

FCC

RF

TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
Gigabit Home AC Router

ISSUED TO
GL Technologies (Hong Kong) Limited

FLAT/RM 203 2/F BUILDING 19W 19 SCIENCE PARK WEST AVENUE
SHATIN NT



Tested by:

Ye Hongji
Ye Hongji

Date

Jan. 14, 2021

Approved by:

Wei Yanquan
Wei Yanquan
(Chief Engineer)

Date

Jan. 19, 2021

Report No.: BL-SZ20C0477-601

EUT Name: Gigabit Home AC Router

Model Name: GL-B1300

Brand Name: GL.iNET

Test Standard: 47 CFR Part 15 Subpart C

FCC ID: 2AFIW-GLB1300

Test Conclusion: Pass

Test Date: Dec. 17, 2020 ~ Jan. 11, 2021

Date of Issue: Jan. 19, 2021

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Jan. 15, 2021</u>	<u>Initial Issue</u>
<u>Rev. 02</u>	<u>Jan. 19, 2021</u>	<u>Correct 2.4G technical information, delete 802.11 ac mode data</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
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.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	GL Technologies (Hong Kong) Limited
Address	FLAT/RM 203 2/F BUILDING 19W 19 SCIENCE PARK WEST AVENUE SHATIN NT

2.2 Manufacturer Information

Manufacturer	Shenzhen Guanglianzhitong Tech Co., Ltd
Address	Room 305-306, Skyworth Digital Building, Shiyan Street, Baoan District, Shenzhen, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	Gigabit Home AC Router
Model Name Under Test	GL-B1300
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.5 Technical Information

Network and Wireless connectivity	2.4G WIFI 802.11b, 802.11g, 802.11n(HT20/HT40), 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80) U-NII-1/3
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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. 802.11b/g/n(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	☒ Mobile ☐ Portable ☐ Fix Location	
Antenna System (eg., MIMO, Smart Antenna)	Cyclic Delay Diversity (CDD)	
Categorization as Correlated or Completely Uncorrelated	Categorization as Correlated	
Antenna Type	Main Antenna Aux. Antenna	PCB Antenna
Antenna Gain	Main Antenna	3.18 dBi (In test items related to antenna gain, the final results reflect this figure. This value is provided by the applicant.)
	Aux. Antenna	4 dBi (In test items related to antenna gain, the final results reflect this figure. This value is provided by the applicant.)
Total directional gain	For power spectral density(PSD) measurements	4 dBi Formulas: Directional gain = GANT + Array Gain, <i>Array Gain</i> = $10 \log(NANT/NSS) \text{ dB}$. $NSS = 2$, GANT set equal to the gain of the antenna having the highest gain.
	For power measurements	4 dBi Formulas: Directional gain = GANT + Array Gain, <i>Array Gain</i> = 0, GANT set equal to the gain of the antenna having the highest gain.
	For Conducted Out-of-Band and Spurious Measurements	4 dBi Formulas: Directional gain = GANT + Array Gain, <i>Array Gain</i> = $10 \log(NANT/NSS) \text{ dB}$. $NSS = 2$, GANT set equal to the gain of the antenna having the highest gain.
About the Product	Only the WIFI 802.11b, 802.11g, 802.11n(HT20/HT40), was tested in this report.	

Mode	Antenna		
	Main Antenna	Aux. Antenna	MIMO
802.11b	√	√	--
802.11g	√	√	--
802.11n20	√	√	√
802.11n40	√	√	√
Note: All the configurations were tested, but only the worst data was shown 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	6.5/7.2
	QPSK	13/19.5/14.4/21.7
	16QAM	26/39/28.9/43.3
	64QAM	52/58.5/65/57.8/65/72.2
OFDM (802.11n-40MHz)	BPSK	13.5/15
	QPSK	27/40.5/30/45
	16QAM	54/81/60/90
	64QAM	108/121.5/135/120/150

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	1/6/11	3/6/9
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	1/6/11	3/6/9
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

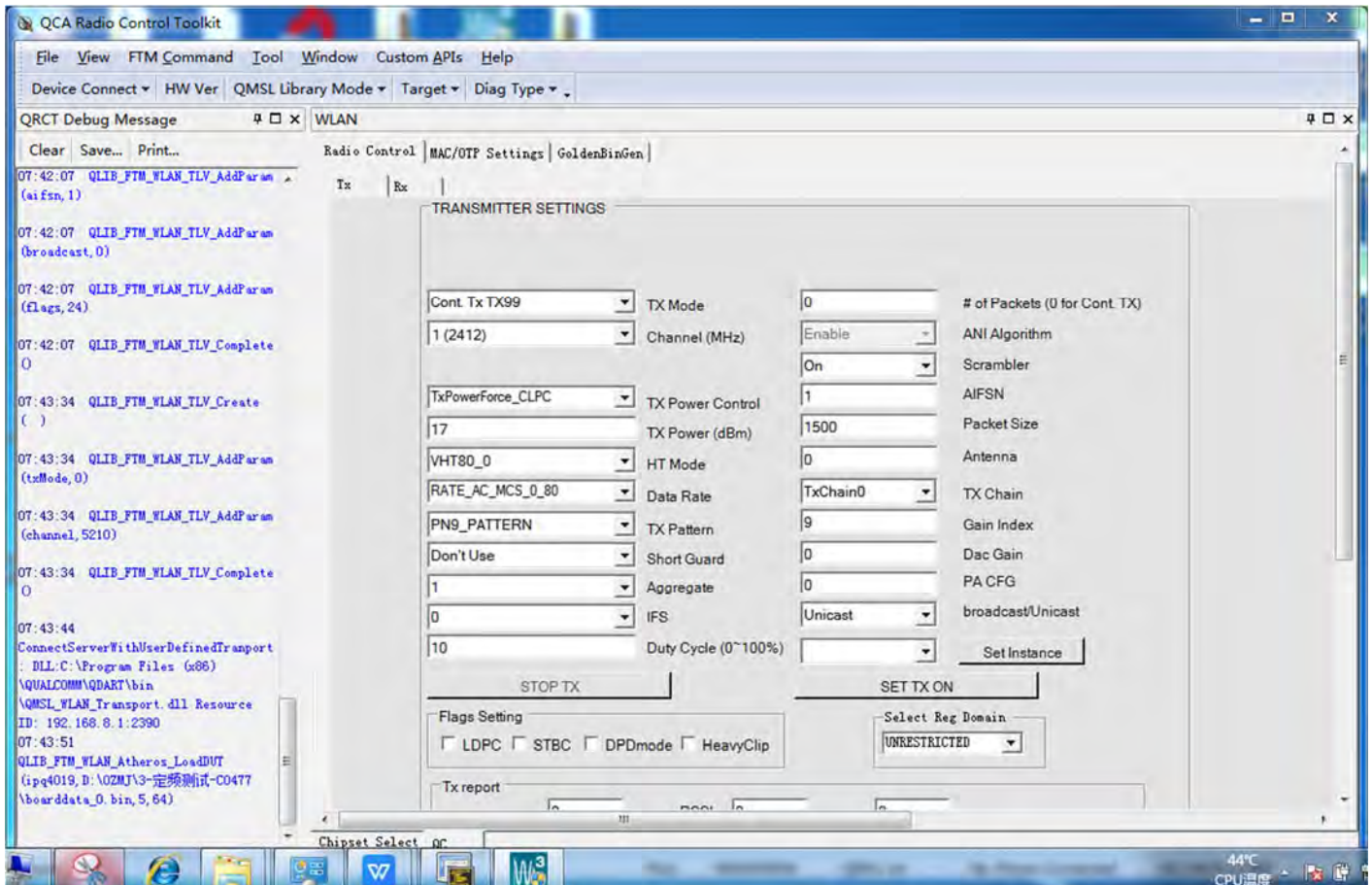
EUT Software Settings:

Mode	☒ Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.
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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.

Power level setup in software					
Test Software Version	QRCT3				
Support Units (Software installation media)	Description	Manufacturer		Model	
	Notebook	Lenovo		X220	
Mode	Channel	Soft Set			
		Main Antenna	Aux. Antenna	MIMO-Main Antenna	MIMO-Aux. Antenna
802.11 b	1	15.0	17.5	--	--
	6	17.0	21.0	--	--
	11	19.0	22.0	--	--
802.11 g	1	17.5	16.0	--	--
	6	21.0	20.5	--	--
	11	18.5	21.0	--	--
802.11 n20	1	17.0	16.5	16.0	16.0
	6	20.5	20.5	19.0	19.0
	11	18.0	21.0	17.0	17.0
802.11 n40	3	16.5	18.5	17.0	17.0
	6	21.0	21.5	21.0	21.0
	9	17.5	19.5	17.0	17.0

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	ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Verdict

No.	Description	FCC PART No.	Test Result	Verdict
1	Antenna Requirement	15.203; 15.247(b)	N/A	Pass ^{Note 1}
2	Output Power	15.247(b)	ANNEX A.1	Pass
3	6dB Bandwidth	15.247(a)	ANNEX A.2	Pass
4	Conducted Spurious Emission	15.247(d)	ANNEX A.3	Pass
5	Band Edge(Authorized-band band-edge)	15.209; 15.247(d)	ANNEX A.4	Pass
6	Conducted Emission	15.207	ANNEX A.5	Pass
7	Radiated Spurious Emission	15.209; 15.247(d)	ANNEX A.6	Pass
8	Band Edge(Restricted-band band-edge)	15.209; 15.247(d)	ANNEX A.7	Pass
9	Power spectral density (PSD)	15.247(e)	ANNEX A.8	Pass
10	Receiver Spurious Emissions	N/A	N/A	N/A ^{Note 2}

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)	12 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2020.06.08	2021.06.07
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2020.06.08	2021.06.07
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2020.06.09	2021.06.08
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2020.06.09	2021.06.08
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2020.06.08	2021.06.07
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2020.06.08	2021.06.07
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2020.06.08	2021.06.07
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
Temperature Chamber	AHK	SP20	1412	2020.06.10	2021.06.09
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2019.10.29	2021.10.28
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2021.01.05	2023.01.04
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2022.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2020.06.08	2021.06.07
Power Amplifier	OPHIR RF	5225F	1037	2020.02.19	2021.02.18
Power Amplifier	OPHIR RF	5273F	1016	2020.02.19	2021.02.18
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Sound Level Meter	B&K	NL-20	00844023	2020.10.23	2021.10.22
Ear Simulator	B&K	4192-L-001	3038758	2020.02.19	2021.02.18

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Audio analyzer	B&K	UPL 16	100129	2020.02.28	2021.02.27

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2020.06.08	2021.06.07
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2020.06.08	2021.06.07
EMI Receiver	KEYSIGHT	N9038A	MY53220118	2020.06.09	2021.06.08
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2020.06.09	2021.06.08
LISN	SCHWARZBECK	NSLK 8127	8127-687	2020.06.09	2021.06.08
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2020.06.08	2021.06.07
DC Power Supply	ROHDE&SCHWARZ	HMP2020	018141664	2020.06.08	2021.06.07
Power Splitter	KMW	DCPD-LDC	1305003215	--	--
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2020.06.08	2021.06.07
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
Temperature Chamber	AHK	SP20	1412	2020.06.10	2021.06.09
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2019.10.29	2021.10.28
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2019.07.02	2021.07.01
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1917	2019.07.02	2021.07.01
Test Antenna-Horn (18-40 GHz)	A-INFO	LB-180400KF	J211060273	2019.01.06	2021.01.05
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2017.02.21	2022.02.20
Anechoic Chamber	EMC Electronic Co., Ltd	20.10*11.60*7.35m	N/A	2018.08.08	2021.08.07
Shielded Enclosure	ChangNing	CN-130701	130703	--	--
Signal Generator	ROHDE&SCHWARZ	SMB100A	177746	2020.06.08	2021.06.07
Power Amplifier	OPHIR RF	5225F	1037	2020.02.19	2021.02.18
Power Amplifier	OPHIR RF	5273F	1016	2020.02.19	2021.02.18
Directional Coupler	Werlantone	C5982-10	109275	N/A	N/A
Directional Coupler	Werlantone	CHP-273E	S00801z-01	N/A	N/A
Sound Level Meter	B&K	NL-20	00844023	2020.10.23	2021.10.22
Ear Simulator	B&K	4192-L-001	3038758	2020.02.19	2021.02.18
Audio analyzer	B&K	UPL 16	100129	2020.02.28	2021.02.27

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	$\pm 4\%$
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	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 4\%$

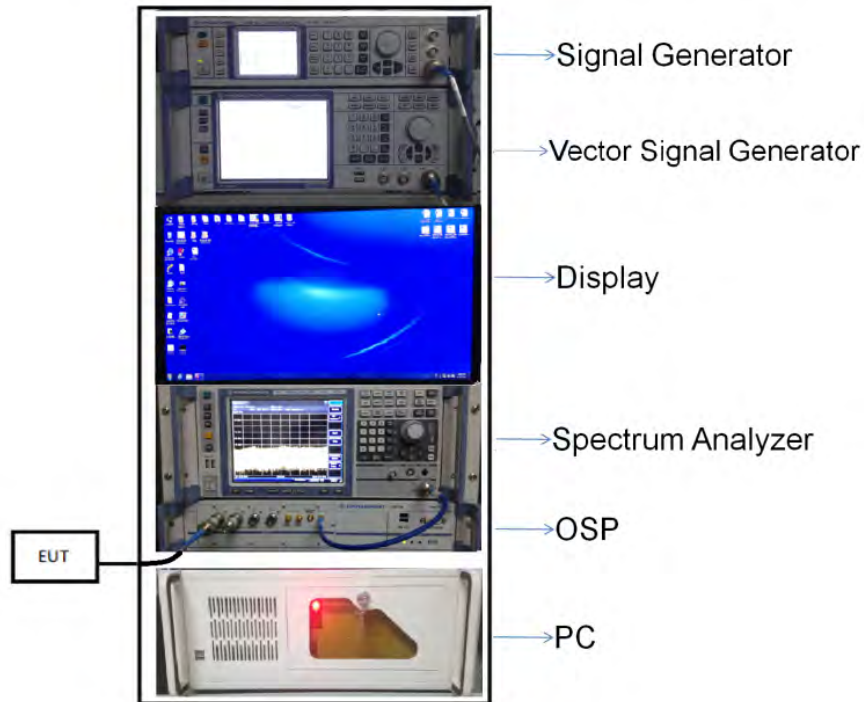
4.4 Description of Test Setup

4.4.1 For Antenna Port Test

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

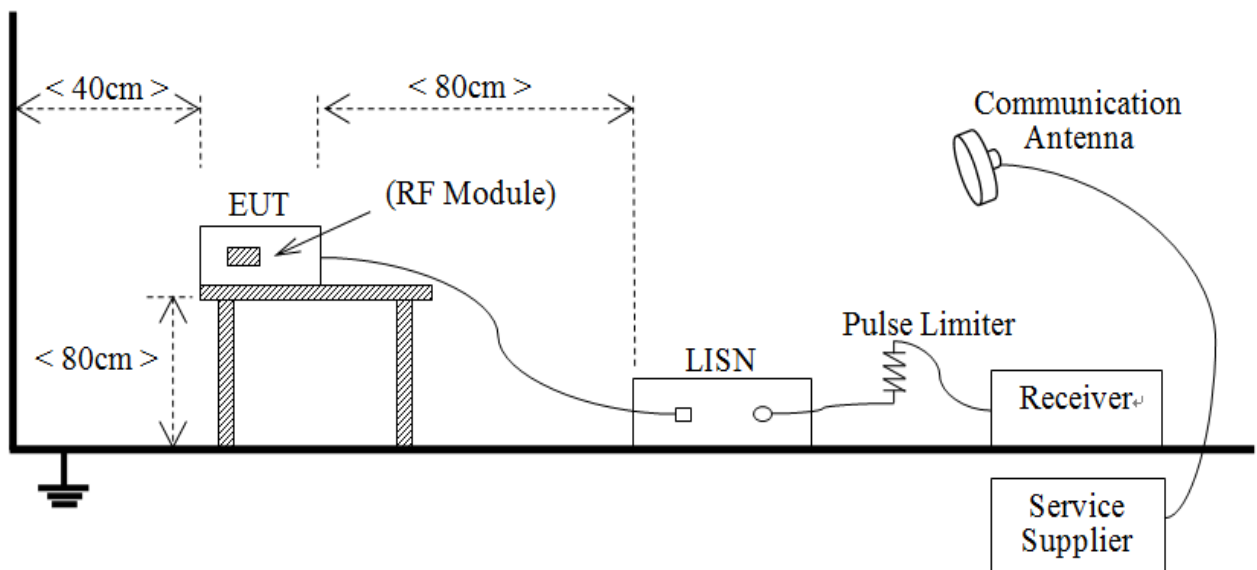
For example: the measurement value is 10 dBm and the cable 0.5dBm used, then the final result of EUT:

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



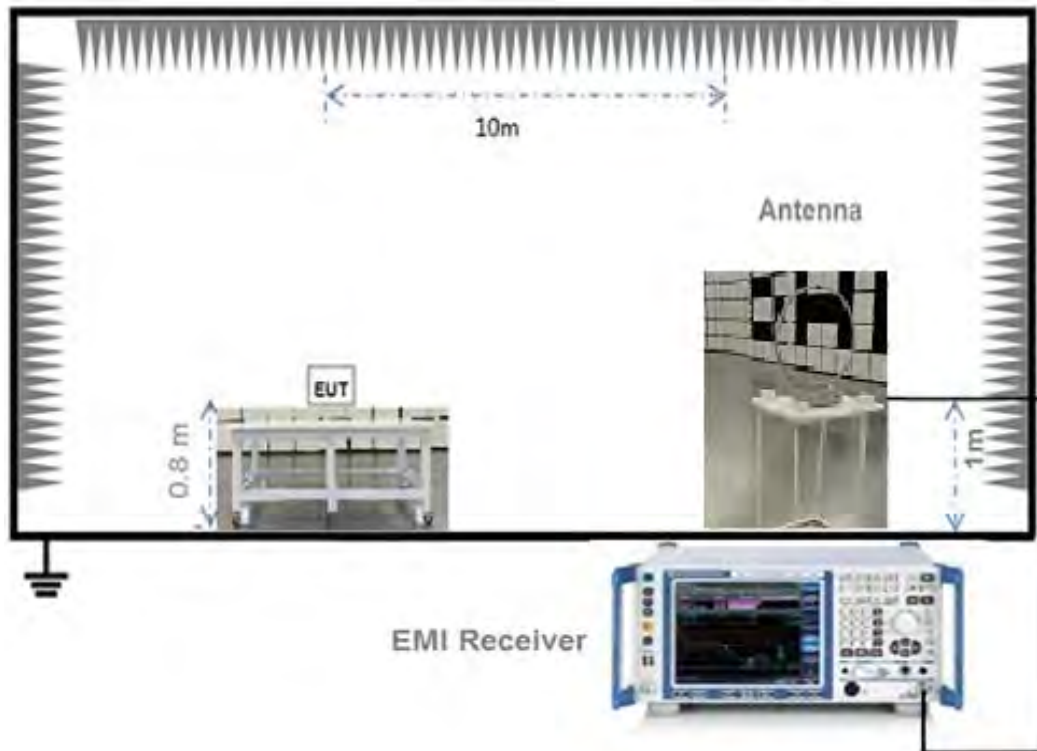
(Diagram 1)

4.4.2 For AC Power Supply Port Test



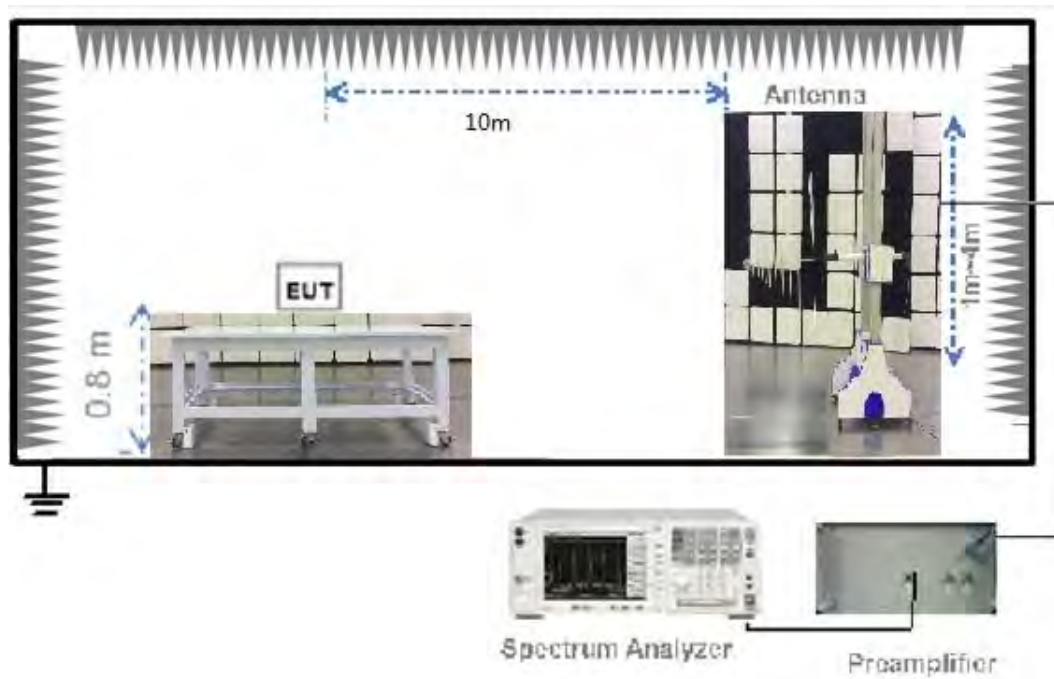
(Diagram 2)

4.4.3 For Radiated Test (Below 30 MHz)



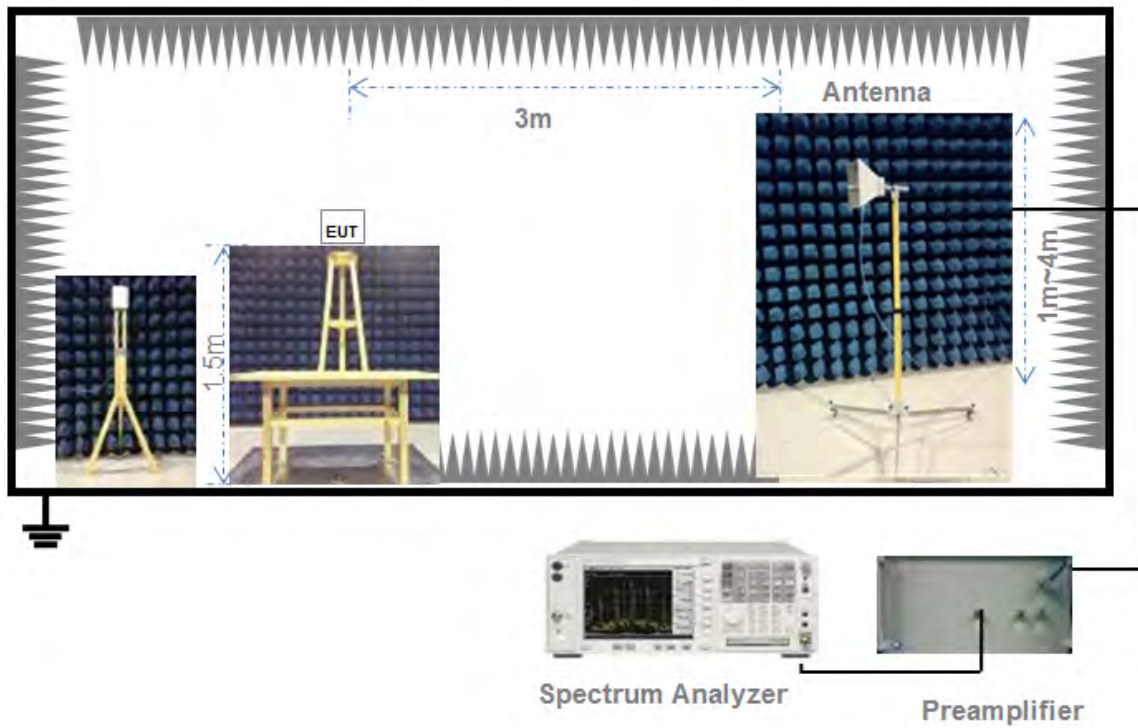
(Diagram 3)

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 μ 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 (f)

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.	An embedded-in antenna design is used.

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 (d)

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.

5.36dB Bandwidth

5.3.1 Limit

FCC §15.247(a); RSS-GEN, 6.7

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) ≥ 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 ≥ 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 ± 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) ± 0.5 MHz. If the instrument does not have a band power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by femission ± 0.5 MHz.

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 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ 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 ($\mu\text{V/m}$)	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 dB μ V/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 $\geq 3 \times$ 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 ≥ 98 percent) cannot be achieved and the duty cycle is constant (i.e., duty cycle variations are less than ± 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 (≥ 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 (b)

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

Test Mode	Duty Cycle	T (ms)	1/T(kHz)
802.11b	98.92%	12.16700	0.08
802.11g	95.61%	2.01852	0.50
802.11n-20 MHz	98.26%	4.95620	0.20
802.11n-40 MHz	96.14%	2.39310	0.42

Peak Power Test Data

Main Antenna

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.94	39.26	30	1000	Pass
Middle	18.16	65.46			Pass
High	19.71	93.54			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.51	282.49	30	1000	Pass
Middle	27.28	534.56			Pass
High	25.08	322.11			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.14	259.42	30	1000	Pass
Middle	26.89	488.65			Pass
High	24.45	278.61			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.28	212.81	30	1000	Pass
Middle	27.33	540.75			Pass
High	24.03	252.93			Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.50	70.79	30	1000	Pass
Middle	21.98	157.76			Pass
High	22.30	169.82			Pass

802.11g Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	22.85	192.75	30	1000	Pass
Middle	27.11	514.04			Pass
High	27.02	503.50			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.51	224.39	30	1000	Pass
Middle	27.06	508.16			Pass
High	26.98	498.88			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	25.19	330.37	30	1000	Pass
Middle	27.68	586.14			Pass
High	25.94	392.64			Pass

MIMO-Main Antenna

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.13	205.59	30	1000	Pass
Middle	25.83	382.82			Pass
High	23.50	223.87			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.07	255.27	30	1000	Pass
Middle	26.85	484.17			Pass
High	23.76	237.68			Pass

MIMO-Aux. Antenna

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	23.56	226.99	30	1000	Pass
Middle	26.46	442.59			Pass
High	24.47	279.90			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	24.40	275.42	30	1000	Pass
Middle	26.95	495.45			Pass
High	24.29	268.53			Pass

MIMO

802.11n-20 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	26.36	432.58	30	1000	Pass
Middle	29.17	825.41			Pass
High	27.02	503.77			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Peak Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	27.25	530.69	30	1000	Pass
Middle	29.91	979.62			Pass
High	27.04	506.22			Pass

Average Power Test Data

Main Antenna

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	13.61	22.96	30	1000	Pass
Middle	15.56	35.97			Pass
High	17.60	57.54			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.32	42.85	30	1000	Pass
Middle	19.81	95.72			Pass
High	17.13	51.64			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.60	36.31	30	1000	Pass
Middle	19.15	82.22			Pass
High	16.54	45.08			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.29	33.81	30	1000	Pass
Middle	19.82	95.94			Pass
High	16.20	41.69			Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.41	34.75	30	1000	Pass
Middle	19.02	79.80			Pass
High	20.57	114.02			Pass

802.11g Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.22	26.42	30	1000	Pass
Middle	19.64	92.04			Pass
High	19.78	95.06			Pass

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	14.62	28.97	30	1000	Pass
Middle	18.67	73.62			Pass
High	19.73	93.97			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.68	46.56	30	1000	Pass
Middle	19.80	95.50			Pass
High	18.08	64.27			Pass

MIMO-Main Antenna

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.66	36.81	30	1000	Pass
Middle	18.51	70.96			Pass
High	16.16	41.30			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	16.21	41.78	30	1000	Pass
Middle	19.80	95.50			Pass
High	15.78	37.84			Pass

MIMO-Aux. Antenna

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.14	32.66	30	1000	Pass
Middle	18.20	66.07			Pass
High	15.95	39.36			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	15.94	39.26	30	1000	Pass
Middle	19.77	94.84			Pass
High	15.51	35.56			Pass

MIMO

802.11n-20 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	18.42	69.47	30	1000	Pass
Middle	21.37	137.03			Pass
High	19.07	80.66			Pass

802.11n-40 MHz Mode:

Channel	Measured Output Average Power		Limit		Verdict
	dBm	mW	dBm	mW	
Low	19.09	81.05	30	1000	Pass
Middle	22.80	190.34			Pass
High	18.66	73.41			Pass

A.2 Bandwidth

Test Data

Main Antenna

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	8.160156	12.850941	≥ 500
Middle	8.110107	12.850941	≥ 500
High	8.160156	12.850941	≥ 500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	16.420654	17.713459	≥ 500
Middle	16.420654	18.350217	≥ 500
High	16.420654	17.887120	≥ 500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	17.721924	18.755427	≥ 500
Middle	17.721924	18.986975	≥ 500
High	17.721924	18.755427	≥ 500

802.11n-40MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	36.172607	36.700000	≥ 500
Middle	36.422607	37.200000	≥ 500
High	36.422607	36.900000	≥ 500

Aux. Antenna

802.11b Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	8.610840	13.024602	≥ 500
Middle	8.210205	12.966715	≥ 500
High	8.110107	13.024602	≥ 500

802.11g Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	16.420654	17.713459	≥ 500
Middle	16.420654	18.234443	≥ 500
High	16.420654	18.234443	≥ 500

802.11n-20MHz Mode:

Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	17.721924	18.581766	≥ 500
Middle	17.721924	19.334298	≥ 500
High	17.671875	19.044863	≥ 500

802.11n-40MHz Mode:

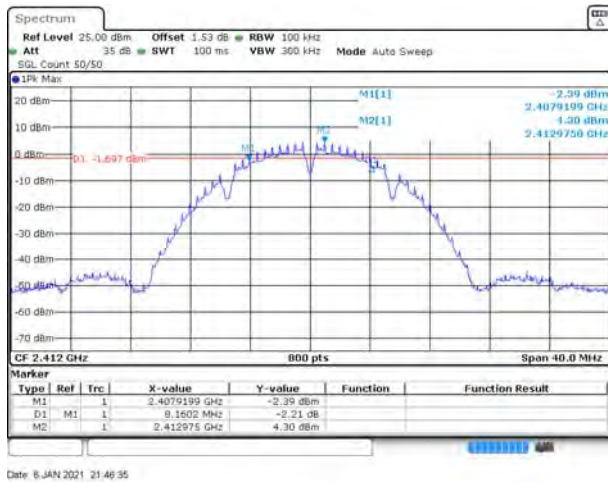
Channel	6 dB Bandwidth (MHz)	99% Bandwidth (MHz)	6 dB Bandwidth Limits (kHz)
Low	36.172607	36.900000	≥ 500
Middle	36.422607	37.300000	≥ 500
High	36.422607	36.800000	≥ 500

Test plots

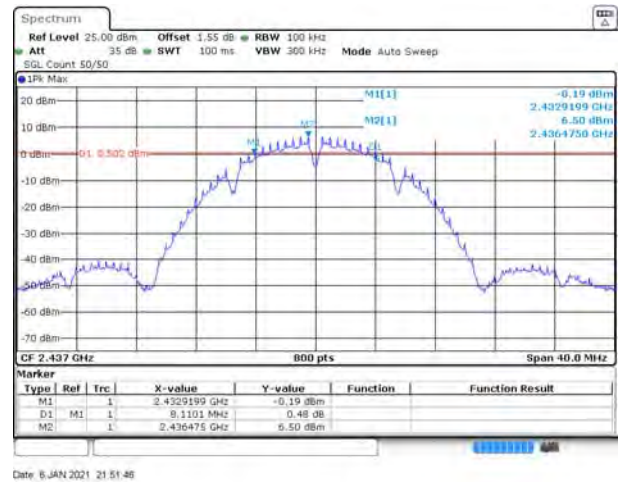
Main Antenna

6 dB Bandwidth

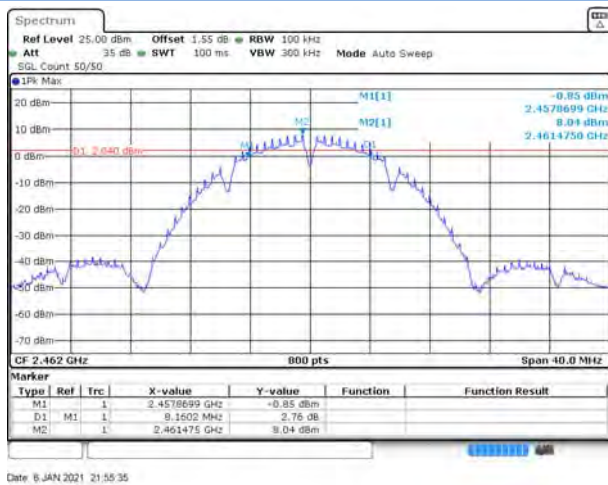
802.11b LOW CHANNEL



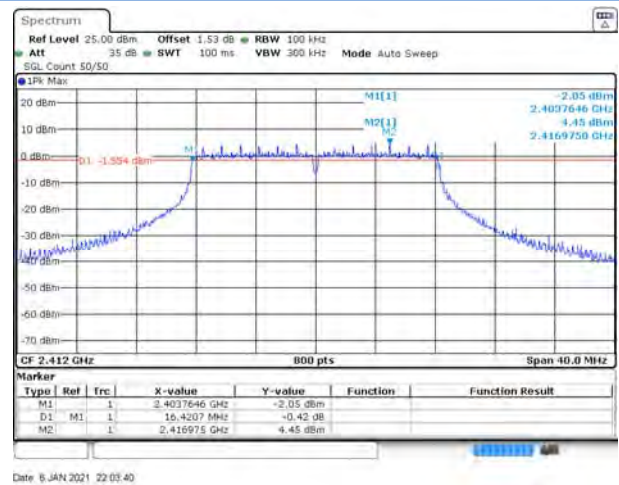
802.11b MIDDLE CHANNEL



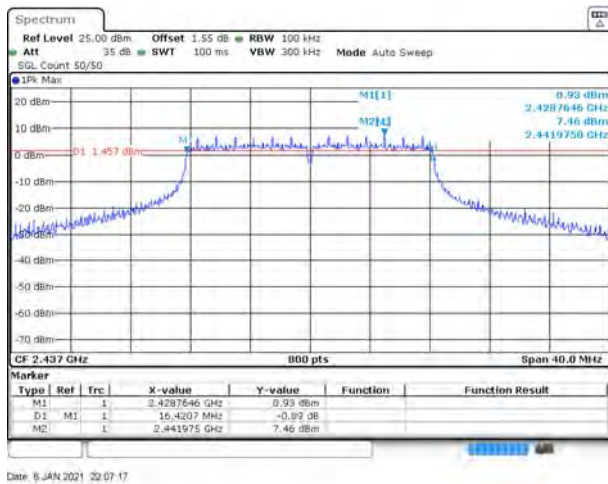
802.11b HIGH CHANNEL



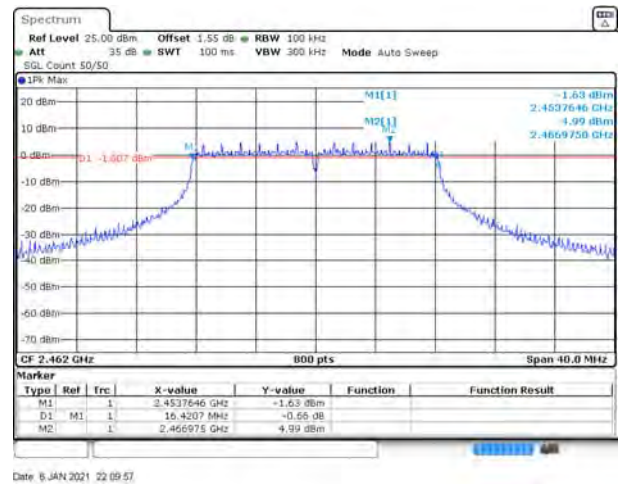
802.11g LOW CHANNEL



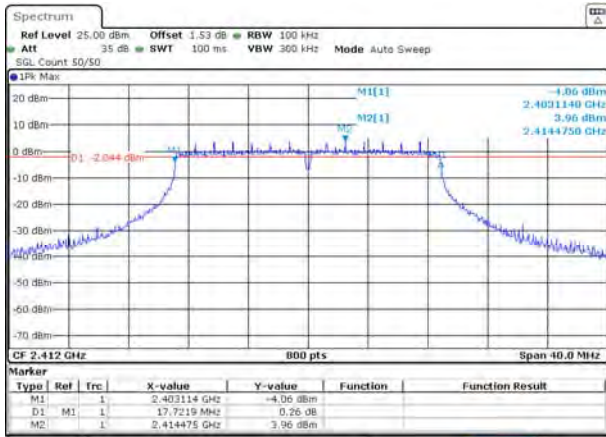
802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL

