

FCC/ISED

RF

TEST REPORT

ISSUED BY  
Shenzhen BALUN Technology Co., Ltd.



FOR  
**Notebook Computer**

ISSUED TO  
Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd.,  
Bantian, Longgang District, Shenzhen, 518129, China



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Date

*Jul. 03, 2019*

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Date

*Jul. 03, 2019*



Report No.: BL-SZ1940136-603

EUT Name: Notebook Computer

Model Name: HN-W29 (refer section 2.4)

Brand Name: HUAWEI

Test Standard: 47 CFR Part 15 Subpart C  
RSS-Gen (Issue 5, April 2018)  
RSS-247 (Issue 2, February 2017)

FCC ID: QISHN-WX9

ISED Number: 6369A-HNWX9

Test Conclusion: Pass

Test Date: Apr. 15, 2019 ~ Jun. 23, 2019

Date of Issue: Jul. 03, 2019

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### Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jul. 03, 2019</u>	<u>Initial Issue</u>

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# 1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

## 1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

## 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	<p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1.</p> <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.</p> <p>The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025.The accreditation certificate is 4344.01.</p> <p>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.</p>
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 Laboratory Condition

Ambient Temperature	20°C to 25°C
Ambient Relative Humidity	45% to 55%
Ambient Pressure	100 kPa to 102 kPa

## 1.4 Announce

- (1) The test report reference to the report template version v6.4.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) 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.
- (6) 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 Information

Applicant	Huawei Technologies Co., Ltd.
Address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China

### 2.2 Manufacturer Information

Manufacturer	Huawei Technologies Co., Ltd.
Address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, China

### 2.3 Factory Information

Factory	N/A
Address	N/A

### 2.4 General Description for Equipment under Test (EUT)

EUT Type	Notebook Computer
Model Name Under Test	HN-W29
Series Model Name	HN-W19, HN-WXXXXX
Description of Model name differentiation	The "X" in model name can be 0 to 9, A to Z, a to z, "-" or blank, only differences are model names for trading purpose
Hardware Version	NX8311_PCB_MB
Software Version	2.191.0.7(C001)
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

## 2.5 Technical Information

Network and Wireless connectivity	Bluetooth 5.0 (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/40) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80)
-----------------------------------	--

The requirement for the following technical information of the EUT was tested in this report:

Frequency Range	802.11b/g/n(20 MHz): 2.412 GHz - 2.462 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$ , where - $f_c$ = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 1 to 11. 802.11n(40 MHz): 2.422 GHz - 2.452 GHz $f_c = 2412 \text{ MHz} + (N-1)*5 \text{ MHz}$ , where - $f_c$ = "Operating Frequency" in MHz, - N = "Channel Number" with the range from 3 to 9.	
Modulation Type	DSSS, OFDM	
Product Type	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location	
Antenna System (eg., MIMO, Smart Antenna)	Cyclic Delay Diversity (CDD) for 802.11n Basic methodology with $N_{ANT}$ transmit antennas, each with the same directional gain $G_{ANT}$ dBi for 802.11b/g	
Categorization as Correlated or Completely Uncorrelated	Categorization as Correlated	
Antenna Type	Antenna 0 (ANT 0) Antenna 1 (ANT 1)	PIFA Antenna
Antenna Gain	Antenna 0 (ANT 0) Antenna 1 (ANT 1)	0.5 dBi
Total directional gain for 802.11n	For power spectral density(PSD) measurements	3.50 dBi Formulas: Directional gain = $G_{ANT} + \text{Array Gain}$ , $\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}) \text{ dB}$ . $N_{SS} = 1$ , $G_{ANT}$ set equal to the gain of the antenna having the highest gain.
	For power measurements	0.50 dBi Formulas: Directional gain = $G_{ANT} + \text{Array Gain}$ , $\text{Array Gain} = 0$ , $G_{ANT}$ set equal to the gain of the antenna having the highest gain.
About the Product	Only the WIFI 802.11b, 802.11g and 802.11n (HT20/40) was tested in this report.	

Mode	Antenna		
	Antenna 0	Antenna 1	Antenna 0 + Antenna1
802.11b	√	√	--
802.11g	√	√	--
802.11n20	√	√	√
802.11n40	√	√	√

Note: All the configurations were tested, but only the worst data was reported in this report.

Modulation technology	Modulation Type	Transfer Rate (Mbps)
DSSS (802.11b)	DBPSK	1
	DQPSK	2
	CCK	5.5/ 11
OFDM (802.11g)	BPSK	6 / 9
	QPSK	12 / 18
	16QAM	24 / 36
	64QAM	48 / 54
OFDM (802.11n-20MHz)	BPSK	6.5
	QPSK	13/19.5
	16QAM	26/39
	64QAM	52/58.5/65
OFDM (802.11n-40MHz)	BPSK	13.5
	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	
Output Power	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/2/3/6/9/10 /11	3/4/5/6/7/ 8/9
6dB Bandwidth	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/6/11	3/6/9
Conducted Spurious Emission	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/6/11	3/6/9
Conducted Emission	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/6/11	3/6/9
Radiated Spurious Emission	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/6/11	3/6/9
Band Edge	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/2/3/6/9/10 /11	3/4/5/6/7/ 8/9
Power spectral density (PSD)	11b/11g/11n20/11n40	1/6/6.5/13.5 Mbps	1/6/11	3/6/9

Note: The above EUT information in section 2.4 and 2.6 was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

## 2.6 Additional Instructions

EUT Software Settings:

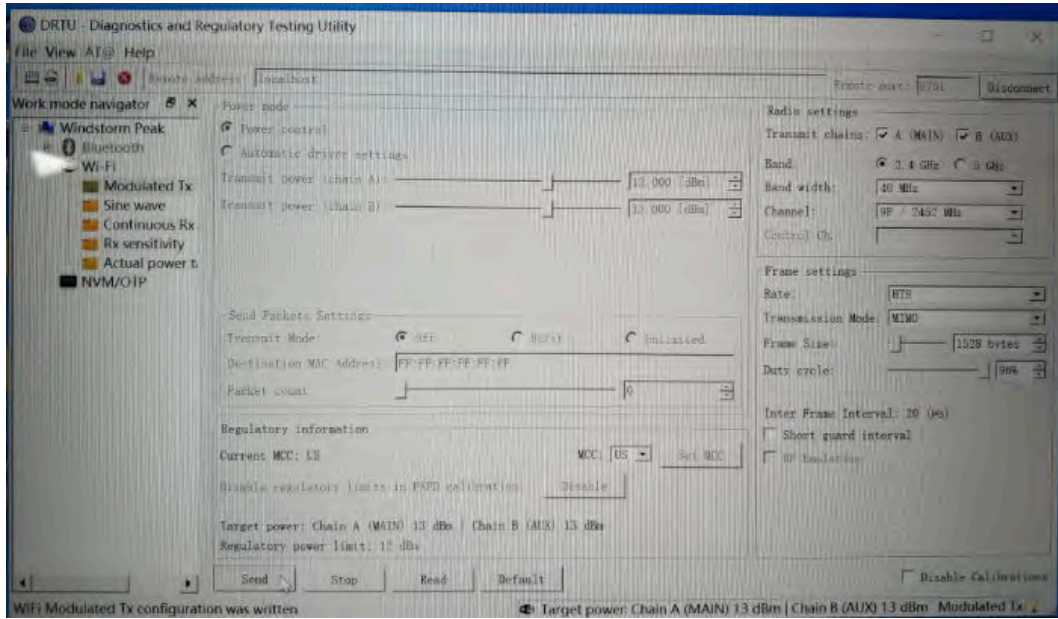
Mode	<input checked="" type="checkbox"/> Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.
------	--

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

EUT Software Settings:

Power level setup in software					
Test Software Version	Test software is set by engineering instruction "DRTU" in engineering mode				
Mode	Channel	Soft Set			
		SISO ANT0	SISO ANT1	MIMO ANT0	MIMO ANT1
802.11 b	1	13.50	13.50	--	--
	2	15.00	15.00		
	3	17.00	16.00		
	6	16.50	16.00	--	--
	9	17.00	16.00		
	10	15.00	15.00		
	11	13.50	13.50	--	--
802.11 g	1	13.50	13.50	--	--
	2	15.00	15.00		
	3	16.50	15.50		
	6	16.50	15.50	--	--
	9	16.50	15.50		
	10	15.00	14.50		
	11	13.50	13.50	--	--
802.11 n20	1	13.50	13.50	10.00	10.00
	2	15.00	15.00	11.50	11.50
	3	17.00	16.50	13.50	12.50
	6	16.50	15.50	13.00	12.50
	9	16.50	16.50	13.00	12.50
	10	15.00	15.00	11.50	11.50
	11	13.50	13.50	10.50	10.00
802.11 n40	3	10.00	10.00	6.50	6.50
	4	12.00	12.00	9.00	9.00
	5	13.50	14.00	11.00	11.00
	6	14.00	14.00	11.00	11.00
	7	14.00	14.00	11.00	11.00
	8	12.00	12.00	9.00	9.00
	9	10.00	10.00	7.00	7.00

Run software:



### 3 SUMMARY OF TEST RESULTS

#### 3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 15, Subpart C	Miscellaneous Wireless Communications Services
2	KDB Publication 558074 D01v05r02	GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES
3	KDB Publication 662911 D01v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
4	RSS-Gen (Issue 5, Apr. 2018)	General Requirements for Compliance of Radio Apparatus
5	RSS-247 (Issue 2, February 2017)	Digital Transmission Systems (DTSs), Frequency Hopping Systems(FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
6	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

#### 3.2 Verdict

No.	Description	FCC PART No.	ISED Part No.	Test Result	Verdict
1	Antenna Requirement	15.203; 15.247(b)	RSS-247, 5.4 (6)	N/A	Pass <sup>Note 1</sup>
2	Output Power	15.247(b)	RSS-247, 5.4 (4)	ANNEX A.1	Pass
3	6dB Bandwidth	15.247(a)	RSS-GEN, 6.6; RSS-247, 5.2 (1)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247(d)	RSS-247, 5.5	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.209; 15.247(d)	RSS-GEN, 8.9; RSS-247, 5.5	ANNEX A.4	Pass
6	Conducted Emission	15.207	RSS-GEN, 8.8	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247(d)	RSS-247, 5.5	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247(d)	RSS-247, 5.5	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247(e)	RSS-247, 5.2 (2)	ANNEX A.8	Pass
10	Receiver Spurious Emissions	N/A	RSS-Gen, 7.1.2	N/A	N/A <sup>Note 2</sup>

Note 1: Please refer to section 5.1.

Note 2: Only radio communication receivers operating in stand-alone mode within the band 30-960 MHz, as well as scanner receivers, are subject to Industry Canada requirements, so this test is not applicable.

## 4 GENERAL TEST CONFIGURATIONS

### 4.1 Test Environments

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

Relative Humidity	45% - 55%	
Atmospheric Pressure	100 kPa - 102 kPa	
Temperature	NT (Normal Temperature)	+22°C to +25°C
Working Voltage of the EUT	NV (Normal Voltage)	11.4 V

### 4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2018.06.15	2019.06.14
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2018.06.15	2019.06.14
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2018.11.07	2019.11.06
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2018.06.13	2019.06.12
LISN	SCHWARZBECK	NSLK 8127	8127-687	2018.06.13	2019.06.12
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2018.06.15	2019.06.14
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2018.06.15	2019.06.14
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2018.06.14	2019.06.13
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2018.06.26	2019.06.25
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2017.11.09	2019.11.08
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2017.07.22	2019.07.21
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2018.07.11	2020.07.10
Test Antenna-Horn(15-26.5 GHz)	SCHWARZBECK	BBHA 9170	9170-305	2018.06.21	2019.06.20
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2019.01.05	2021.01.04
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2020.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2017.08.08	2019.08.07
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2018.06.15	2019.06.14
Power Amplifier	OPHIR RF	5225F	1037	2019.02.28	2020.02.27
Power Amplifier	OPHIR RF	5273F	1016	2019.02.28	2020.02.27
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Feld Strength Meter	Narda	EP601	511WX51129	2018.05.21	2019.05.20
Mouth Simulator	B&K	4227	2423931	2018.11.15	2019.11.14
Sound Calibrator	B&K	4231	2430337	2018.11.15	2019.11.14
Sound Level Meter	B&K	NL-20	00844023	2018.11.15	2019.11.14
Ear Simulator	B&K	4185	2409449	2018.11.15	2019.11.14
Ear Simulator	B&K	4195	2418189	2018.11.15	2019.11.14
Audio analyzer	B&K	UPL 16	100129	2018.11.15	2019.11.14
Amplifier	COM-MW	KL_LNA_18 -40G-01	N/A	2018.06.26	2019.06.25
RF Cable 1	ROHDE&SCHWARZ	JUNFLON	APR0914004	2018.07.10	2019.10.09
RF Cable 2	Huber&suhner	RG_400_/U	N/A	2018.07.10	2019.10.09
RF Cable 3	Huber&suhner	RG_400_/U	N/A	2018.07.10	2019.10.09
RF Cable 4	Huber&suhner	SX_04172_ B-60	N/A	2018.07.10	2019.10.09
RF Cable 5	COM-MW	RFJA360- 2.92mm- J/J3M	N/A	2018.07.10	2019.10.09

Note: The calibration period on the Cable is three month.

### 4.3 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Occupied Channel Bandwidth	±4%
RF output power, conducted	±1.4 dB
Power Spectral Density, conducted	±2.5 dB
Unwanted Emissions, conducted	±2.8 dB
All emissions, radiated	±5.4 dB
Temperature	±1°C
Humidity	±4%

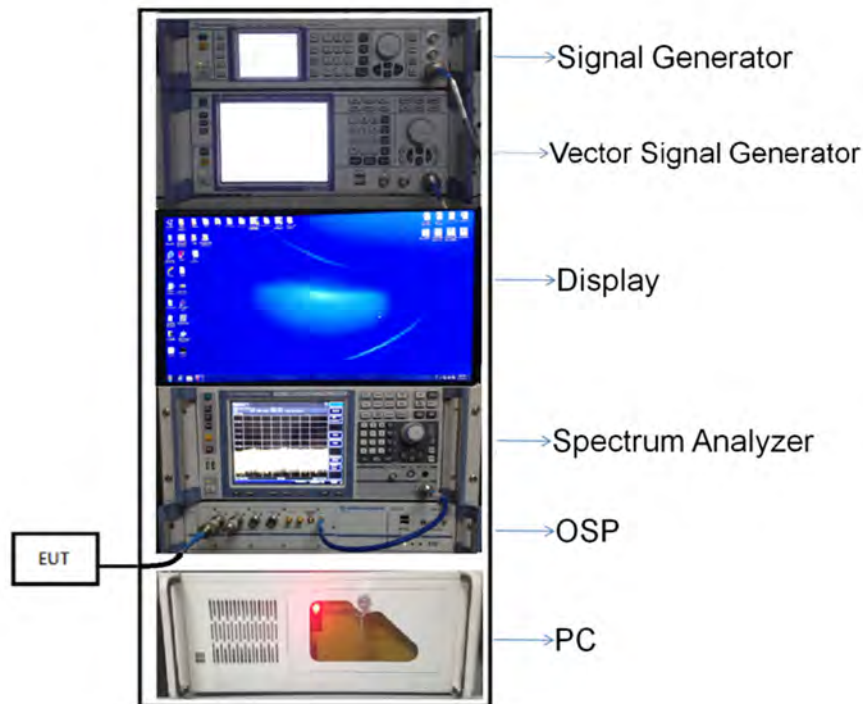
### 4.4 Description of Test Setup

#### 4.4.1 For Antenna Port Test

Conducted value (dBm) = Measurement value (dBm) + cable loss (dB)

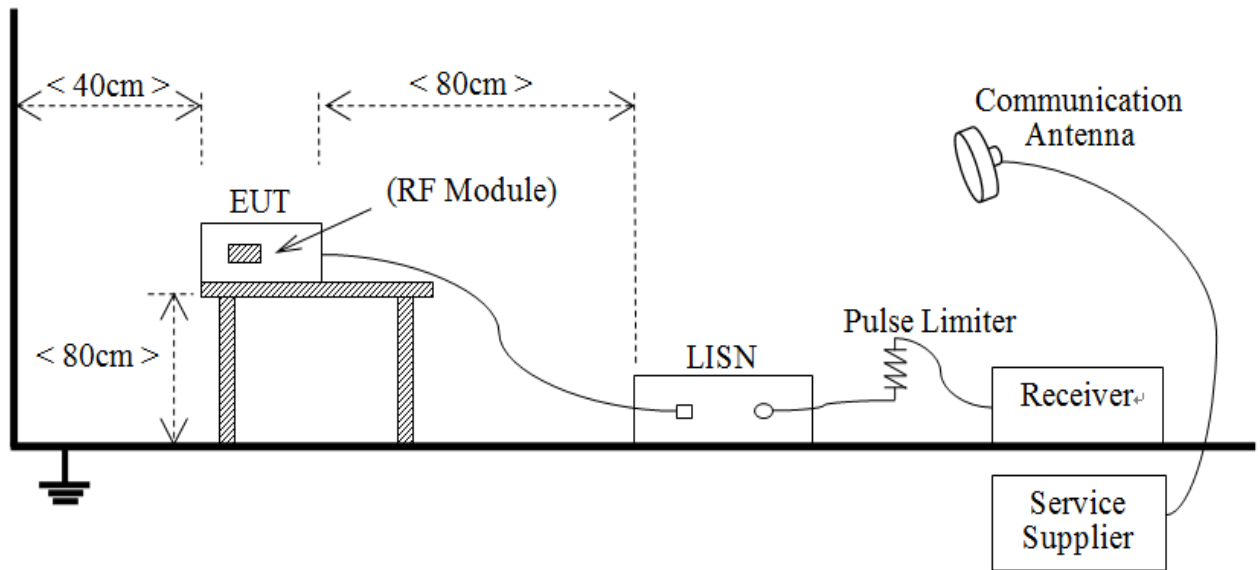
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:

Conducted value (dBm) = 10 dBm + 0.5 dB = 10.5 dBm



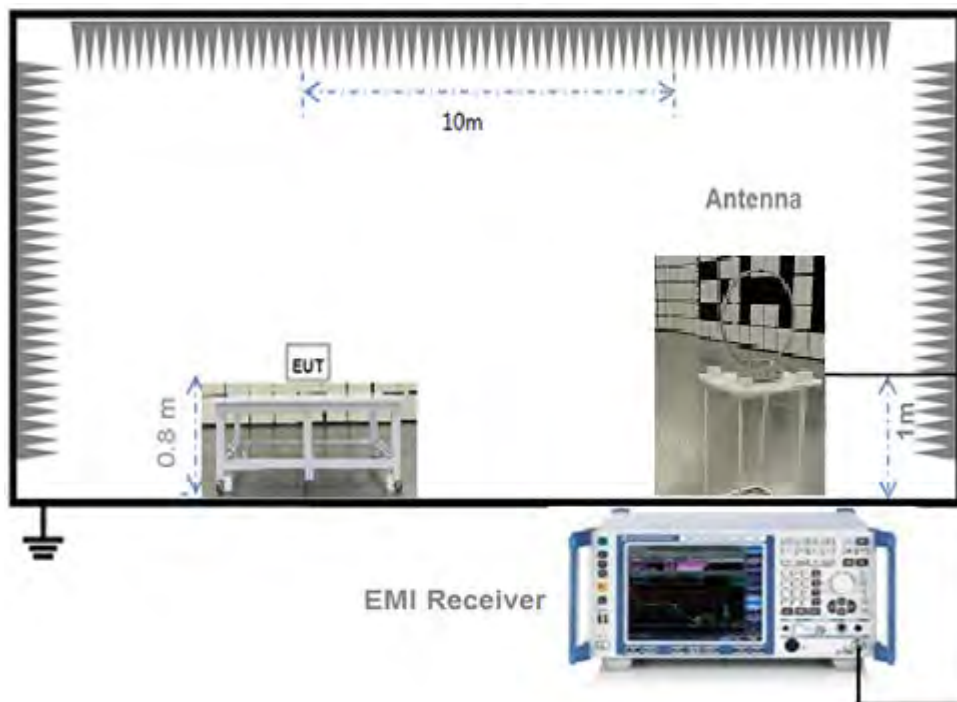
(Diagram 1)

#### 4.4.2 For AC Power Supply Port Test



(Diagram 2)

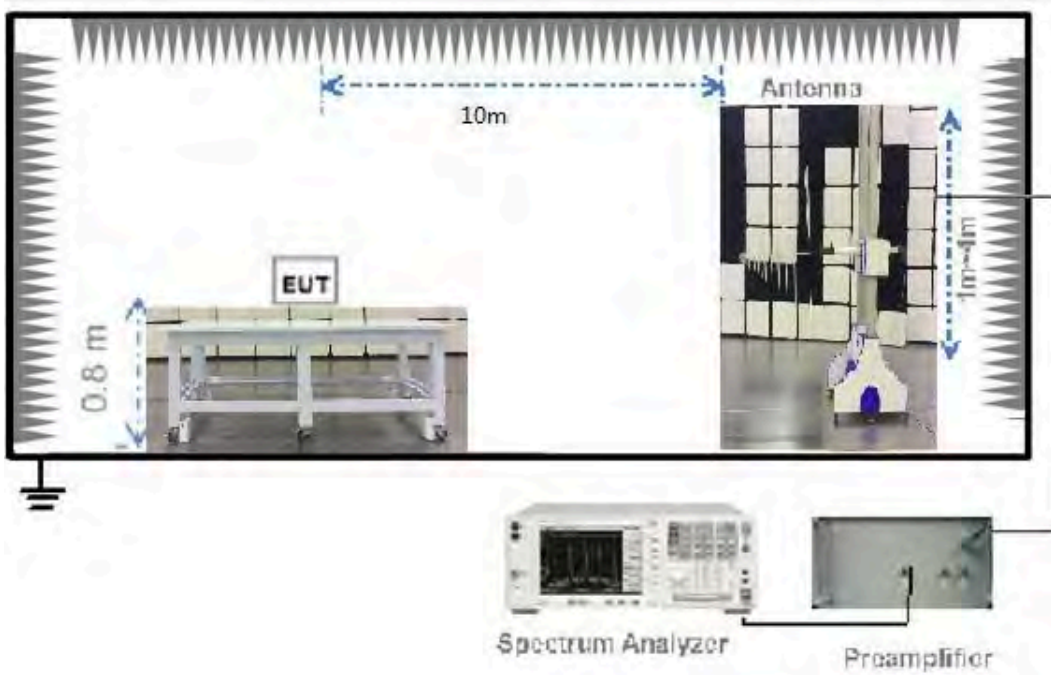
#### 4.4.3 For Radiated Test (Below 30 MHz)



(Diagram 3)

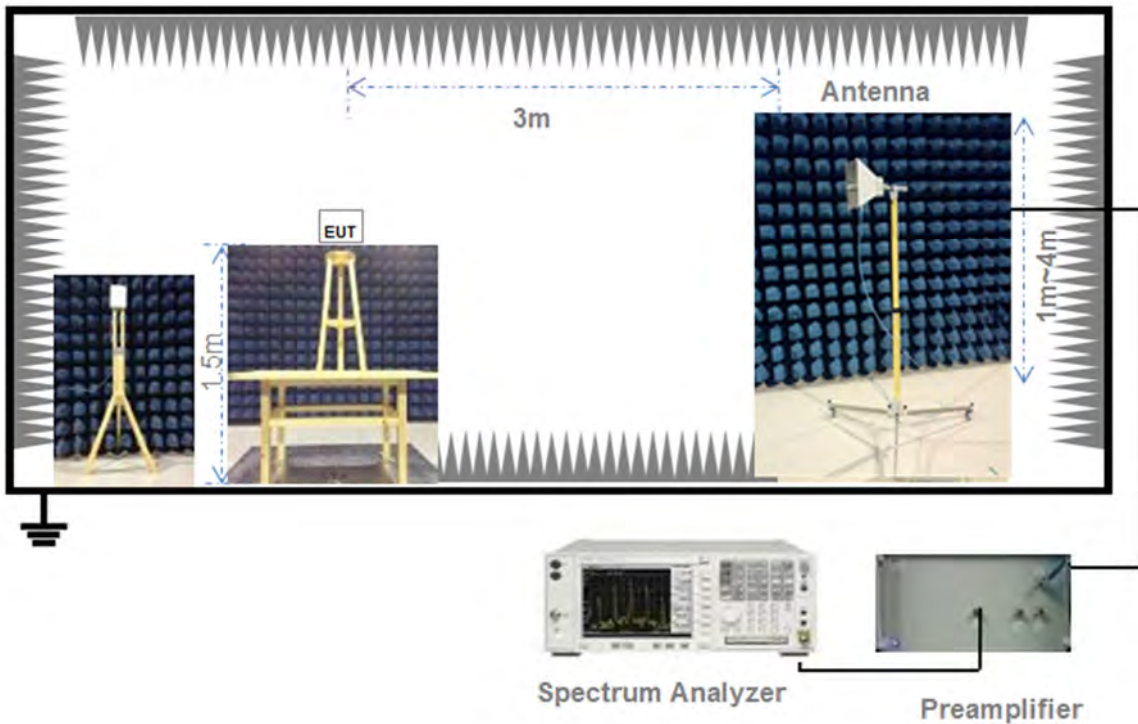


4.4.4 For Radiated Test (30 MHz-1 GHz)



(Diagram 4)

4.4.5 For Radiated Test (Above 1 GHz)



(Diagram 5)

## 4.5 Measurement Results Explanation Example

### 4.5.1 For conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

### 4.5.2 For radiated band edges and spurious emission test:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB $\mu$ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

EIRP = Measure Conducted output power Value (dBm) + Maximum transmit antenna gain (dBi) + the appropriate maximum ground reflection factor (dB)

## 5 TEST ITEMS

### 5.1 Antenna Requirements

#### 5.1.1 Relevant Standards

FCC §15.203 & 15.247(b); RSS-247, 5.4 (6)

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 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. 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 embedded in the product.	The antennas of the product are permanently attached. There are no provisions for connection to an external antenna.

Reference Documents	Item
Photo	Please refer to the EUT Photo documents.

#### 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); RSS-247, 5.4 (4)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz 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 Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.2.3 Test Procedure

#### Maximum peak conducted output power

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode 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  $10\log(1/x)$ , 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  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value.

Set  $VBW \geq RBW$ . 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  $T \leq 16.7$  microseconds.)

#### 5.2.4 Test Result

Please refer to ANNEX A.1.

## 5.3 6dB Bandwidth

### 5.3.1 Limit

FCC §15.247(a); RSS-GEN, 6.6

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 Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.3.3 Test Procedure

Use the following spectrum analyzer settings:

Set RBW = 100 kHz.

Set the video bandwidth (VBW)  $\geq 3$  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.

### 5.3.4 Test Result

Please refer to ANNEX A.2.

## 5.4 Conducted Spurious Emission

### 5.4.1 Limit

FCC §15.247(d); RSS-247, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

### 5.4.2 Test Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.4.3 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  $\geq 1.5$  times the DTS bandwidth.

Set the RBW = 100 kHz.

Set the VBW  $\geq 3 \times$  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  $\geq 3 \times$  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.

#### 5.4.4 Test Result

Please refer to ANNEX A.3.



## 5.5 Band Edge (Authorized-band band-edge)

### 5.5.1 Limit

FCC §15.247(d); RSS-GEN, 8.9, RSS-247, 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

### 5.5.2 Test Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.5.3 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  $\geq 98\%$ ). 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  $\pm 2$  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  $\geq 3 \times$  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)  $\pm 0.5$  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  $\pm 0.5$  MHz.

Standard method(The 99% OBW of the fundamental emission is without 2 MHz of the authorized band):

Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.

Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than  $[10 \log (OBW/RBW)]$  below the reference level. Specific guidance is given in 4.1.5.2.

Attenuation: Auto (at least 10 dB preferred).

Sweep time: Coupled.

Resolution bandwidth: 100 kHz.

Video bandwidth: 300 kHz.

Detector: Peak.

Trace: Max hold.

#### 5.5.4 Test Result

Please refer to ANNEX A.4.

## 5.6 Conducted Emission

### 5.6.1 Limit

FCC §15.207; RSS-GEN, 8.8

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 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

### 5.6.2 Test Setup

See section 4.4.2 for test setup description for the AC power supply port. The photo of test setup please refer to ANNEX B.

### 5.6.3 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.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

### 5.6.4 Test Result

Please refer to ANNEX A.5.

## 5.7 Radiated Spurious Emission

### 5.7.1 Limit

FCC §15.209&15.247(c); RSS-247, 5.5

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 ( $\mu\text{V}/\text{m}$ )	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 1000 MHz, 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 1000 MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK).

### 5.7.2 Test Setup

See section 4.4.3 to 4.4.5 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.7.3 Test Procedure

Since the emission limits are specified in terms of radiated field strength levels, measurements performed to demonstrate compliance have traditionally relied on a radiated test configuration. Radiated measurements remain the principal method for demonstrating compliance to the specified limits; however antenna-port conducted measurements are also now acceptable to demonstrate compliance (see below for details). When radiated measurements are utilized, test site requirements and procedures for maximizing and measuring radiated emissions that are described in ANSI C63.10 shall be followed.

Antenna-port conducted measurements may also be used as an alternative to radiated measurements for demonstrating compliance in the restricted frequency bands. If conducted measurements are performed, then proper impedance matching must be ensured and an additional radiated test for cabinet/case spurious emissions is required.

#### General Procedure for conducted measurements in restricted bands

- a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

- b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the EIRP level (see guidance on determining the applicable antenna gain)
- c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies ≤ 30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies > 1000 MHz).
- d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the EIRP of all chains in linear terms (e.g., Watts, mW).
- e) Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \text{EIRP} - 20 \log D + 104.8$$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

- f) Compare the resultant electric field strength level to the applicable limit.
- g) Perform radiated spurious emission test.

Quasi-Peak measurement procedure

The specifications for measurements using the CISPR quasi-peak detector can be found in Publication 16 of the International Special Committee on Radio Frequency Interference (CISPR) of the International Electrotechnical Commission.

As an alternative to CISPR quasi-peak measurement, compliance can be demonstrated to the applicable emission limits using a peak detector.

Peak power measurement procedure

Peak emission levels are measured by setting the instrument as follows:

- a) RBW = as specified in Table 1.
- b) VBW ≥ 3 x RBW.
- c) Detector = Peak.
- d) Sweep time = auto.
- e) Trace mode = max hold.
- f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be longer for low duty cycle applications).

Table 1—RBW as a function of frequency

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz

> 1000 MHz	1 MHz
------------	-------

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Trace averaging across on and off times of the EUT transmissions followed by duty cycle correction

If continuous transmission of the EUT (i.e., duty cycle  $\geq 98$  percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than  $\pm 2$  percent), then the following procedure shall be used:

- a) The EUT shall be configured to operate at the maximum achievable duty cycle.
- b) Measure the duty cycle,  $x$ , of the transmitter output signal as described in section 6.0.
- c) RBW = 1 MHz (unless otherwise specified).
- d) VBW  $\geq 3 \times$  RBW.
- e) Detector = RMS, if  $\text{span}/(\# \text{ of points in sweep}) \leq (\text{RBW}/2)$ . Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
- f) Averaging type = power (i.e., RMS).
  - 1) As an alternative, the detector and averaging type may be set for linear voltage averaging.
  - 2) Some instruments require linear display mode in order to use linear voltage averaging. Log or dB averaging shall not be used.
- g) Sweep time = auto.
- h) Perform a trace average of at least 100 traces.
- i) A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:
  - 1) If power averaging (RMS) mode was used in step f), then the applicable correction factor is  $10 \log(1/x)$ , where  $x$  is the duty cycle.
  - 2) If linear voltage averaging mode was used in step f), then the applicable correction factor is  $20 \log(1/x)$ , where  $x$  is the duty cycle.
  - 3) If a specific emission is demonstrated to be continuous ( $\geq 98$  percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

NOTE: Reduction of the measured emission amplitude levels to account for operational duty factor is not permitted. Compliance is based on emission levels occurring during transmission - not on an average across on and off times of the transmitter.

Determining the applicable transmit antenna gain

A conducted power measurement will determine the maximum output power associated with a restricted band emission; however, in order to determine the associated EIRP level, the gain of the transmitting antenna (in dBi) must be added to the measured output power (in dBm).

Since the out-of-band characteristics of the EUT transmit antenna will often be unknown, the use of a conservative antenna gain value is necessary. Thus, when determining the EIRP based on the measured conducted power, the upper bound on antenna gain for a device with a single RF output shall be selected as the maximum in-band gain of the antenna across all operating bands, or 2 dBi, whichever is greater. However, for devices that operate in multiple frequency bands while using the same transmit antenna, the highest gain of the antenna within the operating band nearest in frequency to the restricted band emission being measured may be used in lieu of the overall highest gain when the emission is at a frequency that is within 20 percent of the nearest band edge frequency, but in no case shall a value less than 2 dBi be used.

See KDB 662911 for guidance on calculating the additional array gain term when determining the effective antenna gain for a EUT with multiple outputs occupying the same or overlapping frequency ranges in the same band.

#### Radiated spurious emission test

An additional consideration when performing conducted measurements of restricted band emissions is that unwanted emissions radiating from the EUT cabinet, control circuits, power leads, or intermediate circuit elements will likely go undetected in a conducted measurement configuration. To address this concern, a radiated test shall be performed to ensure that emissions emanating from the EUT cabinet (rather than the antenna port) also comply with the applicable limits.

For these cabinet radiated spurious emission measurements the EUT transmit antenna may be replaced with a termination matching the nominal impedance of the antenna. Procedures for performing radiated measurements are specified in ANSI C63.10. All detected emissions shall comply with the applicable limits.

The measurement frequency range is from 30 MHz 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  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

#### 5.7.4 Test Result

Please refer to ANNEX A.6.

## 5.8 Band Edge (Restricted-band band-edge)

### 5.8.1 Limit

FCC §15.209&15.247(c); RSS-247, 5.5

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).

### 5.8.2 Test Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.8.3 Test Procedure

The measurement frequency range is from 9 kHz 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  $f \geq 1$  GHz, 100 kHz for  $f < 1$  GHz

VBW  $\geq$  RBW

Sweep = auto

Detector function = peak

Trace = max hold

For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported, Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

For transmitters operating above 1 GHz repeat the measurement with an average detector.

### 5.8.4 Test Result

Please refer to ANNEX A.7.



## 5.9 Power Spectral density (PSD)

### 5.9.1 Limit

FCC §15.247(d); RSS-247, 5.2 (2)

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.

### 5.9.2 Test Setup

See section 4.4.1 for test setup description for the antenna port. The photo of test setup please refer to ANNEX B.

### 5.9.3 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:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .

Set the VBW  $\geq 3 \text{ RBW}$ .

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.

### 5.9.4 Test Result

Please refer to ANNEX A.8.

## ANNEX A TEST RESULT

### A.1 Output Power

Duty Cycle

SISO ANT0

Test Mode	Duty Cycle	T (ms)	1/T(kHz)
802.11b	0.99	12.26200	0.081552765
802.11g	0.98	2.04232	0.489639234
802.11n-20 MHz	0.98	1.89609	0.527401125
802.11n-40 MHz	0.96	0.92609	1.079808658

SISO ANT1

Test Mode	Duty Cycle	T (ms)	1/T(kHz)
802.11b	0.99	12.2619	0.081553
802.11g	0.98	2.04261	0.489570
802.11n-20 MHz	0.98	1.90319	0.525434
802.11n-40 MHz	0.96	0.93000	1.075269

## Average Power Test Data

## SISO ANT0

## 802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.26	21.20	30	1000	Pass
2	14.86	30.64			Pass
3	16.96	49.69			Pass
6	16.81	48.00			Pass
9	17.06	50.85			Pass
10	14.96	31.35			Pass
11	13.36	21.69			Pass

## 802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.58	22.80	30	1000	Pass
2	14.78	30.06			Pass
3	16.78	47.64			Pass
6	17.08	51.04			Pass
9	16.78	47.64			Pass
10	14.98	31.47			Pass
11	13.38	21.77			Pass

## 802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.30	21.36	30	1000	Pass
2	14.90	30.88			Pass
3	16.90	48.94			Pass
6	16.95	49.51			Pass
9	16.70	46.74			Pass
10	14.80	30.18			Pass
11	13.20	20.88			Pass

## 802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	9.78	9.51	30	1000	Pass
4	11.88	15.42			Pass
5	13.78	23.88			Pass
6	14.18	26.18			Pass
7	13.88	24.43			Pass
8	12.08	16.14			Pass
9	9.88	9.73			Pass

## SISO ANT1

## 802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.36	21.69	30	1000	Pass
2	14.76	29.94			Pass
3	15.86	38.57			Pass
6	16.06	40.39			Pass
9	16.06	40.39			Pass
10	14.96	31.35			Pass
11	13.50	22.39			Pass

## 802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.47	22.24	30	1000	Pass
2	14.87	30.70			Pass
3	16.07	40.47			Pass
6	15.82	38.20			Pass
9	15.67	36.91			Pass
10	14.77	30.00			Pass
11	13.37	21.73			Pass

## 802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.38	21.78	30	1000	Pass
2	15.08	32.21			Pass
3	15.98	39.63			Pass
6	15.68	36.99			Pass
9	15.68	36.99			Pass
10	14.78	30.06			Pass
11	13.28	21.28			Pass

## 802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	10.06	10.15	30	1000	Pass
4	11.76	15.01			Pass
5	13.86	24.35			Pass
6	13.96	24.92			Pass
7	13.86	24.35			Pass
8	11.86	15.36			Pass
9	9.96	9.92			Pass

**MIMO**

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.25	21.13	30	1000	Pass
2	14.85	30.54			Pass
3	16.52	44.85			Pass
6	16.42	43.85			Pass
9	16.32	42.83			Pass
10	14.75	29.85			Pass
11	13.45	22.14			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	9.83	9.62	30	1000	Pass
4	12.08	16.15			Pass
5	13.88	24.46			Pass
6	13.83	24.17			Pass
7	14.03	25.31			Pass
8	11.99	15.80			Pass
9	9.93	9.85			Pass

E.I.R.P Test Data (For ISED)

SISO ANT0

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.76	23.77	36	4	Pass
2	15.36	34.36			Pass
3	17.46	55.72			Pass
6	17.31	53.83			Pass
9	17.56	57.02			Pass
10	15.46	35.16			Pass
11	13.86	24.32			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	14.08	25.59	36	4	Pass
2	15.28	33.73			Pass
3	17.28	53.46			Pass
6	17.58	57.28			Pass
9	17.28	53.46			Pass
10	15.48	35.32			Pass
11	13.88	24.43			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.80	23.99	36	4	Pass
2	15.40	34.67			Pass
3	17.40	54.95			Pass
6	17.45	55.59			Pass
9	17.20	52.48			Pass
10	15.30	33.88			Pass
11	13.70	23.44			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	10.28	10.67	36	4	Pass
4	12.38	17.30			Pass
5	14.28	26.79			Pass
6	14.68	29.38			Pass
7	14.38	27.42			Pass
8	12.58	18.11			Pass
9	10.38	10.91			Pass

## SISO ANT1

## 802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.86	24.32	36	4	Pass
2	15.26	33.57			Pass
3	16.36	43.25			Pass
6	16.56	45.29			Pass
9	16.56	45.29			Pass
10	15.46	35.16			Pass
11	14.00	25.12			Pass

## 802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.97	24.95	36	4	Pass
2	15.37	34.43			Pass
3	16.57	45.39			Pass
6	16.32	42.85			Pass
9	16.17	41.40			Pass
10	15.27	33.65			Pass
11	13.87	24.38			Pass

## 802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.88	24.43	36	4	Pass
2	15.58	36.14			Pass
3	16.48	44.46			Pass
6	16.18	41.50			Pass
9	16.18	41.50			Pass
10	15.28	33.73			Pass
11	13.78	23.88			Pass

## 802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	10.56	11.38	36	4	Pass
4	12.26	16.83			Pass
5	14.36	27.29			Pass
6	14.46	27.93			Pass
7	14.36	27.29			Pass
8	12.36	17.22			Pass
9	10.46	11.12			Pass

**MIMO**
**802.11n-20 MHz Mode:**

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	13.75	23.71	36	4	Pass
2	15.35	34.28			Pass
3	17.02	50.35			Pass
6	16.92	49.20			Pass
9	16.82	48.08			Pass
10	15.25	33.50			Pass
11	13.95	24.83			Pass

**802.11n-40 MHz Mode:**

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	10.33	10.79	36	4	Pass
4	12.58	18.11			Pass
5	14.38	27.42			Pass
6	14.33	27.10			Pass
7	14.53	28.38			Pass
8	12.49	17.74			Pass
9	10.43	11.04			Pass



## PK Power Test Data

## SISO ANT 0

## 802.11b Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	15.53	35.73	30	1000	Pass
6	18.52	71.12			Pass
11	15.62	36.48			Pass

## 802.11g Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.00	125.89	30	1000	Pass
6	24.08	255.86			Pass
11	21.04	127.06			Pass

## 802.11n-20 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	20.87	122.18	30	1000	Pass
6	23.95	248.31			Pass
11	20.92	123.59			Pass

## 802.11n-40 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	17.85	60.95	30	1000	Pass
6	21.48	140.60			Pass
9	17.55	56.89			Pass

## PK Power Test Data

## SISO ANT 1

## 802.11b Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	15.72	37.33	30	1000	Pass
6	18.25	66.83			Pass
11	15.78	37.84			Pass

## 802.11g Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.15	130.32	30	1000	Pass
6	23.33	215.28			Pass
11	21.35	136.46			Pass

## 802.11n-20 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.11	129.12	30	1000	Pass
6	23.19	208.45			Pass
11	21.24	133.05			Pass

## 802.11n-40 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	18.00	63.10	30	1000	Pass
6	21.75	149.62			Pass
9	17.91	61.80			Pass

PK Power Test DataMIMO

802.11n-20 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.46	140.01	30	1000	Pass
6	24.14	259.42			Pass
11	21.69	147.72			Pass

802.11n-40 MHz Mode:

Channel	Measured Output PK Power		Limit		Verdict
	dBm	mW	dBm	mW	
3	17.88	61.42	30	1000	Pass
6	22.29	169.25			Pass
9	18.31	67.84			Pass

## E.I.R.P PK Test Data (For ISED)

## SISO ANT 0

## 802.11b Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	16.03	40.09	36	4	Pass
6	19.02	79.80			Pass
11	16.12	40.93			Pass

## 802.11g Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.50	141.25	36	4	Pass
6	24.58	287.08			Pass
11	21.54	142.56			Pass

## 802.11n-20 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.37	137.09	36	4	Pass
6	24.45	278.61			Pass
11	21.42	138.68			Pass

## 802.11n-40 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
3	18.35	68.39	36	4	Pass
6	21.98	157.76			Pass
9	18.05	63.83			Pass

## PK Power Test Data

## SISO ANT 1

## 802.11b Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	16.22	41.88	36	4	Pass
6	18.75	74.99			Pass
11	16.28	42.46			Pass

## 802.11g Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.65	146.22	36	4	Pass
6	23.83	241.55			Pass
11	21.85	153.11			Pass

## 802.11n-20 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.61	144.88	36	4	Pass
6	23.69	233.88			Pass
11	21.74	149.28			Pass

## 802.11n-40 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
3	18.50	70.79	36	4	Pass
6	22.25	167.88			Pass
9	18.41	69.34			Pass

PK Power Test DataMIMO

802.11n-20 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
1	21.96	157.04	36	4	Pass
6	24.64	291.07			Pass
11	22.19	165.58			Pass

802.11n-40 MHz Mode:

Channel	EIRP		Limit		Verdict
	dBm	mW	dBm	mW	
3	18.38	68.87	36	4	Pass
6	22.79	190.11			Pass
9	18.81	76.03			Pass

## A.2 Bandwidth

### Test Data

#### SISO ANT0

##### 802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	10.162598	13.545586	$\geq 500$
Middle	10.162598	13.603473	$\geq 500$
High	10.162598	13.545586	$\geq 500$

##### 802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.218994	17.539797	$\geq 500$
Middle	15.218994	17.424023	$\geq 500$
High	15.218994	17.539797	$\geq 500$

##### 802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.168945	18.581766	$\geq 500$
Middle	15.519287	18.350217	$\geq 500$
High	15.419189	18.465991	$\geq 500$

##### 802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.171875	36.300000	$\geq 500$
Middle	35.171875	36.400000	$\geq 500$
High	35.171875	36.500000	$\geq 500$

Test DataSISO ANT1

## 802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	10.212646	13.545586	≥500
Middle	10.162598	14.703329	≥500
High	10.212646	13.545586	≥500

## 802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.118896	17.366136	≥500
Middle	15.218994	17.308249	≥500
High	15.218994	17.250362	≥500

## 802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.269043	18.408104	≥500
Middle	15.218994	18.350217	≥500
High	15.168945	18.408104	≥500

## 802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.171875	36.300000	≥500
Middle	35.171875	36.200000	≥500
High	35.121826	36.200000	≥500



Test DataMIMO ANT0

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	15.269043	18.465991	≥500
Middle	15.218994	18.523878	≥500
High	15.218994	18.465991	≥500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.171875	36.300000	≥500
Middle	35.171875	36.300000	≥500
High	35.171875	36.500000	≥500

MIMO ANT1

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	16.370605	17.945007	≥500
Middle	16.370605	18.002894	≥500
High	15.769775	17.945007	≥500

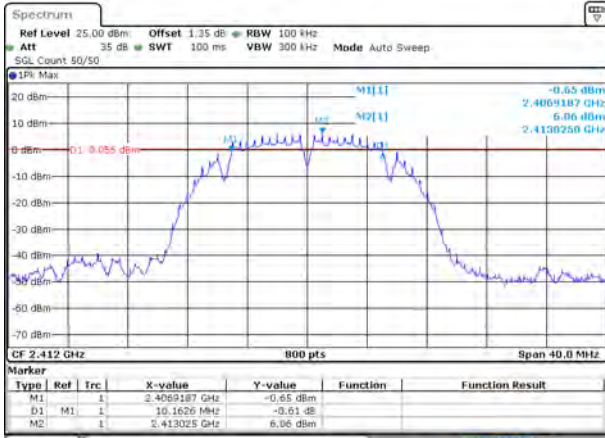
802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	35.171875	36.100000	≥500
Middle	35.221924	36.000000	≥500
High	35.171875	36.100000	≥500

## Test plots (6dB Bandwidth)

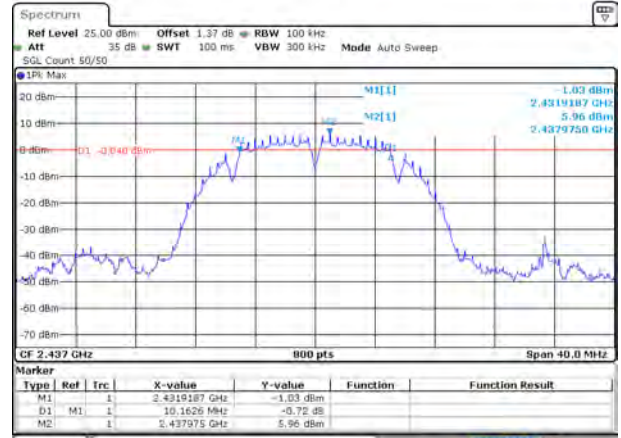
## SISO ANT0

## 802.11b LOW CHANNEL



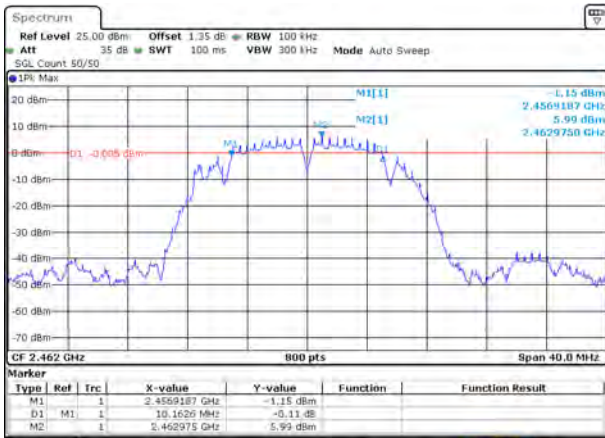
Date: 23 APR 2019 14:25:01

## 802.11b MIDDLE CHANNEL



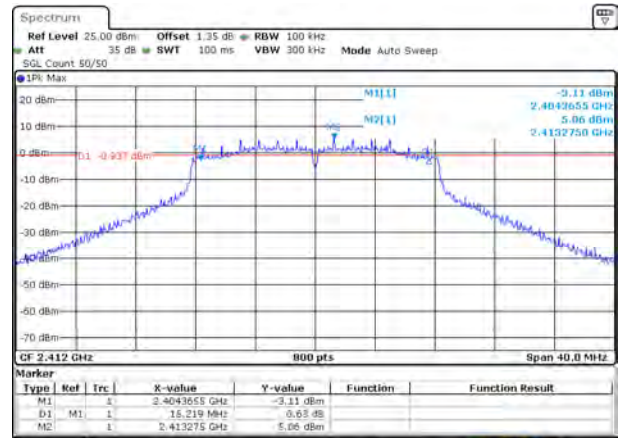
Date: 23 APR 2019 14:32:14

## 802.11b HIGH CHANNEL



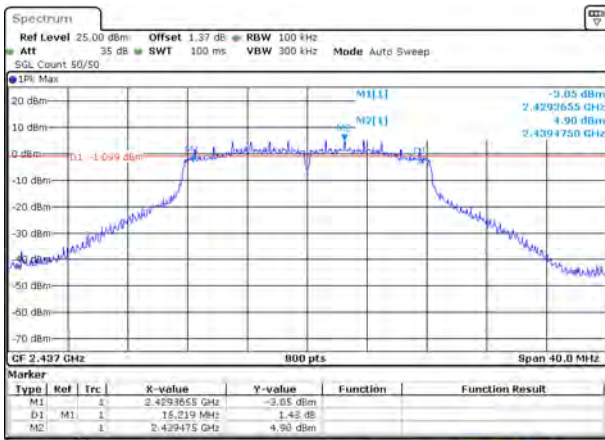
Date: 23 APR 2019 14:35:46

## 802.11g LOW CHANNEL



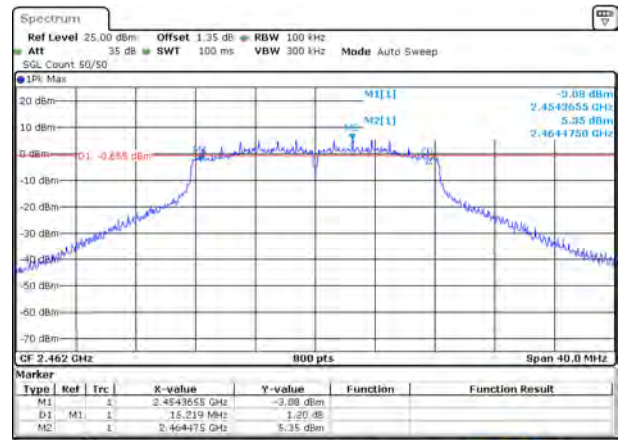
Date: 23 APR 2019 14:40:56

## 802.11g MIDDLE CHANNEL



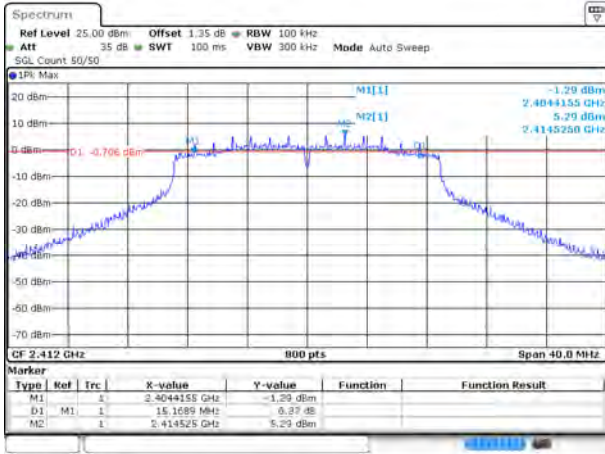
Date: 23 APR 2019 15:12:25

## 802.11g HIGH CHANNEL

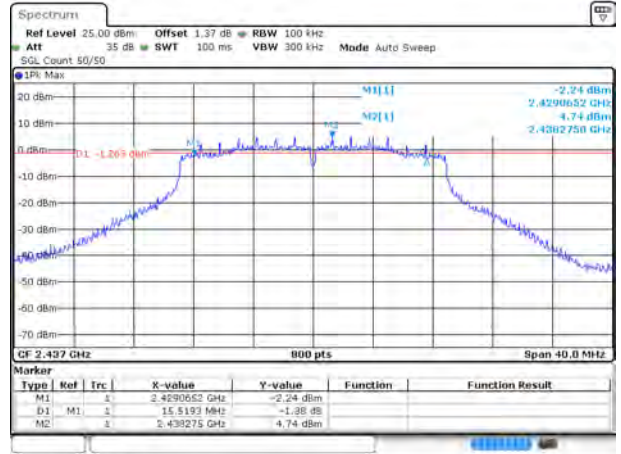


Date: 23 APR 2019 15:16:42

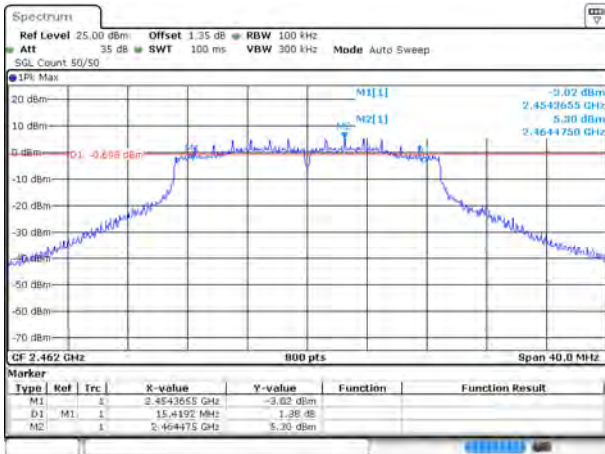
802.11n-20 MHz LOW CHANNEL



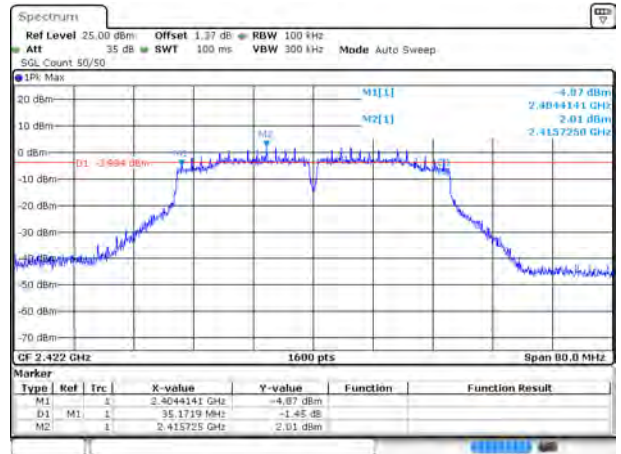
802.11 n-20 MHz MIDDLE CHANNEL



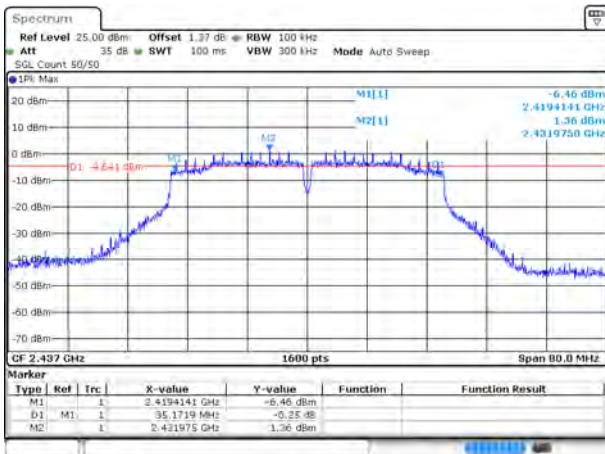
802.11n-20 MHz HIGH CHANNEL



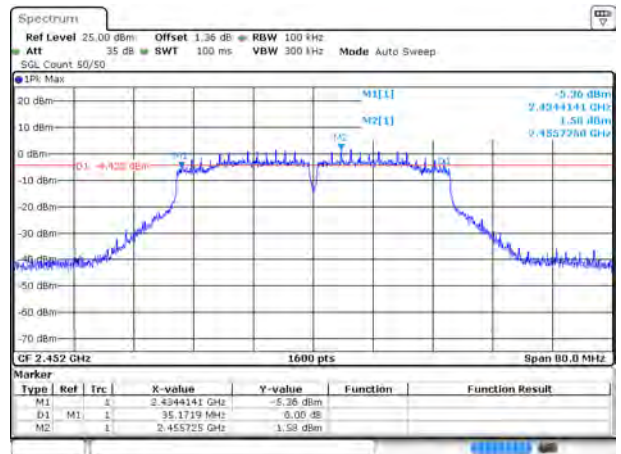
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



