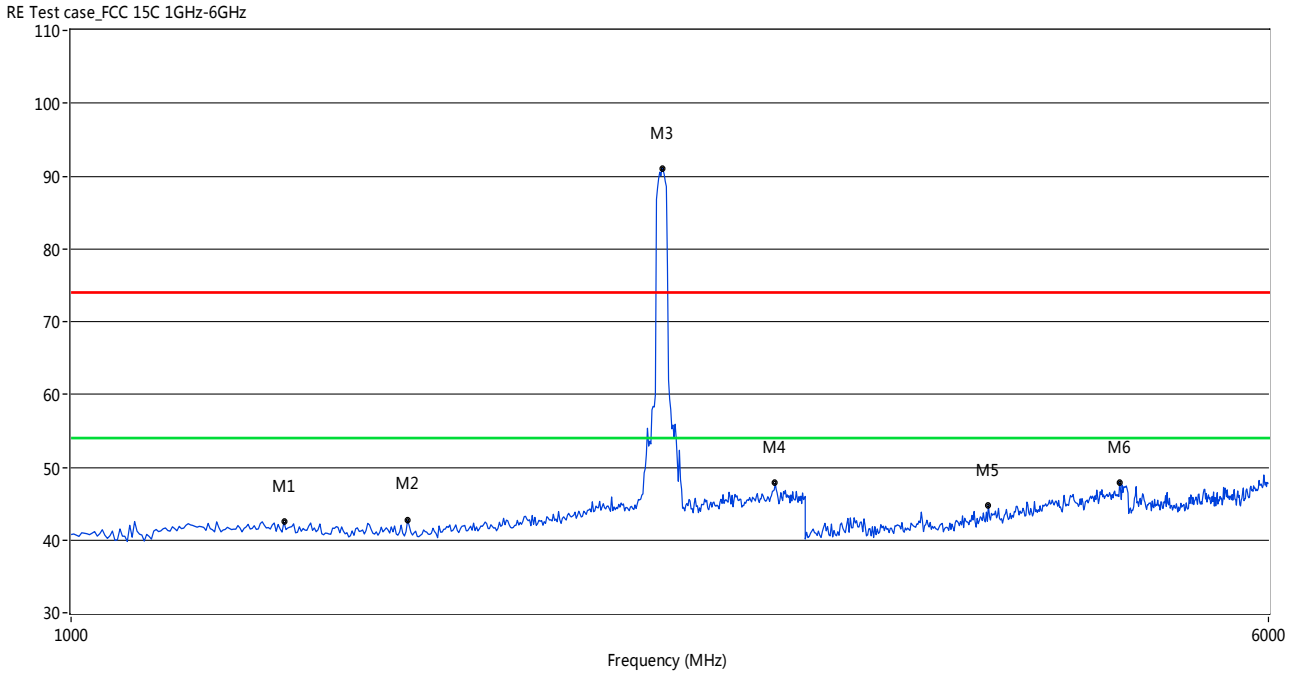
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	45.53			11.81	74.0	--	54.0	8.47	263.10	100	Vertical	PASS
8594.43	46.94			13.21	74.0	--	54.0	7.06	167.10	100	Vertical	PASS
10200.50	49.25			19.46	74.0	--	54.0	4.75	91.70	100	Vertical	PASS
12008.74	52.68			9.52	74.0	--	54.0	1.32	98.70	100	Vertical	PASS
14195.51	47.75			11.01	74.0	--	54.0	6.25	249.40	100	Vertical	PASS
16296.17	49.59			12.13	74.0	--	54.0	4.41	124.30	100	Vertical	PASS

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



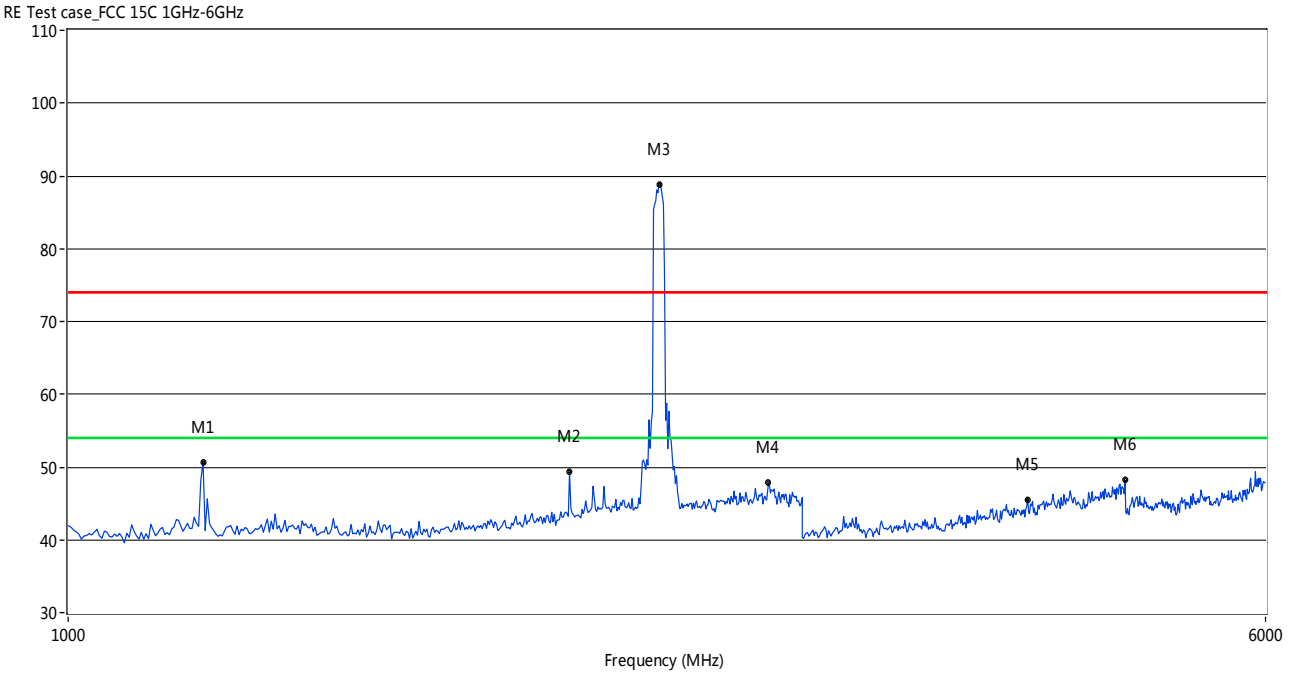
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	47.15			11.42	74.0	--	54.0	6.85	226.20	100	Horizontal	PASS
8684.28	46.71			13.74	74.0	--	54.0	7.29	329.40	100	Horizontal	PASS
10178.04	49.06			19.98	74.0	--	54.0	4.94	27.30	100	Horizontal	PASS
14205.91	47.97			9.57	74.0	--	54.0	6.03	192.10	100	Horizontal	PASS
16296.17	49.68			10.84	74.0	--	54.0	4.32	50.10	100	Horizontal	PASS
19159.73	49.56			11.75	74.0	--	54.0	4.44	360.30	100	Horizontal	PASS

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



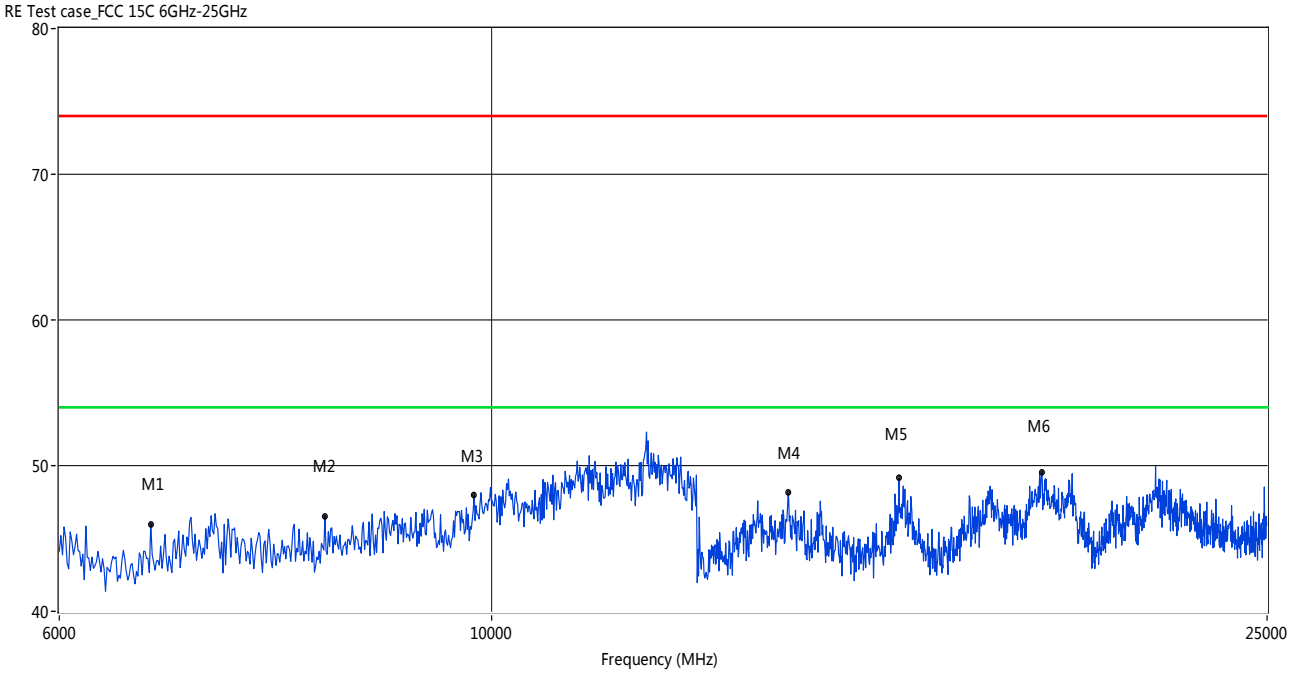
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1375.25	42.46			-3.78	74.0	--	54.0	11.54	289.00	100	Vertical	PASS
1654.69	42.69			-3.88	74.0	--	54.0	11.31	359.20	100	Vertical	PASS
2421.16	91.04			0.61	74.0	--	54.0	-37.04	200.00	100	Vertical	N/A
2868.26	47.79			2.92	74.0	--	54.0	6.21	277.90	100	Vertical	PASS
3946.11	44.84			9.86	74.0	--	54.0	9.16	97.60	100	Vertical	PASS
4802.40	47.87			12.37	74.0	--	54.0	6.13	16.60	100	Vertical	PASS

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



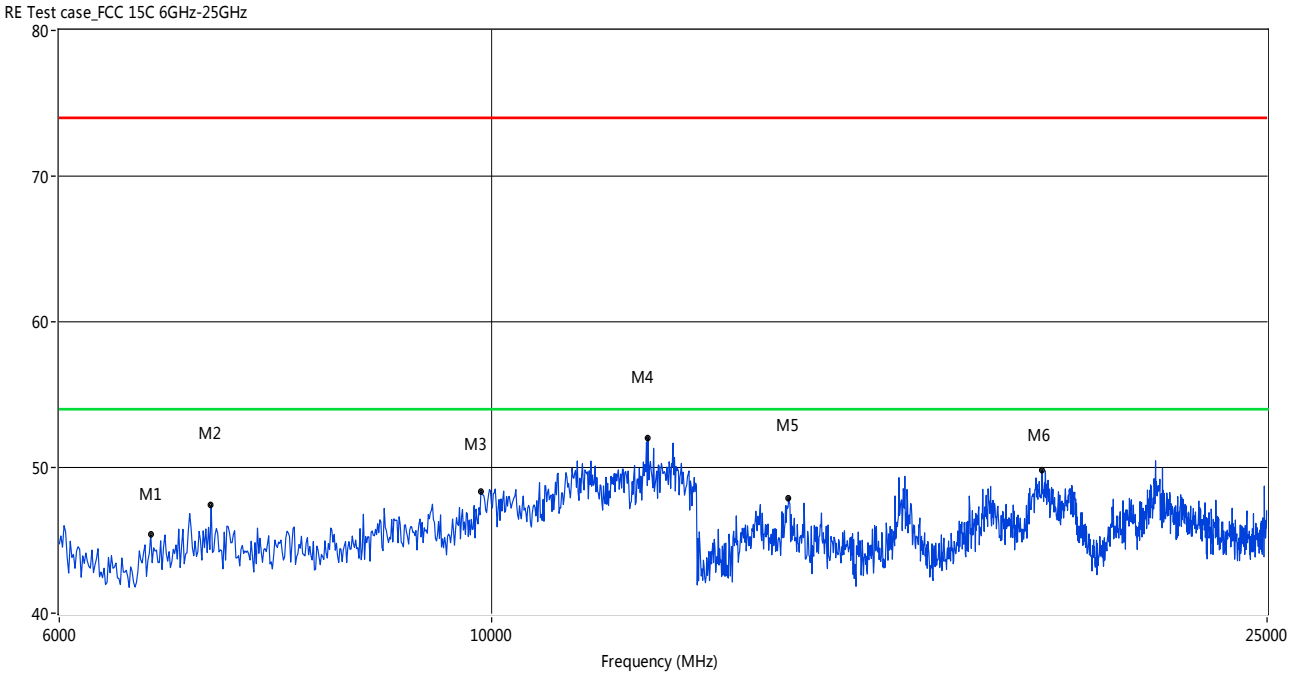
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1223.55	50.69			-3.87	74.0	--	54.0	3.31	60.70	100	Horizontal	PASS
2117.76	49.32			-1.06	74.0	--	54.0	4.68	88.50	100	Horizontal	PASS
2421.16	88.86			0.61	74.0	--	54.0	-34.86	298.70	100	Horizontal	N/A
2852.30	47.81			3.61	74.0	--	54.0	6.19	2.10	100	Horizontal	PASS
4203.59	45.57			10.28	74.0	--	54.0	8.43	0.70	100	Horizontal	PASS
4862.28	48.19			12.32	74.0	--	54.0	5.81	58.60	100	Horizontal	PASS

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



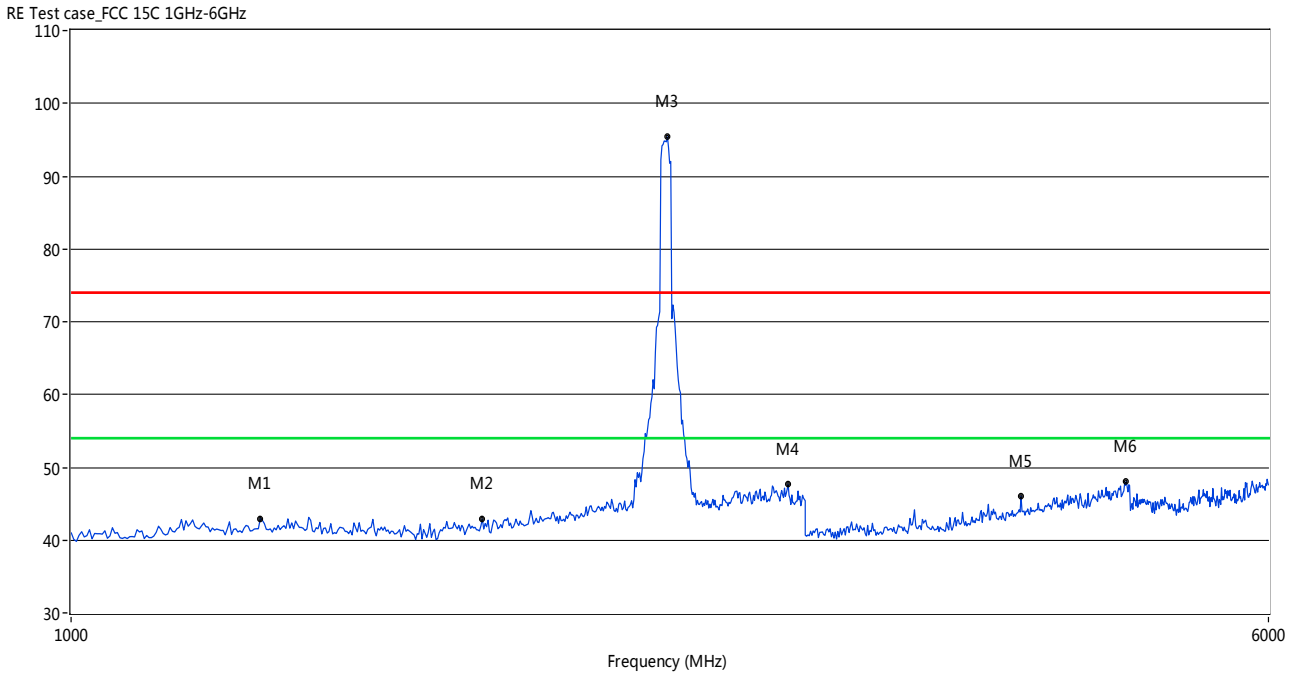
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	46.00			10.99	74.0	--	54.0	8.00	302.20	100	Vertical	PASS
8212.56	46.51			13.7	74.0	--	54.0	7.49	288.50	100	Vertical	PASS
9796.17	47.97			20.13	74.0	--	54.0	6.03	336.30	100	Vertical	PASS
14195.51	48.13			9.43	74.0	--	54.0	5.87	95.60	100	Vertical	PASS
16181.78	49.13			10.95	74.0	--	54.0	4.87	329.30	100	Vertical	PASS
19159.73	49.56			12.25	74.0	--	54.0	4.44	283.50	100	Vertical	PASS