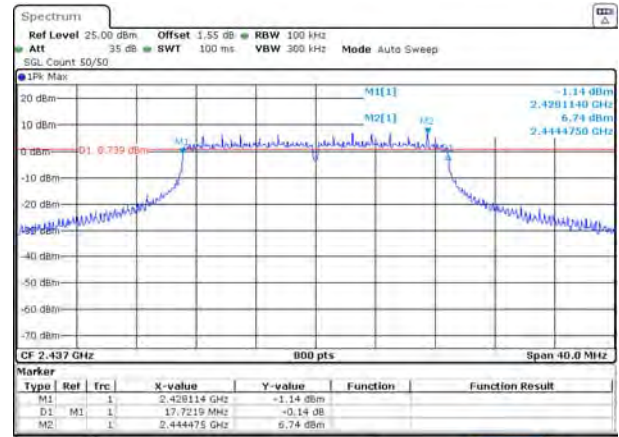


802.11n-20 MHz LOW CHANNEL



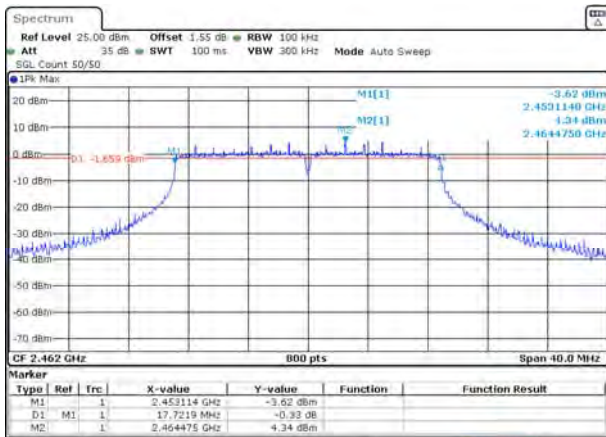
Date: 5 JAN 2021 22:12:36

802.11n-20 MHz MIDDLE CHANNEL



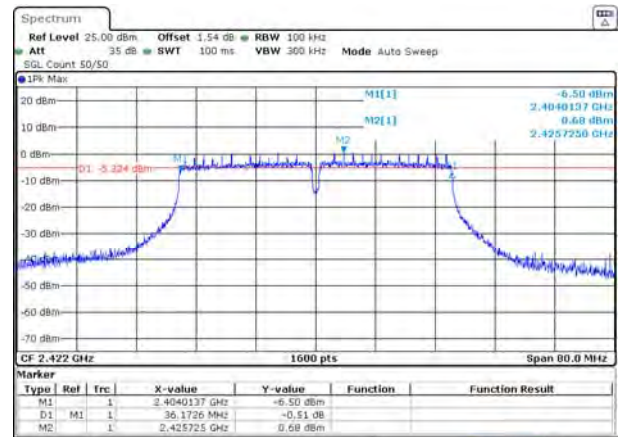
Date: 5 JAN 2021 22:15:56

802.11n-20 MHz HIGH CHANNEL



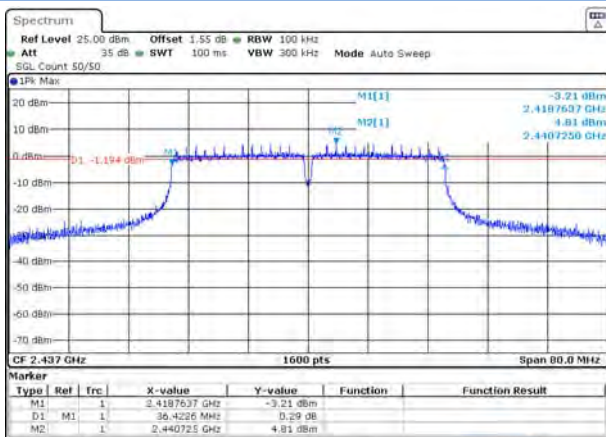
Date: 5 JAN 2021 22:17:57

802.11n-40 MHz LOW CHANNEL



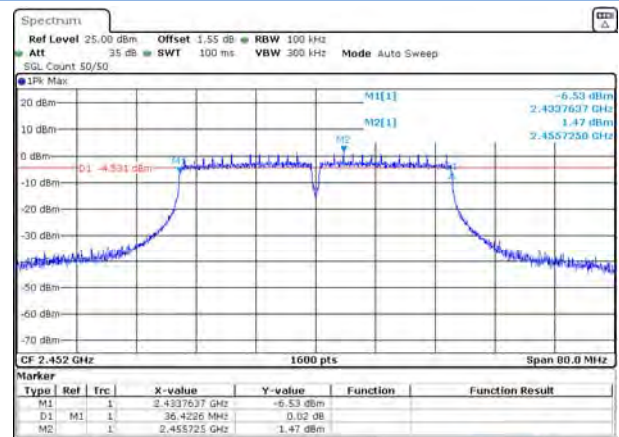
Date: 5 JAN 2021 22:23:18

802.11n-40 MHz MIDDLE CHANNEL



Date: 5 JAN 2021 22:28:47

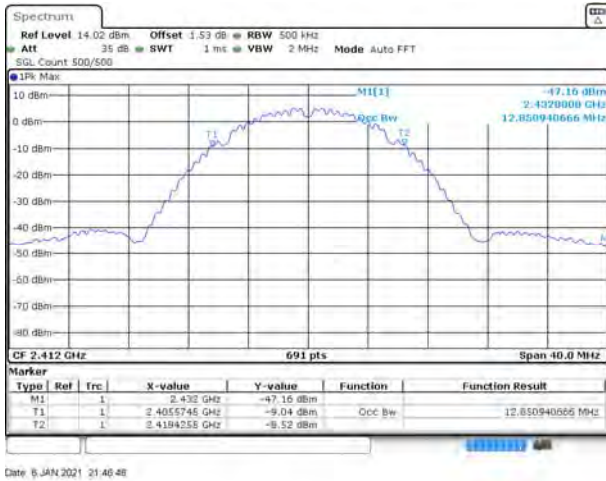
802.11n-40 MHz HIGH CHANNEL



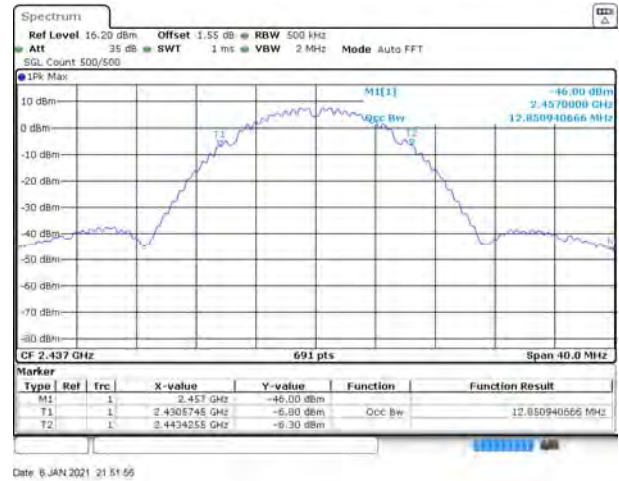
Date: 5 JAN 2021 22:28:35

99% Bandwidth

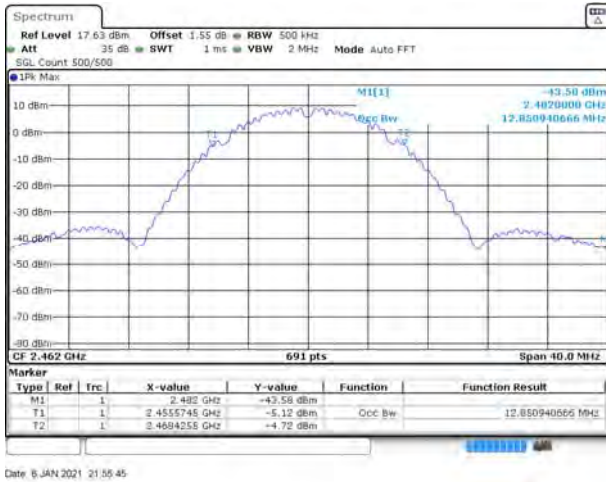
802.11b LOW CHANNEL



802.11b MIDDLE CHANNEL



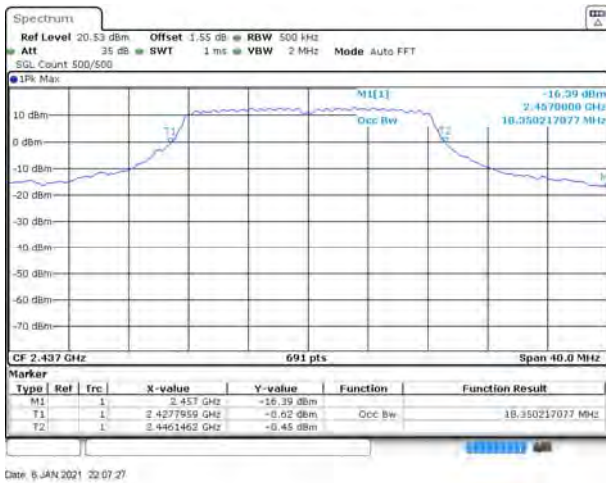
802.11b HIGH CHANNEL



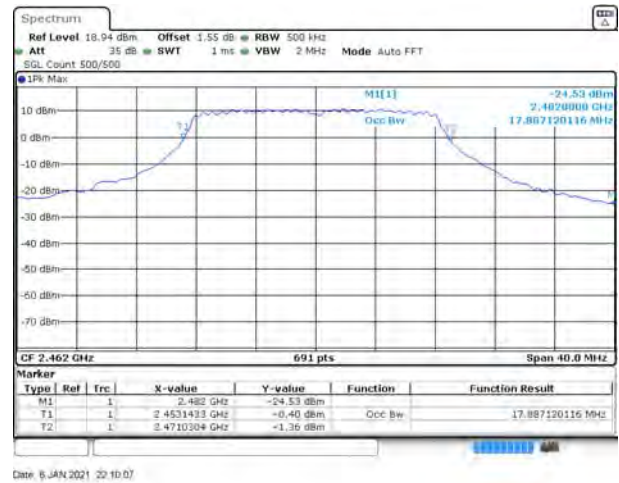
802.11g LOW CHANNEL



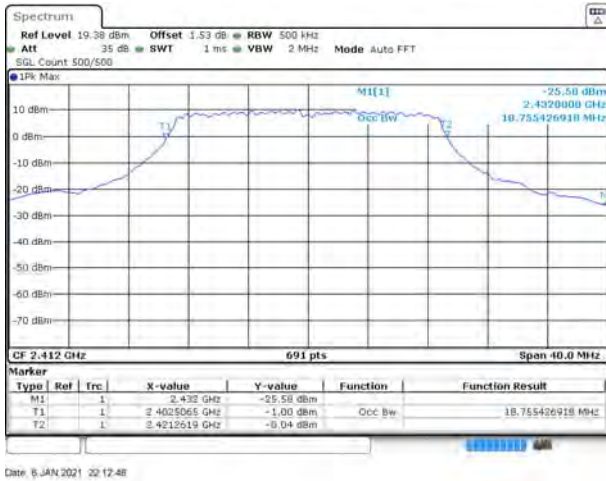
802.11g MIDDLE CHANNEL



802.11g HIGH CHANNEL



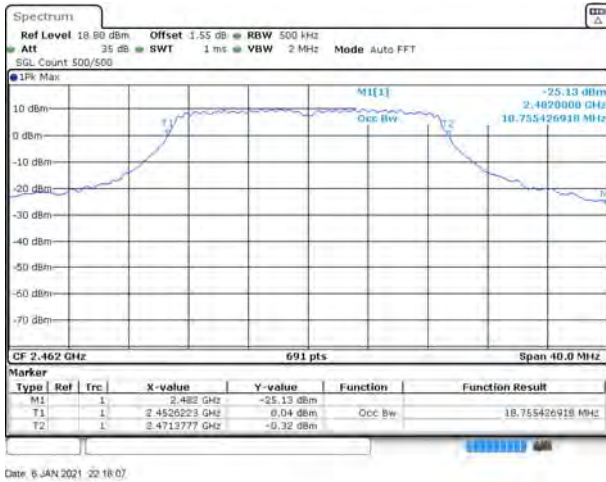
802.11n-20 MHz LOW CHANNEL



802.11n-20 MHz MIDDLE CHANNEL



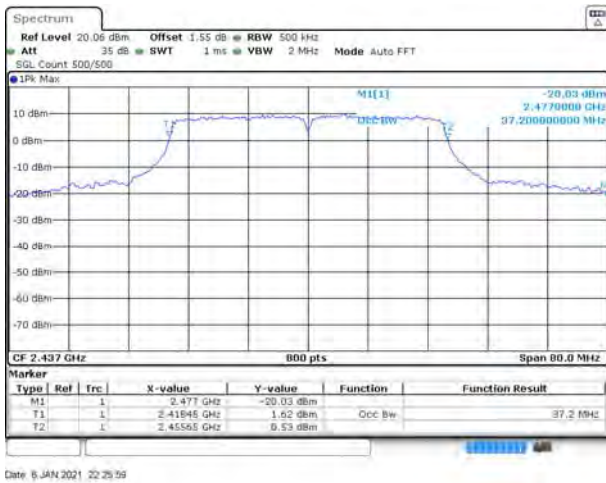
802.11n-20 MHz HIGH CHANNEL



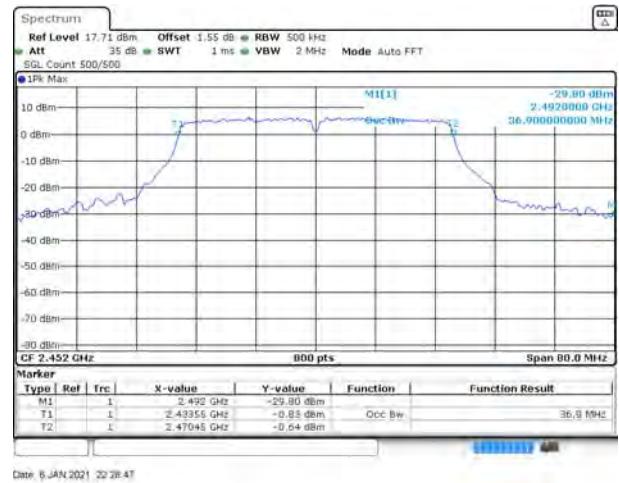
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



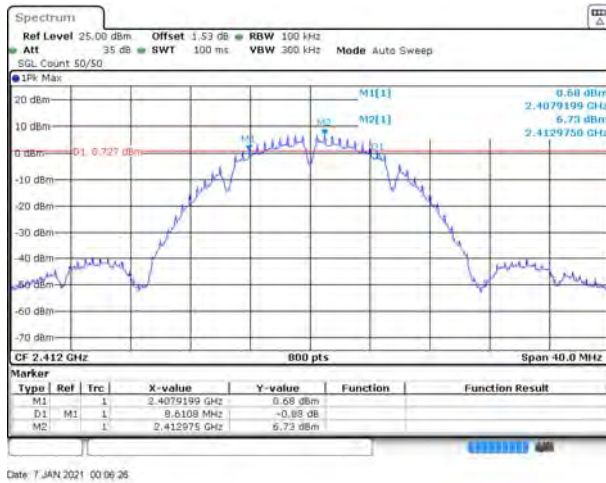
802.11n-40 MHz HIGH CHANNEL



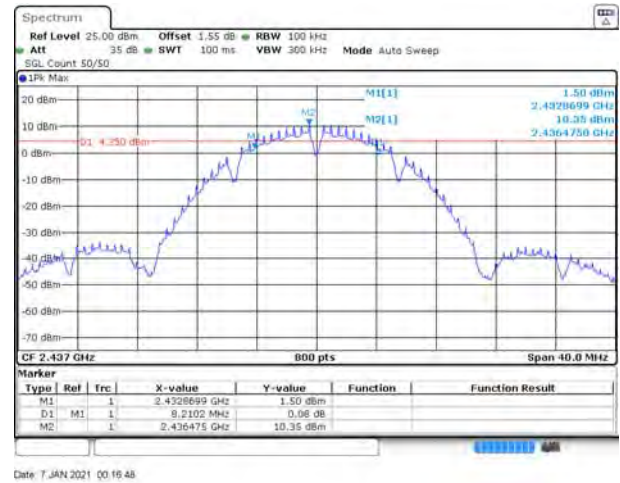
Aux. Antenna

6 dB Bandwidth

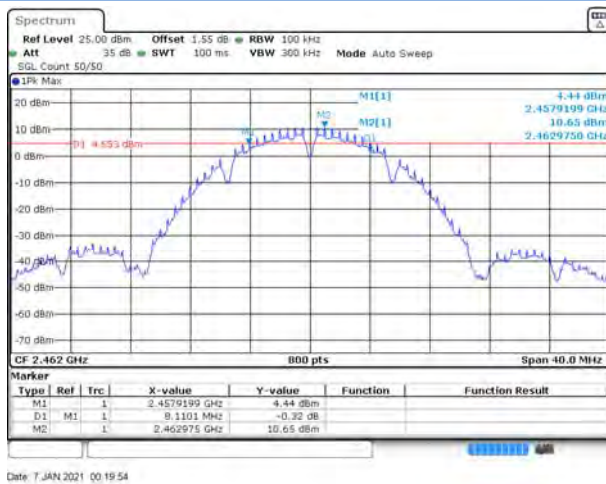
802.11b LOW CHANNEL



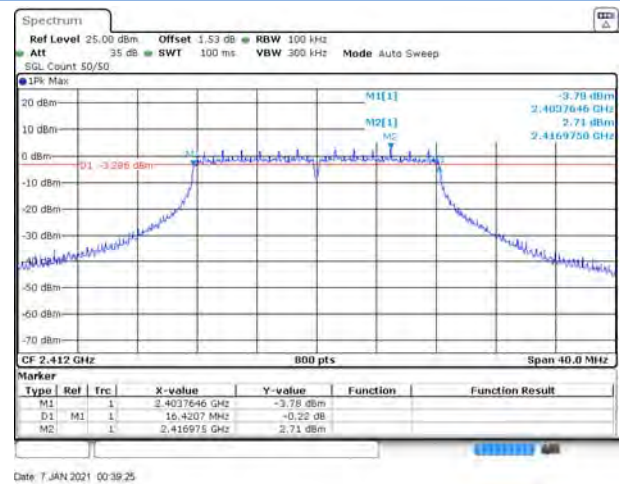
802.11b MIDDLE CHANNEL



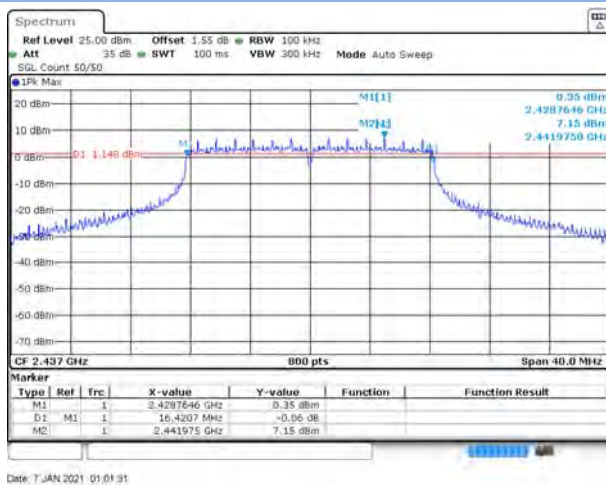
802.11b HIGH CHANNEL



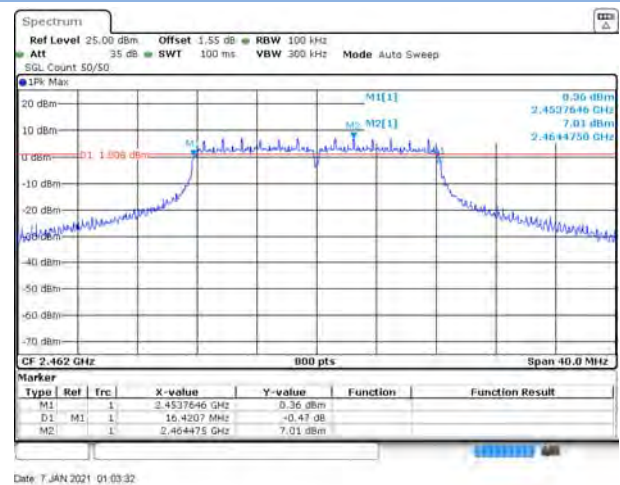
802.11g LOW CHANNEL



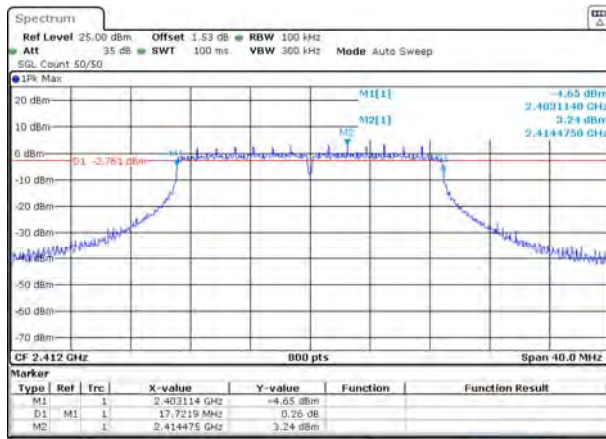
802.11g MIDDLE CHANNEL



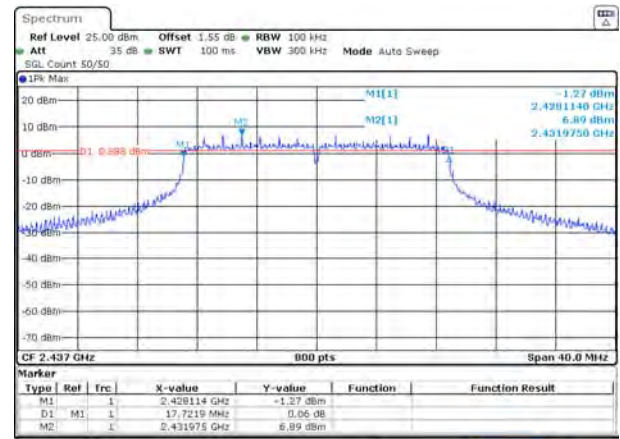
802.11g HIGH CHANNEL



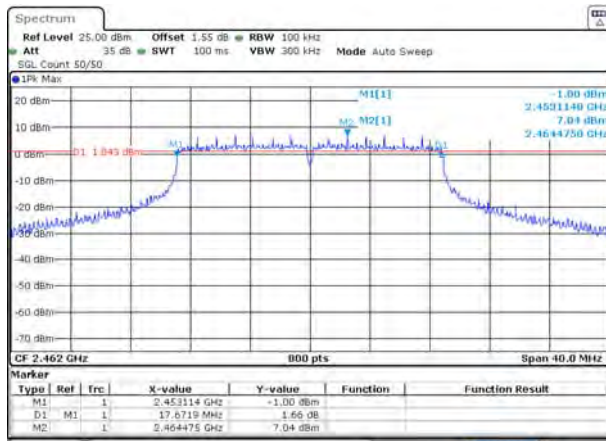
802.11n-20 MHz LOW CHANNEL



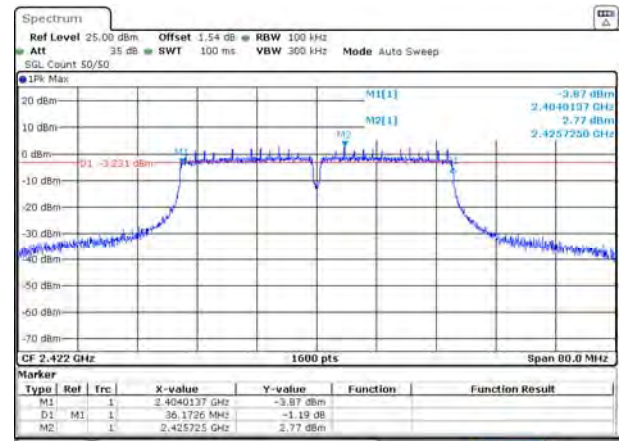
802.11n-20 MHz MIDDLE CHANNEL



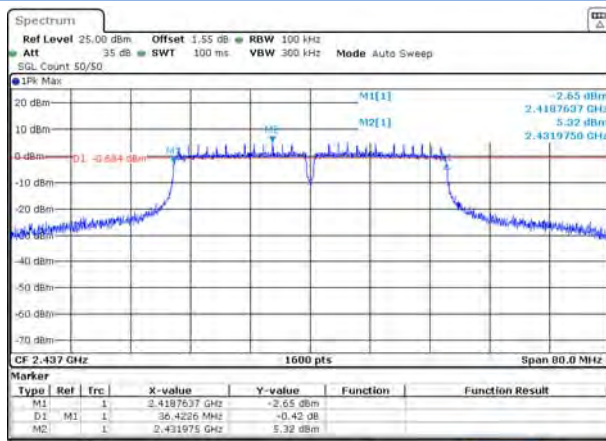
802.11n-20 MHz HIGH CHANNEL



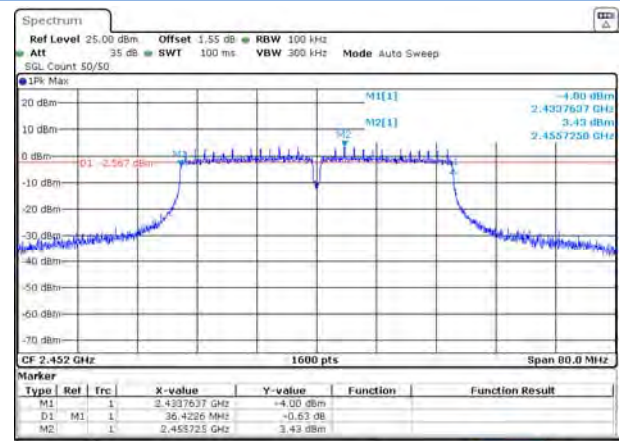
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL

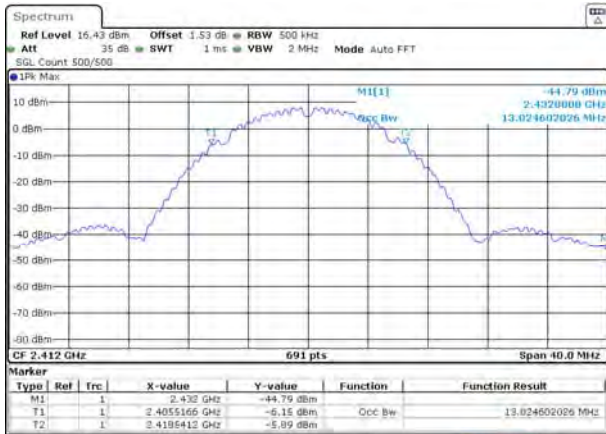


802.11n-40 MHz HIGH CHANNEL



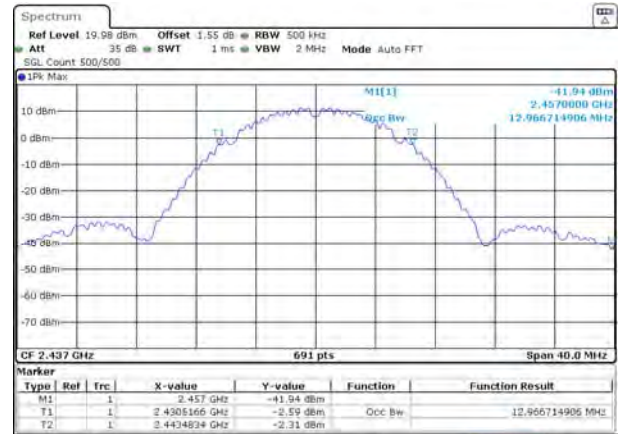
99% Bandwidth

802.11b LOW CHANNEL



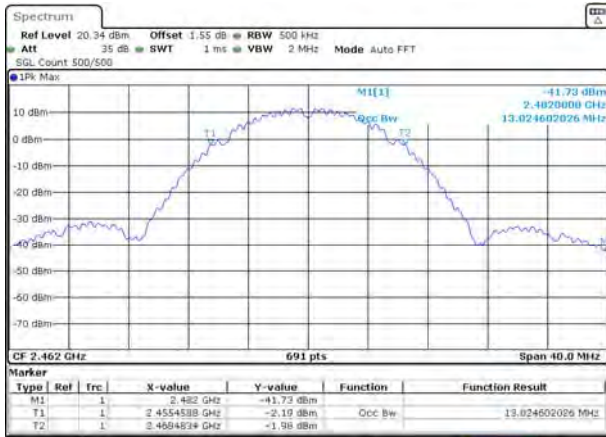
Date: 7 JAN 2021 00:06:36

802.11b MIDDLE CHANNEL



Date: 7 JAN 2021 00:16:58

802.11b HIGH CHANNEL



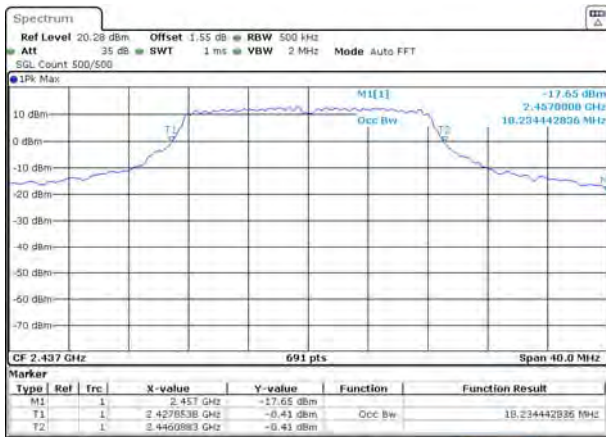
Date: 7 JAN 2021 00:20:04

802.11g LOW CHANNEL



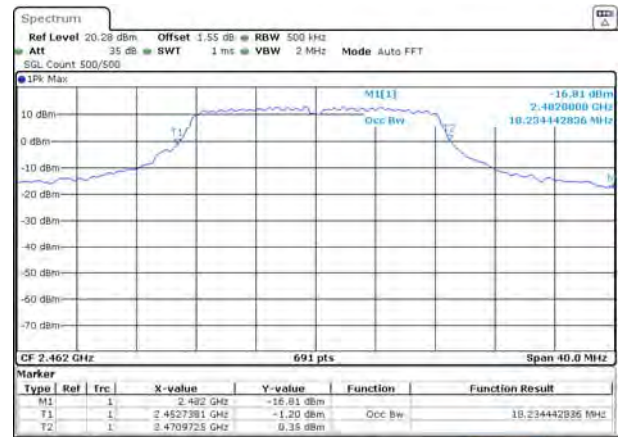
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802.11g MIDDLE CHANNEL



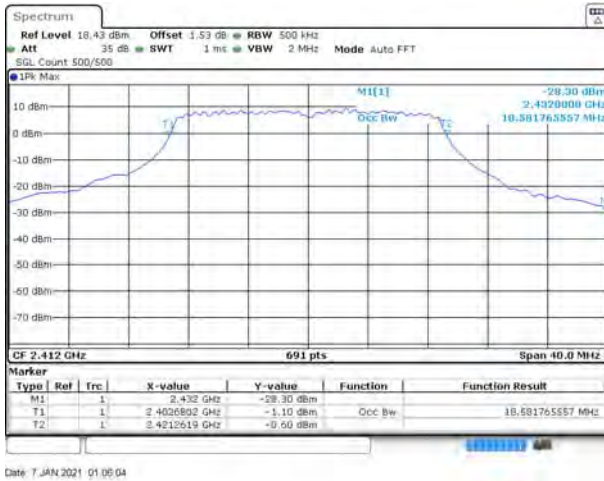
Date: 7 JAN 2021 01:01:41

802.11g HIGH CHANNEL



Date: 7 JAN 2021 01:03:42

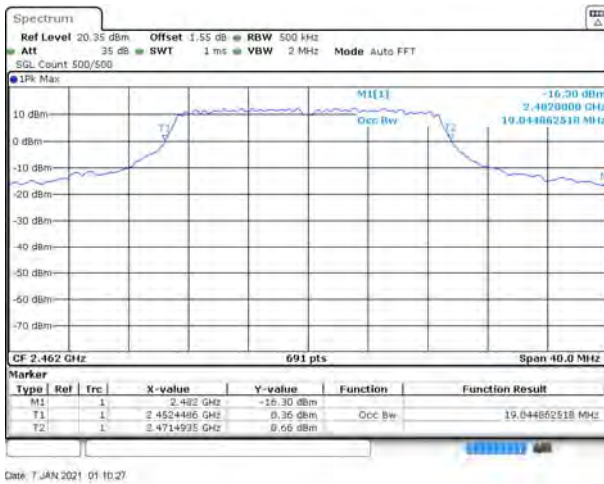
802.11n-20 MHz LOW CHANNEL



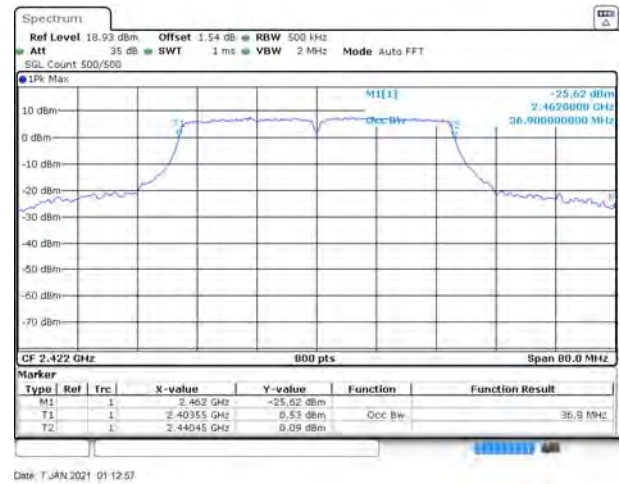
802.11n-20 MHz MIDDLE CHANNEL



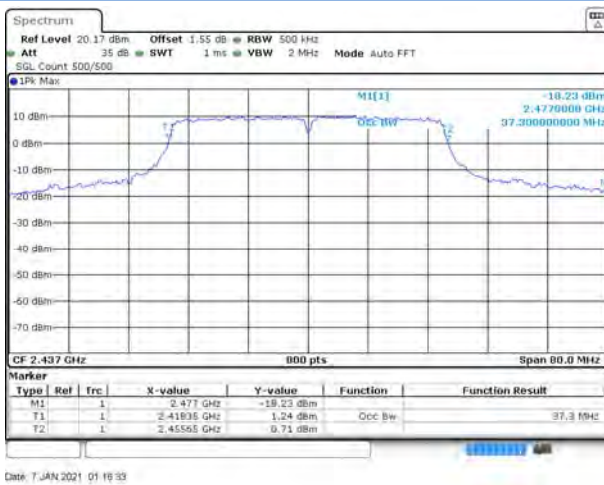
802.11n-20 MHz HIGH CHANNEL



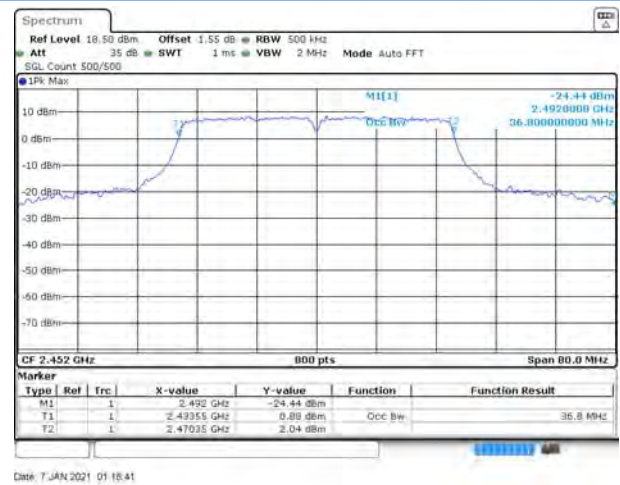
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