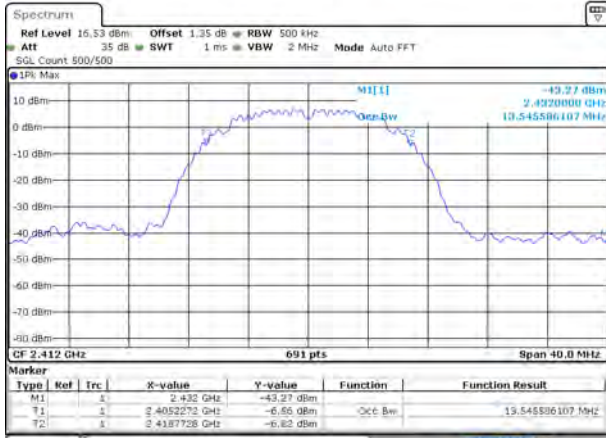
802.11n-40 MHz HIGH CHANNEL



## Test plots (99% Bandwidth)

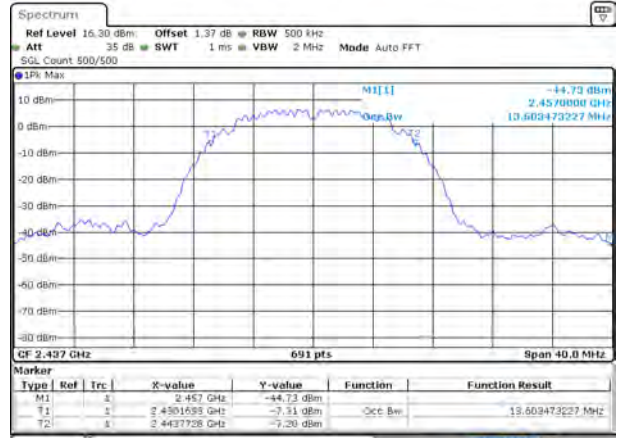
## SISO ANT0

## 802.11b LOW CHANNEL



Date: 23 APR 2019 14:25:10

## 802.11b MIDDLE CHANNEL



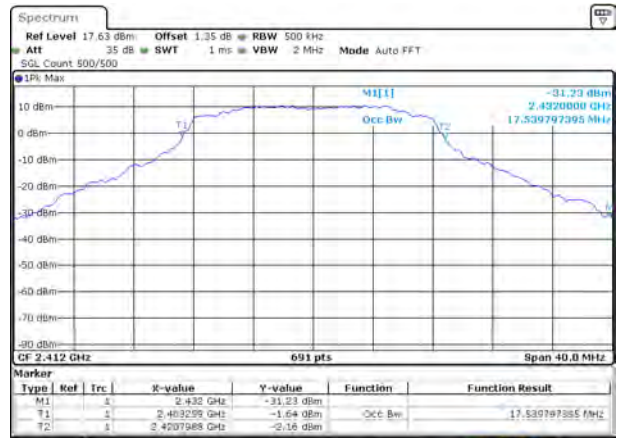
Date: 23 APR 2019 14:32:40

## 802.11b HIGH CHANNEL



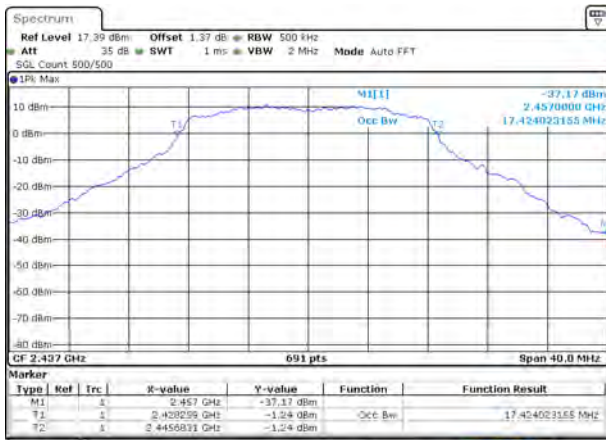
Date: 23 APR 2019 14:38:56

## 802.11g LOW CHANNEL



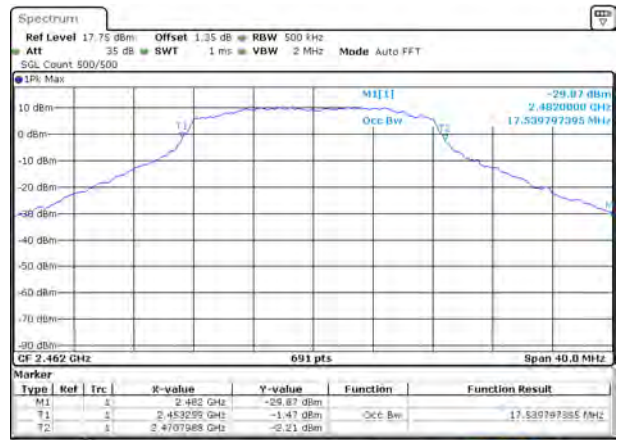
Date: 23 APR 2019 14:41:04

## 802.11g MIDDLE CHANNEL



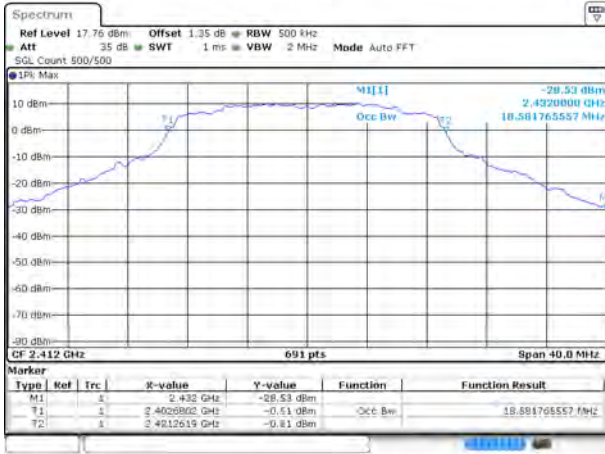
Date: 23 APR 2019 15:13:33

## 802.11g HIGH CHANNEL



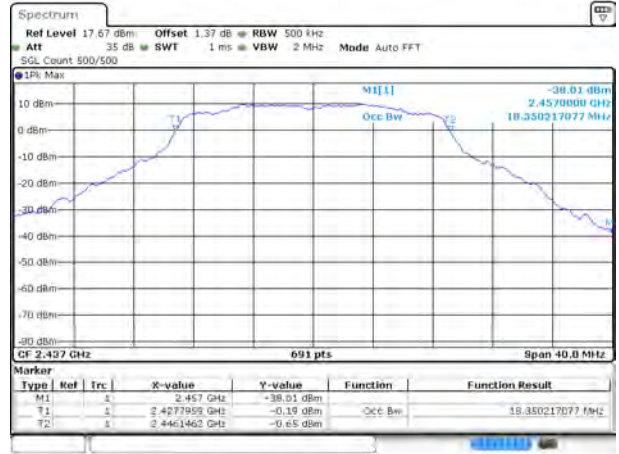
Date: 23 APR 2019 15:18:51

## 802.11n-20 MHz LOW CHANNEL



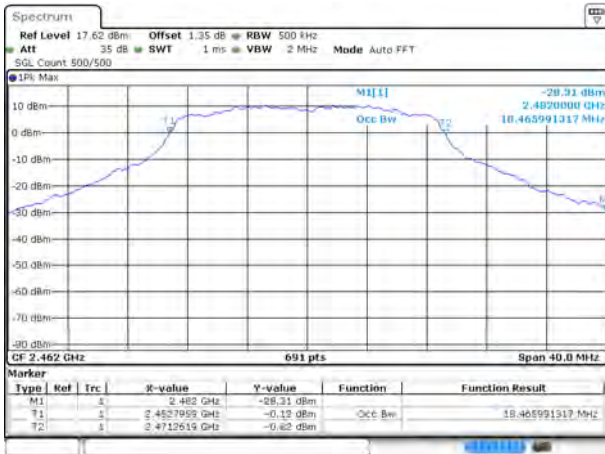
Date: 23 APR 2019 15:22:54

## 802.11 n-20 MHz MIDDLE CHANNEL



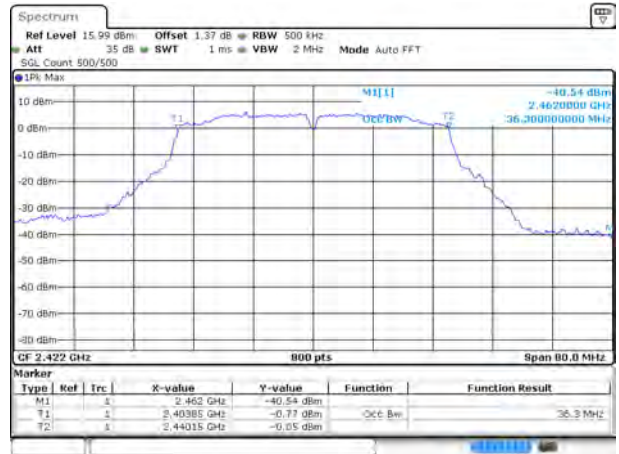
Date: 23 APR 2019 15:34:28

## 802.11n-20 MHz HIGH CHANNEL



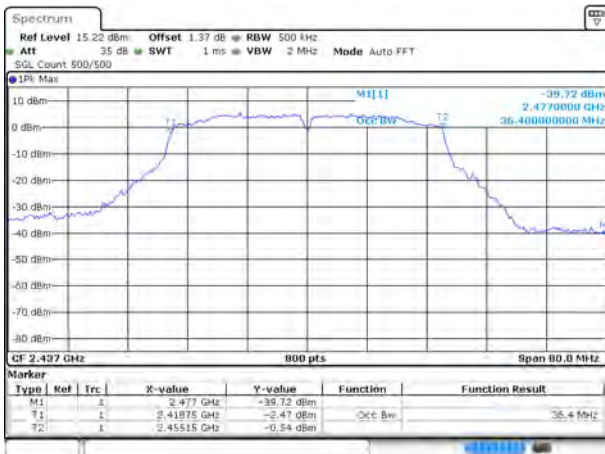
Date: 23 APR 2019 15:35:13

## 802.11n-40 MHz LOW CHANNEL



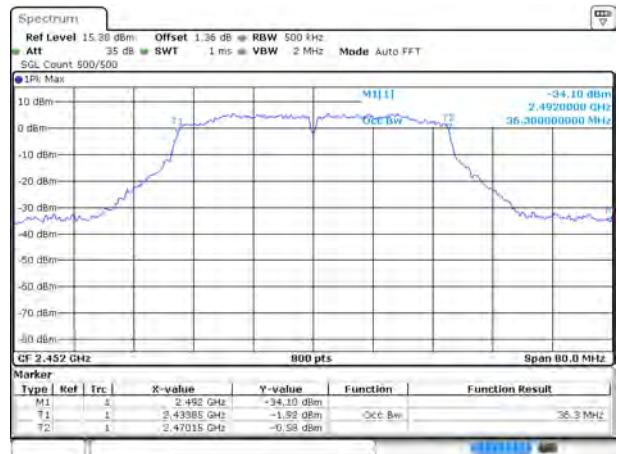
Date: 23 APR 2019 15:41:35

## 802.11n-40 MHz MIDDLE CHANNEL



Date: 23 APR 2019 15:45:09

## 802.11n-40 MHz HIGH CHANNEL

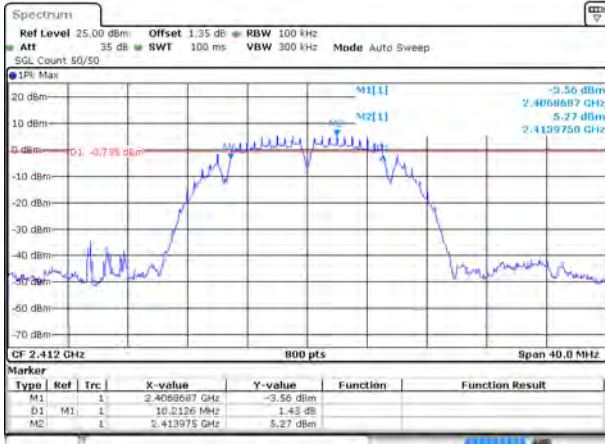


Date: 23 APR 2019 15:48:39

Test plots (6dB Bandwidth)

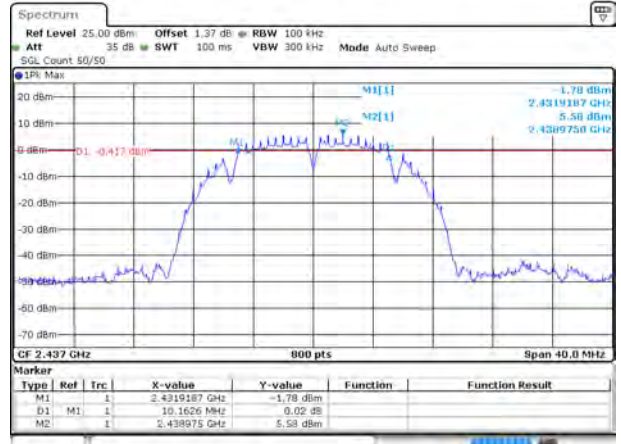
SISO ANT1

802.11b LOW CHANNEL



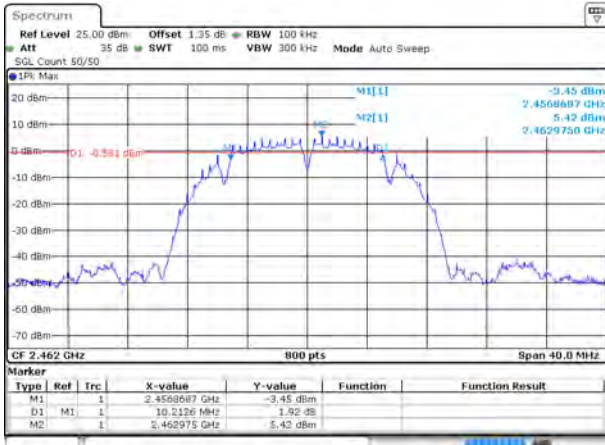
Date: 22 APR 2019 16:54:41

802.11b MIDDLE CHANNEL



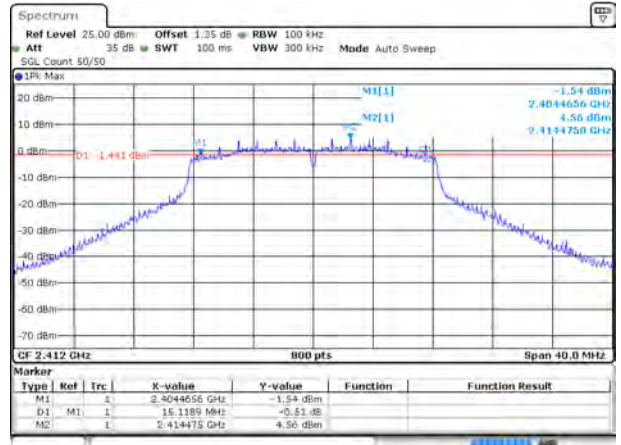
Date: 22 APR 2019 17:02:10

802.11b HIGH CHANNEL



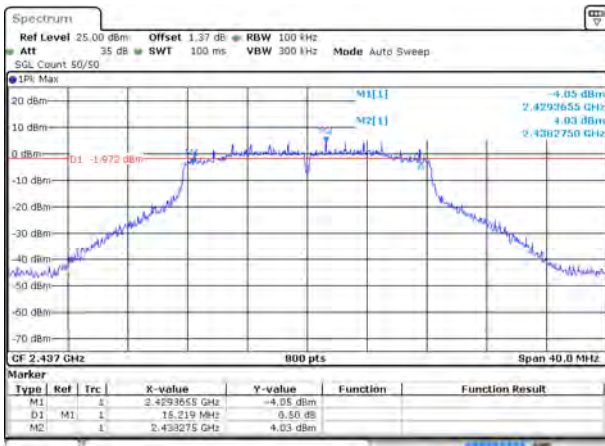
Date: 22 APR 2019 17:04:43

802.11g LOW CHANNEL



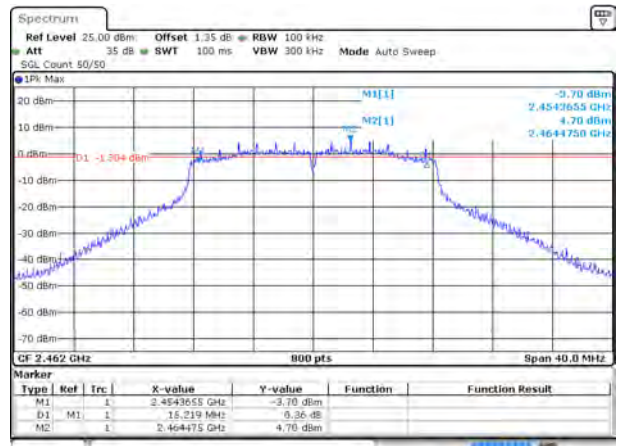
Date: 22 APR 2019 17:07:44

802.11g MIDDLE CHANNEL



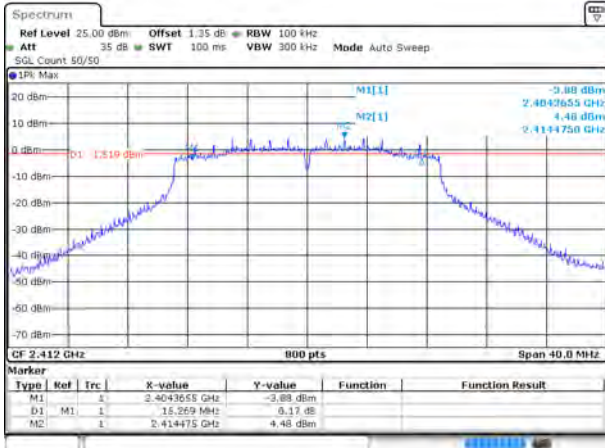
Date: 22 APR 2019 17:12:27

802.11g HIGH CHANNEL



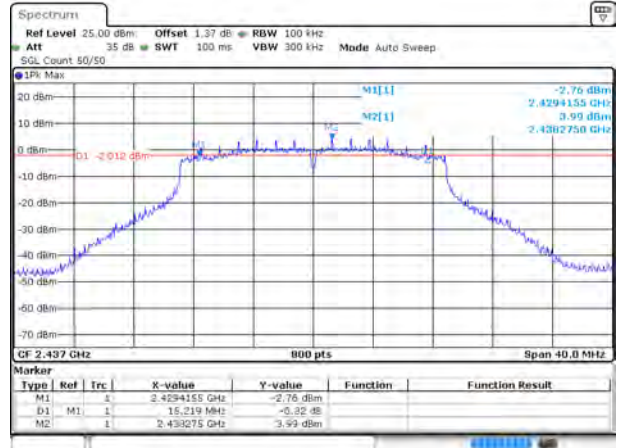
Date: 22 APR 2019 17:17:28

802.11n-20 MHz LOW CHANNEL



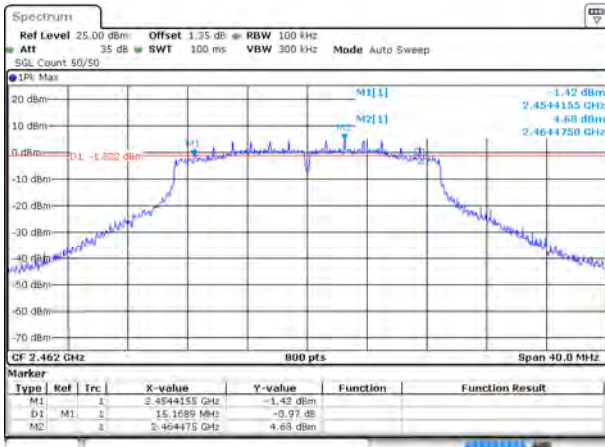
Date: 22 APR 2019 17:20:24

802.11 n-20 MHz MIDDLE CHANNEL



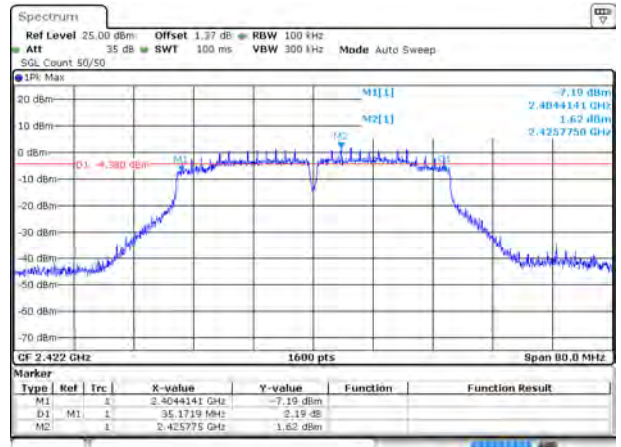
Date: 22 APR 2019 17:23:21

802.11n-20 MHz HIGH CHANNEL



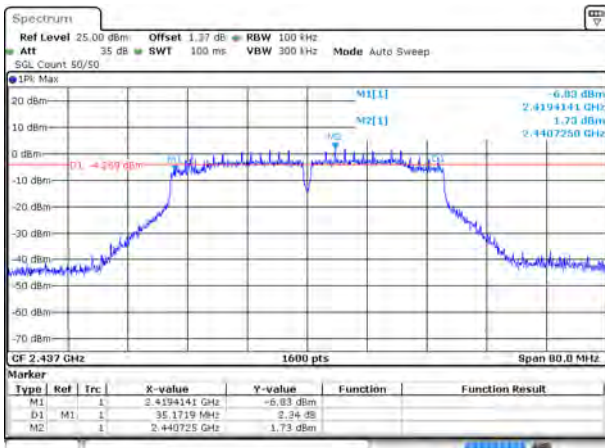
Date: 22 APR 2019 17:27:11

802.11n-40 MHz LOW CHANNEL



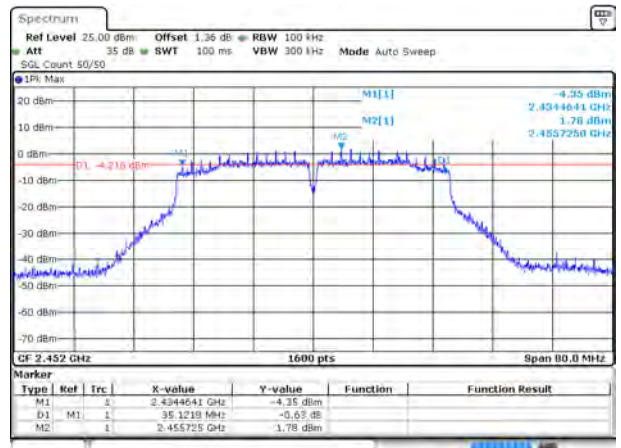
Date: 23 APR 2019 14:09:05

802.11n-40 MHz MIDDLE CHANNEL



Date: 23 APR 2019 14:12:57

802.11n-40 MHz HIGH CHANNEL

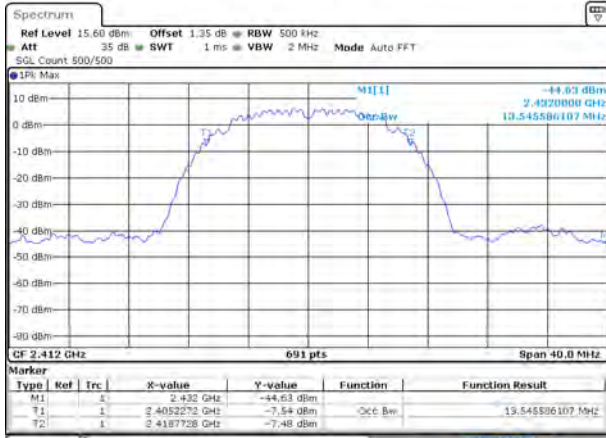


Date: 23 APR 2019 14:16:49

## Test plots (99% Bandwidth)

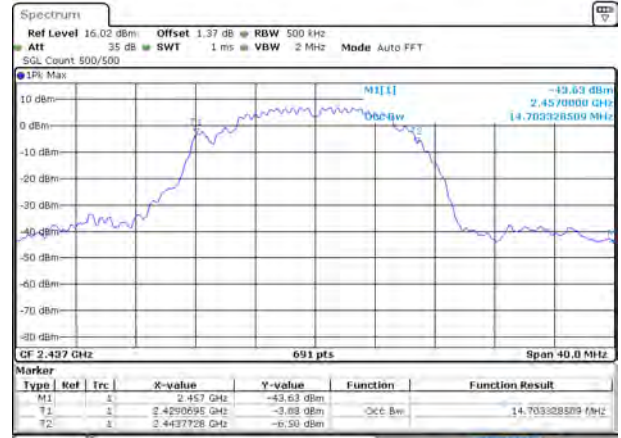
## SISO ANT1

## 802.11b LOW CHANNEL



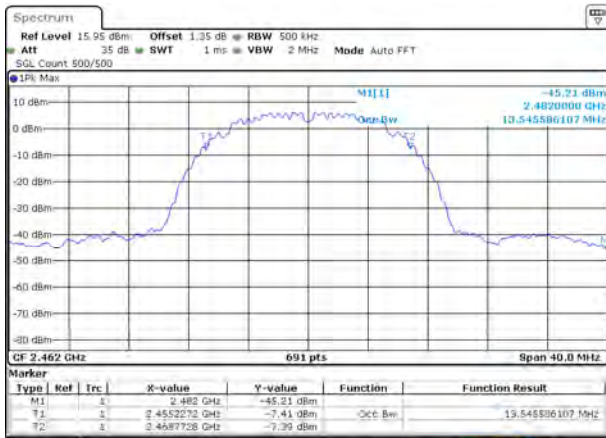
Date: 22 APR 2019 16:56:01

## 802.11b MIDDLE CHANNEL



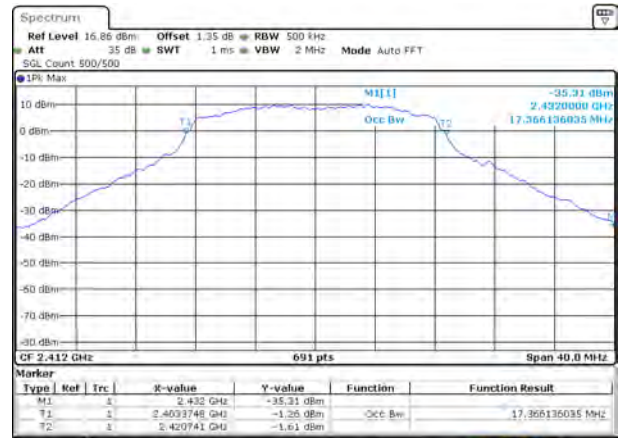
Date: 22 APR 2019 17:02:28

## 802.11b HIGH CHANNEL



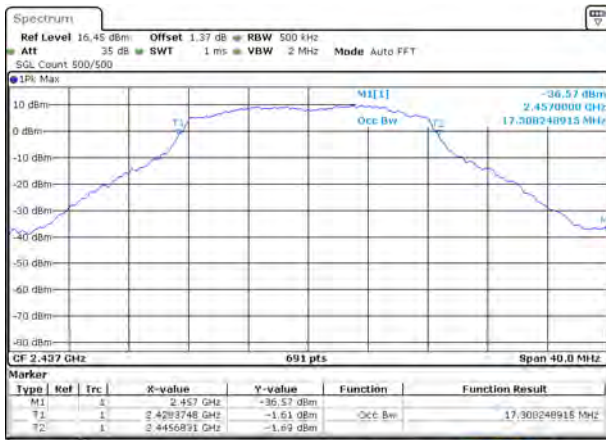
Date: 22 APR 2019 17:04:53

## 802.11g LOW CHANNEL



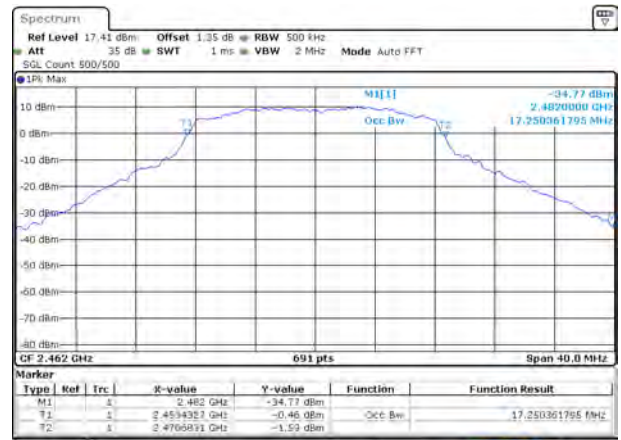
Date: 22 APR 2019 17:07:52

## 802.11g MIDDLE CHANNEL



Date: 22 APR 2019 17:12:36

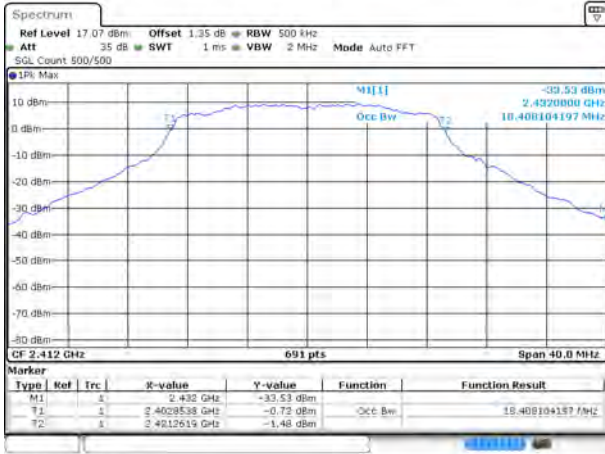
## 802.11g HIGH CHANNEL



Date: 22 APR 2019 17:17:37

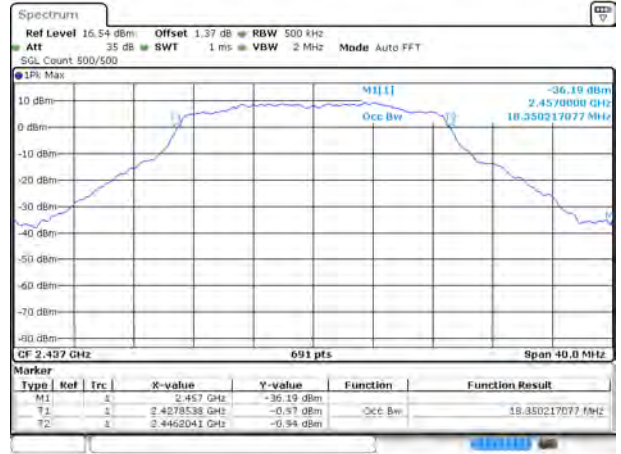


## 802.11n-20 MHz LOW CHANNEL



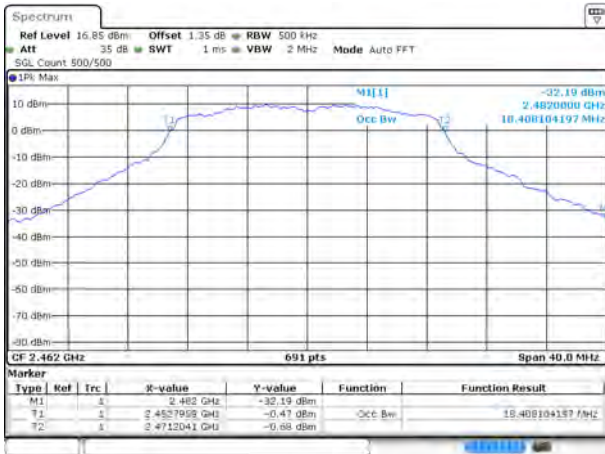
Date: 20 APR 2019 17:20:32

## 802.11 n-20 MHz MIDDLE CHANNEL



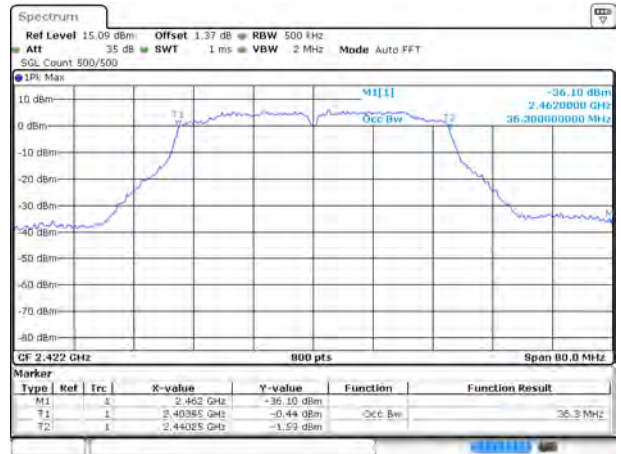
Date: 20 APR 2019 17:23:29

## 802.11n-20 MHz HIGH CHANNEL



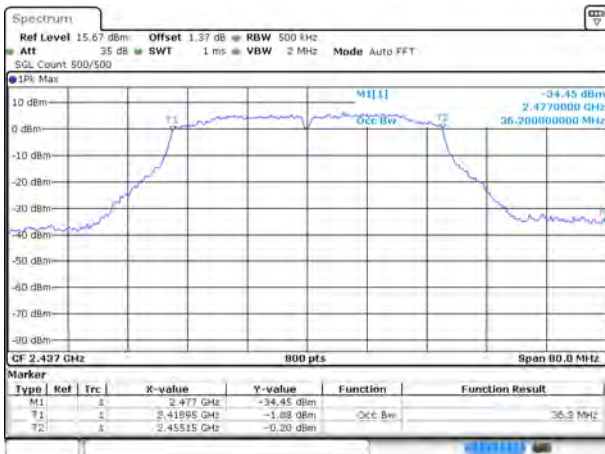
Date: 20 APR 2019 17:27:20

## 802.11n-40 MHz LOW CHANNEL



Date: 20 APR 2019 14:09:16

## 802.11n-40 MHz MIDDLE CHANNEL



Date: 20 APR 2019 14:13:08

## 802.11n-40 MHz HIGH CHANNEL

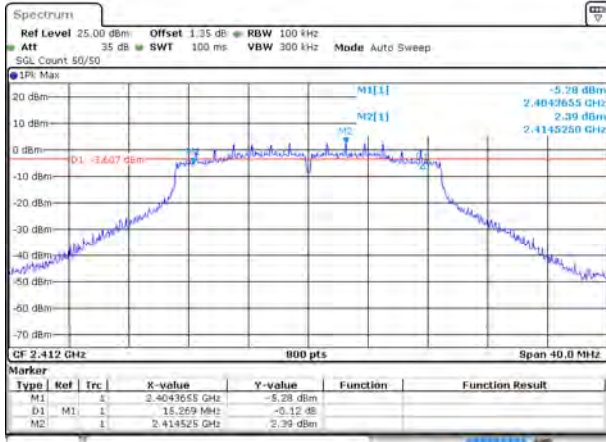


Date: 20 APR 2019 14:16:59

Test plots (6dB Bandwidth)

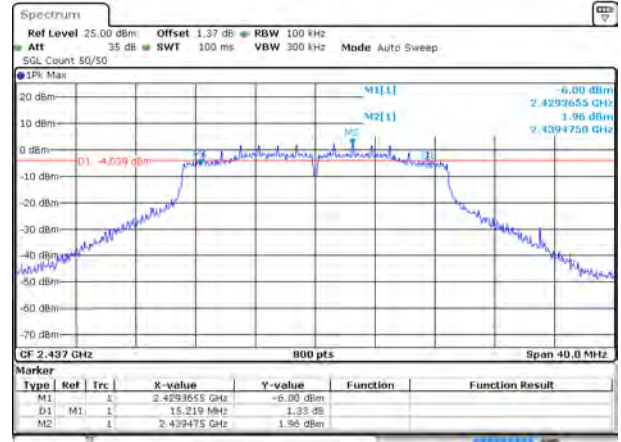
MIMO ANTO

802.11n-20 MHz LOW CHANNEL



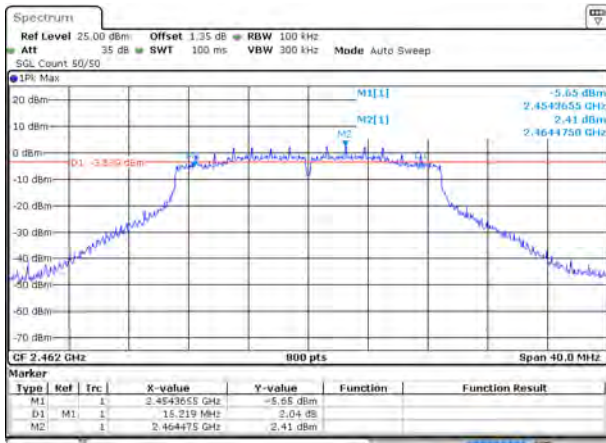
Date: 23 APR 2019 15:58:03

802.11 n-20 MHz MIDDLE CHANNEL



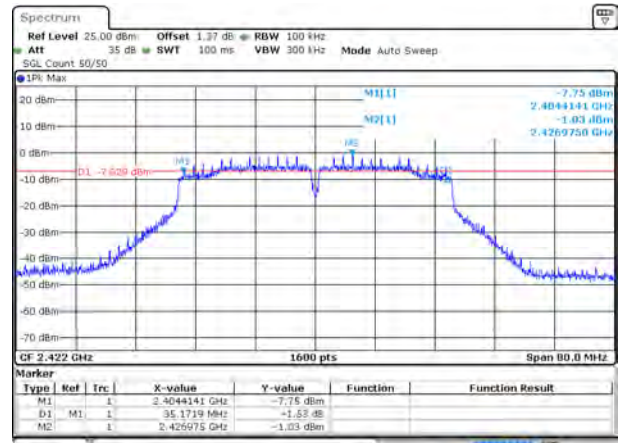
Date: 23 APR 2019 16:01:33

802.11n-20 MHz HIGH CHANNEL



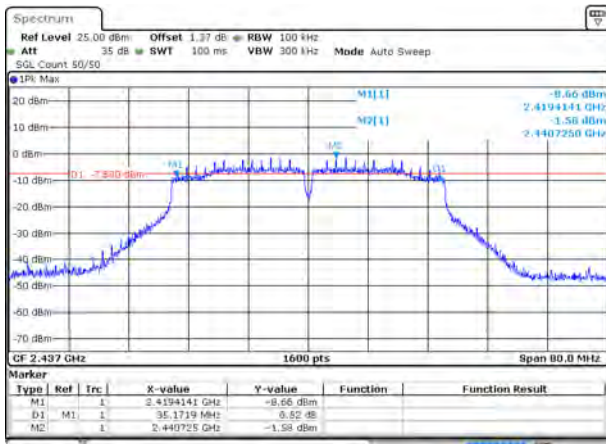
Date: 23 APR 2019 16:05:51

802.11n-40 MHz LOW CHANNEL



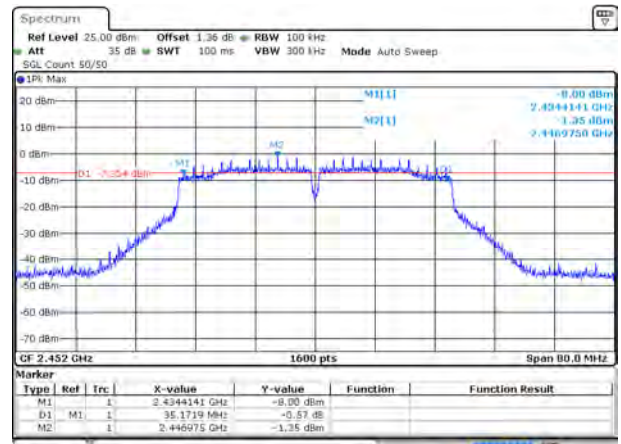
Date: 23 APR 2019 16:11:41

802.11n-40 MHz MIDDLE CHANNEL



Date: 23 APR 2019 16:15:37

802.11n-40 MHz HIGH CHANNEL

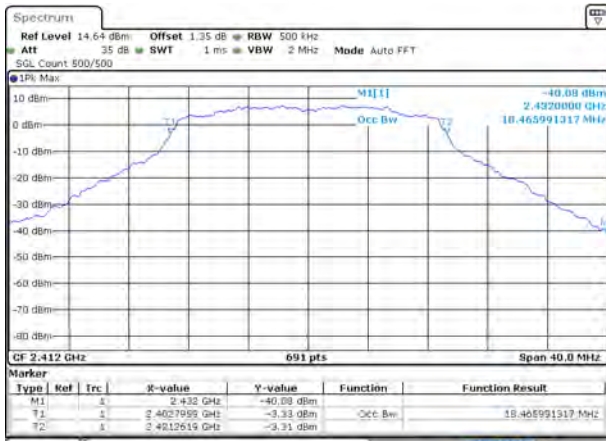


Date: 23 APR 2019 16:20:24

## Test plots (99% Bandwidth)

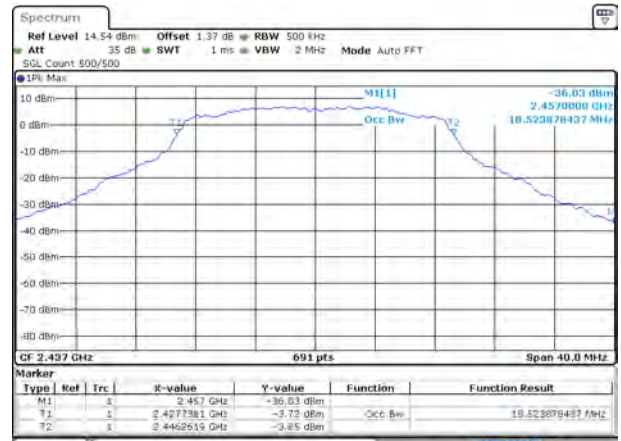
## MIMO ANTO

## 802.11n-20 MHz LOW CHANNEL



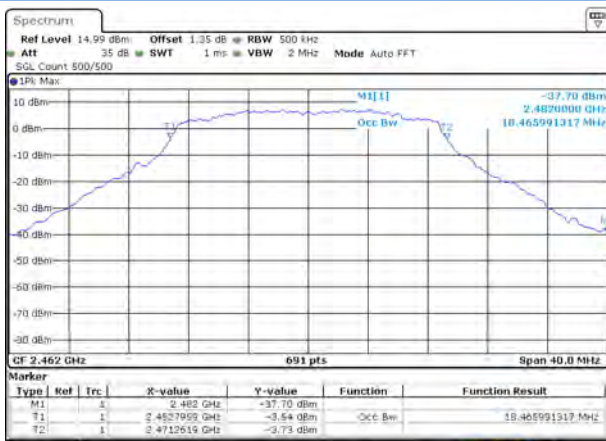
Date: 23 APR 2019 15:55:12

## 802.11 n-20 MHz MIDDLE CHANNEL



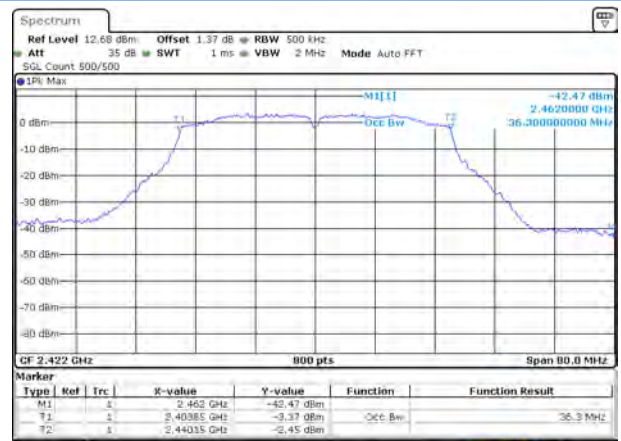
Date: 23 APR 2019 15:04:42

## 802.11n-20 MHz HIGH CHANNEL



Date: 23 APR 2019 16:09:59

## 802.11n-40 MHz LOW CHANNEL



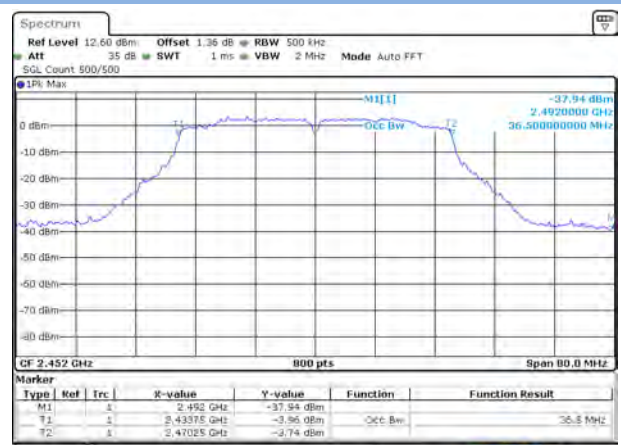
Date: 23 APR 2019 16:11:52

## 802.11n-40 MHz MIDDLE CHANNEL



Date: 23 APR 2019 16:15:48

## 802.11n-40 MHz HIGH CHANNEL

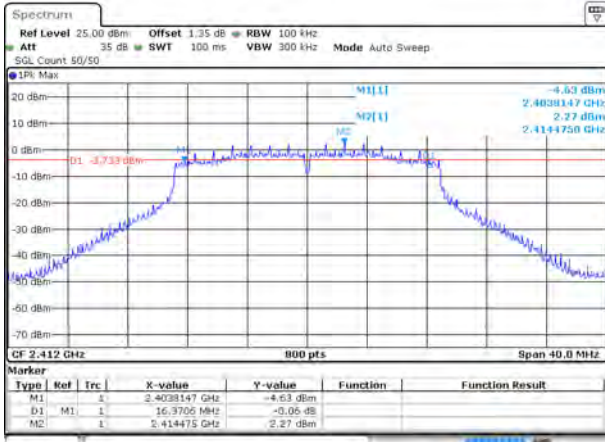


Date: 23 APR 2019 16:20:35

Test plots (6dB Bandwidth)