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



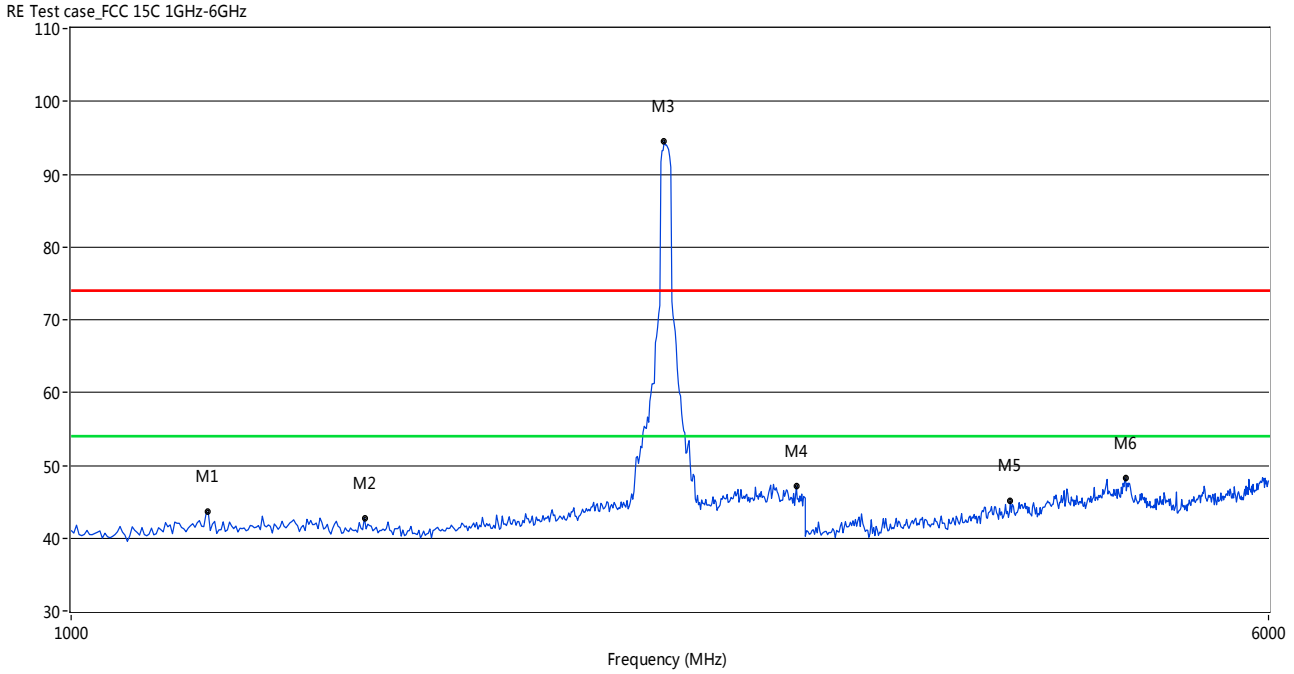
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	45.39			12.22	74.0	--	54.0	8.61	109.20	100	Horizontal	PASS
7179.28	47.41			13.95	74.0	--	54.0	6.59	177.90	100	Horizontal	PASS
9874.79	48.36			19.88	74.0	--	54.0	5.64	41.00	100	Horizontal	PASS
12031.20	52.06			8.9	74.0	--	54.0	1.94	267.60	100	Horizontal	PASS
14205.91	47.91			11.09	74.0	--	54.0	6.09	1.60	100	Horizontal	PASS
19159.73	49.81			12.08	74.0	--	54.0	4.19	0.50	100	Horizontal	PASS

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



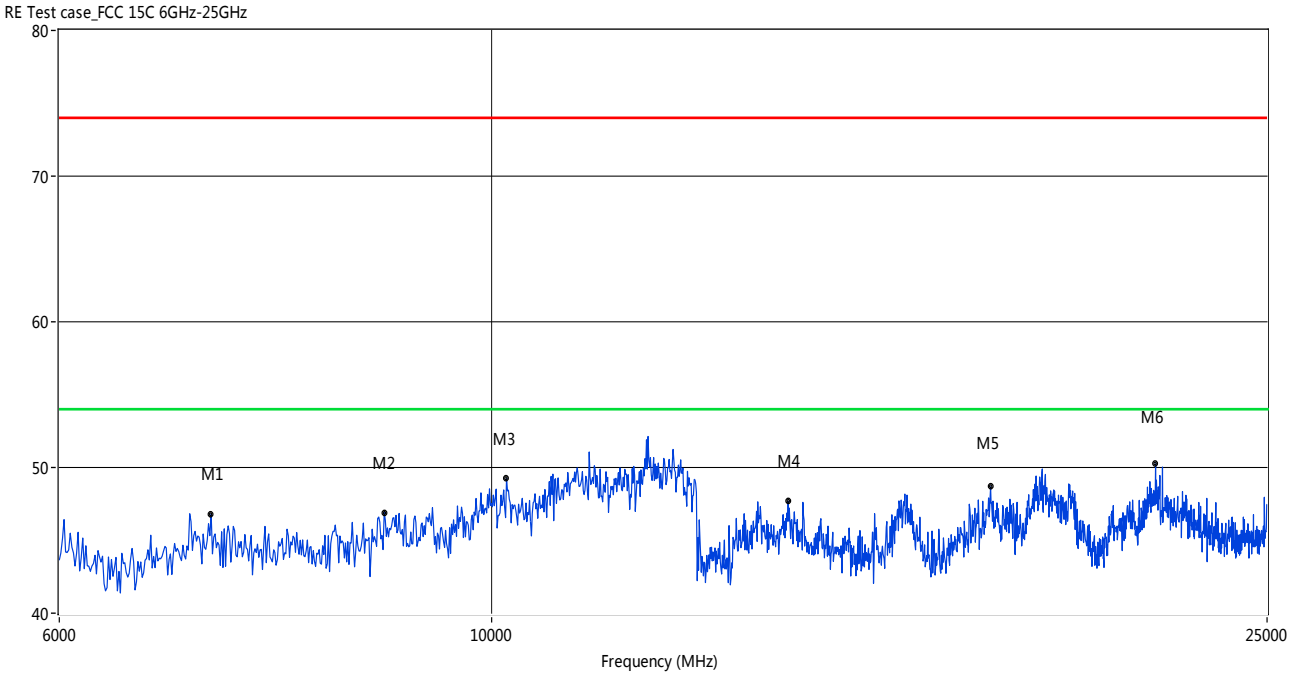
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1327.35	42.97			-3.77	74.0	--	54.0	11.03	43.80	100	Vertical	PASS
1850.30	42.90			-2.70	74.0	--	54.0	11.10	154.60	100	Vertical	PASS
2441.12	95.39			-0.03	74.0	--	54.0	-41.39	199.10	100	Vertical	N/A
2924.15	47.68			3.01	74.0	--	54.0	6.32	271.90	100	Vertical	PASS
4143.71	46.01			10.11	74.0	--	54.0	7.99	62.80	100	Vertical	PASS
4850.30	48.08			12.79	74.0	--	54.0	5.92	359.20	100	Vertical	PASS

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



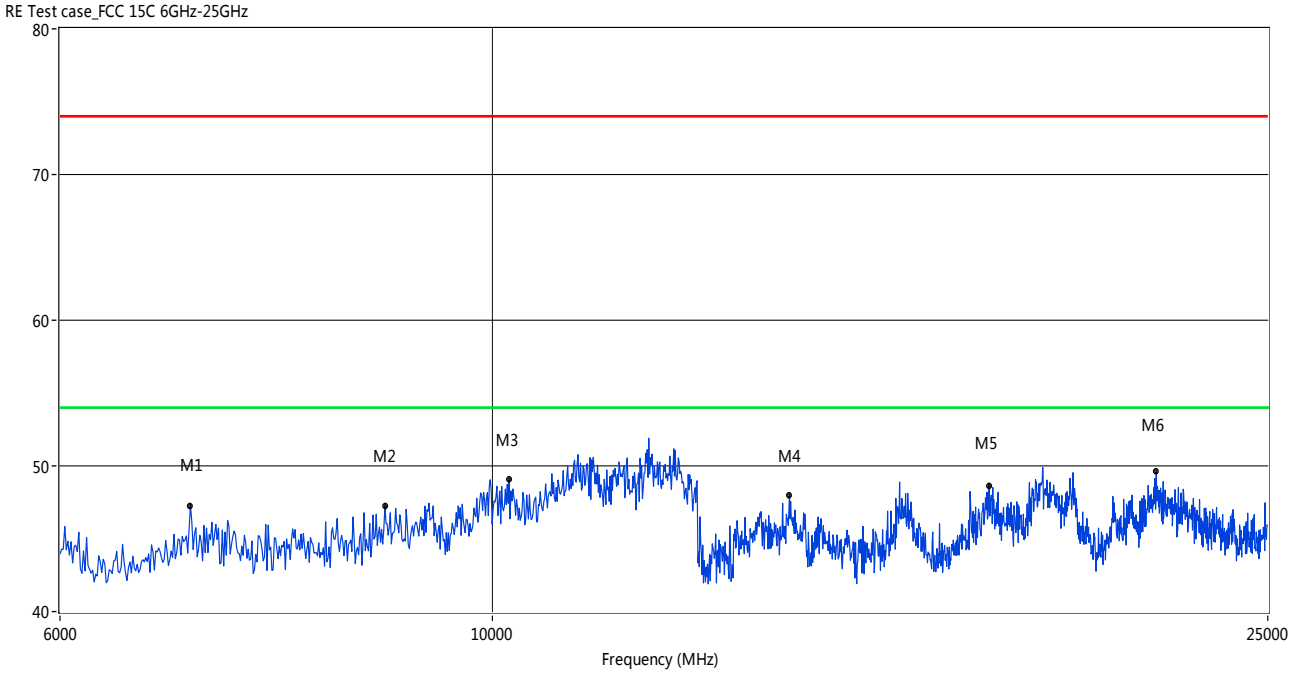
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1227.54	43.61			-3.84	74.0	--	54.0	10.39	271.30	100	Horizontal	PASS
1550.90	42.78			-3.83	74.0	--	54.0	11.22	155.10	100	Horizontal	PASS
2429.14	94.56			0.30	74.0	--	54.0	-40.56	3.50	100	Horizontal	N/A
2960.08	47.11			3.09	74.0	--	54.0	6.89	204.70	100	Horizontal	PASS
4077.84	45.06			10.22	74.0	--	54.0	8.94	279.30	100	Horizontal	PASS
4844.31	48.27			12.98	74.0	--	54.0	5.73	347.10	100	Horizontal	PASS

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



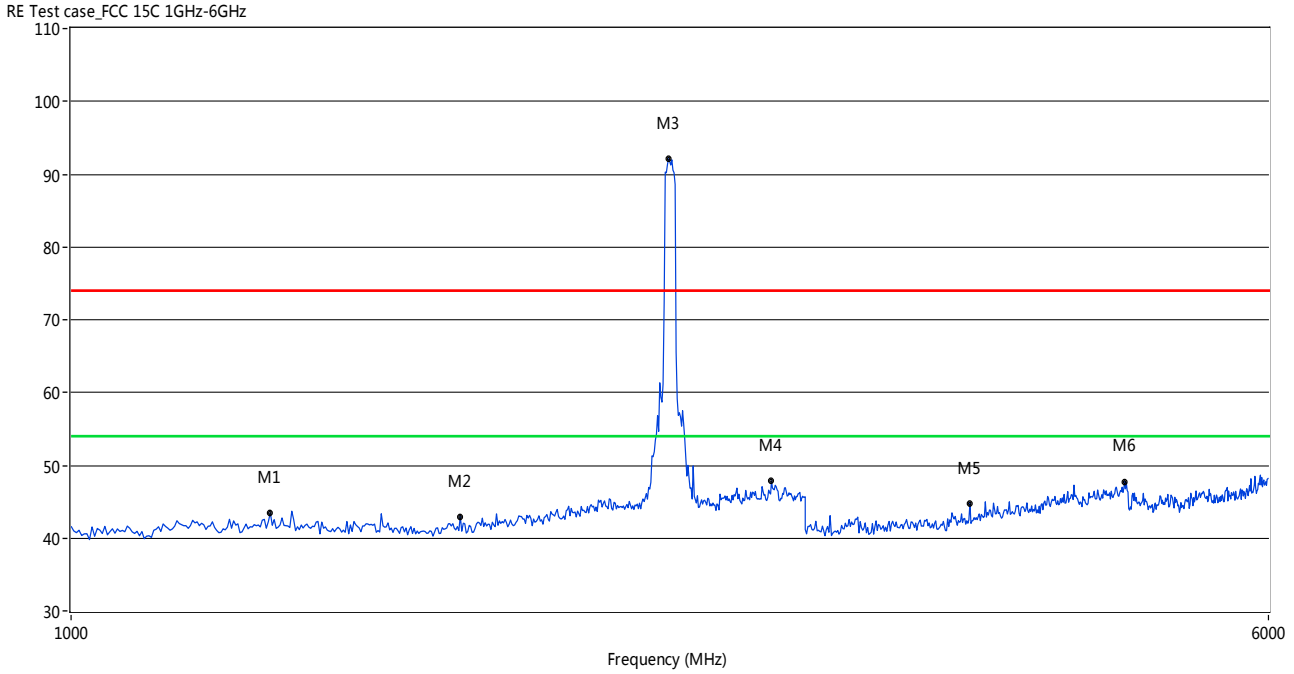
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
7179.28	46.79			11.25	74.0	--	54.0	7.21	282.10	100	Vertical	PASS
8807.82	46.91			13.6	74.0	--	54.0	7.09	96.30	100	Vertical	PASS
10178.04	49.06			19.43	74.0	--	54.0	4.94	234.20	100	Vertical	PASS
14195.51	47.68			8.96	74.0	--	54.0	6.32	139.50	100	Vertical	PASS
18032.86	48.67			10.83	74.0	--	54.0	5.33	247.60	100	Vertical	PASS
21915.14	50.25			11.7	74.0	--	54.0	3.75	178.80	100	Vertical	PASS

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



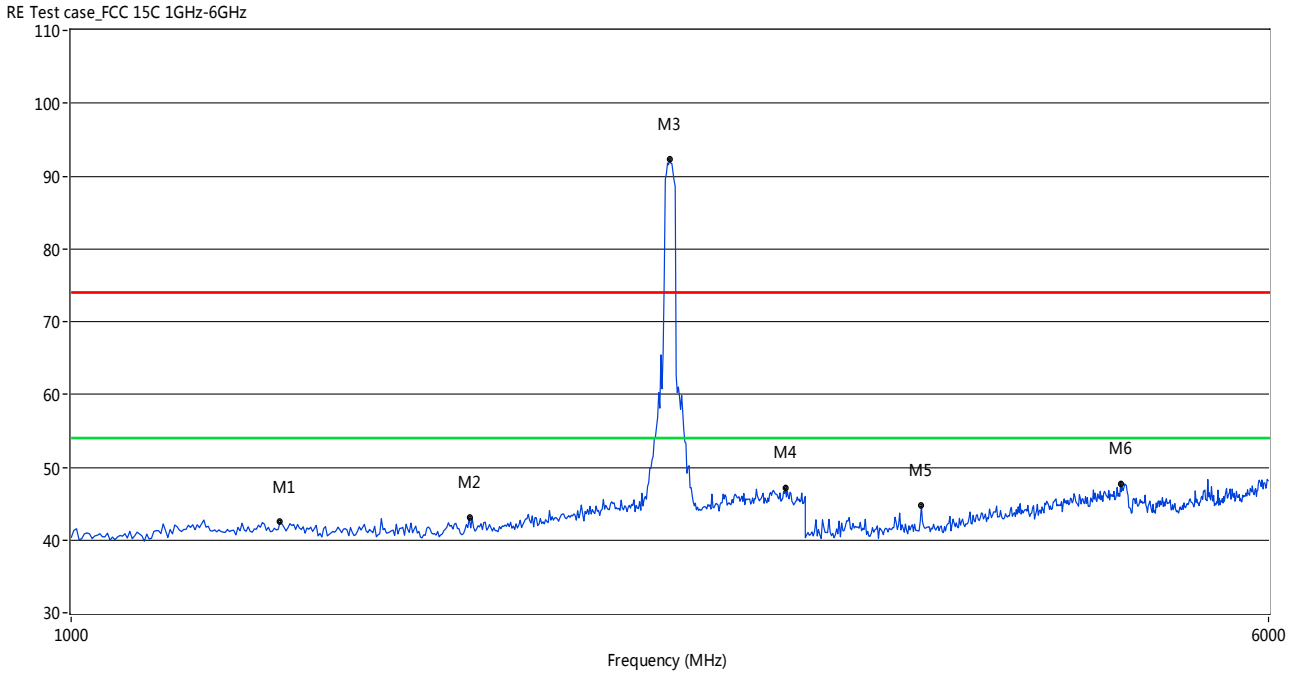
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	47.28			11.54	74.0	--	54.0	6.72	76.20	100	Horizontal	PASS
8807.82	46.91			14.16	74.0	--	54.0	7.09	41.40	100	Horizontal	PASS
10200.50	49.06			20.06	74.0	--	54.0	4.94	275.80	100	Horizontal	PASS
14205.91	47.97			9.18	74.0	--	54.0	6.03	34.40	100	Horizontal	PASS
17980.87	48.65			11.36	74.0	--	54.0	5.35	272.10	100	Horizontal	PASS
21915.14	50.25			12.53	74.0	--	54.0	3.75	130.10	100	Horizontal	PASS