A.3 Conducted Spurious Emissions

Test Data

Main Antenna

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-43.52	4.57	-15.43	Pass
Middle	-42.49	6.85	-13.15	Pass
High	-40.09	8.06	-11.94	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-39.03	4.82	-15.18	Pass
Middle	-40.87	7.70	-12.30	Pass
High	-41.83	5.31	-14.69	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-38.84	4.30	-15.70	Pass
Middle	-40.85	7.36	-12.64	Pass
High	-40.93	4.53	-15.47	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-39.18	0.80	-19.20	Pass
Middle	-40.91	4.88	-15.12	Pass
High	-40.67	1.44	-18.56	Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-36.32	7.07	-12.93	Pass
Middle	-32.02	10.63	-9.37	Pass
High	-33.03	10.84	-9.16	Pass

802.11g Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-43.67	3.01	-16.99	Pass
Middle	-45.98	7.43	-12.57	Pass
High	-47.84	7.44	-12.56	Pass

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-43.18	3.68	-16.32	Pass
Middle	-46.88	7.50	-12.50	Pass
High	-47.50	7.37	-12.63	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-43.60	2.84	-17.16	Pass
Middle	-46.83	5.41	-14.59	Pass
High	-47.62	3.56	-16.44	Pass

MIMO-Main Antenna

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-40.69	3.30	-16.70	Pass
Middle	-40.43	6.18	-13.82	Pass
High	-41.97	3.37	-16.63	Pass

802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-39.69	1.50	-18.50	Pass
Middle	-41.12	4.57	-15.43	Pass
High	-41.12	1.20	-18.80	Pass

MIMO-Aux. Antenna

802.11n-20MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-44.90	3.65	-16.35	Pass
Middle	-46.49	6.14	-13.86	Pass
High	-48.42	4.09	-15.91	Pass

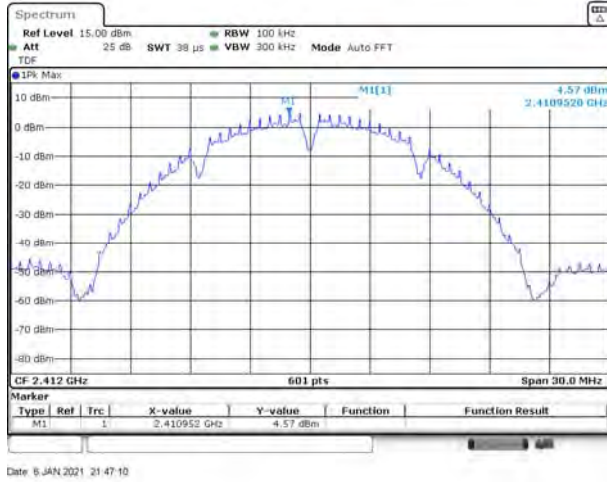
802.11n-40MHz Mode:

Channel	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low	-45.20	1.50	-18.50	Pass
Middle	-43.27	5.64	-14.36	Pass
High	-47.10	1.68	-18.32	Pass

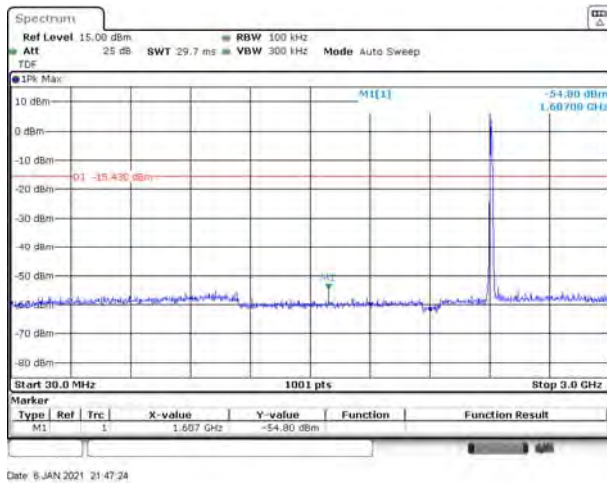
Test Plots

Main Antenna

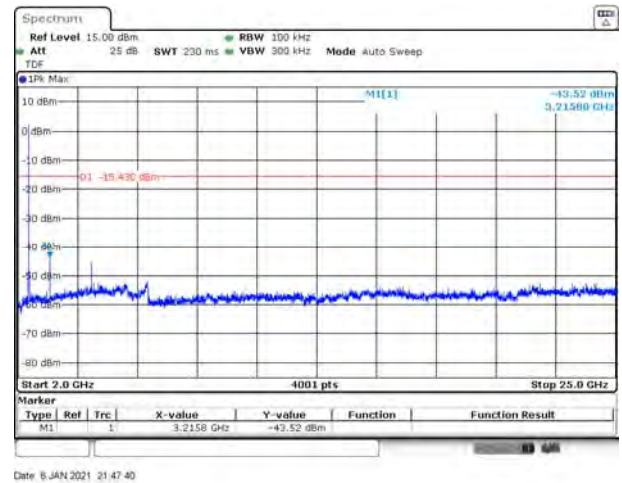
802.11b LOW CHANNEL CARRIER LEVEL



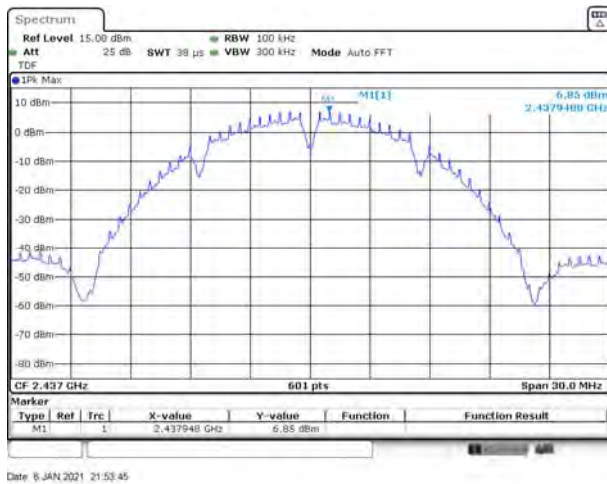
802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



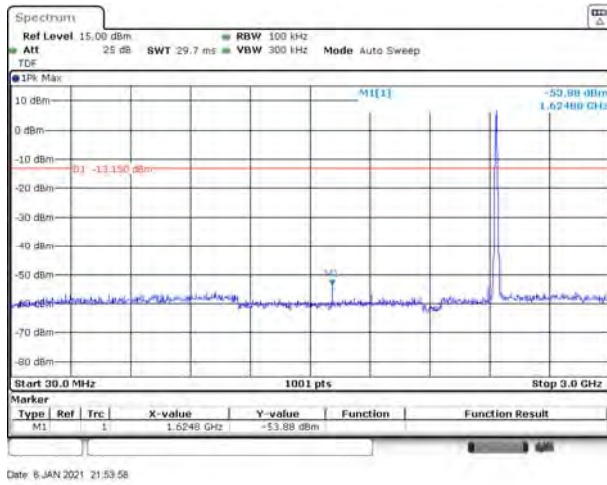
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



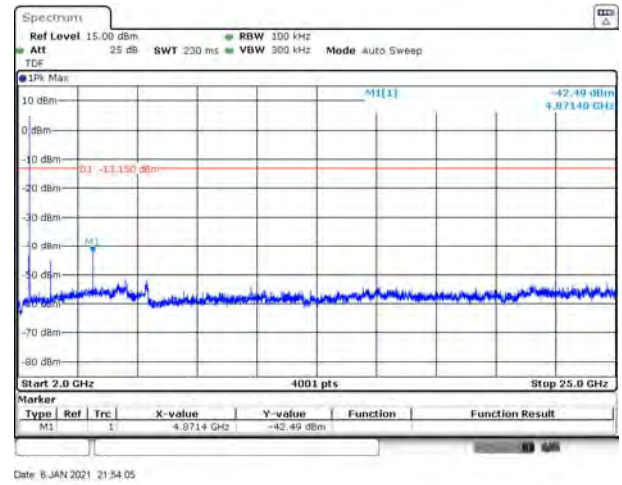
802.11b MIDDLE CHANNEL CARRIER LEVEL



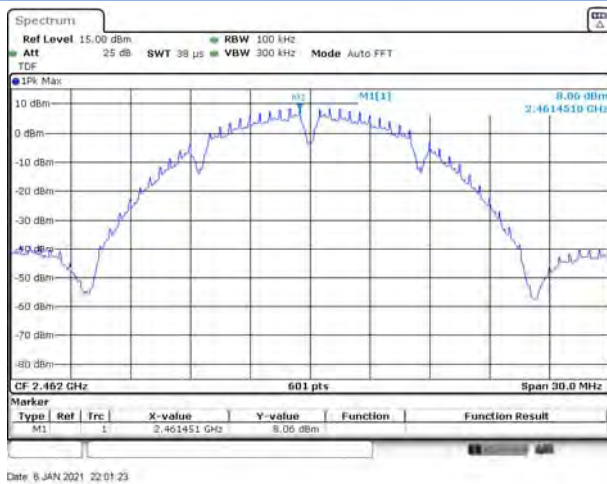
802.11b MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11b MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



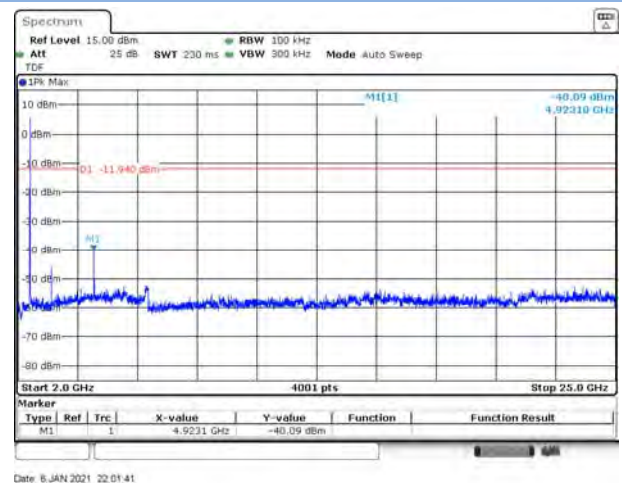
802.11b HIGH CHANNEL CARRIER LEVEL



802.11b HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



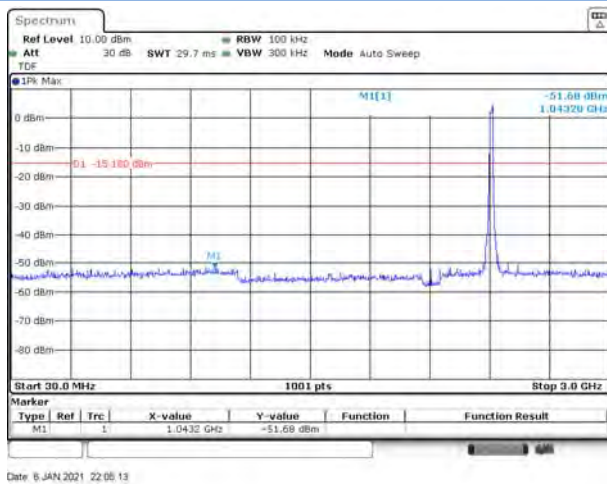
802.11b HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



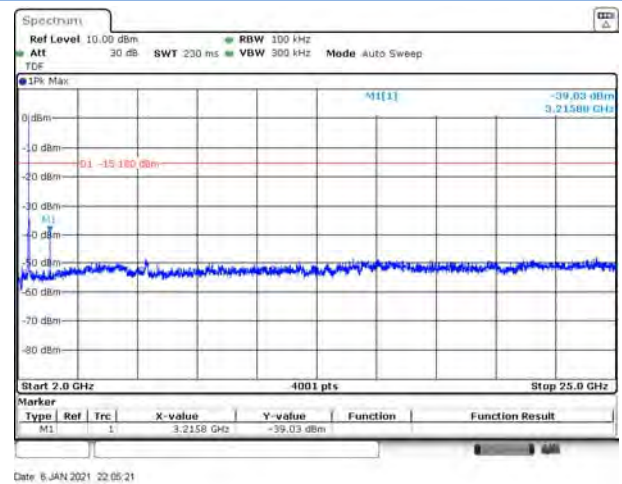
802.11g LOW CHANNEL CARRIER LEVEL



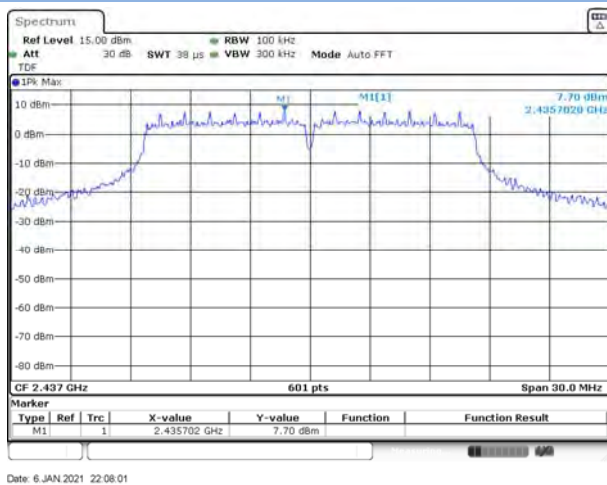
802.11g LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



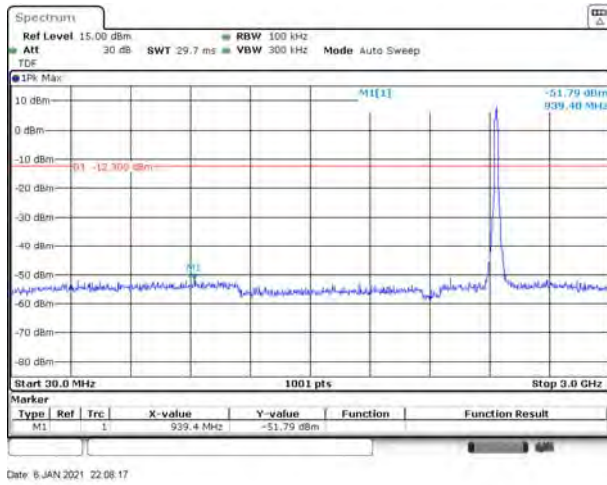
802.11g LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



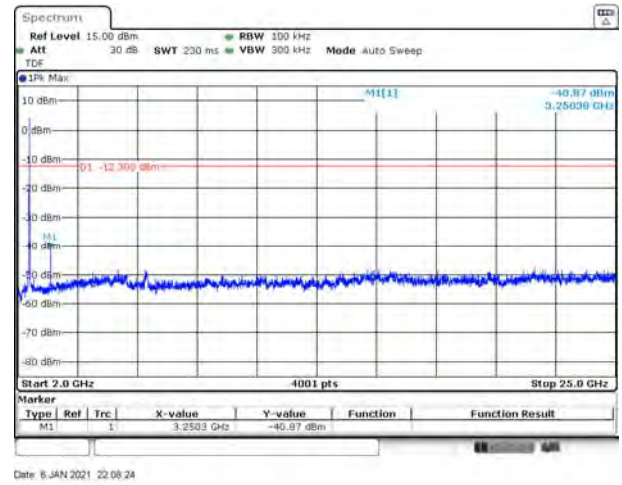
802.11g MIDDLE CHANNEL CARRIER LEVEL



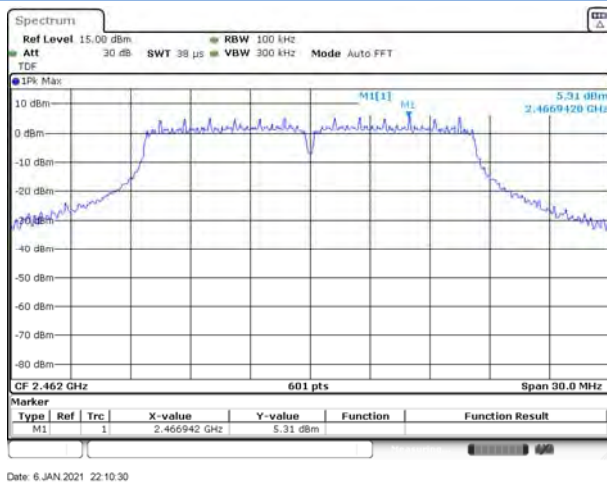
802.11g MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



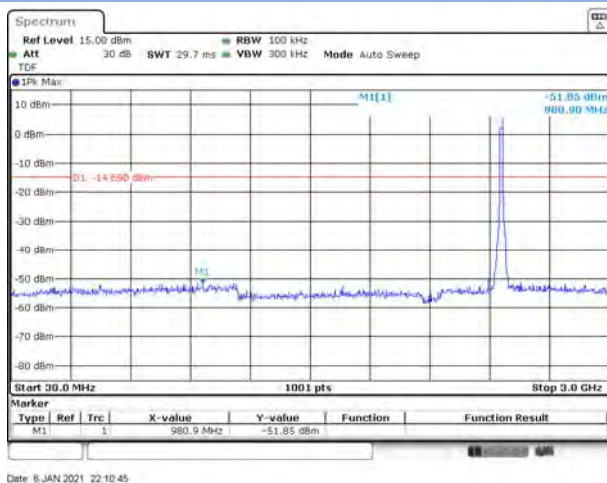
802.11g MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



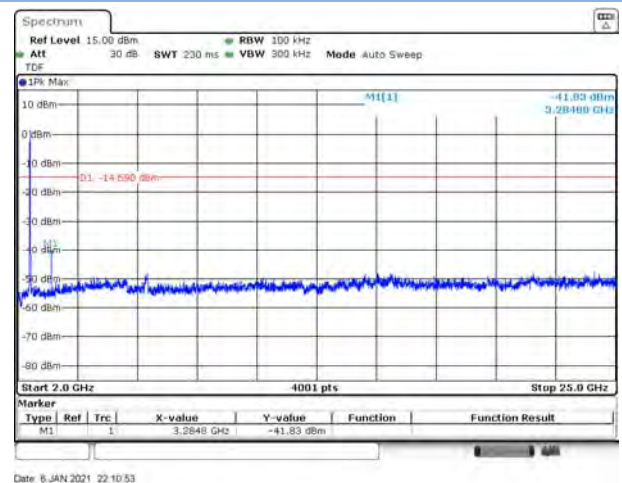
802.11g HIGH CHANNEL CARRIER LEVEL



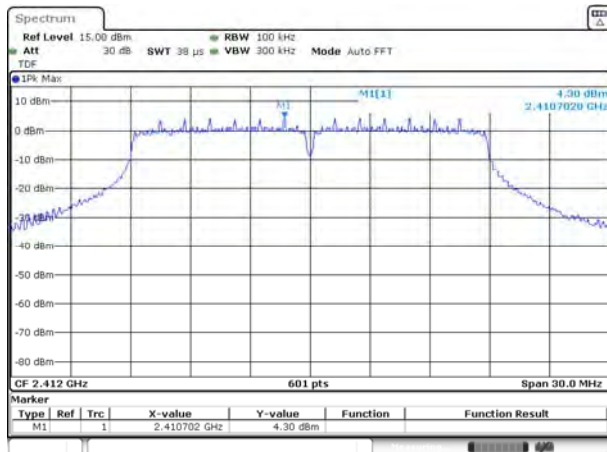
802.11g HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11g HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

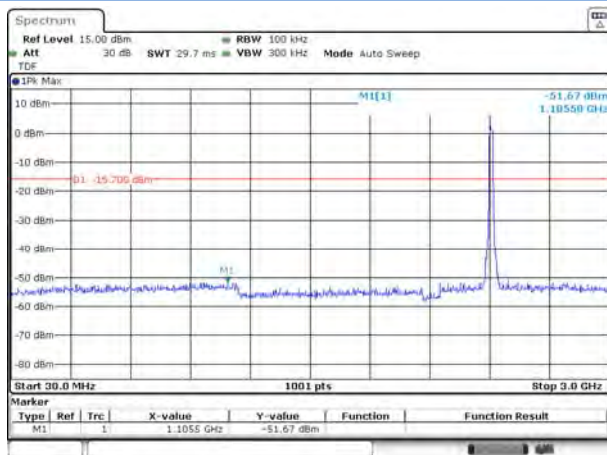


802.11n-20 LOW CHANNEL CARRIER LEVEL



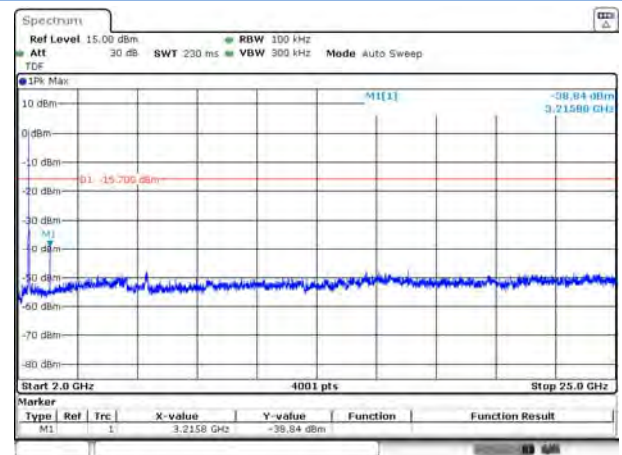
Date: 6 JAN 2021 22:13:11

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



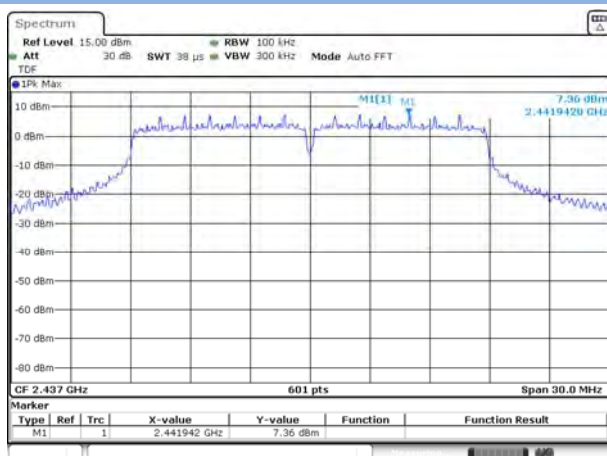
Date: 6 JAN 2021 22:13:24

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

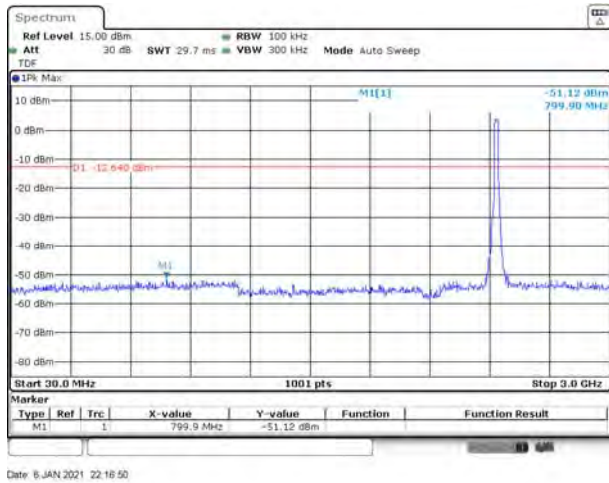
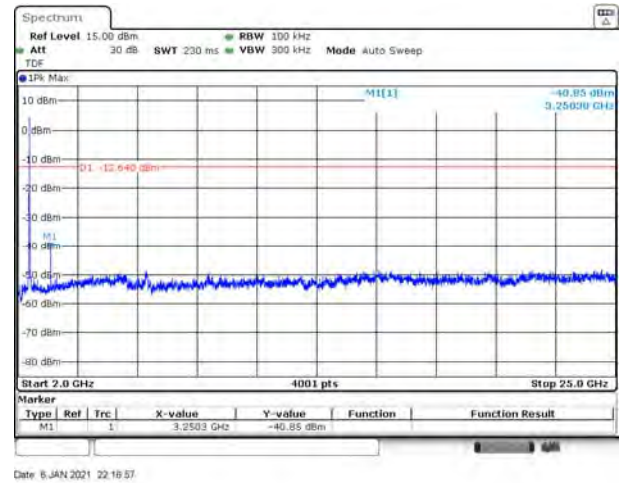


Date: 6 JAN 2021 22:13:32

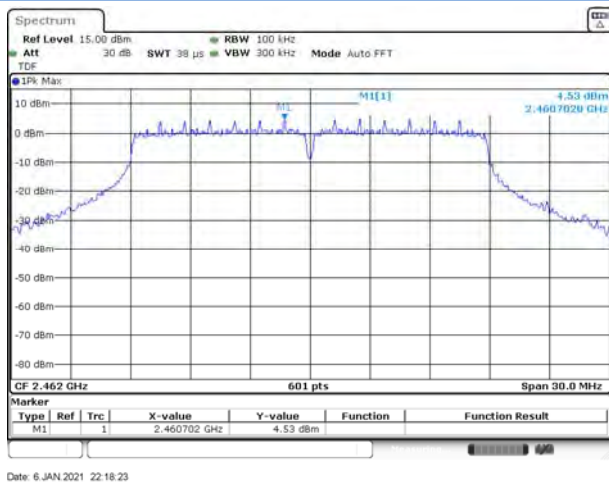
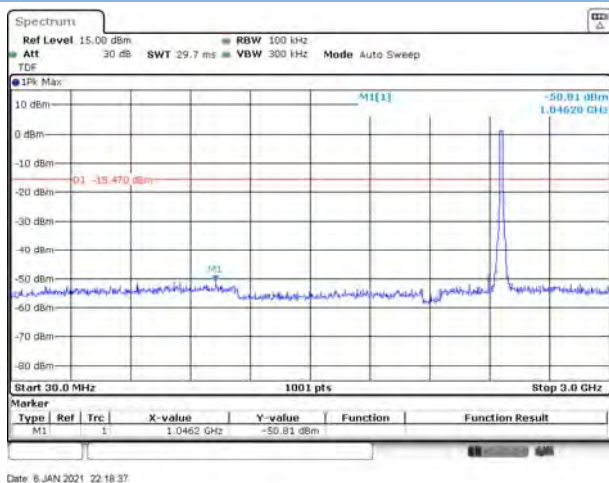
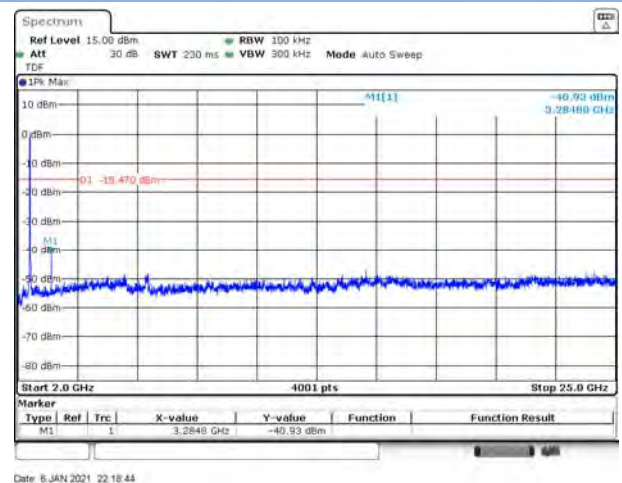
802.11n-20 MIDDLE CHANNEL CARRIER LEVEL



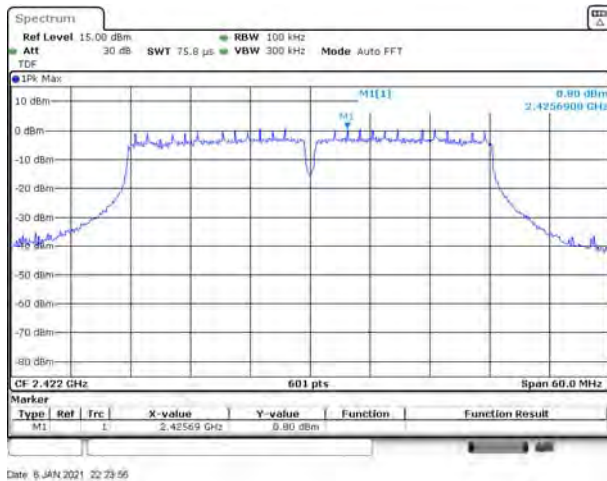
Date: 6 JAN 2021 22:16:36

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

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


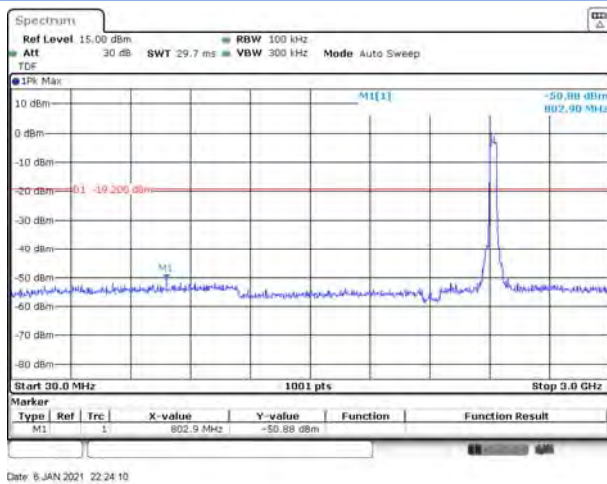
802.11n-20 HIGH CHANNEL CARRIER LEVEL


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

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


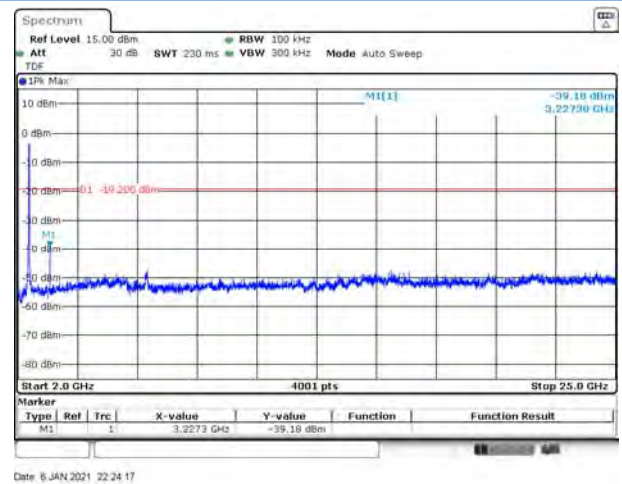
802.11n-40 LOW CHANNEL CARRIER LEVEL



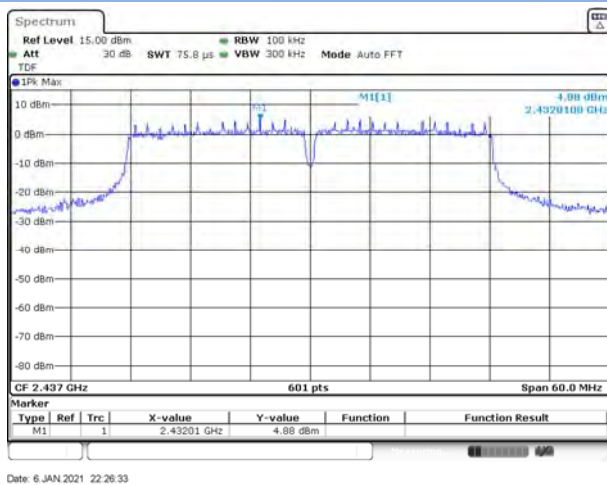
802.11n-40 LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

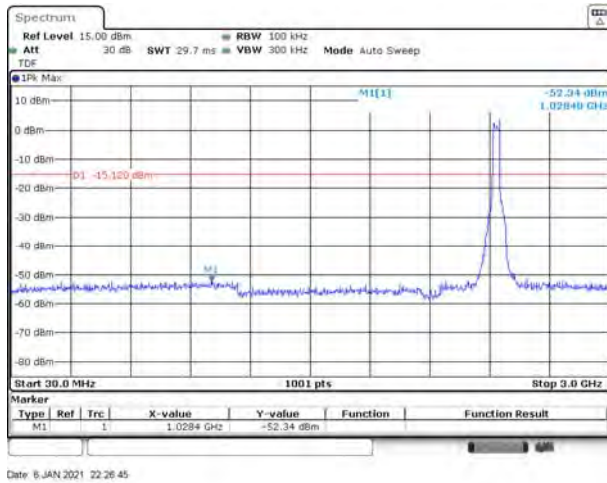
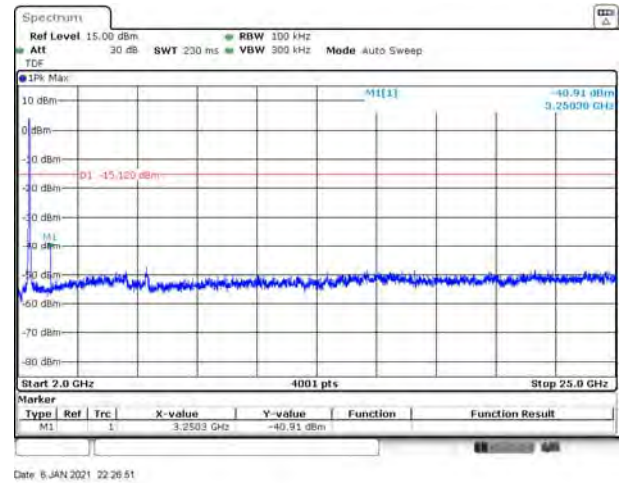


802.11n-40 LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

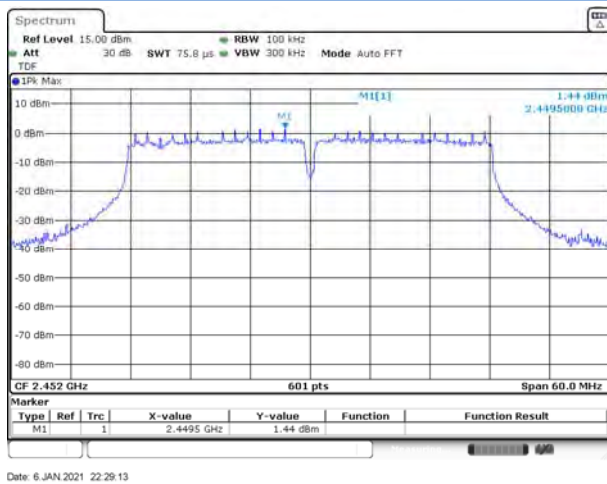
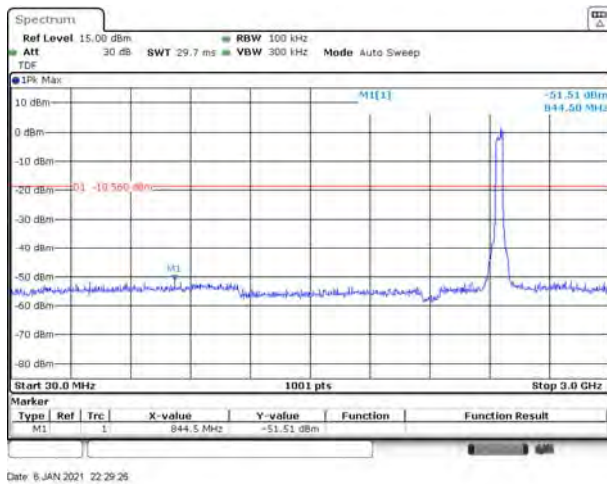
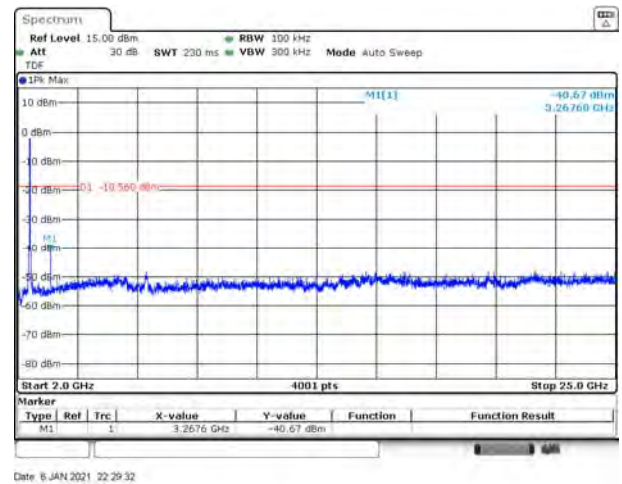