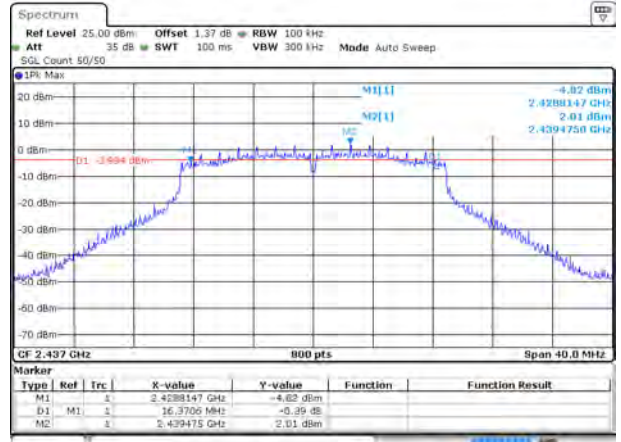
MIMO ANT1

802.11n-20 MHz LOW CHANNEL



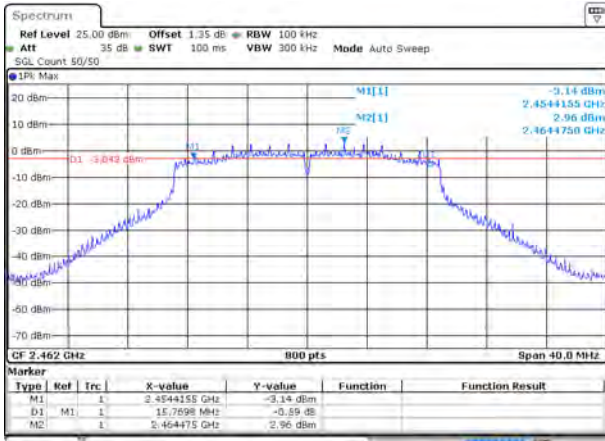
Date: 23 APR 2019 17:33:38

802.11 n-20 MHz MIDDLE CHANNEL



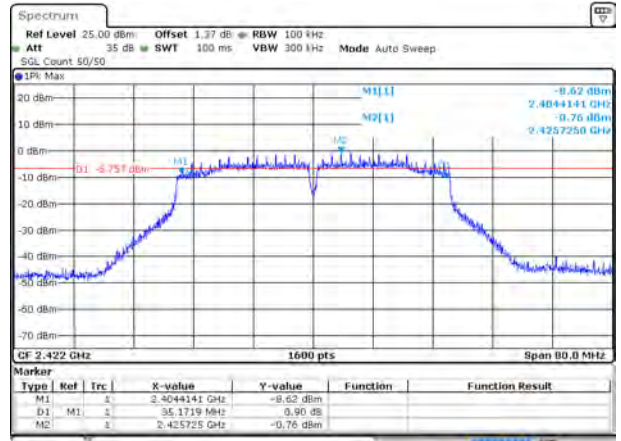
Date: 23 APR 2019 17:37:26

802.11n-20 MHz HIGH CHANNEL



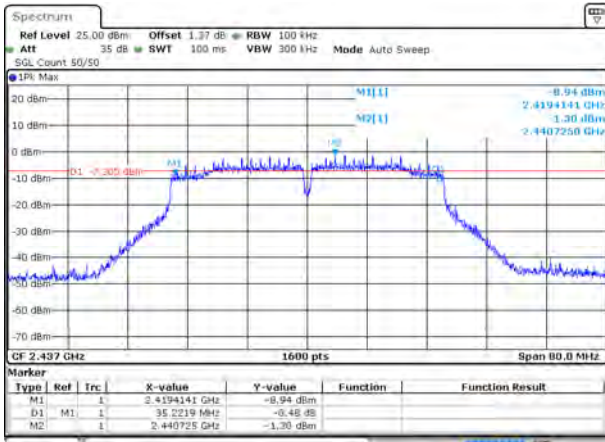
Date: 23 APR 2019 17:41:11

802.11n-40 MHz LOW CHANNEL



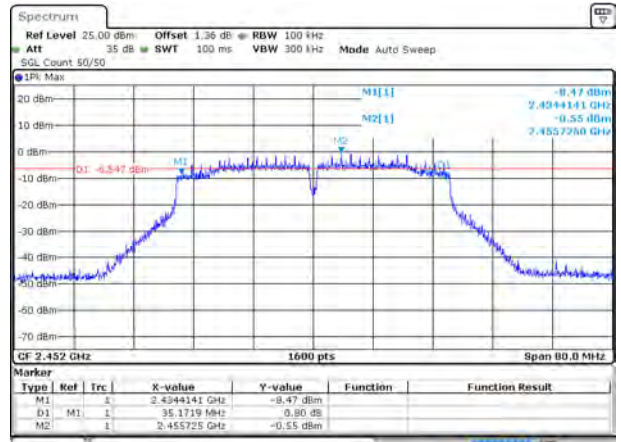
Date: 23 APR 2019 17:44:25

802.11n-40 MHz MIDDLE CHANNEL



Date: 23 APR 2019 17:46:21

802.11n-40 MHz HIGH CHANNEL

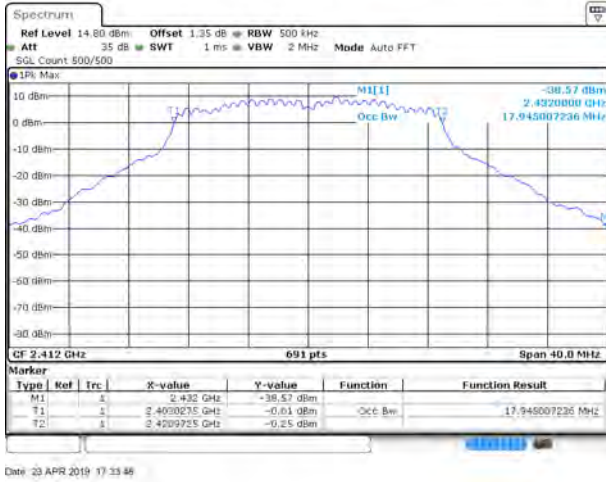


Date: 23 APR 2019 17:53:21

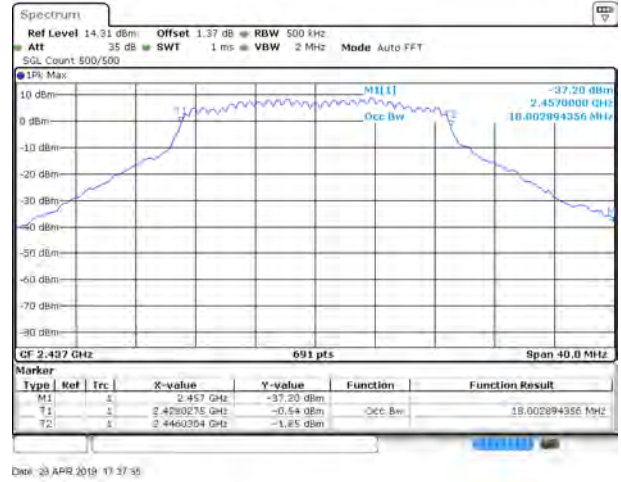
Test plots (99% Bandwidth)

MIMO ANT1

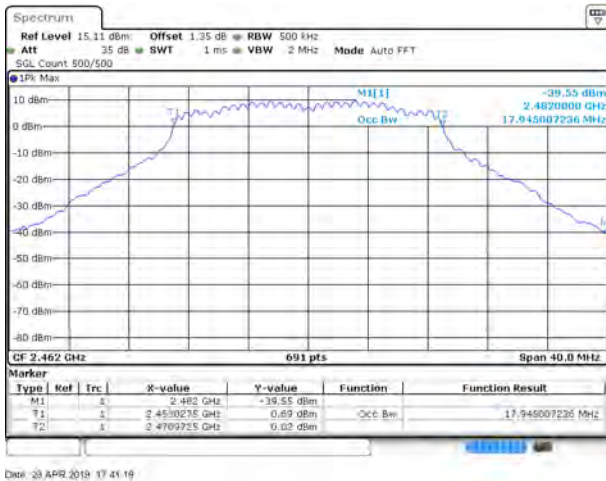
802.11n-20 MHz LOW CHANNEL



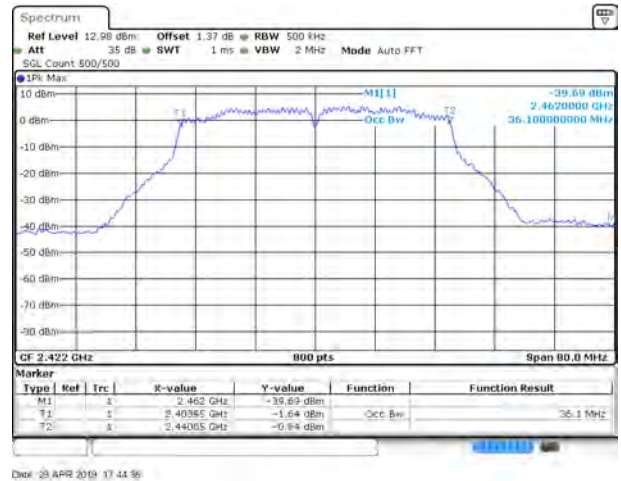
802.11 n-20 MHz MIDDLE CHANNEL



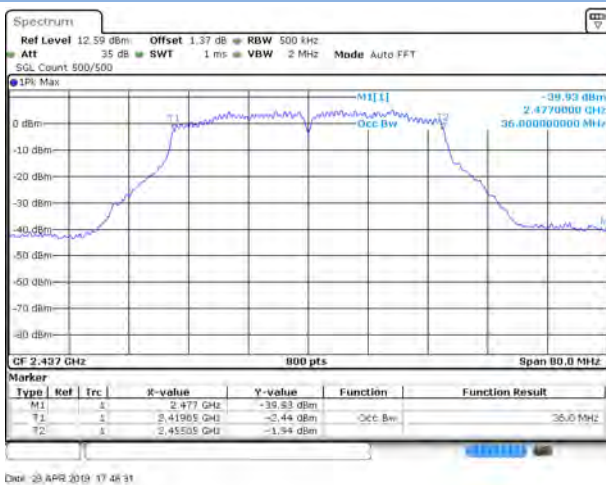
802.11n-20 MHz HIGH CHANNEL



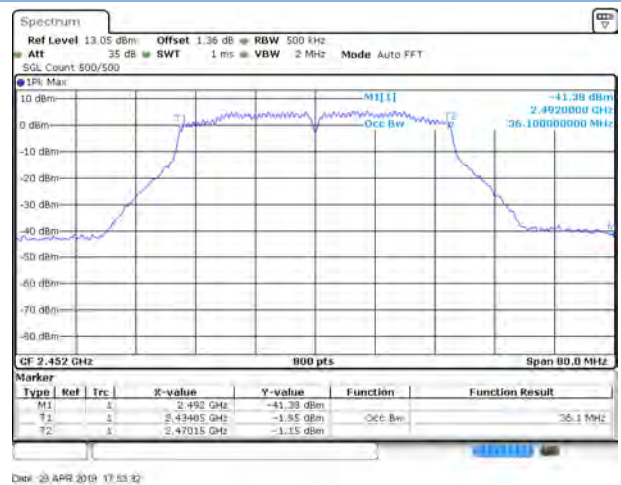
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



### A.3 Conducted Spurious Emissions

Test Data

SISO ANT0

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.66	3.12	-16.88	Pass
6	-44.34	6.07	-13.93	Pass
11	-44.61	3.06	-16.94	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.8	2.15	-17.85	Pass
6	-44.34	5.10	-14.90	Pass
11	-44.5	1.75	-18.25	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.73	2.08	-17.92	Pass
6	-43.97	5.12	-14.88	Pass
11	-44.12	2.11	-17.89	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-44.66	-3.81	-23.81	Pass
6	-45.38	-0.09	-20.09	Pass
9	-44.99	-1.95	-21.95	Pass

## SISO ANT1

## 802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.57	3.19	-16.81	Pass
6	-44.25	5.72	-14.28	Pass
11	-44.4	3.28	-16.72	Pass

## 802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-45.42	2.34	-17.66	Pass
6	-44.65	4.44	-15.56	Pass
11	-44.4	2.42	-17.58	Pass

## 802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.16	2.32	-17.68	Pass
6	-44.60	4.47	-15.53	Pass
11	-45.28	2.47	-17.53	Pass

## 802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-45.31	-3.53	-23.53	Pass
6	-45.48	0.35	-19.65	Pass
9	-43.92	-3.52	-23.52	Pass

**MIMO ANT0**

## 802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-45.31	-0.80	-20.80	Pass
6	-44.76	2.21	-17.79	Pass
11	-44.34	-0.48	-20.48	Pass

## 802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-44.77	-7.16	-27.16	Pass
6	-45.09	-2.96	-22.96	Pass
9	-45.27	-6.87	-26.87	Pass

**MIMO ANT1**

## 802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-45.26	-0.33	-20.33	Pass
6	-44.52	2.11	-17.89	Pass
11	-45.16	-0.23	-20.23	Pass

## 802.11n-40MHz Mode:

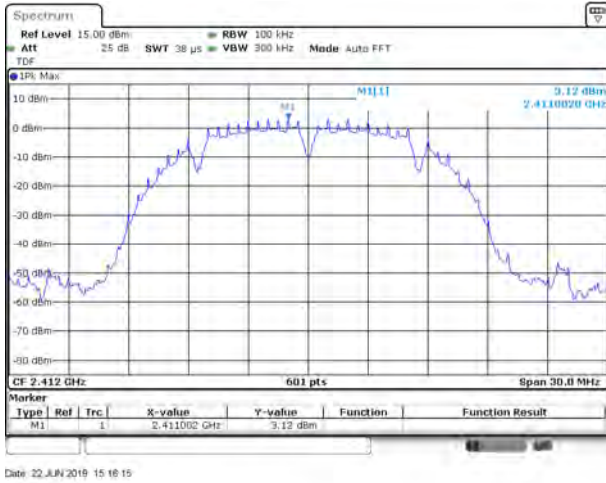
Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-45.20	-6.88	-26.88	Pass
6	-45.02	-2.61	-22.61	Pass
9	-44.64	-6.55	-26.55	Pass



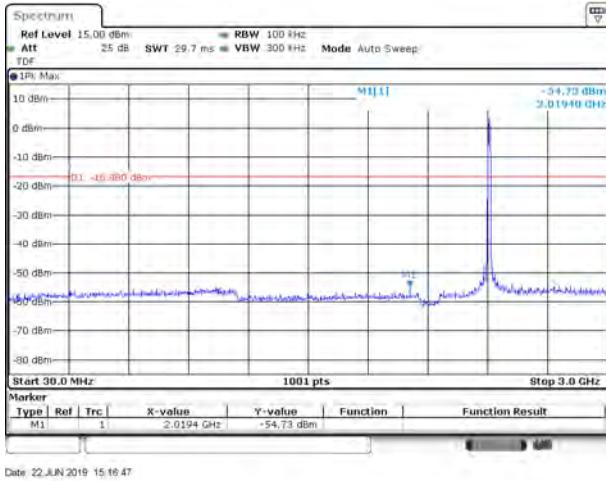
Test Plots

SISO ANT0

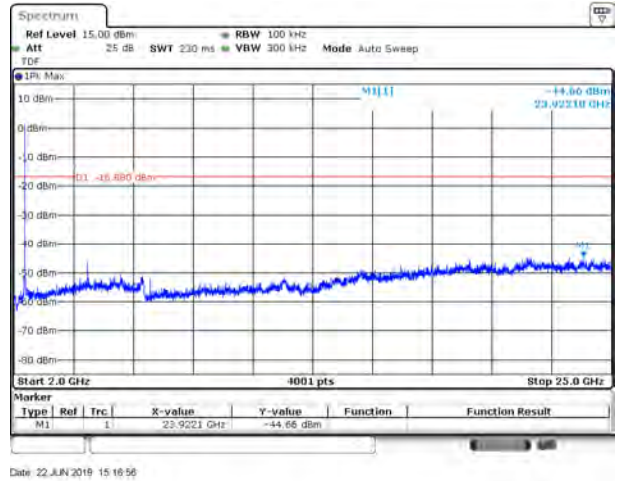
802.11b CHANNEL 1 CARRIER LEVEL



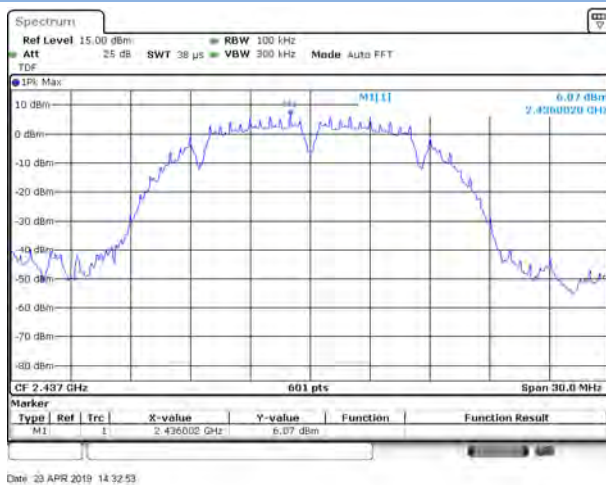
802.11b CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



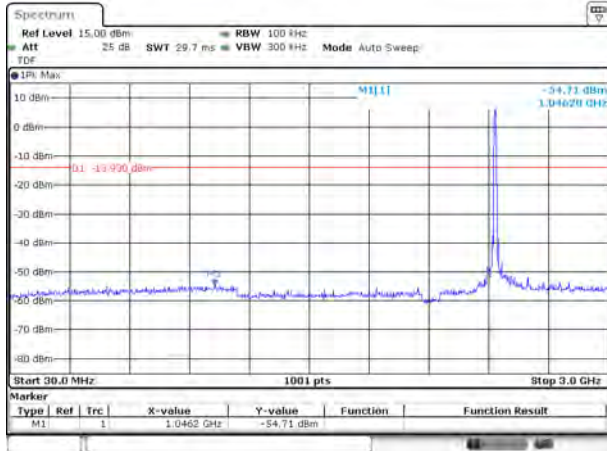
802.11b CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



802.11b CHANNEL 6 CARRIER LEVEL

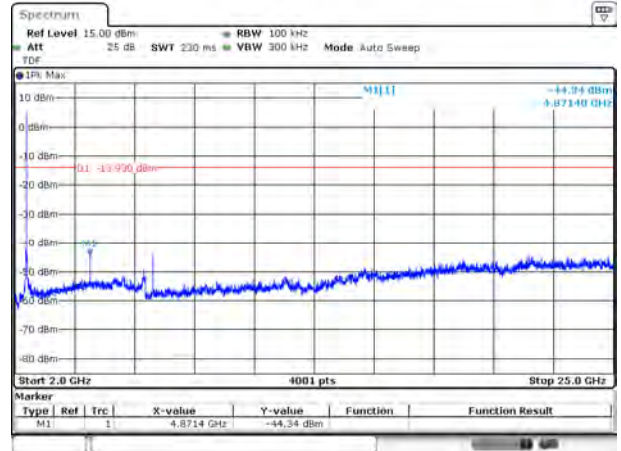


802.11b CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



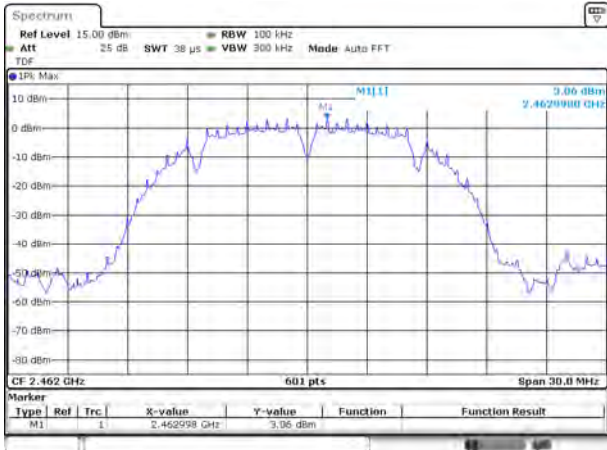
Date: 23 APR 2019 14:34:03

802.11b CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



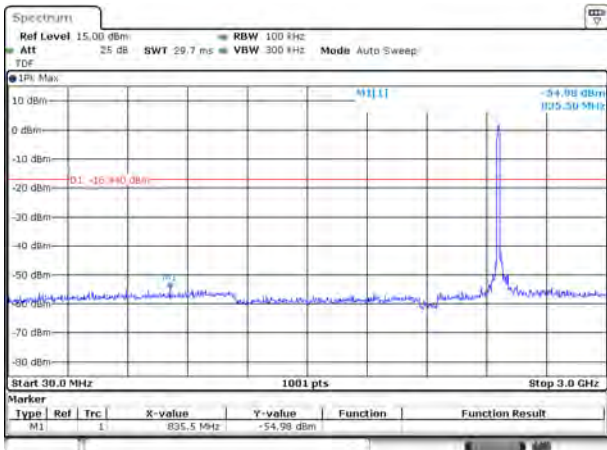
Date: 23 APR 2019 14:34:16

802.11b CHANNEL 11 CARRIER LEVEL



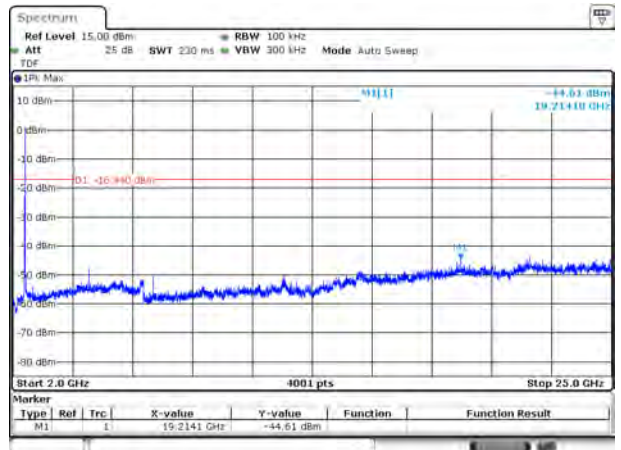
Date: 22 JUN 2019 15:19:15

802.11b CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



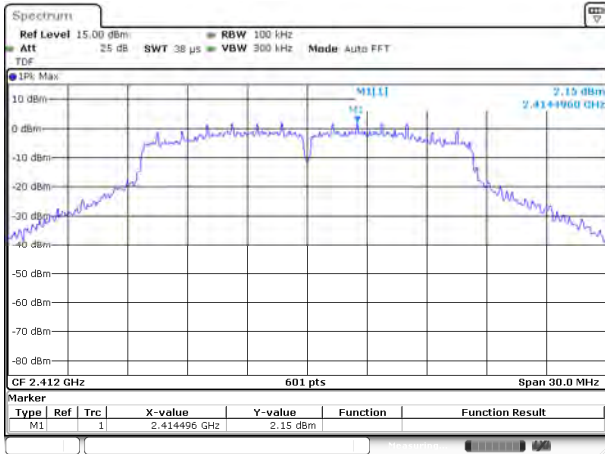
Date: 22 JUN 2019 15:19:35

802.11b CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz



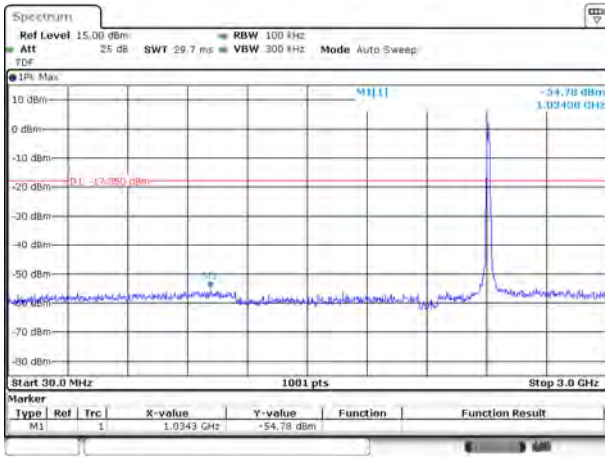
Date: 22 JUN 2019 15:19:43

802.11g CHANNEL 1 CARRIER LEVEL



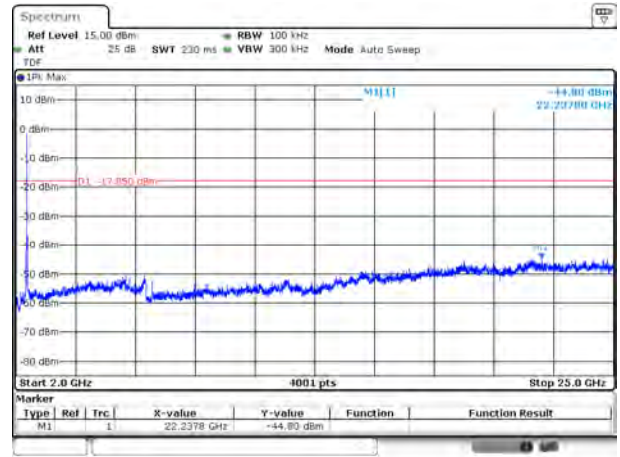
Date: 22 JUN 2019 15:22:58

802.11g CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



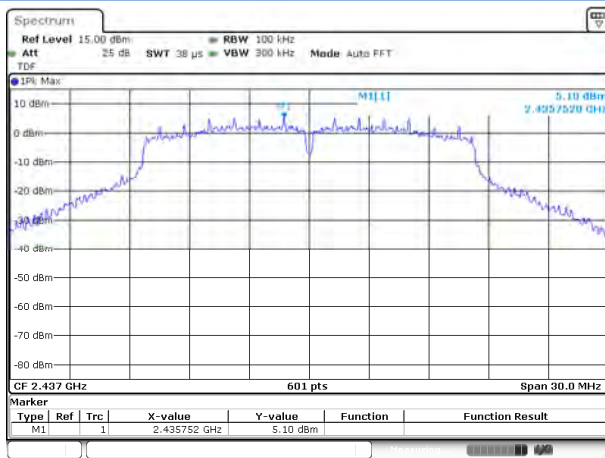
Date: 22 JUN 2019 15:23:24

802.11g CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



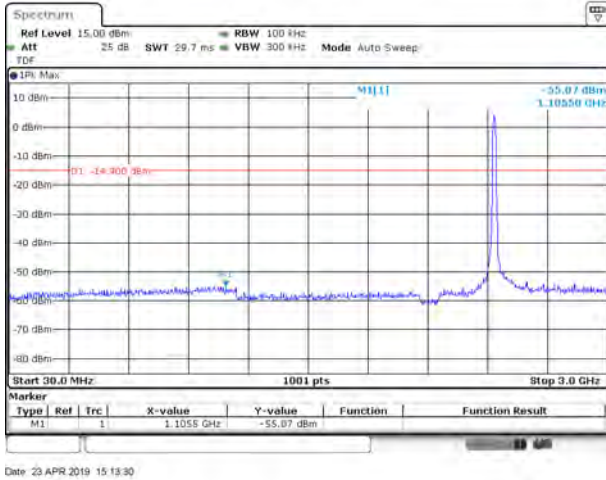
Date: 22 JUN 2019 15:23:32

802.11g CHANNEL 6 CARRIER LEVEL

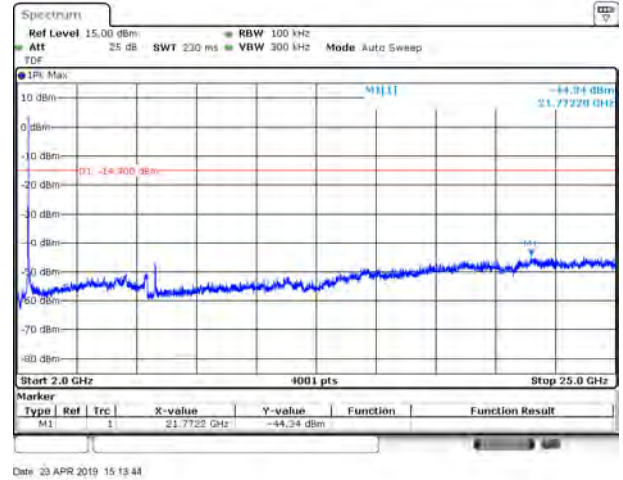


Date: 23 APR 2019 15:12:57

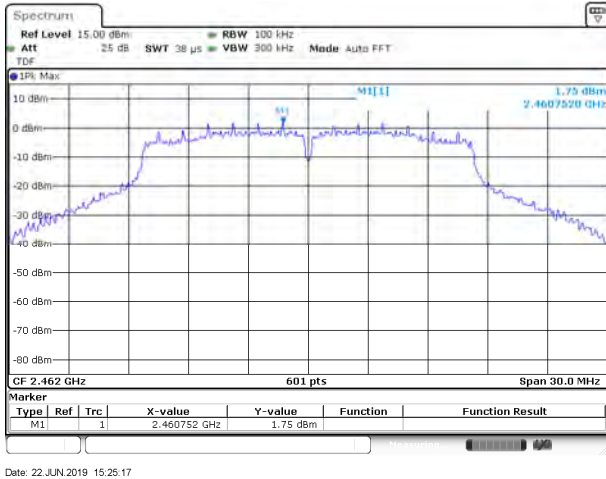
802.11g CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



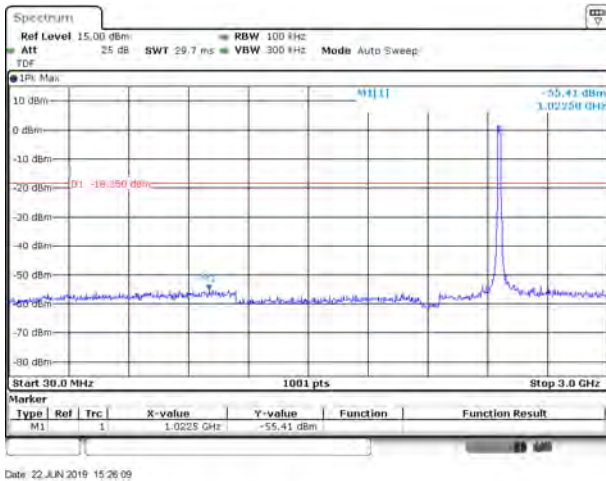
802.11g CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



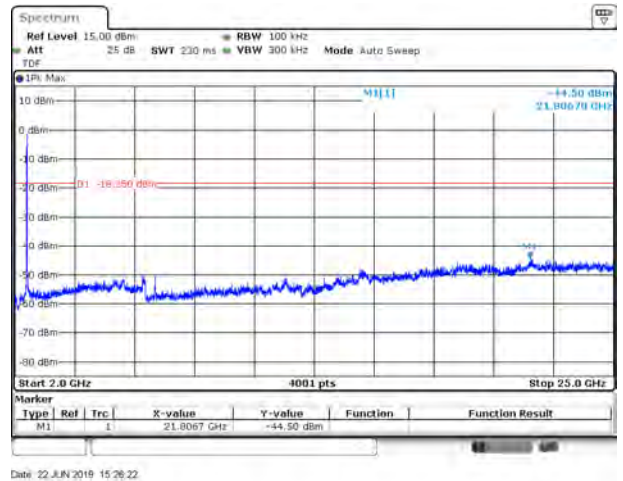
802.11g CHANNEL 11 CARRIER LEVEL



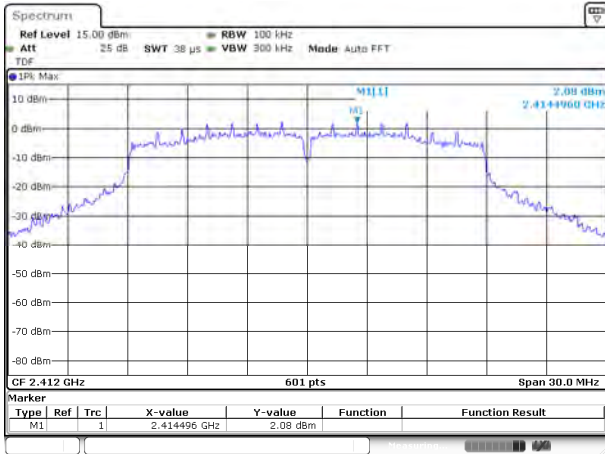
802.11g CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



802.11g CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz

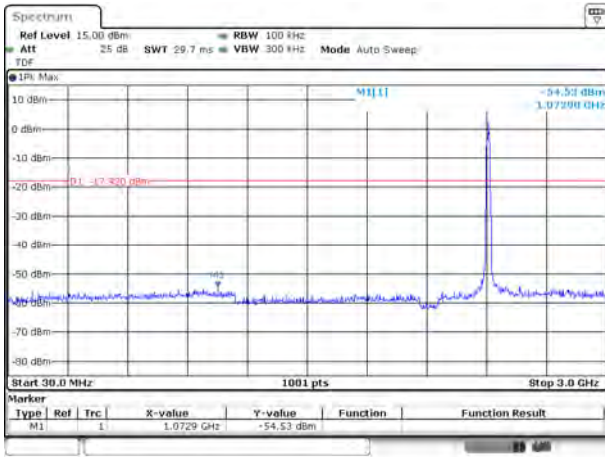


802.11n-20 CHANNEL 1 CARRIER LEVEL

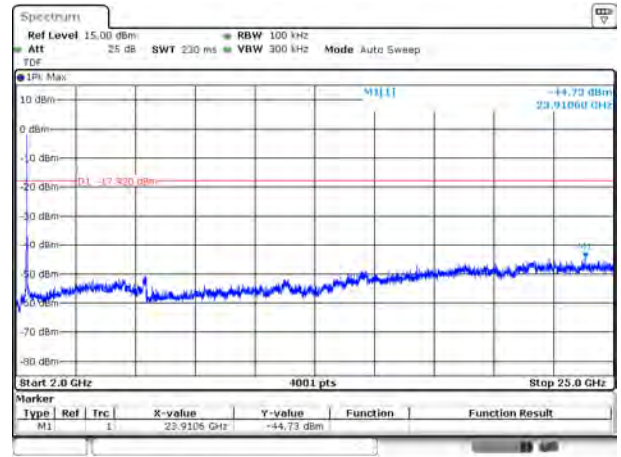


Date: 22 JUN 2019 15:30:46

802.11n-20 CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz      802.11n-20 CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz

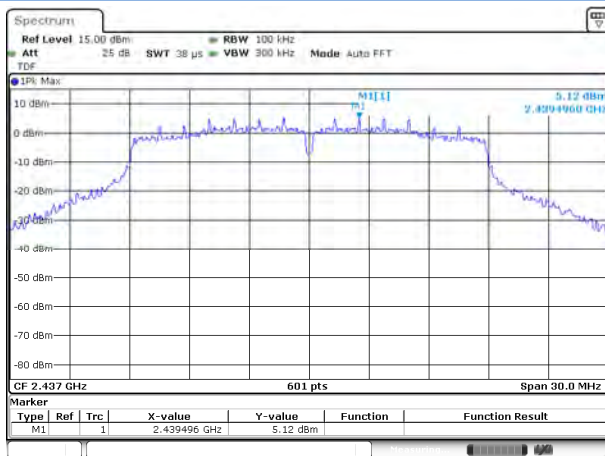


Date: 22 JUN 2019 15:31:20



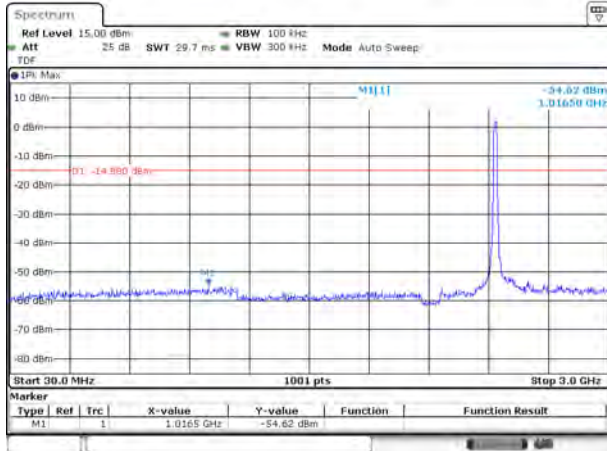
Date: 22 JUN 2019 15:31:27

802.11n-20 CHANNEL 6 CARRIER LEVEL



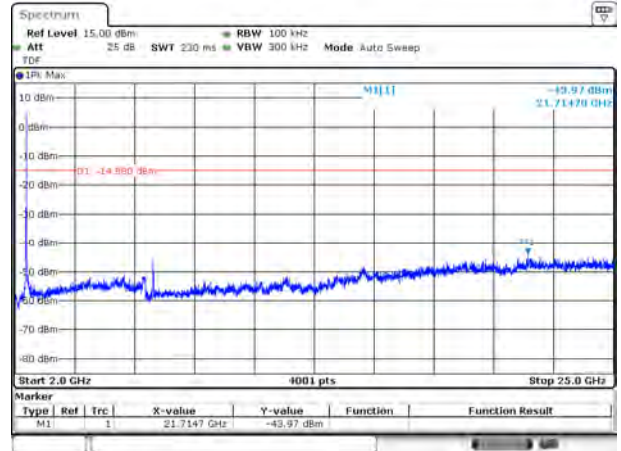
Date: 23 APR 2019 15:34:49

802.11n-20 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



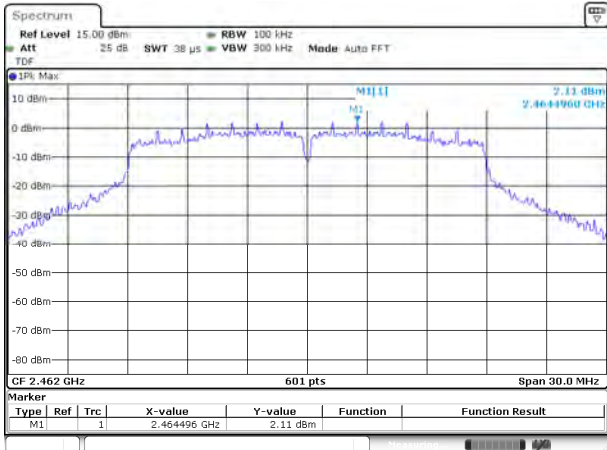
Date: 23 APR 2019 15:35:28

802.11n-20 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



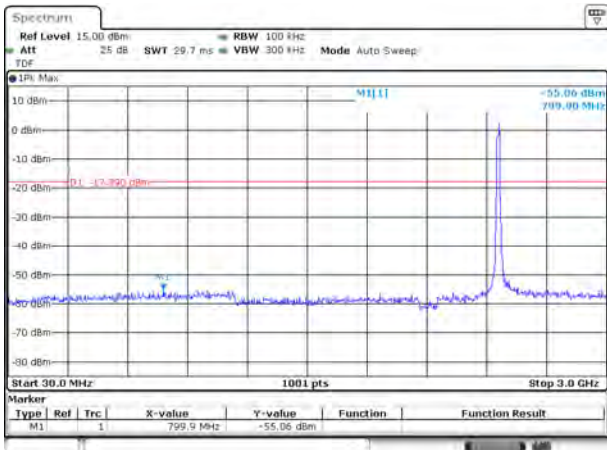
Date: 23 APR 2019 15:35:36

802.11n-20 CHANNEL 11 CARRIER LEVEL



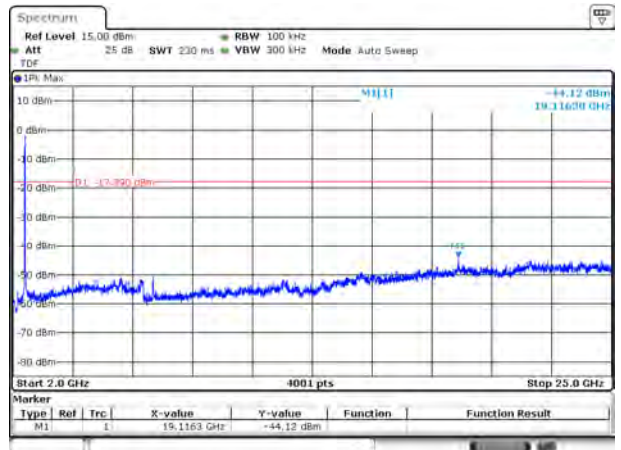
Date: 22 JUN 2019 15:33:08

802.11n-20 CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



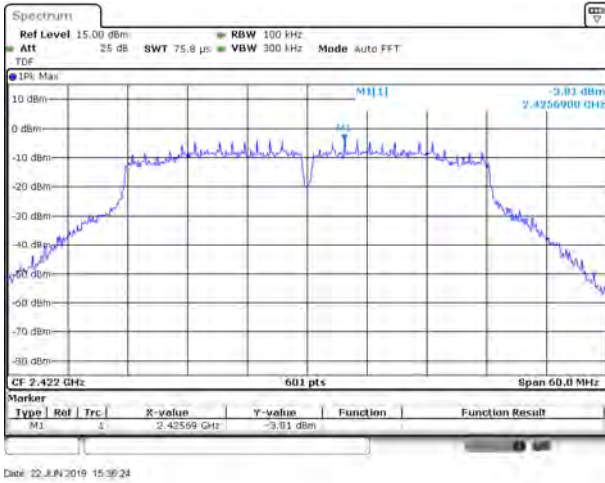
Date: 22 JUN 2019 15:33:45

802.11n-20 CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz

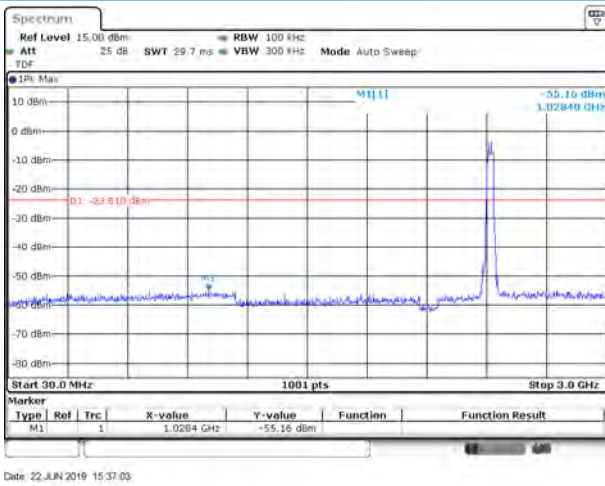


Date: 22 JUN 2019 15:33:54

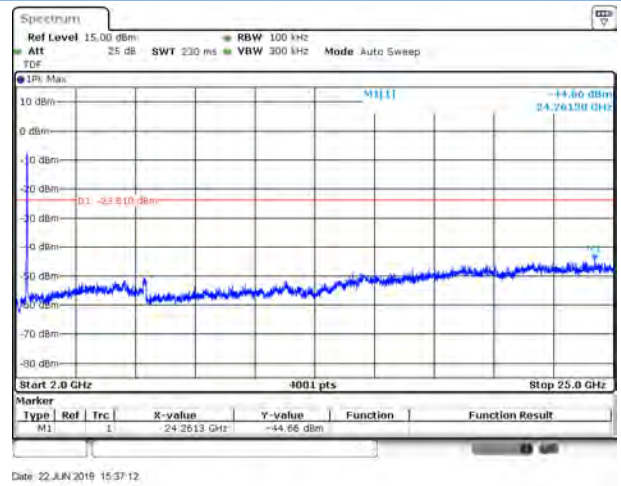
802.11n-40 CHANNEL 3 CARRIER LEVEL



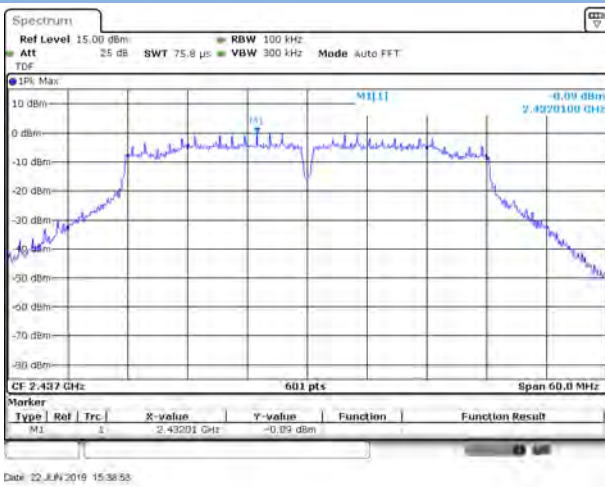
802.11n-40 CHANNEL 3, SPURIOUS 30 MHz ~ 3 GHz

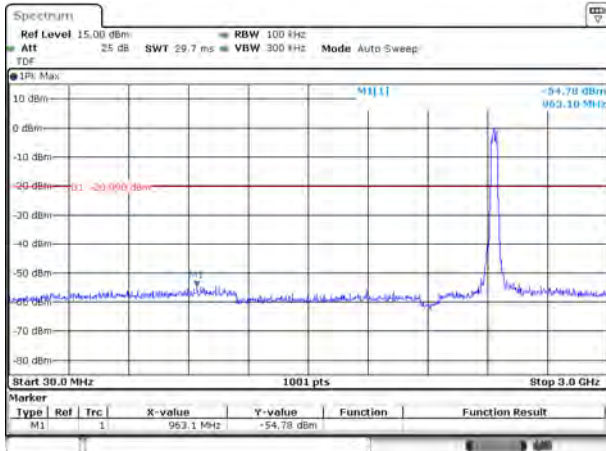


802.11n-40 CHANNEL 3, SPURIOUS 2 GHz ~ 25 GHz

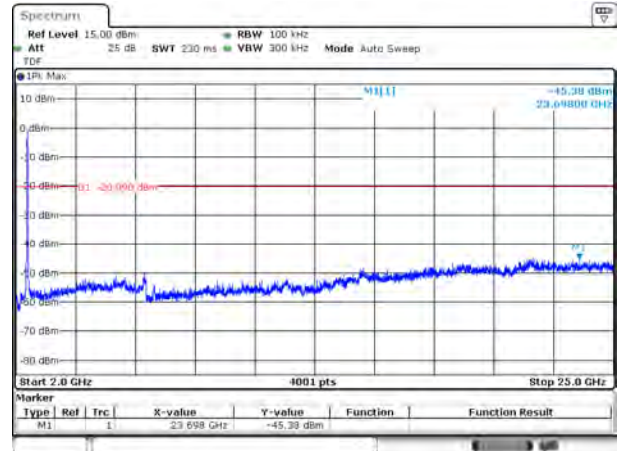


802.11n-40 CHANNEL 6 CARRIER LEVEL



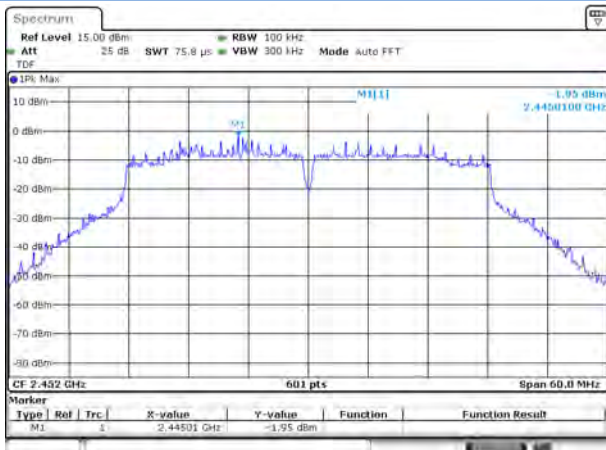
802.11n-40 CHANNEL 6, SPURIOUS  
 30 MHz ~ 3 GHz


Date: 22 JUN 2019 15:39:12

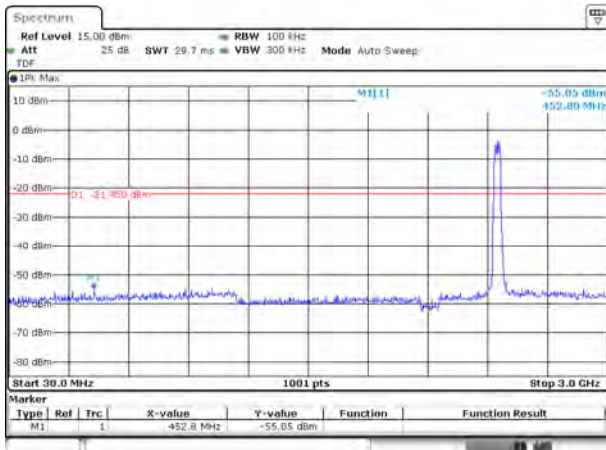
 802.11n-40 CHANNEL 6, SPURIOUS  
 2 GHz ~ 25 GHz


Date: 22 JUN 2019 15:39:20

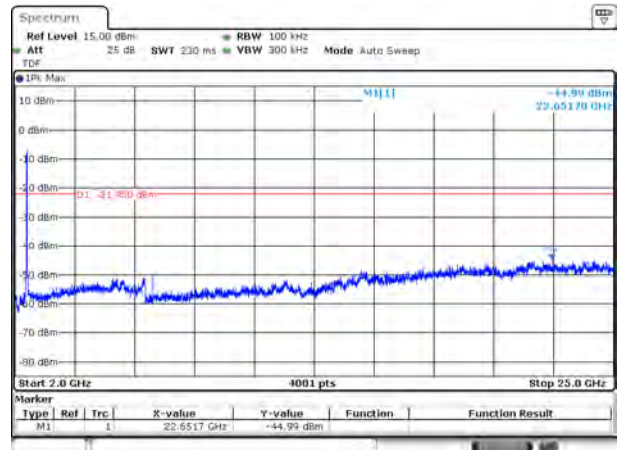
## 802.11n-40 CHANNEL 9 CARRIER LEVEL



Date: 22 JUN 2019 15:41:07

 802.11n-40 CHANNEL 9, SPURIOUS  
 30 MHz ~ 3 GHz


Date: 22 JUN 2019 15:41:35

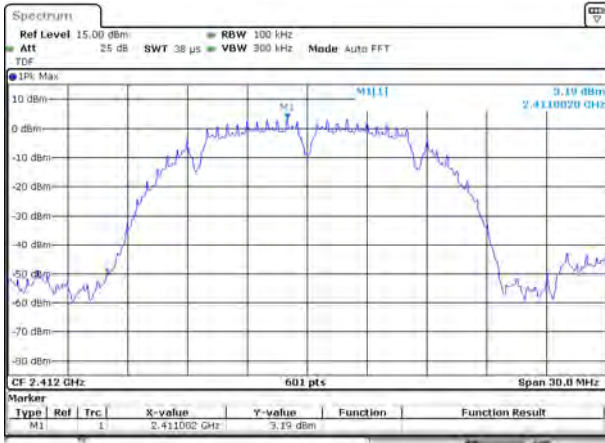
 802.11n-40 CHANNEL 9, SPURIOUS  
 2 GHz ~ 25 GHz