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



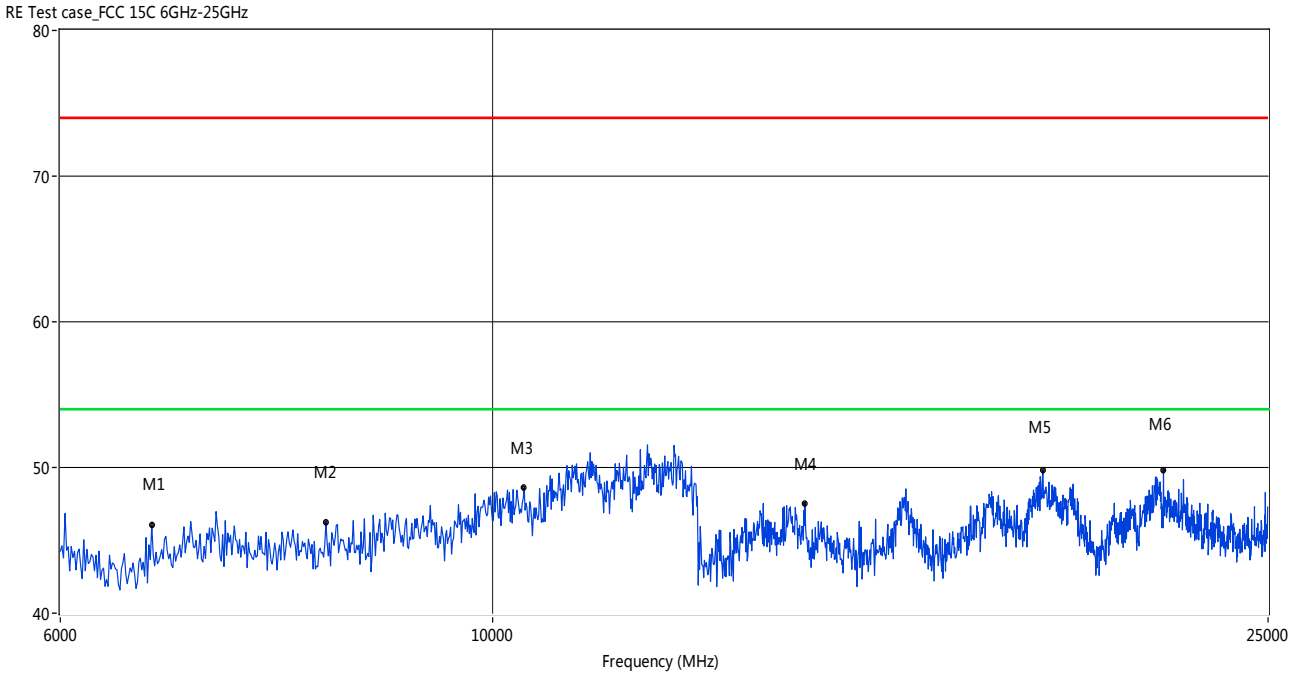
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1347.31	43.48			-3.93	74.0	--	54.0	10.52	266.10	100	Vertical	PASS
1790.42	42.99			-3.33	74.0	--	54.0	11.01	183.00	100	Vertical	PASS
2445.11	92.11			0.14	74.0	--	54.0	-38.11	204.90	100	Vertical	N/A
2852.30	47.86			3.61	74.0	--	54.0	6.14	204.90	100	Vertical	PASS
3838.32	44.80			9.90	74.0	--	54.0	9.20	279.70	100	Vertical	PASS
4838.32	47.78			13.06	74.0	--	54.0	6.22	262.00	100	Vertical	PASS

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



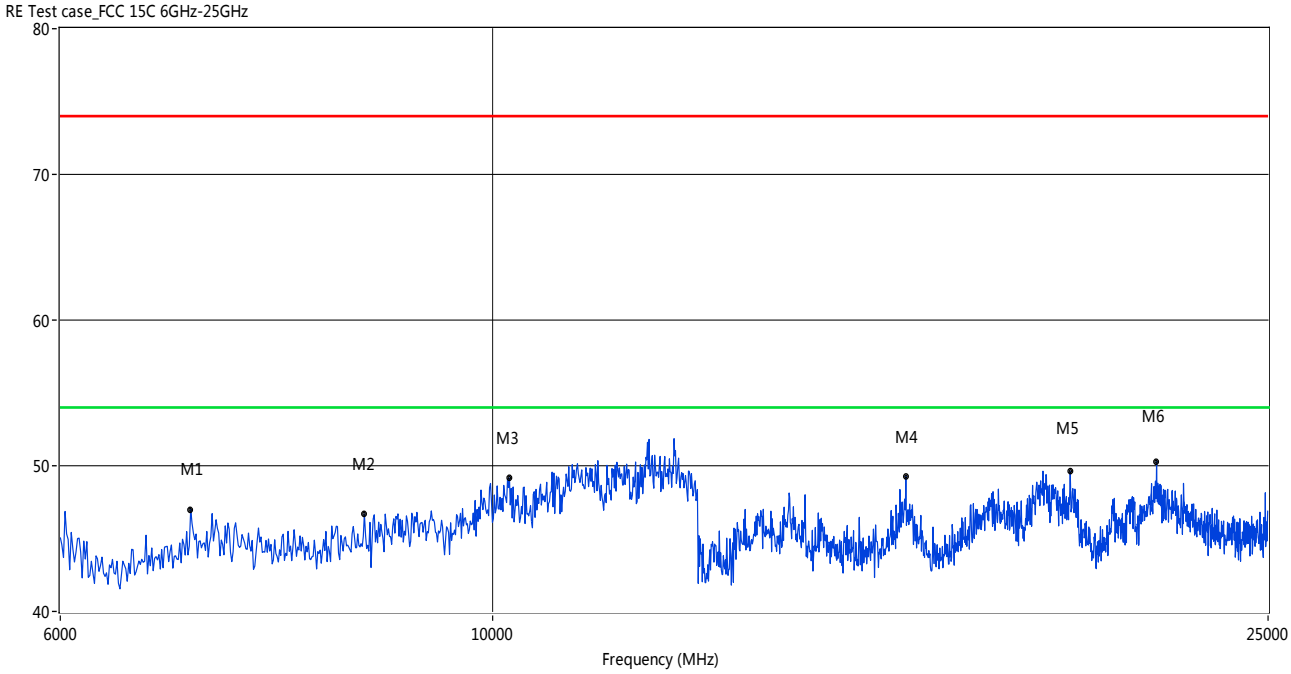
Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
1367.27	42.51			-3.66	74.0	--	54.0	11.49	170.30	100	Horizontal	PASS
1814.37	43.04			-3.12	74.0	--	54.0	10.96	203.60	100	Horizontal	PASS
2449.10	92.27			0.44	74.0	--	54.0	-38.27	343.00	100	Horizontal	N/A
2912.18	47.14			3.29	74.0	--	54.0	6.86	181.40	100	Horizontal	PASS
3568.86	44.69			8.80	74.0	--	54.0	9.31	117.80	100	Horizontal	PASS
4808.38	47.71			12.36	74.0	--	54.0	6.29	313.80	100	Horizontal	PASS

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



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6685.11	46.04			11.26	74.0	--	54.0	7.96	157.80	100	Vertical	PASS
8212.56	46.22			13.23	74.0	--	54.0	7.78	295.50	100	Vertical	PASS
10380.20	48.64			19.48	74.0	--	54.0	5.36	281.70	100	Vertical	PASS
14465.89	47.56			9.42	74.0	--	54.0	6.44	358.40	100	Vertical	PASS
19159.73	49.80			10.67	74.0	--	54.0	4.20	111.40	100	Vertical	PASS
22094.84	49.85			12.35	74.0	--	54.0	4.15	0.60	100	Vertical	PASS

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



Frequency (MHz)	Peak (dBuV/m)	Q-peak (dBuV/m)	Average (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Table (o)	Height (cm)	ANT	Verdict
6999.58	47.02			12.22	74.0	--	54.0	6.98	275.40	100	Horizontal	PASS
8594.43	46.69			13.34	74.0	--	54.0	7.31	158.30	100	Horizontal	PASS
10200.50	49.17			19.35	74.0	--	54.0	4.83	110.90	100	Horizontal	PASS
16296.17	49.31			9.16	74.0	--	54.0	4.69	355.30	100	Horizontal	PASS
19788.69	49.60			11.21	74.0	--	54.0	4.40	70.20	100	Horizontal	PASS
21915.14	50.31			12.15	74.0	--	54.0	3.69	311.60	100	Horizontal	PASS

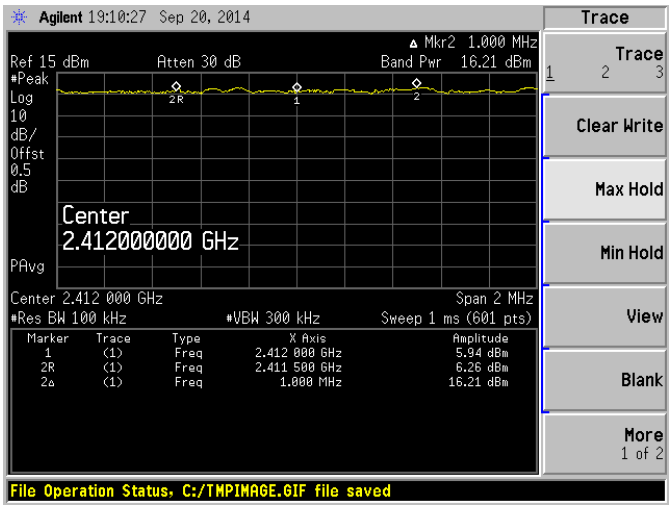
A.6 Band Edge

Test Data

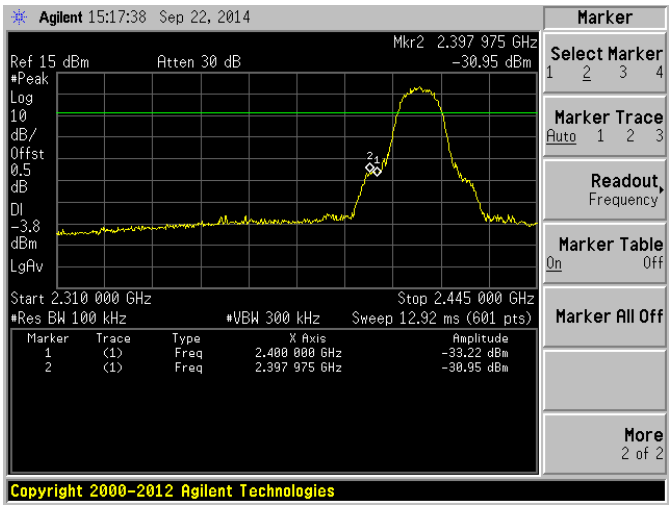
The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Test Plots