802.11n-40 MIDDLE CHANNEL CARRIER LEVEL



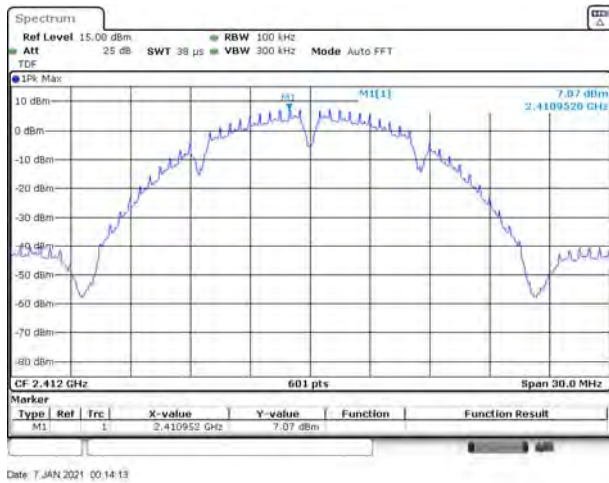
802.11n-40 MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

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


802.11n-40 HIGH CHANNEL, CARRIER LEVEL

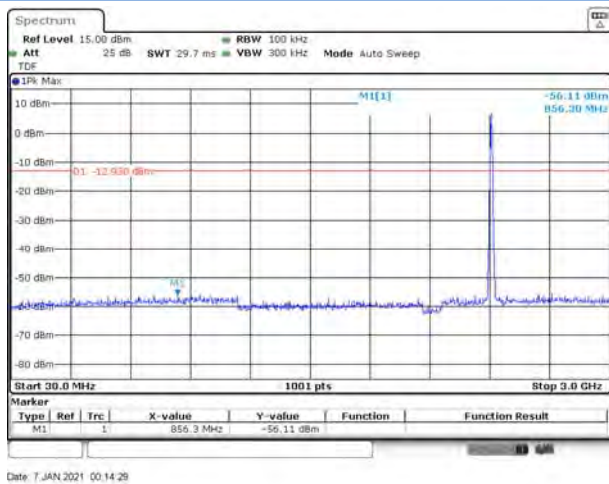

802.11n-40 HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

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


Aux. Antenna

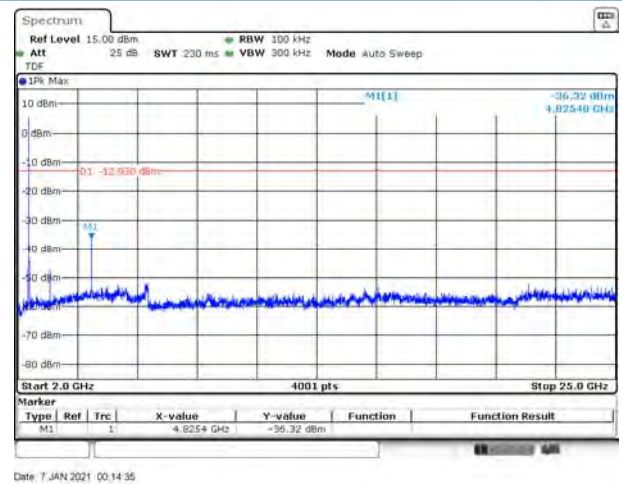
802.11b LOW CHANNEL CARRIER LEVEL



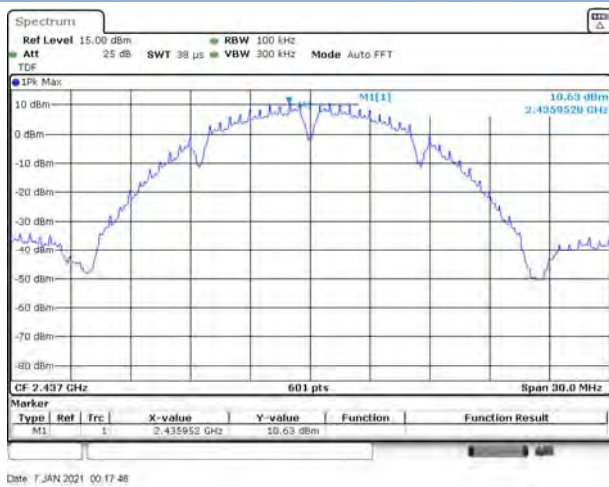
802.11b LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



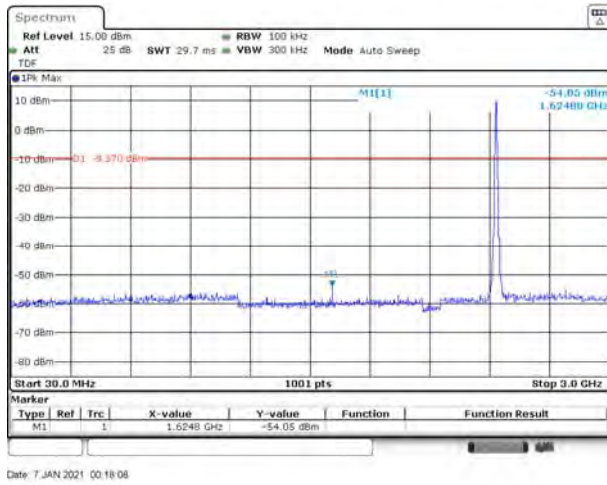
802.11b LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



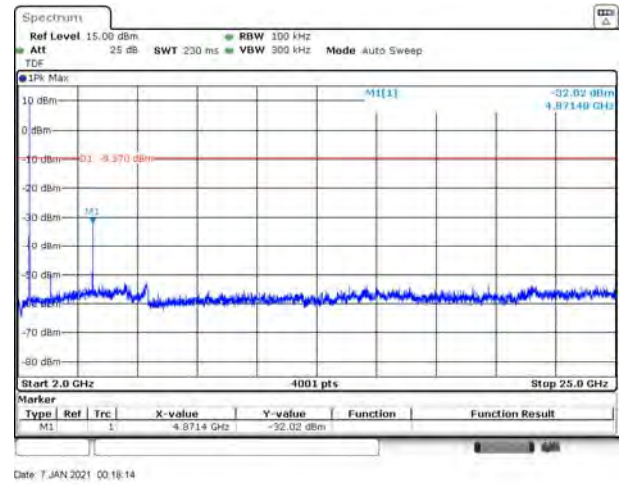
802.11b MIDDLE CHANNEL CARRIER LEVEL



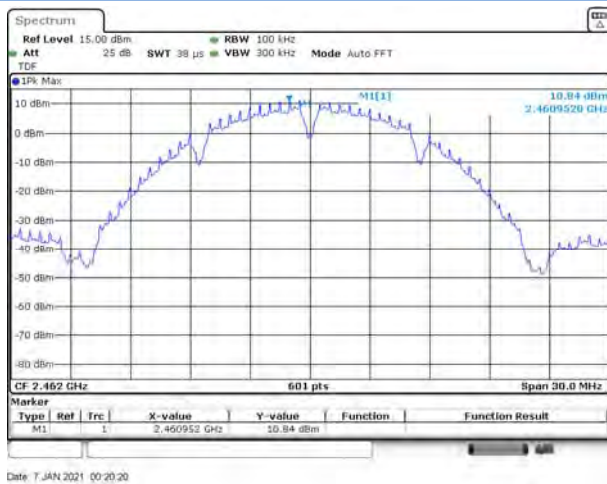
802.11b MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



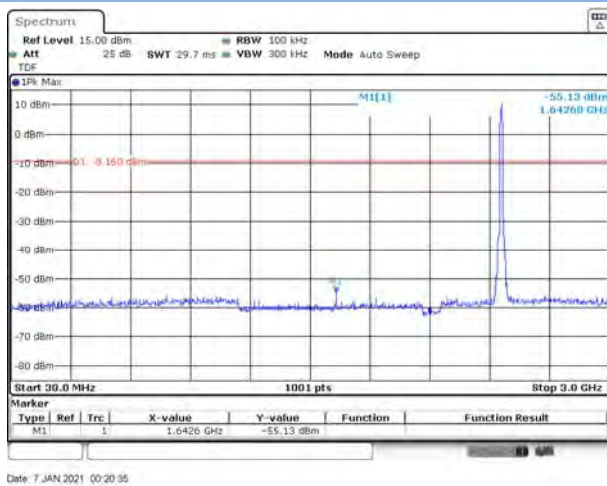
802.11b MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



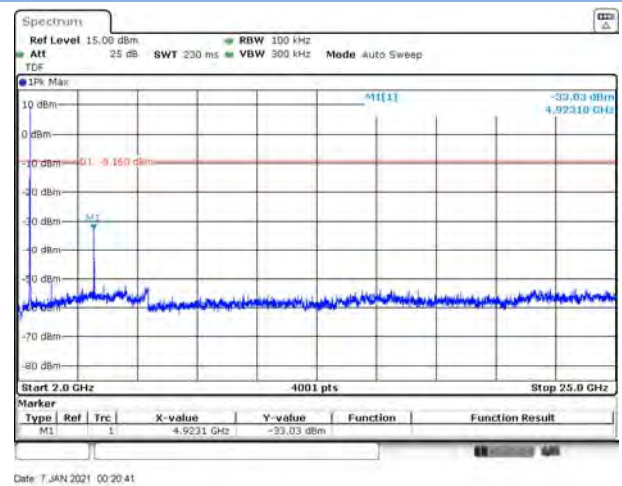
802.11b HIGH CHANNEL CARRIER LEVEL



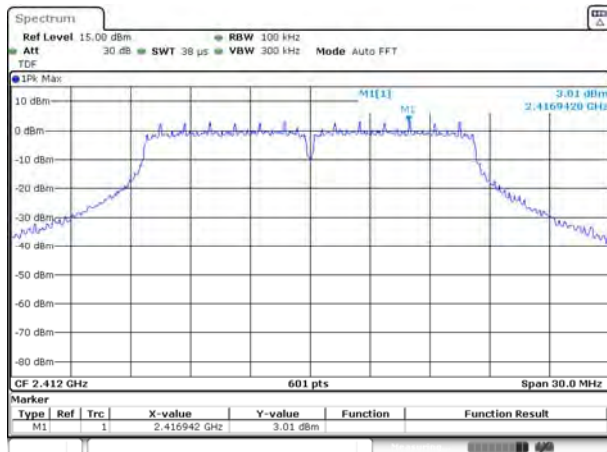
802.11b HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11b HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

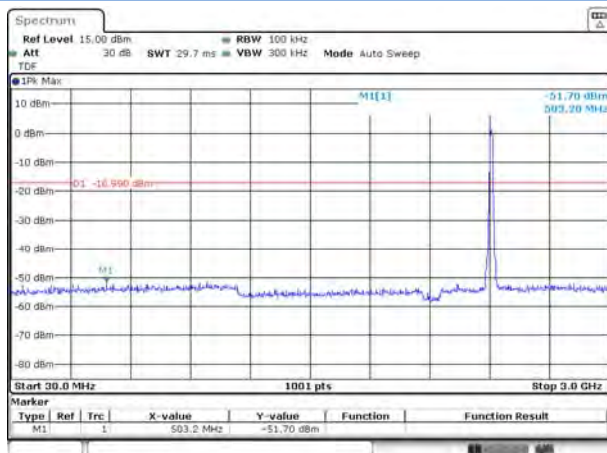


802.11g LOW CHANNEL CARRIER LEVEL



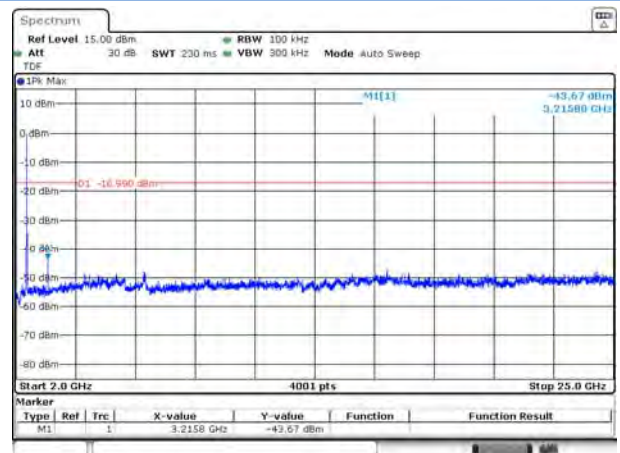
Date: 7 JAN 2021 00:39:56

802.11g LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



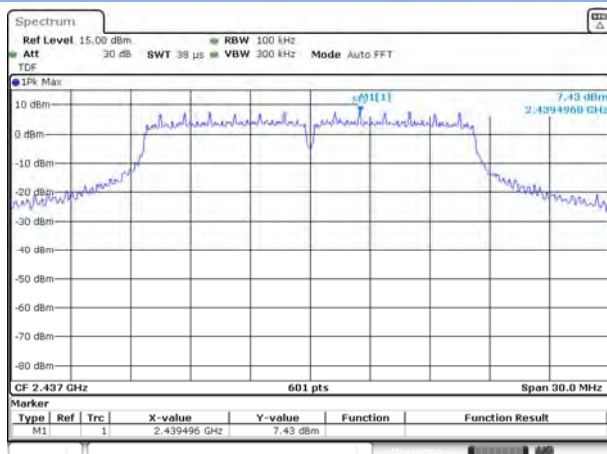
Date: 7 JAN 2021 00:40:18

802.11g LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



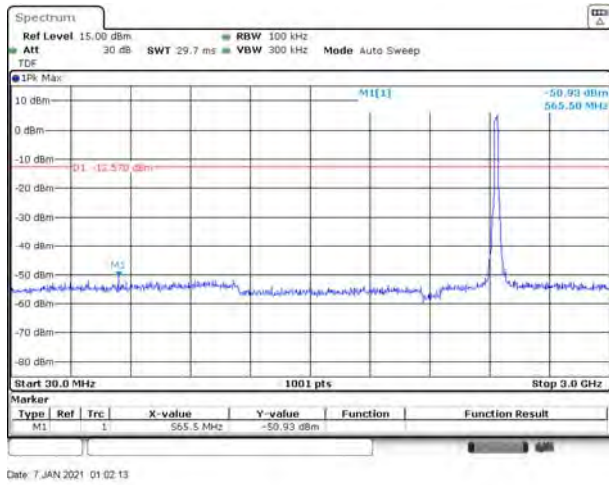
Date: 7 JAN 2021 00:40:45

802.11g MIDDLE CHANNEL CARRIER LEVEL

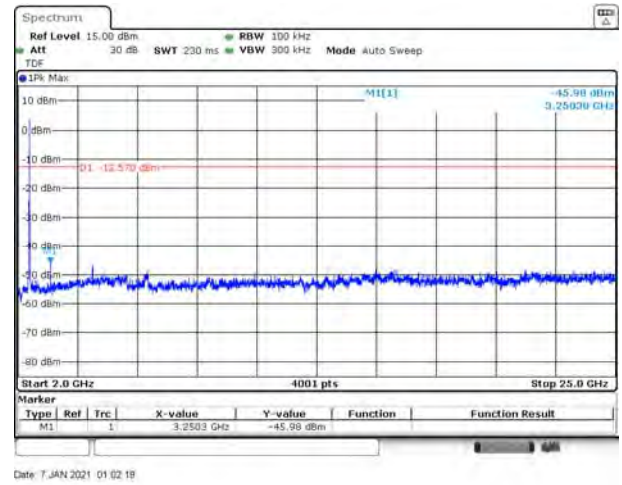


Date: 7 JAN 2021 01:01:59

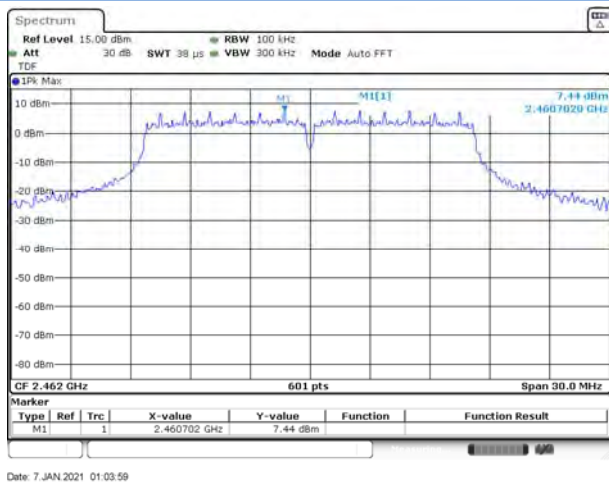
802.11g MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



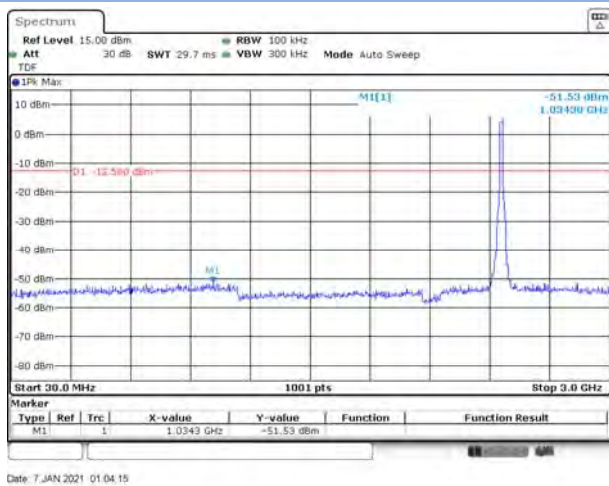
802.11g MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



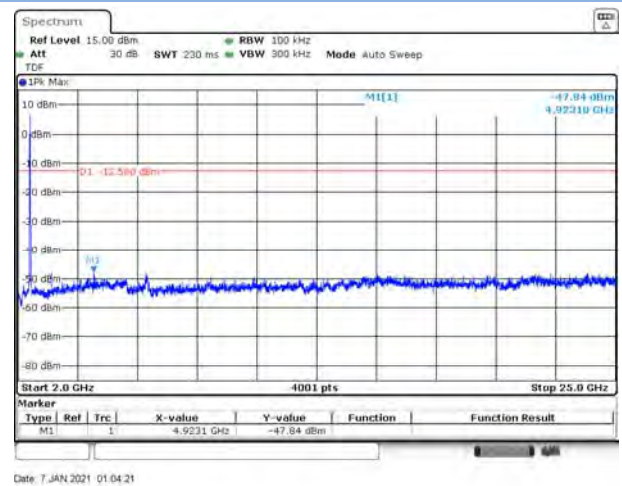
802.11g HIGH CHANNEL CARRIER LEVEL



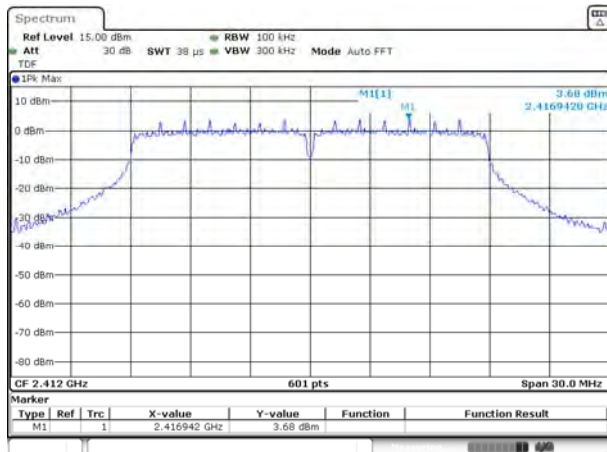
802.11g HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



802.11g HIGH CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

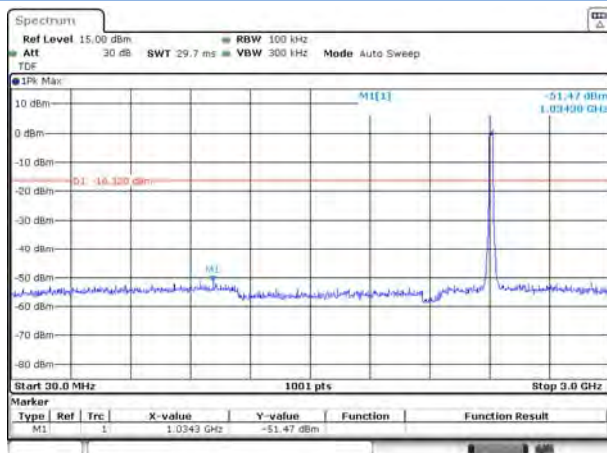


802.11n-20 LOW CHANNEL CARRIER LEVEL



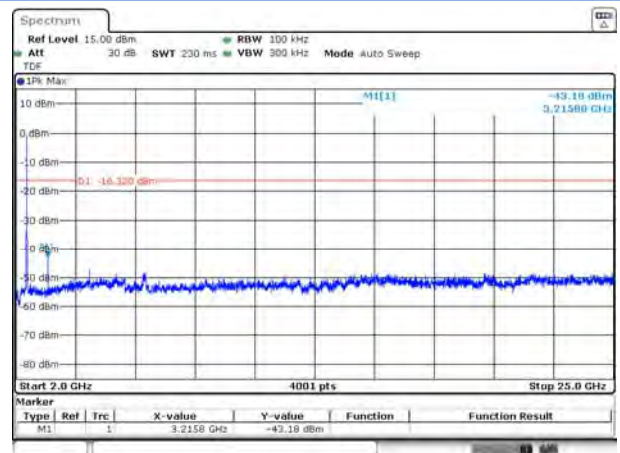
Date: 7 JAN 2021 01:06:29

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



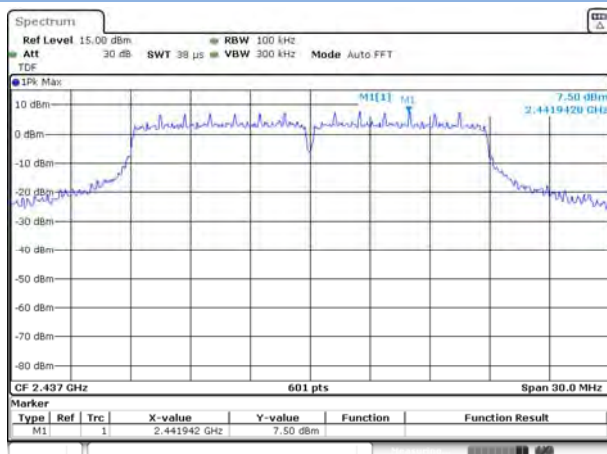
Date: 7 JAN 2021 01:06:41

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

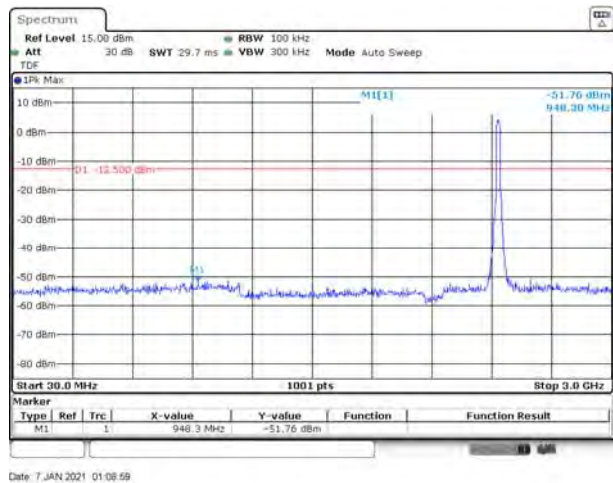
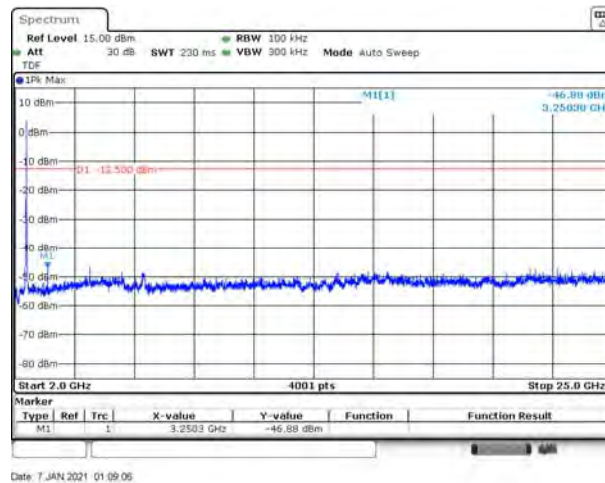


Date: 7 JAN 2021 01:06:45

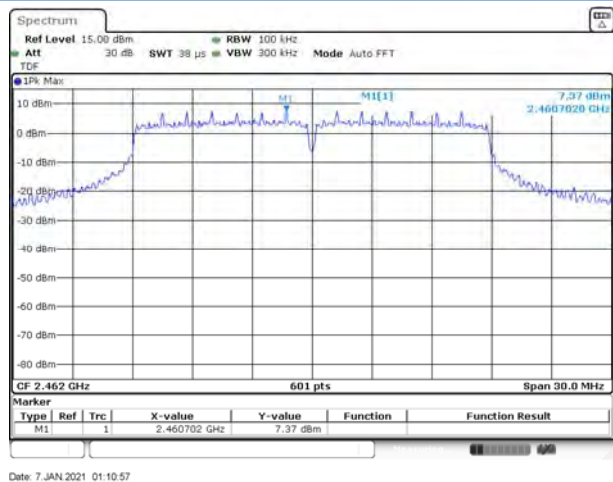
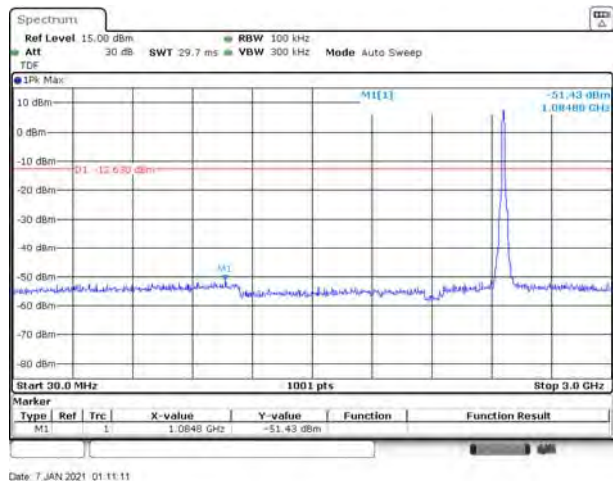
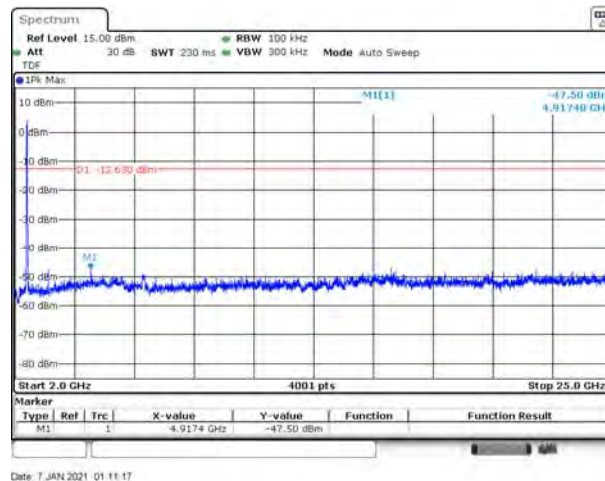
802.11n-20 MIDDLE CHANNEL CARRIER LEVEL



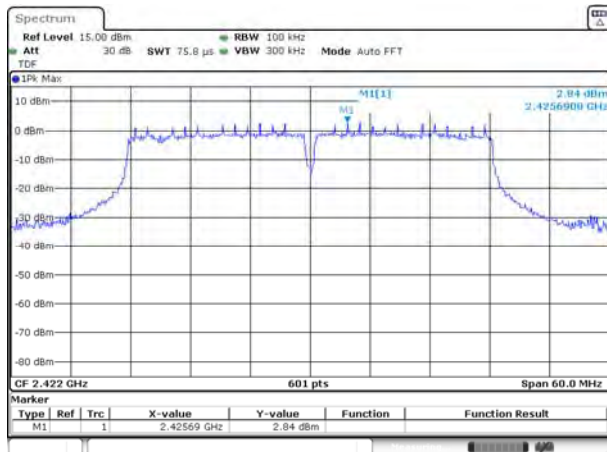
Date: 7 JAN 2021 01:08:48

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

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


802.11n-20 HIGH CHANNEL CARRIER LEVEL

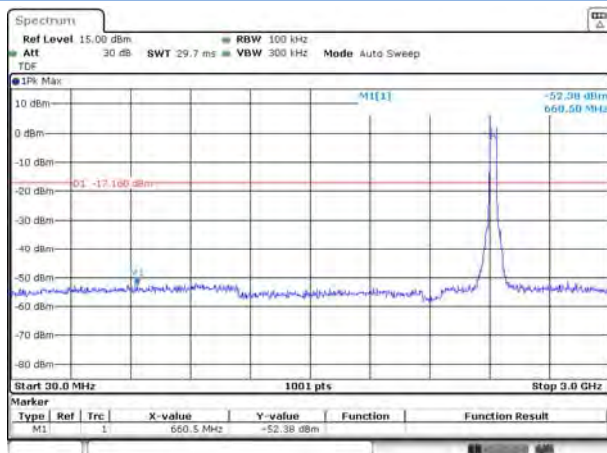

802.11n-20 HIGH CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

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


802.11n-40 LOW CHANNEL CARRIER LEVEL



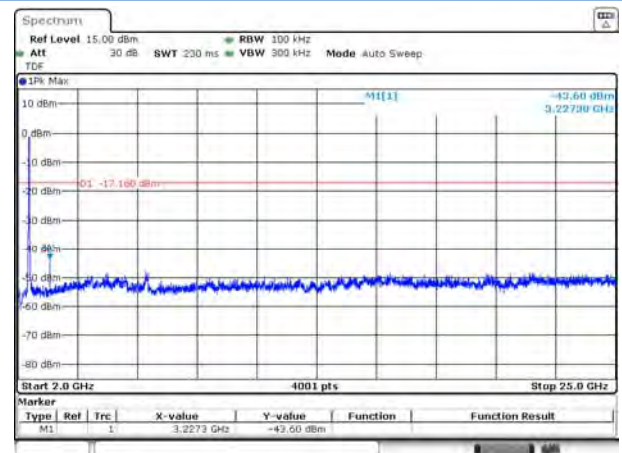
Date: 7 JAN 2021 01:14:19

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



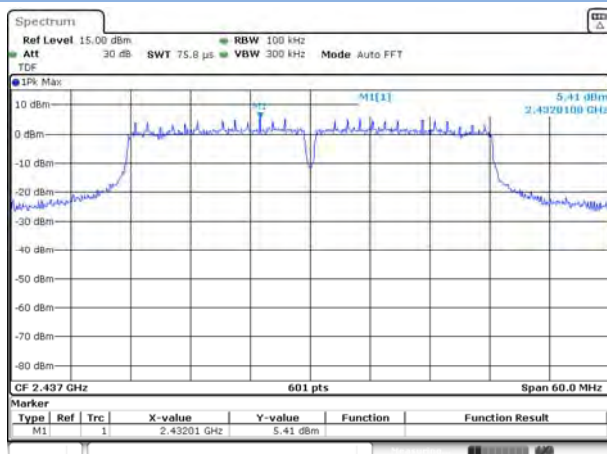
Date: 7 JAN 2021 01:14:33

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

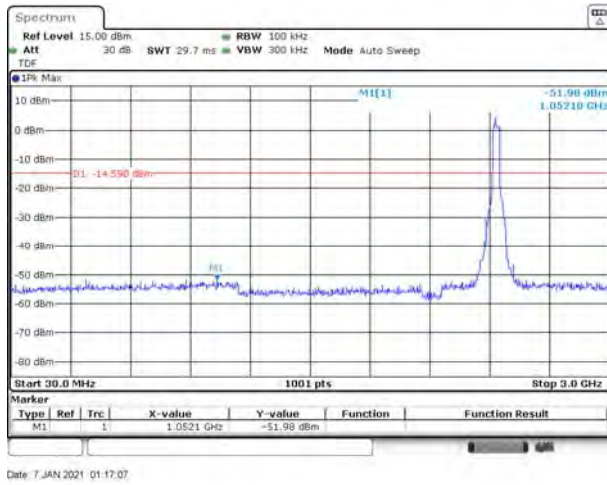
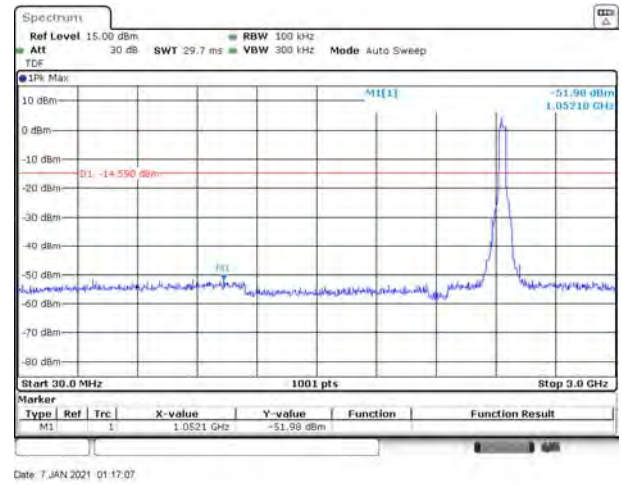