Date: 22 JUN 2019 15:41:43



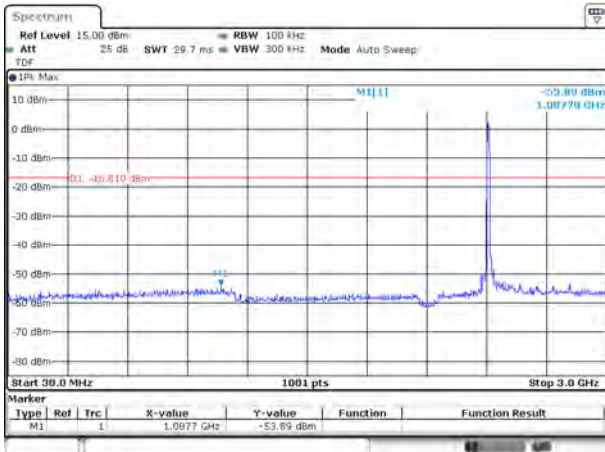
SISO ANT1

802.11b CHANNEL 1 CARRIER LEVEL



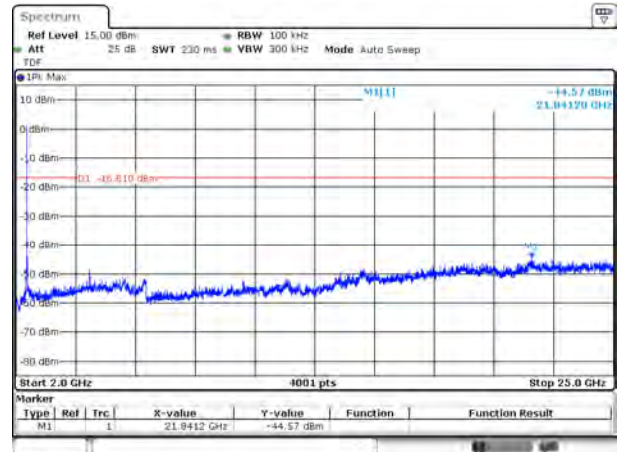
Date: 22 JUN 2019 15:47:02

802.11b CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



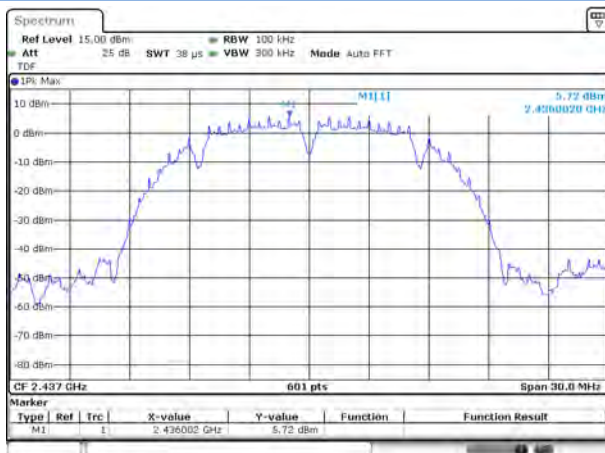
Date: 22 JUN 2019 15:47:29

802.11b CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



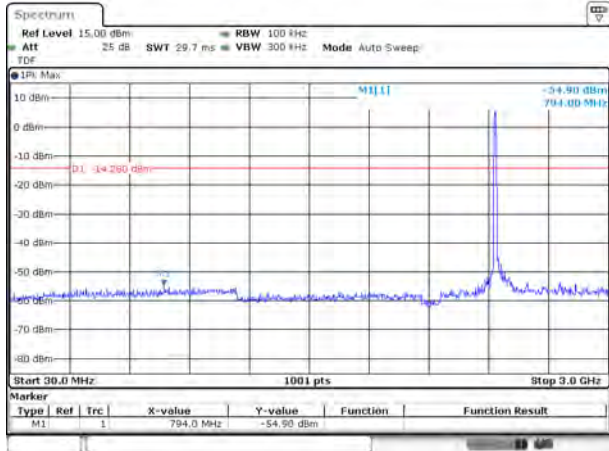
Date: 22 JUN 2019 15:47:37

802.11b CHANNEL 6 CARRIER LEVEL



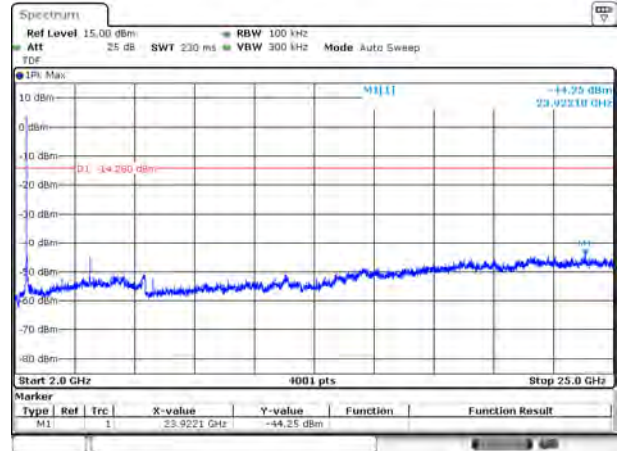
Date: 22 APR 2019 17:02:43

802.11b CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



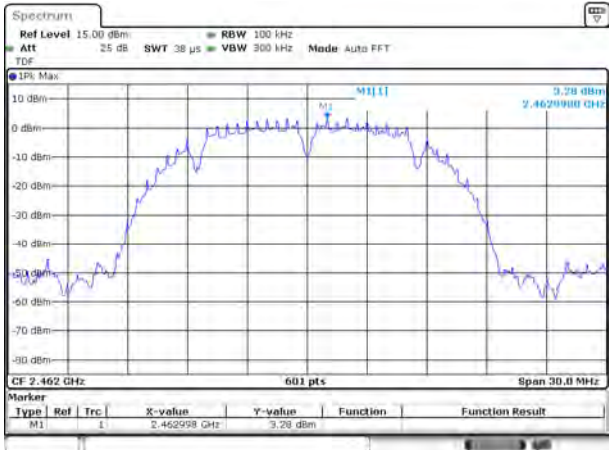
Date 22 APR 2019 17:03:10

802.11b CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



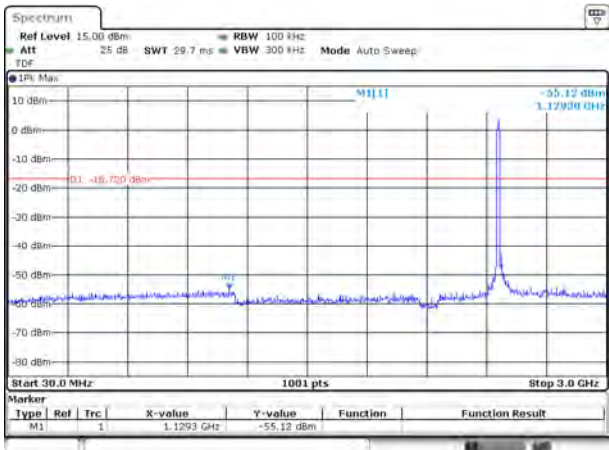
Date 22 APR 2019 17:03:25

802.11b CHANNEL 11 CARRIER LEVEL



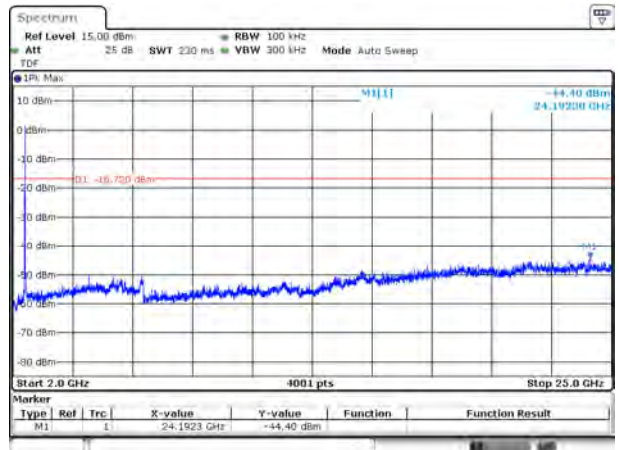
Date 22 JUN 2019 15:52:41

802.11b CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



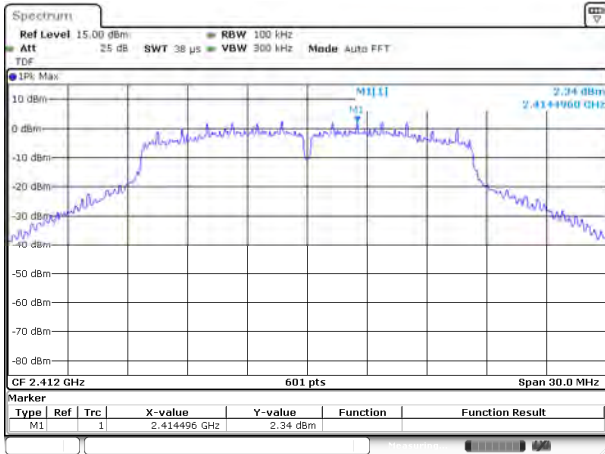
Date 22 JUN 2019 15:53:01

802.11b CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz



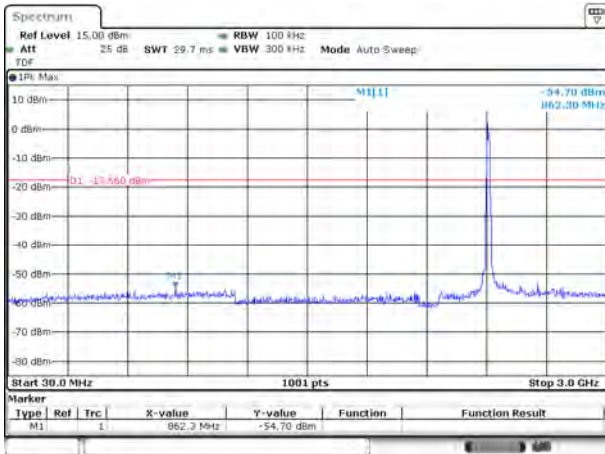
Date 22 JUN 2019 15:53:09

802.11g CHANNEL 1 CARRIER LEVEL



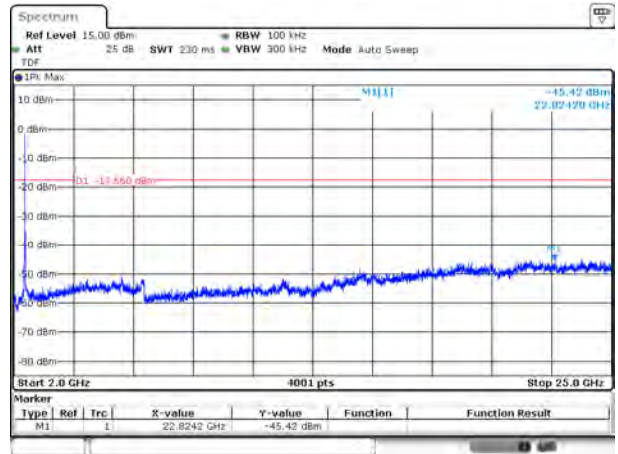
Date: 22 JUN 2019 15:55:15

802.11g CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



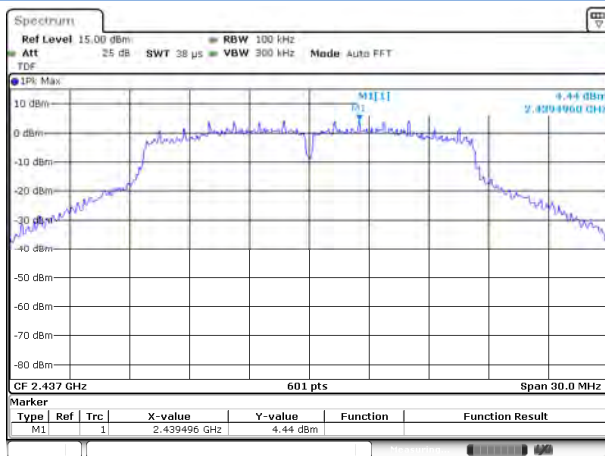
Date: 22 JUN 2019 15:55:34

802.11g CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



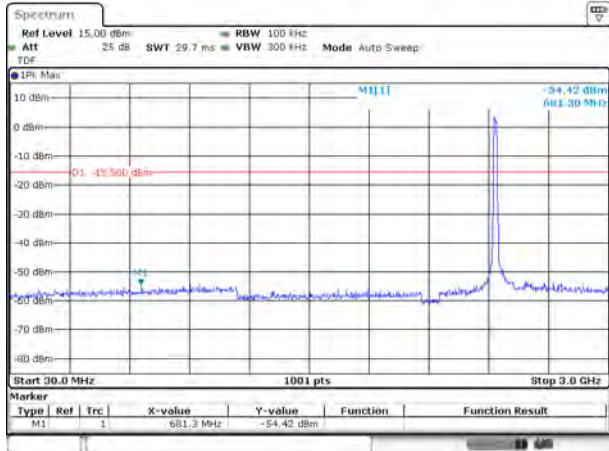
Date: 22 JUN 2019 15:55:41

802.11g CHANNEL 6 CARRIER LEVEL



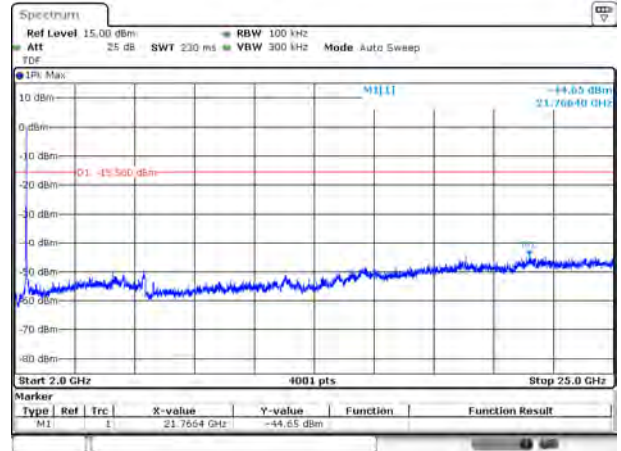
Date: 22 APR 2019 17:12:53

802.11g CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



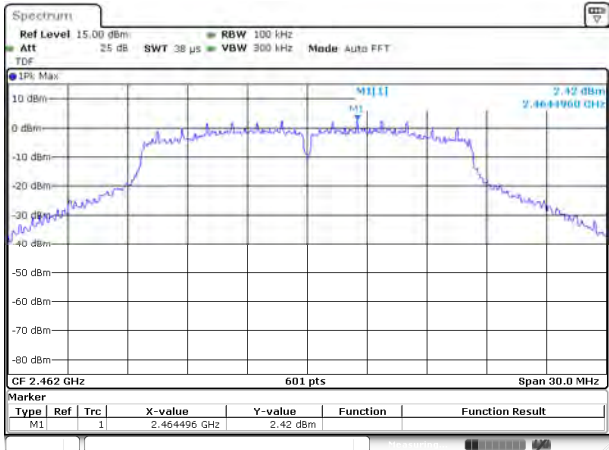
Date: 22 APR 2019 17:13:37

802.11g CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



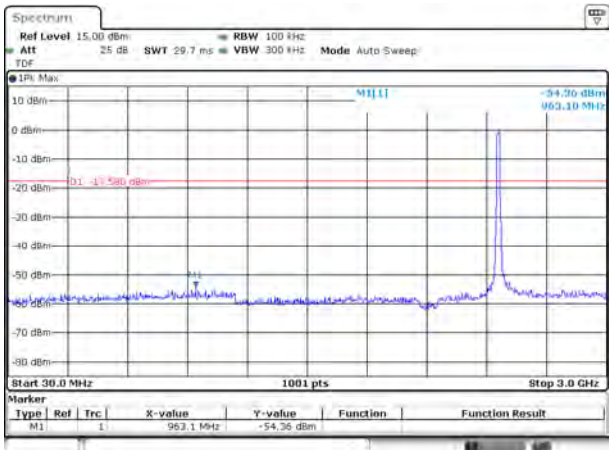
Date: 22 APR 2019 17:13:48

802.11g CHANNEL 11 CARRIER LEVEL



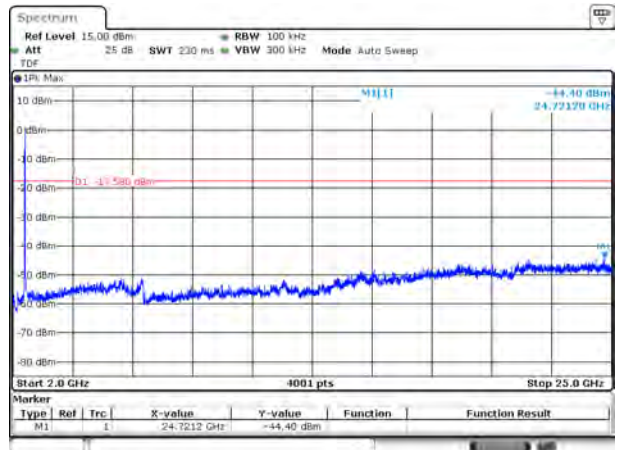
Date: 22 JUN 2019 15:57:08

802.11g CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



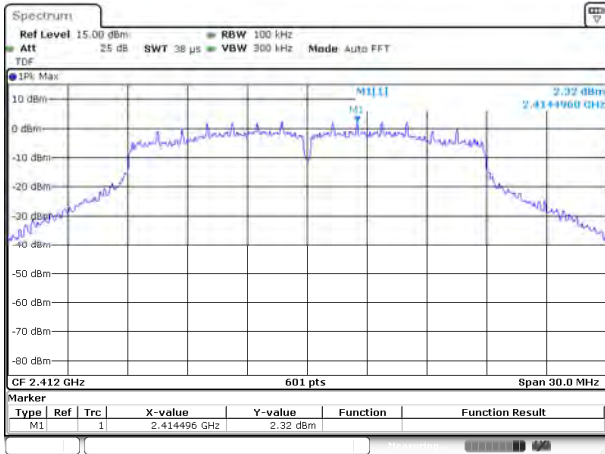
Date: 22 JUN 2019 15:57:32

802.11g CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz



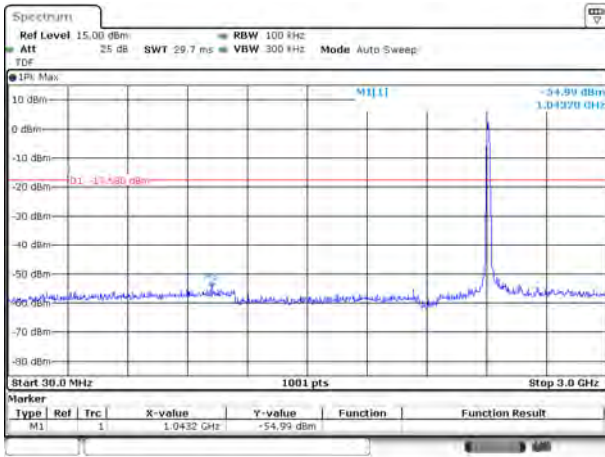
Date: 22 JUN 2019 15:57:39

802.11n-20 CHANNEL 1 CARRIER LEVEL



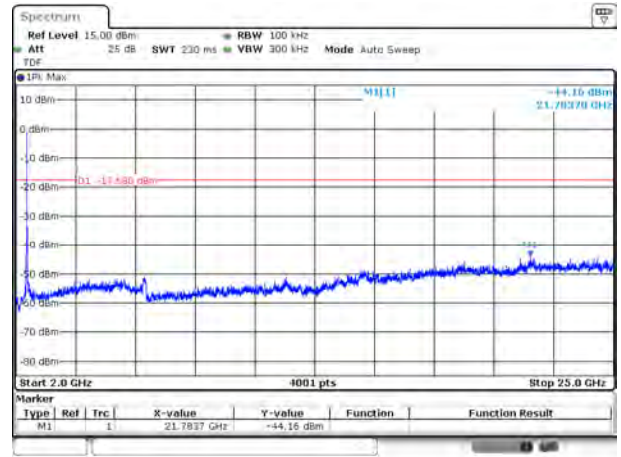
Date: 22 JUN 2019 15:59:57

802.11n-20 CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



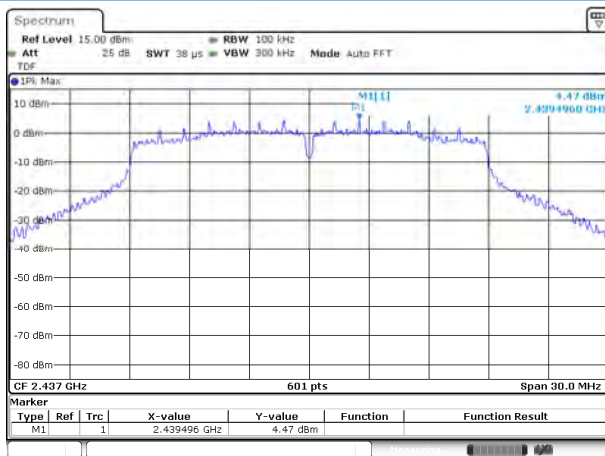
Date: 22 JUN 2019 16:00:25

802.11n-20 CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



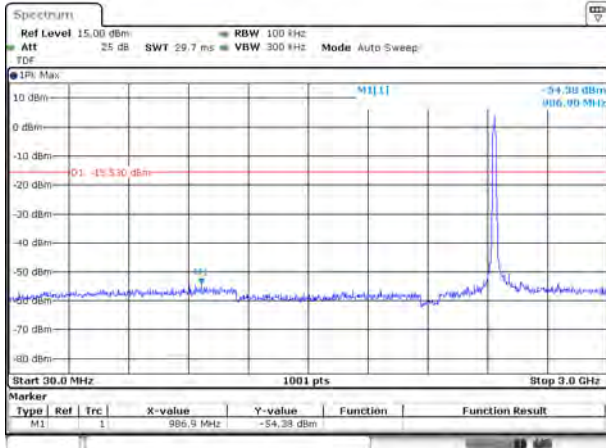
Date: 22 JUN 2019 16:00:35

802.11n-20 CHANNEL 6 CARRIER LEVEL



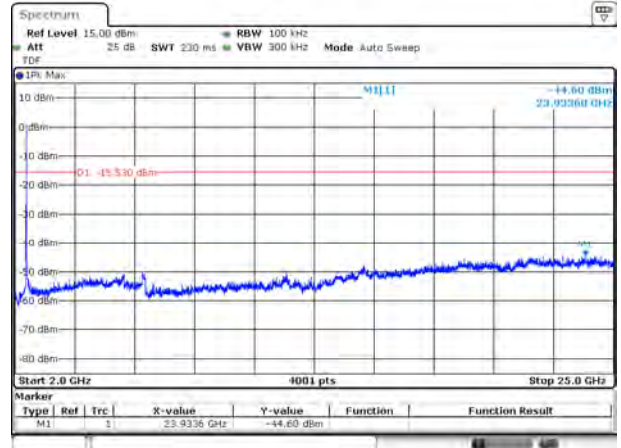
Date: 22 APR 2019 17:23:46

802.11n-20 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



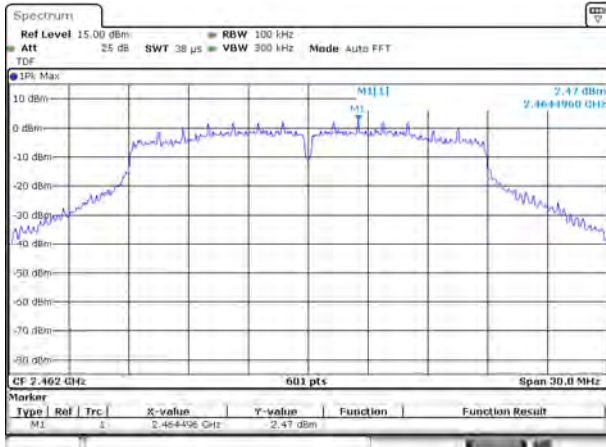
Date: 22 APR 2019 17:24:09

802.11n-20 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



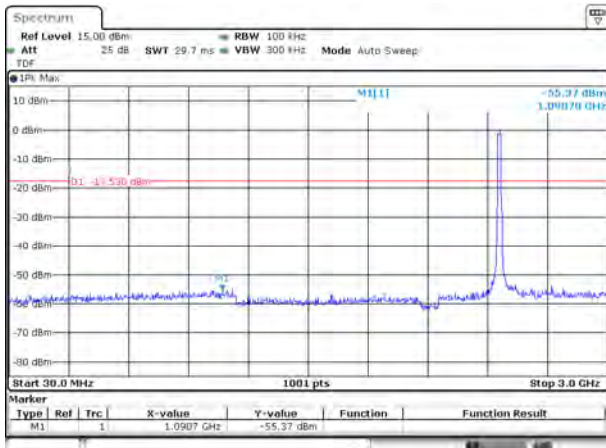
Date: 22 APR 2019 17:24:22

802.11n-20 CHANNEL 11 CARRIER LEVEL



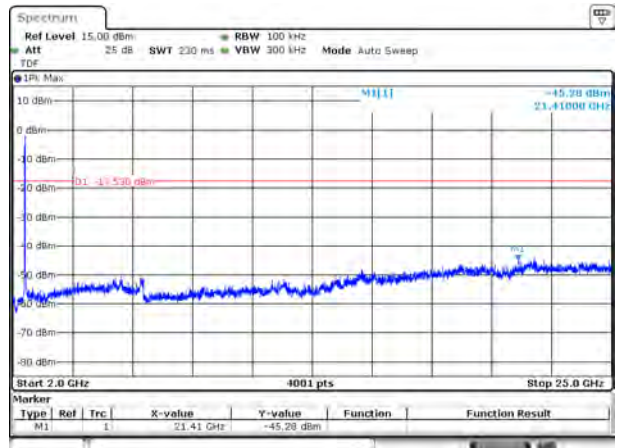
Date: 22 JUN 2019 18:01:54

802.11n-20 CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



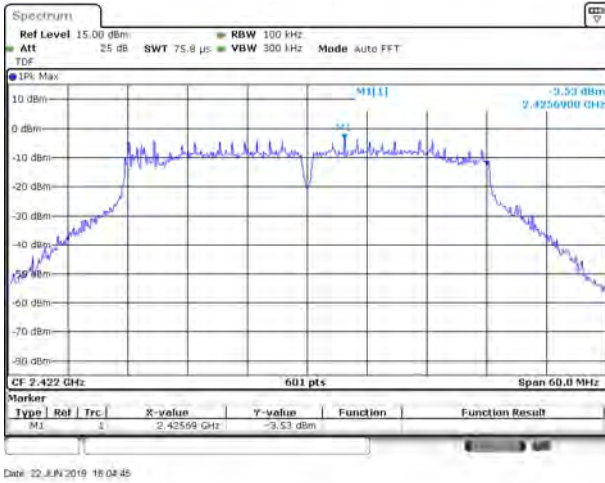
Date: 22 JUN 2019 18:02:17

802.11n-20 CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz

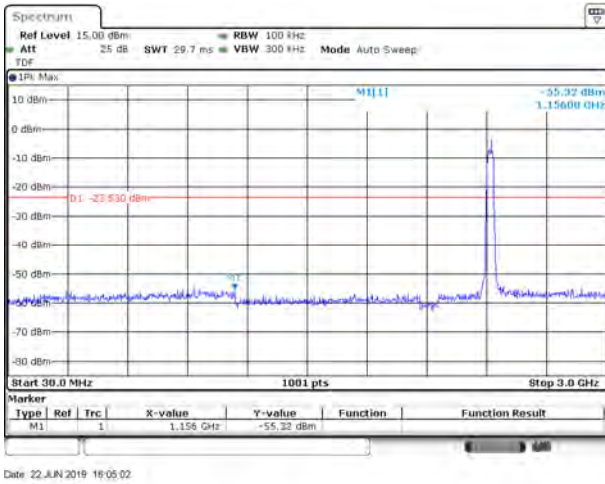


Date: 22 JUN 2019 18:02:26

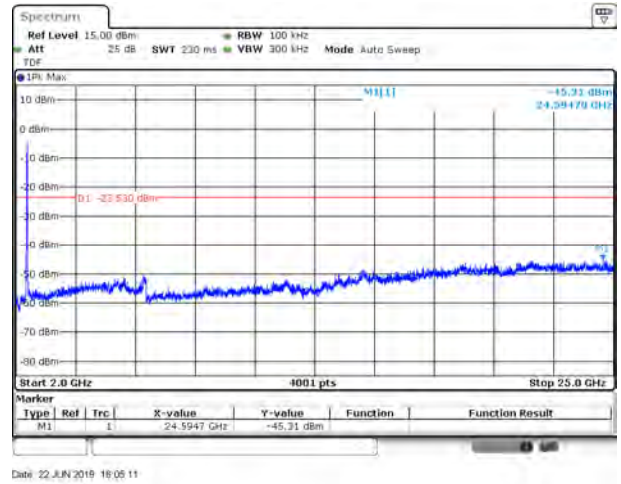
802.11n-40 CHANNEL 3 CARRIER LEVEL



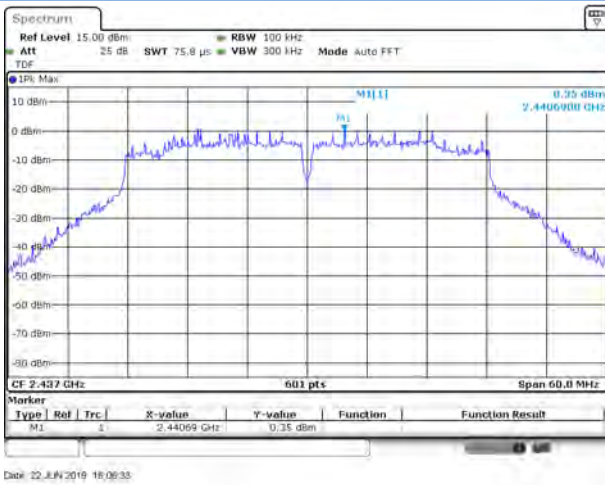
802.11n-40 CHANNEL 3, SPURIOUS 30 MHz ~ 3 GHz



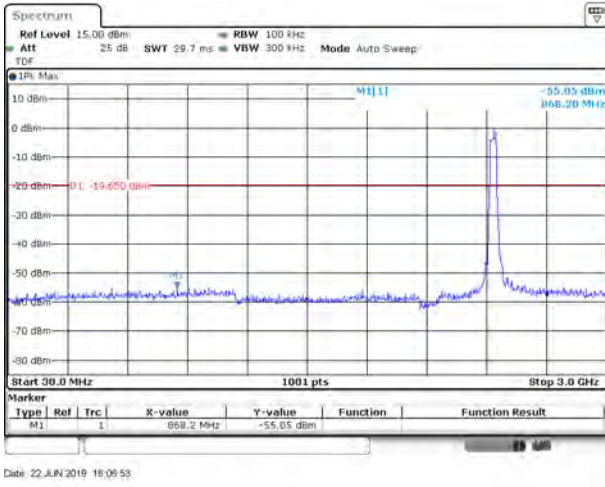
802.11n-40 CHANNEL 3, SPURIOUS 2 GHz ~ 25 GHz



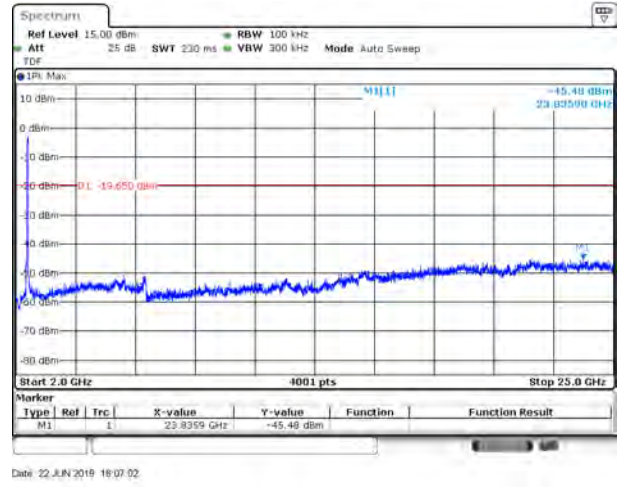
802.11n-40 CHANNEL 6 CARRIER LEVEL



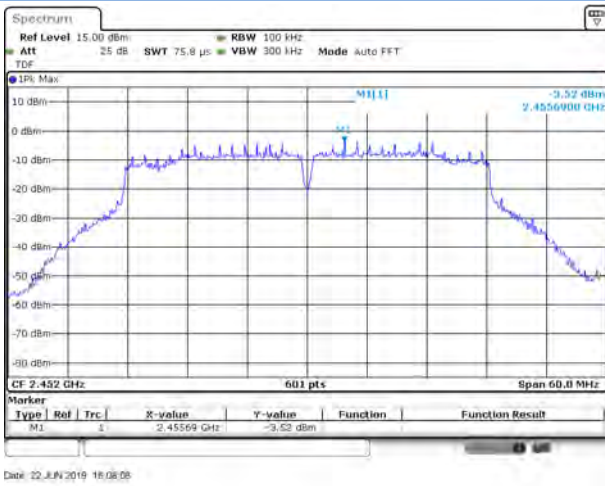
802.11n-40 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



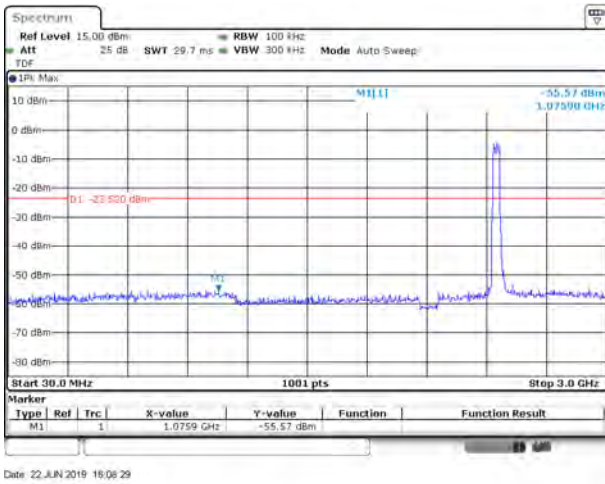
802.11n-40 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



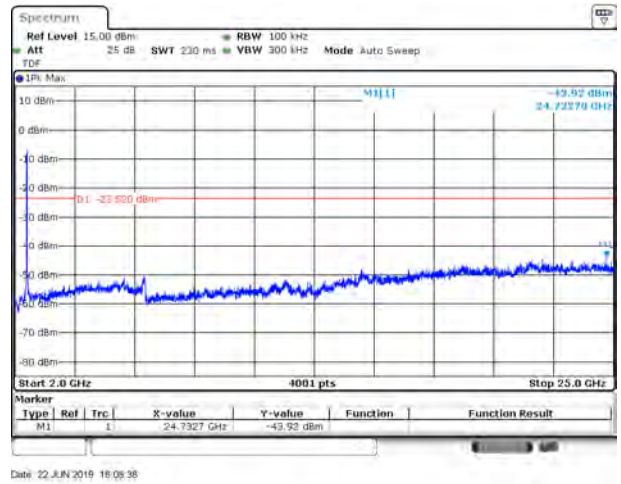
802.11n-40 CHANNEL 9 CARRIER LEVEL



802.11n-40 CHANNEL 9, SPURIOUS  
30 MHz ~ 3 GHz



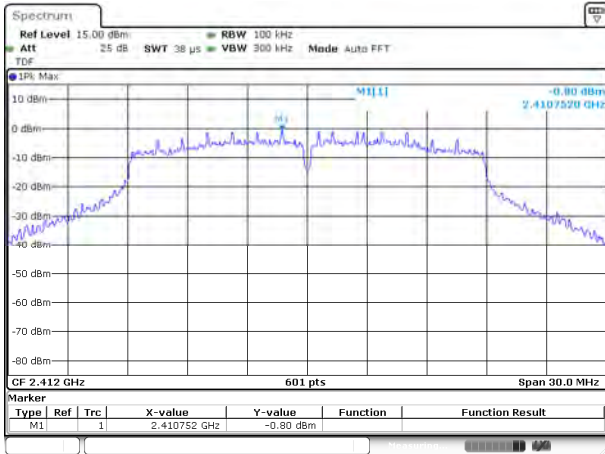
802.11n-40 CHANNEL 9, SPURIOUS  
2 GHz ~ 25 GHz





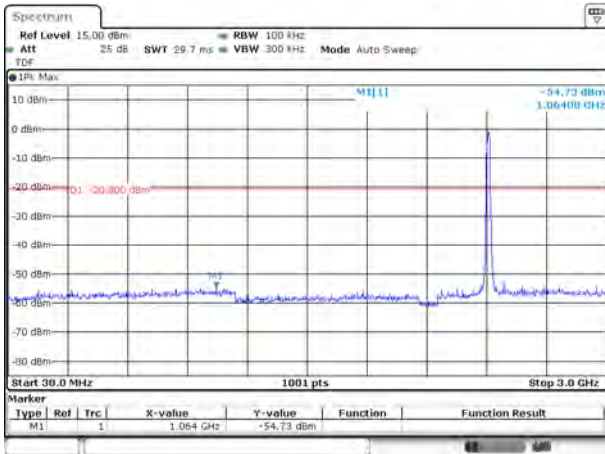
MIMO ANTO

802.11n-20 CHANNEL 1 CARRIER LEVEL



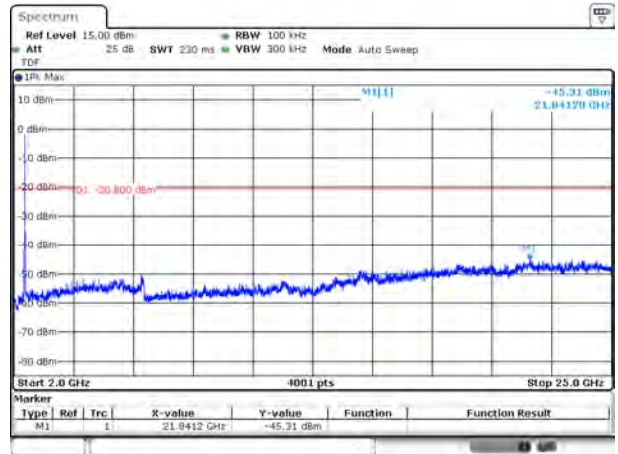
Date: 22 JUN 2019 16:24:11

802.11n-20 CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



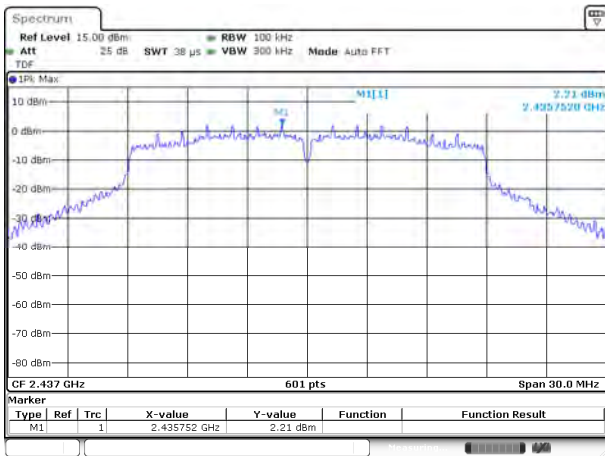
Date: 22 JUN 2019 16:24:40

802.11n-20 CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



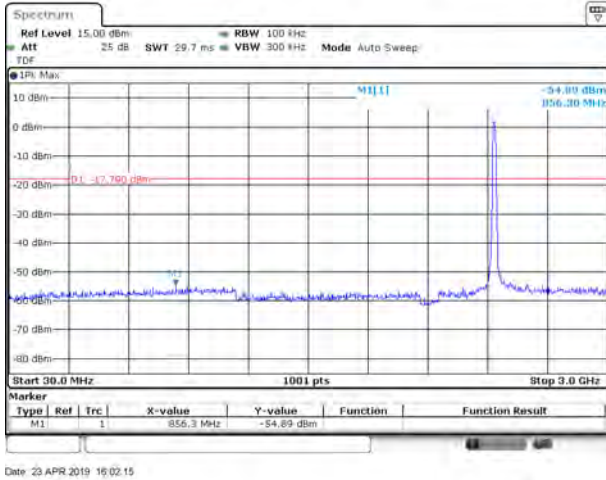
Date: 22 JUN 2019 16:24:53

802.11n-20 CHANNEL 6 CARRIER LEVEL

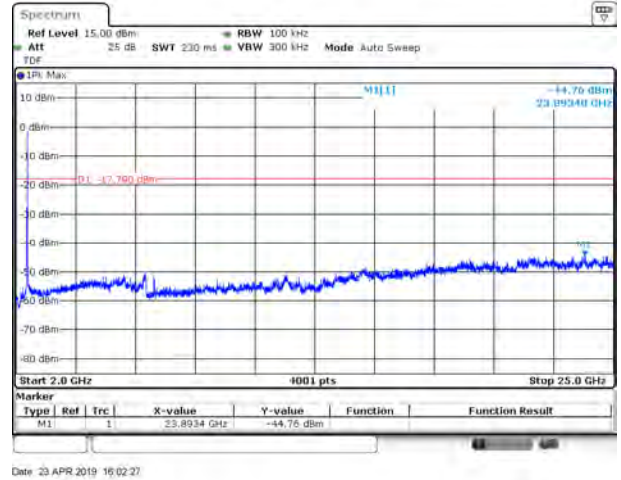


Date: 23 APR 2019 16:01:55

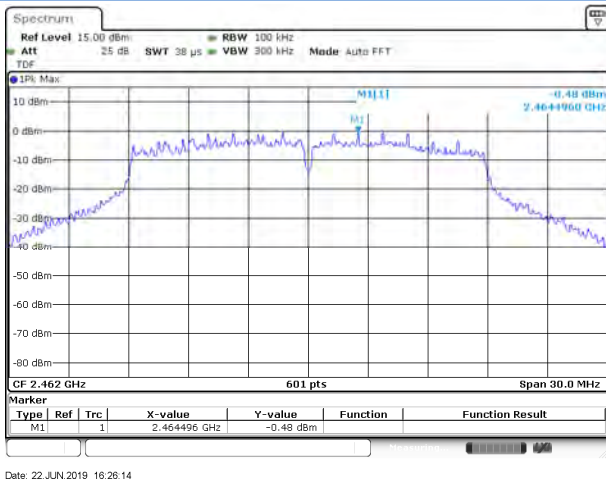
802.11n-20 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



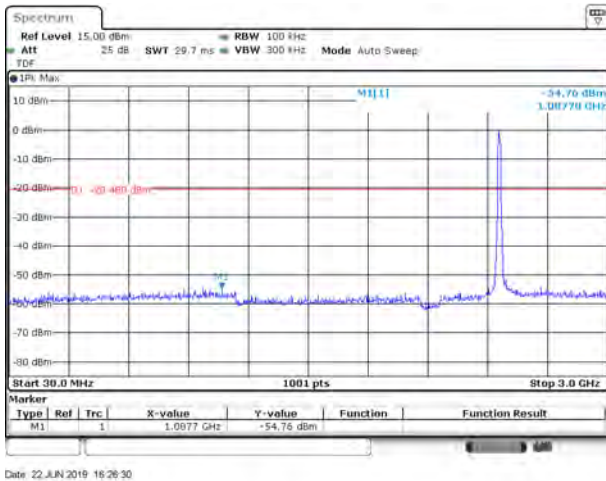
802.11n-20 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



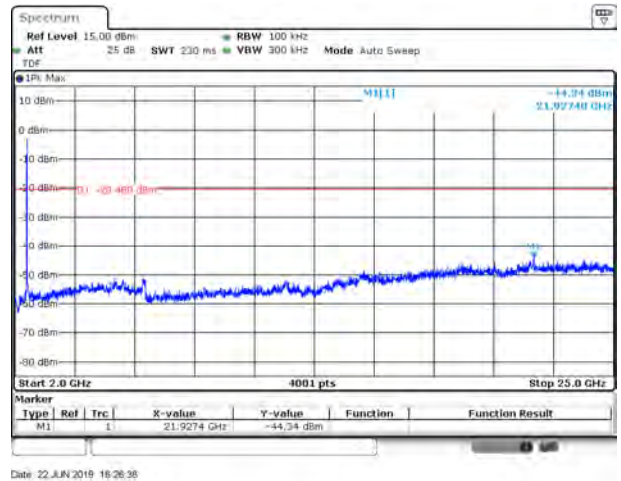
802.11n-20 CHANNEL 11 CARRIER LEVEL



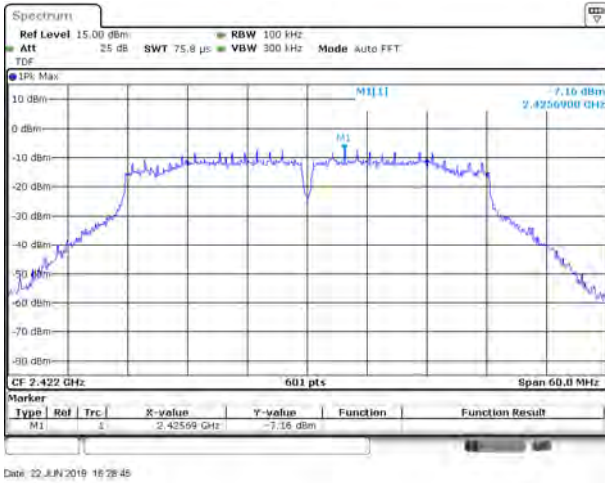
802.11n-20 CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



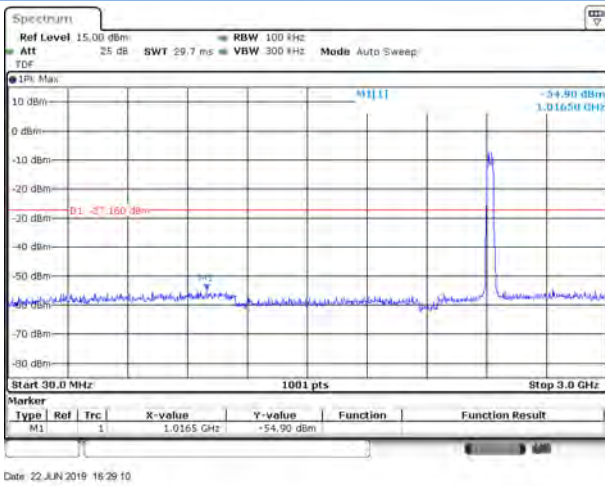
802.11n-20 CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz



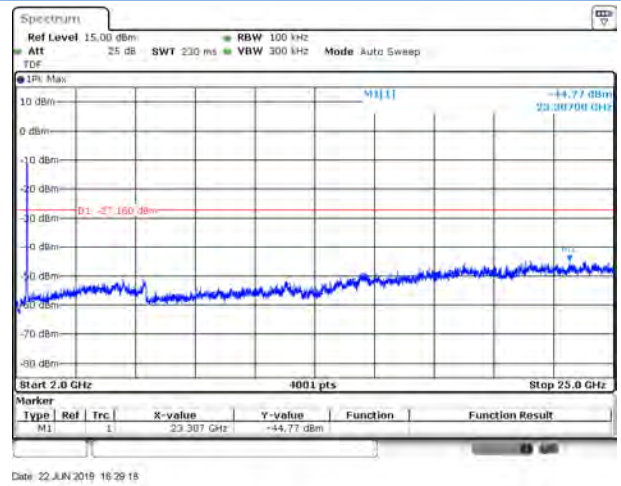
802.11n-40 CHANNEL 3 CARRIER LEVEL



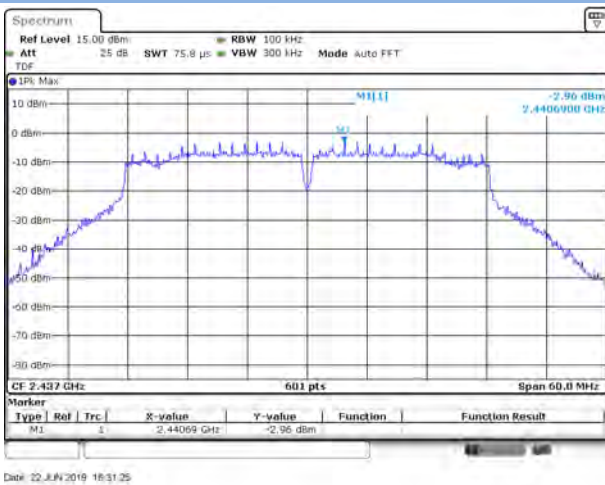
802.11n-40 CHANNEL 3, SPURIOUS 30 MHz ~ 3 GHz



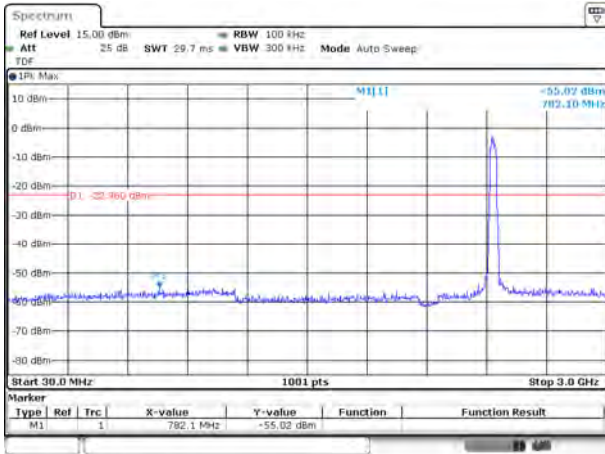
802.11n-40 CHANNEL 3, SPURIOUS 2 GHz ~ 25 GHz



802.11n-40 CHANNEL 6 CARRIER LEVEL

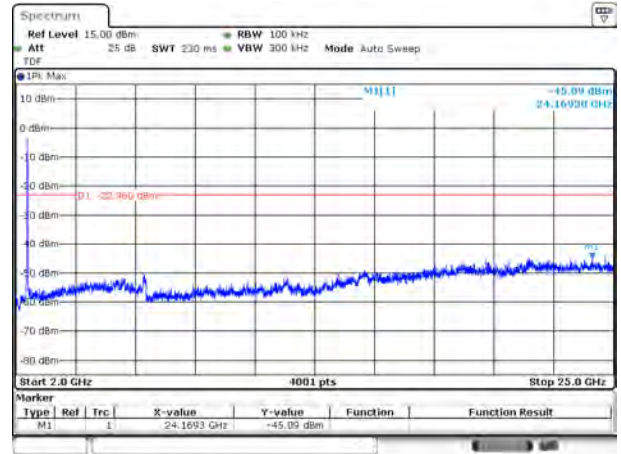


802.11n-40 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



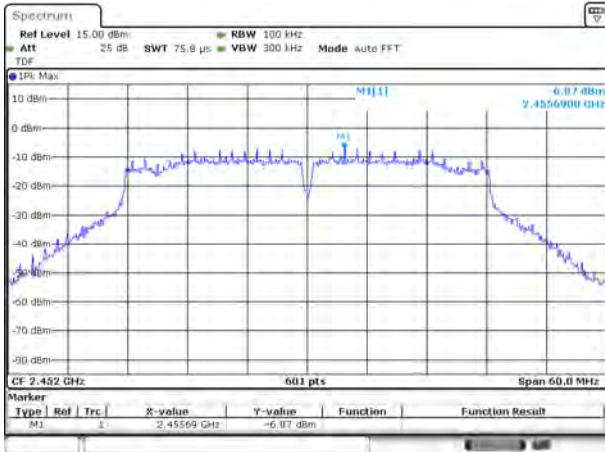
Date: 22 JUN 2019 16:31:47

802.11n-40 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



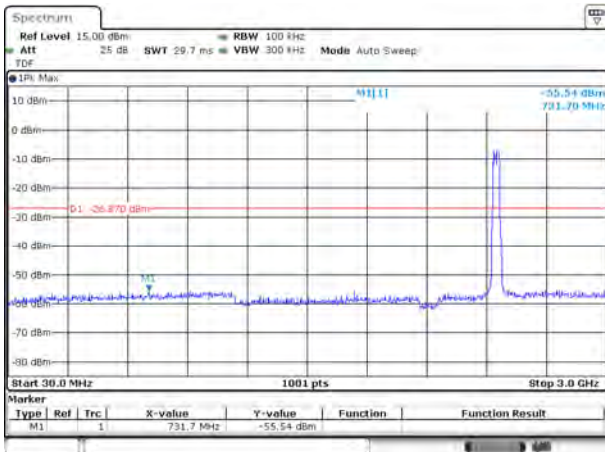
Date: 22 JUN 2019 16:31:54

802.11n-40 CHANNEL 9 CARRIER LEVEL



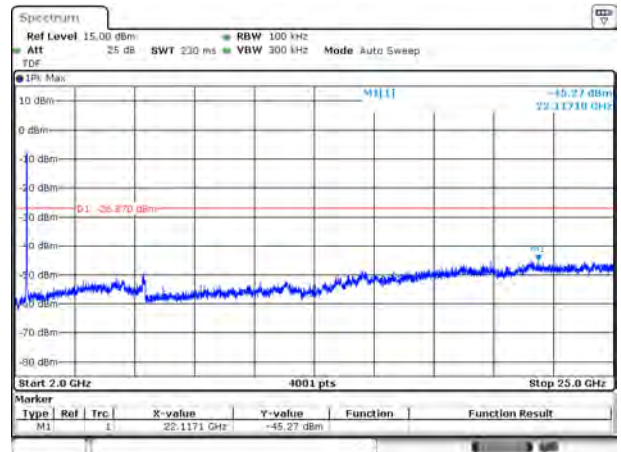
Date: 22 JUN 2019 16:33:12

802.11n-40 CHANNEL 9, SPURIOUS  
30 MHz ~ 3 GHz



Date: 22 JUN 2019 16:33:35

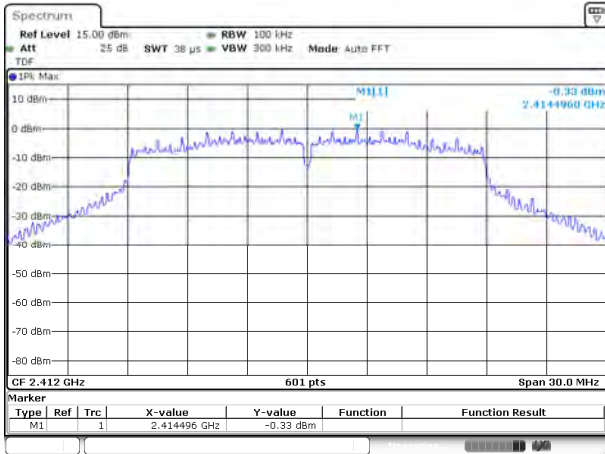
802.11n-40 CHANNEL 9, SPURIOUS  
2 GHz ~ 25 GHz