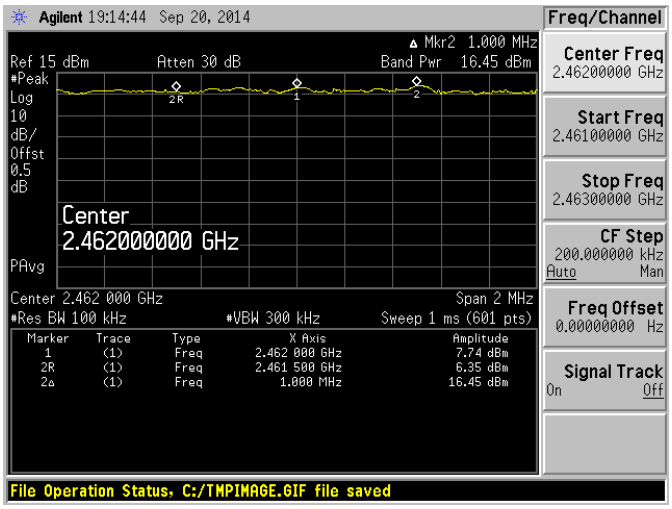
802.11b LOW CHANNEL, Reference level



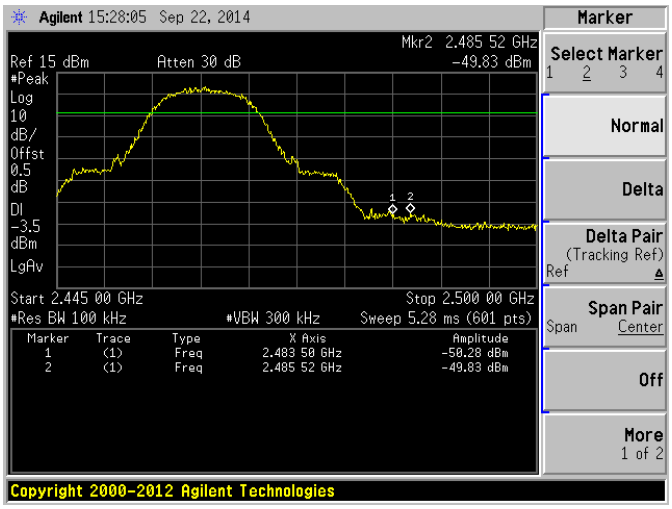
802.11b LOW CHANNEL, Band Edge



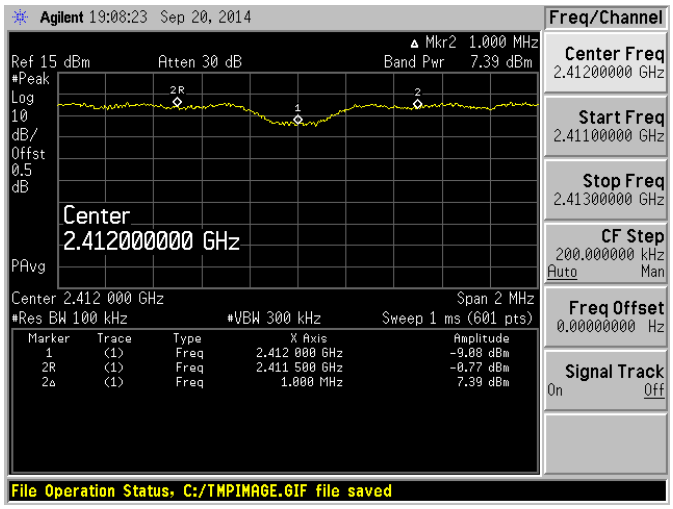
802.11b HIGH CHANNEL, Reference level



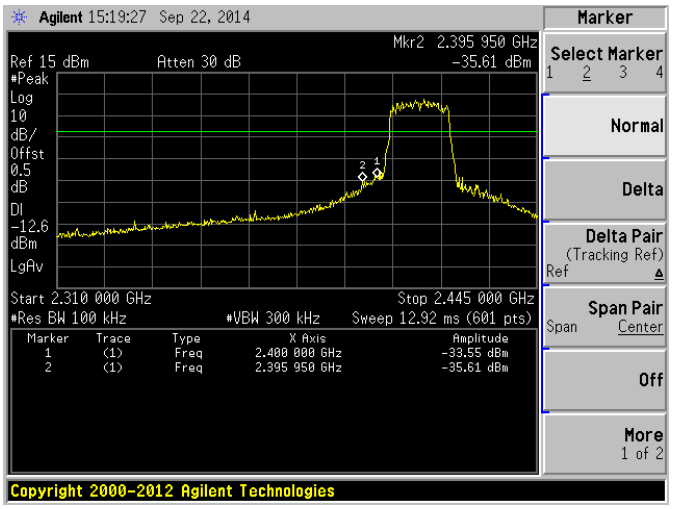
802.11b HIGH CHANNEL, Band Edge



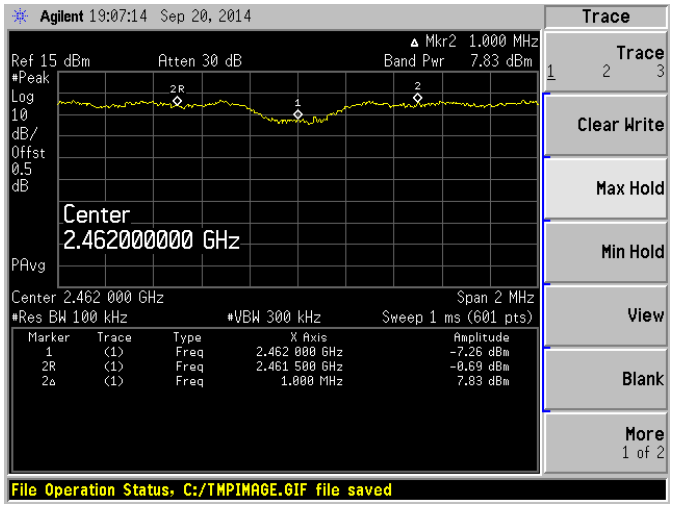
802.11g LOW CHANNEL, Reference level



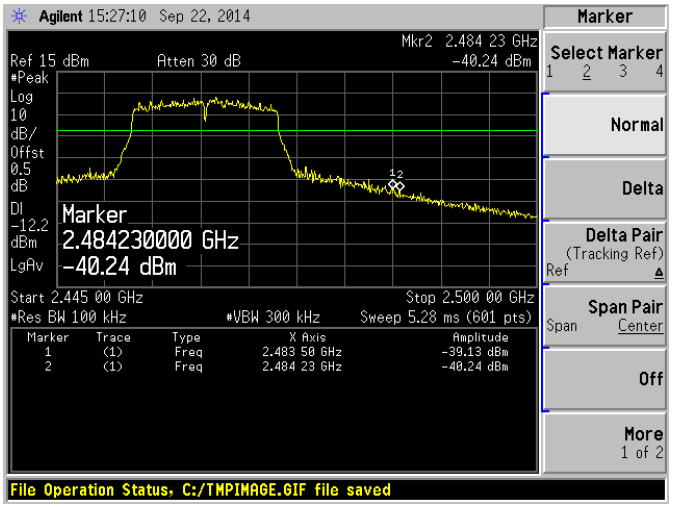
802.11g LOW CHANNEL, Band Edge



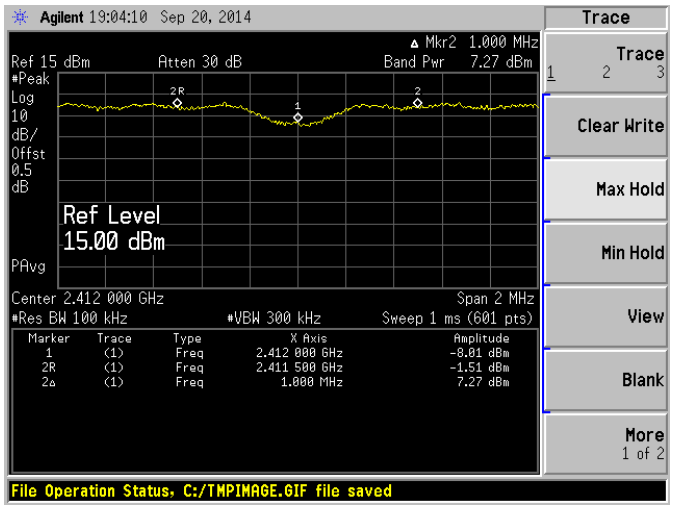
802.11g HIGH CHANNEL, Reference level



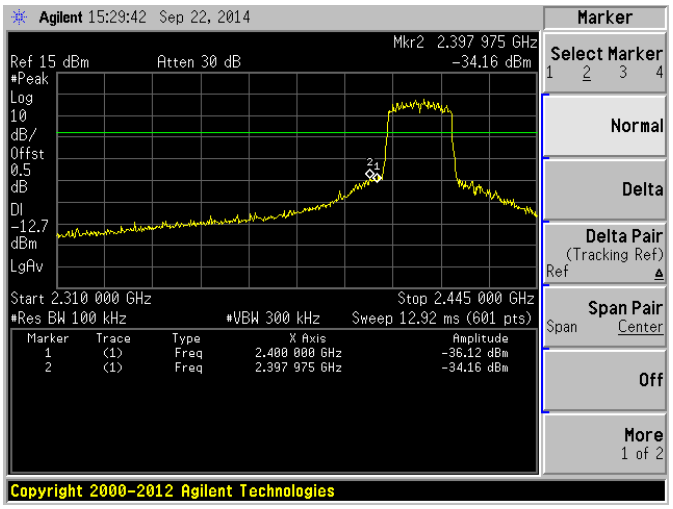
802.11g HIGH CHANNEL, Band Edge



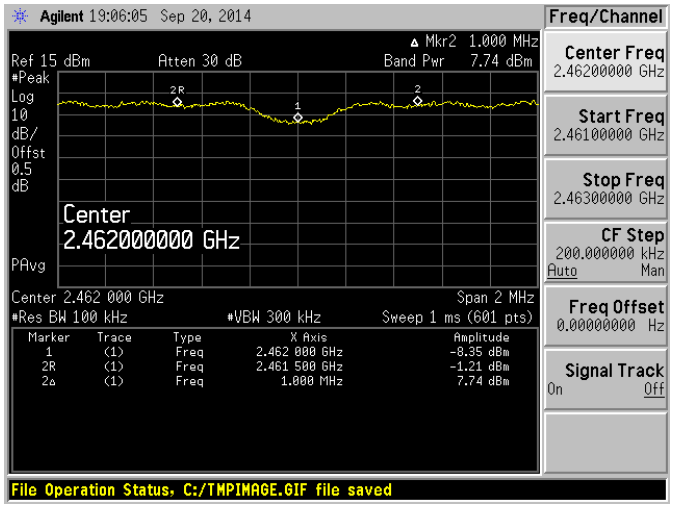
802.11n-20MHz LOW CHANNEL, Reference level



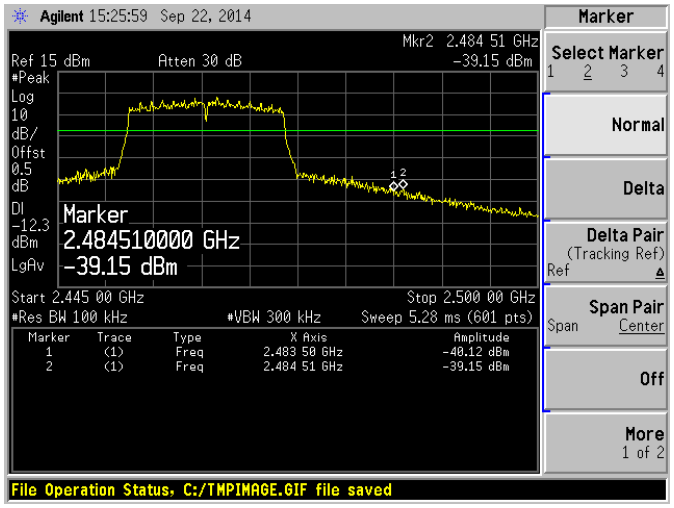
802.11n-20MHz LOW CHANNEL, Band Edge



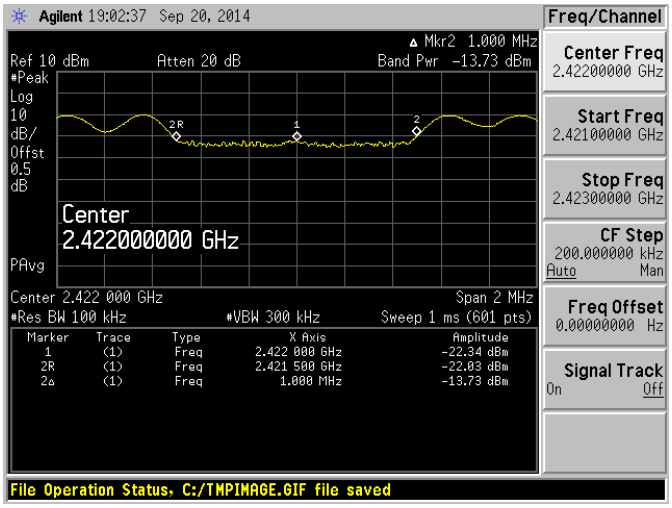
802.11n-20MHz HIGH CHANNEL, Reference level



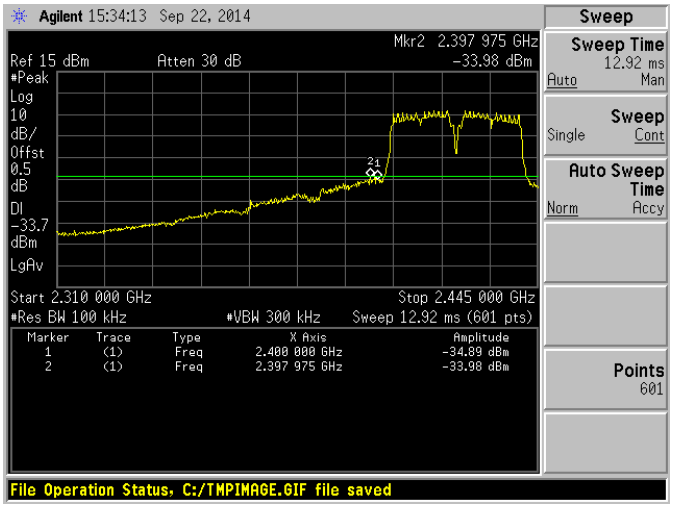
802.11n-20MHz HIGH CHANNEL, Band Edge



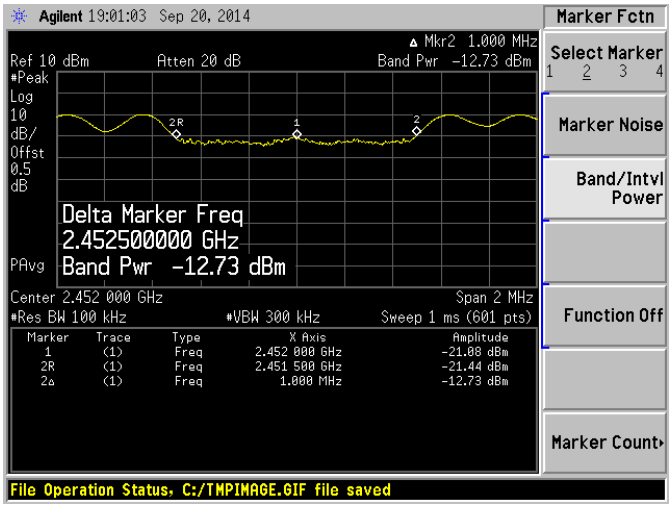
802.11n-40MHz LOW CHANNEL, Reference level



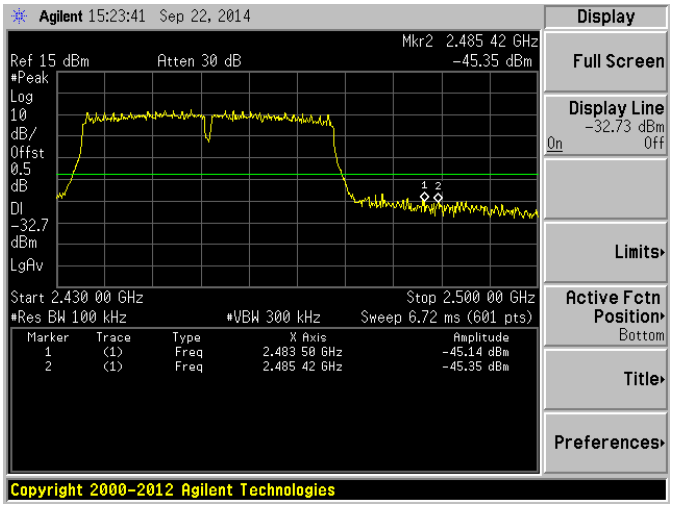
802.11n-40MHz LOW CHANNEL, Band Edge



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	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-7.10	8
Middle	-7.23	8
High	-6.99	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-11.90	8
Middle	-12.32	8
High	-11.98	8

802.11n-20MHz Mode:

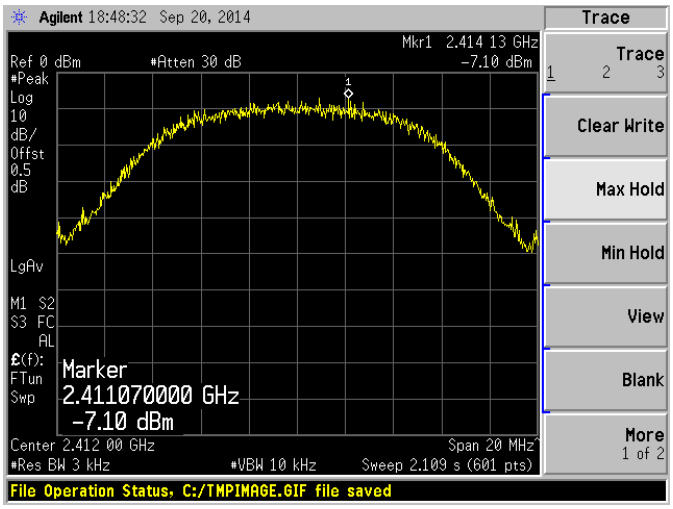
Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-13.16	8
Middle	-10.82	8
High	-12.44	8

802.11n-40MHz Mode:

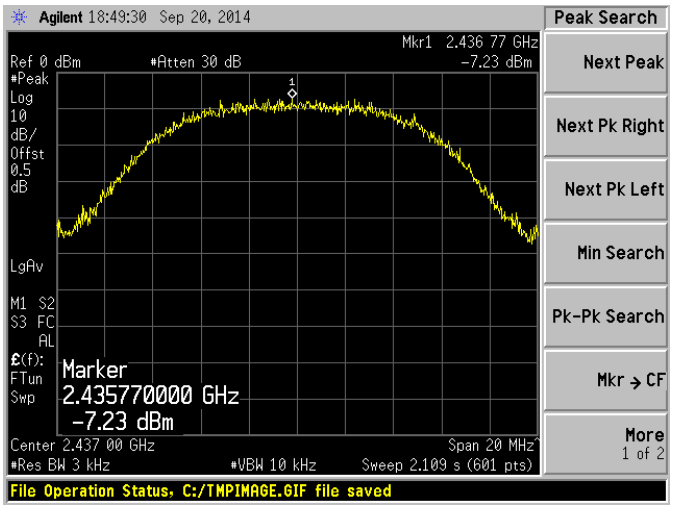
Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-15.93	8
Middle	-13.69	8
High	-16.58	8