Date: 7 JAN 2021 01:14:40

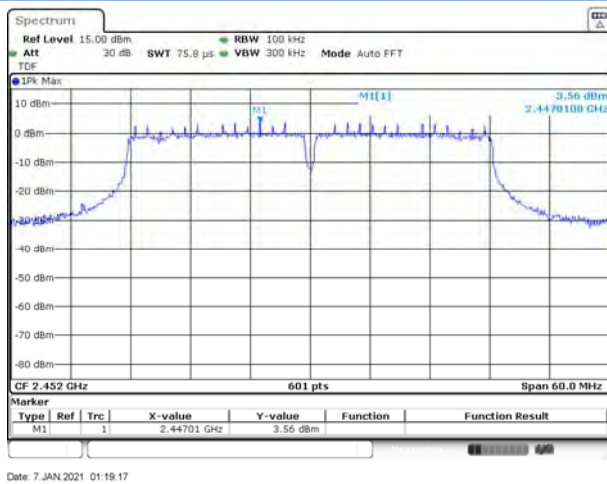
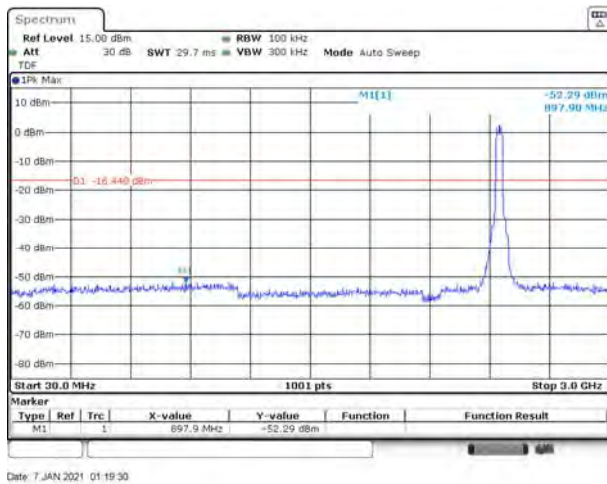
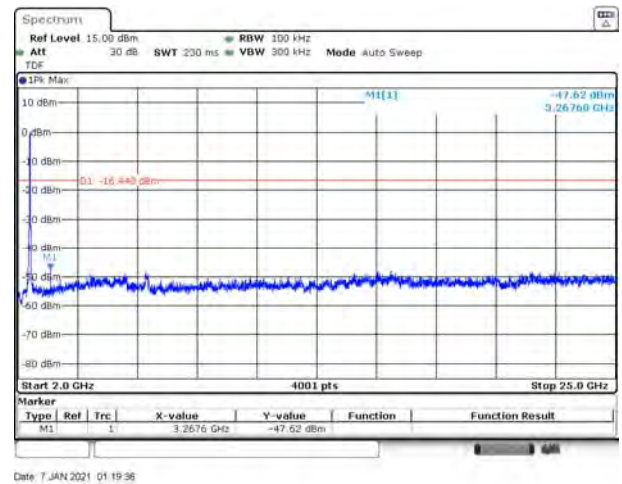
802.11n-40 MIDDLE CHANNEL CARRIER LEVEL



Date: 7 JAN 2021 01:16:55

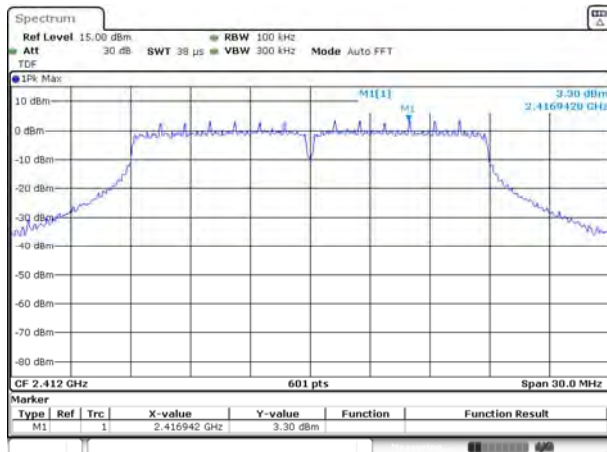
802.11n-40 MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

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


802.11n-40 HIGH CHANNEL CARRIER LEVEL


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

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


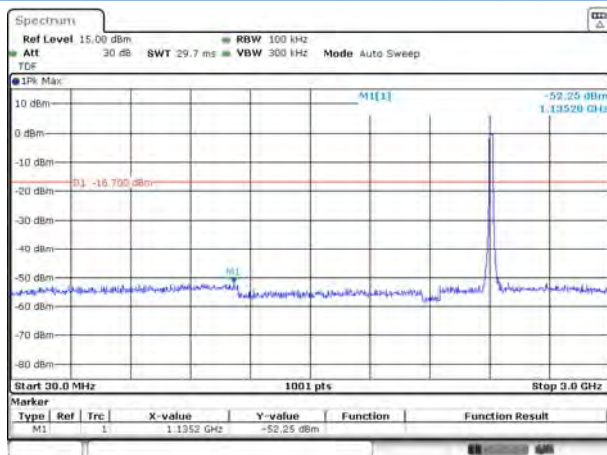
MIMO-Main Antenna

802.11n-20 LOW CHANNEL CARRIER LEVEL



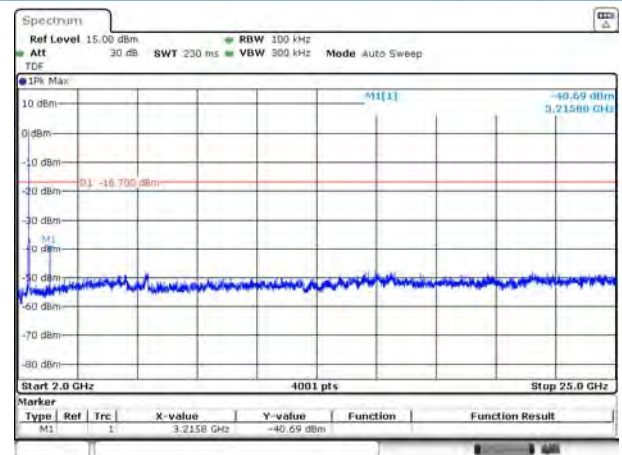
Date: 6 JAN 2021 23:04:01

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



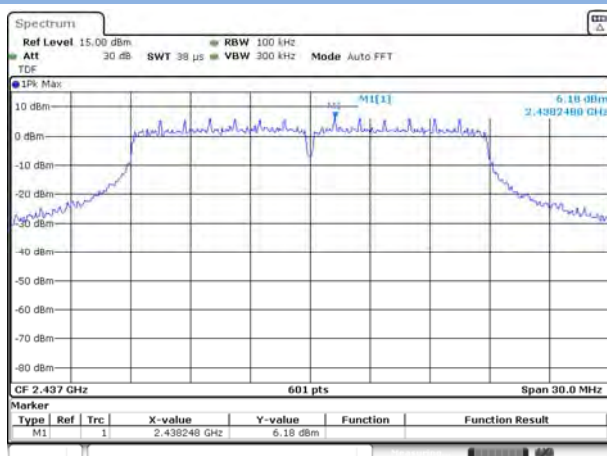
Date: 6 JAN 2021 23:04:15

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

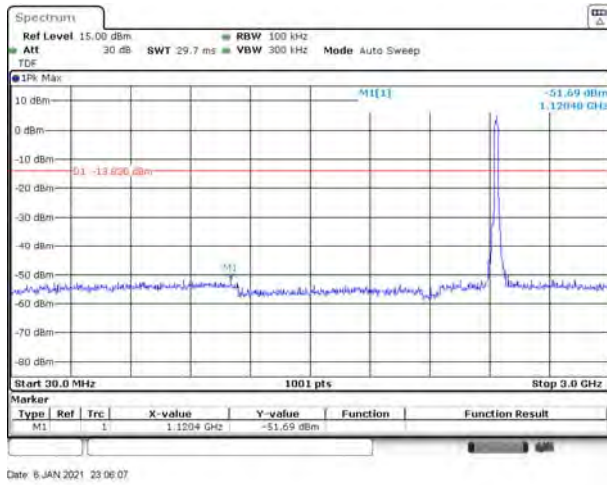
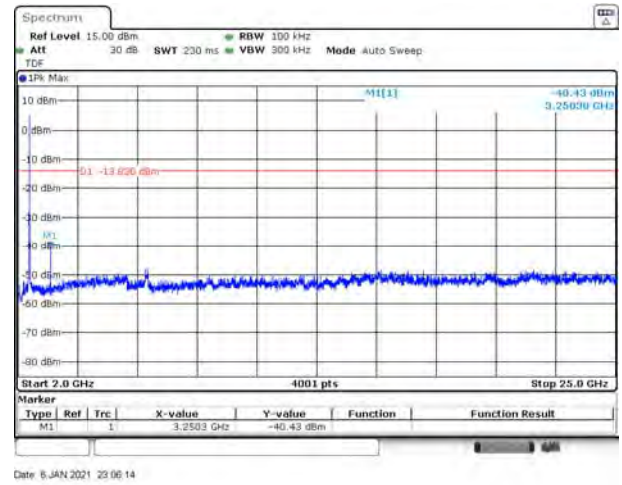


Date: 6 JAN 2021 23:04:22

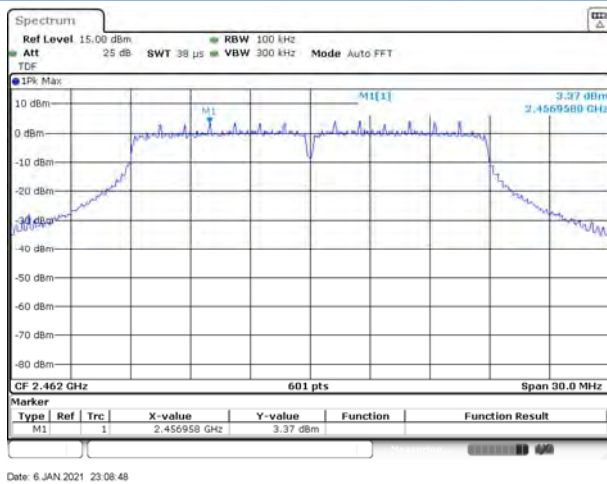
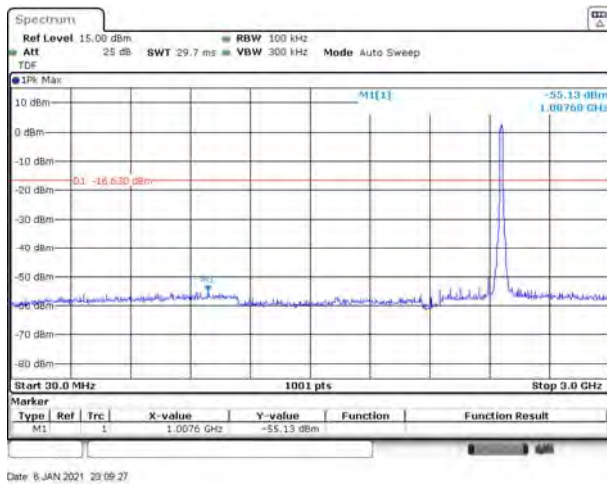
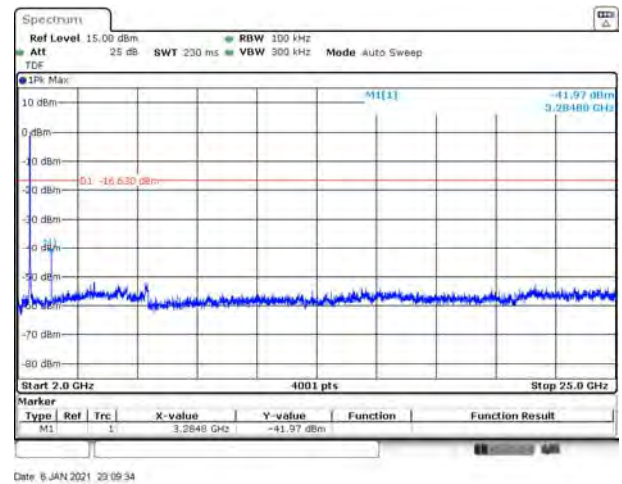
802.11n-20 MIDDLE CHANNEL CARRIER LEVEL



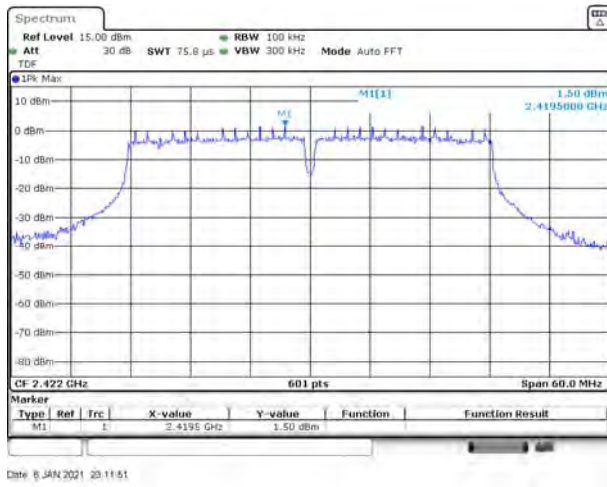
Date: 6 JAN 2021 23:05:55

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

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


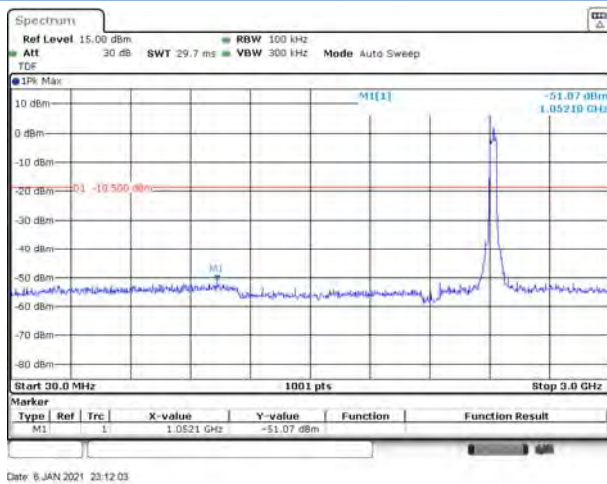
802.11n-20 HIGH CHANNEL CARRIER LEVEL


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

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


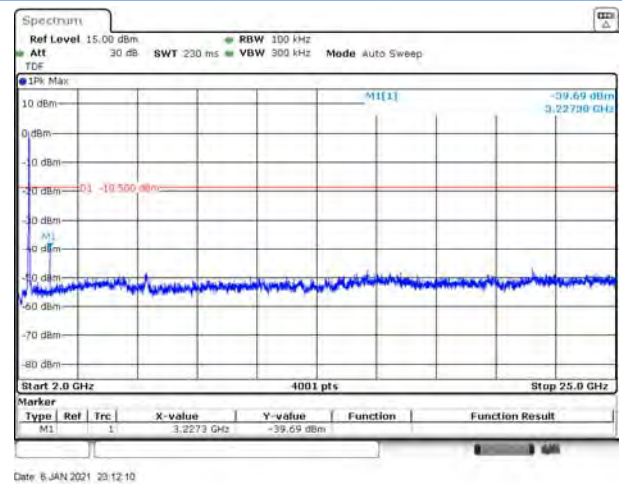
802.11n-40 LOW CHANNEL CARRIER LEVEL



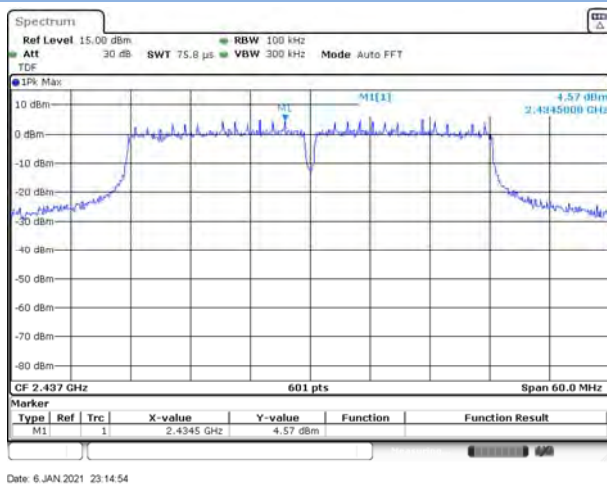
802.11n-40 LOW CHANNEL, SPURIOUS 30 MHz ~ 3 GHz

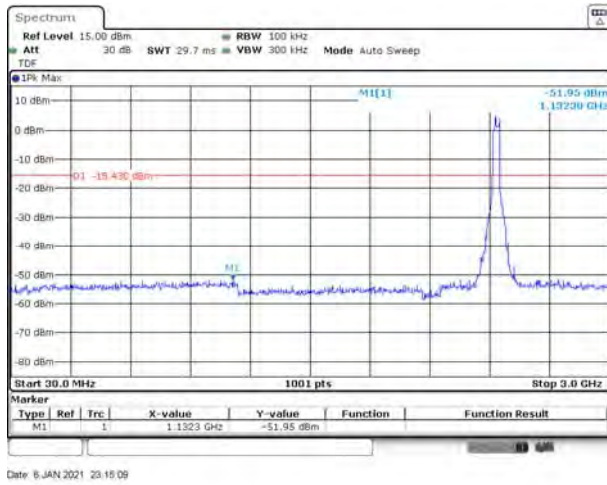
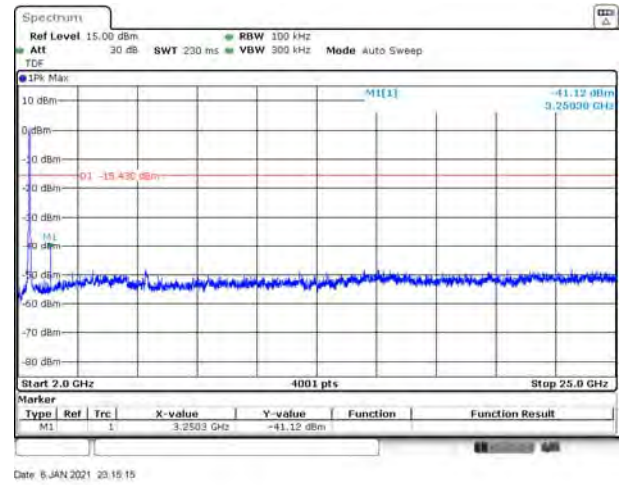


802.11n-40 LOW CHANNEL, SPURIOUS 2 GHz ~ 25 GHz

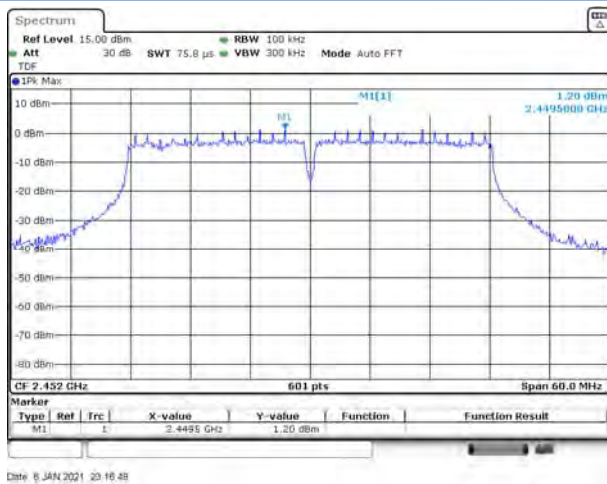
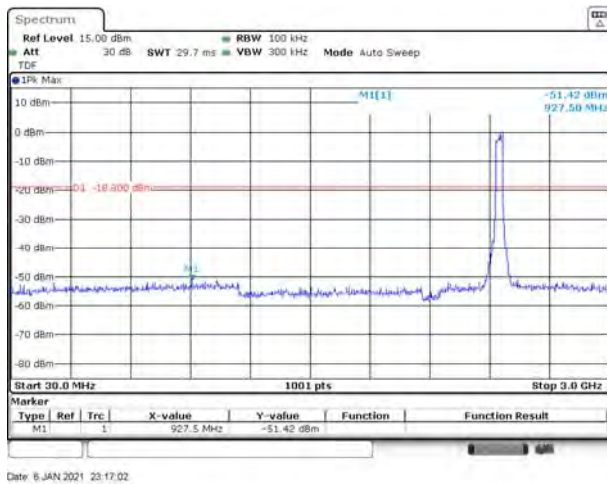
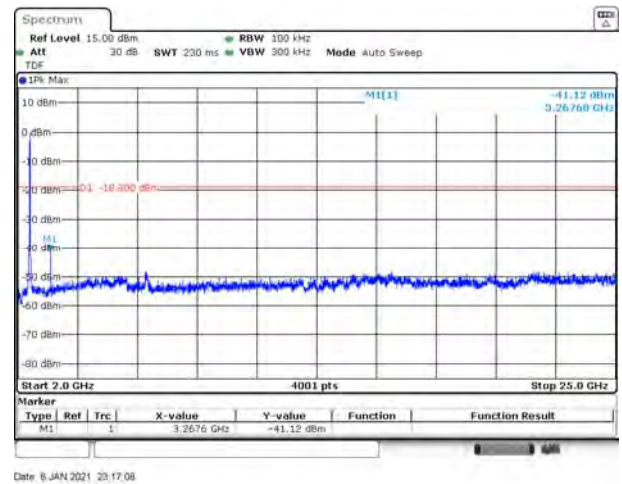


802.11n-40 MIDDLE CHANNEL CARRIER LEVEL



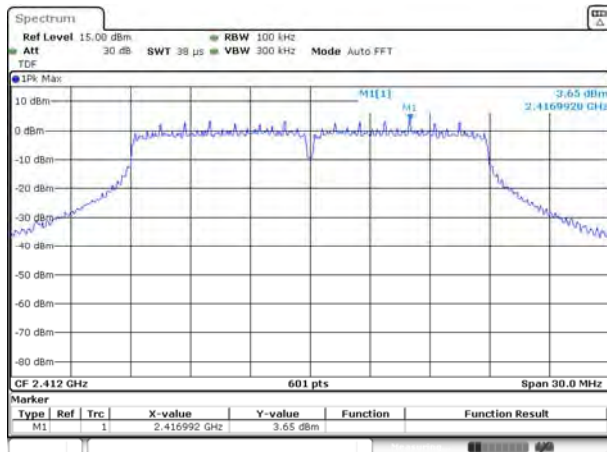
802.11n-40 MIDDLE CHANNEL, SPURIOUS
30 MHz ~ 3 GHz

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


802.11n-40 HIGH CHANNEL CARRIER LEVEL


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

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


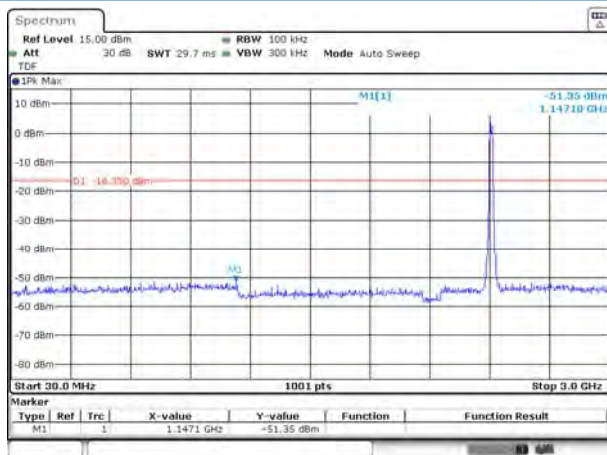
MIMO-Aux. Antenna

802.11n-20 LOW CHANNEL CARRIER LEVEL



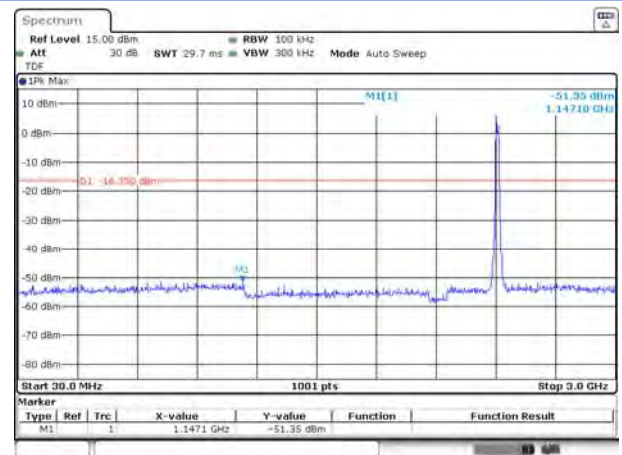
Date: 6 JAN 2021 23:35:03

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



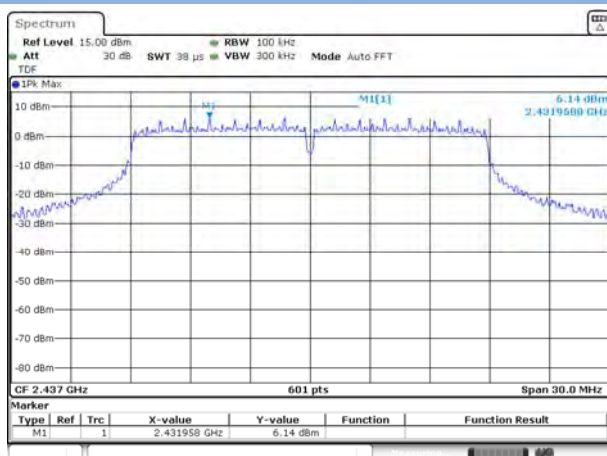
Date: 6 JAN 2021 23:35:16

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



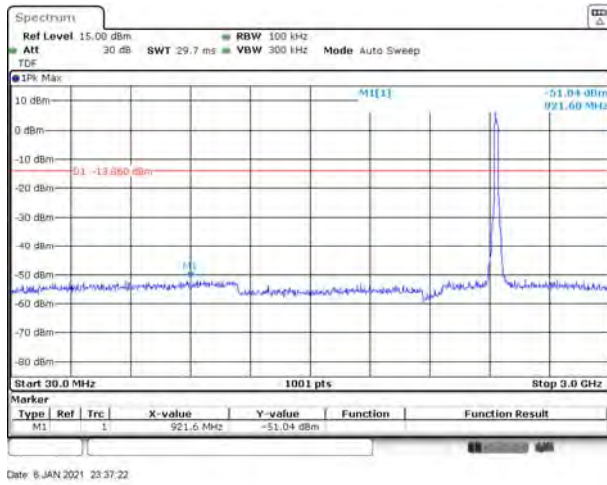
Date: 6 JAN 2021 23:35:16

802.11n-20 MIDDLE CHANNEL CARRIER LEVEL

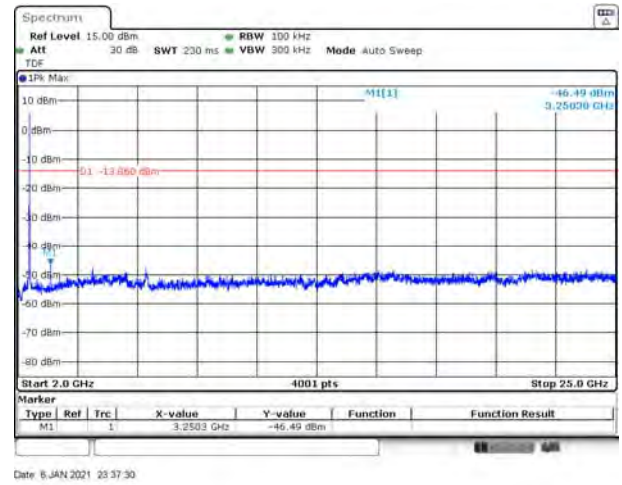


Date: 6 JAN 2021 23:37:07

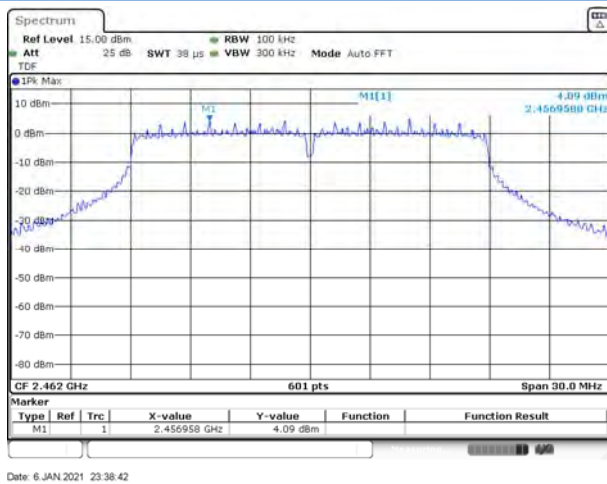
802.11n-20 MIDDLE CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



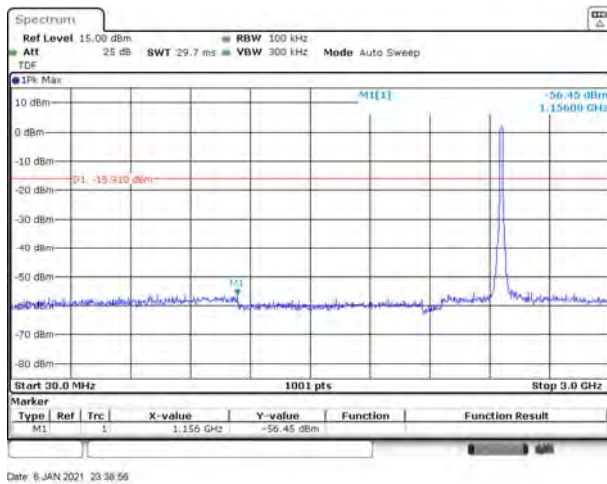
802.11n-20 MIDDLE CHANNEL, SPURIOUS 2 GHz ~ 25 GHz



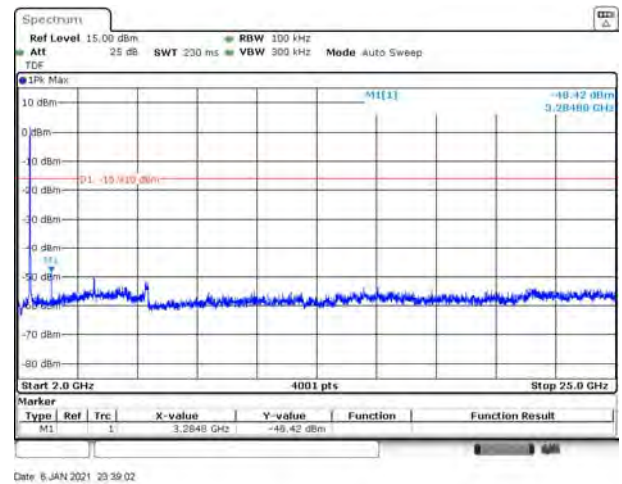
802.11n-20 HIGH CHANNEL CARRIER LEVEL



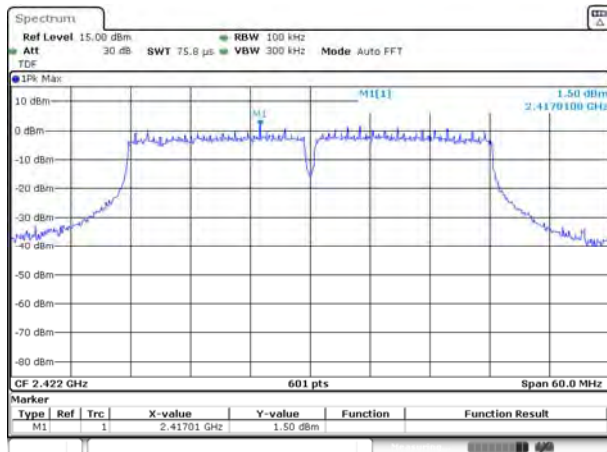
802.11n-20 HIGH CHANNEL, SPURIOUS 30 MHz ~ 3 GHz



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

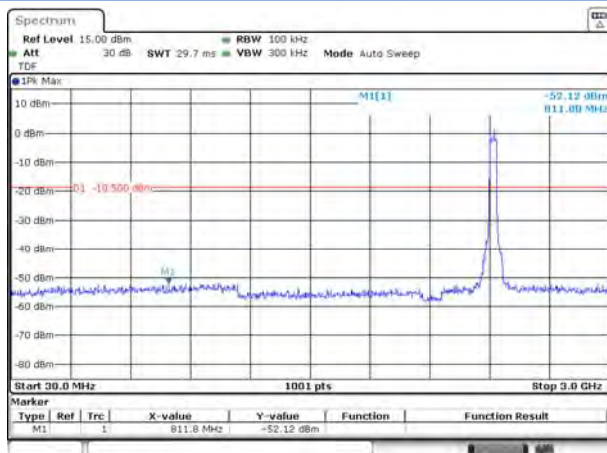


802.11n-40 LOW CHANNEL CARRIER LEVEL



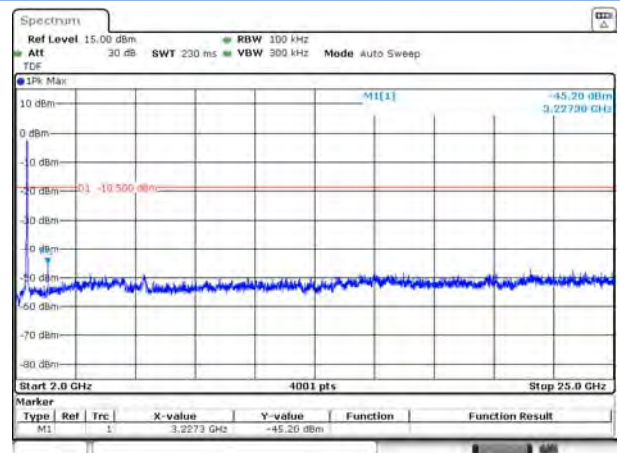
Date: 6 JAN 2021 23:41:08

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



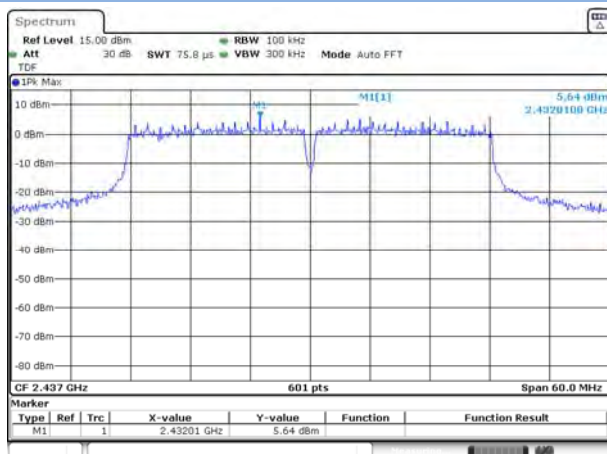
Date: 6 JAN 2021 23:41:20

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

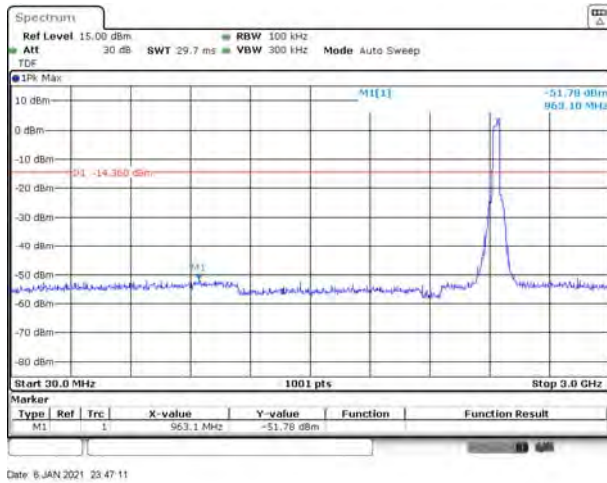
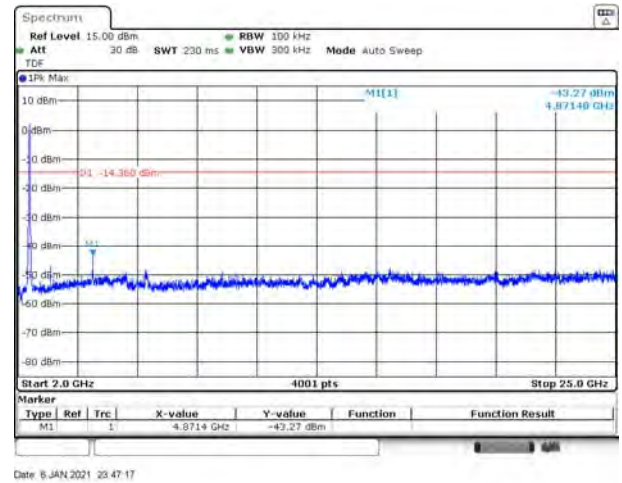