Date: 22 JUN 2019 16:33:44

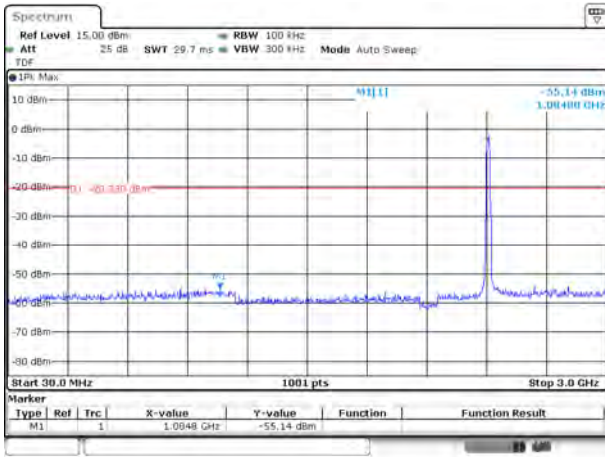
MIMO ANT1

802.11n-20 CHANNEL 1 CARRIER LEVEL



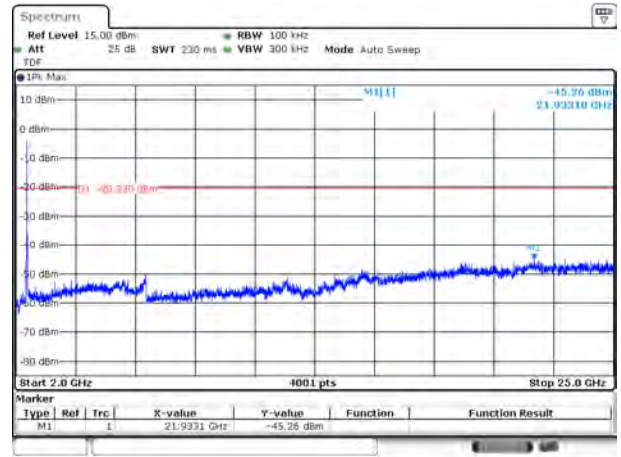
Date: 22 JUN 2019 16:12:20

802.11n-20 CHANNEL 1, SPURIOUS 30 MHz ~ 3 GHz



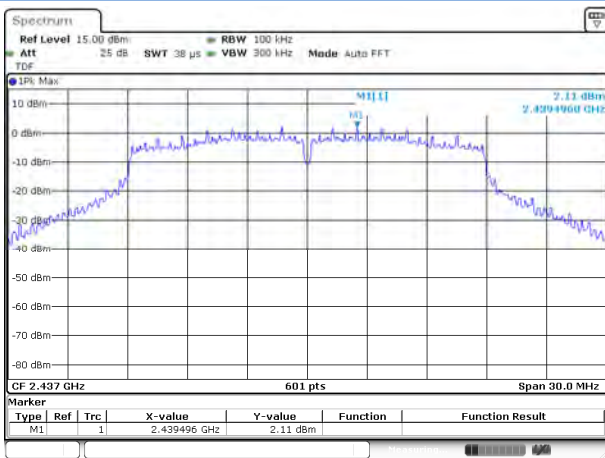
Date: 22 JUN 2019 16:12:47

802.11n-20 CHANNEL 1, SPURIOUS 2 GHz ~ 25 GHz



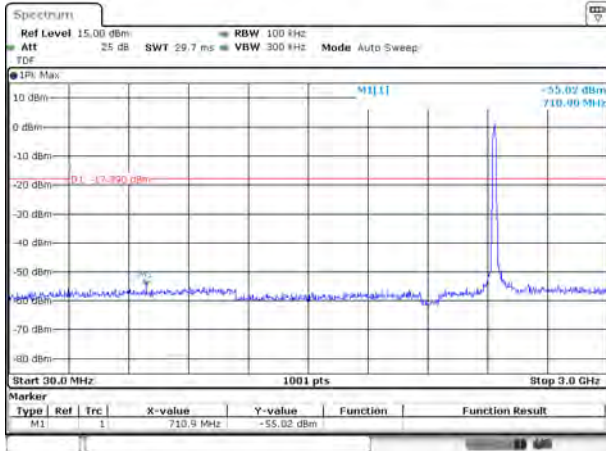
Date: 22 JUN 2019 16:12:54

802.11n-20 CHANNEL 6 CARRIER LEVEL



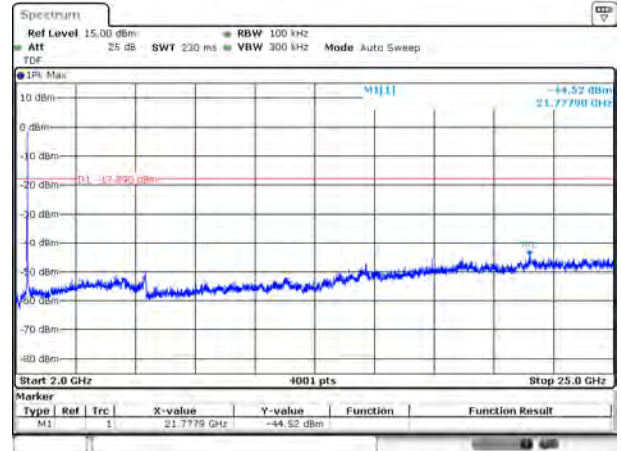
Date: 23 APR 2019 17:38:20

802.11n-20 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



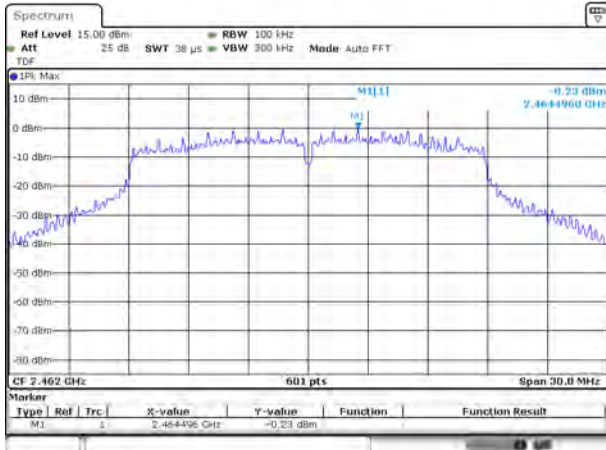
Date: 23 APR 2019 17:38:59

802.11n-20 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



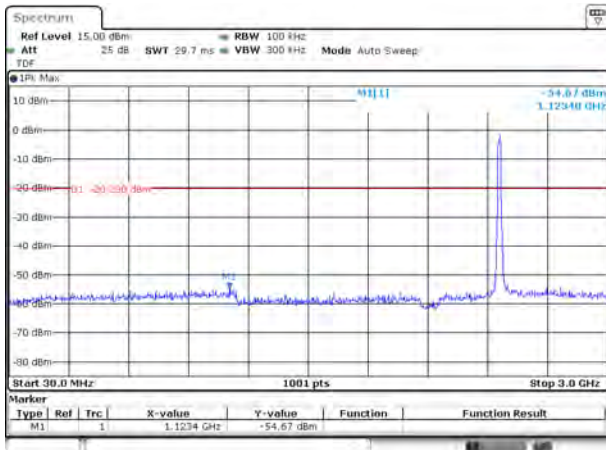
Date: 23 APR 2019 17:39:10

802.11n-20 CHANNEL 11 CARRIER LEVEL



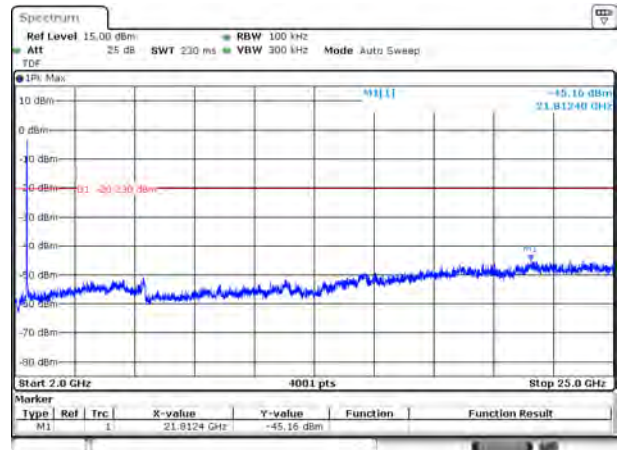
Date: 22 JUN 2019 16:14:25

802.11n-20 CHANNEL 11, SPURIOUS  
30 MHz ~ 3 GHz



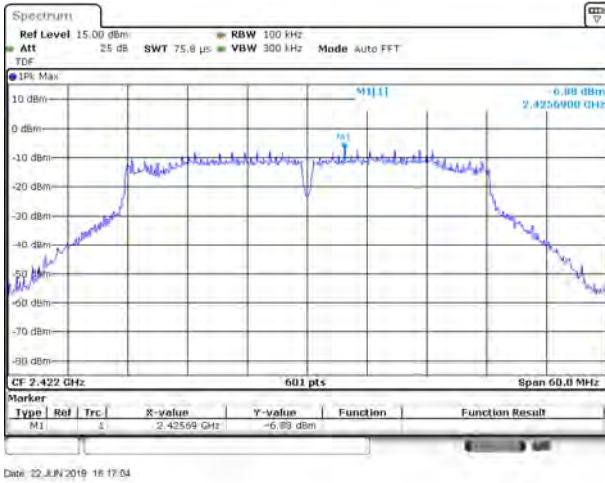
Date: 22 JUN 2019 16:14:50

802.11n-20 CHANNEL 11, SPURIOUS  
2 GHz ~ 25 GHz

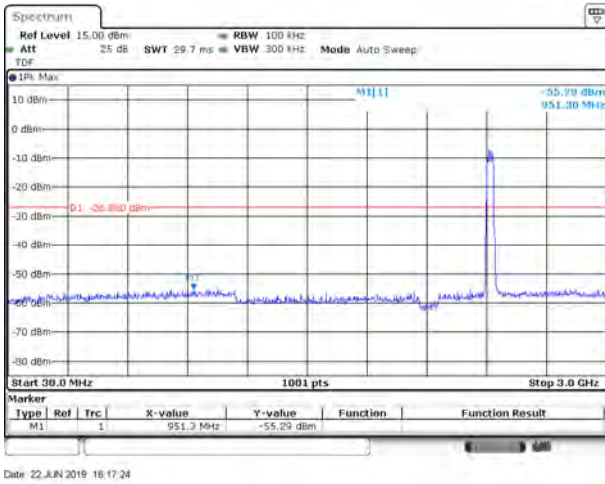


Date: 22 JUN 2019 16:15:00

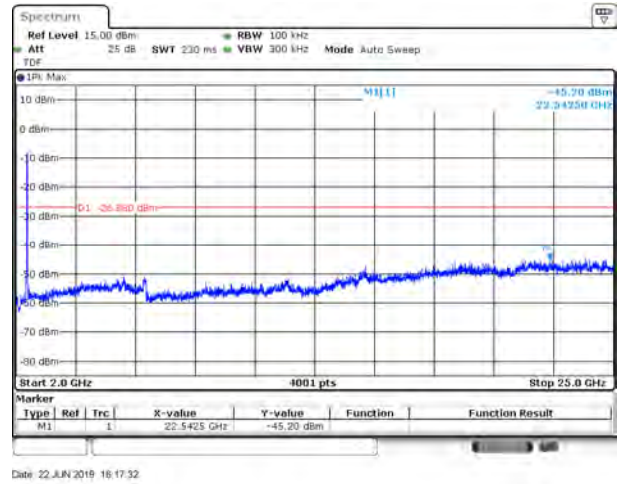
802.11n-40 CHANNEL 3 CARRIER LEVEL



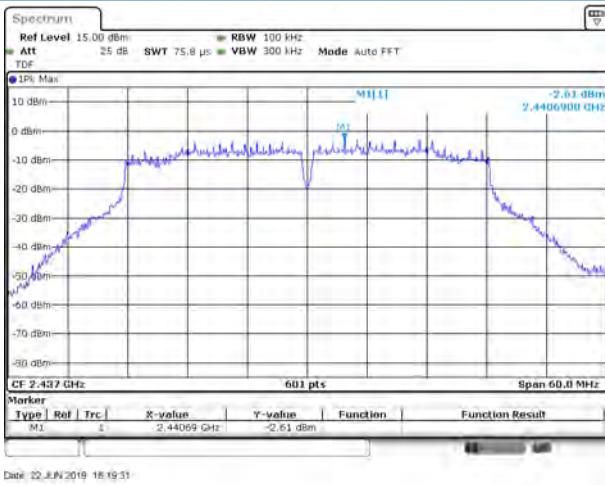
802.11n-40 CHANNEL 3, SPURIOUS 30 MHz ~ 3 GHz



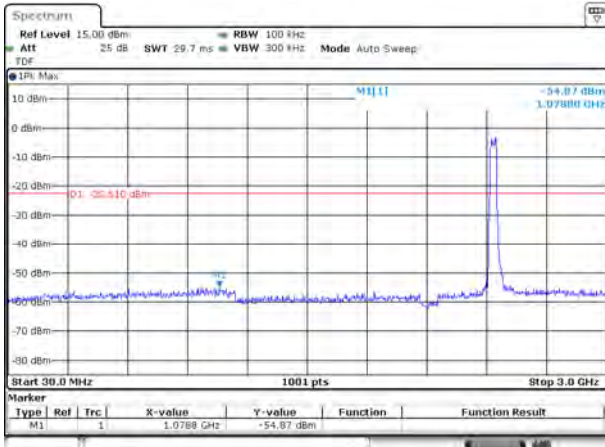
802.11n-40 CHANNEL 3, SPURIOUS 2 GHz ~ 25 GHz



802.11n-40 CHANNEL 6 CARRIER LEVEL

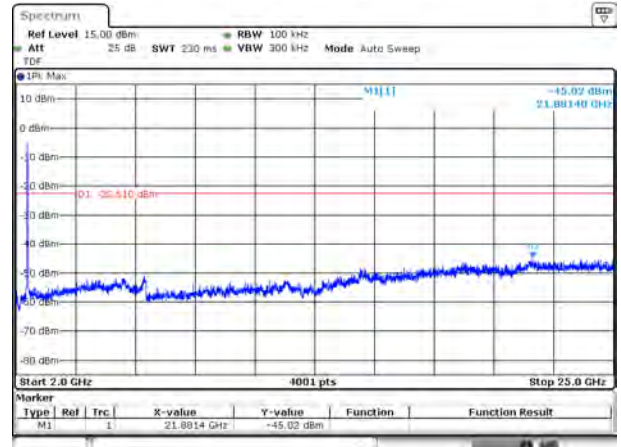


802.11n-40 CHANNEL 6, SPURIOUS  
30 MHz ~ 3 GHz



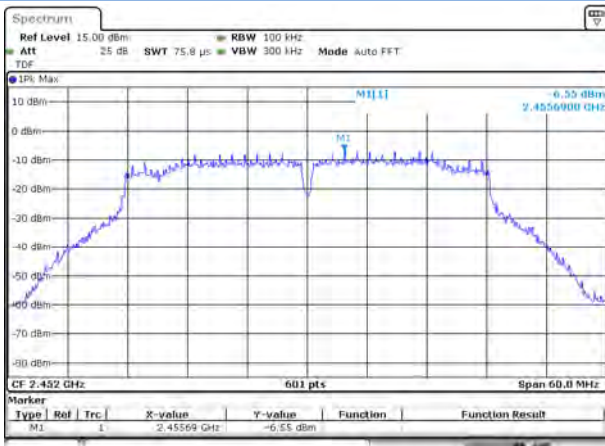
Date: 22 JUN 2019 16:19:48

802.11n-40 CHANNEL 6, SPURIOUS  
2 GHz ~ 25 GHz



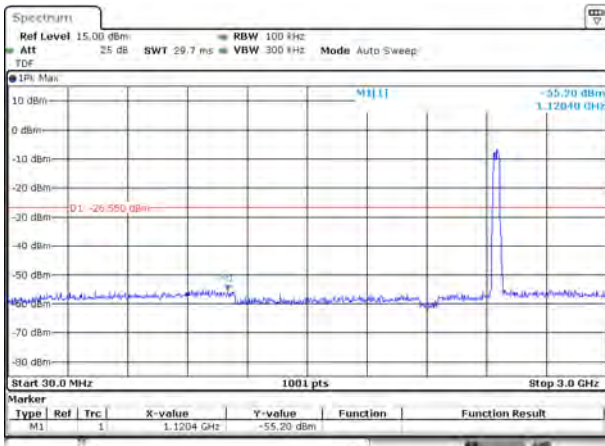
Date: 22 JUN 2019 16:19:56

802.11n-40 CHANNEL 9 CARRIER LEVEL



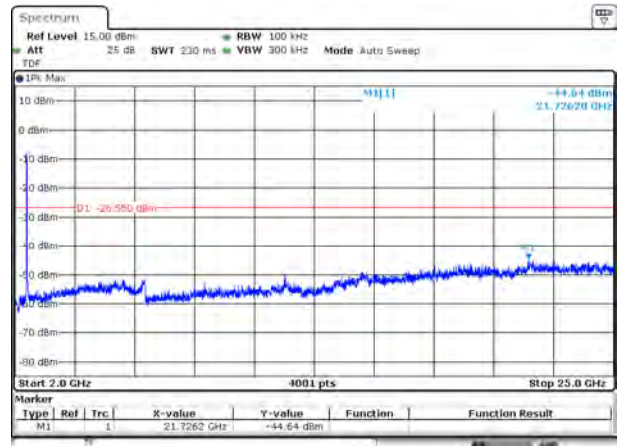
Date: 22 JUN 2019 16:21:21

802.11n-40 CHANNEL 9, SPURIOUS  
30 MHz ~ 3 GHz



Date: 22 JUN 2019 16:21:43

802.11n-40 CHANNEL 9, SPURIOUS  
2 GHz ~ 25 GHz



Date: 22 JUN 2019 16:21:51



## A.4 Band Edge (Authorized-band band-edge)

### Test Data

Note: The 99% OBW of the fundamental emission is without 2 MHz of the authorized band.

### SISLANT0

#### 802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-43.47	3.12	-16.88	Pass
11	-45.49	3.06	-16.94	Pass

#### 802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-27.17	2.15	-17.85	Pass
11	-44.68	1.75	-18.25	Pass

#### 802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-24.78	2.08	-17.92	Pass
11	-45.05	2.11	-17.89	Pass

#### 802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-31.32	-3.81	-23.81	Pass
9	-44.28	-1.95	-21.95	Pass

**SISI ANT1**
**802.11b Mode:**

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-44.38	3.19	-16.81	Pass
11	-45.42	3.28	-16.72	Pass

**802.11g Mode:**

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-27.77	2.34	-17.66	Pass
11	-44.77	2.42	-17.58	Pass

**802.11n-20 MHz Mode:**

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-27.12	2.32	-17.68	Pass
11	-44.94	2.47	-17.53	Pass

**802.11n-40 MHz Mode:**

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-31.52	-3.53	-23.53	Pass
9	-42.27	-3.52	-23.52	Pass

**MIMO ANT0**

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-27.93	-0.80	-20.80	Pass
11	-45.65	-0.48	-20.48	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-34.26	-7.16	-27.16	Pass
9	-46.40	-6.87	-26.87	Pass

**MIMO ANT1**

802.11n-20 MHz Mode:

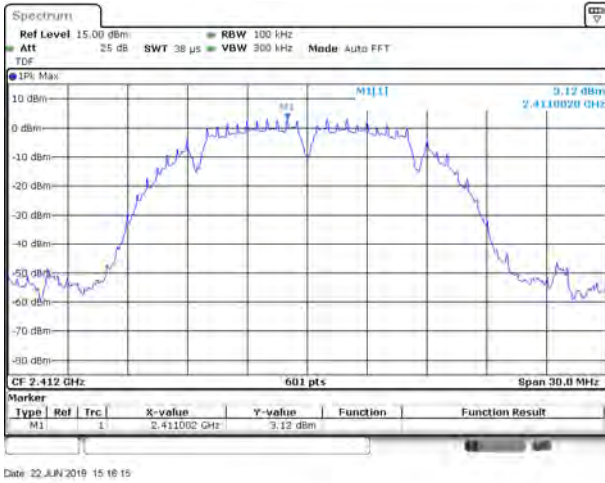
Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
1	-28.41	-0.33	-20.33	Pass
11	-45.62	-0.23	-20.23	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
3	-34.35	-6.88	-26.88	Pass
9	-48.38	-6.55	-26.55	Pass

Test Plots  
SISO ANT0

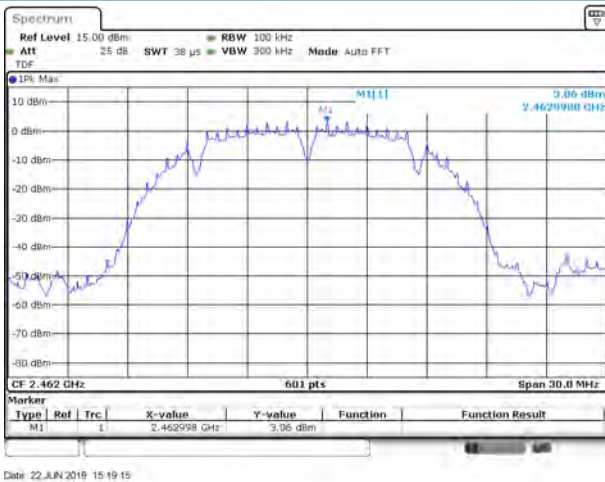
802.11b CHANNEL 1, Carrier level



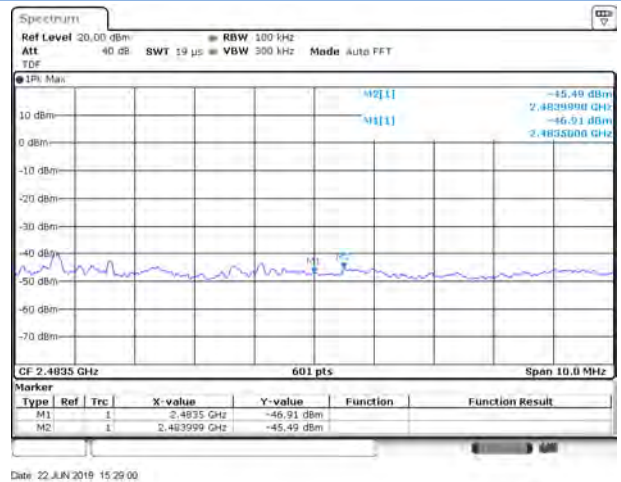
802.11b CHANNEL 1, Reference level



802.11b CHANNEL 11, Carrier level



802.11b CHANNEL 11, Reference level



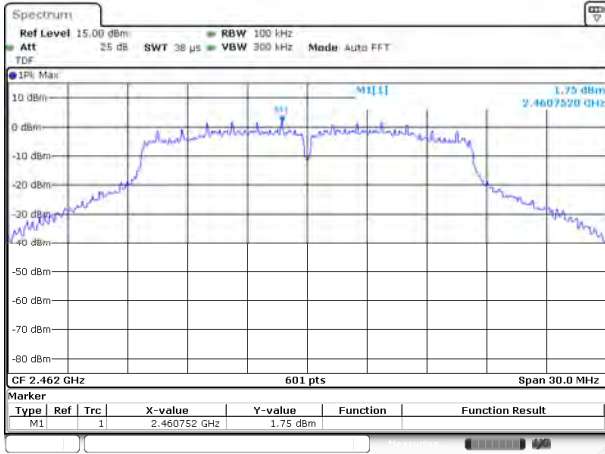
802.11g CHANNEL 1, Carrier level



802.11g LOW CHANNEL 1, Reference level

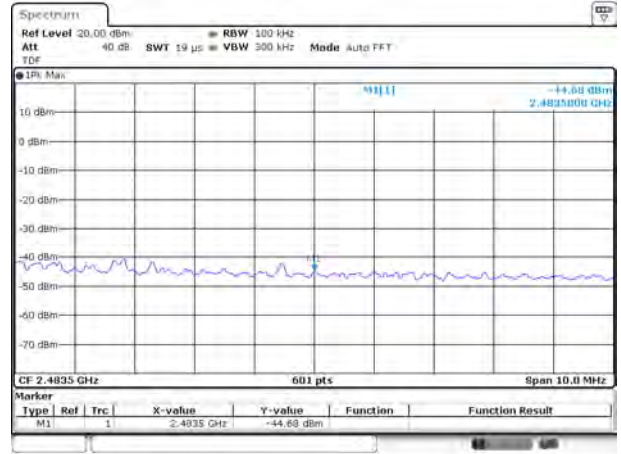


802.11g CHANNEL 11, Carrier level



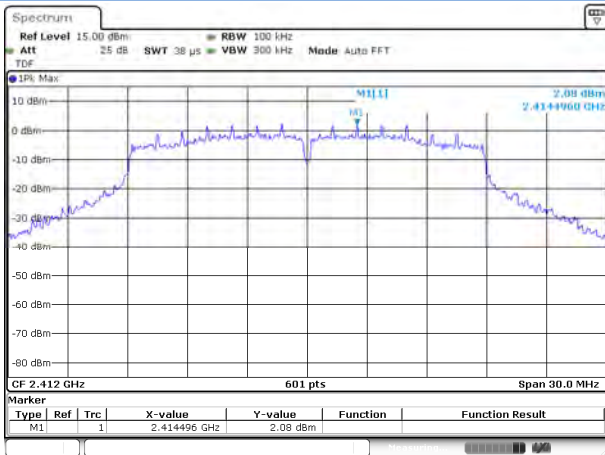
Date: 22 JUN 2019 15:25:17

802.11g LOW CHANNEL 11, Reference level



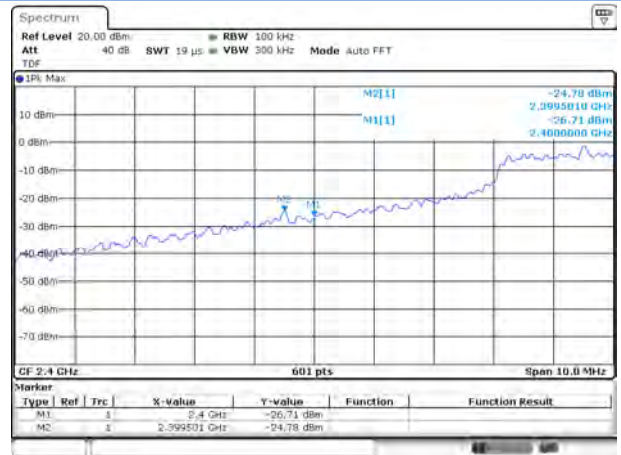
Date: 22 JUN 2019 15:27:59

802.11n-20 MHz CHANNEL 1, Carrier level



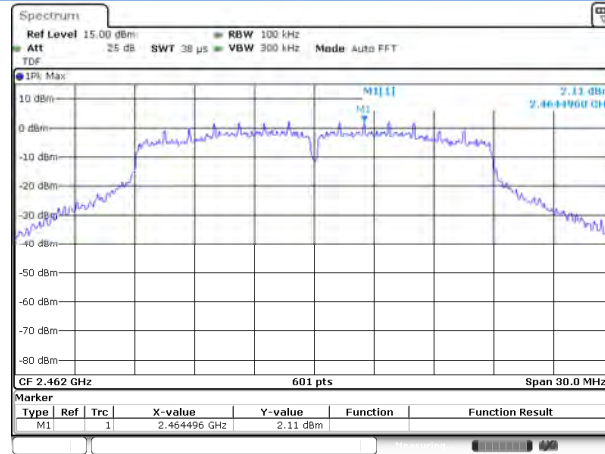
Date: 22 JUN 2019 15:30:46

802.11n-20 MHz CHANNEL 1, Reference level



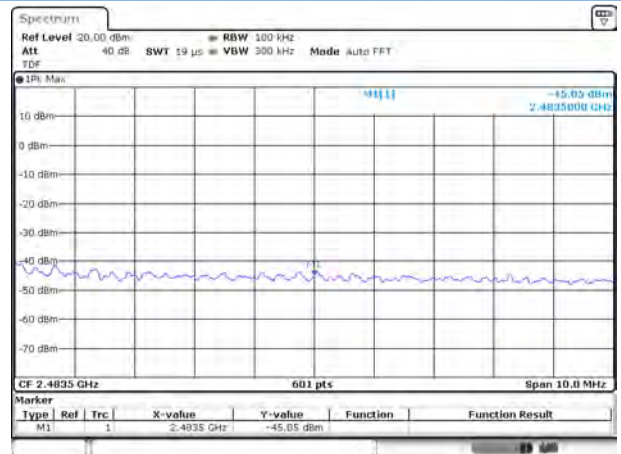
Date: 22 JUN 2019 15:32:00

802.11n-20 MHz CHANNEL 11, Carrier level



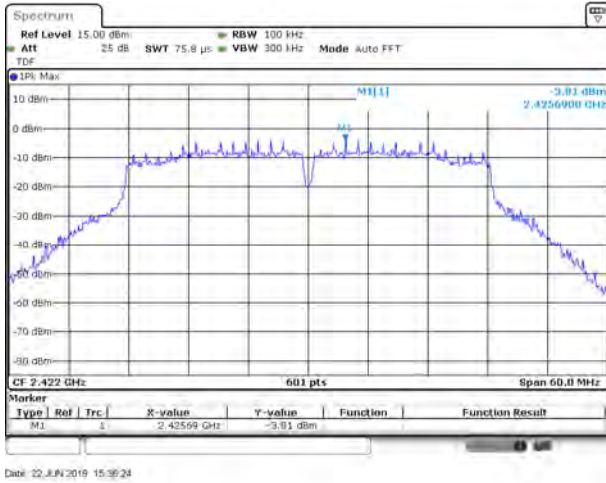
Date: 22 JUN 2019 15:33:08

802.11n-20 MHz CHANNEL 11, Reference level

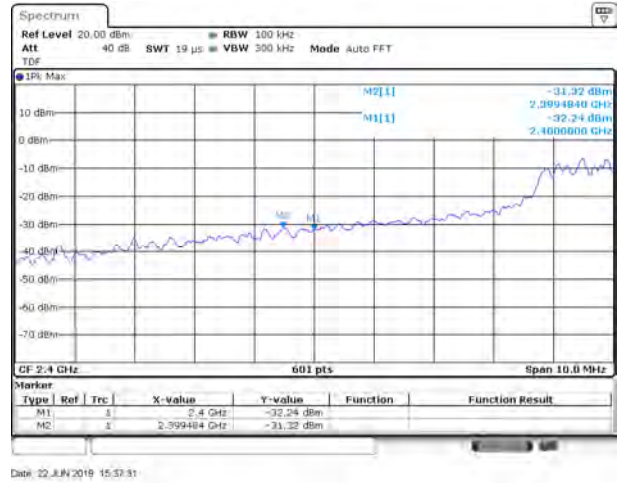


Date: 22 JUN 2019 15:34:12

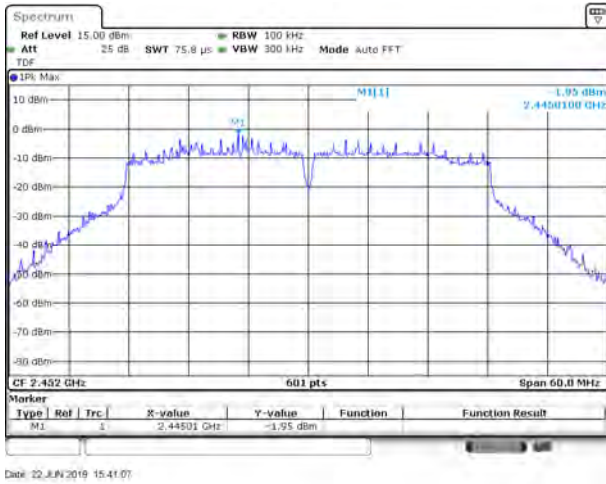
802.11n-40 MHz CHANNEL 3, Carrier level



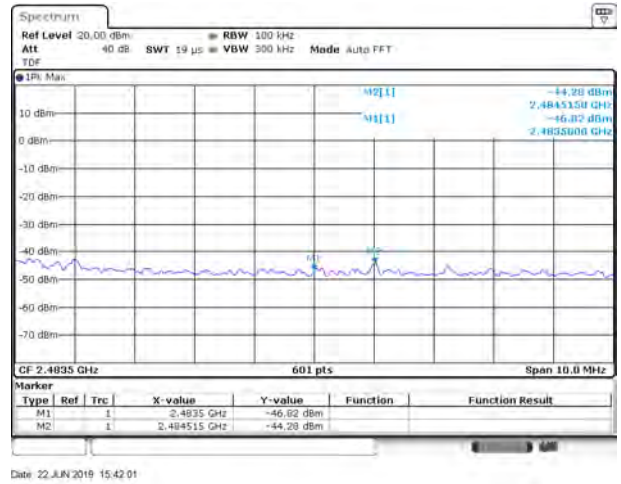
802.11n-40 MHz CHANNEL 3, Reference level



802.11n-40 MHz CHANNEL 9, Carrier level

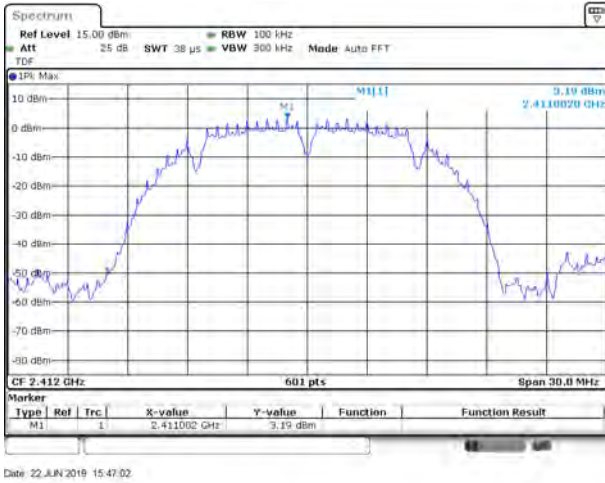


802.11n-40 MHz CHANNEL 9, Reference level

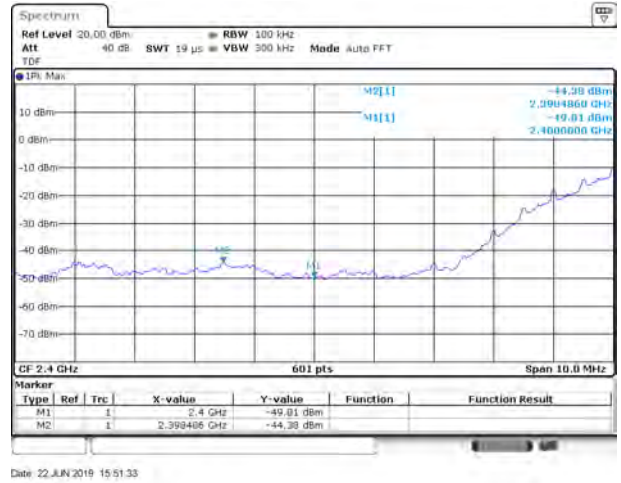


Test Plots  
SISO ANT1

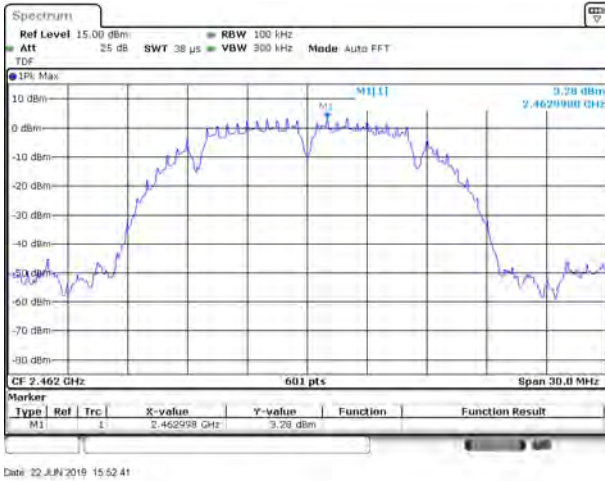
802.11b CHANNEL 1, Carrier level



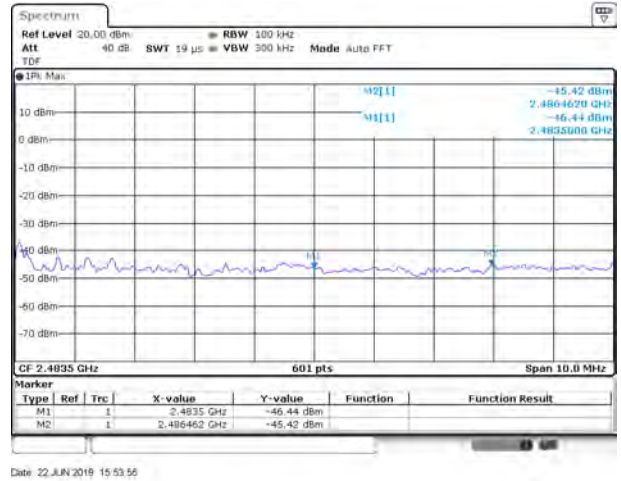
802.11b CHANNEL 1, Reference level



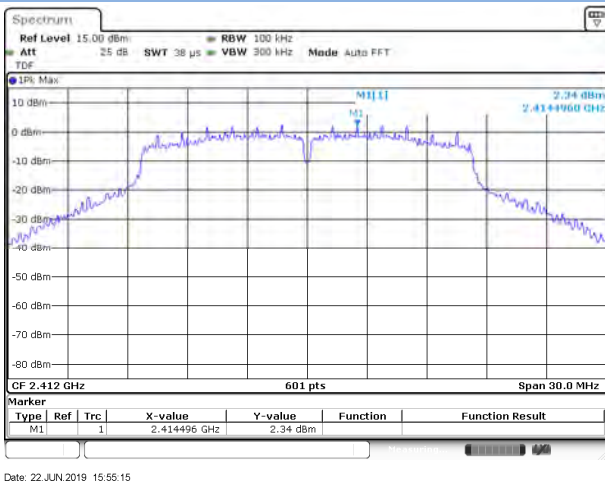
802.11b CHANNEL 11, Carrier level



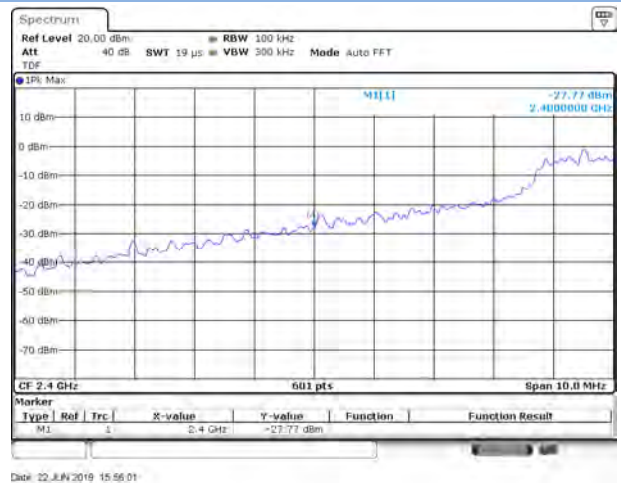
802.11b CHANNEL 11, Reference level



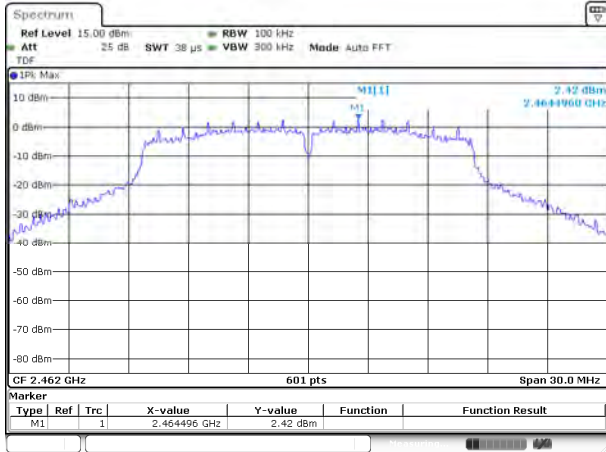
802.11g CHANNEL 1, Carrier level



802.11g LOW CHANNEL 1, Reference level

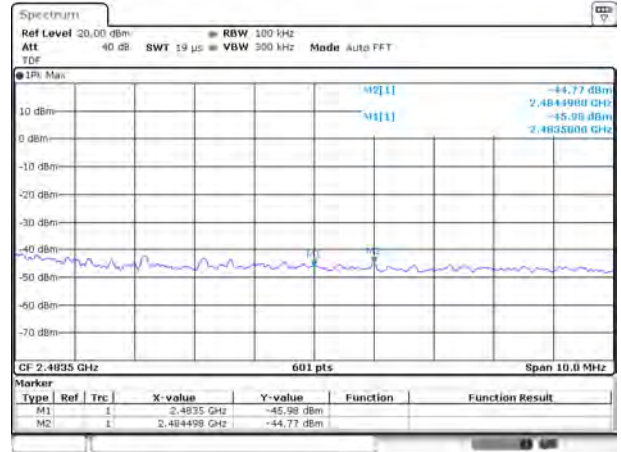


802.11g CHANNEL 11, Carrier level



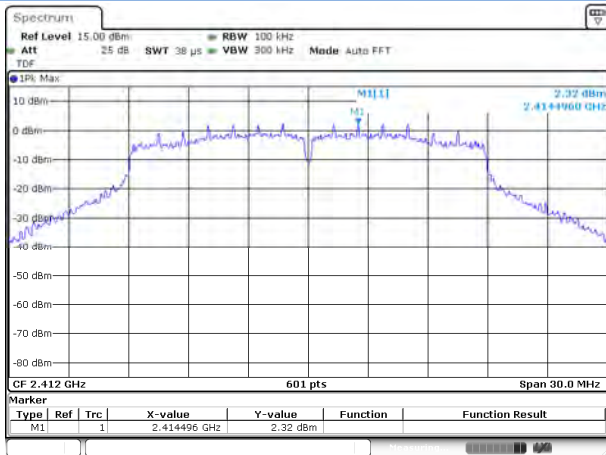
Date: 22 JUN 2019 15:57:08

802.11g LOW CHANNEL 11, Reference level



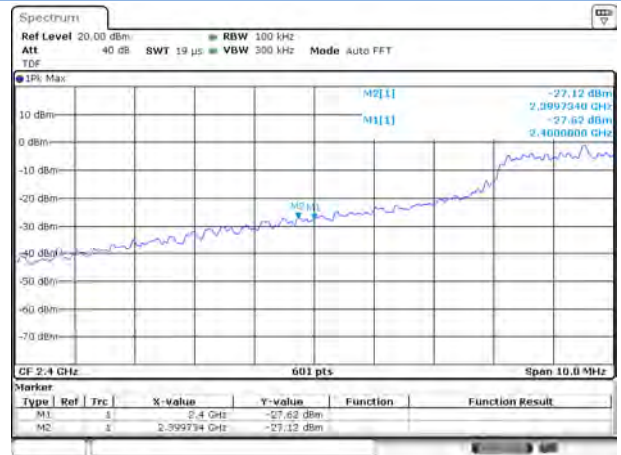
Date: 22 JUN 2019 15:58:56

802.11n-20 MHz CHANNEL 1, Carrier level



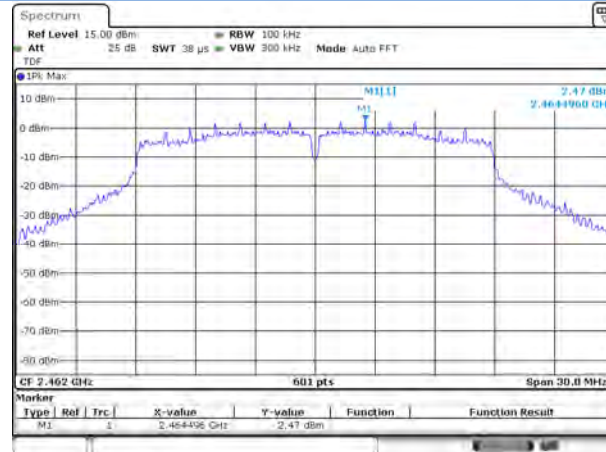
Date: 22 JUN 2019 15:59:57

802.11n-20 MHz CHANNEL 1, Reference level



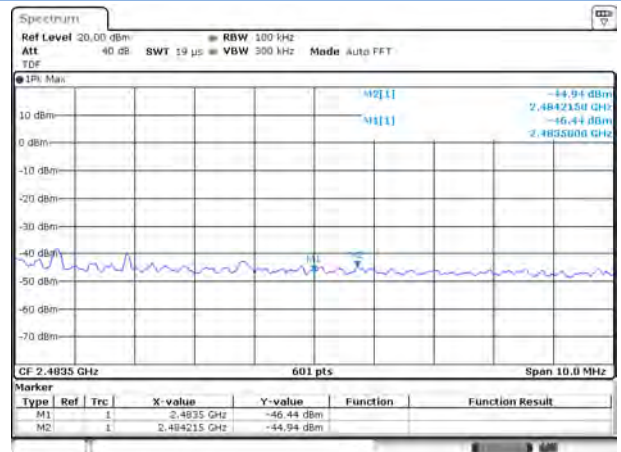
Date: 22 JUN 2019 16:00:52

802.11n-20 MHz CHANNEL 11, Carrier level



Date: 22 JUN 2019 16:01:54

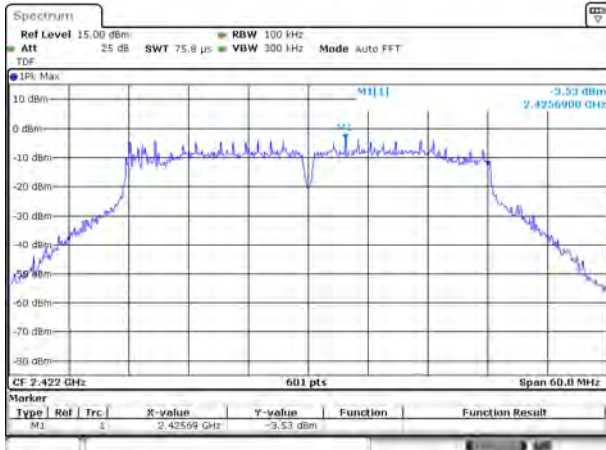
802.11n-20 MHz CHANNEL 11, Reference level



Date: 22 JUN 2019 16:03:15

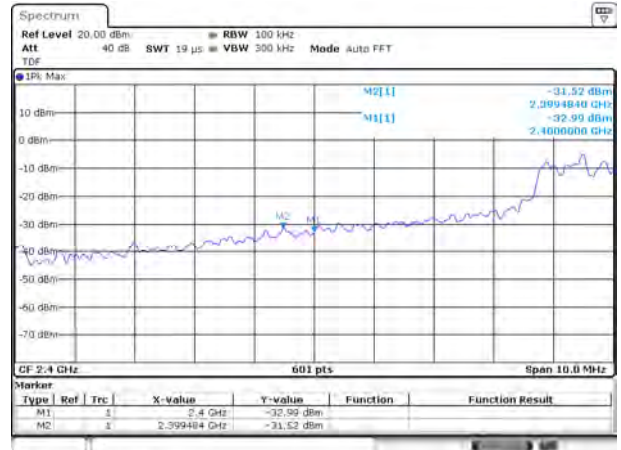


802.11n-40 MHz CHANNEL 3, Carrier level



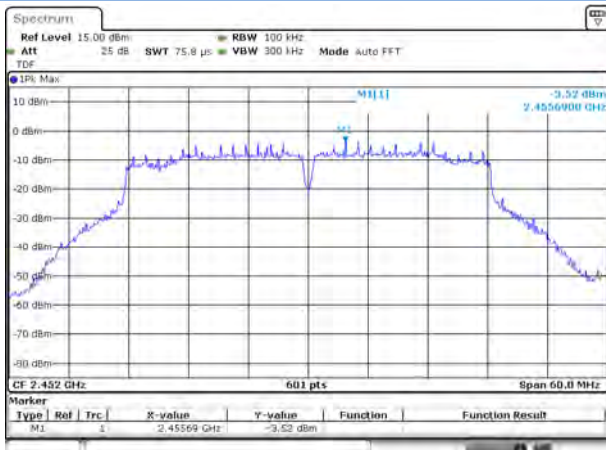
Date: 22 JUN 2019 16:04:45

802.11n-40 MHz CHANNEL 3, Reference level



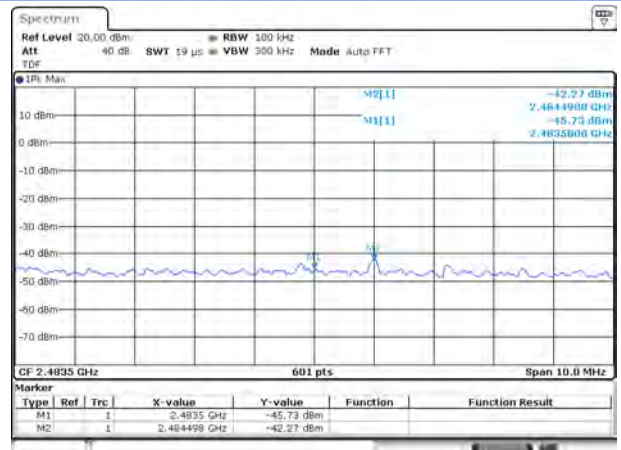
Date: 22 JUN 2019 16:05:24

802.11n-40 MHz CHANNEL 9, Carrier level



Date: 22 JUN 2019 16:08:08

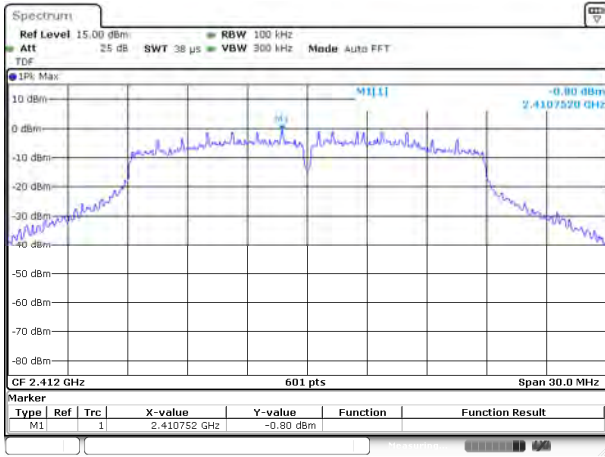
802.11n-40 MHz CHANNEL 9, Reference level