Test plots

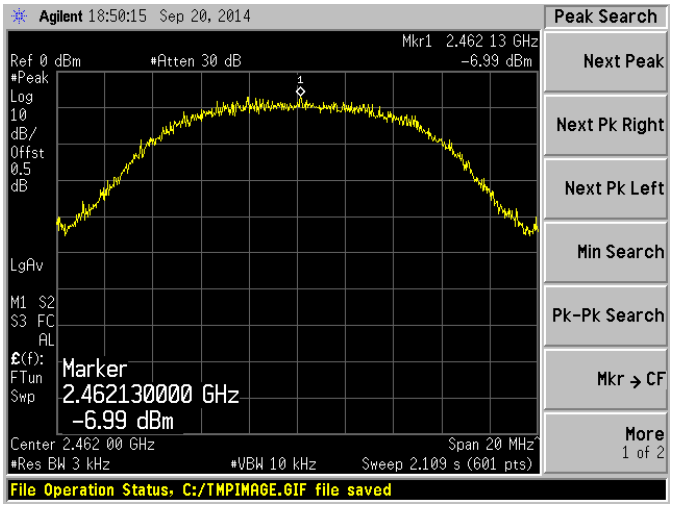
802.11b LOW CHANNEL



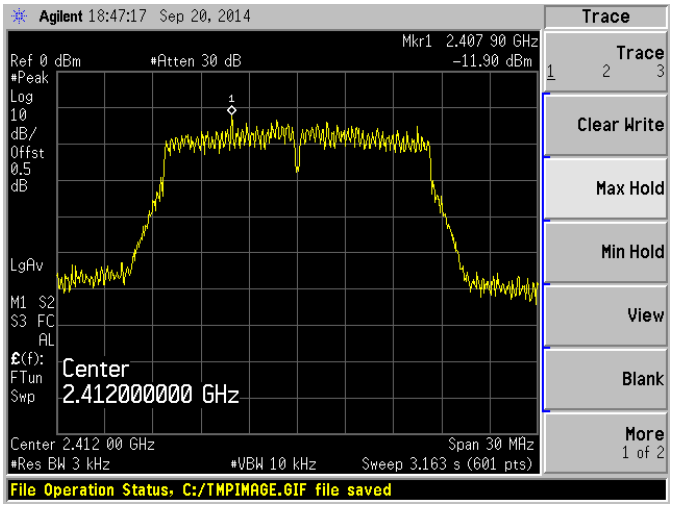
802.11b MID CHANNEL



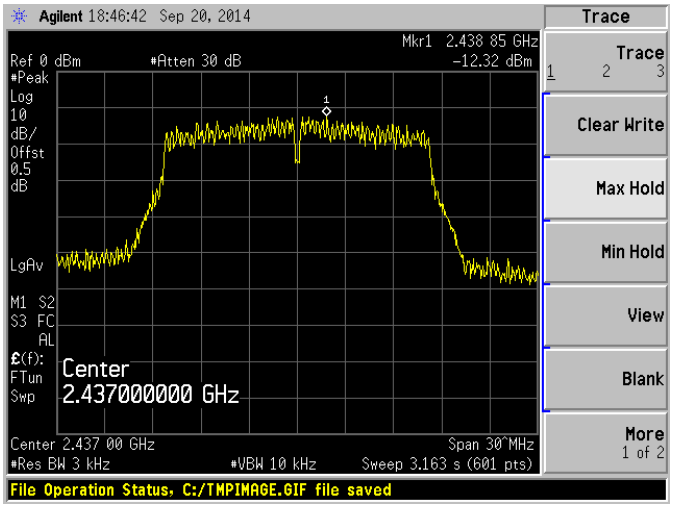
802.11b HIGH CHANNEL



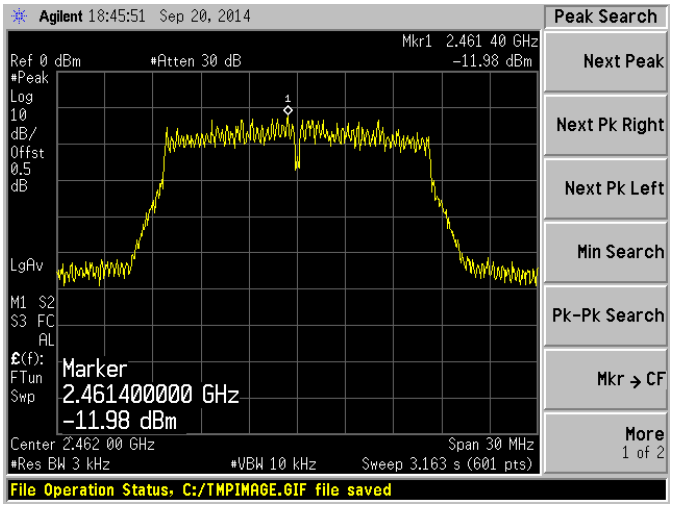
802.11g LOW CHANNEL



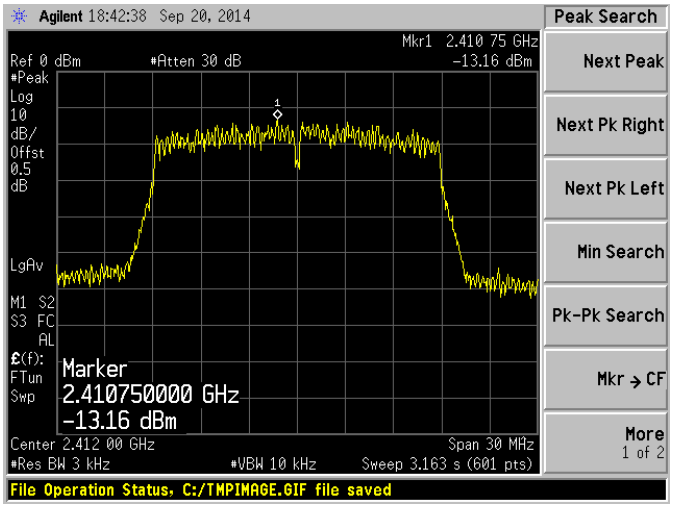
802.11g MID CHANNEL



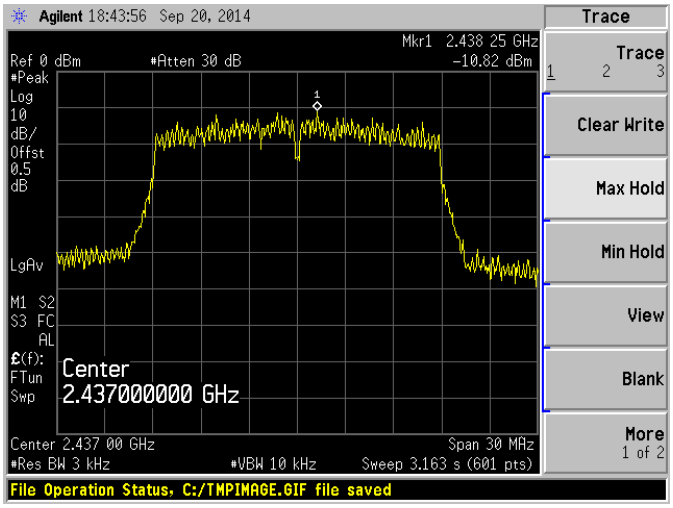
802.11g HIGH CHANNEL



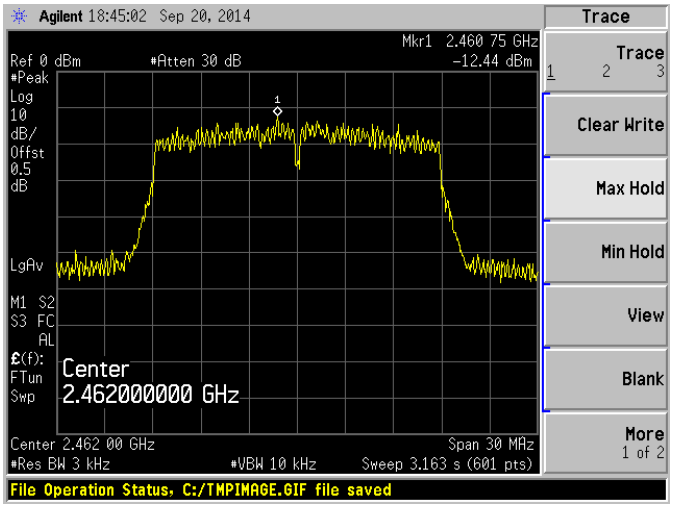
802.11n-20MHz LOW CHANNEL



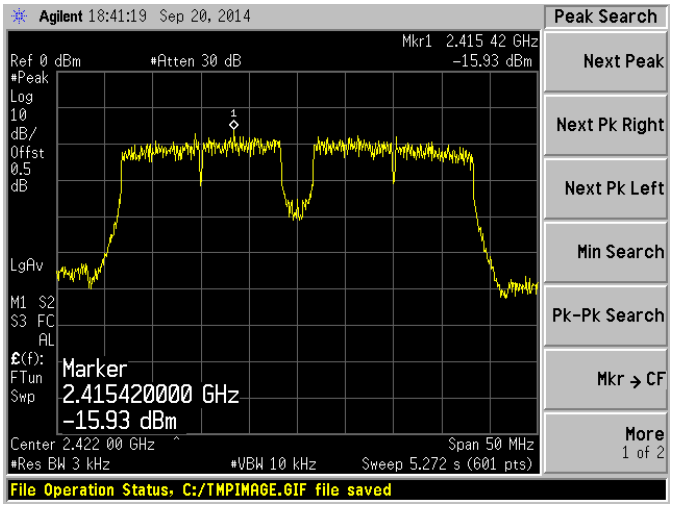
802.11 n-20MHz MID CHANNEL