Date: 6 JAN 2021 23:41:26

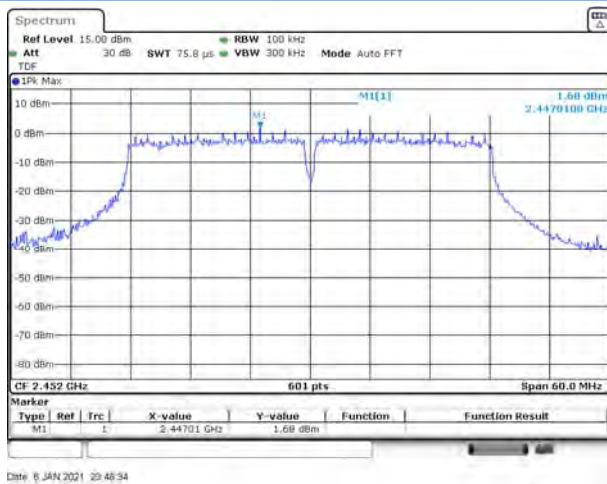
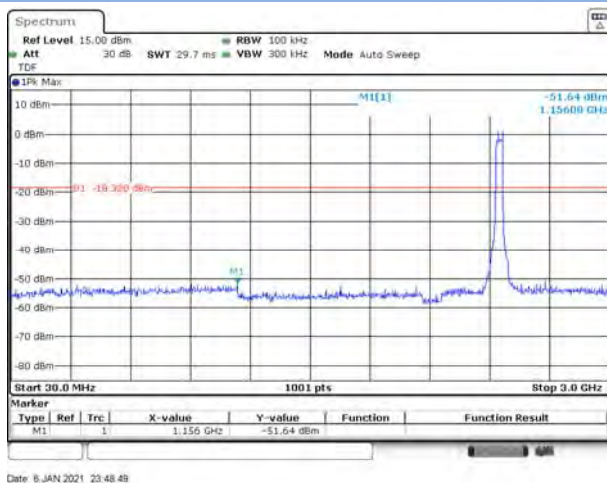
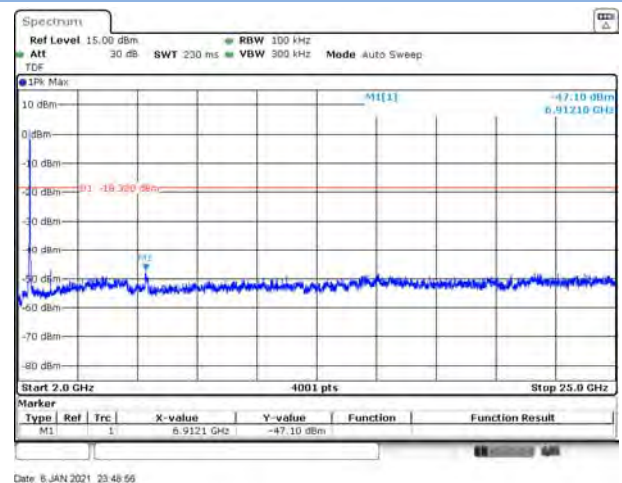
802.11n-40 MIDDLE CHANNEL CARRIER LEVEL



Date: 6 JAN 2021 23:46:57

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

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


802.11n-40 HIGH CHANNEL CARRIER LEVEL


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

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


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

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

Test Data

Main Antenna

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-43.82	4.57	-15.43	Pass
High Channel	-47.51	8.06	-11.94	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-25.09	4.82	-15.18	Pass
High Channel	-37.44	5.31	-14.69	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-26.23	4.30	-15.70	Pass
High Channel	-37.58	4.53	-15.47	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-30.58	0.80	-19.20	Pass
High Channel	-36.25	1.44	-18.56	Pass

Aux. Antenna

802.11b Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-38.87	7.07	-12.93	Pass
High Channel	-46.36	10.84	-9.16	Pass

802.11g Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-27.78	3.01	-16.99	Pass
High Channel	-29.14	7.44	-12.56	Pass

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-27.91	3.68	-16.32	Pass
High Channel	-25.59	7.37	-12.63	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-26.46	2.84	-17.16	Pass
High Channel	-29.65	3.56	-16.44	Pass

MIMO-Main Antenna

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-29.10	3.30	-16.70	Pass
High Channel	-39.73	3.37	-16.63	Pass

802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-28.63	1.50	-18.50	Pass
High Channel	-36.97	1.20	-18.80	Pass

MIMO-Aux. Antenna

802.11n-20 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-26.83	3.65	-16.35	Pass
High Channel	-37.19	4.09	-15.91	Pass

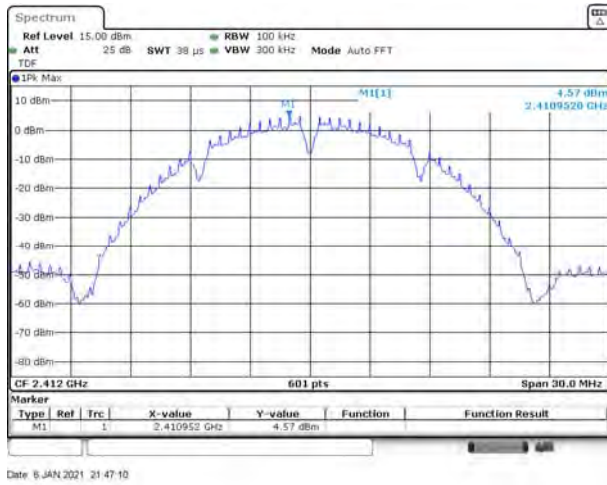
802.11n-40 MHz Mode:

Channel	Measured Max. Band Edge Emission (dBm)	Limit (dBm)		Verdict
		Carrier Level	Calculated 20 dBc Limit	
Low Channel	-29.98	1.50	-18.50	Pass
High Channel	-36.70	1.68	-18.32	Pass

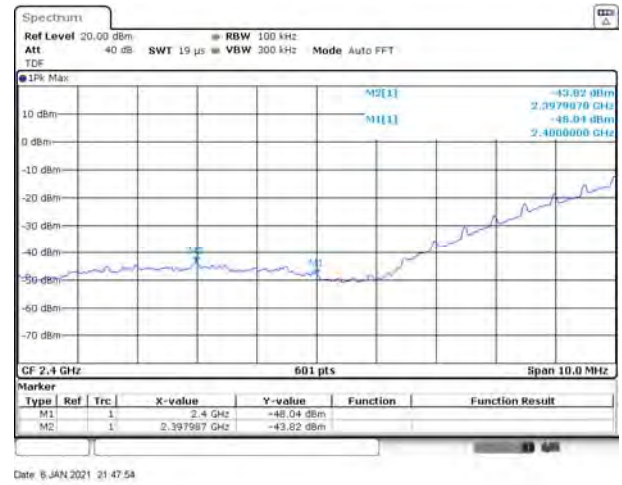
Test Plots

Main Antenna

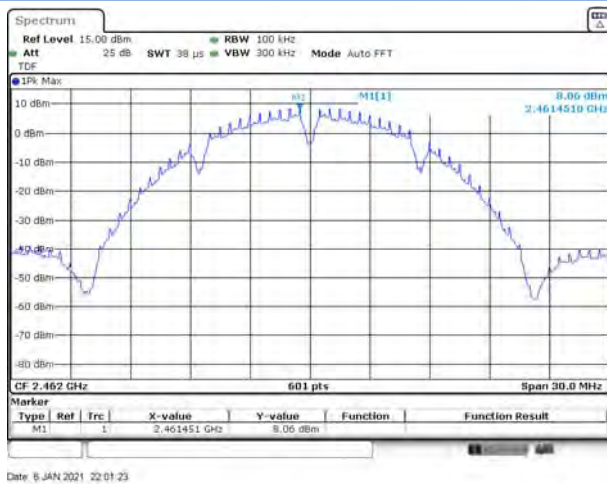
802.11b LOW CHANNEL, Carrier level



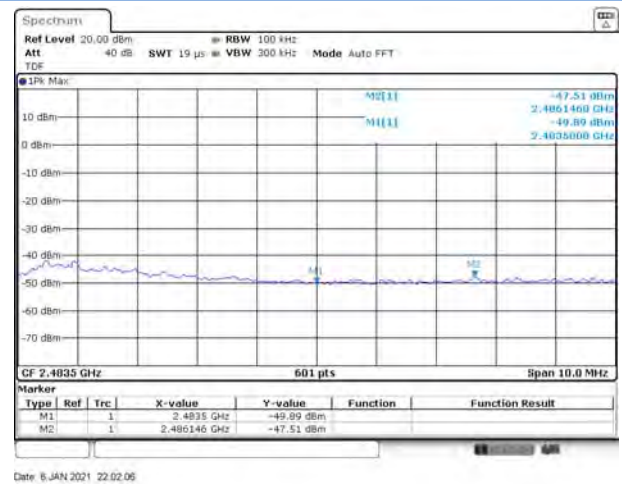
802.11b LOW CHANNEL, Reference level



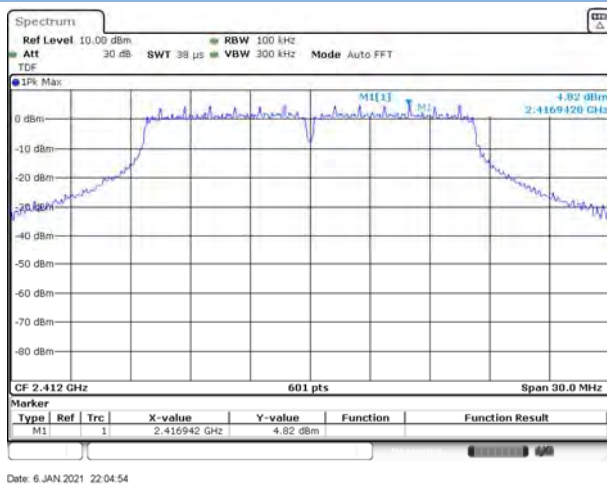
802.11b HIGH CHANNEL, Carrier level



802.11b HIGH CHANNEL, Reference level



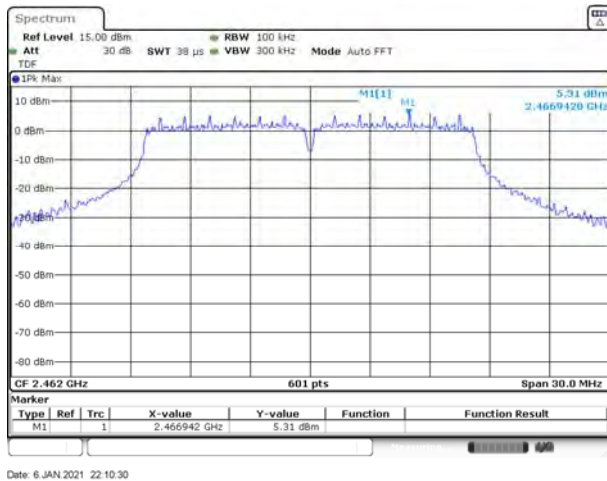
802.11g LOW CHANNEL, Carrier level



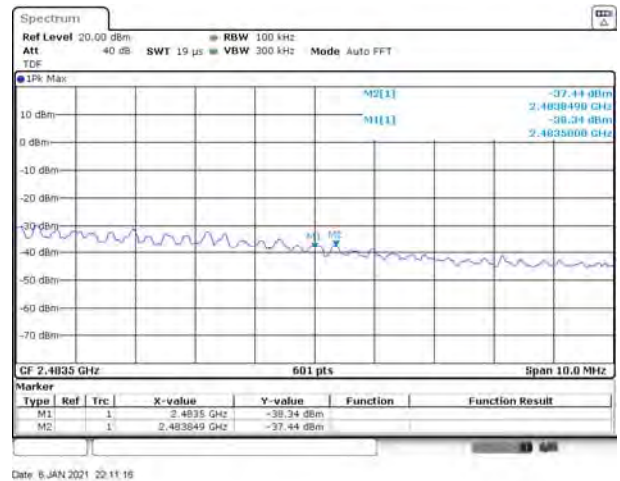
802.11g LOW CHANNEL, Reference level



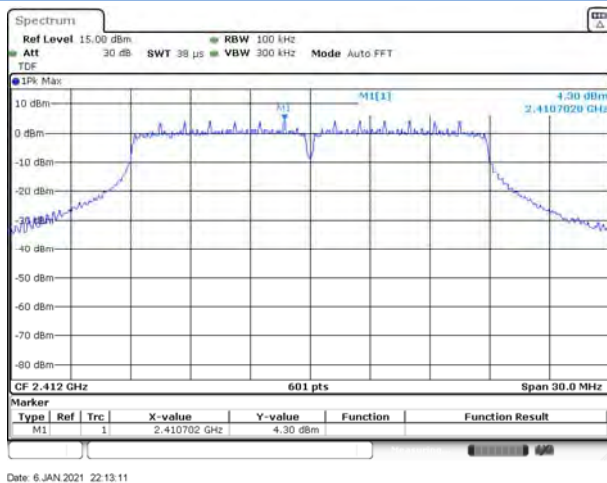
802.11g HIGH CHANNEL, Carrier level



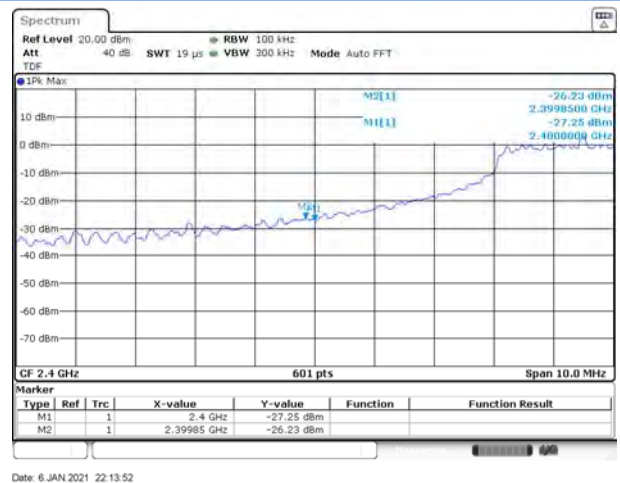
802.11g HIGH CHANNEL, Reference level



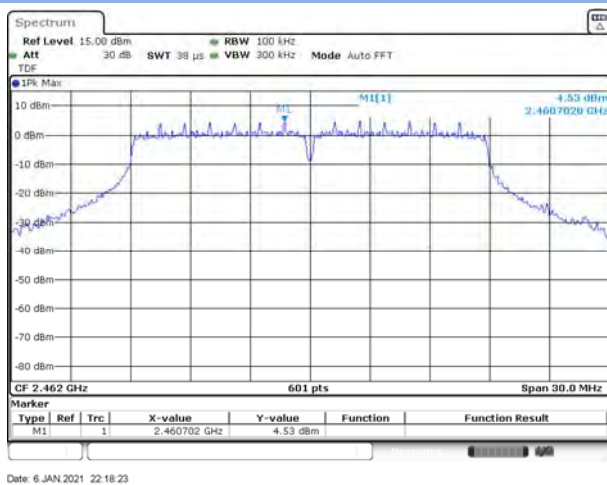
802.11n-20 MHz LOW CHANNEL, Carrier level



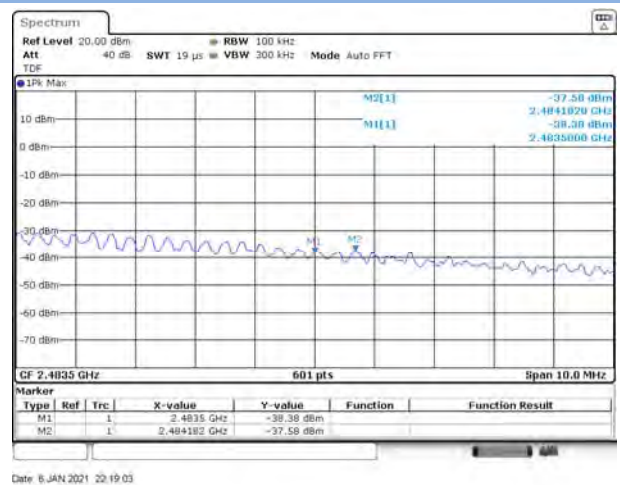
802.11n-20 MHz LOW CHANNEL, Reference level



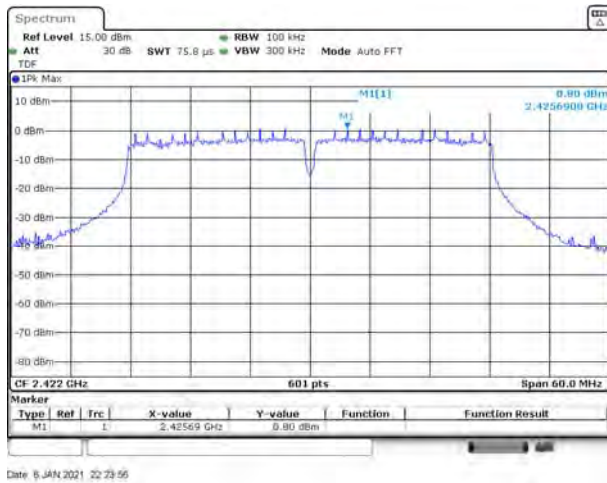
802.11n-20 MHz HIGH CHANNEL, Carrier level



802.11n-20 MHz HIGH CHANNEL, Reference level



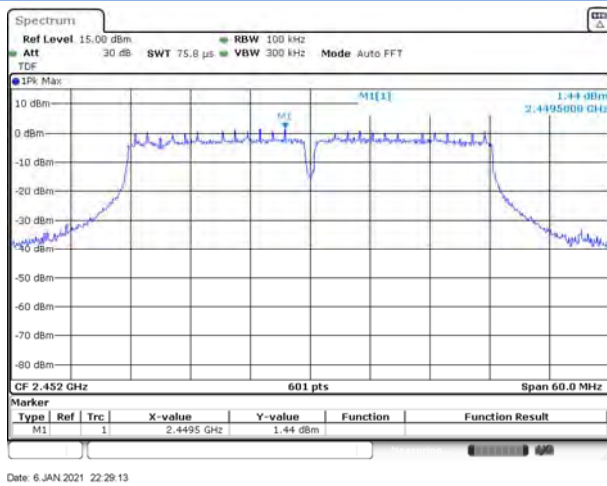
802.11n-40 MHz LOW CHANNEL, Carrier level



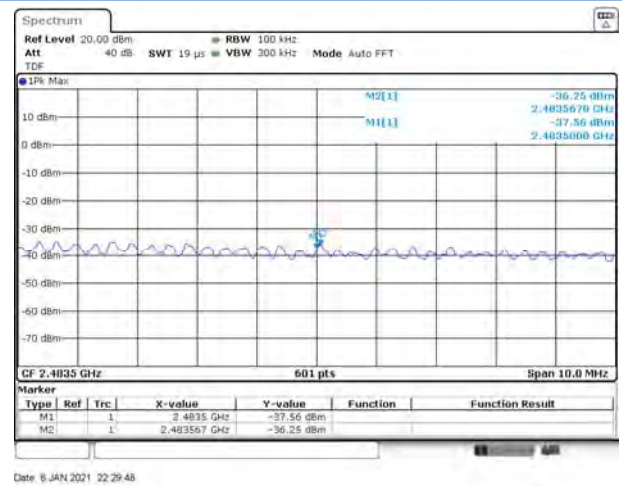
802.11n-40 MHz LOW CHANNEL, Reference level



802.11n-40 MHz HIGH CHANNEL, Carrier level

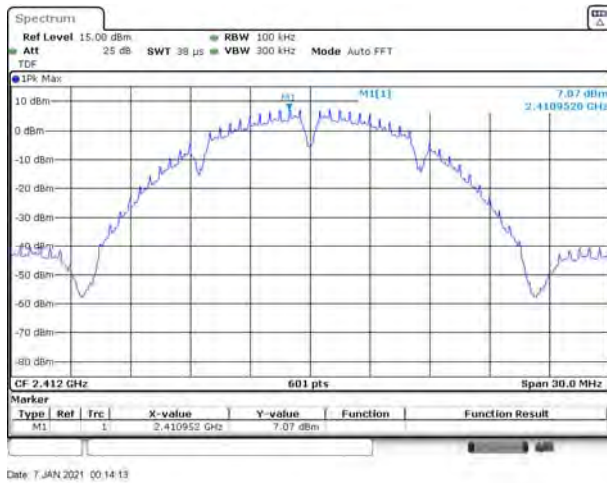


802.11n-40 MHz HIGH CHANNEL, Reference level

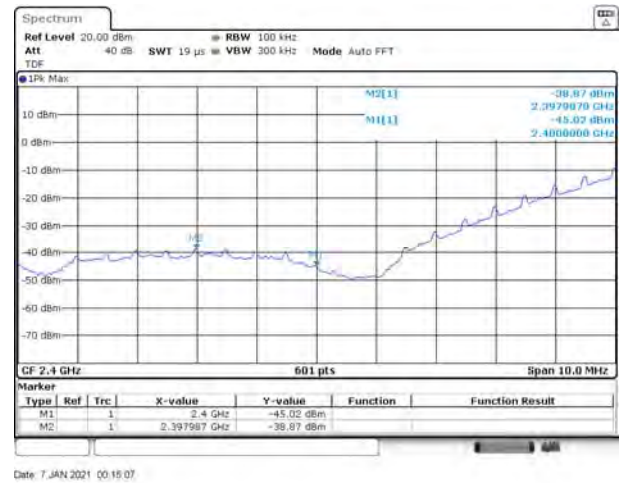


Aux. Antenna

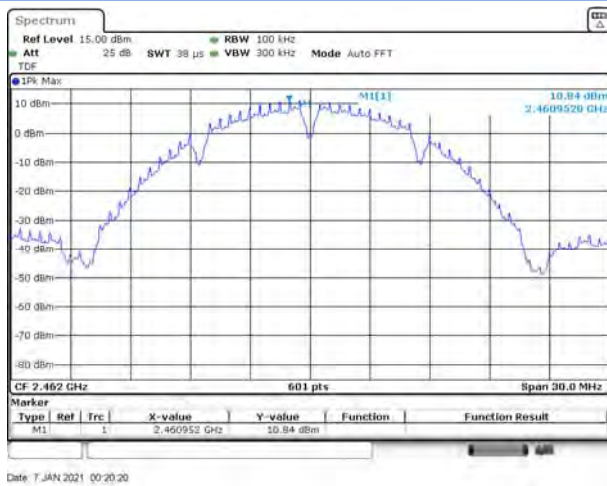
802.11b LOW CHANNEL, Carrier level



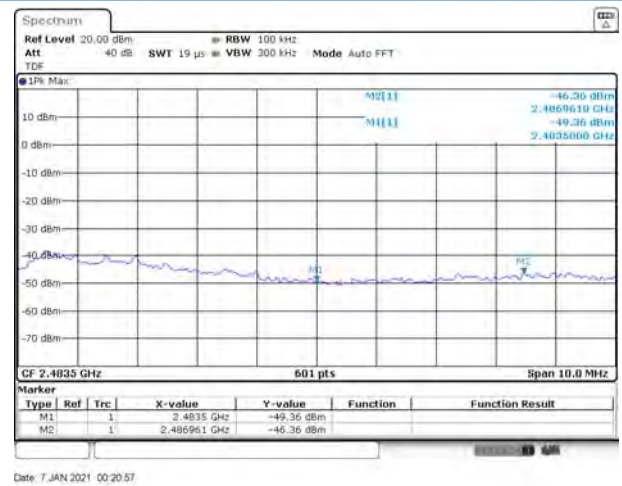
802.11b LOW CHANNEL, Reference level



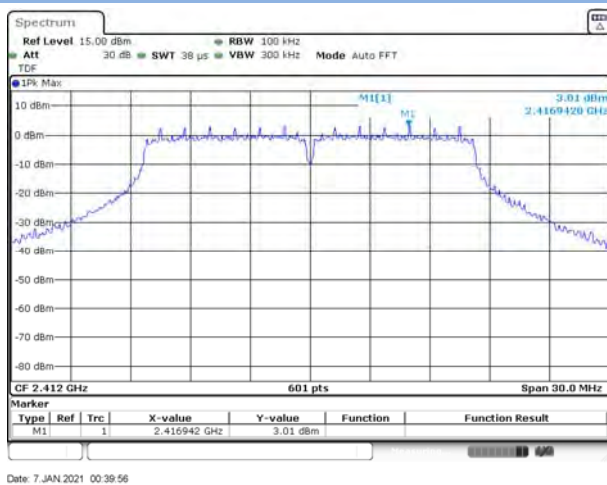
802.11b HIGH CHANNEL, Carrier level



802.11b HIGH CHANNEL, Reference level



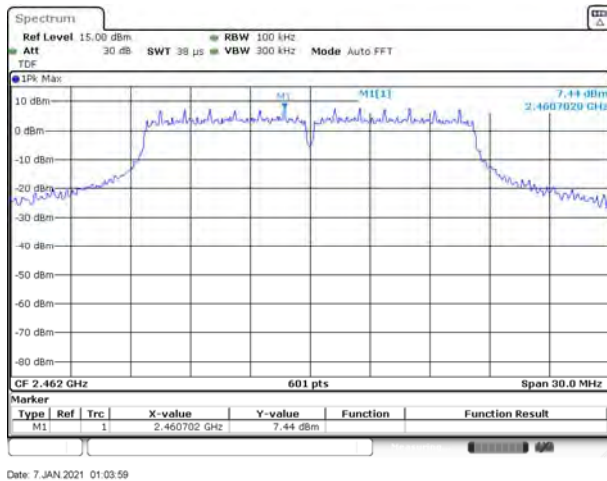
802.11g LOW CHANNEL, Carrier level



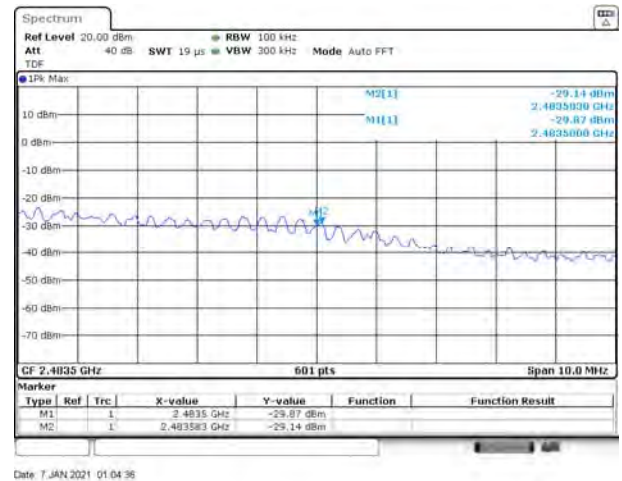
802.11g LOW CHANNEL, Reference level



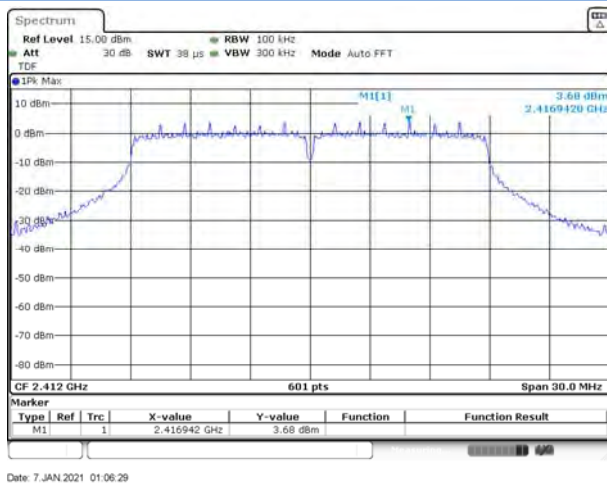
802.11g HIGH CHANNEL, Carrier level



802.11g HIGH CHANNEL, Reference level



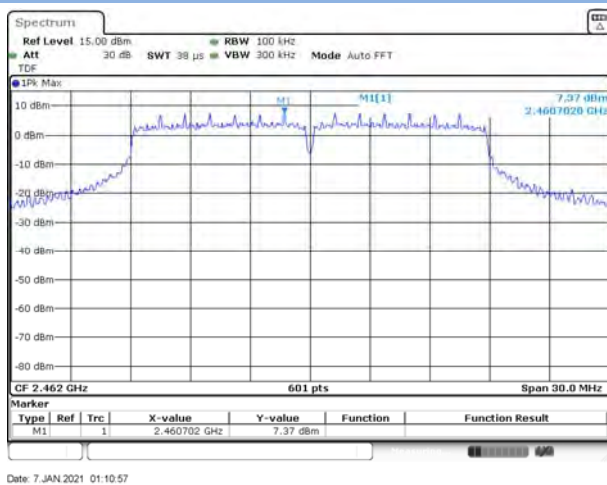
802.11n-20 MHz LOW CHANNEL, Carrier level



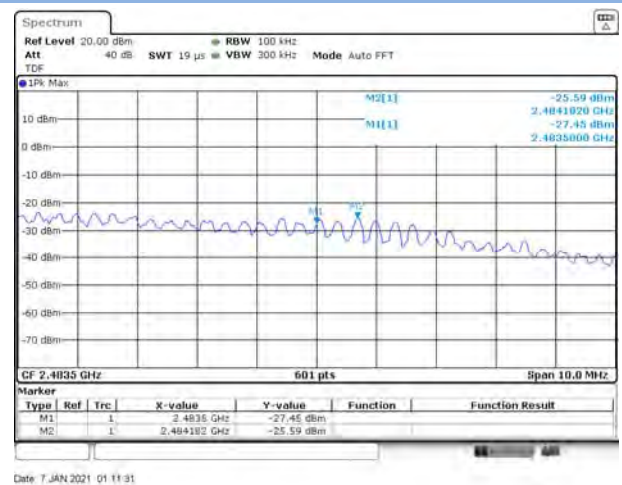
802.11n-20 MHz LOW CHANNEL, Reference level



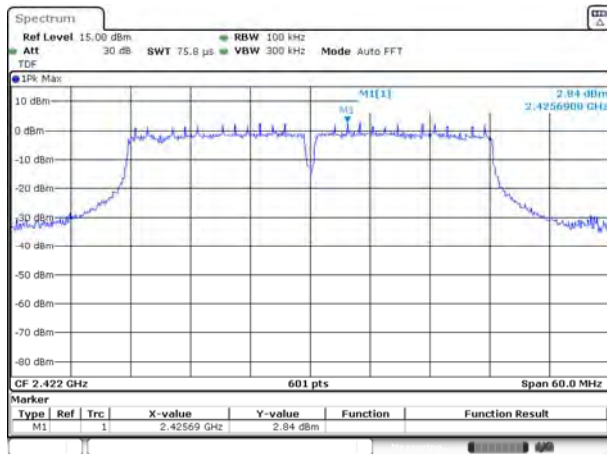
802.11n-20 MHz HIGH CHANNEL, Carrier level



802.11n-20 MHz HIGH CHANNEL, Reference level

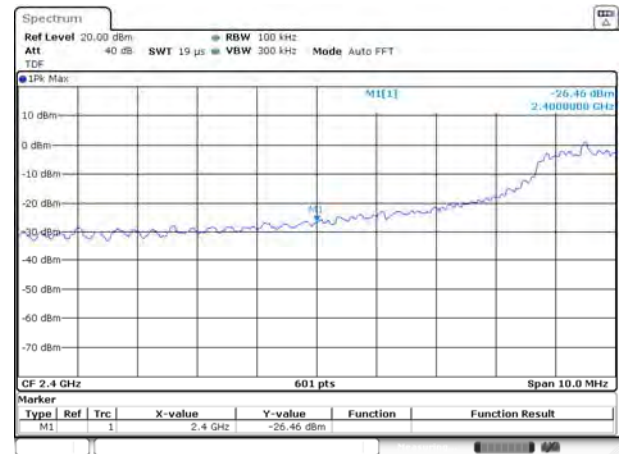


802.11n-40 MHz LOW CHANNEL, Carrier level



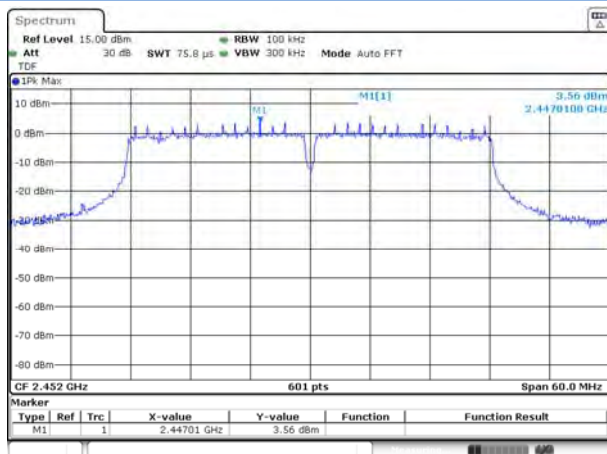
Date: 7.JAN.2021 01:14:19

802.11n-40 MHz LOW CHANNEL, Reference level



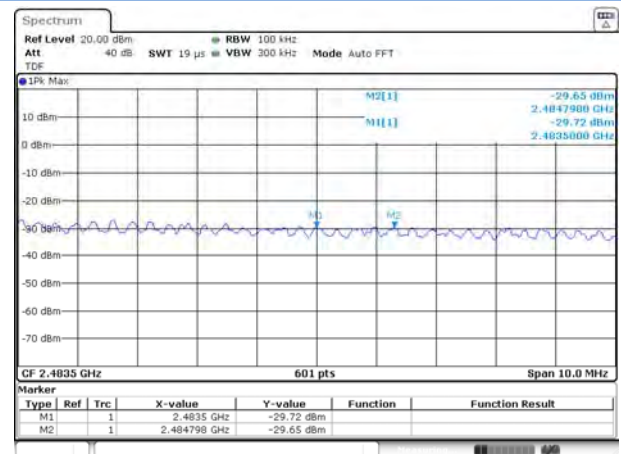
Date: 7.JAN.2021 01:15:05

802.11n-40 MHz HIGH CHANNEL, Carrier level



Date: 7.JAN.2021 01:19:17

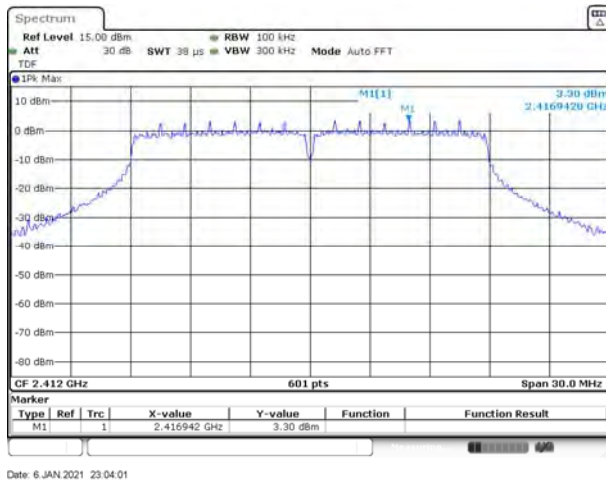
802.11n-40 MHz HIGH CHANNEL, Reference level



Date: 7.JAN.2021 01:20:09

MIMO-Main Antenna

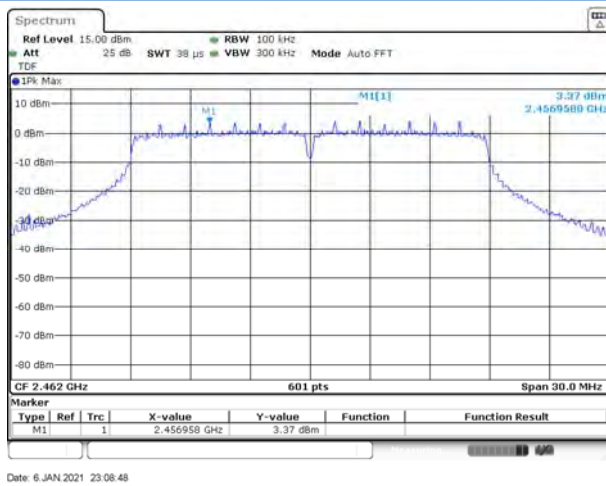
802.11n-20 MHz LOW CHANNEL, Carrier level