Date: 22 JUN 2019 16:08:49

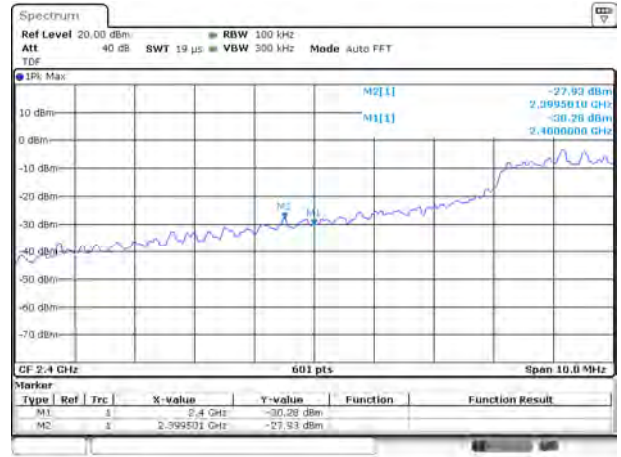
MIMO ANTO

802.11n-20 MHz CHANNEL 1, Carrier level



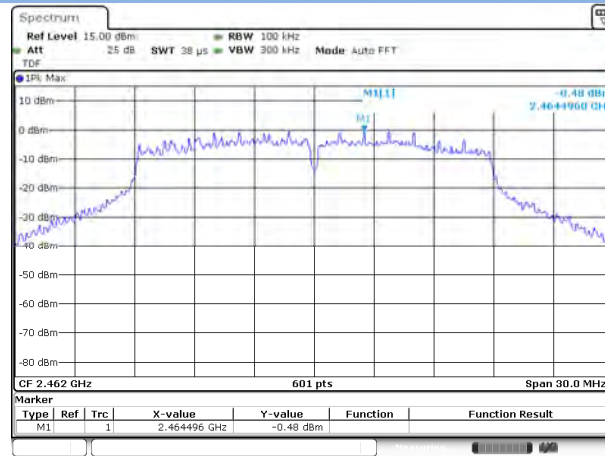
Date: 22 JUN 2019 16:24:11

802.11n-20 MHz CHANNEL 1, Reference level



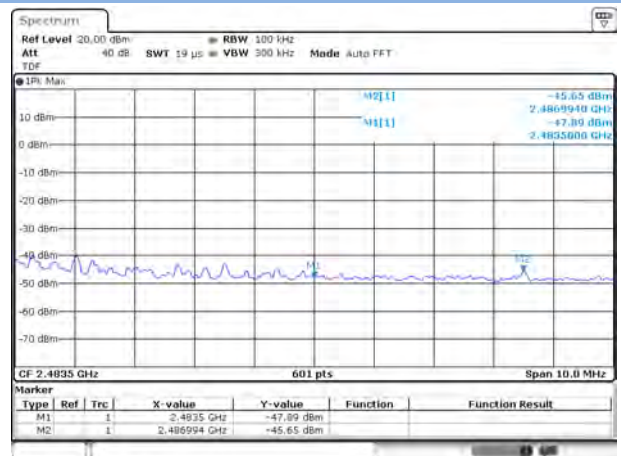
Date: 22 JUN 2019 16:26:08

802.11n-20 MHz CHANNEL 11, Carrier level



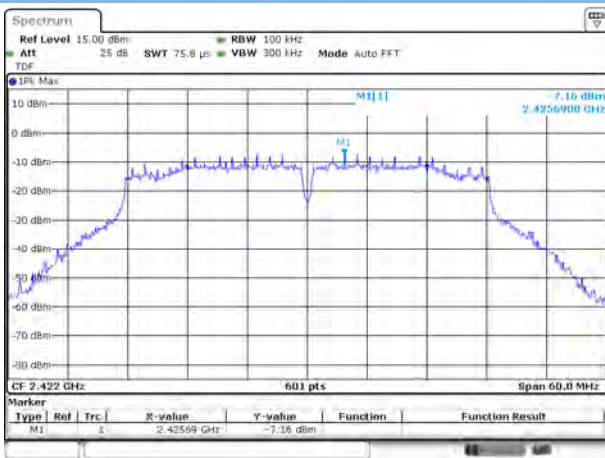
Date: 22 JUN 2019 16:26:14

802.11n-20 MHz CHANNEL 11, Reference level



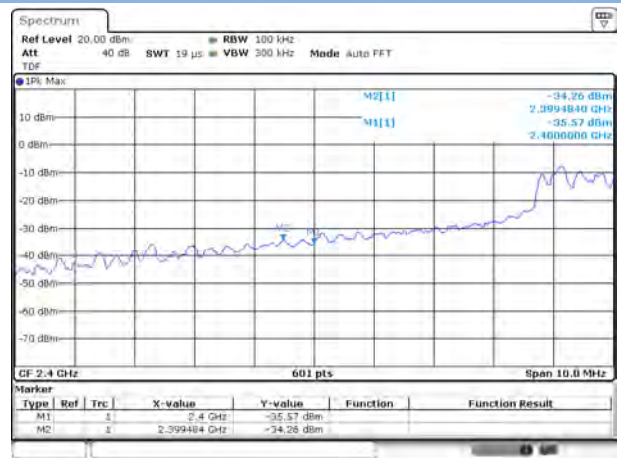
Date: 22 JUN 2019 16:27:32

802.11n-40 MHz CHANNEL 3, Carrier level



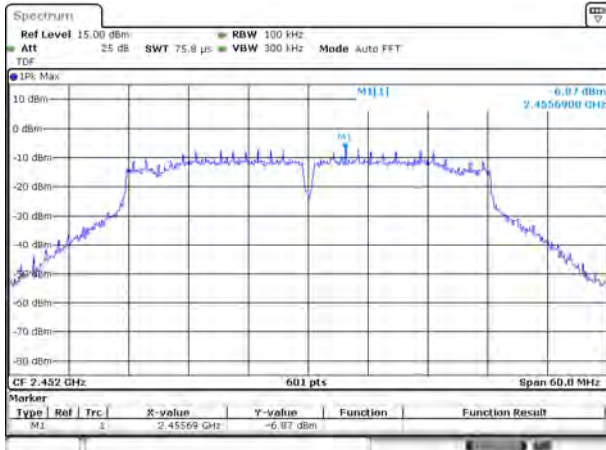
Date: 22 JUN 2019 16:28:45

802.11n-40 MHz CHANNEL 3, Reference level



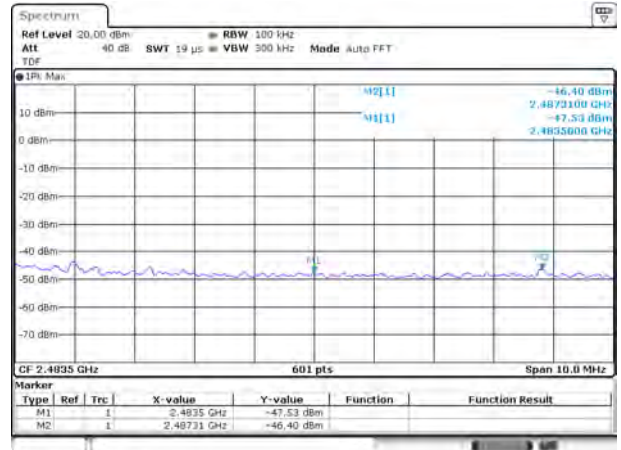
Date: 22 JUN 2019 16:29:37

802.11n-40 MHz CHANNEL 9, Carrier level



Date: 22 JUN 2019 16:33:12

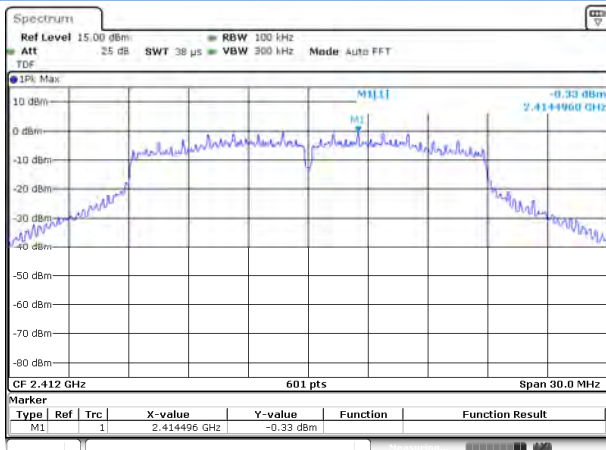
802.11n-40 MHz CHANNEL 9, Reference level



Date: 22 JUN 2019 16:34:02

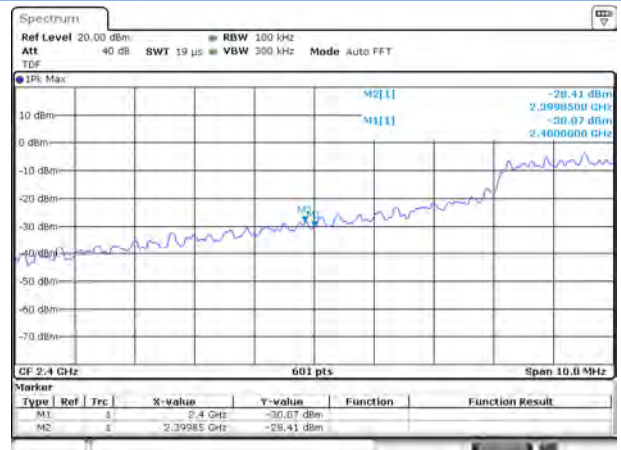
## MIMO ANT1

802.11n-20 MHz CHANNEL 1, Carrier level



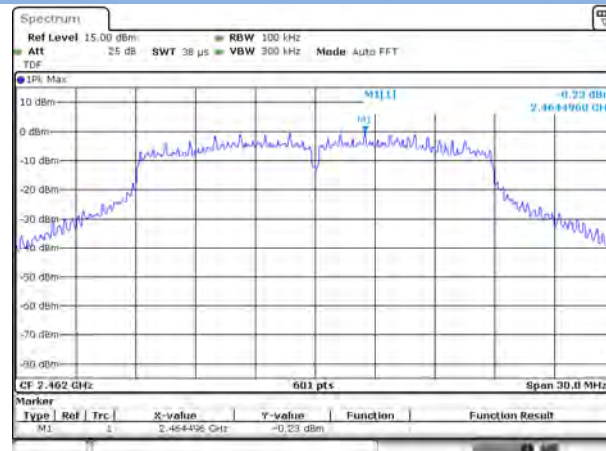
Date: 22 JUN 2019 16:12:20

802.11n-20 MHz CHANNEL 1, Reference level



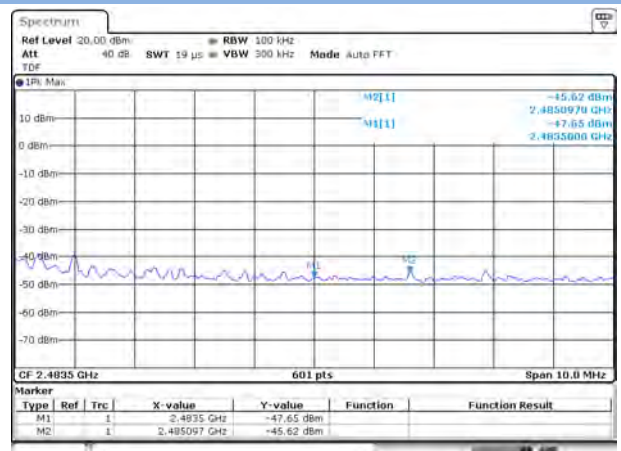
Date: 22 JUN 2019 16:13:12

802.11n-20 MHz CHANNEL 11, Carrier level



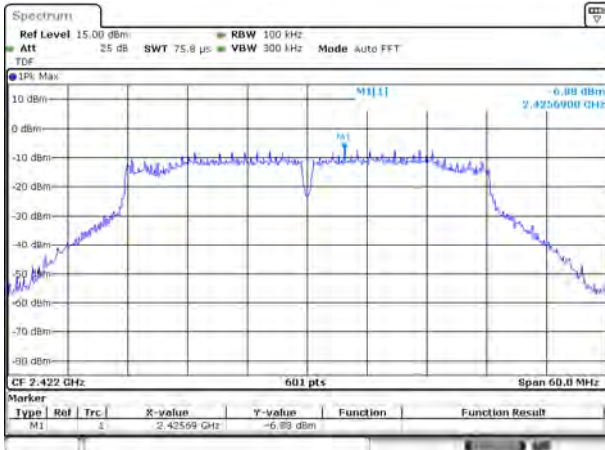
Date: 22 JUN 2019 16:14:26

802.11n-20 MHz CHANNEL 11, Reference level



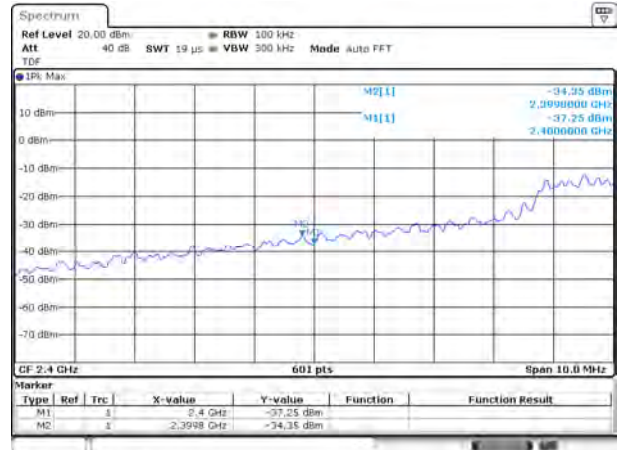
Date: 22 JUN 2019 16:15:27

802.11n-40 MHz CHANNEL 3, Carrier level



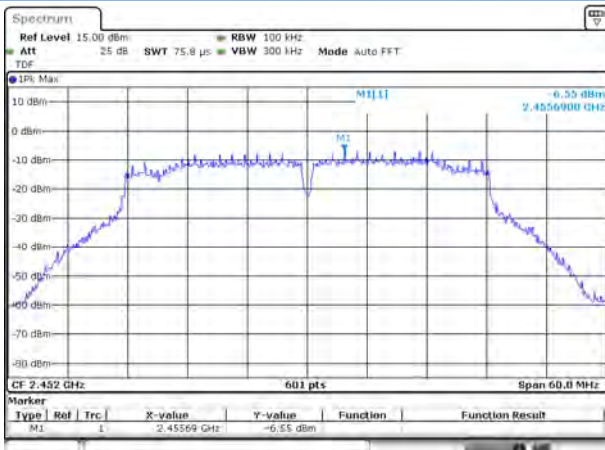
Date: 22 JUN 2019 16:17:04

802.11n-40 MHz CHANNEL 3, Reference level



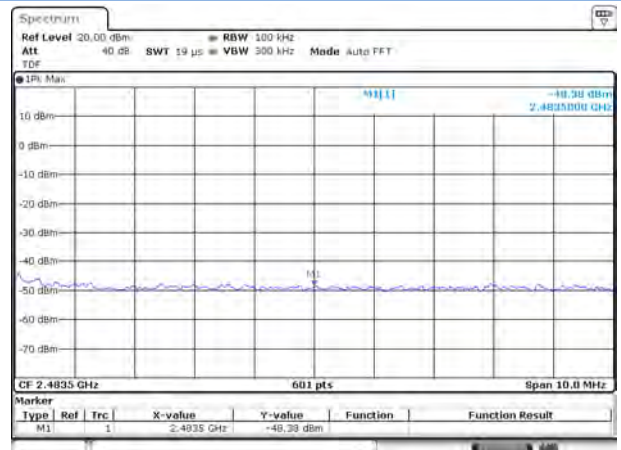
Date: 22 JUN 2019 16:18:34

802.11n-40 MHz CHANNEL 9, Carrier level



Date: 22 JUN 2019 16:21:21

802.11n-40 MHz CHANNEL 9, Reference level

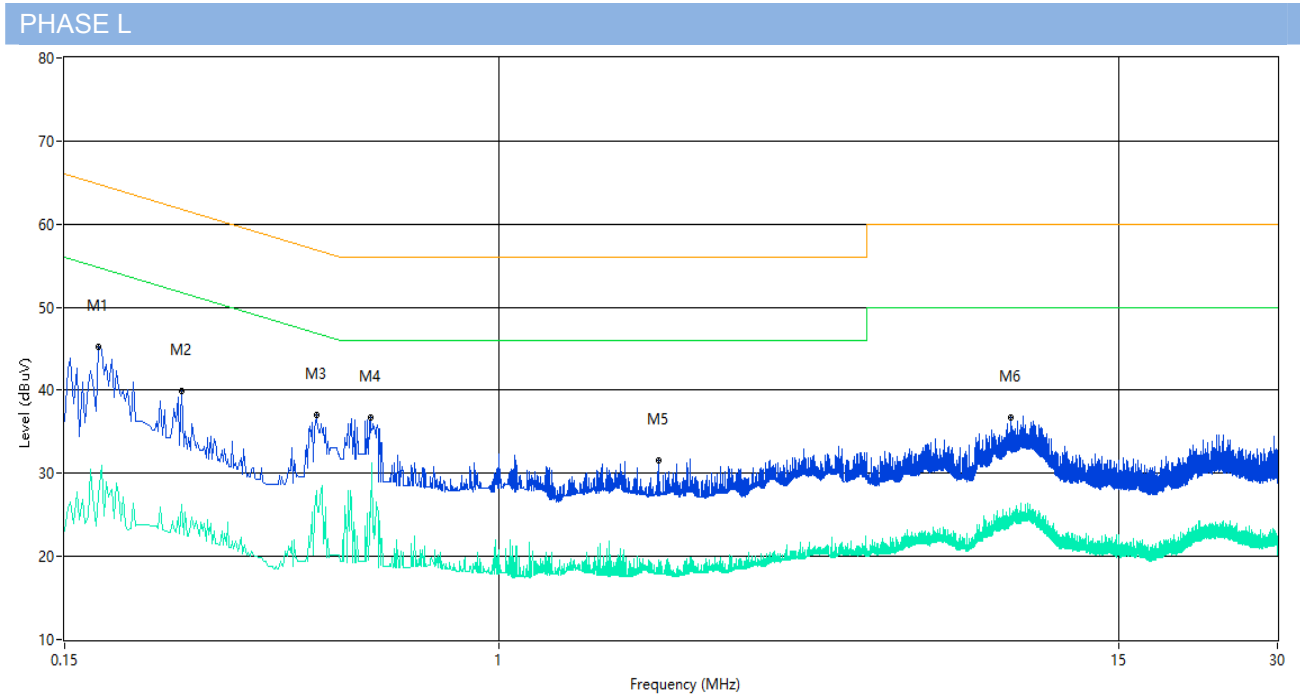


Date: 22 JUN 2019 16:22:01

## A.5 Conducted Emissions

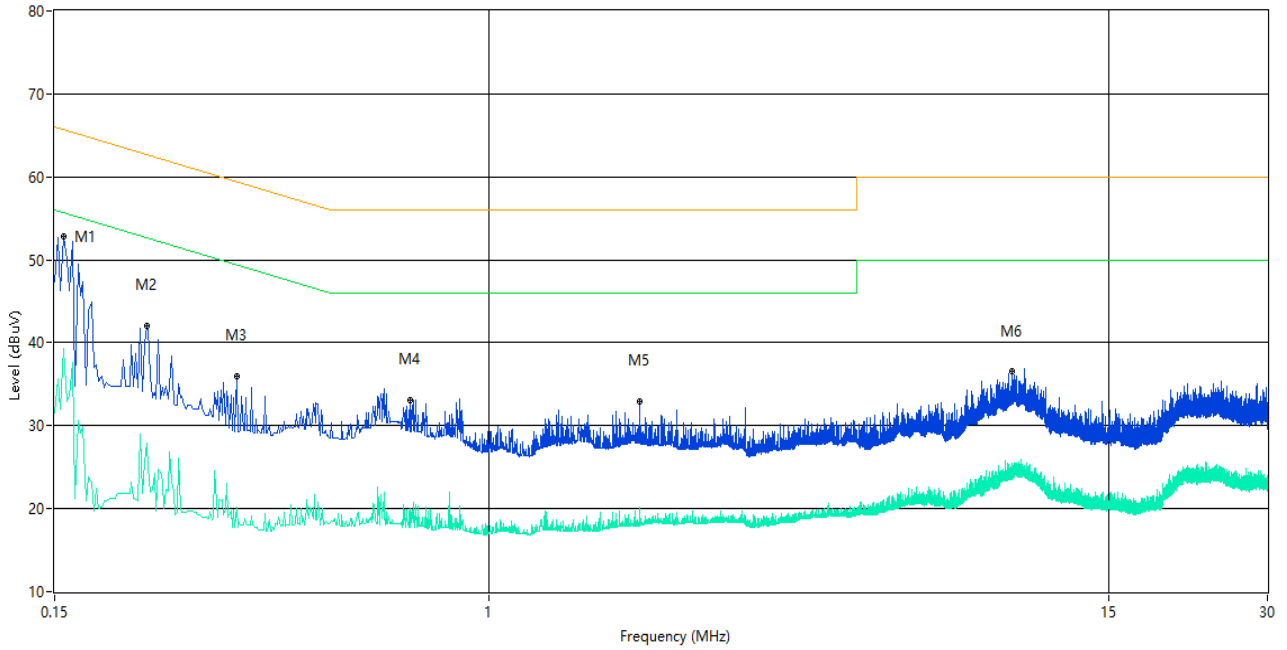
Note 1: The EUT is working in the Normal link mode.

### Test Data and Plots



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.174	45.3	10.01	64.8	-19.50	Peak	L Line	Pass
1**	0.174	27.3	10.01	54.8	-27.50	AV	L Line	Pass
2	0.250	39.9	10.00	61.8	-21.90	Peak	L Line	Pass
2**	0.250	26.3	10.00	51.8	-25.50	AV	L Line	Pass
3	0.450	37.1	10.02	56.9	-19.80	Peak	L Line	Pass
3**	0.450	28.0	10.02	46.9	-18.90	AV	L Line	Pass
4	0.570	36.8	10.01	56.0	-19.20	Peak	L Line	Pass
4**	0.570	27.6	10.01	46.0	-18.40	AV	L Line	Pass
5	2.006	31.6	10.06	56.0	-24.40	Peak	L Line	Pass
5**	2.006	19.5	10.06	46.0	-26.50	AV	L Line	Pass
6	9.366	36.7	10.16	60.0	-23.30	Peak	L Line	Pass
6**	9.366	23.4	10.16	50.0	-26.60	AV	L Line	Pass

## PHASE N



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.156	52.8	10.01	65.7	-12.90	Peak	N Line	Pass
1**	0.156	39.3	10.01	55.7	-16.40	AV	N Line	Pass
2	0.224	42.0	10.02	62.7	-20.70	Peak	N Line	Pass
2**	0.224	28.0	10.02	52.7	-24.70	AV	N Line	Pass
3	0.332	36.0	10.03	59.4	-23.40	Peak	N Line	Pass
3**	0.332	20.2	10.03	49.4	-29.20	AV	N Line	Pass
4	0.710	33.1	10.02	56.0	-22.90	Peak	N Line	Pass
4**	0.710	20.1	10.02	46.0	-25.90	AV	N Line	Pass
5	1.930	32.9	10.05	56.0	-23.10	Peak	N Line	Pass
5**	1.930	20.1	10.05	46.0	-25.90	AV	N Line	Pass
6	9.852	36.5	10.17	60.0	-23.50	Peak	N Line	Pass
6**	9.852	24.1	10.17	50.0	-25.90	AV	N Line	Pass

## A.6 Radiated Emission

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

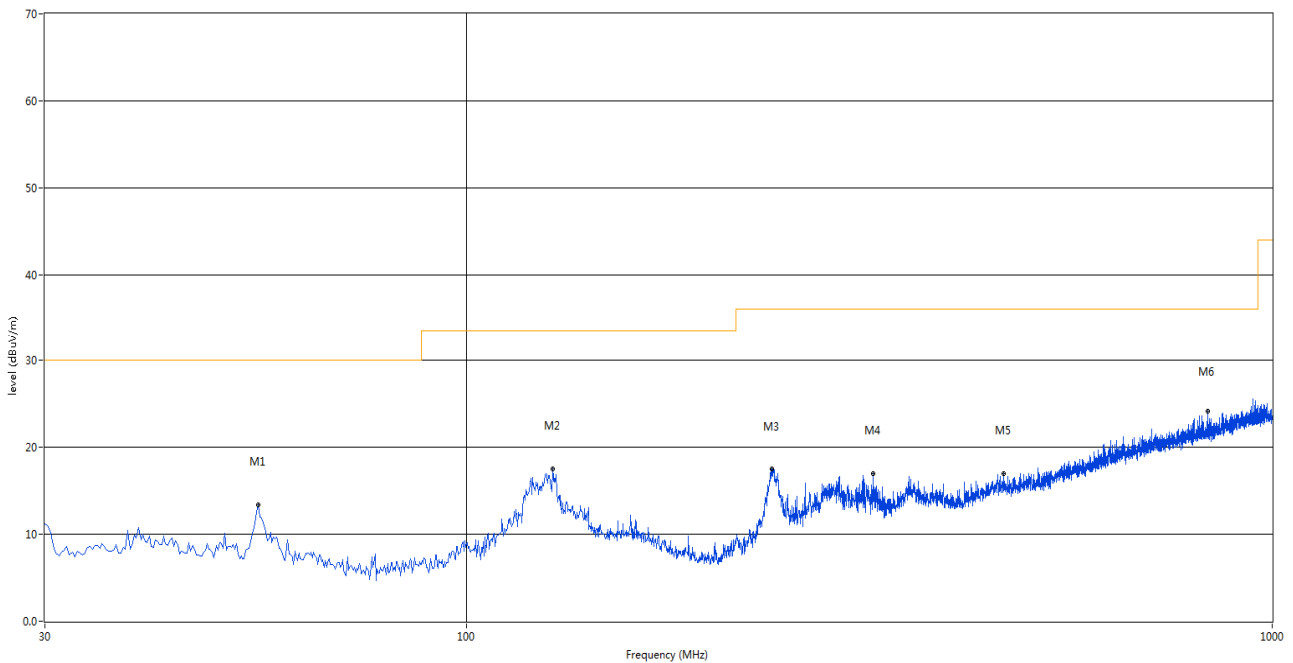
Note 2: For the test data above 1 GHz, According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

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

Note 4: The EUT is working in the Normal link mode below 1 GHz.

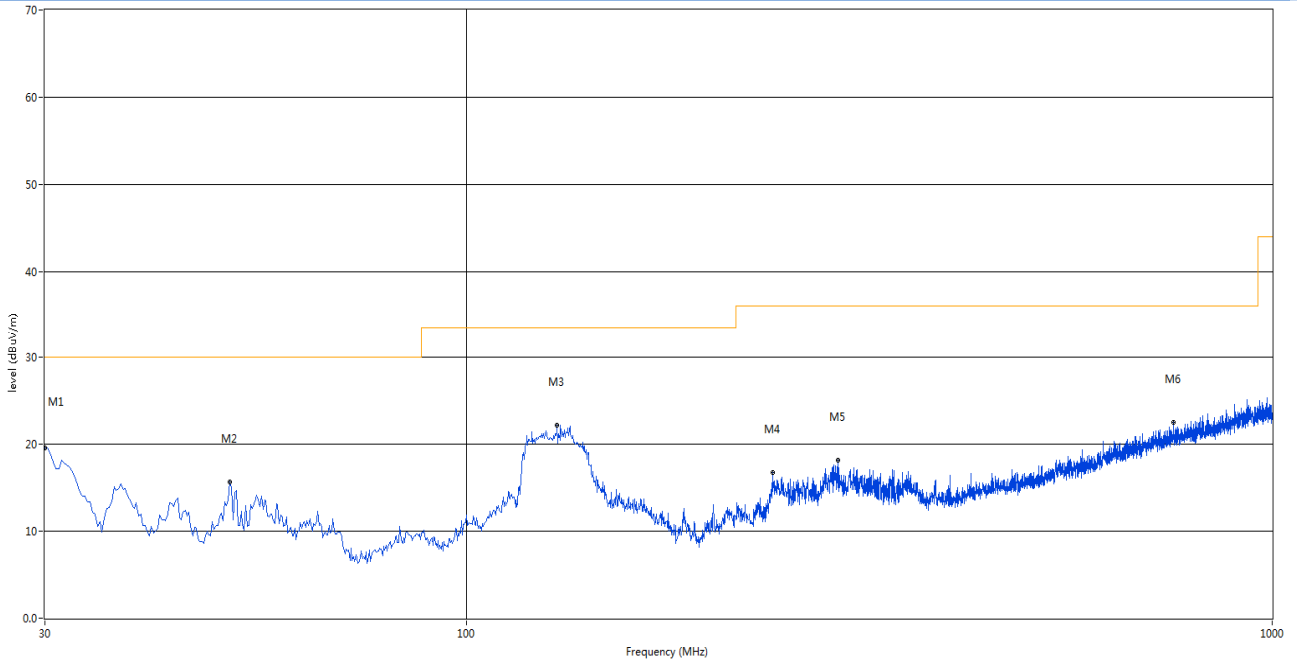
### Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	55.220	13.44	-27.48	30.0	-16.56	Peak	312.00	300	Horizontal	Pass
2	127.970	17.58	-27.34	33.5	-15.92	Peak	360.00	400	Horizontal	Pass
3	239.520	17.48	-27.89	36.0	-18.52	Peak	312.00	400	Horizontal	Pass
4	320.030	16.95	-25.30	36.0	-19.05	Peak	86.00	400	Horizontal	Pass
5	464.318	16.94	-21.22	36.0	-19.06	Peak	0.00	300	Horizontal	Pass
6	832.433	24.14	-13.71	36.0	-11.86	Peak	237.00	100	Horizontal	Pass

30 MHz to 1 GHz, ANT V



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	30.000	19.61	-27.47	30.0	-10.39	Peak	243.00	100	Vertical	Pass
2	50.855	15.69	-27.24	30.0	-14.31	Peak	360.00	200	Vertical	Pass
3	129.667	22.26	-27.37	33.5	-11.24	Peak	287.00	100	Vertical	Pass
4	240.005	16.82	-27.87	36.0	-19.18	Peak	243.00	100	Vertical	Pass
5	289.475	18.20	-26.09	36.0	-17.80	Peak	186.00	100	Vertical	Pass
6	754.347	22.51	-14.78	36.0	-13.49	Peak	360.00	200	Vertical	Pass



Note 1: The marked spikes near 2400 MHz with circle should be ignored because they are Fundamental signal.

Note 2: The spurious from 18G-25G is noise only, do not show on the report.

SISO ANT0

1 GHz to 18 GHz, ANT H 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1312.000	26.03	-17.23	54.0	-27.97	AV	340.00	100	Horizontal	Pass
1	1312.000	36.51	-17.23	74.0	-37.49	Peak	340.00	100	Horizontal	Pass
2**	1998.500	29.01	-15.59	54.0	-24.99	AV	352.00	100	Horizontal	Pass
2	1998.500	42.08	-15.59	74.0	-31.92	Peak	352.00	100	Horizontal	Pass
3**	2415.000	88.88	-12.12	54.0	34.88	AV	266.00	100	Horizontal	N/A
3	2415.000	93.22	-12.12	74.0	19.22	Peak	266.00	100	Horizontal	N/A
4**	3987.000	37.20	-3.96	54.0	-16.80	AV	11.00	100	Horizontal	Pass
4	3987.000	47.37	-3.96	74.0	-26.63	Peak	11.00	100	Horizontal	Pass
5**	6674.000	44.59	1.92	54.0	-9.41	AV	117.00	100	Horizontal	Pass
5	6674.000	54.04	1.92	74.0	-19.96	Peak	117.00	100	Horizontal	Pass
6**	13979.813	41.79	2.63	54.0	-12.21	AV	31.00	100	Horizontal	Pass
6	13979.813	53.09	2.63	74.0	-20.91	Peak	31.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11b Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1250.500	26.25	-17.34	54.0	-27.75	AV	25.00	100	Vertical	Pass
1	1250.500	36.38	-17.34	74.0	-37.62	Peak	25.00	100	Vertical	Pass
2**	1998.500	29.35	-15.59	54.0	-24.65	AV	265.00	100	Vertical	Pass
2	1998.500	45.24	-15.59	74.0	-28.76	Peak	265.00	100	Vertical	Pass
3**	2415.000	89.15	-12.12	54.0	35.15	AV	324.00	100	Vertical	N/A
3	2415.000	93.61	-12.12	74.0	19.61	Peak	324.00	100	Vertical	N/A
4**	4825.000	45.97	-2.69	54.0	-8.03	AV	360.00	100	Vertical	Pass
4	4825.000	48.57	-2.69	74.0	-25.43	Peak	360.00	100	Vertical	Pass
5**	7234.313	40.58	-2.72	54.0	-13.42	AV	256.00	100	Vertical	Pass
5	7234.313	48.67	-2.72	74.0	-25.33	Peak	256.00	100	Vertical	Pass
6**	14991.750	43.21	1.84	54.0	-10.79	AV	292.00	100	Vertical	Pass
6	14991.750	54.54	1.84	74.0	-19.46	Peak	292.00	100	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1298.500	25.87	-17.19	54.0	-28.13	AV	68.00	100	Horizontal	Pass
1	1298.500	36.69	-17.19	74.0	-37.31	Peak	68.00	100	Horizontal	Pass
2**	2093.500	30.17	-14.20	54.0	-23.83	AV	203.00	100	Horizontal	Pass
2	2093.500	41.09	-14.20	74.0	-32.91	Peak	203.00	100	Horizontal	Pass
3**	2441.000	89.38	-12.50	54.0	35.38	AV	260.00	100	Horizontal	N/A
3	2441.000	92.63	-12.50	74.0	18.63	Peak	260.00	100	Horizontal	N/A
4**	3672.000	36.74	-5.02	54.0	-17.26	AV	360.00	100	Horizontal	Pass
4	3672.000	46.38	-5.02	74.0	-27.62	Peak	360.00	100	Horizontal	Pass
5**	6671.000	44.86	2.08	54.0	-9.14	AV	41.00	100	Horizontal	Pass
5	6671.000	54.41	2.08	74.0	-19.59	Peak	41.00	100	Horizontal	Pass
6**	12921.938	41.08	1.50	54.0	-12.92	AV	360.00	100	Horizontal	Pass
6	12921.938	52.01	1.50	74.0	-21.99	Peak	360.00	100	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1264.000	26.02	-17.44	54.0	-27.98	AV	89.00	100	Vertical	Pass
1	1264.000	36.97	-17.44	74.0	-37.03	Peak	89.00	100	Vertical	Pass
2**	2000.000	28.36	-15.47	54.0	-25.64	AV	309.00	100	Vertical	Pass
2	2000.000	42.67	-15.47	74.0	-31.33	Peak	309.00	100	Vertical	Pass
3**	2440.000	88.70	-12.65	54.0	34.70	AV	320.00	100	Vertical	N/A
3	2440.000	92.92	-12.65	74.0	18.92	Peak	320.00	100	Vertical	N/A
4**	4874.000	39.26	-2.60	54.0	-14.74	AV	318.00	100	Vertical	Pass
4	4874.000	49.75	-2.60	74.0	-24.25	Peak	318.00	100	Vertical	Pass
5**	6669.000	44.85	1.98	54.0	-9.15	AV	355.00	100	Vertical	Pass
5	6669.000	54.18	1.98	74.0	-19.82	Peak	355.00	100	Vertical	Pass
6**	7309.063	41.89	-3.23	54.0	-12.11	AV	339.00	100	Vertical	Pass
6	7309.063	48.42	-3.23	74.0	-25.58	Peak	339.00	100	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1428.500	26.17	-17.33	54.0	-27.83	AV	188.00	100	Horizontal	Pass
1	1428.500	37.15	-17.33	74.0	-36.85	Peak	188.00	100	Horizontal	Pass
2**	1783.500	27.04	-16.62	54.0	-26.96	AV	0.00	100	Horizontal	Pass
2	1783.500	38.14	-16.62	74.0	-35.86	Peak	0.00	100	Horizontal	Pass
3**	2465.000	88.32	-12.37	54.0	34.32	AV	273.00	100	Horizontal	N/A
3	2465.000	92.55	-12.37	74.0	18.55	Peak	273.00	100	Horizontal	N/A
4**	4732.000	38.44	-3.29	54.0	-15.56	AV	222.00	100	Horizontal	Pass
4	4732.000	49.68	-3.29	74.0	-24.32	Peak	222.00	100	Horizontal	Pass
5**	6674.000	44.36	1.92	54.0	-9.64	AV	75.00	100	Horizontal	Pass
5	6674.000	54.38	1.92	74.0	-19.62	Peak	75.00	100	Horizontal	Pass
6**	10419.812	39.55	0.65	54.0	-14.45	AV	31.00	100	Horizontal	Pass
6	10419.812	51.02	0.65	74.0	-22.98	Peak	31.00	100	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1252.000	25.92	-17.32	54.0	-28.08	AV	199.00	100	Vertical	Pass
1	1252.000	37.05	-17.32	74.0	-36.95	Peak	199.00	100	Vertical	Pass
2**	1999.000	29.31	-15.54	54.0	-24.69	AV	353.00	100	Vertical	Pass
2	1999.000	42.28	-15.54	74.0	-31.72	Peak	353.00	100	Vertical	Pass
3**	2466.000	89.76	-12.29	54.0	35.76	AV	329.00	100	Vertical	N/A
3	2466.000	93.13	-12.29	74.0	19.13	Peak	329.00	100	Vertical	N/A
4**	3672.000	37.51	-5.02	54.0	-16.49	AV	273.00	100	Vertical	Pass
4	3672.000	47.45	-5.02	74.0	-26.55	Peak	273.00	100	Vertical	Pass
5**	7389.562	46.69	-3.36	54.0	-7.31	AV	262.00	100	Vertical	Pass
5	7389.562	49.67	-3.36	74.0	-24.33	Peak	262.00	100	Vertical	Pass
6**	14666.250	42.23	0.96	54.0	-11.77	AV	312.00	100	Vertical	Pass
6	14666.250	53.55	0.96	74.0	-20.45	Peak	312.00	100	Vertical	Pass

1 GHz to 18 GHz, ANT H 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1296.000	25.79	-17.42	54.0	-28.21	AV	156.00	100	Horizontal	Pass
1	1296.000	36.35	-17.42	74.0	-37.65	Peak	156.00	100	Horizontal	Pass
2**	1768.500	26.76	-16.86	54.0	-27.24	AV	85.00	100	Horizontal	Pass
2	1768.500	37.75	-16.86	74.0	-36.25	Peak	85.00	100	Horizontal	Pass
3**	2416.500	88.69	-12.08	54.0	34.69	AV	292.00	100	Horizontal	N/A
3	2416.500	96.30	-12.08	74.0	22.30	Peak	292.00	100	Horizontal	N/A
4**	3885.000	35.87	-5.33	54.0	-18.13	AV	7.00	100	Horizontal	Pass
4	3885.000	47.45	-5.33	74.0	-26.55	Peak	7.00	100	Horizontal	Pass
5**	6674.000	44.64	1.92	54.0	-9.36	AV	0.00	100	Horizontal	Pass
5	6674.000	54.73	1.92	74.0	-19.27	Peak	0.00	100	Horizontal	Pass
6**	14976.000	43.20	1.84	54.0	-10.80	AV	75.00	100	Horizontal	Pass
6	14976.000	53.77	1.84	74.0	-20.23	Peak	75.00	100	Horizontal	Pass

1 GHz to 18 GHz, ANT V 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1331.500	26.08	-17.21	54.0	-27.92	AV	193.00	100	Vertical	Pass
1	1331.500	36.44	-17.21	74.0	-37.56	Peak	193.00	100	Vertical	Pass
2**	1999.500	28.63	-15.50	54.0	-25.37	AV	0.00	100	Vertical	Pass
2	1999.500	42.37	-15.50	74.0	-31.63	Peak	0.00	100	Vertical	Pass
3**	2418.500	87.60	-12.36	54.0	33.60	AV	324.00	100	Vertical	N/A
3	2418.500	96.38	-12.36	74.0	22.38	Peak	324.00	100	Vertical	N/A
4**	3989.000	37.20	-3.88	54.0	-16.80	AV	252.00	100	Vertical	Pass
4	3989.000	47.21	-3.88	74.0	-26.79	Peak	252.00	100	Vertical	Pass
5**	6679.000	44.67	1.57	54.0	-9.33	AV	298.00	100	Vertical	Pass
5	6679.000	54.34	1.57	74.0	-19.66	Peak	298.00	100	Vertical	Pass
6**	14011.312	42.09	2.20	54.0	-11.91	AV	254.00	100	Vertical	Pass
6	14011.312	53.50	2.20	74.0	-20.50	Peak	254.00	100	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1310.500	26.12	-17.20	54.0	-27.88	AV	50.00	100	Horizontal	Pass
1	1310.500	37.31	-17.20	74.0	-36.69	Peak	50.00	100	Horizontal	Pass
2**	1958.500	28.18	-15.72	54.0	-25.82	AV	272.00	100	Horizontal	Pass
2	1958.500	38.70	-15.72	74.0	-35.30	Peak	272.00	100	Horizontal	Pass
3**	2442.000	87.64	-12.40	54.0	33.64	AV	254.00	100	Horizontal	N/A
3	2442.000	95.69	-12.40	74.0	21.69	Peak	254.00	100	Horizontal	N/A
4**	4757.000	38.92	-2.77	54.0	-15.08	AV	122.00	100	Horizontal	Pass
4	4757.000	49.21	-2.77	74.0	-24.79	Peak	122.00	100	Horizontal	Pass
5**	6671.000	44.59	2.08	54.0	-9.41	AV	151.00	100	Horizontal	Pass
5	6671.000	54.26	2.08	74.0	-19.74	Peak	151.00	100	Horizontal	Pass
6**	14254.125	41.94	2.44	54.0	-12.06	AV	234.00	100	Horizontal	Pass
6	14254.125	53.42	2.44	74.0	-20.58	Peak	234.00	100	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1372.000	26.26	-17.17	54.0	-27.74	AV	186.00	100	Vertical	Pass
1	1372.000	36.93	-17.17	74.0	-37.07	Peak	186.00	100	Vertical	Pass
2**	1999.500	29.02	-15.50	54.0	-24.98	AV	84.00	100	Vertical	Pass
2	1999.500	43.98	-15.50	74.0	-30.02	Peak	84.00	100	Vertical	Pass
3**	2441.500	87.99	-12.43	54.0	33.99	AV	322.00	100	Vertical	N/A
3	2441.500	96.06	-12.43	74.0	22.06	Peak	322.00	100	Vertical	N/A
4**	4710.000	38.36	-3.48	54.0	-15.64	AV	204.00	100	Vertical	Pass
4	4710.000	49.26	-3.48	74.0	-24.74	Peak	204.00	100	Vertical	Pass
5**	6681.000	44.38	1.49	54.0	-9.62	AV	0.00	100	Vertical	Pass
5	6681.000	55.14	1.49	74.0	-18.86	Peak	0.00	100	Vertical	Pass
6**	15297.563	43.29	1.69	54.0	-10.71	AV	226.00	100	Vertical	Pass
6	15297.563	54.51	1.69	74.0	-19.49	Peak	226.00	100	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1320.000	26.43	-17.11	54.0	-27.57	AV	109.00	100	Horizontal	Pass
1	1320.000	36.56	-17.11	74.0	-37.44	Peak	109.00	100	Horizontal	Pass
2**	2043.500	29.16	-15.30	54.0	-24.84	AV	84.00	100	Horizontal	Pass
2	2043.500	39.94	-15.30	74.0	-34.06	Peak	84.00	100	Horizontal	Pass
3**	2461.000	86.89	-12.43	54.0	32.89	AV	264.00	100	Horizontal	N/A
3	2461.000	96.10	-12.43	74.0	22.10	Peak	264.00	100	Horizontal	N/A
4**	3988.000	37.37	-3.91	54.0	-16.63	AV	44.00	100	Horizontal	Pass
4	3988.000	46.96	-3.91	74.0	-27.04	Peak	44.00	100	Horizontal	Pass
5**	6667.000	44.32	1.87	54.0	-9.68	AV	139.00	100	Horizontal	Pass
5	6667.000	53.99	1.87	74.0	-20.01	Peak	139.00	100	Horizontal	Pass
6**	14745.000	43.15	1.49	54.0	-10.85	AV	325.00	100	Horizontal	Pass
6	14745.000	53.67	1.49	74.0	-20.33	Peak	325.00	100	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1217.500	26.11	-17.44	54.0	-27.89	AV	42.00	100	Vertical	Pass
1	1217.500	36.46	-17.44	74.0	-37.54	Peak	42.00	100	Vertical	Pass
2**	1996.000	28.11	-15.61	54.0	-25.89	AV	72.00	100	Vertical	Pass
2	1996.000	42.99	-15.61	74.0	-31.01	Peak	72.00	100	Vertical	Pass
3**	2469.500	87.05	-12.06	54.0	33.05	AV	334.00	100	Vertical	N/A
3	2469.500	96.20	-12.06	74.0	22.20	Peak	334.00	100	Vertical	N/A
4**	3668.000	36.58	-5.43	54.0	-17.42	AV	85.00	100	Vertical	Pass
4	3668.000	47.42	-5.43	74.0	-26.58	Peak	85.00	100	Vertical	Pass
5**	6662.000	44.02	1.74	54.0	-9.98	AV	311.00	100	Vertical	Pass
5	6662.000	54.56	1.74	74.0	-19.44	Peak	311.00	100	Vertical	Pass
6**	7386.687	43.41	-3.37	54.0	-10.59	AV	252.00	100	Vertical	Pass
6	7386.687	52.61	-3.37	74.0	-21.39	Peak	252.00	100	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1412.500	26.68	-17.23	54.0	-27.32	AV	191.00	150	Horizontal	Pass
1	1412.500	37.95	-17.23	74.0	-36.05	Peak	191.00	150	Horizontal	Pass
2**	1992.500	28.36	-15.55	54.0	-25.64	AV	356.00	150	Horizontal	Pass
2	1992.500	39.26	-15.55	74.0	-34.74	Peak	356.00	150	Horizontal	Pass
3**	2416.500	88.09	-12.08	54.0	34.09	AV	284.00	150	Horizontal	N/A
3	2416.500	96.22	-12.08	74.0	22.22	Peak	284.00	150	Horizontal	N/A
4**	3672.000	37.28	-5.02	54.0	-16.72	AV	228.00	150	Horizontal	Pass
4	3672.000	46.32	-5.02	74.0	-27.68	Peak	228.00	150	Horizontal	Pass
5**	6668.000	44.81	1.90	54.0	-9.19	AV	77.00	150	Horizontal	Pass
5	6668.000	54.73	1.90	74.0	-19.27	Peak	77.00	150	Horizontal	Pass
6**	14636.063	42.66	1.16	54.0	-11.34	AV	205.00	150	Horizontal	Pass
6	14636.063	53.53	1.16	74.0	-20.47	Peak	205.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1207.500	25.94	-17.56	54.0	-28.06	AV	146.00	150	Vertical	Pass
1	1207.500	35.85	-17.56	74.0	-38.15	Peak	146.00	150	Vertical	Pass
2**	2000.000	29.75	-15.47	54.0	-24.25	AV	90.00	150	Vertical	Pass
2	2000.000	42.35	-15.47	74.0	-31.65	Peak	90.00	150	Vertical	Pass
3**	2416.500	88.80	-12.08	54.0	34.80	AV	291.00	150	Vertical	N/A
3	2416.500	96.27	-12.08	74.0	22.27	Peak	291.00	150	Vertical	N/A
4**	3674.000	36.69	-5.28	54.0	-17.31	AV	319.00	150	Vertical	Pass
4	3674.000	46.34	-5.28	74.0	-27.66	Peak	319.00	150	Vertical	Pass
5**	6681.000	44.33	1.49	54.0	-9.67	AV	197.00	150	Vertical	Pass
5	6681.000	55.02	1.49	74.0	-18.98	Peak	197.00	150	Vertical	Pass
6**	14909.062	43.00	1.43	54.0	-11.00	AV	12.00	150	Vertical	Pass
6	14909.062	53.83	1.43	74.0	-20.17	Peak	12.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1334.000	26.43	-17.14	54.0	-27.57	AV	323.00	150	Horizontal	Pass
1	1334.000	36.54	-17.14	74.0	-37.46	Peak	323.00	150	Horizontal	Pass
2**	1998.000	28.06	-15.64	54.0	-25.94	AV	351.00	150	Horizontal	Pass
2	1998.000	39.03	-15.64	74.0	-34.97	Peak	351.00	150	Horizontal	Pass
3**	2441.500	87.73	-12.43	54.0	33.73	AV	269.00	150	Horizontal	N/A
3	2441.500	95.22	-12.43	74.0	21.22	Peak	269.00	150	Horizontal	N/A
4**	3658.000	36.00	-6.22	54.0	-18.00	AV	69.00	150	Horizontal	Pass
4	3658.000	46.56	-6.22	74.0	-27.44	Peak	69.00	150	Horizontal	Pass
5**	6679.000	44.22	1.57	54.0	-9.78	AV	271.00	150	Horizontal	Pass
5	6679.000	54.31	1.57	74.0	-19.69	Peak	271.00	150	Horizontal	Pass
6**	15611.250	43.48	2.14	54.0	-10.52	AV	308.00	150	Horizontal	Pass
6	15611.250	53.77	2.14	74.0	-20.23	Peak	308.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1218.000	26.31	-17.40	54.0	-27.69	AV	0.00	150	Vertical	Pass
1	1218.000	36.61	-17.40	74.0	-37.39	Peak	0.00	150	Vertical	Pass
2**	1999.000	29.82	-15.54	54.0	-24.18	AV	277.00	150	Vertical	Pass
2	1999.000	43.77	-15.54	74.0	-30.23	Peak	277.00	150	Vertical	Pass
3**	2438.500	87.27	-12.88	54.0	33.27	AV	339.00	150	Vertical	N/A
3	2438.500	95.65	-12.88	74.0	21.65	Peak	339.00	150	Vertical	N/A
4**	3975.000	36.41	-4.74	54.0	-17.59	AV	202.00	150	Vertical	Pass
4	3975.000	47.15	-4.74	74.0	-26.85	Peak	202.00	150	Vertical	Pass
5**	6667.000	44.32	1.87	54.0	-9.68	AV	358.00	150	Vertical	Pass
5	6667.000	54.35	1.87	74.0	-19.65	Peak	358.00	150	Vertical	Pass
6**	7319.125	41.19	-3.18	54.0	-12.81	AV	272.00	150	Vertical	Pass
6	7319.125	50.39	-3.18	74.0	-23.61	Peak	272.00	150	Vertical	Pass



## 1 GHz to 18 GHz, ANT H 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1218.000	26.10	-17.40	54.0	-27.90	AV	137.00	150	Horizontal	Pass
1	1218.000	36.06	-17.40	74.0	-37.94	Peak	137.00	150	Horizontal	Pass
2**	2199.500	30.54	-12.90	54.0	-23.46	AV	196.00	150	Horizontal	Pass
2	2199.500	40.91	-12.90	74.0	-33.09	Peak	196.00	150	Horizontal	Pass
3**	2458.000	87.65	-12.46	54.0	33.65	AV	271.00	150	Horizontal	N/A
3	2458.000	96.25	-12.46	74.0	22.25	Peak	271.00	150	Horizontal	N/A
4**	3674.000	36.49	-5.28	54.0	-17.51	AV	43.00	150	Horizontal	Pass
4	3674.000	46.29	-5.28	74.0	-27.71	Peak	43.00	150	Horizontal	Pass
5**	6658.000	43.93	1.46	54.0	-10.07	AV	332.00	150	Horizontal	Pass
5	6658.000	54.38	1.46	74.0	-19.62	Peak	332.00	150	Horizontal	Pass
6**	15569.250	43.80	2.61	54.0	-10.20	AV	360.00	150	Horizontal	Pass
6	15569.250	54.53	2.61	74.0	-19.47	Peak	360.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1307.500	26.36	-16.88	54.0	-27.64	AV	278.00	150	Vertical	Pass
1	1307.500	36.89	-16.88	74.0	-37.11	Peak	278.00	150	Vertical	Pass
2**	1999.500	28.66	-15.50	54.0	-25.34	AV	281.00	150	Vertical	Pass
2	1999.500	42.80	-15.50	74.0	-31.20	Peak	281.00	150	Vertical	Pass
3**	2458.000	87.99	-12.46	54.0	33.99	AV	344.00	150	Vertical	N/A
3	2458.000	96.36	-12.46	74.0	22.36	Peak	344.00	150	Vertical	N/A
4**	3667.000	37.14	-5.50	54.0	-16.86	AV	347.00	150	Vertical	Pass
4	3667.000	46.20	-5.50	74.0	-27.80	Peak	347.00	150	Vertical	Pass
5**	6670.000	44.93	2.08	54.0	-9.07	AV	139.00	150	Vertical	Pass
5	6670.000	54.28	2.08	74.0	-19.72	Peak	139.00	150	Vertical	Pass
6**	7379.500	42.91	-3.65	54.0	-11.09	AV	276.00	150	Vertical	Pass
6	7379.500	53.06	-3.65	74.0	-20.94	Peak	276.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1273.000	26.13	-17.18	54.0	-27.87	AV	13.00	150	Horizontal	Pass
1	1273.000	36.33	-17.18	74.0	-37.67	Peak	13.00	150	Horizontal	Pass
2**	1990.500	28.69	-15.52	54.0	-25.31	AV	49.00	150	Horizontal	Pass
2	1990.500	38.62	-15.52	74.0	-35.38	Peak	49.00	150	Horizontal	Pass
3**	2433.000	86.28	-12.75	54.0	32.28	AV	263.00	150	Horizontal	N/A
3	2433.000	94.68	-12.75	74.0	20.68	Peak	263.00	150	Horizontal	N/A
4**	3992.000	37.13	-3.84	54.0	-16.87	AV	293.00	150	Horizontal	Pass
4	3992.000	47.32	-3.84	74.0	-26.68	Peak	293.00	150	Horizontal	Pass
5**	6678.000	45.24	1.62	54.0	-8.76	AV	360.00	150	Horizontal	Pass
5	6678.000	54.23	1.62	74.0	-19.77	Peak	360.00	150	Horizontal	Pass
6**	11690.563	39.66	0.57	54.0	-14.34	AV	131.00	150	Horizontal	Pass
6	11690.563	50.43	0.57	74.0	-23.57	Peak	131.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1311.500	26.09	-17.23	54.0	-27.91	AV	189.00	150	Vertical	Pass
1	1311.500	36.66	-17.23	74.0	-37.34	Peak	189.00	150	Vertical	Pass
2**	1992.500	28.28	-15.55	54.0	-25.72	AV	320.00	150	Vertical	Pass
2	1992.500	43.60	-15.55	74.0	-30.40	Peak	320.00	150	Vertical	Pass
3**	2438.000	85.63	-12.96	54.0	31.63	AV	332.00	150	Vertical	N/A
3	2438.000	95.46	-12.96	74.0	21.46	Peak	332.00	150	Vertical	N/A
4**	3672.000	37.12	-5.02	54.0	-16.88	AV	274.00	150	Vertical	Pass
4	3672.000	46.31	-5.02	74.0	-27.69	Peak	274.00	150	Vertical	Pass
5**	6679.000	44.21	1.57	54.0	-9.79	AV	112.00	150	Vertical	Pass
5	6679.000	54.22	1.57	74.0	-19.78	Peak	112.00	150	Vertical	Pass
6**	14210.813	42.86	2.54	54.0	-11.14	AV	262.00	150	Vertical	Pass
6	14210.813	53.19	2.54	74.0	-20.81	Peak	262.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1346.000	26.51	-17.21	54.0	-27.49	AV	10.00	150	Horizontal	Pass
1	1346.000	36.96	-17.21	74.0	-37.04	Peak	10.00	150	Horizontal	Pass
2**	1985.000	28.14	-15.38	54.0	-25.86	AV	48.00	150	Horizontal	Pass
2	1985.000	38.71	-15.38	74.0	-35.29	Peak	48.00	150	Horizontal	Pass
3**	2445.500	86.38	-12.49	54.0	32.38	AV	277.00	150	Horizontal	N/A
3	2445.500	94.47	-12.49	74.0	20.47	Peak	277.00	150	Horizontal	N/A
4**	3671.000	36.58	-5.35	54.0	-17.42	AV	3.00	150	Horizontal	Pass
4	3671.000	46.28	-5.35	74.0	-27.72	Peak	3.00	150	Horizontal	Pass
5**	6668.000	44.91	1.90	54.0	-9.09	AV	120.00	150	Horizontal	Pass
5	6668.000	54.06	1.90	74.0	-19.94	Peak	120.00	150	Horizontal	Pass
6**	13264.500	41.46	1.33	54.0	-12.54	AV	1.00	150	Horizontal	Pass
6	13264.500	52.42	1.33	74.0	-21.58	Peak	1.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1188.000	25.43	-17.71	54.0	-28.57	AV	91.00	150	Vertical	Pass
1	1188.000	36.62	-17.71	74.0	-37.38	Peak	91.00	150	Vertical	Pass
2**	1998.000	29.83	-15.64	54.0	-24.17	AV	315.00	150	Vertical	Pass
2	1998.000	43.78	-15.64	74.0	-30.22	Peak	315.00	150	Vertical	Pass
3**	2433.000	86.73	-12.75	54.0	32.73	AV	337.00	150	Vertical	N/A
3	2433.000	95.66	-12.75	74.0	21.66	Peak	337.00	150	Vertical	N/A
4**	3978.000	36.44	-4.70	54.0	-17.56	AV	287.00	150	Vertical	Pass
4	3978.000	47.42	-4.70	74.0	-26.58	Peak	287.00	150	Vertical	Pass
5**	6674.000	44.69	1.92	54.0	-9.31	AV	41.00	150	Vertical	Pass
5	6674.000	53.96	1.92	74.0	-20.04	Peak	41.00	150	Vertical	Pass
6**	12134.750	39.74	0.78	54.0	-14.26	AV	64.00	150	Vertical	Pass
6	12134.750	51.05	0.78	74.0	-22.95	Peak	64.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1241.500	25.40	-17.69	54.0	-28.60	AV	153.00	150	Horizontal	Pass
1	1241.500	36.59	-17.69	74.0	-37.41	Peak	153.00	150	Horizontal	Pass
2**	2113.500	29.77	-13.74	54.0	-24.23	AV	359.00	150	Horizontal	Pass
2	2113.500	39.88	-13.74	74.0	-34.12	Peak	359.00	150	Horizontal	Pass
3**	2464.000	86.56	-12.44	54.0	32.56	AV	283.00	150	Horizontal	N/A
3	2464.000	94.84	-12.44	74.0	20.84	Peak	283.00	150	Horizontal	N/A
4**	3670.000	36.44	-5.67	54.0	-17.56	AV	171.00	150	Horizontal	Pass
4	3670.000	45.99	-5.67	74.0	-28.01	Peak	171.00	150	Horizontal	Pass
5**	6672.000	45.00	2.00	54.0	-9.00	AV	225.00	150	Horizontal	Pass
5	6672.000	54.96	2.00	74.0	-19.04	Peak	225.00	150	Horizontal	Pass
6**	12563.125	41.05	1.84	54.0	-12.95	AV	0.00	150	Horizontal	Pass
6	12563.125	51.26	1.84	74.0	-22.74	Peak	0.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1332.000	26.01	-17.24	54.0	-27.99	AV	269.00	150	Vertical	Pass
1	1332.000	36.31	-17.24	74.0	-37.69	Peak	269.00	150	Vertical	Pass
2**	1999.000	29.04	-15.54	54.0	-24.96	AV	89.00	150	Vertical	Pass
2	1999.000	43.34	-15.54	74.0	-30.66	Peak	89.00	150	Vertical	Pass
3**	2445.500	86.86	-12.49	54.0	32.86	AV	351.00	150	Vertical	N/A
3	2445.500	95.44	-12.49	74.0	21.44	Peak	351.00	150	Vertical	N/A
4**	3988.000	37.88	-3.91	54.0	-16.12	AV	59.00	150	Vertical	Pass
4	3988.000	47.28	-3.91	74.0	-26.72	Peak	59.00	150	Vertical	Pass
5**	6676.000	44.92	1.77	54.0	-9.08	AV	181.00	150	Vertical	Pass
5	6676.000	55.10	1.77	74.0	-18.90	Peak	181.00	150	Vertical	Pass
6**	11591.375	39.56	0.22	54.0	-14.44	AV	278.00	150	Vertical	Pass
6	11591.375	50.68	0.22	74.0	-23.32	Peak	278.00	150	Vertical	Pass