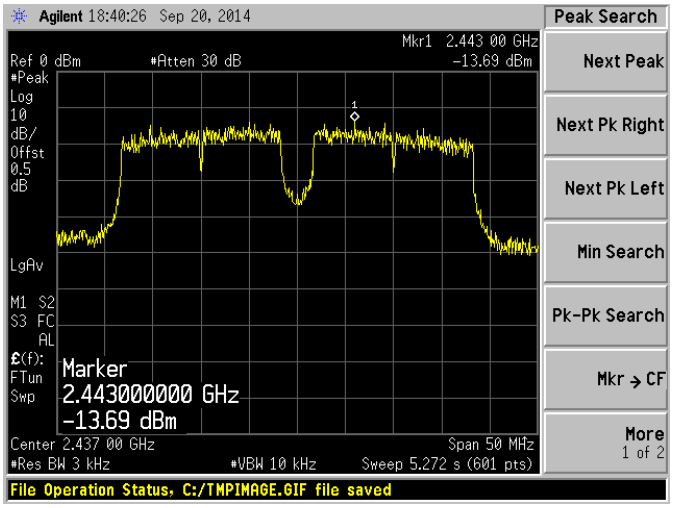
802.11n-20MHz HIGH CHANNEL



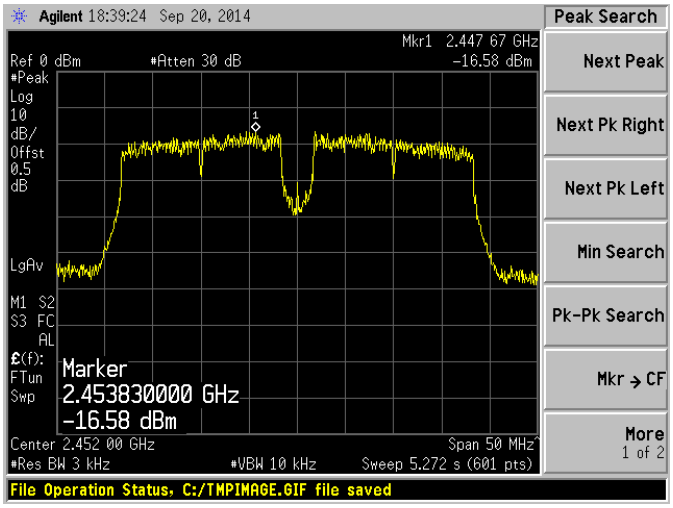
802.11n-40MHz LOW CHANNEL



802.11n-40MHz MID CHANNEL

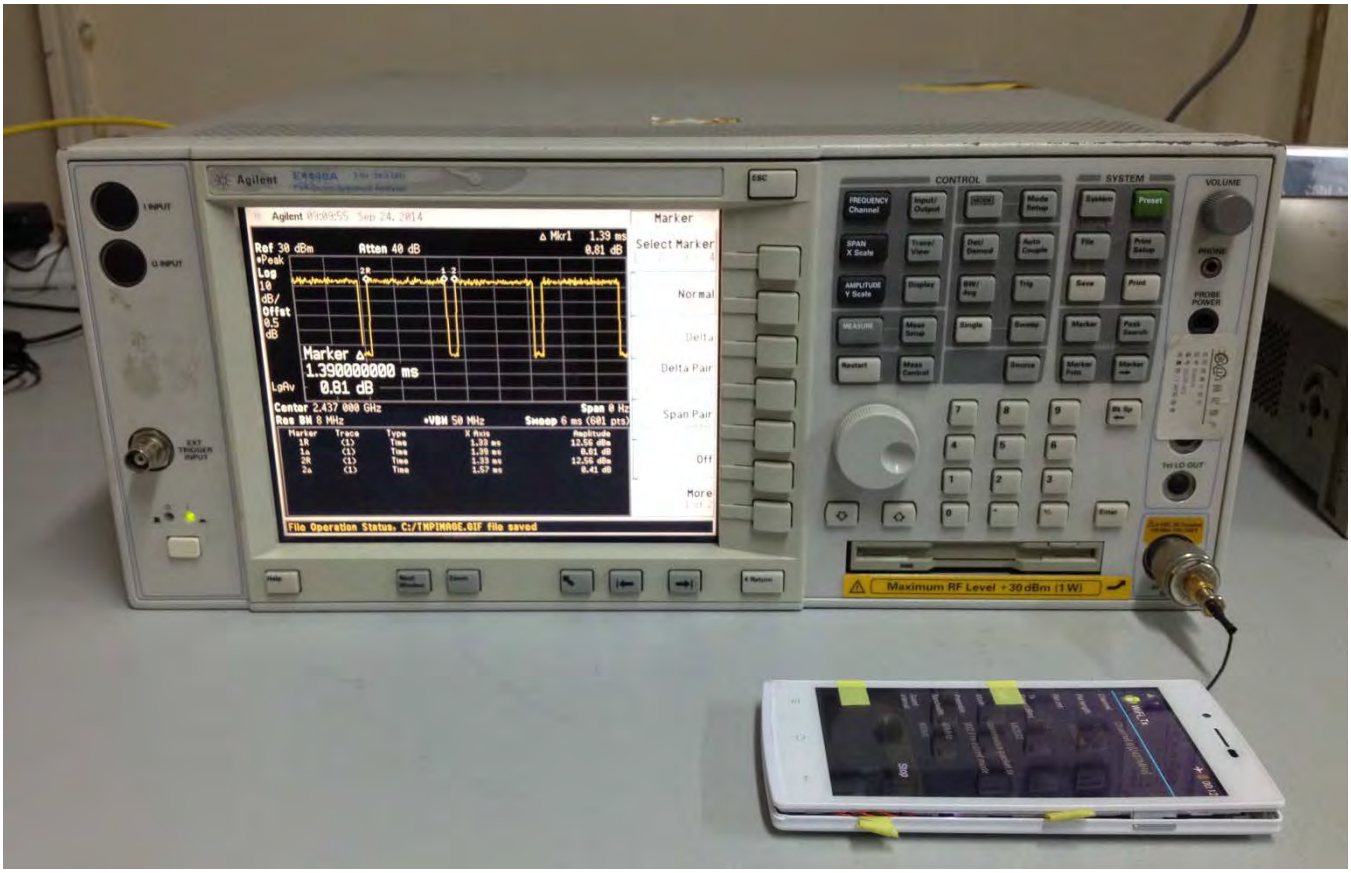


802.11n-40MHz HIGH CHANNEL

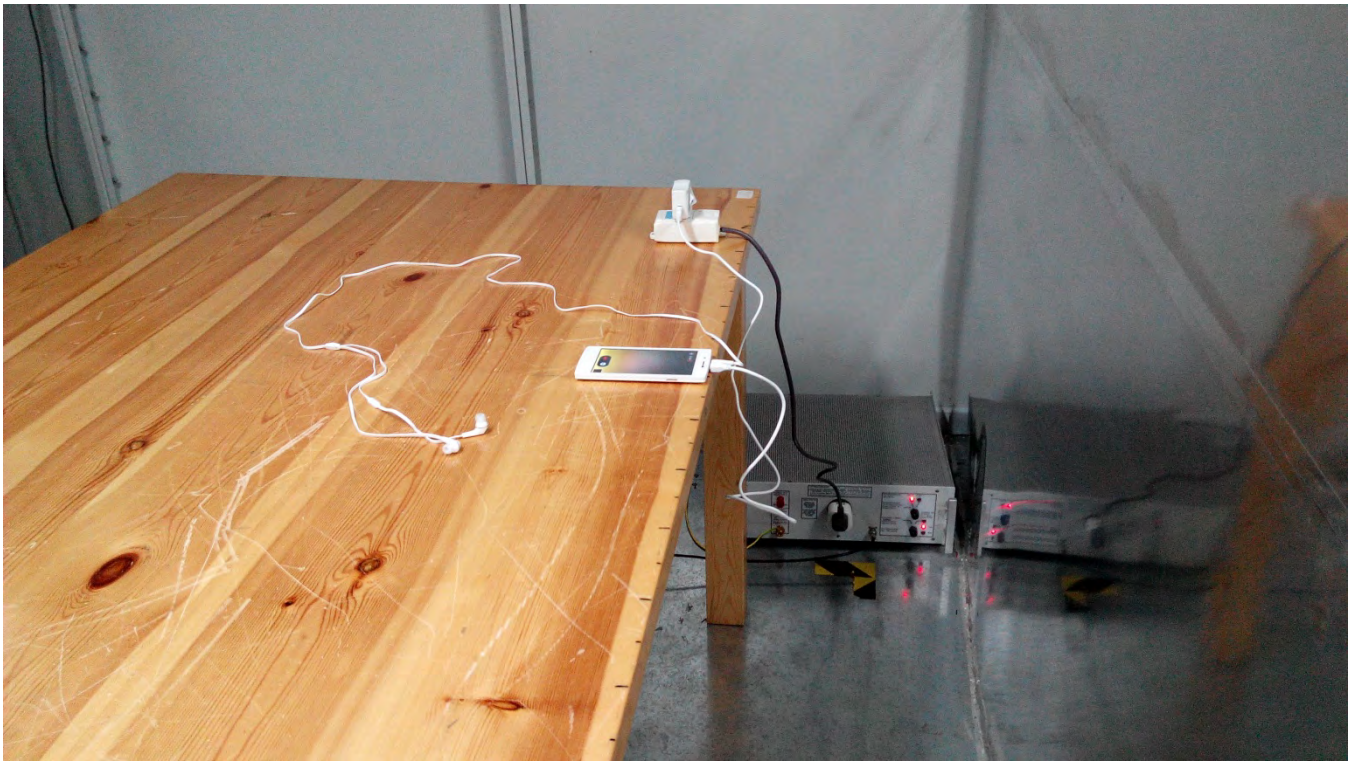


ANNEX B TEST SETUP PHOTOS

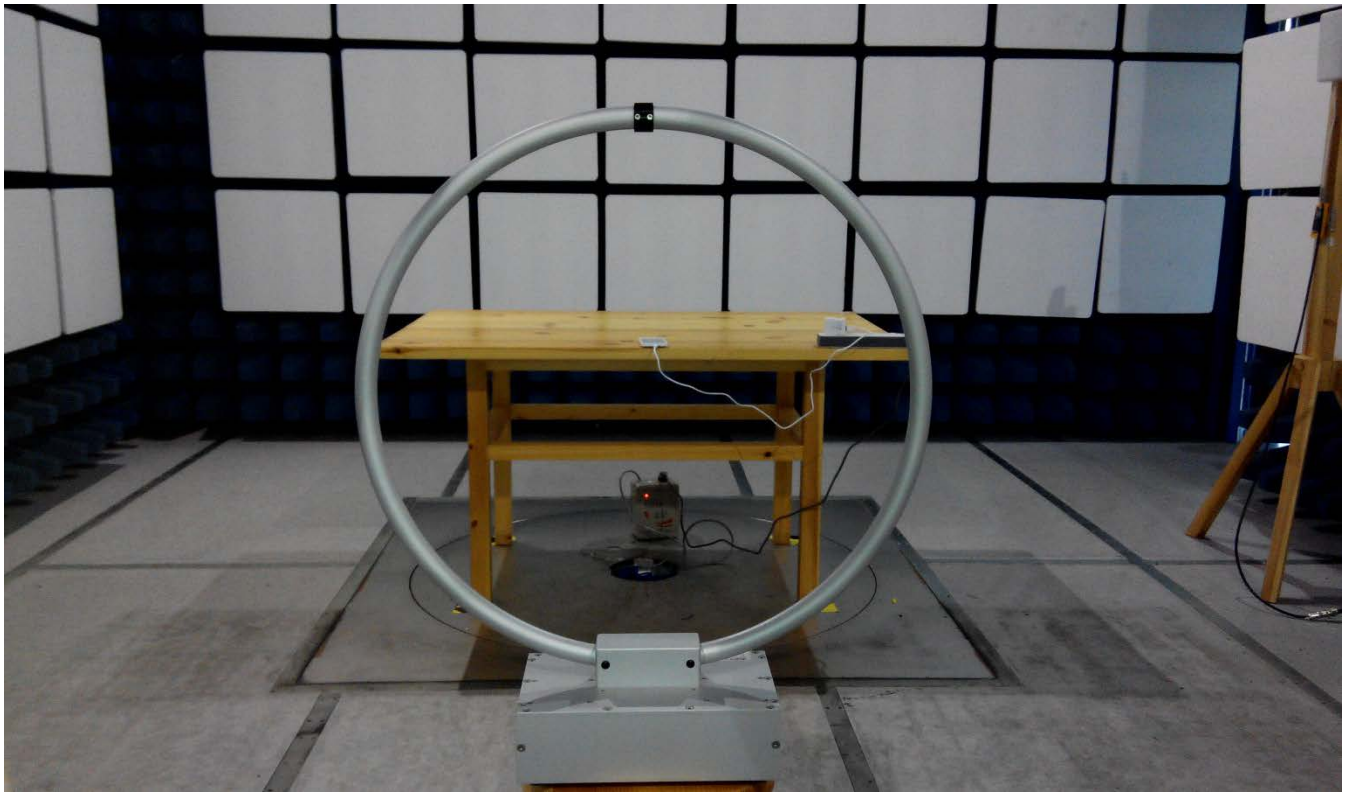
B.1. Conducted Test Photo



B.2. Conducted Emissions Test Photo

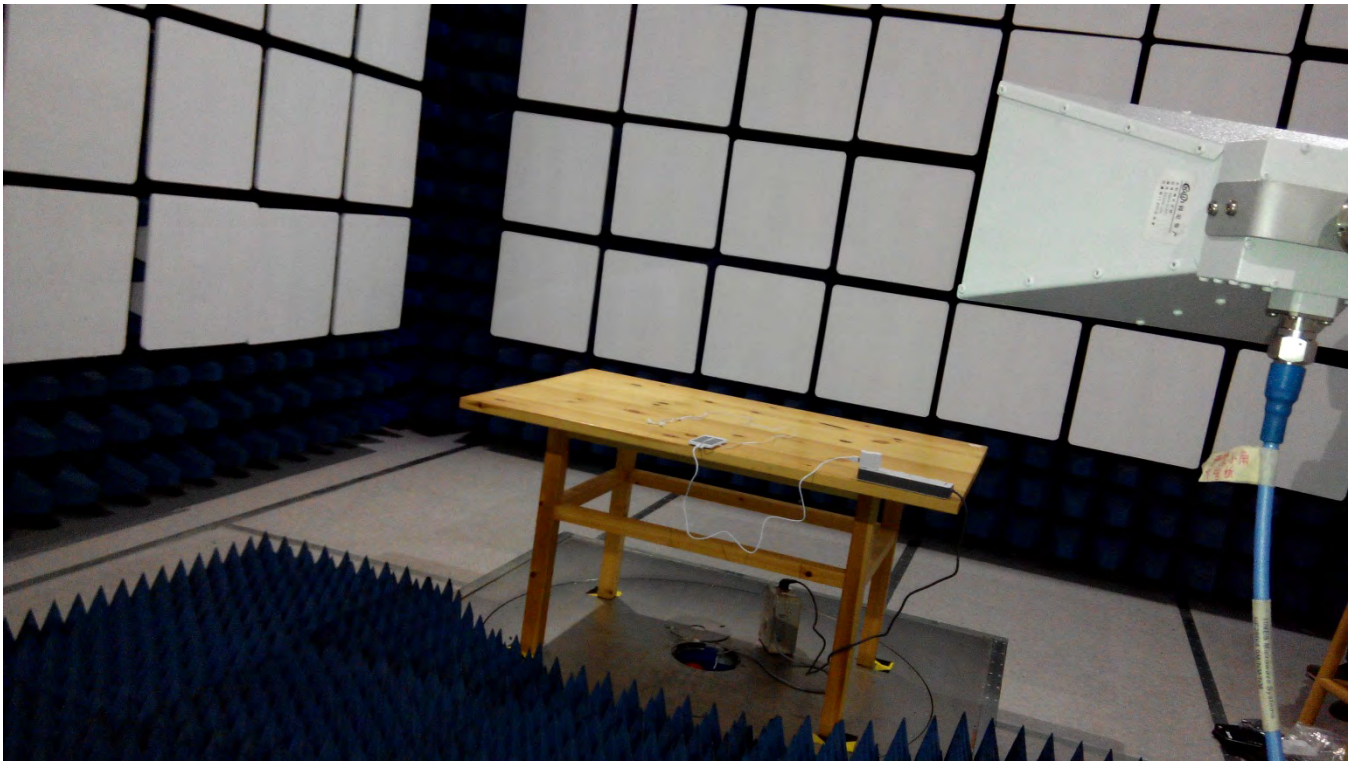


B.3. Radiated Test Photo



Below 30MHz

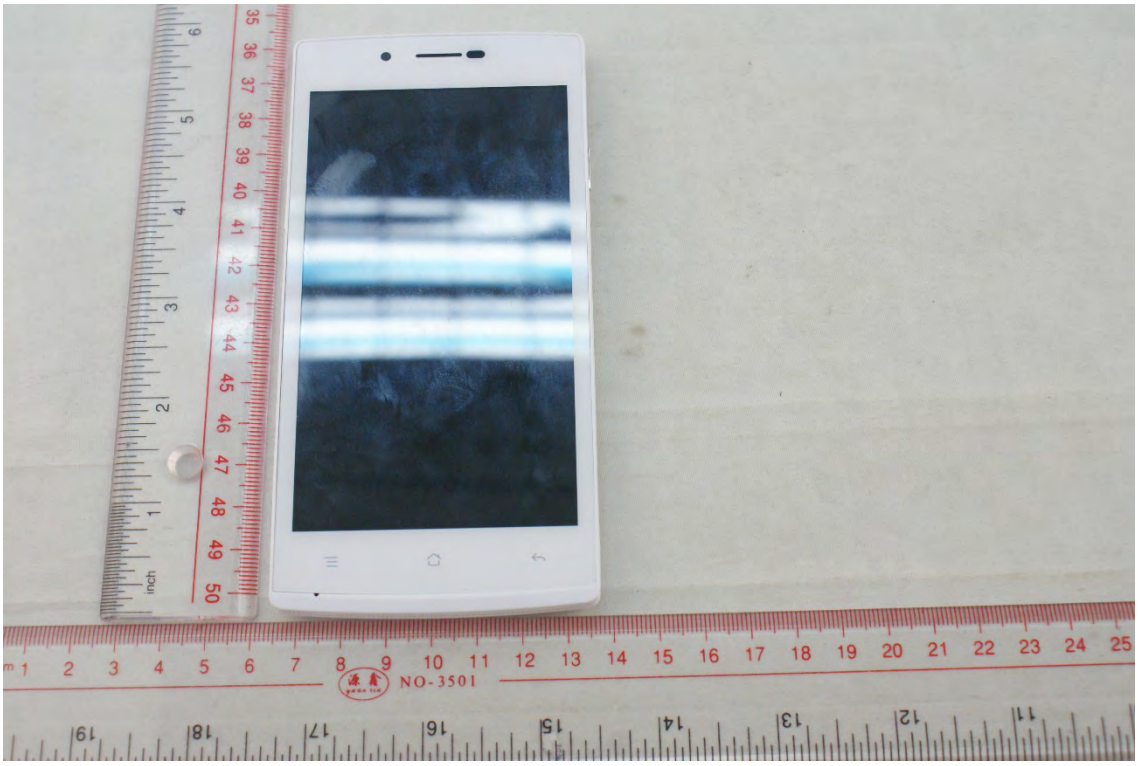