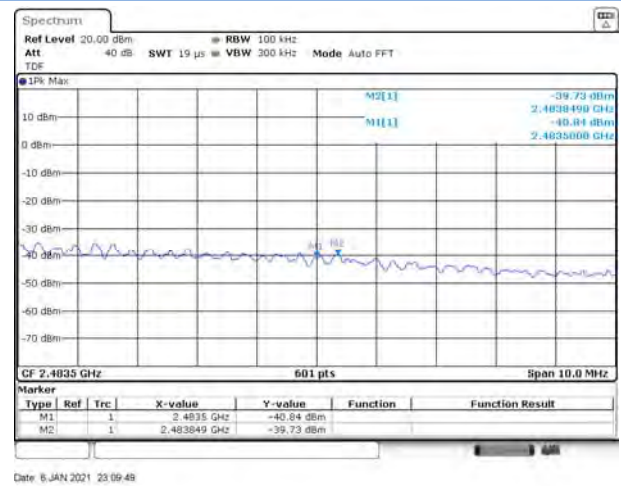
802.11n-20 MHz LOW CHANNEL, Reference level



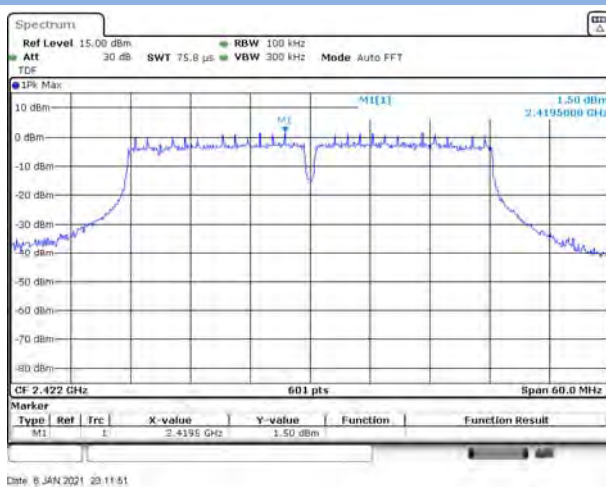
802.11n-20 MHz HIGH CHANNEL, Carrier level



802.11n-20 MHz HIGH CHANNEL, Reference level



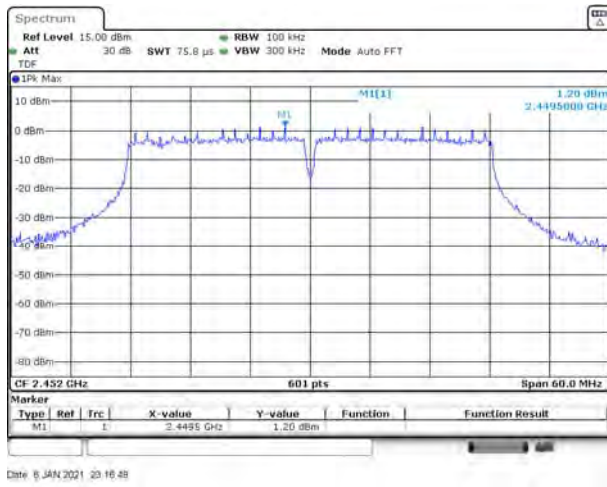
802.11n-40 MHz LOW CHANNEL, Carrier level



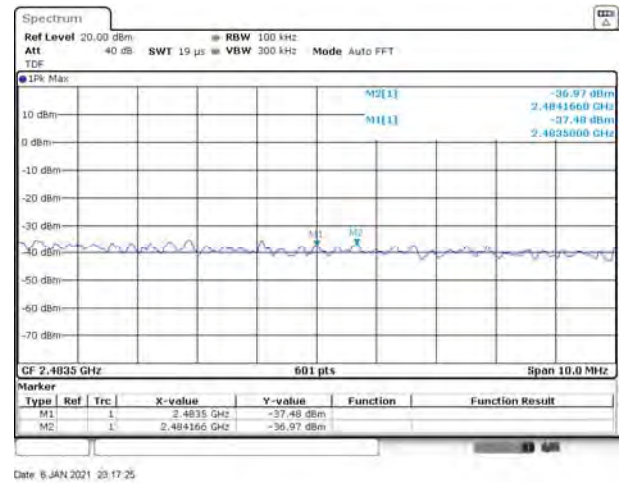
802.11n-40 MHz LOW CHANNEL, Reference level



802.11n-40 MHz HIGH CHANNEL, Carrier level

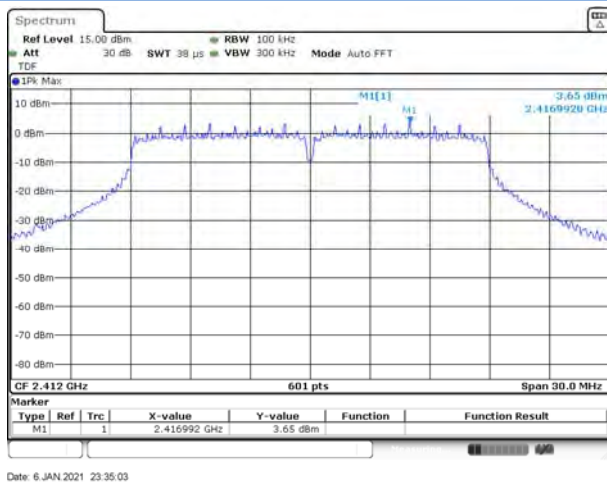


802.11n-40 MHz HIGH CHANNEL, Reference level

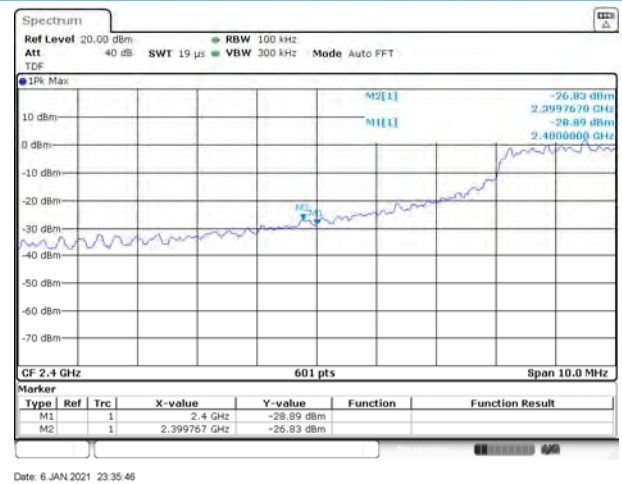


MIMO-Aux. Antenna

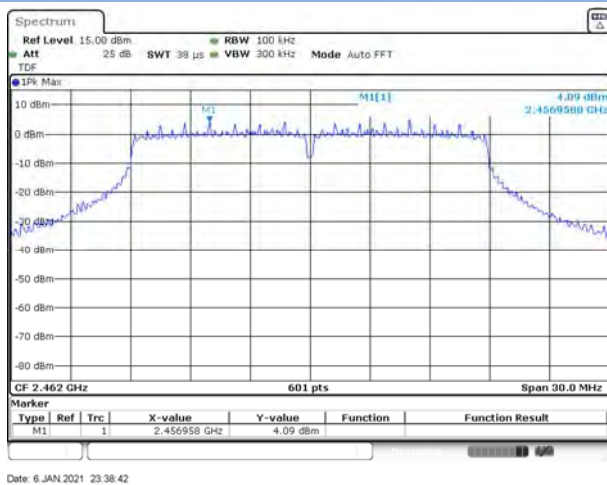
802.11n-20 MHz LOW CHANNEL, Carrier level



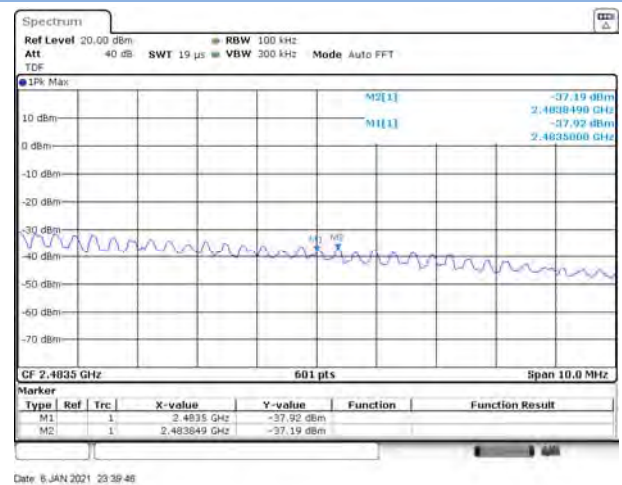
802.11n-20 MHz LOW CHANNEL, Reference level



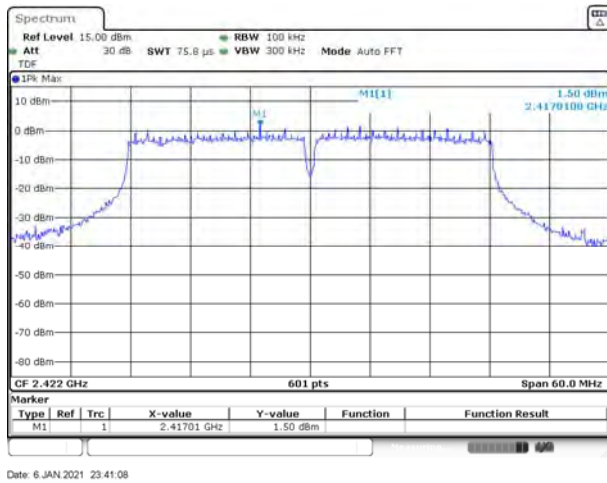
802.11n-20 MHz HIGH CHANNEL, Carrier level



802.11n-20 MHz HIGH CHANNEL, Reference level



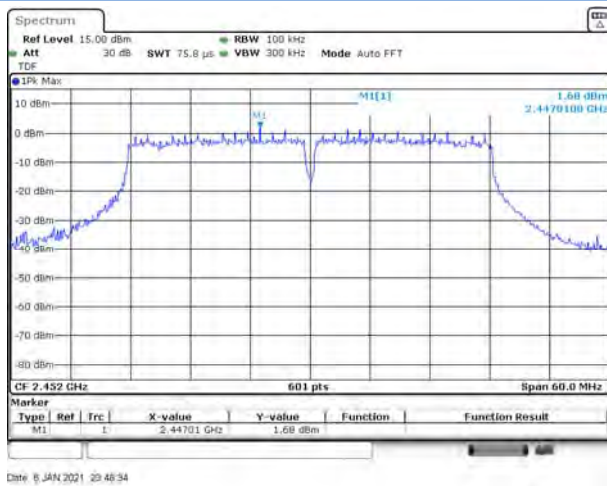
802.11n-40 MHz LOW CHANNEL, Carrier level



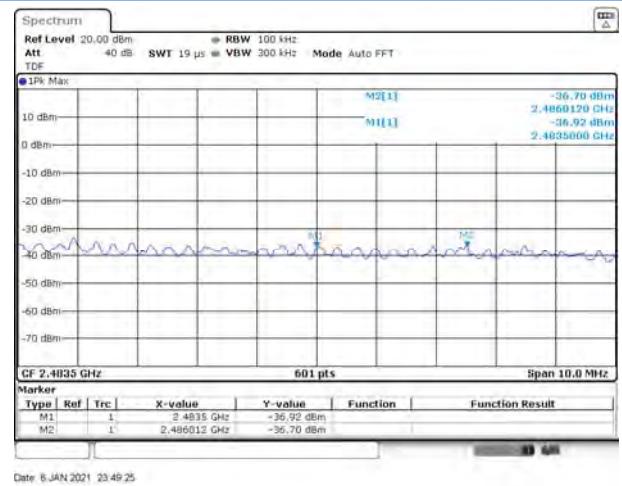
802.11n-40 MHz LOW CHANNEL, Reference level



802.11n-40 MHz HIGH CHANNEL, Carrier level



802.11n-40 MHz HIGH CHANNEL, Reference level



A.5 Conducted Emissions

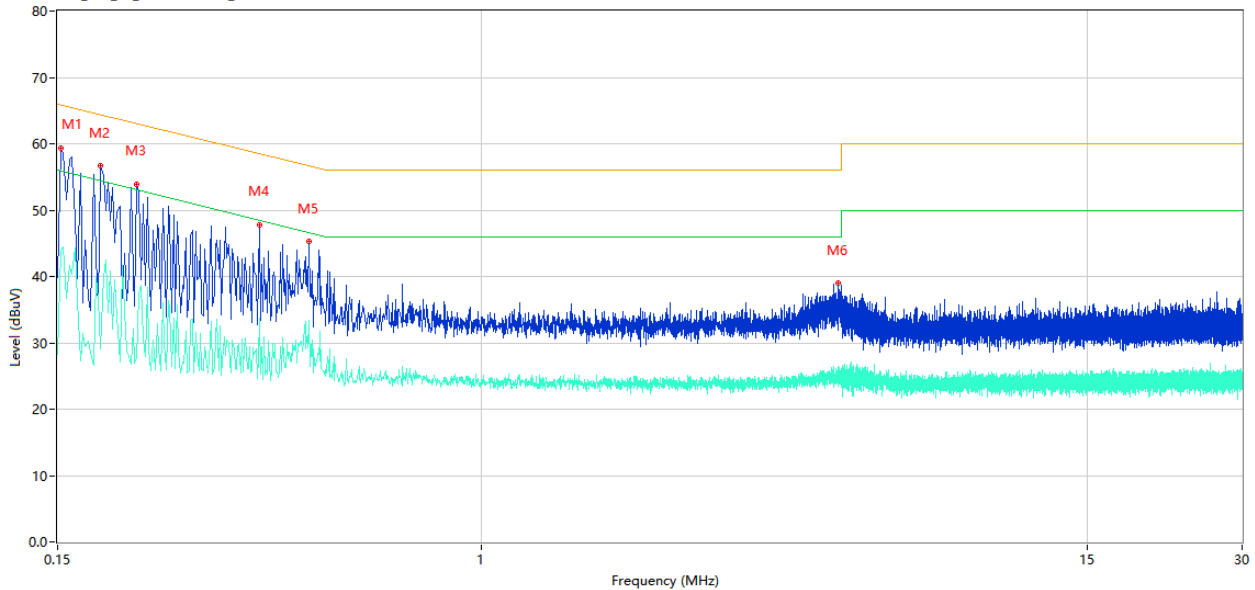
Note¹: The EUT is working in the Normal link mode. All modes have been tested and normal link mode is worst.

Note²: Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 60 Hz and 240 VAC, 50 Hz) for which the device is capable of operation. So, The configuration 120 VAC, 60 Hz and 240 VAC, 50 Hz were tested respectively, but only the worst configuration (120 VAC, 60 Hz) shown here.

Test Data and Plots

PHASE L

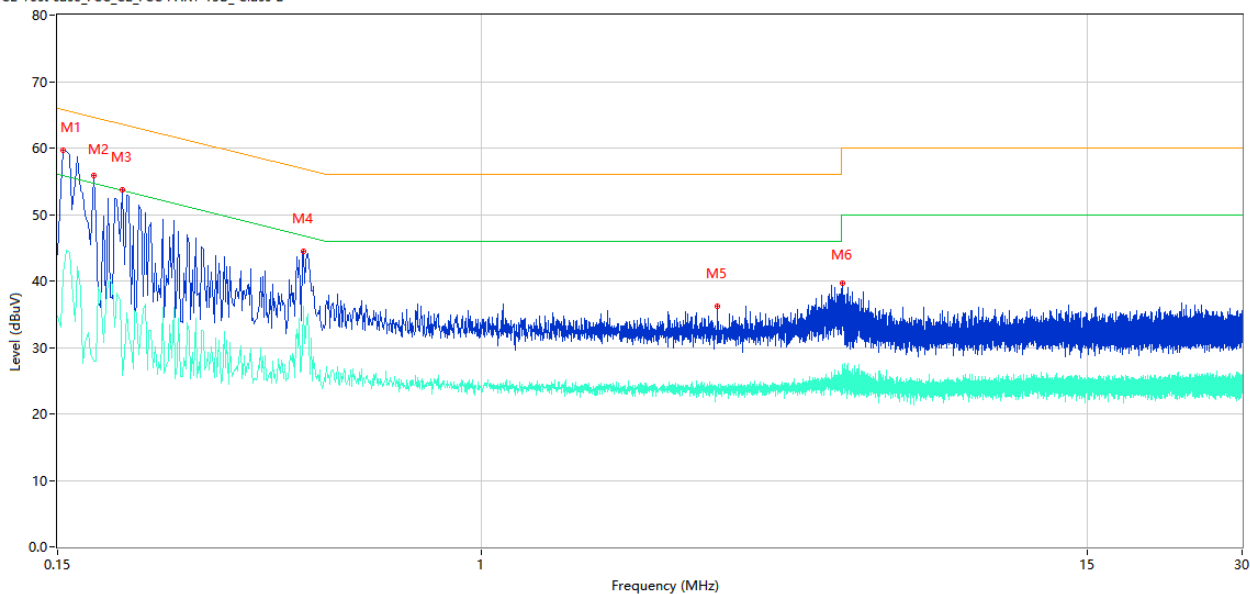
CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	39.88	10.41	66.00	-26.12	Peak	L	Pass
1**	0.150	28.25	10.41	56.00	-27.75	AV	L	Pass
2	0.182	56.69	10.39	64.39	-7.70	Peak	L	Pass
2**	0.182	29.15	10.39	54.39	-25.24	AV	L	Pass
3	0.214	53.94	10.38	63.05	-9.11	Peak	L	Pass
3**	0.214	27.63	10.38	53.05	-25.42	AV	L	Pass
4	0.370	47.83	10.30	58.50	-10.67	Peak	L	Pass
4**	0.370	33.68	10.30	48.50	-14.82	AV	L	Pass
5	0.462	45.30	10.30	56.66	-11.36	Peak	L	Pass
5**	0.462	33.34	10.30	46.66	-13.32	AV	L	Pass
6	4.932	39.03	10.31	56.00	-16.97	Peak	L	Pass
6**	4.932	25.49	10.31	46.00	-20.51	AV	L	Pass

PHASE N

CE Test case_FCC_CE_FCC PART 15B_Class B



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.150	44.00	10.41	66.00	-22.00	Peak	N	Pass
1**	0.150	34.67	10.41	56.00	-21.33	AV	N	Pass
2	0.176	55.85	10.39	64.67	-8.82	Peak	N	Pass
2**	0.176	27.99	10.39	54.67	-26.68	AV	N	Pass
3	0.200	53.69	10.38	63.61	-9.92	Peak	N	Pass
3**	0.200	25.86	10.38	53.61	-27.75	AV	N	Pass
4	0.450	44.40	10.30	56.88	-12.48	Peak	N	Pass
4**	0.450	36.20	10.30	46.88	-10.68	AV	N	Pass
5	2.870	36.18	10.28	56.00	-19.82	Peak	N	Pass
5**	2.870	23.52	10.28	46.00	-22.48	AV	N	Pass
6	5.018	39.73	10.31	60.00	-20.27	Peak	N	Pass
6**	5.018	23.30	10.31	50.00	-26.70	AV	N	Pass

A.6 Radiated Emission

Note¹: The symbol of “--” in the table which means not application.

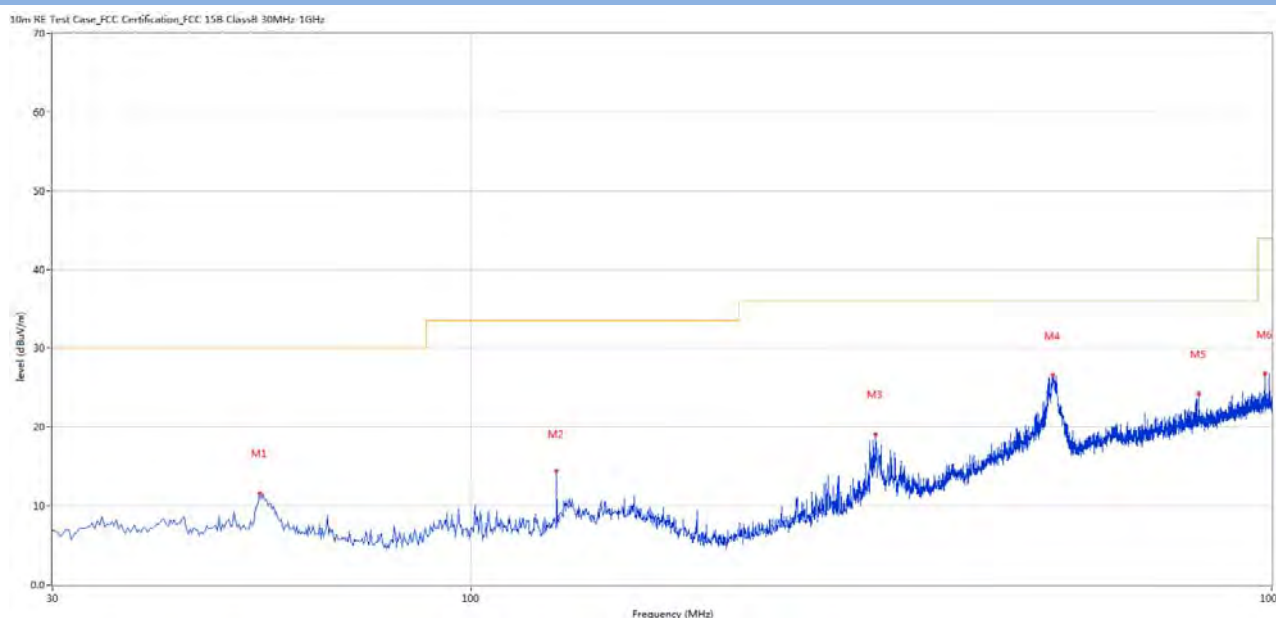
Note²: For the test data above 1 GHz, According the ANSI C63.10-2013, where limits are specified for both average and peak (or quasi-peak) detector functions, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement.

Note³: 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.

Note⁴: The EUT is working in the Normal link mode below 1 GHz. All modes have been tested and normal link mode is worst.

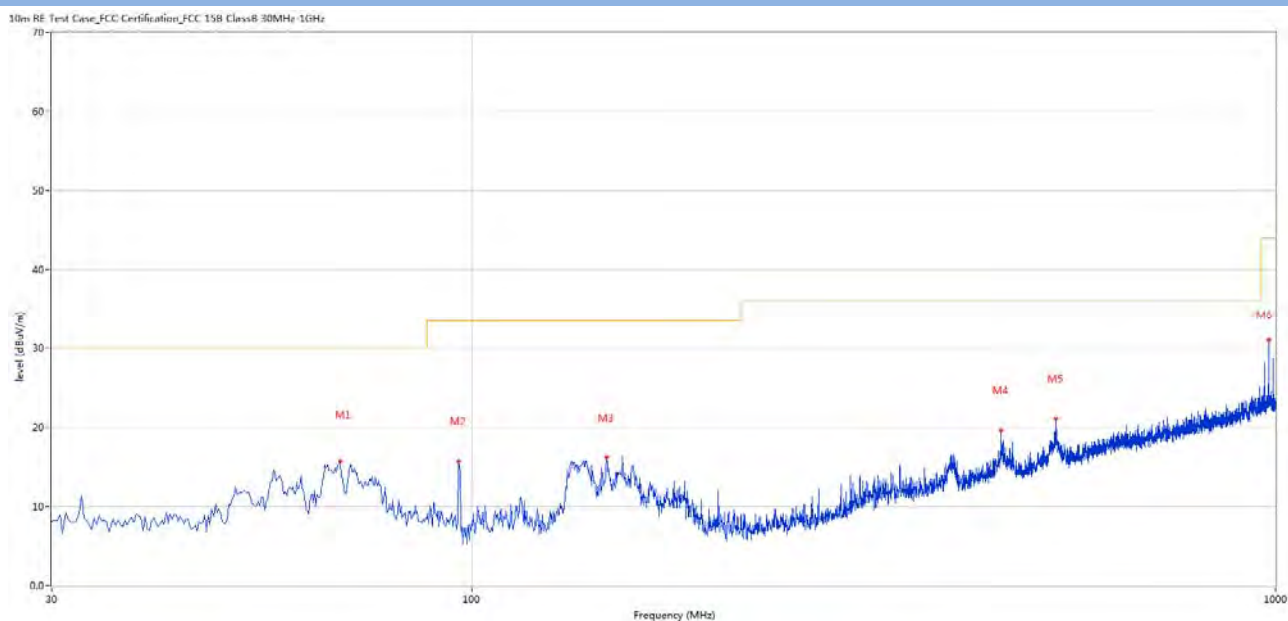
Test Data and Plots

30 MHz to 1 GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	54.486	11.62	-27.56	30.0	-18.38	Peak	0.00	400	Horizontal	Pass
2	127.946	14.45	-27.34	33.5	-19.05	Peak	351.00	100	Horizontal	Pass
3	320.200	19.06	-25.28	36.0	-16.94	Peak	120.00	200	Horizontal	Pass
4	532.334	26.49	-19.73	36.0	-9.51	Peak	221.00	200	Horizontal	Pass
5	810.655	24.16	-13.91	36.0	-11.84	Peak	245.00	100	Horizontal	Pass
6	981.090	26.69	-11.24	44.0	-17.31	Peak	230.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	68.548	15.71	-29.45	30.0	-14.29	Peak	105.00	100	Vertical	Pass
2	96.186	15.72	-30.42	33.5	-17.78	Peak	282.00	100	Vertical	Pass
3	147.098	16.17	-25.94	33.5	-17.33	Peak	235.00	200	Vertical	Pass
4	455.481	19.56	-21.42	36.0	-16.44	Peak	317.00	100	Vertical	Pass
5	532.577	21.10	-19.73	36.0	-14.90	Peak	166.00	100	Vertical	Pass
6	981.090	31.07	-11.24	44.0	-12.93	Peak	94.00	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 above 18G is noise only, do not show on the report.