**SISO ANT1**
**1 GHz to 18 GHz, ANT H 802.11b Low Channel**

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1208.000	25.85	-17.57	54.0	-28.15	AV	316.00	150	Horizontal	Pass
1	1208.000	36.38	-17.57	74.0	-37.62	Peak	316.00	150	Horizontal	Pass
2**	1917.000	28.04	-15.82	54.0	-25.96	AV	308.00	150	Horizontal	Pass
2	1917.000	38.64	-15.82	74.0	-35.36	Peak	308.00	150	Horizontal	Pass
3**	2415.000	88.97	-12.12	54.0	34.97	AV	217.00	150	Horizontal	N/A
3	2415.000	93.37	-12.12	74.0	19.37	Peak	217.00	150	Horizontal	N/A
4**	3672.000	36.78	-5.02	54.0	-17.22	AV	184.00	150	Horizontal	Pass
4	3672.000	46.46	-5.02	74.0	-27.54	Peak	184.00	150	Horizontal	Pass
5**	6677.000	44.50	1.67	54.0	-9.50	AV	158.00	150	Horizontal	Pass
5	6677.000	54.30	1.67	74.0	-19.70	Peak	158.00	150	Horizontal	Pass
6**	11282.312	39.59	0.62	54.0	-14.41	AV	259.00	150	Horizontal	Pass
6	11282.312	50.84	0.62	74.0	-23.16	Peak	259.00	150	Horizontal	Pass

**1 GHz to 18 GHz, ANT V 802.11b Low Channel**

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1996.000	27.91	-15.61	54.0	-26.09	AV	279.00	150	Vertical	Pass
1	1996.000	42.81	-15.61	74.0	-31.19	Peak	279.00	150	Vertical	Pass
2**	2414.500	88.97	-12.15	54.0	34.97	AV	67.00	150	Vertical	N/A
2	2414.500	93.24	-12.15	74.0	19.24	Peak	67.00	150	Vertical	N/A
3**	4825.000	46.95	-2.69	54.0	-7.05	AV	360.00	150	Vertical	Pass
3	4825.000	47.72	-2.69	74.0	-26.28	Peak	360.00	150	Vertical	Pass
4**	6677.000	44.17	1.67	54.0	-9.83	AV	318.00	150	Vertical	Pass
4	6677.000	55.57	1.67	74.0	-18.43	Peak	318.00	150	Vertical	Pass
5**	7235.750	43.84	-2.59	54.0	-10.16	AV	50.00	150	Vertical	Pass
5	7235.750	49.67	-2.59	74.0	-24.33	Peak	50.00	150	Vertical	Pass
6**	15518.063	43.90	2.48	54.0	-10.10	AV	220.00	150	Vertical	Pass
6	15518.063	54.99	2.48	74.0	-19.01	Peak	220.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1241.000	25.96	-17.72	54.0	-28.04	AV	0.00	150	Horizontal	Pass
1	1241.000	36.58	-17.72	74.0	-37.42	Peak	0.00	150	Horizontal	Pass
2**	1791.000	27.34	-16.47	54.0	-26.66	AV	13.00	150	Horizontal	Pass
2	1791.000	37.95	-16.47	74.0	-36.05	Peak	13.00	150	Horizontal	Pass
3**	2440.000	88.65	-12.65	54.0	34.65	AV	47.00	150	Horizontal	N/A
3	2440.000	92.98	-12.65	74.0	18.98	Peak	47.00	150	Horizontal	N/A
4**	3981.000	37.70	-4.24	54.0	-16.30	AV	135.00	150	Horizontal	Pass
4	3981.000	47.40	-4.24	74.0	-26.60	Peak	135.00	150	Horizontal	Pass
5**	6670.000	45.09	2.08	54.0	-8.91	AV	360.00	150	Horizontal	Pass
5	6670.000	54.89	2.08	74.0	-19.11	Peak	360.00	150	Horizontal	Pass
6**	15363.188	43.24	1.28	54.0	-10.76	AV	108.00	150	Horizontal	Pass
6	15363.188	54.40	1.28	74.0	-19.60	Peak	108.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11b Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1997.000	28.95	-15.64	54.0	-25.05	AV	334.00	150	Vertical	Pass
1	1997.000	42.64	-15.64	74.0	-31.36	Peak	334.00	150	Vertical	Pass
2**	2440.000	88.72	-12.65	54.0	34.72	AV	351.00	150	Vertical	N/A
2	2440.000	92.96	-12.65	74.0	18.96	Peak	351.00	150	Vertical	N/A
3**	4874.000	39.83	-2.60	54.0	-14.17	AV	12.00	150	Vertical	Pass
3	4874.000	51.01	-2.60	74.0	-22.99	Peak	12.00	150	Vertical	Pass
4**	6675.000	44.68	1.88	54.0	-9.32	AV	221.00	150	Vertical	Pass
4	6675.000	54.74	1.88	74.0	-19.26	Peak	221.00	150	Vertical	Pass
5**	7307.625	39.80	-3.28	54.0	-14.20	AV	56.00	150	Vertical	Pass
5	7307.625	48.35	-3.28	74.0	-25.65	Peak	56.00	150	Vertical	Pass
6**	15234.562	43.83	2.06	54.0	-10.17	AV	194.00	150	Vertical	Pass
6	15234.562	53.86	2.06	74.0	-20.14	Peak	194.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1283.000	25.90	-17.37	54.0	-28.10	AV	284.00	150	Horizontal	Pass
1	1283.000	37.25	-17.37	74.0	-36.75	Peak	284.00	150	Horizontal	Pass
2**	1902.000	28.21	-15.83	54.0	-25.79	AV	67.00	150	Horizontal	Pass
2	1902.000	38.68	-15.83	74.0	-35.32	Peak	67.00	150	Horizontal	Pass
3**	2466.000	89.46	-12.29	54.0	35.46	AV	45.00	150	Horizontal	N/A
3	2466.000	92.73	-12.29	74.0	18.73	Peak	45.00	150	Horizontal	N/A
4**	3676.000	36.99	-5.15	54.0	-17.01	AV	220.00	150	Horizontal	Pass
4	3676.000	46.89	-5.15	74.0	-27.11	Peak	220.00	150	Horizontal	Pass
5**	6674.000	45.12	1.92	54.0	-8.88	AV	0.00	150	Horizontal	Pass
5	6674.000	54.41	1.92	74.0	-19.59	Peak	0.00	150	Horizontal	Pass
6**	14405.063	42.73	2.53	54.0	-11.27	AV	1.00	150	Horizontal	Pass
6	14405.063	54.14	2.53	74.0	-19.86	Peak	1.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11b High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1998.500	28.59	-15.59	54.0	-25.41	AV	287.00	150	Vertical	Pass
1	1998.500	43.64	-15.59	74.0	-30.36	Peak	287.00	150	Vertical	Pass
2**	2465.000	88.77	-12.37	54.0	34.77	AV	31.00	150	Vertical	N/A
2	2465.000	93.02	-12.37	74.0	19.02	Peak	31.00	150	Vertical	N/A
3**	4924.000	38.61	-3.41	54.0	-15.39	AV	14.00	150	Vertical	Pass
3	4924.000	50.40	-3.41	74.0	-23.60	Peak	14.00	150	Vertical	Pass
4**	6666.000	44.57	1.82	54.0	-9.43	AV	308.00	150	Vertical	Pass
4	6666.000	54.01	1.82	74.0	-19.99	Peak	308.00	150	Vertical	Pass
5**	7983.250	38.02	-2.27	54.0	-15.98	AV	139.00	150	Vertical	Pass
5	7983.250	49.31	-2.27	74.0	-24.69	Peak	139.00	150	Vertical	Pass
6**	14949.750	43.09	1.39	54.0	-10.91	AV	153.00	150	Vertical	Pass
6	14949.750	54.55	1.39	74.0	-19.45	Peak	153.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1427.000	26.46	-17.46	54.0	-27.54	AV	338.00	150	Horizontal	Pass
1	1427.000	37.12	-17.46	74.0	-36.88	Peak	338.00	150	Horizontal	Pass
2**	2113.000	30.05	-13.80	54.0	-23.95	AV	163.00	150	Horizontal	Pass
2	2113.000	40.38	-13.80	74.0	-33.62	Peak	163.00	150	Horizontal	Pass
3**	2408.500	89.10	-12.05	54.0	35.10	AV	45.00	150	Horizontal	N/A
3	2408.500	96.59	-12.05	74.0	22.59	Peak	45.00	150	Horizontal	N/A
4**	3981.000	37.48	-4.24	54.0	-16.52	AV	360.00	150	Horizontal	Pass
4	3981.000	46.48	-4.24	74.0	-27.52	Peak	360.00	150	Horizontal	Pass
5**	6670.000	44.61	2.08	54.0	-9.39	AV	6.00	150	Horizontal	Pass
5	6670.000	55.19	2.08	74.0	-18.81	Peak	6.00	150	Horizontal	Pass
6**	15564.000	44.36	2.53	54.0	-9.64	AV	137.00	150	Horizontal	Pass
6	15564.000	55.07	2.53	74.0	-18.93	Peak	137.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11g Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1320.500	25.94	-17.18	54.0	-28.06	AV	96.00	150	Vertical	Pass
1	1320.500	36.73	-17.18	74.0	-37.27	Peak	96.00	150	Vertical	Pass
2**	1994.000	28.11	-15.65	54.0	-25.89	AV	330.00	150	Vertical	Pass
2	1994.000	42.79	-15.65	74.0	-31.21	Peak	330.00	150	Vertical	Pass
3**	2408.500	88.84	-12.05	54.0	34.84	AV	47.00	150	Vertical	N/A
3	2408.500	96.39	-12.05	74.0	22.39	Peak	47.00	150	Vertical	N/A
4**	3983.000	37.10	-4.27	54.0	-16.90	AV	53.00	150	Vertical	Pass
4	3983.000	46.92	-4.27	74.0	-27.08	Peak	53.00	150	Vertical	Pass
5**	6666.000	44.36	1.82	54.0	-9.64	AV	126.00	150	Vertical	Pass
5	6666.000	54.70	1.82	74.0	-19.30	Peak	126.00	150	Vertical	Pass
6**	7242.937	40.48	-2.85	54.0	-13.52	AV	305.00	150	Vertical	Pass
6	7242.937	50.07	-2.85	74.0	-23.93	Peak	305.00	150	Vertical	Pass



## 1 GHz to 18 GHz, ANT H 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1302.000	26.40	-17.25	54.0	-27.60	AV	238.00	150	Horizontal	Pass
1	1302.000	36.06	-17.25	74.0	-37.94	Peak	238.00	150	Horizontal	Pass
2**	2020.000	28.77	-15.41	54.0	-25.23	AV	78.00	150	Horizontal	Pass
2	2020.000	38.96	-15.41	74.0	-35.04	Peak	78.00	150	Horizontal	Pass
3**	2441.000	87.96	-12.50	54.0	33.96	AV	43.00	150	Horizontal	N/A
3	2441.000	95.59	-12.50	74.0	21.59	Peak	43.00	150	Horizontal	N/A
4**	3993.000	37.48	-3.74	54.0	-16.52	AV	288.00	150	Horizontal	Pass
4	3993.000	46.74	-3.74	74.0	-27.26	Peak	288.00	150	Horizontal	Pass
5**	6672.000	44.86	2.00	54.0	-9.14	AV	62.00	150	Horizontal	Pass
5	6672.000	54.80	2.00	74.0	-19.20	Peak	62.00	150	Horizontal	Pass
6**	13659.563	41.68	1.67	54.0	-12.32	AV	36.00	150	Horizontal	Pass
6	13659.563	51.94	1.67	74.0	-22.06	Peak	36.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11g Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1184.000	25.23	-17.71	54.0	-28.77	AV	129.00	150	Vertical	Pass
1	1184.000	35.83	-17.71	74.0	-38.17	Peak	129.00	150	Vertical	Pass
2**	1995.500	29.38	-15.60	54.0	-24.62	AV	286.00	150	Vertical	Pass
2	1995.500	42.69	-15.60	74.0	-31.31	Peak	286.00	150	Vertical	Pass
3**	2442.000	88.45	-12.40	54.0	34.45	AV	188.00	150	Vertical	N/A
3	2442.000	96.12	-12.40	74.0	22.12	Peak	188.00	150	Vertical	N/A
4**	3672.000	37.47	-5.02	54.0	-16.53	AV	97.00	150	Vertical	Pass
4	3672.000	46.68	-5.02	74.0	-27.32	Peak	97.00	150	Vertical	Pass
5**	6669.000	44.82	1.98	54.0	-9.18	AV	225.00	150	Vertical	Pass
5	6669.000	54.20	1.98	74.0	-19.80	Peak	225.00	150	Vertical	Pass
6**	7322.000	38.04	-3.09	54.0	-15.96	AV	64.00	150	Vertical	Pass
6	7322.000	49.23	-3.09	74.0	-24.77	Peak	64.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1390.000	26.48	-17.55	54.0	-27.52	AV	283.00	150	Horizontal	Pass
1	1390.000	36.75	-17.55	74.0	-37.25	Peak	283.00	150	Horizontal	Pass
2**	1945.000	28.21	-15.70	54.0	-25.79	AV	0.00	150	Horizontal	Pass
2	1945.000	38.19	-15.70	74.0	-35.81	Peak	0.00	150	Horizontal	Pass
3**	2463.000	86.86	-12.49	54.0	32.86	AV	99.00	150	Horizontal	N/A
3	2463.000	95.55	-12.49	74.0	21.55	Peak	99.00	150	Horizontal	N/A
4**	4003.000	36.36	-4.39	54.0	-17.64	AV	177.00	150	Horizontal	Pass
4	4003.000	47.08	-4.39	74.0	-26.92	Peak	177.00	150	Horizontal	Pass
5**	6672.000	44.66	2.00	54.0	-9.34	AV	257.00	150	Horizontal	Pass
5	6672.000	54.26	2.00	74.0	-19.74	Peak	257.00	150	Horizontal	Pass
6**	15856.687	43.46	1.63	54.0	-10.54	AV	138.00	150	Horizontal	Pass
6	15856.687	56.15	1.63	74.0	-17.85	Peak	138.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11g High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1243.500	25.62	-17.56	54.0	-28.38	AV	9.00	150	Vertical	Pass
1	1243.500	36.33	-17.56	74.0	-37.67	Peak	9.00	150	Vertical	Pass
2**	1999.000	30.24	-15.54	54.0	-23.76	AV	283.00	150	Vertical	Pass
2	1999.000	43.70	-15.54	74.0	-30.30	Peak	283.00	150	Vertical	Pass
3**	2458.000	88.43	-12.46	54.0	34.43	AV	62.00	150	Vertical	N/A
3	2458.000	96.23	-12.46	74.0	22.23	Peak	62.00	150	Vertical	N/A
4**	3679.000	36.24	-5.58	54.0	-17.76	AV	323.00	150	Vertical	Pass
4	3679.000	46.35	-5.58	74.0	-27.65	Peak	323.00	150	Vertical	Pass
5**	6676.000	44.70	1.77	54.0	-9.30	AV	32.00	150	Vertical	Pass
5	6676.000	54.43	1.77	74.0	-19.57	Peak	32.00	150	Vertical	Pass
6**	10859.688	39.95	0.61	54.0	-14.05	AV	306.00	150	Vertical	Pass
6	10859.688	49.66	0.61	74.0	-24.34	Peak	306.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1336.000	26.58	-17.07	54.0	-27.42	AV	229.00	150	Horizontal	Pass
1	1336.000	36.86	-17.07	74.0	-37.14	Peak	229.00	150	Horizontal	Pass
2**	1800.000	28.08	-16.30	54.0	-25.92	AV	40.00	150	Horizontal	Pass
2	1800.000	37.95	-16.30	74.0	-36.05	Peak	40.00	150	Horizontal	Pass
3**	2407.000	87.96	-11.97	54.0	33.96	AV	110.00	150	Horizontal	N/A
3	2407.000	96.34	-11.97	74.0	22.34	Peak	110.00	150	Horizontal	N/A
4**	3995.000	37.23	-4.00	54.0	-16.77	AV	156.00	150	Horizontal	Pass
4	3995.000	47.32	-4.00	74.0	-26.68	Peak	156.00	150	Horizontal	Pass
5**	6674.000	44.72	1.92	54.0	-9.28	AV	168.00	150	Horizontal	Pass
5	6674.000	54.64	1.92	74.0	-19.36	Peak	168.00	150	Horizontal	Pass
6**	12607.688	41.15	2.18	54.0	-12.85	AV	307.00	150	Horizontal	Pass
6	12607.688	51.59	2.18	74.0	-22.41	Peak	307.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	2000.000	29.27	-15.47	54.0	-24.73	AV	8.00	150	Vertical	Pass
1	2000.000	44.24	-15.47	74.0	-29.76	Peak	8.00	150	Vertical	Pass
2**	2417.000	88.58	-12.15	54.0	34.58	AV	351.00	150	Vertical	N/A
2	2417.000	96.79	-12.15	74.0	22.79	Peak	351.00	150	Vertical	N/A
3**	3982.000	36.85	-4.27	54.0	-17.15	AV	252.00	150	Vertical	Pass
3	3982.000	47.92	-4.27	74.0	-26.08	Peak	252.00	150	Vertical	Pass
4**	6665.000	44.52	1.72	54.0	-9.48	AV	348.00	150	Vertical	Pass
4	6665.000	55.04	1.72	74.0	-18.96	Peak	348.00	150	Vertical	Pass
5**	7238.625	41.35	-2.68	54.0	-12.65	AV	60.00	150	Vertical	Pass
5	7238.625	51.17	-2.68	74.0	-22.83	Peak	60.00	150	Vertical	Pass
6**	14516.625	42.67	1.40	54.0	-11.33	AV	217.00	150	Vertical	Pass
6	14516.625	53.81	1.40	74.0	-20.19	Peak	217.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1308.500	26.09	-17.03	54.0	-27.91	AV	292.00	150	Horizontal	Pass
1	1308.500	36.77	-17.03	74.0	-37.23	Peak	292.00	150	Horizontal	Pass
2**	1999.500	28.16	-15.50	54.0	-25.84	AV	24.00	150	Horizontal	Pass
2	1999.500	39.23	-15.50	74.0	-34.77	Peak	24.00	150	Horizontal	Pass
3**	2441.500	88.96	-12.43	54.0	34.96	AV	175.00	150	Horizontal	N/A
3	2441.500	95.73	-12.43	74.0	21.73	Peak	175.00	150	Horizontal	N/A
4**	3988.000	37.66	-3.91	54.0	-16.34	AV	360.00	150	Horizontal	Pass
4	3988.000	47.25	-3.91	74.0	-26.75	Peak	360.00	150	Horizontal	Pass
5**	6682.000	44.01	1.17	54.0	-9.99	AV	254.00	150	Horizontal	Pass
5	6682.000	54.20	1.17	74.0	-19.80	Peak	254.00	150	Horizontal	Pass
6**	13327.500	40.65	1.40	54.0	-13.35	AV	228.00	150	Horizontal	Pass
6	13327.500	51.80	1.40	74.0	-22.20	Peak	228.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1999.000	29.57	-15.54	54.0	-24.43	AV	289.00	150	Vertical	Pass
1	1999.000	43.44	-15.54	74.0	-30.56	Peak	289.00	150	Vertical	Pass
2**	2432.500	88.08	-12.75	54.0	34.08	AV	349.00	150	Vertical	N/A
2	2432.500	96.19	-12.75	74.0	22.19	Peak	349.00	150	Vertical	N/A
3**	3672.000	37.29	-5.02	54.0	-16.71	AV	199.00	150	Vertical	Pass
3	3672.000	46.39	-5.02	74.0	-27.61	Peak	199.00	150	Vertical	Pass
4**	6667.000	44.52	1.87	54.0	-9.48	AV	360.00	150	Vertical	Pass
4	6667.000	54.58	1.87	74.0	-19.42	Peak	360.00	150	Vertical	Pass
5**	7316.250	39.56	-2.91	54.0	-14.44	AV	50.00	150	Vertical	Pass
5	7316.250	49.70	-2.91	74.0	-24.30	Peak	50.00	150	Vertical	Pass
6**	14416.874	42.49	2.51	54.0	-11.51	AV	137.00	150	Vertical	Pass
6	14416.874	53.32	2.51	74.0	-20.68	Peak	137.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1344.000	26.19	-17.29	54.0	-27.81	AV	22.00	150	Horizontal	Pass
1	1344.000	36.59	-17.29	74.0	-37.41	Peak	22.00	150	Horizontal	Pass
2**	1921.500	28.00	-15.75	54.0	-26.00	AV	204.00	150	Horizontal	Pass
2	1921.500	38.71	-15.75	74.0	-35.29	Peak	204.00	150	Horizontal	Pass
3**	2466.000	87.86	-12.29	54.0	33.86	AV	229.00	150	Horizontal	N/A
3	2466.000	96.08	-12.29	74.0	22.08	Peak	229.00	150	Horizontal	N/A
4**	3658.000	36.24	-6.22	54.0	-17.76	AV	57.00	150	Horizontal	Pass
4	3658.000	46.37	-6.22	74.0	-27.63	Peak	57.00	150	Horizontal	Pass
5**	6669.000	44.55	1.98	54.0	-9.45	AV	190.00	150	Horizontal	Pass
5	6669.000	54.28	1.98	74.0	-19.72	Peak	190.00	150	Horizontal	Pass
6**	14394.563	42.51	2.48	54.0	-11.49	AV	333.00	150	Horizontal	Pass
6	14394.563	53.47	2.48	74.0	-20.53	Peak	333.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1350.500	26.18	-17.32	54.0	-27.82	AV	360.00	150	Vertical	Pass
1	1350.500	36.66	-17.32	74.0	-37.34	Peak	360.00	150	Vertical	Pass
2**	2000.000	30.10	-15.47	54.0	-23.90	AV	313.00	150	Vertical	Pass
2	2000.000	45.36	-15.47	74.0	-28.64	Peak	313.00	150	Vertical	Pass
3**	2458.000	87.94	-12.46	54.0	33.94	AV	65.00	150	Vertical	N/A
3	2458.000	95.86	-12.46	74.0	21.86	Peak	65.00	150	Vertical	N/A
4**	3673.000	37.18	-5.11	54.0	-16.82	AV	247.00	150	Vertical	Pass
4	3673.000	46.79	-5.11	74.0	-27.21	Peak	247.00	150	Vertical	Pass
5**	6676.000	44.74	1.77	54.0	-9.26	AV	54.00	150	Vertical	Pass
5	6676.000	53.71	1.77	74.0	-20.29	Peak	54.00	150	Vertical	Pass
6**	14178.000	42.38	2.11	54.0	-11.62	AV	259.00	150	Vertical	Pass
6	14178.000	52.59	2.11	74.0	-21.41	Peak	259.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1313.500	26.38	-17.23	54.0	-27.62	AV	316.00	150	Horizontal	Pass
1	1313.500	37.30	-17.23	74.0	-36.70	Peak	316.00	150	Horizontal	Pass
2**	1999.500	27.98	-15.50	54.0	-26.02	AV	360.00	150	Horizontal	Pass
2	1999.500	39.21	-15.50	74.0	-34.79	Peak	360.00	150	Horizontal	Pass
3**	2411.000	87.68	-11.93	54.0	33.68	AV	37.00	150	Horizontal	N/A
3	2411.000	95.32	-11.93	74.0	21.32	Peak	37.00	150	Horizontal	N/A
4**	3677.000	36.34	-5.24	54.0	-17.66	AV	179.00	150	Horizontal	Pass
4	3677.000	47.56	-5.24	74.0	-26.44	Peak	179.00	150	Horizontal	Pass
5**	6679.000	44.53	1.57	54.0	-9.47	AV	345.00	150	Horizontal	Pass
5	6679.000	54.98	1.57	74.0	-19.02	Peak	345.00	150	Horizontal	Pass
6**	14222.625	42.25	2.62	54.0	-11.75	AV	110.00	150	Horizontal	Pass
6	14222.625	53.02	2.62	74.0	-20.98	Peak	110.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1171.500	25.50	-17.58	54.0	-28.50	AV	259.00	150	Vertical	Pass
1	1171.500	36.45	-17.58	74.0	-37.55	Peak	259.00	150	Vertical	Pass
2**	1993.500	29.11	-15.66	54.0	-24.89	AV	259.00	150	Vertical	Pass
2	1993.500	43.18	-15.66	74.0	-30.82	Peak	259.00	150	Vertical	Pass
3**	2426.500	86.31	-12.78	54.0	32.31	AV	348.00	150	Vertical	N/A
3	2426.500	95.26	-12.78	74.0	21.26	Peak	348.00	150	Vertical	N/A
4**	3804.000	36.18	-4.90	54.0	-17.82	AV	163.00	150	Vertical	Pass
4	3804.000	47.53	-4.90	74.0	-26.47	Peak	163.00	150	Vertical	Pass
5**	6672.000	44.56	2.00	54.0	-9.44	AV	40.00	150	Vertical	Pass
5	6672.000	55.02	2.00	74.0	-18.98	Peak	40.00	150	Vertical	Pass
6**	14057.250	41.76	1.57	54.0	-12.24	AV	360.00	150	Vertical	Pass
6	14057.250	53.62	1.57	74.0	-20.38	Peak	360.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1189.000	25.41	-17.80	54.0	-28.59	AV	195.00	150	Horizontal	Pass
1	1189.000	35.95	-17.80	74.0	-38.05	Peak	195.00	150	Horizontal	Pass
2**	1993.000	28.24	-15.61	54.0	-25.76	AV	347.00	150	Horizontal	Pass
2	1993.000	40.24	-15.61	74.0	-33.76	Peak	347.00	150	Horizontal	Pass
3**	2449.500	87.29	-12.70	54.0	33.29	AV	44.00	150	Horizontal	N/A
3	2449.500	95.07	-12.70	74.0	21.07	Peak	44.00	150	Horizontal	N/A
4**	3667.000	36.64	-5.50	54.0	-17.36	AV	208.00	150	Horizontal	Pass
4	3667.000	46.96	-5.50	74.0	-27.04	Peak	208.00	150	Horizontal	Pass
5**	6664.000	44.26	1.64	54.0	-9.74	AV	297.00	150	Horizontal	Pass
5	6664.000	53.90	1.64	74.0	-20.10	Peak	297.00	150	Horizontal	Pass
6**	12610.562	40.84	2.19	54.0	-13.16	AV	238.00	150	Horizontal	Pass
6	12610.562	51.83	2.19	74.0	-22.17	Peak	238.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1311.000	26.75	-17.22	54.0	-27.25	AV	88.00	150	Vertical	Pass
1	1311.000	36.51	-17.22	74.0	-37.49	Peak	88.00	150	Vertical	Pass
2**	1993.500	29.55	-15.66	54.0	-24.45	AV	318.00	150	Vertical	Pass
2	1993.500	43.35	-15.66	74.0	-30.65	Peak	318.00	150	Vertical	Pass
3**	2432.000	86.34	-12.75	54.0	32.34	AV	16.00	150	Vertical	N/A
3	2432.000	95.10	-12.75	74.0	21.10	Peak	16.00	150	Vertical	N/A
4**	4080.000	36.47	-5.12	54.0	-17.53	AV	95.00	150	Vertical	Pass
4	4080.000	47.13	-5.12	74.0	-26.87	Peak	95.00	150	Vertical	Pass
5**	6670.000	44.73	2.08	54.0	-9.27	AV	359.00	150	Vertical	Pass
5	6670.000	54.06	2.08	74.0	-19.94	Peak	359.00	150	Vertical	Pass
6**	12841.875	41.07	1.81	54.0	-12.93	AV	346.00	150	Vertical	Pass
6	12841.875	51.63	1.81	74.0	-22.37	Peak	346.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1296.500	25.48	-17.39	54.0	-28.52	AV	272.00	150	Horizontal	Pass
1	1296.500	36.77	-17.39	74.0	-37.23	Peak	272.00	150	Horizontal	Pass
2**	1926.000	28.20	-15.66	54.0	-25.80	AV	28.00	150	Horizontal	Pass
2	1926.000	38.86	-15.66	74.0	-35.14	Peak	28.00	150	Horizontal	Pass
3**	2460.500	86.55	-12.43	54.0	32.55	AV	162.00	150	Horizontal	N/A
3	2460.500	94.73	-12.43	74.0	20.73	Peak	162.00	150	Horizontal	N/A
4**	3669.000	36.58	-5.55	54.0	-17.42	AV	125.00	150	Horizontal	Pass
4	3669.000	46.60	-5.55	74.0	-27.40	Peak	125.00	150	Horizontal	Pass
5**	6677.000	44.63	1.67	54.0	-9.37	AV	154.00	150	Horizontal	Pass
5	6677.000	54.69	1.67	74.0	-19.31	Peak	154.00	150	Horizontal	Pass
6**	13599.188	40.87	1.67	54.0	-13.13	AV	0.00	150	Horizontal	Pass
6	13599.188	52.06	1.67	74.0	-21.94	Peak	0.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1277.500	25.69	-17.29	54.0	-28.31	AV	10.00	150	Vertical	Pass
1	1277.500	36.21	-17.29	74.0	-37.79	Peak	10.00	150	Vertical	Pass
2**	1999.500	28.94	-15.50	54.0	-25.06	AV	259.00	150	Vertical	Pass
2	1999.500	43.81	-15.50	74.0	-30.19	Peak	259.00	150	Vertical	Pass
3**	2449.000	86.64	-12.58	54.0	32.64	AV	330.00	150	Vertical	N/A
3	2449.000	95.28	-12.58	74.0	21.28	Peak	330.00	150	Vertical	N/A
4**	3672.000	37.29	-5.02	54.0	-16.71	AV	263.00	150	Vertical	Pass
4	3672.000	47.12	-5.02	74.0	-26.88	Peak	263.00	150	Vertical	Pass
5**	6668.000	44.51	1.90	54.0	-9.49	AV	14.00	150	Vertical	Pass
5	6668.000	54.28	1.90	74.0	-19.72	Peak	14.00	150	Vertical	Pass
6**	12032.687	40.10	1.12	54.0	-13.90	AV	268.00	150	Vertical	Pass
6	12032.687	51.79	1.12	74.0	-22.21	Peak	268.00	150	Vertical	Pass



## MIMO

## 1 GHz to 18 GHz, ANT H 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1813.000	29.83	-16.56	54.0	-24.17	AV	99.00	150	Horizontal	Pass
1	1813.000	40.56	-16.56	74.0	-33.44	Peak	99.00	150	Horizontal	Pass
2**	2407.500	88.33	-12.03	54.0	34.33	AV	258.00	150	Horizontal	N/A
2	2407.500	96.68	-12.03	74.0	22.68	Peak	258.00	150	Horizontal	N/A
3**	3991.000	37.53	-3.95	54.0	-16.47	AV	74.00	150	Horizontal	Pass
3	3991.000	48.58	-3.95	74.0	-25.42	Peak	74.00	150	Horizontal	Pass
4**	6672.000	44.76	2.00	54.0	-9.24	AV	133.00	150	Horizontal	Pass
4	6672.000	54.43	2.00	74.0	-19.57	Peak	133.00	150	Horizontal	Pass
5**	7485.875	38.01	-2.63	54.0	-15.99	AV	134.00	150	Horizontal	Pass
5	7485.875	48.22	-2.63	74.0	-25.78	Peak	134.00	150	Horizontal	Pass
6**	12617.750	40.79	2.20	54.0	-13.21	AV	172.00	150	Horizontal	Pass
6	12617.750	52.06	2.20	74.0	-21.94	Peak	172.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1999.500	29.70	-15.50	54.0	-24.30	AV	0.00	150	Vertical	Pass
1	1999.500	44.75	-15.50	74.0	-29.25	Peak	0.00	150	Vertical	Pass
2**	2416.000	88.07	-12.07	54.0	34.07	AV	334.00	150	Vertical	N/A
2	2416.000	97.38	-12.07	74.0	23.38	Peak	334.00	150	Vertical	N/A
3**	3975.000	36.85	-4.74	54.0	-17.15	AV	76.00	150	Vertical	Pass
3	3975.000	47.28	-4.74	74.0	-26.72	Peak	76.00	150	Vertical	Pass
4**	6679.000	44.43	1.57	54.0	-9.57	AV	137.00	150	Vertical	Pass
4	6679.000	54.34	1.57	74.0	-19.66	Peak	137.00	150	Vertical	Pass
5**	7238.625	40.00	-2.68	54.0	-14.00	AV	159.00	150	Vertical	Pass
5	7238.625	49.31	-2.68	74.0	-24.69	Peak	159.00	150	Vertical	Pass
6**	14626.875	42.70	1.38	54.0	-11.30	AV	329.00	150	Vertical	Pass
6	14626.875	53.32	1.38	74.0	-20.68	Peak	329.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1267.500	25.92	-17.37	54.0	-28.08	AV	42.00	150	Horizontal	Pass
1	1267.500	35.97	-17.37	74.0	-38.03	Peak	42.00	150	Horizontal	Pass
2**	1842.500	28.09	-16.39	54.0	-25.91	AV	12.00	150	Horizontal	Pass
2	1842.500	38.49	-16.39	74.0	-35.51	Peak	12.00	150	Horizontal	Pass
3**	2435.000	86.87	-12.81	54.0	32.87	AV	28.00	150	Horizontal	N/A
3	2435.000	95.77	-12.81	74.0	21.77	Peak	28.00	150	Horizontal	N/A
4**	4002.000	36.92	-4.15	54.0	-17.08	AV	108.00	150	Horizontal	Pass
4	4002.000	46.83	-4.15	74.0	-27.17	Peak	108.00	150	Horizontal	Pass
5**	6670.000	45.35	2.08	54.0	-8.65	AV	1.00	150	Horizontal	Pass
5	6670.000	54.52	2.08	74.0	-19.48	Peak	1.00	150	Horizontal	Pass
6**	13952.250	42.21	2.61	54.0	-11.79	AV	202.00	150	Horizontal	Pass
6	13952.250	52.55	2.61	74.0	-21.45	Peak	202.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1942.500	31.01	-15.99	54.0	-22.99	AV	328.00	150	Vertical	Pass
1	1942.500	42.05	-15.99	74.0	-31.95	Peak	328.00	150	Vertical	Pass
2**	2445.000	88.51	-12.48	54.0	34.51	AV	26.00	150	Vertical	N/A
2	2445.000	96.89	-12.48	74.0	22.89	Peak	26.00	150	Vertical	N/A
3**	3664.000	36.35	-5.83	54.0	-17.65	AV	215.00	150	Vertical	Pass
3	3664.000	46.65	-5.83	74.0	-27.35	Peak	215.00	150	Vertical	Pass
4**	6673.000	44.78	1.94	54.0	-9.22	AV	68.00	150	Vertical	Pass
4	6673.000	55.14	1.94	74.0	-18.86	Peak	68.00	150	Vertical	Pass
5**	8106.875	38.60	-1.50	54.0	-15.40	AV	345.00	150	Vertical	Pass
5	8106.875	48.17	-1.50	74.0	-25.83	Peak	345.00	150	Vertical	Pass
6**	15435.375	44.02	1.98	54.0	-9.98	AV	17.00	150	Vertical	Pass
6	15435.375	54.19	1.98	74.0	-19.81	Peak	17.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1205.500	25.04	-17.76	54.0	-28.96	AV	130.00	150	Horizontal	Pass
1	1205.500	35.88	-17.76	74.0	-38.12	Peak	130.00	150	Horizontal	Pass
2**	2085.000	29.34	-14.23	54.0	-24.66	AV	70.00	150	Horizontal	Pass
2	2085.000	39.89	-14.23	74.0	-34.11	Peak	70.00	150	Horizontal	Pass
3**	2466.000	87.43	-12.29	54.0	33.43	AV	117.00	150	Horizontal	N/A
3	2466.000	95.70	-12.29	74.0	21.70	Peak	117.00	150	Horizontal	N/A
4**	3669.000	36.41	-5.55	54.0	-17.59	AV	245.00	150	Horizontal	Pass
4	3669.000	46.11	-5.55	74.0	-27.89	Peak	245.00	150	Horizontal	Pass
5**	6673.000	44.57	1.94	54.0	-9.43	AV	116.00	150	Horizontal	Pass
5	6673.000	54.43	1.94	74.0	-19.57	Peak	116.00	150	Horizontal	Pass
6**	12275.625	40.84	1.90	54.0	-13.16	AV	311.00	150	Horizontal	Pass
6	12275.625	51.02	1.90	74.0	-22.98	Peak	311.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n20 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1999.000	30.18	-15.54	54.0	-23.82	AV	257.00	150	Vertical	Pass
1	1999.000	43.98	-15.54	74.0	-30.02	Peak	257.00	150	Vertical	Pass
2**	2469.500	87.04	-12.06	54.0	33.04	AV	329.00	150	Vertical	N/A
2	2469.500	97.24	-12.06	74.0	23.24	Peak	329.00	150	Vertical	N/A
3**	3983.000	37.20	-4.27	54.0	-16.80	AV	188.00	150	Vertical	Pass
3	3983.000	47.32	-4.27	74.0	-26.68	Peak	188.00	150	Vertical	Pass
4**	6672.000	44.76	2.00	54.0	-9.24	AV	360.00	150	Vertical	Pass
4	6672.000	54.60	2.00	74.0	-19.40	Peak	360.00	150	Vertical	Pass
5**	7388.125	40.66	-3.43	54.0	-13.34	AV	259.00	150	Vertical	Pass
5	7388.125	49.82	-3.43	74.0	-24.18	Peak	259.00	150	Vertical	Pass
6**	12794.625	40.49	1.46	54.0	-13.51	AV	260.00	150	Vertical	Pass
6	12794.625	51.08	1.46	74.0	-22.92	Peak	260.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1321.500	26.27	-17.31	54.0	-27.73	AV	8.00	150	Horizontal	Pass
1	1321.500	37.14	-17.31	74.0	-36.86	Peak	8.00	150	Horizontal	Pass
2**	2117.500	29.56	-13.79	54.0	-24.44	AV	104.00	150	Horizontal	Pass
2	2117.500	40.17	-13.79	74.0	-33.83	Peak	104.00	150	Horizontal	Pass
3**	2410.000	87.67	-11.99	54.0	33.67	AV	104.00	150	Horizontal	N/A
3	2410.000	96.04	-11.99	74.0	22.04	Peak	104.00	150	Horizontal	N/A
4**	3658.000	36.26	-6.22	54.0	-17.74	AV	237.00	150	Horizontal	Pass
4	3658.000	45.90	-6.22	74.0	-28.10	Peak	237.00	150	Horizontal	Pass
5**	6677.000	44.66	1.67	54.0	-9.34	AV	307.00	150	Horizontal	Pass
5	6677.000	55.23	1.67	74.0	-18.77	Peak	307.00	150	Horizontal	Pass
6**	14229.188	42.67	2.50	54.0	-11.33	AV	155.00	150	Horizontal	Pass
6	14229.188	53.49	2.50	74.0	-20.51	Peak	155.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Low Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1306.000	26.06	-16.92	54.0	-27.94	AV	356.00	150	Vertical	Pass
1	1306.000	36.80	-16.92	74.0	-37.20	Peak	356.00	150	Vertical	Pass
2**	1999.000	30.09	-15.54	54.0	-23.91	AV	0.00	150	Vertical	Pass
2	1999.000	43.34	-15.54	74.0	-30.66	Peak	0.00	150	Vertical	Pass
3**	2410.000	87.79	-11.99	54.0	33.79	AV	336.00	150	Vertical	N/A
3	2410.000	96.73	-11.99	74.0	22.73	Peak	336.00	150	Vertical	N/A
4**	3668.000	36.89	-5.43	54.0	-17.11	AV	165.00	150	Vertical	Pass
4	3668.000	46.68	-5.43	74.0	-27.32	Peak	165.00	150	Vertical	Pass
5**	6671.000	44.95	2.08	54.0	-9.05	AV	358.00	150	Vertical	Pass
5	6671.000	54.08	2.08	74.0	-19.92	Peak	358.00	150	Vertical	Pass
6**	13267.125	40.90	1.29	54.0	-13.10	AV	319.00	150	Vertical	Pass
6	13267.125	52.12	1.29	74.0	-21.88	Peak	319.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1307.500	26.51	-16.88	54.0	-27.49	AV	286.00	150	Horizontal	Pass
1	1307.500	36.93	-16.88	74.0	-37.07	Peak	286.00	150	Horizontal	Pass
2**	1900.000	27.96	-15.88	54.0	-26.04	AV	290.00	150	Horizontal	Pass
2	1900.000	38.73	-15.88	74.0	-35.27	Peak	290.00	150	Horizontal	Pass
3**	2441.000	85.87	-12.50	54.0	31.87	AV	278.00	150	Horizontal	N/A
3	2441.000	96.03	-12.50	74.0	22.03	Peak	278.00	150	Horizontal	N/A
4**	3666.000	36.68	-5.59	54.0	-17.32	AV	167.00	150	Horizontal	Pass
4	3666.000	47.05	-5.59	74.0	-26.95	Peak	167.00	150	Horizontal	Pass
5**	6674.000	44.84	1.92	54.0	-9.16	AV	185.00	150	Horizontal	Pass
5	6674.000	54.52	1.92	74.0	-19.48	Peak	185.00	150	Horizontal	Pass
6**	15518.063	44.26	2.48	54.0	-9.74	AV	48.00	150	Horizontal	Pass
6	15518.063	54.46	2.48	74.0	-19.54	Peak	48.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 Middle Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1245.500	26.10	-17.69	54.0	-27.90	AV	5.00	150	Vertical	Pass
1	1245.500	36.49	-17.69	74.0	-37.51	Peak	5.00	150	Vertical	Pass
2**	1999.500	30.80	-15.50	54.0	-23.20	AV	323.00	150	Vertical	Pass
2	1999.500	43.94	-15.50	74.0	-30.06	Peak	323.00	150	Vertical	Pass
3**	2430.500	88.11	-12.78	54.0	34.11	AV	328.00	150	Vertical	N/A
3	2430.500	96.63	-12.78	74.0	22.63	Peak	328.00	150	Vertical	N/A
4**	3988.000	37.65	-3.91	54.0	-16.35	AV	11.00	150	Vertical	Pass
4	3988.000	48.00	-3.91	74.0	-26.00	Peak	11.00	150	Vertical	Pass
5**	6671.000	44.73	2.08	54.0	-9.27	AV	353.00	150	Vertical	Pass
5	6671.000	54.14	2.08	74.0	-19.86	Peak	353.00	150	Vertical	Pass
6**	13264.500	41.01	1.33	54.0	-12.99	AV	118.00	150	Vertical	Pass
6	13264.500	52.14	1.33	74.0	-21.86	Peak	118.00	150	Vertical	Pass

## 1 GHz to 18 GHz, ANT H 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1349.000	25.99	-17.30	54.0	-28.01	AV	238.00	150	Horizontal	Pass
1	1349.000	37.33	-17.30	74.0	-36.67	Peak	238.00	150	Horizontal	Pass
2**	1998.000	27.98	-15.64	54.0	-26.02	AV	14.00	150	Horizontal	Pass
2	1998.000	40.56	-15.64	74.0	-33.44	Peak	14.00	150	Horizontal	Pass
3**	2460.000	86.90	-12.42	54.0	32.90	AV	278.00	150	Horizontal	N/A
3	2460.000	95.85	-12.42	74.0	21.85	Peak	278.00	150	Horizontal	N/A
4**	3980.000	37.24	-4.29	54.0	-16.76	AV	6.00	150	Horizontal	Pass
4	3980.000	46.81	-4.29	74.0	-27.19	Peak	6.00	150	Horizontal	Pass
5**	6666.000	44.21	1.82	54.0	-9.79	AV	162.00	150	Horizontal	Pass
5	6666.000	54.07	1.82	74.0	-19.93	Peak	162.00	150	Horizontal	Pass
6**	14909.062	43.02	1.43	54.0	-10.98	AV	339.00	150	Horizontal	Pass
6	14909.062	53.56	1.43	74.0	-20.44	Peak	339.00	150	Horizontal	Pass

## 1 GHz to 18 GHz, ANT V 802.11n40 High Channel

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1229.500	25.73	-17.77	54.0	-28.27	AV	96.00	150	Vertical	Pass
1	1229.500	35.81	-17.77	74.0	-38.19	Peak	96.00	150	Vertical	Pass
2**	1997.000	28.39	-15.64	54.0	-25.61	AV	277.00	150	Vertical	Pass
2	1997.000	43.02	-15.64	74.0	-30.98	Peak	277.00	150	Vertical	Pass
3**	2446.000	88.25	-12.49	54.0	34.25	AV	57.00	150	Vertical	N/A
3	2446.000	96.50	-12.49	74.0	22.50	Peak	57.00	150	Vertical	N/A
4**	3663.000	36.55	-5.95	54.0	-17.45	AV	106.00	150	Vertical	Pass
4	3663.000	46.63	-5.95	74.0	-27.37	Peak	106.00	150	Vertical	Pass
5**	6674.000	44.71	1.92	54.0	-9.29	AV	242.00	150	Vertical	Pass
5	6674.000	54.35	1.92	74.0	-19.65	Peak	242.00	150	Vertical	Pass
6**	14601.938	42.74	1.79	54.0	-11.26	AV	0.00	150	Vertical	Pass
6	14601.938	53.55	1.79	74.0	-20.45	Peak	0.00	150	Vertical	Pass

## A.7 Band Edge (Restricted-band band-edge)

### Test Data

Note <sup>1</sup>: The lowest and highest channels are tested to verify the band edge emissions. Please refer to the following the plots for emissions values.

Note <sup>2</sup>: The test data all are tested in the vertical and horizontal antenna which the trace is max hold. So these plots have shown the worst case.

Note <sup>3</sup>: According the ANSI C63.10-2013, 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.