30MHz to 1GHz



Above 1GHz

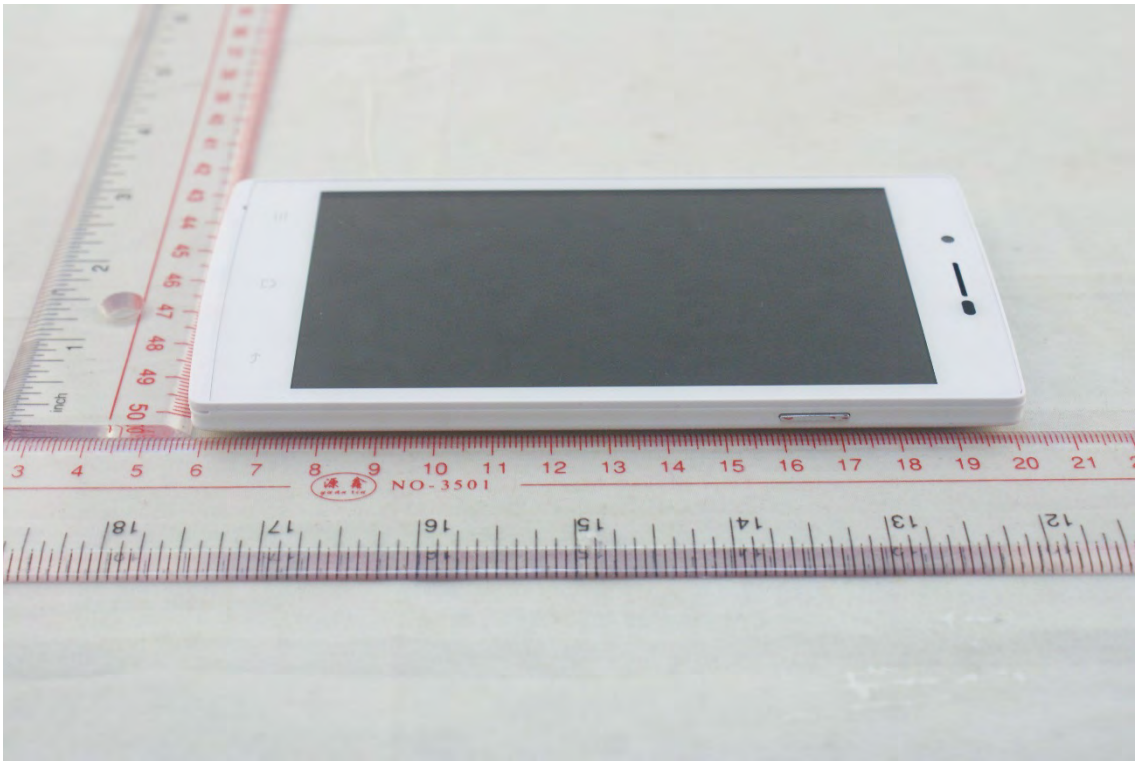
ANNEX C EUT PHOTOS

C.1 Appearance of the EUT

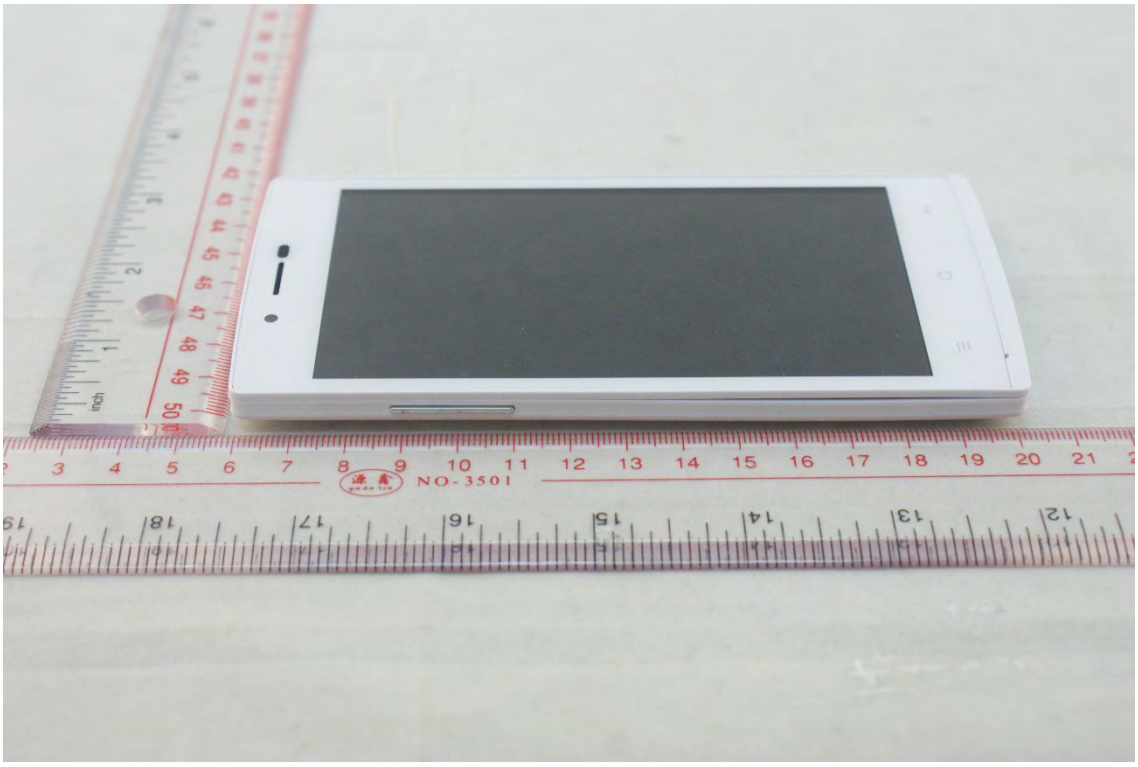


THE FRONT OF EUT

THE BACK OF EUT

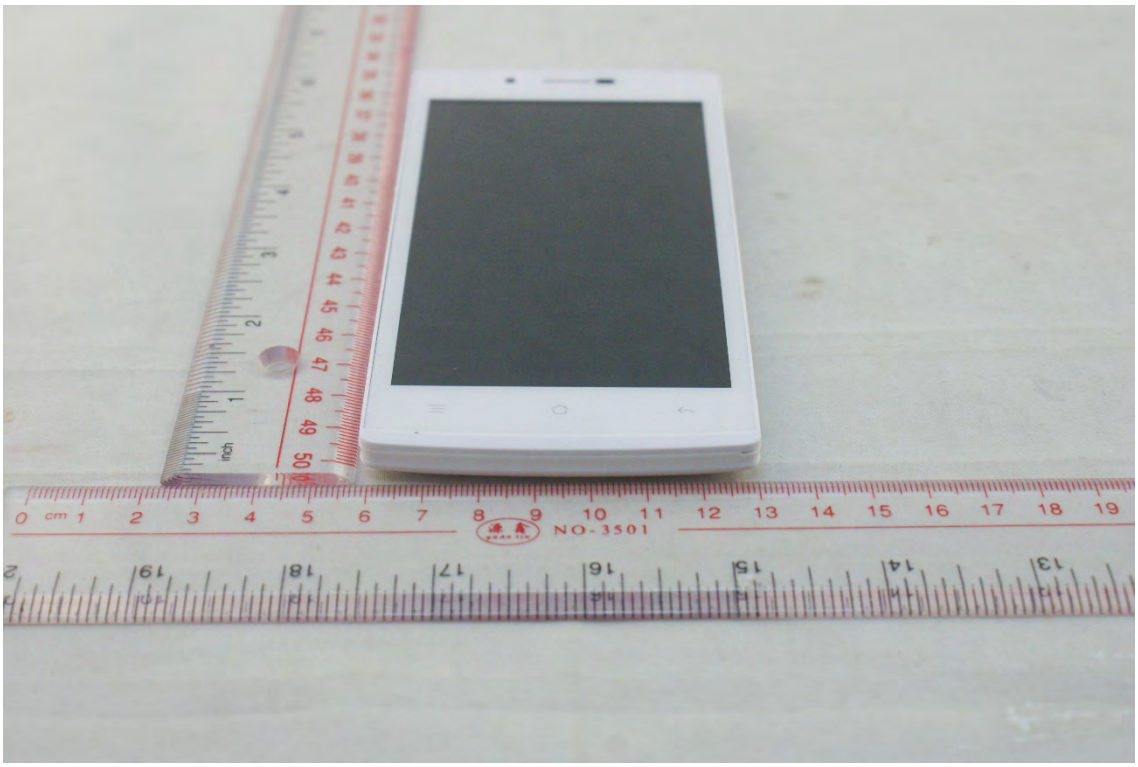


THE LEFT OF EUT

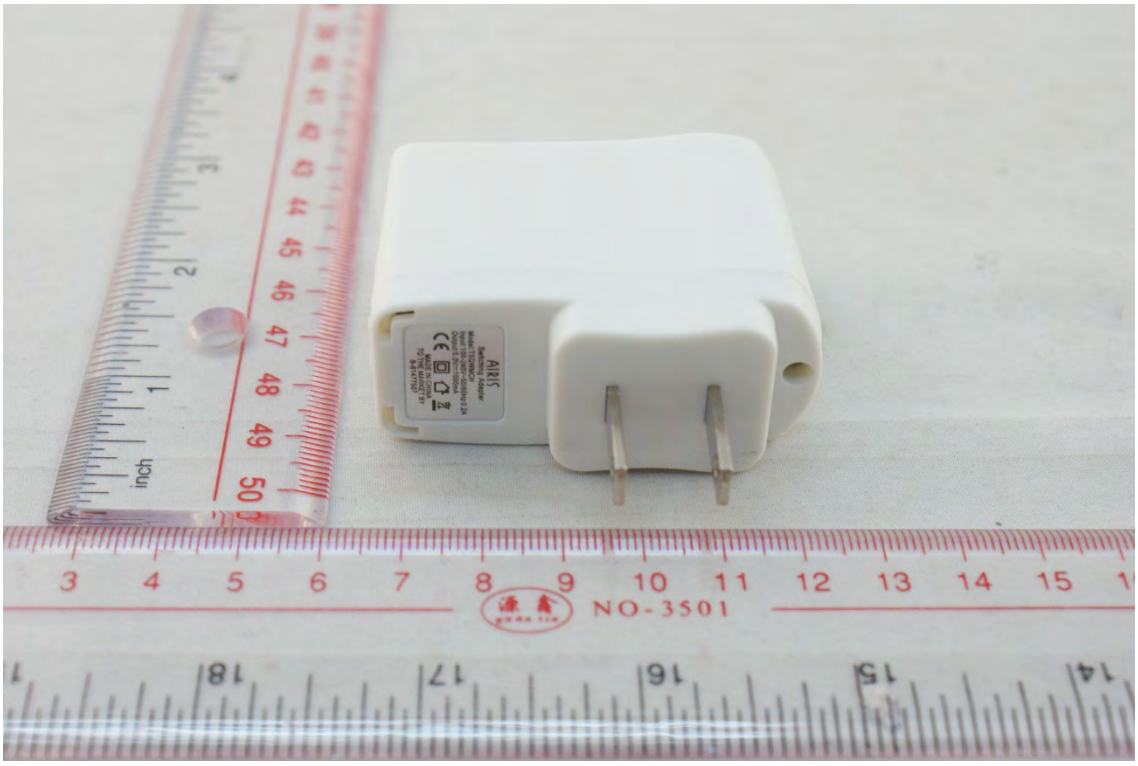


THE RIGHT OF EUT

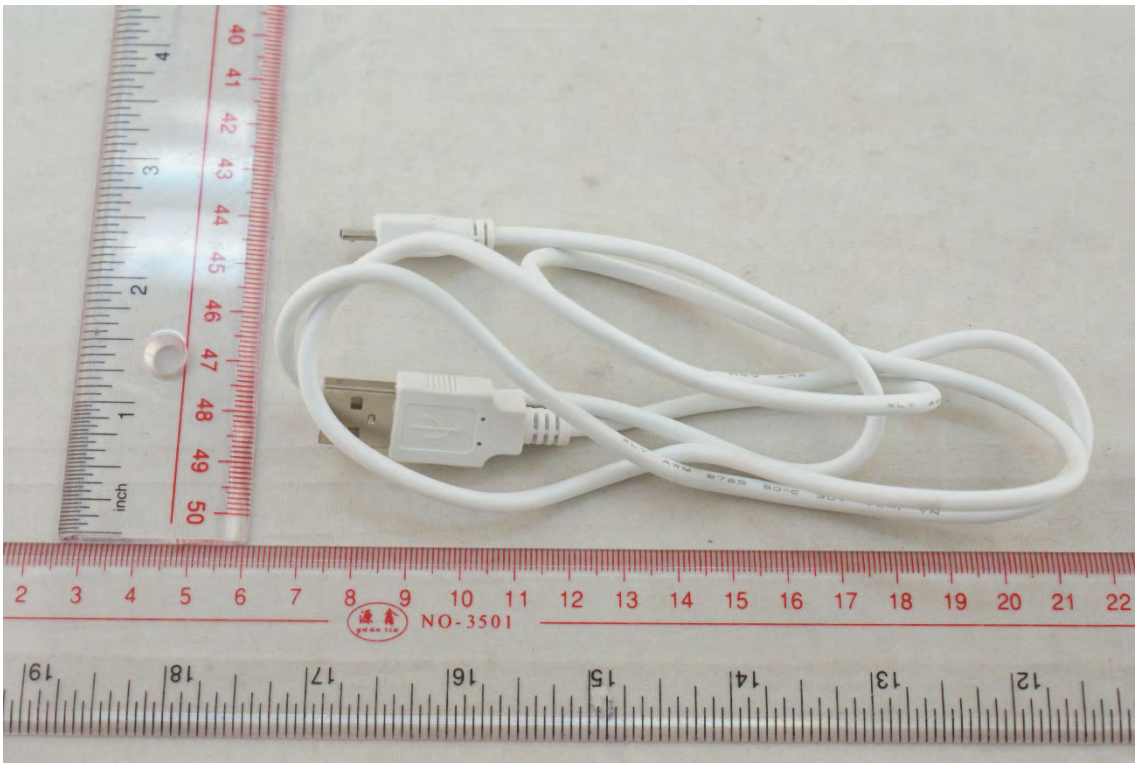
THE UP OF EUT



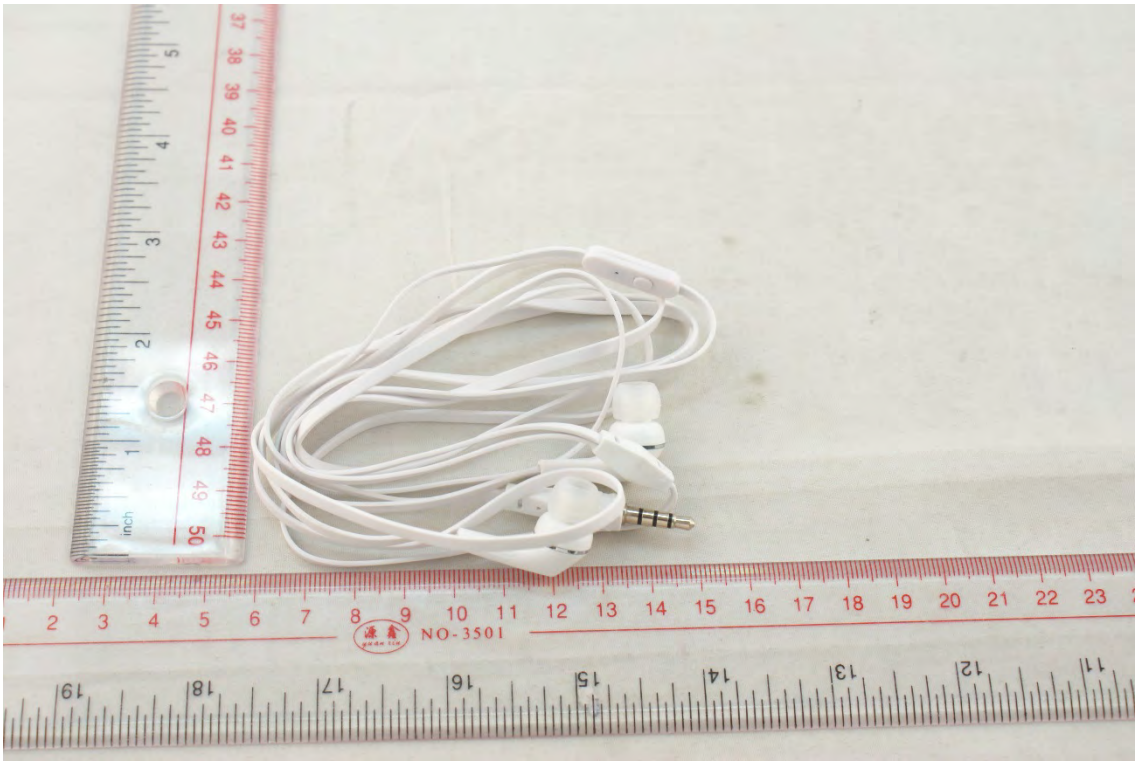
THE DOWN OF EUT



CHARGER



DATA CABLE

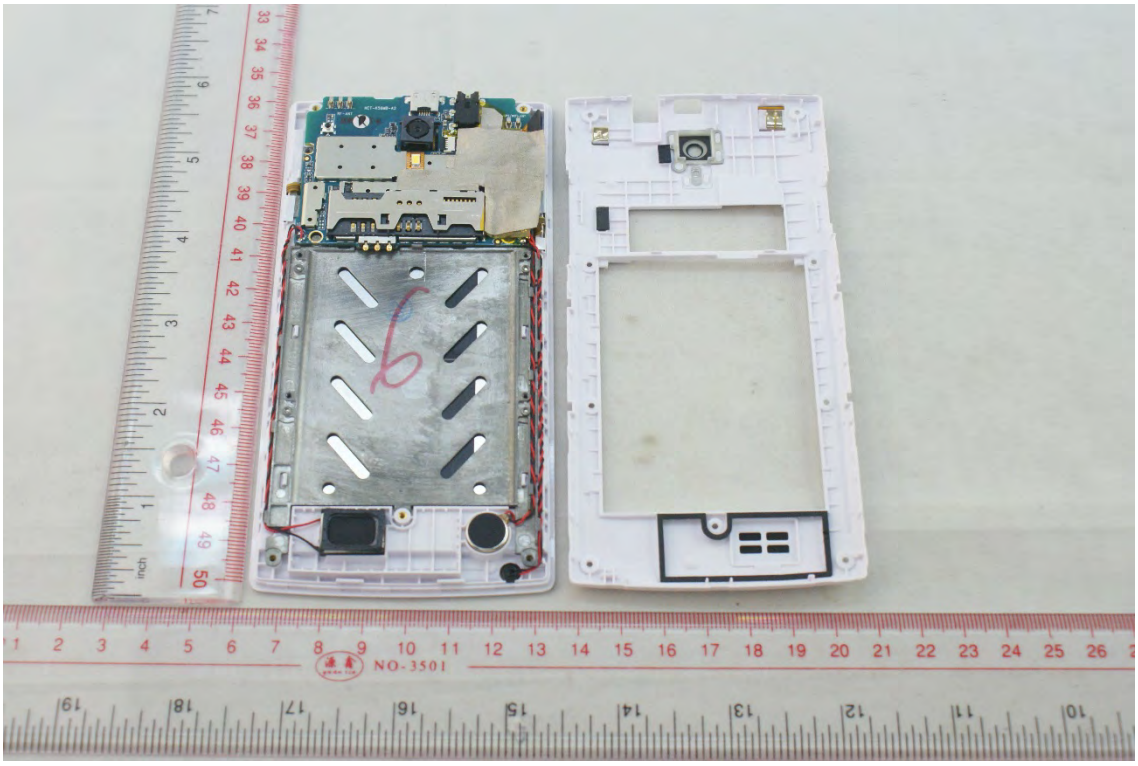


EARPHONE

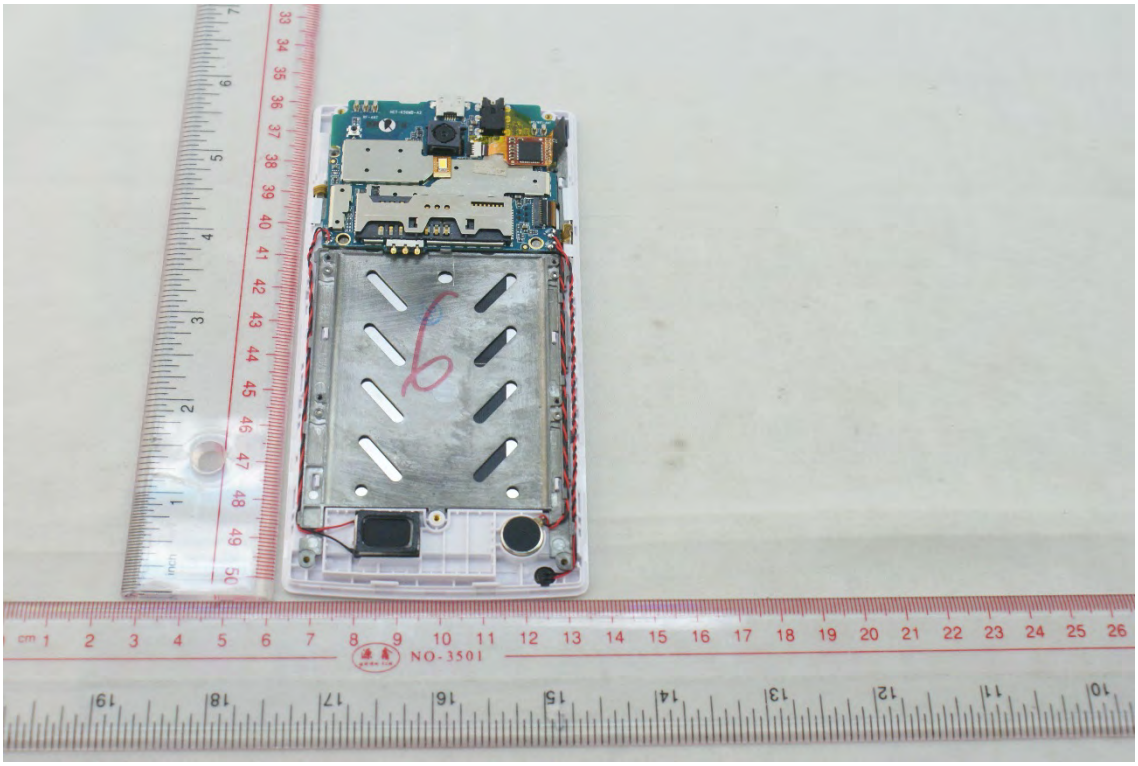