## SISO ANT0

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11b	1	2390	52.40	74	21.60	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	51.39	74	22.61	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	3	2390	51.52	74	22.48	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	52.51	74	21.49	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	10	2483.5	52.13	74	21.87	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	52.05	74	21.95	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
802.11g	1	2390	52.97	74	21.03	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	53.85	74	20.15	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	3	2390	59.75	74	14.25	PEAK	Pass
		2390	44.26	54	9.75	AVERAGE	Pass
	9	2483.5	55.11	74	18.89	PEAK	Pass
		2483.5	44.21	54	9.80	AVERAGE	Pass
	10	2483.5	52.89	74	21.11	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	53.91	74	20.09	PEAK	Pass
		2483.5	44.50	54	9.50	AVERAGE	Pass
802.11n20	1	2390	53.27	74	20.73	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	54.05	74	19.95	PEAK	Pass
		2390	44.45	54	9.55	AVERAGE	Pass
	3	2390	53.11	74	20.89	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	53.59	74	20.41	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	10	2483.5	52.60	74	21.40	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	53.42	74	20.58	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
802.11n40	3	2390	53.73	74	20.27	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	4	2390	56.21	74	17.79	PEAK	Pass



		2390	46.14	54	7.86	AVERAGE	Pass
5		2390	57.27	74	16.73	PEAK	Pass
		2390	46.84	54	7.16	AVERAGE	Pass
7		2483.5	53.19	74	20.82	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
8		2483.5	52.55	74	21.45	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
9		2483.5	53.80	74	20.21	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass

## SISO ANT1

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11b	1	2390	51.87	74	22.13	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	53.09	74	20.91	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	3	2390	51.05	74	22.95	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	51.57	74	22.43	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	10	2483.5	52.74	74	21.26	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	52.51	74	21.49	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
802.11g	1	2390	60.27	74	13.73	PEAK	Pass
		2390	46.32	54	7.68	AVERAGE	Pass
	2	2390	54.97	74	19.03	PEAK	Pass
		2390	45.22	54	8.78	AVERAGE	Pass
	3	2390	60.18	74	13.83	PEAK	Pass
		2390	44.08	54	9.92	AVERAGE	Pass
	9	2483.5	52.53	74	21.47	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	10	2483.5	51.91	74	22.09	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	54.37	74	19.63	PEAK	Pass
		2483.5	45.03	54	8.97	AVERAGE	Pass
802.11n20	1	2390	53.56	74	20.44	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	53.44	74	20.56	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	3	2390	52.37	74	21.63	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	55.15	74	18.85	PEAK	Pass
		2483.5	45.73	54	8.27	AVERAGE	Pass
	10	2483.5	54.15	74	19.85	PEAK	Pass
		2483.5	46.06	54	7.95	AVERAGE	Pass
	11	2483.5	54.89	74	19.11	PEAK	Pass
		2483.5	45.39	54	8.61	AVERAGE	Pass
802.11n40	3	2390	52.11	74	21.89	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	4	2390	55.74	74	18.26	PEAK	Pass

		2390	46.53	54	7.47	AVERAGE	Pass
5		2390	56.95	74	17.06	PEAK	Pass
		2390	44.84	54	9.16	AVERAGE	Pass
7		2483.5	58.63	74	15.37	PEAK	Pass
		2483.5	47.21	54	6.79	AVERAGE	Pass
8		2483.5	56.70	74	17.30	PEAK	Pass
		2483.5	46.64	54	7.36	AVERAGE	Pass
9		2483.5	55.96	74	18.04	PEAK	Pass
		2483.5	46.23	54	7.77	AVERAGE	Pass

## MIMO

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11n20	1	2390	53.83	74	20.17	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	2	2390	51.05	74	22.95	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	3	2390	53.13	74	20.88	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	53.64	74	20.36	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	10	2483.5	53.11	74	20.90	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	11	2483.5	53.38	74	20.62	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
802.11n40	3	2390	52.67	74	21.33	PEAK	Pass
		2390	N/A	54	N/A	AVERAGE	Pass
	4	2390	55.70	74	18.30	PEAK	Pass
		2390	45.02	54	8.98	AVERAGE	Pass
	5	2390	56.33	74	17.67	PEAK	Pass
		2390	45.17	54	8.83	AVERAGE	Pass
	7	2483.5	56.18	74	17.82	PEAK	Pass
		2483.5	45.89	54	8.11	AVERAGE	Pass
	8	2483.5	53.62	74	20.38	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass
	9	2483.5	52.78	74	21.22	PEAK	Pass
		2483.5	N/A	54	N/A	AVERAGE	Pass

SISO ANT0

802.11b Mode:

CHANNEL 1, PEAK



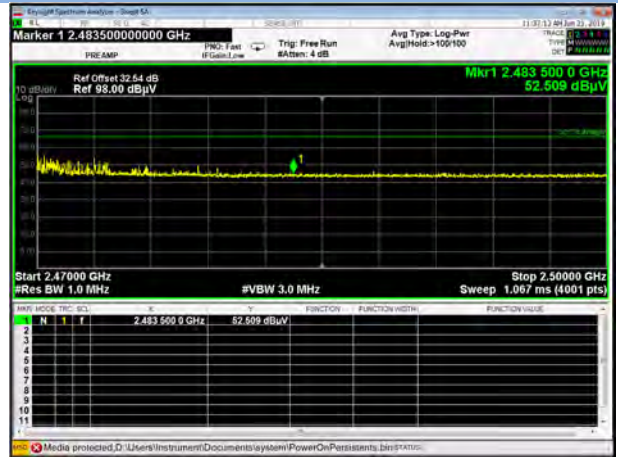
CHANNEL 2, PEAK



CHANNEL 3, PEAK



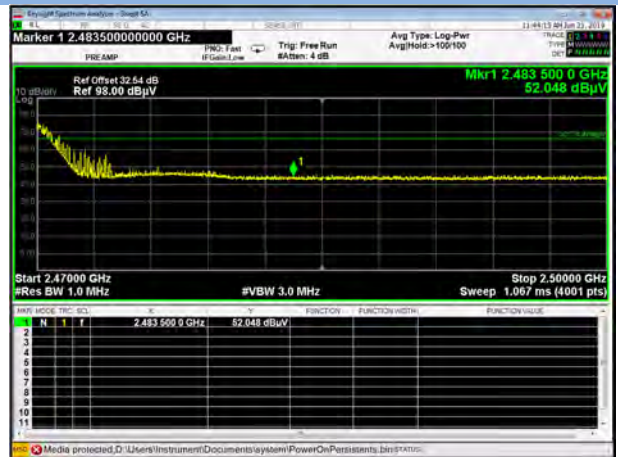
CHANNEL 9, PEAK



CHANNEL 10, PEAK



CHANNEL 11, PEAK



802.11g Mode:

CHANNEL 1, PEAK

CHANNEL 2, PEAK



CHANNEL 3, AV 1

CHANNEL 3, AV 2



CHANNEL 3, PEAK

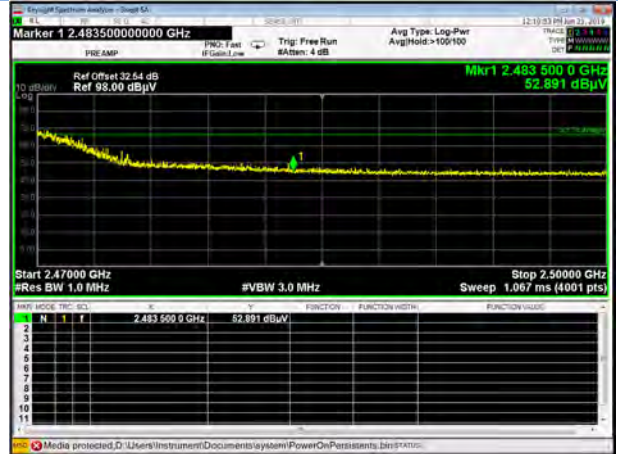
CHANNEL 9, AV



CHANNEL 9, PEAK



CHANNEL 10, PEAK



CHANNEL 11, AV



CHANNEL 11, PEAK

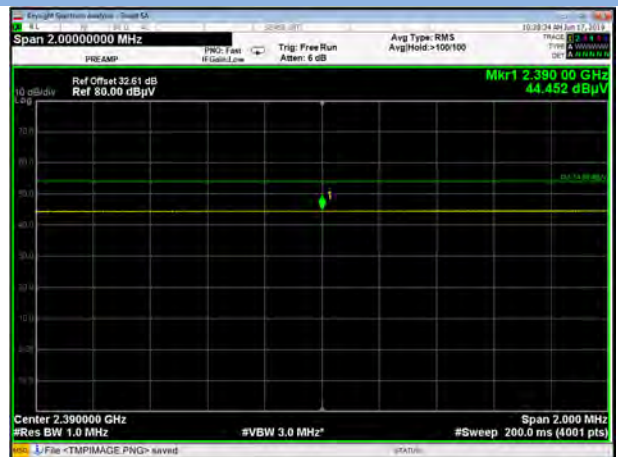


802.11n-20 MHz Mode:

CHANNEL 1, PEAK



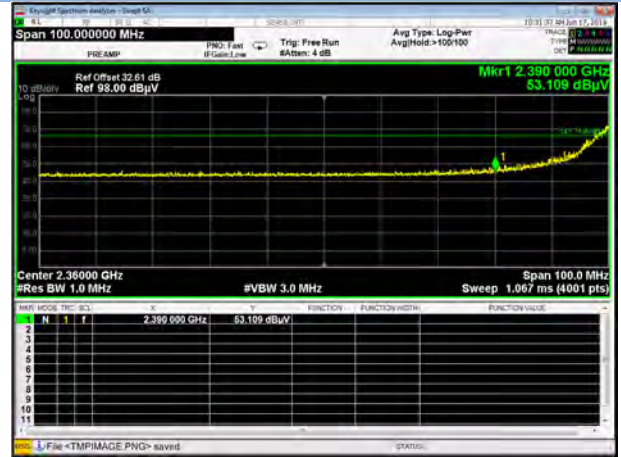
CHANNEL 2, AV



CHANNEL 2, PEAK



CHANNEL 3, PEAK



CHANNEL 9, PEAK



CHANNEL 10, PEAK



CHANNEL 11, PEAK





802.11n-40 MHz Mode:

CHANNEL 3, PEAK



CHANNEL 4, AV



CHANNEL 4, PEAK



CHANNEL 5, AV



CHANNEL 5, PEAK



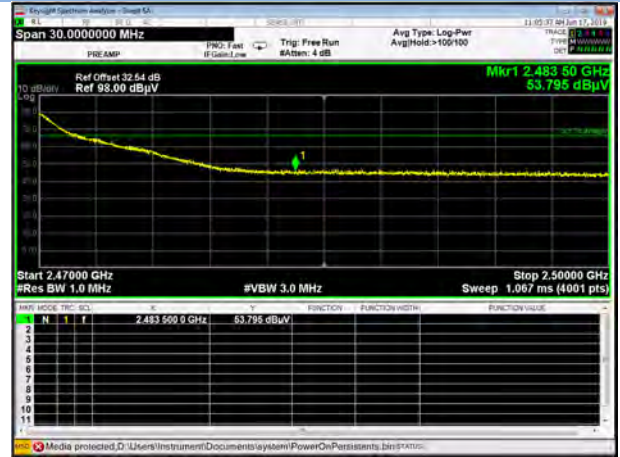
CHANNEL 7, PEAK



CHANNEL 8, PEAK



CHANNEL 9, PEAK



SISO ANT1

802.11b Mode:

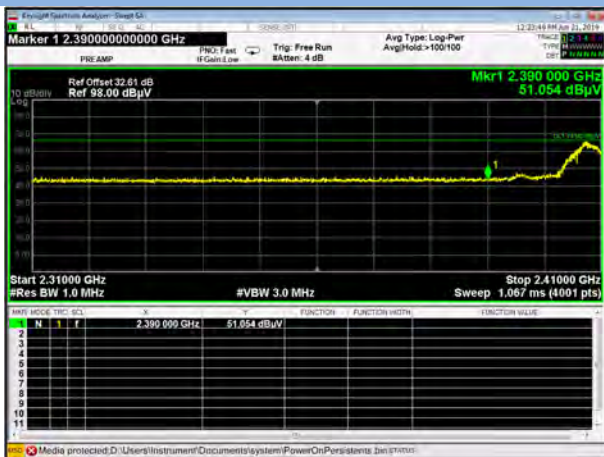
CHANNEL 1, PEAK



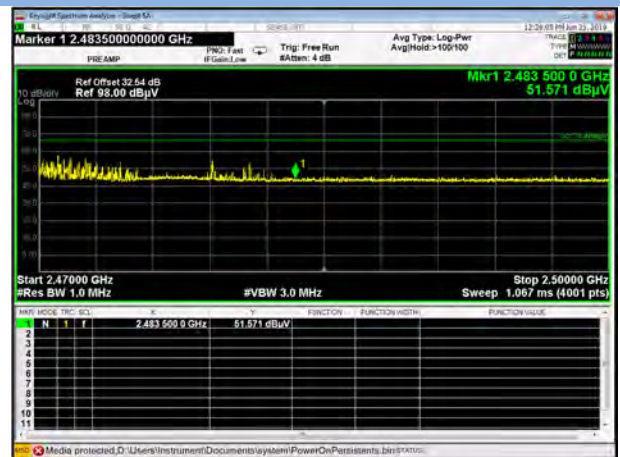
CHANNEL 2, PEAK



CHANNEL 3, PEAK



CHANNEL 9, PEAK



CHANNEL 10, PEAK



CHANNEL 11, PEAK



802.11g Mode:

CHANNEL 1, AV



CHANNEL 1, PEAK



CHANNEL 2, AV



CHANNEL 2, PEAK



CHANNEL 3, AV 1



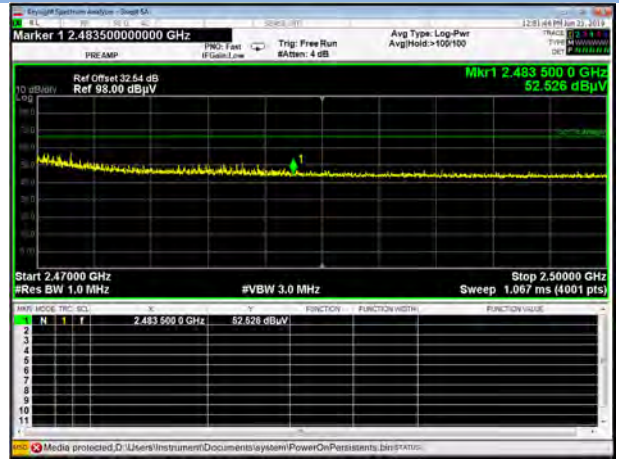
CHANNEL 3, AV 2



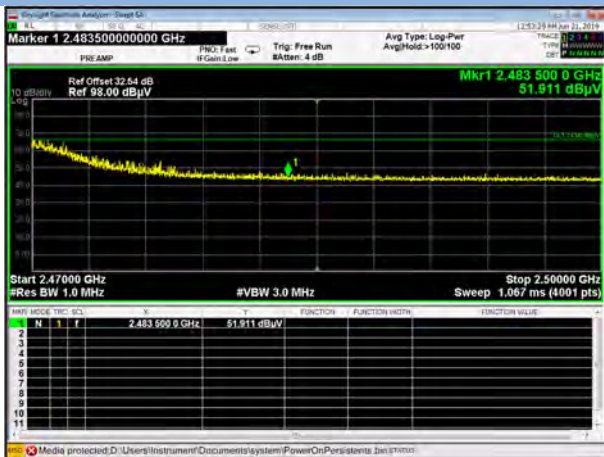
CHANNEL 3, PEAK



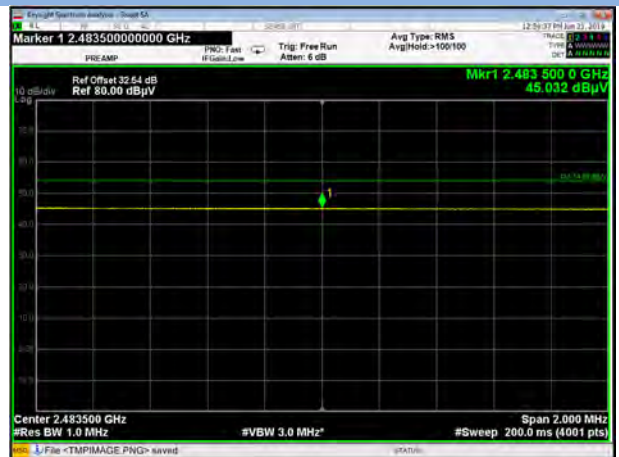
CHANNEL 9, PEAK



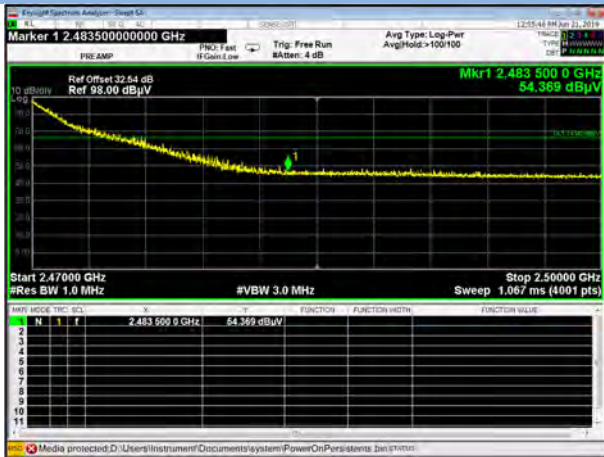
CHANNEL 10, PEAK



CHANNEL 11, AV



CHANNEL 11, PEAK



802.11n-20 MHz Mode:

CHANNEL 1, PEAK



CHANNEL 2, PEAK



CHANNEL 3, PEAK



CHANNEL 9, AV



CHANNEL 9, PEAK



CHANNEL 10, AV



CHANNEL 10, PEAK



CHANNEL 11, AV



CHANNEL 11, PEAK



802.11n-40 MHz Mode:

CHANNEL 3, PEAK



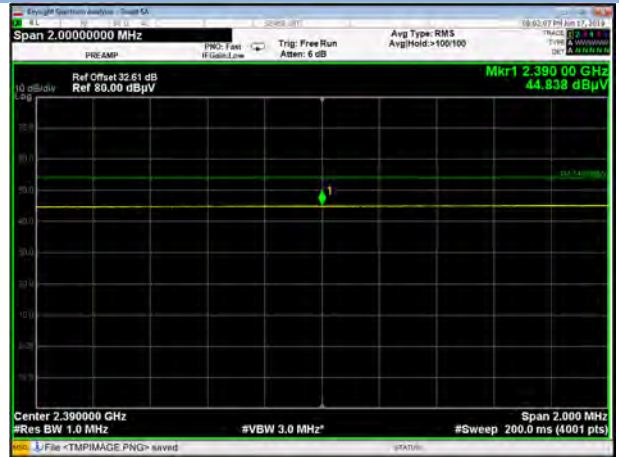
CHANNEL 4, AV



CHANNEL 4, PEAK



CHANNEL 5, AV



CHANNEL 5, PEAK



CHANNEL 7, AV



CHANNEL 7, PEAK



CHANNEL 8, AV



CHANNEL 8, PEAK



CHANNEL 9, AV



CHANNEL 9, PEAK





MIMO

802.11n-20 MHz Mode:

CHANNEL 1, PEAK



CHANNEL 2, PEAK



CHANNEL 3, PEAK



CHANNEL 9, PEAK



CHANNEL 10, PEAK

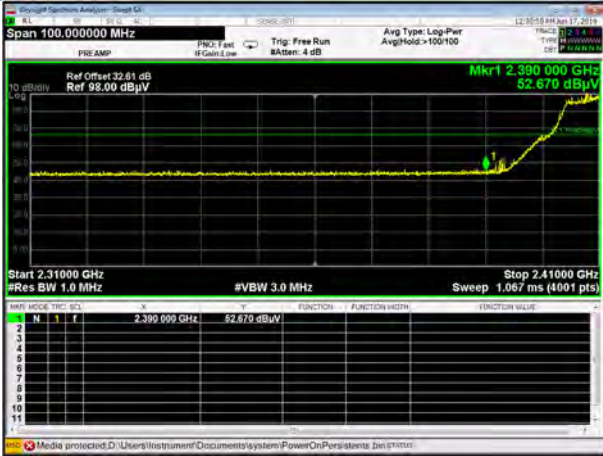


CHANNEL 11, PEAK



802.11n-40 MHz Mode:

CHANNEL 3, PEAK



CHANNEL 4, AV



CHANNEL 4, PEAK



CHANNEL 5, AV



CHANNEL 5, PEAK



CHANNEL 7, AV



CHANNEL 7, PEAK



CHANNEL 8, PEAK



CHANNEL 9, PEAK



## A.8 Power Spectral Density (PSD)

Test Data

SISO ANT 0

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-21.18	8
6	-18.62	8
11	-21.23	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-22.29	8
6	-19.50	8
11	-22.10	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-22.42	8
6	-19.51	8
11	-22.44	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
3	-28.84	8
6	-24.85	8
9	-28.05	8

SISO ANT 1

## 802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-21.08	8
6	-18.67	8
11	-20.86	8

## 802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-21.94	8
6	-19.97	8
11	-21.85	8

## 802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-22.22	8
6	-20.29	8
11	-22.11	8

## 802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
3	-28.21	8
6	-24.34	8
9	-28.41	8

MIMO

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
1	-22.11	8
6	-19.72	8
11	-22.00	8

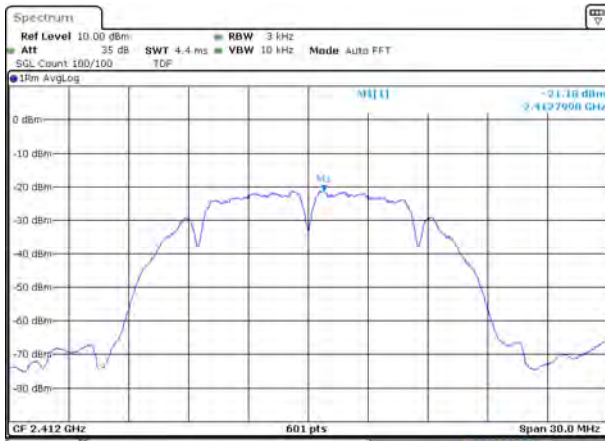
802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
3	-28.88	8
6	-24.62	8
9	-28.58	8

## Test plots

## SISO ANT0

802.11b CHANNEL 1



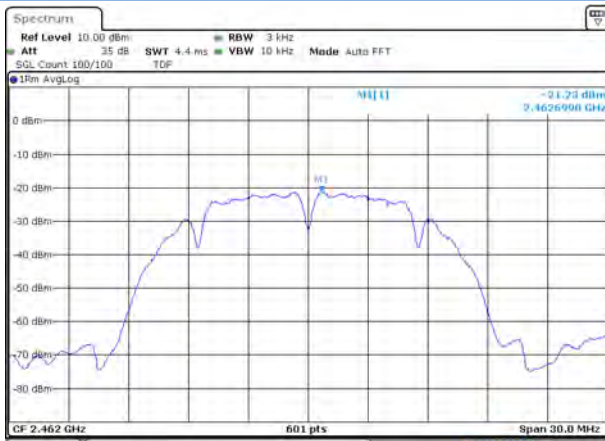
Date: 22 JUN 2019 15:17:54

802.11b CHANNEL 6



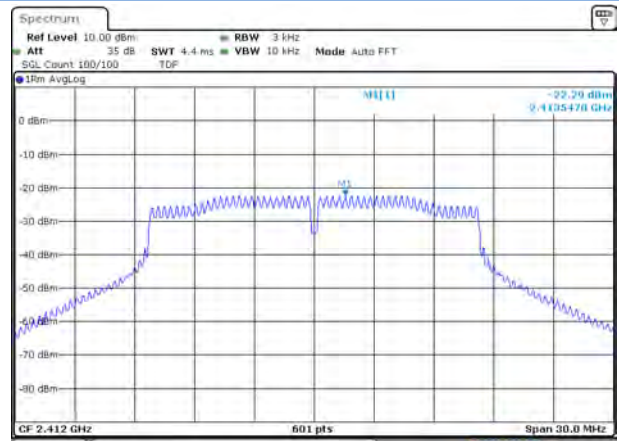
Date: 2 MAY 2019 15:34:01

802.11b CHANNEL 11



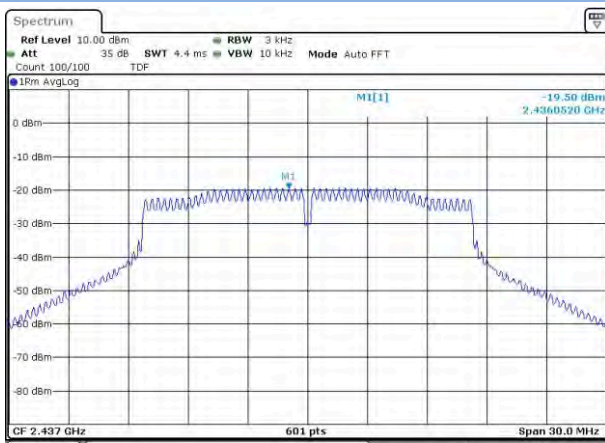
Date: 22 JUN 2019 15:20:44

802.11g CHANNEL 1



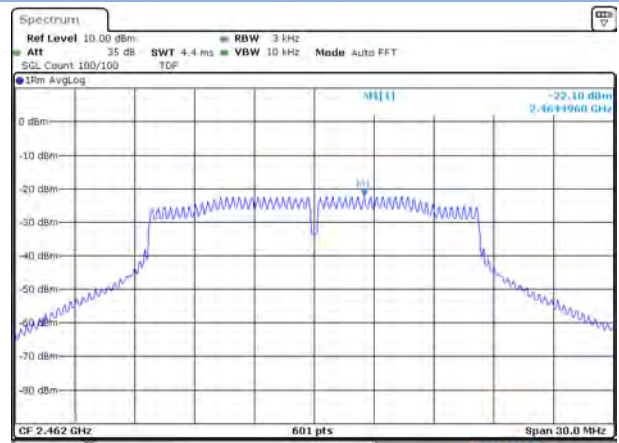
Date: 22 JUN 2019 15:24:13

802.11g CHANNEL 6



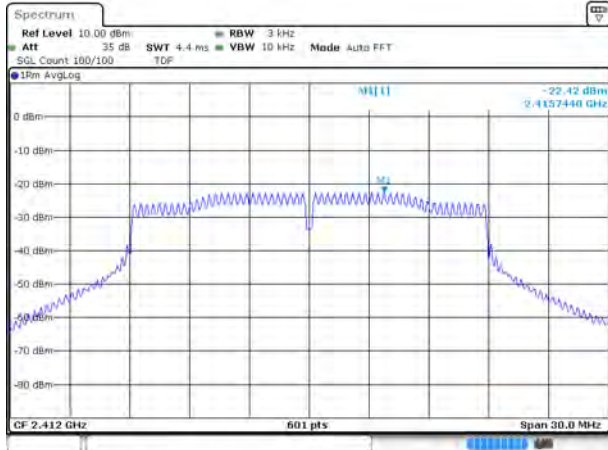
Date: 2 MAY 2019 15:42:02

802.11g CHANNEL 11



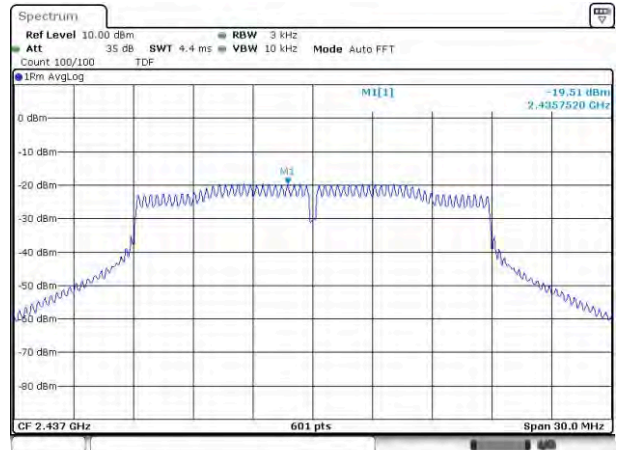
Date: 22 JUN 2019 15:27:03

## 802.11n-20 MHz CHANNEL 1



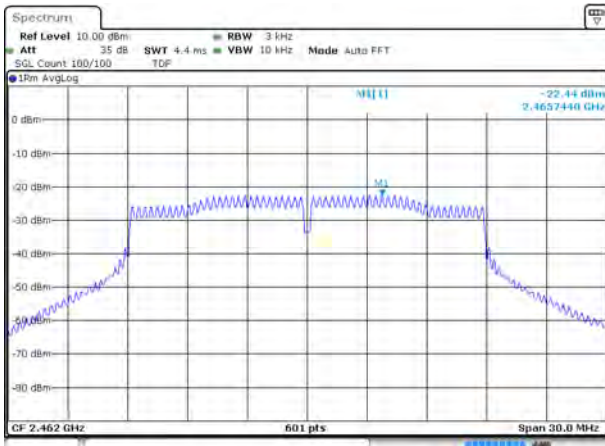
Date: 22 JUN 2019 15:32:19

## 802.11 n-20 MHz CHANNEL 6



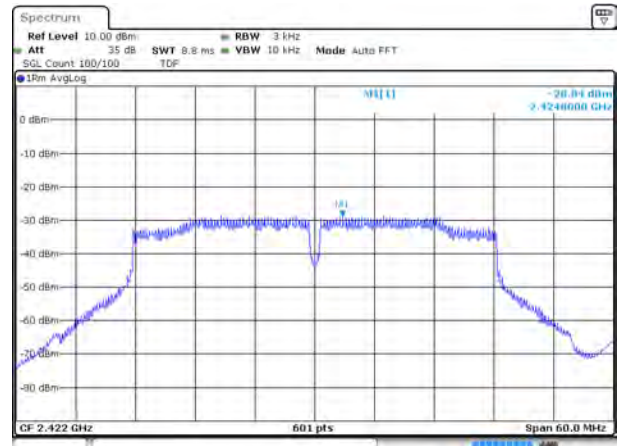
Date: 2 MAY 2019 15:44:08

## 802.11n-20 MHz CHANNEL 11



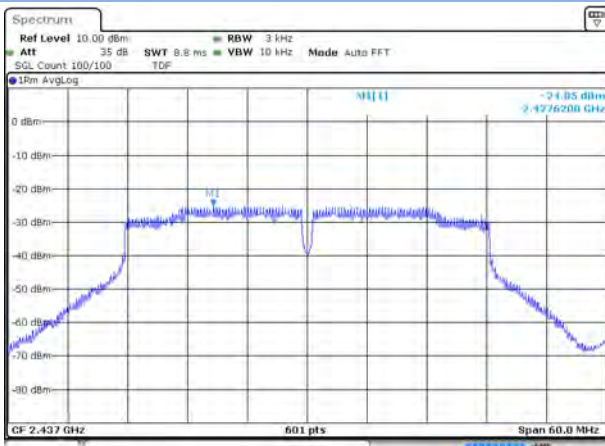
Date: 22 JUN 2019 15:34:29

## 802.11 n-40 MHz CHANNEL 3



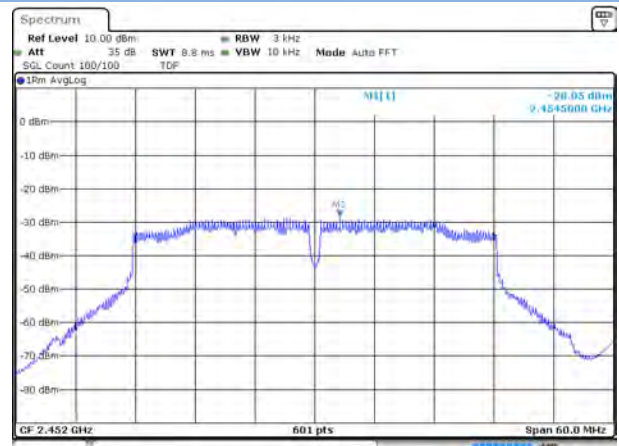
Date: 22 JUN 2019 15:37:51

## 802.11n-20 MHz CHANNEL 6



Date: 22 JUN 2019 15:39:42

## 802.11 n-40 MHz CHANNEL 9

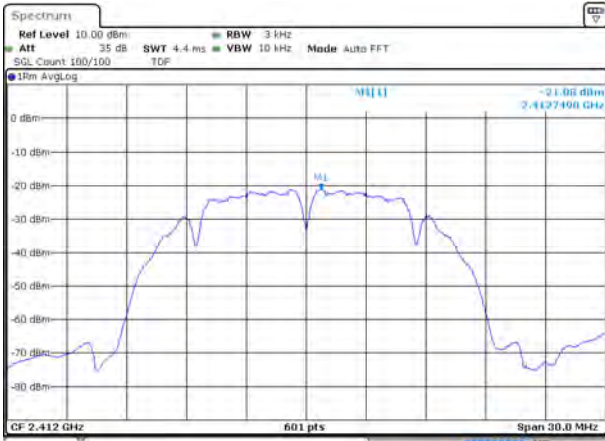


Date: 22 JUN 2019 15:42:25



SISO ANT1

802.11b CHANNEL 1



Date: 22 JUN 2019 15:48:49

802.11b CHANNEL 6



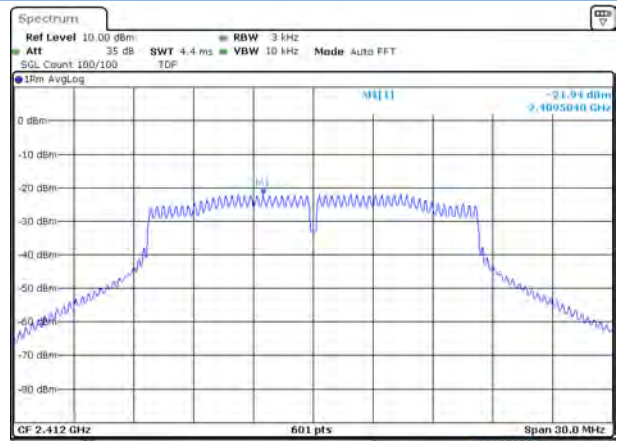
Date: 2 MAY 2019 15:58:04

802.11b CHANNEL 11



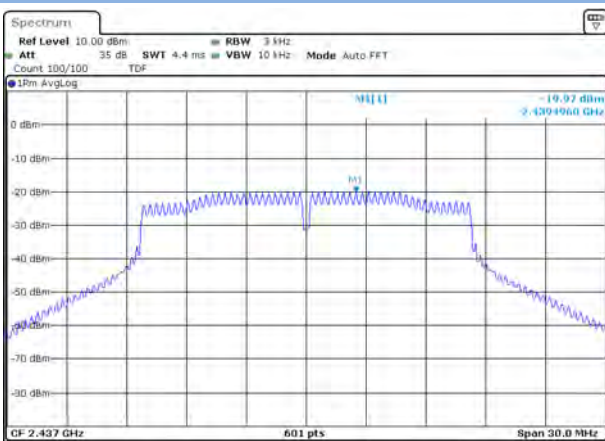
Date: 22 JUN 2019 15:54:11

802.11g CHANNEL 1



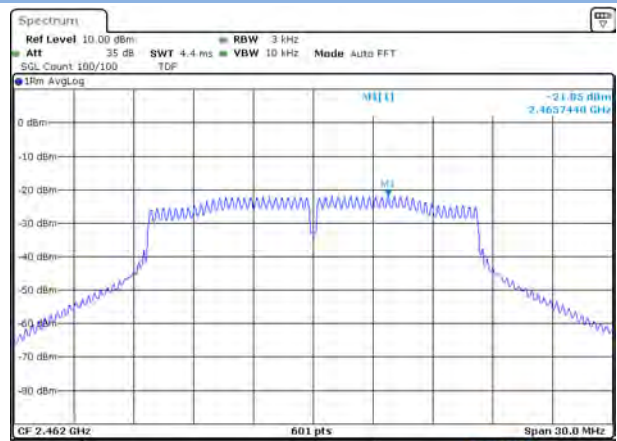
Date: 22 JUN 2019 15:56:21

802.11g CHANNEL 6



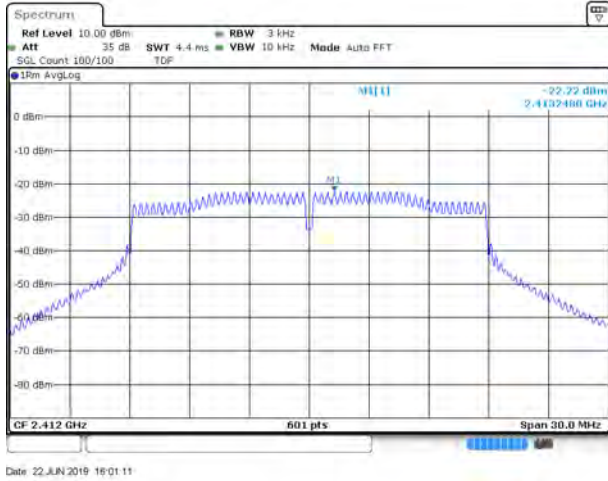
Date: 2 MAY 2019 16:30:21

802.11g CHANNEL 11

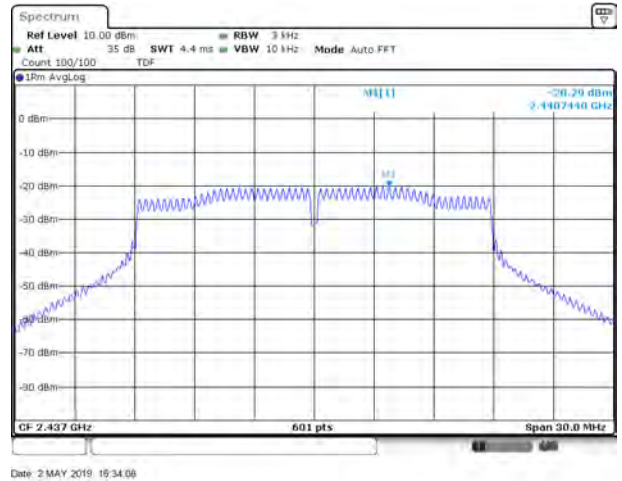


Date: 22 JUN 2019 15:58:24

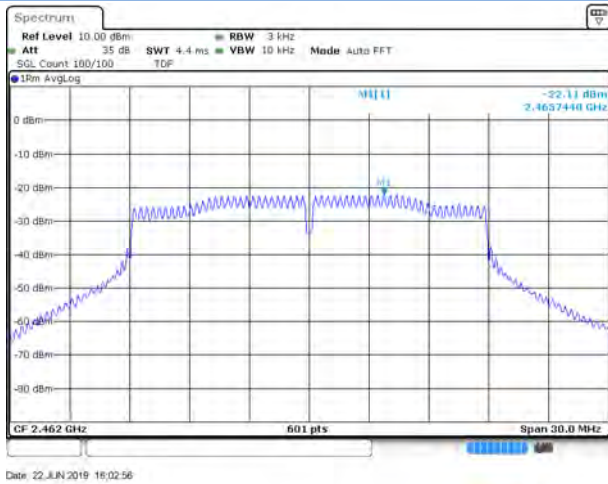
802.11n-20 MHz CHANNEL 1



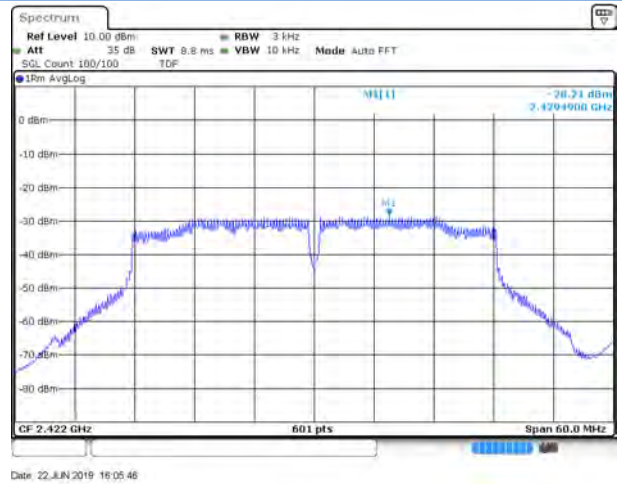
802.11n-20 MHz CHANNEL 6



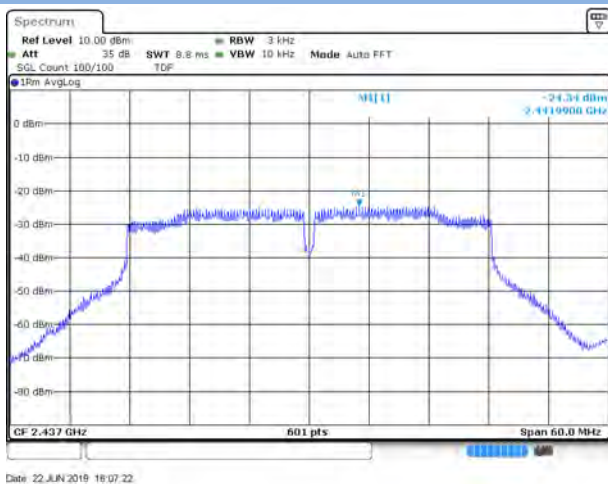
802.11n-20 MHz CHANNEL 11



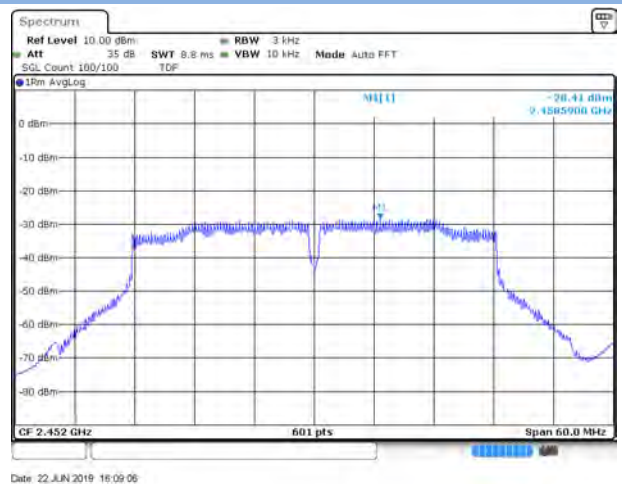
802.11n-40 MHz CHANNEL 3



802.11n-40 MHz CHANNEL 6

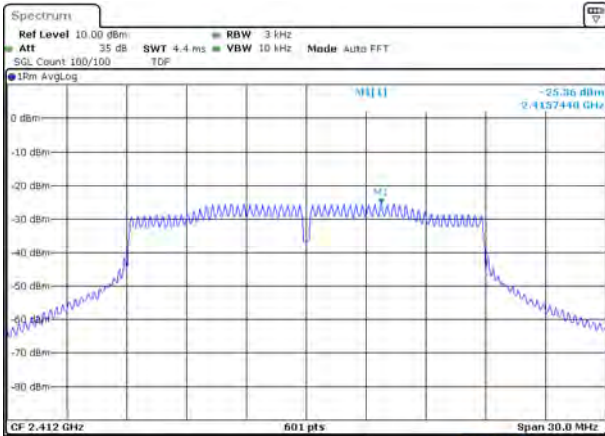


802.11n-40 MHz CHANNEL 9



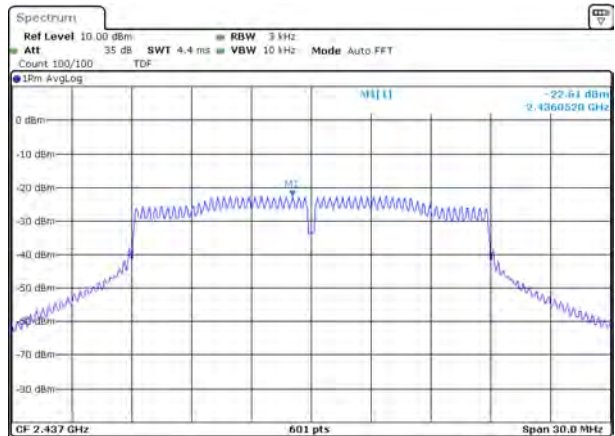
MIMO ANTO

802.11n-20 MHz CHANNEL 1



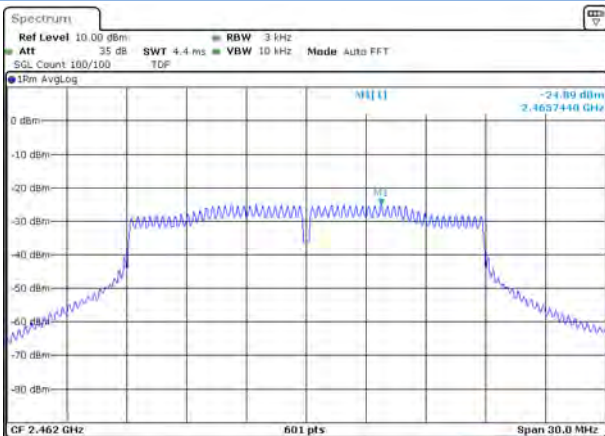
Date: 22 JUN 2019 16:25:25

802.11n-20 MHz CHANNEL 6



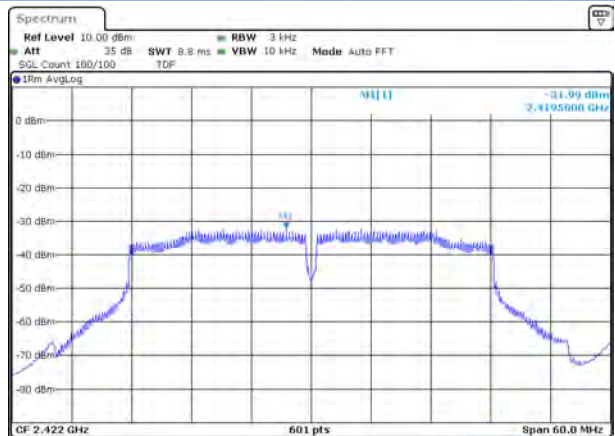
Date: 2 MAY 2019 16:55:51

802.11n-20 MHz CHANNEL 11



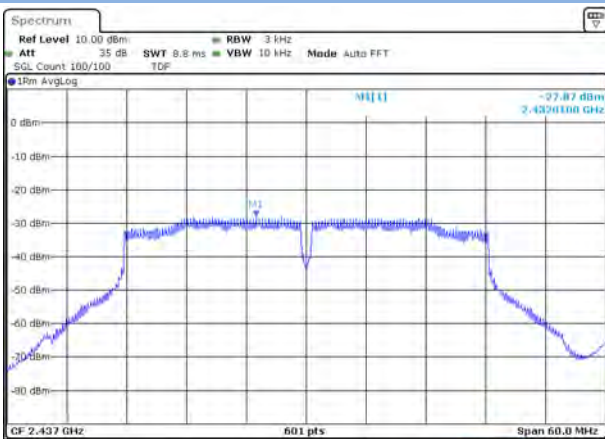
Date: 22 JUN 2019 16:27:03

802.11n-40 MHz CHANNEL 3



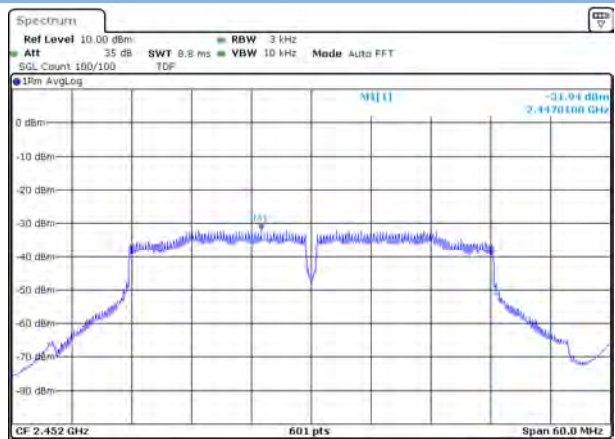
Date: 22 JUN 2019 16:30:11

802.11n-40 MHz CHANNEL 6



Date: 22 JUN 2019 16:32:15

802.11n-40 MHz CHANNEL 9

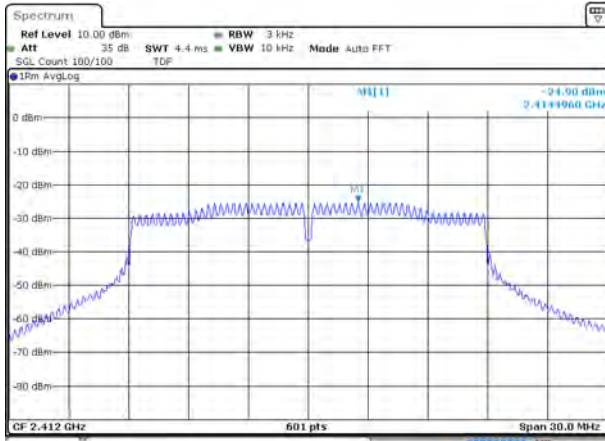


Date: 22 JUN 2019 16:34:26

## Test plots

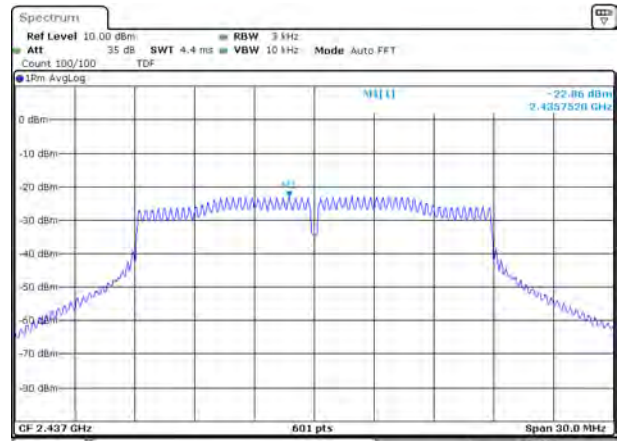
## MIMO ANT1

802.11n-20 MHz CHANNEL 1



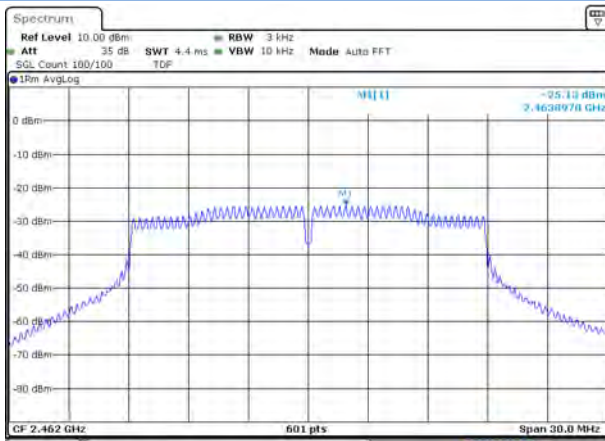
Date: 22 JUN 2019 16:13:39

802.11n-20 MHz CHANNEL 6



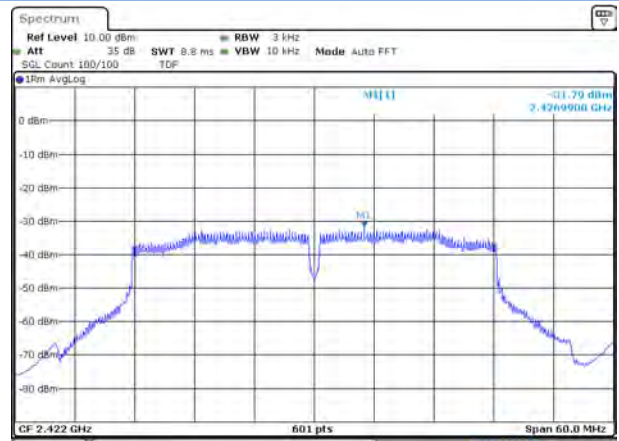
Date: 2 MAY 2019 16:48:02

802.11n-20 MHz CHANNEL 11



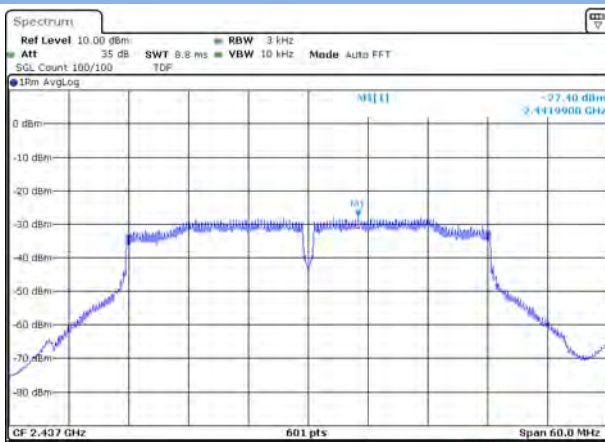
Date: 22 JUN 2019 16:15:43

802.11n-40 MHz CHANNEL 3



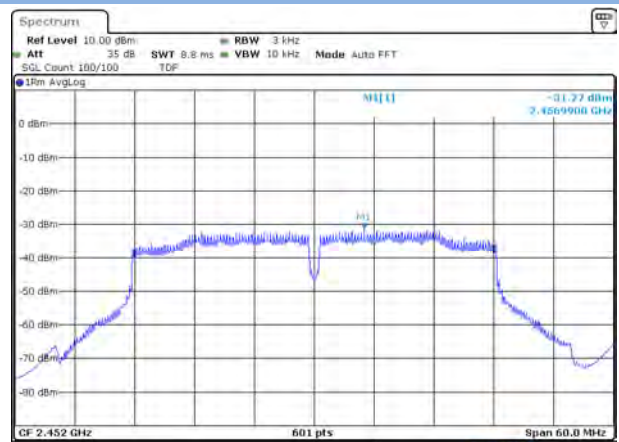
Date: 22 JUN 2019 16:15:16

802.11n-40 MHz CHANNEL 6



Date: 22 JUN 2019 16:20:11

802.11n-40 MHz CHANNEL 9



Date: 22 JUN 2019 16:22:23

## **ANNEX B TEST SETUP PHOTOS**

Please refer the document "BL-SZ1940136-AR.pdf".

## **ANNEX C EUT EXTERNAL PHOTOS**

Please refer the document "BL-SZ1940136-AW.pdf".

## **ANNEX D EUT INTERNAL PHOTOS**

Please refer the document "BL-SZ1940136-AI.pdf".

--END OF REPORT--