C.2 Inside of the EUT

EUT UNCOVER VIEW 1

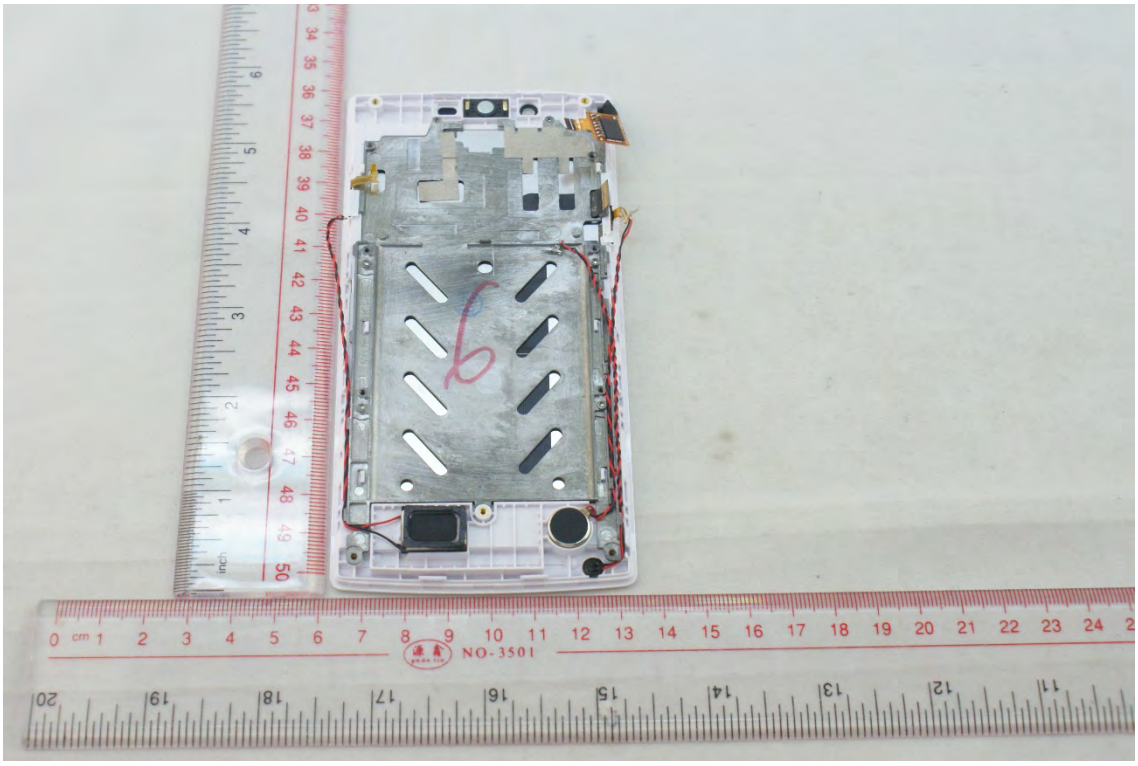
EUT UNCOVER VIEW 2



EUT UNCOVER VIEW 3

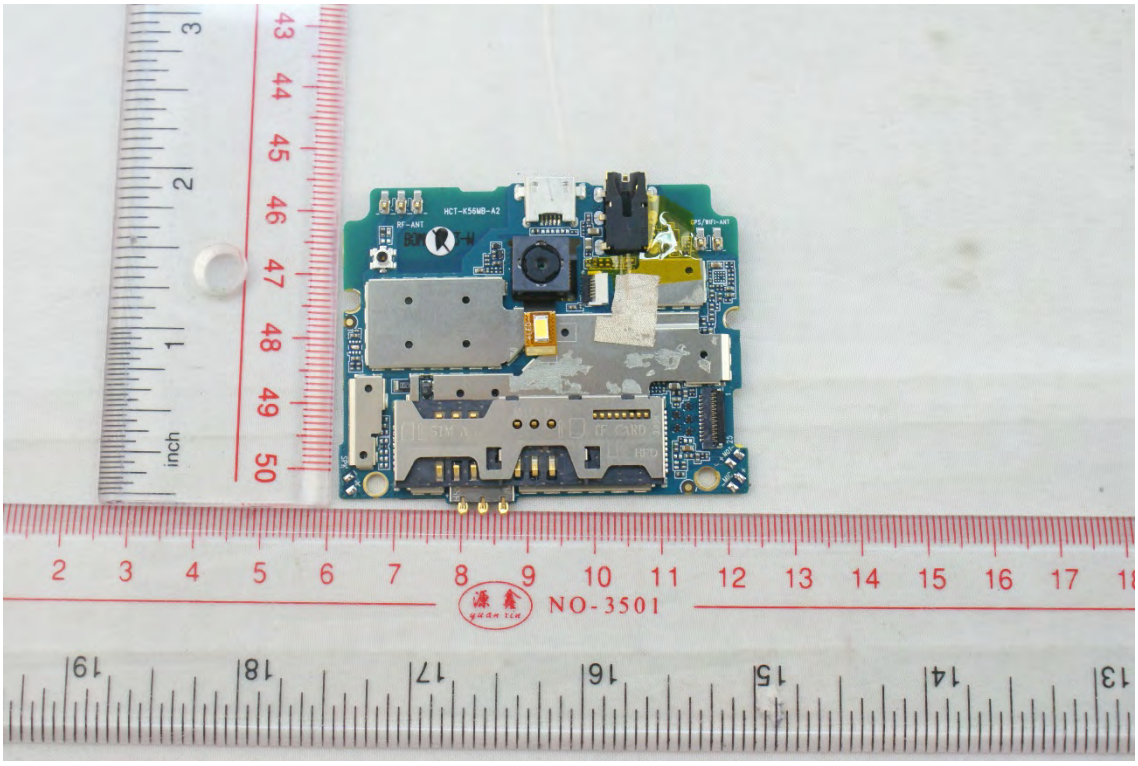


EUT UNCOVER VIEW 3

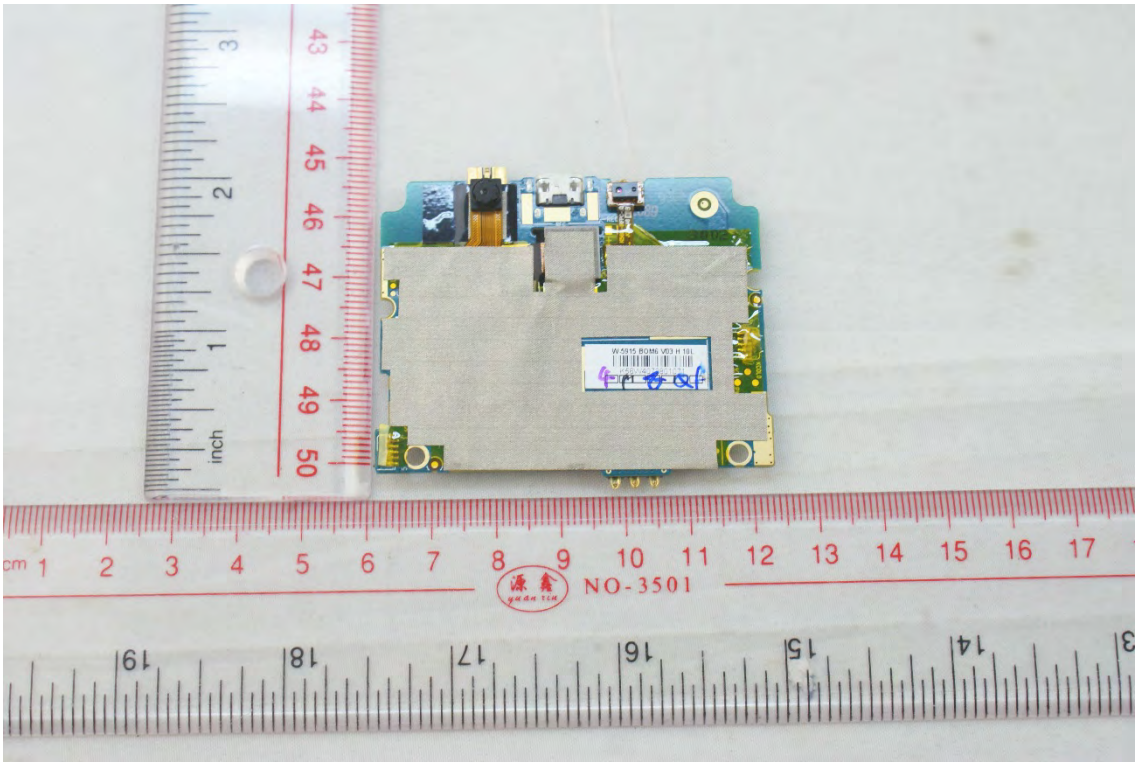


EUT UNCOVER VIEW 4

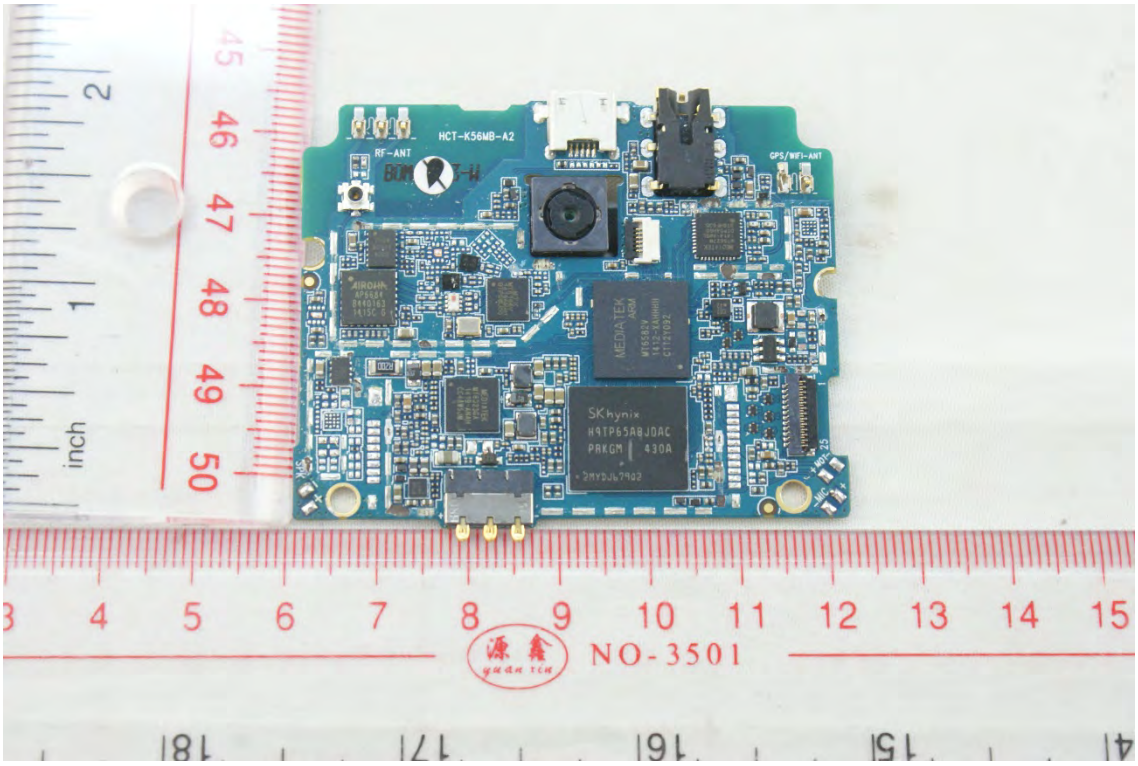
BATTERY



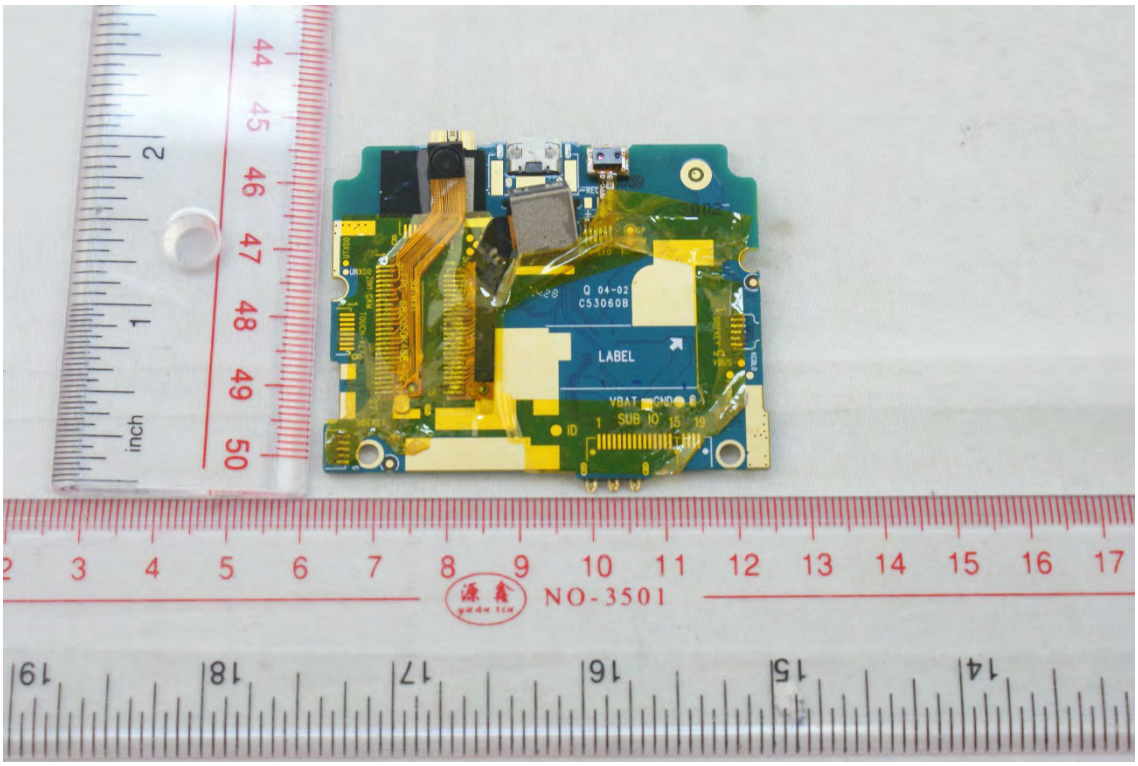
MAIN BOARD TOP VIEW 1



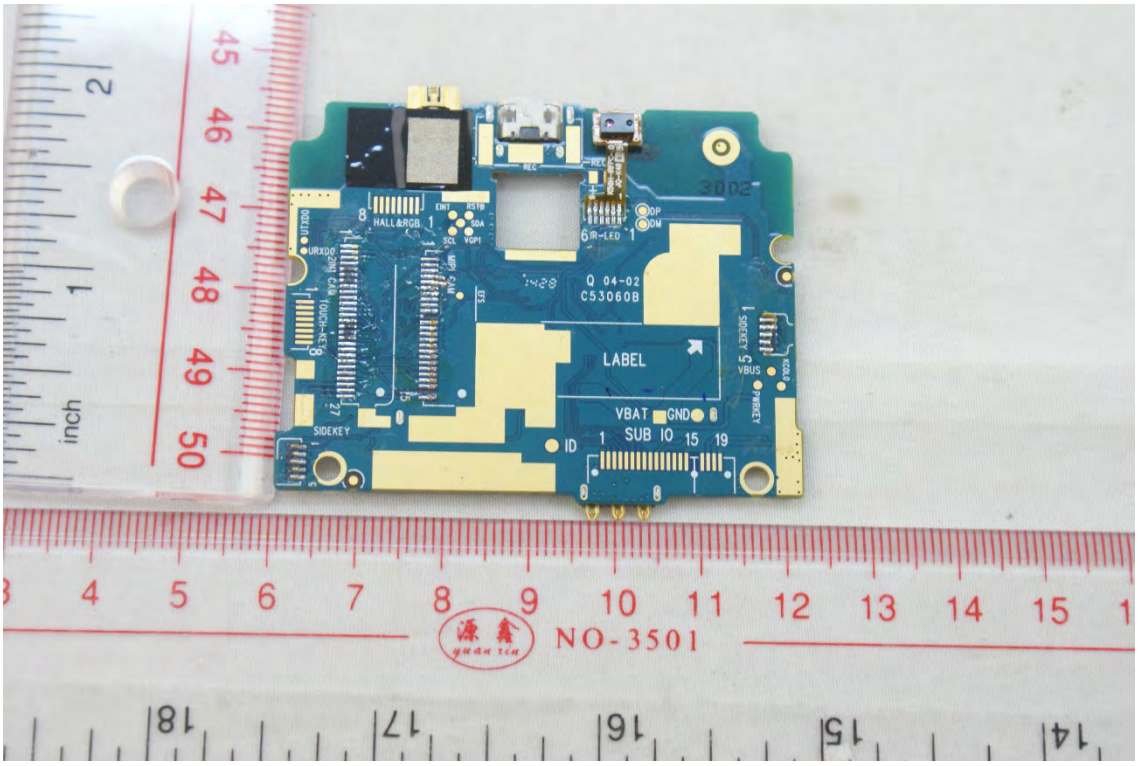
MAIN BOARD BACK VIEW 1



MAIN BOARD TOP VIEW 2



MAIN BOARD TOP VIEW 3



MAIN BOARD TOP VIEW 4

--END OF REPORT--