Main Antenna

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 (Degree)	Height (cm)	Antenna	Verdict
1	1122.200	40.24	-18.49	74.0	-33.76	Peak	325.00	150	Horizontal	Pass
1**	1122.200	32.28	-18.49	54.0	-21.72	AV	325.00	150	Horizontal	Pass
2	2412.800	98.87	-12.26	74.0	24.87	Peak	114.00	150	Horizontal	N/A
2**	2412.800	96.67	-12.26	54.0	42.67	AV	114.00	150	Horizontal	N/A
3	3667.000	47.46	-6.85	74.0	-26.54	Peak	60.00	150	Horizontal	Pass
3**	3667.000	43.95	-6.85	54.0	-10.05	AV	60.00	150	Horizontal	Pass
4	4824.000	53.11	-3.38	74.0	-20.89	Peak	217.00	150	Horizontal	Pass
4**	4824.000	51.07	-3.38	54.0	-2.93	AV	217.00	150	Horizontal	Pass
5	9040.675	48.91	-1.10	74.0	-25.09	Peak	61.00	150	Horizontal	Pass
5**	9040.675	39.48	-1.10	54.0	-14.52	AV	61.00	150	Horizontal	Pass
6	17469.225	54.89	2.91	74.0	-19.11	Peak	128.00	150	Horizontal	Pass
6**	17469.225	45.58	2.91	54.0	-8.42	AV	128.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1738.800	41.85	-17.02	74.0	-32.15	Peak	98.00	150	Vertical	Pass
1**	1738.800	32.20	-17.02	54.0	-21.80	AV	98.00	150	Vertical	Pass
2	2412.800	96.52	-12.26	74.0	22.52	Peak	199.00	150	Vertical	N/A
2**	2412.800	94.47	-12.26	54.0	40.47	AV	199.00	150	Vertical	N/A
3	3223.400	52.35	-6.96	74.0	-21.65	Peak	228.00	150	Vertical	Pass
3**	3223.400	41.33	-6.96	54.0	-12.67	AV	228.00	150	Vertical	Pass
4	4824.000	54.85	-3.38	74.0	-19.15	Peak	104.00	150	Vertical	Pass
4**	4824.000	52.77	-3.38	54.0	-1.23	AV	104.00	150	Vertical	Pass
5	7333.212	48.41	-3.52	74.0	-25.59	Peak	168.00	150	Vertical	Pass
5**	7333.212	42.81	-3.52	54.0	-11.19	AV	168.00	150	Vertical	Pass
6	17429.062	54.36	3.48	74.0	-19.64	Peak	0.00	150	Vertical	Pass
6**	17429.062	45.61	3.48	54.0	-8.39	AV	0.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1624.600	40.81	-17.72	74.0	-33.19	Peak	71.00	150	Horizontal	Pass
1**	1624.600	36.56	-17.72	54.0	-17.44	AV	71.00	150	Horizontal	Pass
2	2437.800	101.76	-12.59	74.0	27.76	Peak	134.00	150	Horizontal	N/A
2**	2437.800	99.55	-12.59	54.0	45.55	AV	134.00	150	Horizontal	N/A
3	3217.800	47.72	-7.09	74.0	-26.28	Peak	335.00	150	Horizontal	Pass
3**	3217.800	35.78	-7.09	54.0	-18.22	AV	335.00	150	Horizontal	Pass
4	4874.200	51.45	-3.35	74.0	-22.55	Peak	262.00	150	Horizontal	Pass
4**	4874.200	50.59	-3.35	54.0	-3.41	AV	262.00	150	Horizontal	Pass
5	7841.800	47.47	-2.26	74.0	-26.53	Peak	71.00	150	Horizontal	Pass
5**	7841.800	39.23	-2.26	54.0	-14.77	AV	71.00	150	Horizontal	Pass
6	17425.125	55.00	3.62	74.0	-19.00	Peak	43.00	150	Horizontal	Pass
6**	17425.125	46.18	3.62	54.0	-7.82	AV	43.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1993.700	44.59	-15.62	74.0	-29.41	Peak	50.00	150	Vertical	Pass
1**	1993.700	28.72	-15.62	54.0	-25.28	AV	50.00	150	Vertical	Pass
2	2437.800	99.75	-12.59	74.0	25.75	Peak	202.00	150	Vertical	N/A
2**	2437.800	97.53	-12.59	54.0	43.53	AV	202.00	150	Vertical	N/A
3	3221.600	51.80	-6.94	74.0	-22.20	Peak	224.00	150	Vertical	Pass
3**	3221.600	43.80	-6.94	54.0	-10.20	AV	224.00	150	Vertical	Pass
4	4874.000	53.74	-3.34	74.0	-20.26	Peak	103.00	150	Vertical	Pass
4**	4874.000	52.16	-3.34	54.0	-1.84	AV	103.00	150	Vertical	Pass
5	7333.212	48.67	-3.52	74.0	-25.33	Peak	170.00	150	Vertical	Pass
5**	7333.212	44.47	-3.52	54.0	-9.53	AV	170.00	150	Vertical	Pass
6	16080.338	53.71	1.63	74.0	-20.29	Peak	129.00	150	Vertical	Pass
6**	16080.338	44.48	1.63	54.0	-9.52	AV	129.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1641.400	42.81	-17.45	74.0	-31.19	Peak	69.00	150	Horizontal	Pass
1**	1641.400	40.60	-17.45	54.0	-13.40	AV	69.00	150	Horizontal	Pass
2	2462.900	102.81	-12.79	74.0	28.81	Peak	80.00	150	Horizontal	N/A
2**	2462.900	100.80	-12.79	54.0	46.80	AV	80.00	150	Horizontal	N/A
3	3218.400	47.54	-7.07	74.0	-26.46	Peak	78.00	150	Horizontal	Pass
3**	3218.400	38.31	-7.07	54.0	-15.69	AV	78.00	150	Horizontal	Pass
4	4924.200	51.45	-2.60	74.0	-22.55	Peak	209.00	150	Horizontal	Pass
4**	4924.200	49.55	-2.60	54.0	-4.45	AV	209.00	150	Horizontal	Pass
5	7601.163	47.36	-3.67	74.0	-26.64	Peak	3.00	150	Horizontal	Pass
5**	7601.163	38.44	-3.67	54.0	-15.56	AV	3.00	150	Horizontal	Pass
6	17466.337	54.29	2.89	74.0	-19.71	Peak	244.00	150	Horizontal	Pass
6**	17466.337	45.90	2.89	54.0	-8.10	AV	244.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1641.200	41.38	-17.45	74.0	-32.62	Peak	93.00	150	Vertical	Pass
1**	1641.200	36.76	-17.45	54.0	-17.24	AV	93.00	150	Vertical	Pass
2	2462.800	102.28	-12.79	74.0	28.28	Peak	191.00	150	Vertical	N/A
2**	2462.800	100.05	-12.79	54.0	46.05	AV	191.00	150	Vertical	N/A
3	3223.600	52.37	-6.96	74.0	-21.63	Peak	214.00	150	Vertical	Pass
3**	3223.600	41.24	-6.96	54.0	-12.76	AV	214.00	150	Vertical	Pass
4	4924.000	54.44	-2.59	74.0	-19.56	Peak	148.00	150	Vertical	Pass
4**	4924.000	52.12	-2.59	54.0	-1.88	AV	148.00	150	Vertical	Pass
5	7333.212	47.92	-3.52	74.0	-26.08	Peak	126.00	150	Vertical	Pass
5**	7333.212	43.26	-3.52	54.0	-10.74	AV	126.00	150	Vertical	Pass
6	17468.699	55.11	2.90	74.0	-18.89	Peak	154.00	150	Vertical	Pass
6**	17468.699	45.50	2.90	54.0	-8.50	AV	154.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1778.500	44.13	-14.61	74.0	-29.87	Peak	251.00	150	Horizontal	Pass
1**	1778.500	27.40	-14.61	54.0	-26.60	AV	251.00	150	Horizontal	Pass
2	2408.400	102.44	-10.33	74.0	28.44	Peak	294.00	150	Horizontal	N/A
2**	2408.400	95.12	-10.33	54.0	41.12	AV	294.00	150	Horizontal	N/A
3	4821.600	52.72	-1.48	74.0	-21.28	Peak	161.00	150	Horizontal	Pass
3**	4821.600	45.24	-1.48	54.0	-8.76	AV	161.00	150	Horizontal	Pass
4	6908.000	52.58	4.73	74.0	-21.42	Peak	238.00	150	Horizontal	Pass
4**	6908.000	43.50	4.73	54.0	-10.50	AV	238.00	150	Horizontal	Pass
5	11834.599	50.97	18.25	74.0	-23.03	Peak	48.00	150	Horizontal	Pass
5**	11834.599	37.55	18.25	54.0	-16.45	AV	48.00	150	Horizontal	Pass
6	17269.199	57.08	24.36	74.0	-16.92	Peak	347.00	150	Horizontal	Pass
6**	17269.199	44.94	24.36	54.0	-9.06	AV	347.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1992.400	49.17	-13.61	74.0	-24.83	Peak	28.00	150	Vertical	Pass
1**	1992.400	37.00	-13.61	54.0	-17.00	AV	28.00	150	Vertical	Pass
2	2408.700	100.04	-10.32	74.0	26.04	Peak	158.00	150	Vertical	N/A
2**	2408.700	93.19	-10.32	54.0	39.19	AV	158.00	150	Vertical	N/A
3	4824.200	54.47	-1.44	74.0	-19.53	Peak	236.00	150	Vertical	Pass
3**	4824.200	50.83	-1.44	54.0	-3.17	AV	236.00	150	Vertical	Pass
4	6970.400	52.42	5.13	74.0	-21.58	Peak	75.00	150	Vertical	Pass
4**	6970.400	42.97	5.13	54.0	-11.03	AV	75.00	150	Vertical	Pass
5	11526.688	50.36	19.50	74.0	-23.64	Peak	360.00	150	Vertical	Pass
5**	11526.688	37.70	19.50	54.0	-16.30	AV	360.00	150	Vertical	Pass
6	17899.198	57.00	24.55	74.0	-17.00	Peak	154.00	150	Vertical	Pass
6**	17899.198	45.03	24.55	54.0	-8.97	AV	154.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1826.000	43.70	-14.59	74.0	-30.30	Peak	140.00	150	Horizontal	Pass
1**	1826.000	34.09	-14.59	54.0	-19.91	AV	140.00	150	Horizontal	Pass
2	2439.500	102.68	-10.35	74.0	28.68	Peak	0.00	150	Horizontal	N/A
2**	2439.500	96.65	-10.35	54.0	42.65	AV	0.00	150	Horizontal	N/A
3	4871.600	53.38	-1.49	74.0	-20.62	Peak	162.00	150	Horizontal	Pass
3**	4871.600	44.34	-1.49	54.0	-9.66	AV	162.00	150	Horizontal	Pass
4	6967.200	52.18	5.03	74.0	-21.82	Peak	55.00	150	Horizontal	Pass
4**	6967.200	42.97	5.03	54.0	-11.03	AV	55.00	150	Horizontal	Pass
5	11612.650	50.29	20.20	74.0	-23.71	Peak	230.00	150	Horizontal	Pass
5**	11612.650	39.48	20.20	54.0	-14.52	AV	230.00	150	Horizontal	Pass
6	15530.138	55.92	23.74	74.0	-18.08	Peak	72.00	150	Horizontal	Pass
6**	15530.138	43.74	23.74	54.0	-10.26	AV	72.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1701.600	48.06	-15.22	74.0	-25.94	Peak	356.00	150	Vertical	Pass
1**	1701.600	27.02	-15.22	54.0	-26.98	AV	356.00	150	Vertical	Pass
2	2443.800	100.58	-10.23	74.0	26.58	Peak	349.00	150	Vertical	N/A
2**	2443.800	93.99	-10.23	54.0	39.99	AV	349.00	150	Vertical	N/A
3	4874.400	57.12	-1.55	74.0	-16.88	Peak	18.00	150	Vertical	Pass
3**	4874.400	52.84	-1.55	54.0	-1.16	AV	18.00	150	Vertical	Pass
4	6977.200	52.09	5.10	74.0	-21.91	Peak	143.00	150	Vertical	Pass
4**	6977.200	43.54	5.10	54.0	-10.46	AV	143.00	150	Vertical	Pass
5	12217.550	50.06	20.45	74.0	-23.94	Peak	335.00	150	Vertical	Pass
5**	12217.550	37.66	20.45	54.0	-16.34	AV	335.00	150	Vertical	Pass
6	17635.650	56.46	24.09	74.0	-17.54	Peak	302.00	150	Vertical	Pass
6**	17635.650	44.91	24.09	54.0	-9.09	AV	302.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1659.100	43.47	-15.27	74.0	-30.53	Peak	237.00	150	Horizontal	Pass
1**	1659.100	26.51	-15.27	54.0	-27.49	AV	237.00	150	Horizontal	Pass
2	2464.800	102.02	-10.61	74.0	28.02	Peak	298.00	150	Horizontal	N/A
2**	2464.800	94.92	-10.61	54.0	40.92	AV	298.00	150	Horizontal	N/A
3	4925.600	52.72	-1.08	74.0	-21.28	Peak	17.00	150	Horizontal	Pass
3**	4925.600	43.35	-1.08	54.0	-10.65	AV	17.00	150	Horizontal	Pass
4	6989.800	52.85	4.58	74.0	-21.15	Peak	153.00	150	Horizontal	Pass
4**	6989.800	43.51	4.58	54.0	-10.49	AV	153.00	150	Horizontal	Pass
5	12164.362	50.14	20.09	74.0	-23.86	Peak	21.00	150	Horizontal	Pass
5**	12164.362	37.72	20.09	54.0	-16.28	AV	21.00	150	Horizontal	Pass
6	17180.475	56.11	23.61	74.0	-17.89	Peak	177.00	150	Horizontal	Pass
6**	17180.475	43.66	23.61	54.0	-10.34	AV	177.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1686.600	50.24	-15.26	74.0	-23.76	Peak	358.00	150	Vertical	Pass
1**	1686.600	30.24	-15.26	54.0	-23.76	AV	358.00	150	Vertical	Pass
2	2464.500	100.72	-10.61	74.0	26.72	Peak	159.00	150	Vertical	N/A
2**	2464.500	93.27	-10.61	54.0	39.27	AV	159.00	150	Vertical	N/A
3	4924.200	57.20	-1.09	74.0	-16.80	Peak	18.00	150	Vertical	Pass
3**	4924.200	52.52	-1.09	54.0	-1.48	AV	18.00	150	Vertical	Pass
4	6894.000	52.49	4.40	74.0	-21.51	Peak	220.00	150	Vertical	Pass
4**	6894.000	42.71	4.40	54.0	-11.29	AV	220.00	150	Vertical	Pass
5	11619.550	49.80	20.24	74.0	-24.20	Peak	192.00	150	Vertical	Pass
5**	11619.550	38.35	20.24	54.0	-15.65	AV	192.00	150	Vertical	Pass
6	15933.600	55.17	23.82	74.0	-18.83	Peak	136.00	150	Vertical	Pass
6**	15933.600	44.74	23.82	54.0	-9.26	AV	136.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1721.800	44.63	-14.86	74.0	-29.37	Peak	140.00	150	Horizontal	Pass
1**	1721.800	27.91	-14.86	54.0	-26.09	AV	140.00	150	Horizontal	Pass
2	2408.200	103.30	-10.34	74.0	29.30	Peak	302.00	150	Horizontal	N/A
2**	2408.200	95.35	-10.34	54.0	41.35	AV	302.00	150	Horizontal	N/A
3	4823.400	53.49	-1.47	74.0	-20.51	Peak	156.00	150	Horizontal	Pass
3**	4823.400	44.44	-1.47	54.0	-9.56	AV	156.00	150	Horizontal	Pass
4	6988.800	52.46	4.60	74.0	-21.54	Peak	360.00	150	Horizontal	Pass
4**	6988.800	45.42	4.60	54.0	-8.58	AV	360.00	150	Horizontal	Pass
5	11597.700	50.57	20.10	74.0	-23.43	Peak	360.00	150	Horizontal	Pass
5**	11597.700	39.35	20.10	54.0	-14.65	AV	360.00	150	Horizontal	Pass
6	17330.362	56.65	24.13	74.0	-17.35	Peak	0.00	150	Horizontal	Pass
6**	17330.362	44.90	24.13	54.0	-9.10	AV	0.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1769.200	48.88	-14.59	74.0	-25.12	Peak	168.00	150	Vertical	Pass
1**	1769.200	32.32	-14.59	54.0	-21.68	AV	168.00	150	Vertical	Pass
2	2416.000	99.32	-10.27	74.0	25.32	Peak	158.00	150	Vertical	N/A
2**	2416.000	92.28	-10.27	54.0	38.28	AV	158.00	150	Vertical	N/A
3	4828.400	56.10	-1.46	74.0	-17.90	Peak	231.00	150	Vertical	Pass
3**	4828.400	47.45	-1.46	54.0	-6.55	AV	231.00	150	Vertical	Pass
4	6758.400	52.55	4.24	74.0	-21.45	Peak	157.00	150	Vertical	Pass
4**	6758.400	44.29	4.24	54.0	-9.71	AV	157.00	150	Vertical	Pass
5	12467.675	50.65	18.60	74.0	-23.35	Peak	302.00	150	Vertical	Pass
5**	12467.675	37.91	18.60	54.0	-16.09	AV	302.00	150	Vertical	Pass
6	17254.500	56.01	24.22	74.0	-17.99	Peak	360.00	150	Vertical	Pass
6**	17254.500	44.82	24.22	54.0	-9.18	AV	360.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1774.200	44.41	-14.68	74.0	-29.59	Peak	67.00	150	Horizontal	Pass
1**	1774.200	26.52	-14.68	54.0	-27.48	AV	67.00	150	Horizontal	Pass
2	2440.700	103.00	-10.40	74.0	29.00	Peak	0.00	150	Horizontal	N/A
2**	2440.700	95.74	-10.40	54.0	41.74	AV	0.00	150	Horizontal	N/A
3	4871.800	53.05	-1.49	74.0	-20.95	Peak	151.00	150	Horizontal	Pass
3**	4871.800	44.04	-1.49	54.0	-9.96	AV	151.00	150	Horizontal	Pass
4	6516.000	52.79	2.98	74.0	-21.21	Peak	330.00	150	Horizontal	Pass
4**	6516.000	42.40	2.98	54.0	-11.60	AV	330.00	150	Horizontal	Pass
5	11659.513	50.29	20.28	74.0	-23.71	Peak	360.00	150	Horizontal	Pass
5**	11659.513	38.66	20.28	54.0	-15.34	AV	360.00	150	Horizontal	Pass
6	17291.250	56.41	24.55	74.0	-17.59	Peak	203.00	150	Horizontal	Pass
6**	17291.250	45.57	24.55	54.0	-8.43	AV	203.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1886.100	47.71	-14.10	74.0	-26.29	Peak	325.00	150	Vertical	Pass
1**	1886.100	28.07	-14.10	54.0	-25.93	AV	325.00	150	Vertical	Pass
2	2440.600	101.16	-10.40	74.0	27.16	Peak	346.00	150	Vertical	N/A
2**	2440.600	94.17	-10.40	54.0	40.17	AV	346.00	150	Vertical	N/A
3	4873.000	56.52	-1.51	74.0	-17.48	Peak	27.00	150	Vertical	Pass
3**	4873.000	52.63	-1.51	54.0	-1.37	AV	27.00	150	Vertical	Pass
4	6654.000	52.31	4.67	74.0	-21.69	Peak	312.00	150	Vertical	Pass
4**	6654.000	42.93	4.67	54.0	-11.07	AV	312.00	150	Vertical	Pass
5	12211.225	50.44	20.44	74.0	-23.56	Peak	187.00	150	Vertical	Pass
5**	12211.225	39.33	20.44	54.0	-14.67	AV	187.00	150	Vertical	Pass
6	17300.175	56.63	24.59	74.0	-17.37	Peak	9.00	150	Vertical	Pass
6**	17300.175	45.19	24.59	54.0	-8.81	AV	9.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1825.500	44.57	-14.61	74.0	-29.43	Peak	250.00	150	Horizontal	Pass
1**	1825.500	26.29	-14.61	54.0	-27.71	AV	250.00	150	Horizontal	Pass
2	2458.200	101.96	-10.36	74.0	27.96	Peak	0.00	150	Horizontal	N/A
2**	2458.200	96.02	-10.36	54.0	42.02	AV	0.00	150	Horizontal	N/A
3	4923.800	53.10	-1.10	74.0	-20.90	Peak	298.00	150	Horizontal	Pass
3**	4923.800	44.36	-1.10	54.0	-9.64	AV	298.00	150	Horizontal	Pass
4	6930.000	52.20	4.25	74.0	-21.80	Peak	337.00	150	Horizontal	Pass
4**	6930.000	44.30	4.25	54.0	-9.70	AV	337.00	150	Horizontal	Pass
5	11643.412	50.24	20.37	74.0	-23.76	Peak	352.00	150	Horizontal	Pass
5**	11643.412	38.21	20.37	54.0	-15.79	AV	352.00	150	Horizontal	Pass
6	17254.762	56.06	24.22	74.0	-17.94	Peak	118.00	150	Horizontal	Pass
6**	17254.762	44.66	24.22	54.0	-9.34	AV	118.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1790.200	47.49	-14.72	74.0	-26.51	Peak	151.00	150	Vertical	Pass
1**	1790.200	27.28	-14.72	54.0	-26.72	AV	151.00	150	Vertical	Pass
2	2461.300	99.65	-10.45	74.0	25.65	Peak	151.00	150	Vertical	N/A
2**	2461.300	92.41	-10.45	54.0	38.41	AV	151.00	150	Vertical	N/A
3	4925.200	58.75	-1.08	74.0	-15.25	Peak	352.00	150	Vertical	Pass
3**	4925.200	52.39	-1.08	54.0	-1.61	AV	352.00	150	Vertical	Pass
4	6424.400	52.71	3.63	74.0	-21.29	Peak	227.00	150	Vertical	Pass
4**	6424.400	42.98	3.63	54.0	-11.02	AV	227.00	150	Vertical	Pass
5	12078.687	50.13	19.22	74.0	-23.87	Peak	27.00	150	Vertical	Pass
5**	12078.687	37.64	19.22	54.0	-16.36	AV	27.00	150	Vertical	Pass
6	17738.813	56.46	23.96	74.0	-17.54	Peak	242.00	150	Vertical	Pass
6**	17738.813	44.12	23.96	54.0	-9.88	AV	242.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1769.900	47.60	-14.54	74.0	-26.40	Peak	53.00	150	Horizontal	Pass
1**	1769.900	27.24	-14.54	54.0	-26.76	AV	53.00	150	Horizontal	Pass
2	2436.800	98.55	-10.46	74.0	24.55	Peak	0.00	150	Horizontal	N/A
2**	2436.800	92.57	-10.46	54.0	38.57	AV	0.00	150	Horizontal	N/A
3	4844.200	51.32	-1.26	74.0	-22.68	Peak	176.00	150	Horizontal	Pass
3**	4844.200	44.90	-1.26	54.0	-9.10	AV	176.00	150	Horizontal	Pass
4	6976.200	52.78	5.17	74.0	-21.22	Peak	0.00	150	Horizontal	Pass
4**	6976.200	43.28	5.17	54.0	-10.72	AV	0.00	150	Horizontal	Pass
5	12145.100	50.04	19.88	74.0	-23.96	Peak	85.00	150	Horizontal	Pass
5**	12145.100	38.37	19.88	54.0	-15.63	AV	85.00	150	Horizontal	Pass
6	17296.501	56.09	24.58	74.0	-17.91	Peak	103.00	150	Horizontal	Pass
6**	17296.501	45.43	24.58	54.0	-8.57	AV	103.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1886.500	48.67	-14.11	74.0	-25.33	Peak	0.00	150	Vertical	Pass
1**	1886.500	29.30	-14.11	54.0	-24.70	AV	0.00	150	Vertical	Pass
2	2437.800	96.75	-10.43	74.0	22.75	Peak	352.00	150	Vertical	N/A
2**	2437.800	90.55	-10.43	54.0	36.55	AV	352.00	150	Vertical	N/A
3	4856.000	54.15	-1.24	74.0	-19.85	Peak	32.00	150	Vertical	Pass
3**	4856.000	46.08	-1.24	54.0	-7.92	AV	32.00	150	Vertical	Pass
4	6914.000	52.59	4.78	74.0	-21.41	Peak	57.00	150	Vertical	Pass
4**	6914.000	43.31	4.78	54.0	-10.69	AV	57.00	150	Vertical	Pass
5	11765.313	50.28	18.81	74.0	-23.72	Peak	271.00	150	Vertical	Pass
5**	11765.313	38.29	18.81	54.0	-15.71	AV	271.00	150	Vertical	Pass
6	15945.150	56.83	23.93	74.0	-17.17	Peak	363.00	150	Vertical	Pass
6**	15945.150	43.47	23.93	54.0	-10.53	AV	363.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1764.500	44.62	-14.69	74.0	-29.38	Peak	241.00	150	Horizontal	Pass
1**	1764.500	25.73	-14.69	54.0	-28.27	AV	241.00	150	Horizontal	Pass
2	2445.700	100.26	-10.26	74.0	26.26	Peak	328.00	150	Horizontal	N/A
2**	2445.700	94.04	-10.26	54.0	40.04	AV	328.00	150	Horizontal	N/A
3	4873.400	51.58	-1.52	74.0	-22.42	Peak	8.00	150	Horizontal	Pass
3**	4873.400	43.06	-1.52	54.0	-10.94	AV	8.00	150	Horizontal	Pass
4	6841.800	51.86	3.60	74.0	-22.14	Peak	60.00	150	Horizontal	Pass
4**	6841.800	41.42	3.60	54.0	-12.58	AV	60.00	150	Horizontal	Pass
5	11611.213	49.92	20.19	74.0	-24.08	Peak	360.00	150	Horizontal	Pass
5**	11611.213	37.85	20.19	54.0	-16.15	AV	360.00	150	Horizontal	Pass
6	17303.849	57.77	24.54	74.0	-16.23	Peak	296.00	150	Horizontal	Pass
6**	17303.849	44.25	24.54	54.0	-9.75	AV	296.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1868.500	50.47	-13.68	74.0	-23.53	Peak	35.00	150	Vertical	Pass
1**	1868.500	34.21	-13.68	54.0	-19.79	AV	35.00	150	Vertical	Pass
2	2441.300	98.60	-10.44	74.0	24.60	Peak	77.00	150	Vertical	N/A
2**	2441.300	92.00	-10.44	54.0	38.00	AV	77.00	150	Vertical	N/A
3	4875.400	53.74	-1.51	74.0	-20.26	Peak	116.00	150	Vertical	Pass
3**	4875.400	51.31	-1.51	54.0	-2.69	AV	116.00	150	Vertical	Pass
4	6988.400	51.80	4.55	74.0	-22.20	Peak	324.00	150	Vertical	Pass
4**	6988.400	42.93	4.55	54.0	-11.07	AV	324.00	150	Vertical	Pass
5	12546.450	49.30	18.53	74.0	-24.70	Peak	150.00	150	Vertical	Pass
5**	12546.450	38.43	18.53	54.0	-15.57	AV	150.00	150	Vertical	Pass
6	17874.000	56.70	24.37	74.0	-17.30	Peak	339.00	150	Vertical	Pass
6**	17874.000	44.70	24.37	54.0	-9.30	AV	339.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1759.000	46.85	-14.86	74.0	-27.15	Peak	129.00	150	Horizontal	Pass
1**	1759.000	25.90	-14.86	54.0	-28.10	AV	129.00	150	Horizontal	Pass
2	2455.800	100.63	-10.26	74.0	26.63	Peak	339.00	150	Horizontal	N/A
2**	2455.800	94.23	-10.26	54.0	40.23	AV	339.00	150	Horizontal	N/A
3	4910.000	52.76	-0.83	74.0	-21.24	Peak	320.00	150	Horizontal	Pass
3**	4910.000	42.09	-0.83	54.0	-11.91	AV	320.00	150	Horizontal	Pass
4	6970.800	52.01	5.11	74.0	-21.99	Peak	196.00	150	Horizontal	Pass
4**	6970.800	42.54	5.11	54.0	-11.46	AV	196.00	150	Horizontal	Pass
5	11676.763	49.28	20.10	74.0	-24.72	Peak	73.00	150	Horizontal	Pass
5**	11676.763	37.05	20.10	54.0	-16.95	AV	73.00	150	Horizontal	Pass
6	15488.925	55.70	23.79	74.0	-18.30	Peak	-1.00	150	Horizontal	Pass
6**	15488.925	43.71	23.79	54.0	-10.29	AV	-1.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1909.000	50.63	-13.72	74.0	-23.37	Peak	131.00	150	Vertical	Pass
1**	1909.000	28.21	-13.72	54.0	-25.79	AV	131.00	150	Vertical	Pass
2	2457.800	99.66	-10.32	74.0	25.66	Peak	98.00	150	Vertical	N/A
2**	2457.800	92.66	-10.32	54.0	38.66	AV	98.00	150	Vertical	N/A
3	4905.200	54.77	-0.90	74.0	-19.23	Peak	175.00	150	Vertical	Pass
3**	4905.200	52.93	-0.90	54.0	-1.07	AV	175.00	150	Vertical	Pass
4	6997.400	52.04	4.07	74.0	-21.96	Peak	234.00	150	Vertical	Pass
4**	6997.400	44.18	4.07	54.0	-9.82	AV	234.00	150	Vertical	Pass
5	12213.812	49.68	20.44	74.0	-24.32	Peak	82.00	150	Vertical	Pass
5**	12213.812	39.03	20.44	54.0	-14.97	AV	82.00	150	Vertical	Pass
6	17386.537	55.83	23.70	74.0	-18.17	Peak	301.00	150	Vertical	Pass
6**	17386.537	44.12	23.70	54.0	-9.88	AV	301.00	150	Vertical	Pass

Aux. Antenna

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 (Degree)	Height (cm)	Antenna	Verdict
1	1134.300	39.46	-18.46	74.0	-34.54	Peak	322.00	150	Horizontal	Pass
1**	1134.300	29.65	-18.46	54.0	-24.35	AV	322.00	150	Horizontal	Pass
2	2411.100	101.47	-12.25	74.0	27.47	Peak	88.00	150	Horizontal	N/A
2**	2411.100	99.80	-12.25	54.0	45.80	AV	88.00	150	Horizontal	N/A
3	3221.400	47.26	-6.95	74.0	-26.74	Peak	110.00	150	Horizontal	Pass
3**	3221.400	37.42	-6.95	54.0	-16.58	AV	110.00	150	Horizontal	Pass
4	4824.000	53.64	-3.38	74.0	-20.36	Peak	207.00	150	Horizontal	Pass
4**	4824.000	51.47	-3.38	54.0	-2.53	AV	207.00	150	Horizontal	Pass
5	8641.912	49.57	-1.84	74.0	-24.43	Peak	318.00	150	Horizontal	Pass
5**	8641.912	40.01	-1.84	54.0	-13.99	AV	318.00	150	Horizontal	Pass
6	17425.650	54.38	3.60	74.0	-19.62	Peak	361.00	150	Horizontal	Pass
6**	17425.650	46.50	3.60	54.0	-7.50	AV	361.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1754.300	41.55	-17.17	74.0	-32.45	Peak	91.00	150	Vertical	Pass
1**	1754.300	32.78	-17.17	54.0	-21.22	AV	91.00	150	Vertical	Pass
2	2411.100	99.06	-12.25	74.0	25.06	Peak	71.00	150	Vertical	N/A
2**	2411.100	96.62	-12.25	54.0	42.62	AV	71.00	150	Vertical	N/A
3	3221.600	51.65	-6.94	74.0	-22.35	Peak	226.00	150	Vertical	Pass
3**	3221.600	41.90	-6.94	54.0	-12.10	AV	226.00	150	Vertical	Pass
4	4824.200	54.28	-3.39	74.0	-19.72	Peak	162.00	150	Vertical	Pass
4**	4824.200	52.26	-3.39	54.0	-1.74	AV	162.00	150	Vertical	Pass
5	7333.212	49.03	-3.52	74.0	-24.97	Peak	173.00	150	Vertical	Pass
5**	7333.212	43.94	-3.52	54.0	-10.06	AV	173.00	150	Vertical	Pass
6	17194.387	54.39	2.21	74.0	-19.61	Peak	160.00	150	Vertical	Pass
6**	17194.387	45.67	2.21	54.0	-8.33	AV	160.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1116.800	39.14	-18.60	74.0	-34.86	Peak	322.00	150	Horizontal	Pass
1**	1116.800	30.57	-18.60	54.0	-23.43	AV	322.00	150	Horizontal	Pass
2	2437.900	102.90	-12.59	74.0	28.90	Peak	130.00	150	Horizontal	N/A
2**	2437.900	100.79	-12.59	54.0	46.79	AV	130.00	150	Horizontal	N/A
3	3666.800	47.87	-6.85	74.0	-26.13	Peak	58.00	150	Horizontal	Pass
3**	3666.800	44.49	-6.85	54.0	-9.51	AV	58.00	150	Horizontal	Pass
4	4874.200	53.14	-3.35	74.0	-20.86	Peak	214.00	150	Horizontal	Pass
4**	4874.200	51.57	-3.35	54.0	-2.43	AV	214.00	150	Horizontal	Pass
5	8244.588	47.84	-2.32	74.0	-26.16	Peak	123.00	150	Horizontal	Pass
5**	8244.588	38.97	-2.32	54.0	-15.03	AV	123.00	150	Horizontal	Pass
6	17379.187	54.39	2.63	74.0	-19.61	Peak	363.00	150	Horizontal	Pass
6**	17379.187	46.05	2.63	54.0	-7.95	AV	363.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1729.900	40.13	-17.21	74.0	-33.87	Peak	95.00	150	Vertical	Pass
1**	1729.900	30.01	-17.21	54.0	-23.99	AV	95.00	150	Vertical	Pass
2	2437.800	102.43	-12.59	74.0	28.43	Peak	191.00	150	Vertical	N/A
2**	2437.800	100.26	-12.59	54.0	46.26	AV	191.00	150	Vertical	N/A
3	3232.800	52.79	-7.49	74.0	-21.21	Peak	226.00	150	Vertical	Pass
3**	3232.800	41.89	-7.49	54.0	-12.11	AV	226.00	150	Vertical	Pass
4	4874.000	54.77	-3.34	74.0	-19.23	Peak	162.00	150	Vertical	Pass
4**	4874.000	52.99	-3.34	54.0	-1.01	AV	162.00	150	Vertical	Pass
5	7333.500	48.83	-3.51	74.0	-25.17	Peak	170.00	150	Vertical	Pass
5**	7333.500	44.68	-3.51	54.0	-9.32	AV	170.00	150	Vertical	Pass
6	17471.850	54.56	2.88	74.0	-19.44	Peak	119.00	150	Vertical	Pass
6**	17471.850	46.06	2.88	54.0	-7.94	AV	119.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1641.300	40.93	-17.45	74.0	-33.07	Peak	199.00	150	Horizontal	Pass
1**	1641.300	37.82	-17.45	54.0	-16.18	AV	199.00	150	Horizontal	Pass
2	2462.900	102.79	-12.79	74.0	28.79	Peak	145.00	150	Horizontal	N/A
2**	2462.900	100.87	-12.79	54.0	46.87	AV	145.00	150	Horizontal	N/A
3	3220.600	47.95	-6.99	74.0	-26.05	Peak	121.00	150	Horizontal	Pass
3**	3220.600	37.63	-6.99	54.0	-16.37	AV	121.00	150	Horizontal	Pass
4	4924.200	52.35	-2.60	74.0	-21.65	Peak	231.00	150	Horizontal	Pass
4**	4924.200	52.28	-2.60	54.0	-1.72	AV	231.00	150	Horizontal	Pass
5	7384.963	49.78	-3.88	74.0	-24.22	Peak	311.00	150	Horizontal	Pass
5**	7384.963	43.94	-3.88	54.0	-10.06	AV	311.00	150	Horizontal	Pass
6	9847.687	50.12	-0.68	74.0	-23.88	Peak	231.00	150	Horizontal	Pass
6**	9847.687	42.03	-0.68	54.0	-11.97	AV	231.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1998.500	43.86	-15.47	74.0	-30.14	Peak	55.00	150	Vertical	Pass
1**	1998.500	29.06	-15.47	54.0	-24.94	AV	55.00	150	Vertical	Pass
2	2462.900	102.42	-12.79	74.0	28.42	Peak	185.00	150	Vertical	N/A
2**	2462.900	100.39	-12.79	54.0	46.39	AV	185.00	150	Vertical	N/A
3	3217.800	52.80	-7.09	74.0	-21.20	Peak	222.00	150	Vertical	Pass
3**	3217.800	41.55	-7.09	54.0	-12.45	AV	222.00	150	Vertical	Pass
4	4924.000	53.10	-2.59	74.0	-20.90	Peak	153.00	150	Vertical	Pass
4**	4924.000	51.13	-2.59	54.0	-2.87	AV	153.00	150	Vertical	Pass
5	7333.500	49.84	-3.51	74.0	-24.16	Peak	158.00	150	Vertical	Pass
5**	7333.500	44.83	-3.51	54.0	-9.17	AV	158.00	150	Vertical	Pass
6	17432.474	54.49	3.36	74.0	-19.51	Peak	218.00	150	Vertical	Pass
6**	17432.474	46.02	3.36	54.0	-7.98	AV	218.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1829.600	44.04	-14.56	74.0	-29.96	Peak	206.00	150	Horizontal	Pass
1**	1829.600	30.70	-14.56	54.0	-23.30	AV	206.00	150	Horizontal	Pass
2	2417.500	98.97	-10.18	74.0	24.97	Peak	26.00	150	Horizontal	N/A
2**	2417.500	92.80	-10.18	54.0	38.80	AV	26.00	150	Horizontal	N/A
3	4820.600	54.80	-1.37	74.0	-19.20	Peak	296.00	150	Horizontal	Pass
3**	4820.600	52.16	-1.37	54.0	-1.84	AV	296.00	150	Horizontal	Pass
4	6914.000	52.48	4.78	74.0	-21.52	Peak	224.00	150	Horizontal	Pass
4**	6914.000	42.81	4.78	54.0	-11.19	AV	224.00	150	Horizontal	Pass
5	11540.487	49.67	19.62	74.0	-24.33	Peak	25.00	150	Horizontal	Pass
5**	11540.487	37.28	19.62	54.0	-16.72	AV	25.00	150	Horizontal	Pass
6	17244.000	56.00	24.20	74.0	-18.00	Peak	137.00	150	Horizontal	Pass
6**	17244.000	44.55	24.20	54.0	-9.45	AV	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 (Degree)	Height (cm)	Antenna	Verdict
1	1852.400	50.39	-13.90	74.0	-23.61	Peak	341.00	150	Vertical	Pass
1**	1852.400	35.84	-13.90	54.0	-18.16	AV	341.00	150	Vertical	Pass
2	2416.700	98.04	-10.22	74.0	24.04	Peak	232.00	150	Vertical	N/A
2**	2416.700	91.49	-10.22	54.0	37.49	AV	232.00	150	Vertical	N/A
3	4820.600	52.74	-1.37	74.0	-21.26	Peak	188.00	150	Vertical	Pass
3**	4820.600	50.86	-1.37	54.0	-3.14	AV	188.00	150	Vertical	Pass
4	6991.000	53.18	4.45	74.0	-20.82	Peak	69.00	150	Vertical	Pass
4**	6991.000	42.60	4.45	54.0	-11.40	AV	69.00	150	Vertical	Pass
5	10608.987	49.89	18.51	74.0	-24.11	Peak	323.00	150	Vertical	Pass
5**	10608.987	37.06	18.51	54.0	-16.94	AV	323.00	150	Vertical	Pass
6	17718.338	56.83	24.16	74.0	-17.17	Peak	251.00	150	Vertical	Pass
6**	17718.338	44.65	24.16	54.0	-9.35	AV	251.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1774.900	43.70	-14.69	74.0	-30.30	Peak	209.00	150	Horizontal	Pass
1**	1774.900	28.95	-14.69	54.0	-25.05	AV	209.00	150	Horizontal	Pass
2	2432.500	100.87	-10.48	74.0	26.87	Peak	201.00	150	Horizontal	N/A
2**	2432.500	94.87	-10.48	54.0	40.87	AV	201.00	150	Horizontal	N/A
3	4872.200	57.91	-1.50	74.0	-16.09	Peak	280.00	150	Horizontal	Pass
3**	4872.200	52.57	-1.50	54.0	-1.43	AV	280.00	150	Horizontal	Pass
4	6991.600	52.61	4.37	74.0	-21.39	Peak	139.00	150	Horizontal	Pass
4**	6991.600	42.36	4.37	54.0	-11.64	AV	139.00	150	Horizontal	Pass
5	12606.537	50.29	18.73	74.0	-23.71	Peak	21.00	150	Horizontal	Pass
5**	12606.537	37.67	18.73	54.0	-16.33	AV	21.00	150	Horizontal	Pass
6	17882.401	56.36	24.44	74.0	-17.64	Peak	212.00	150	Horizontal	Pass
6**	17882.401	45.16	24.44	54.0	-8.84	AV	212.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1677.600	49.65	-15.28	74.0	-24.35	Peak	331.00	150	Vertical	Pass
1**	1677.600	38.66	-15.28	54.0	-15.34	AV	331.00	150	Vertical	Pass
2	2440.100	101.30	-10.37	74.0	27.30	Peak	230.00	150	Vertical	N/A
2**	2440.100	95.20	-10.37	54.0	41.20	AV	230.00	150	Vertical	N/A
3	4876.000	54.71	-1.46	74.0	-19.29	Peak	182.00	150	Vertical	Pass
3**	4876.000	52.25	-1.46	54.0	-1.75	AV	182.00	150	Vertical	Pass
4	6983.000	52.34	4.66	74.0	-21.66	Peak	106.00	150	Vertical	Pass
4**	6983.000	44.29	4.66	54.0	-9.71	AV	106.00	150	Vertical	Pass
5	11880.887	50.24	18.06	74.0	-23.76	Peak	115.00	150	Vertical	Pass
5**	11880.887	37.00	18.06	54.0	-17.00	AV	115.00	150	Vertical	Pass
6	17262.901	56.45	24.28	74.0	-17.55	Peak	118.00	150	Vertical	Pass
6**	17262.901	44.75	24.28	54.0	-9.25	AV	118.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1803.600	44.58	-14.73	74.0	-29.42	Peak	216.00	150	Horizontal	Pass
1**	1803.600	28.18	-14.73	54.0	-25.82	AV	216.00	150	Horizontal	Pass
2	2459.400	100.94	-10.41	74.0	26.94	Peak	293.00	150	Horizontal	N/A
2**	2459.400	94.02	-10.41	54.0	40.02	AV	293.00	150	Horizontal	N/A
3	4925.800	55.30	-1.07	74.0	-18.70	Peak	277.00	150	Horizontal	Pass
3**	4925.800	41.89	-1.07	54.0	-12.11	AV	277.00	150	Horizontal	Pass
4	6156.000	53.18	3.00	74.0	-20.82	Peak	247.00	150	Horizontal	Pass
4**	6156.000	43.60	3.00	54.0	-10.40	AV	247.00	150	Horizontal	Pass
5	11744.612	49.99	19.03	74.0	-24.01	Peak	99.00	150	Horizontal	Pass
5**	11744.612	37.89	19.03	54.0	-16.11	AV	99.00	150	Horizontal	Pass
6	17286.001	56.14	24.53	74.0	-17.86	Peak	322.00	150	Horizontal	Pass
6**	17286.001	44.95	24.53	54.0	-9.05	AV	322.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1865.700	50.16	-13.60	74.0	-23.84	Peak	306.00	150	Vertical	Pass
1**	1865.700	33.05	-13.60	54.0	-20.95	AV	306.00	150	Vertical	Pass
2	2464.700	101.84	-10.61	74.0	27.84	Peak	226.00	150	Vertical	N/A
2**	2464.700	95.08	-10.61	54.0	41.08	AV	226.00	150	Vertical	N/A
3	4921.600	54.50	-1.13	74.0	-19.50	Peak	183.00	150	Vertical	Pass
3**	4921.600	44.88	-1.13	54.0	-9.12	AV	183.00	150	Vertical	Pass
4	6634.200	52.53	3.75	74.0	-21.47	Peak	240.00	150	Vertical	Pass
4**	6634.200	43.47	3.75	54.0	-10.53	AV	240.00	150	Vertical	Pass
5	11800.963	49.60	18.54	74.0	-24.40	Peak	311.00	150	Vertical	Pass
5**	11800.963	38.11	18.54	54.0	-15.89	AV	311.00	150	Vertical	Pass
6	16908.000	55.74	23.30	74.0	-18.26	Peak	197.00	150	Vertical	Pass
6**	16908.000	43.03	23.30	54.0	-10.97	AV	197.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1679.200	45.64	-15.22	74.0	-28.36	Peak	327.00	150	Horizontal	Pass
1**	1679.200	28.28	-15.22	54.0	-25.72	AV	327.00	150	Horizontal	Pass
2	2415.900	99.09	-10.28	74.0	25.09	Peak	183.00	150	Horizontal	N/A
2**	2415.900	92.66	-10.28	54.0	38.66	AV	183.00	150	Horizontal	N/A
3	4820.600	57.02	-1.37	74.0	-16.98	Peak	257.00	150	Horizontal	Pass
3**	4820.600	52.27	-1.37	54.0	-1.73	AV	257.00	150	Horizontal	Pass
4	6918.400	53.34	4.56	74.0	-20.66	Peak	181.00	150	Horizontal	Pass
4**	6918.400	42.67	4.56	54.0	-11.33	AV	181.00	150	Horizontal	Pass
5	10603.525	49.81	18.54	74.0	-24.19	Peak	61.00	150	Horizontal	Pass
5**	10603.525	36.78	18.54	54.0	-17.22	AV	61.00	150	Horizontal	Pass
6	17702.851	56.01	24.40	74.0	-17.99	Peak	324.00	150	Horizontal	Pass
6**	17702.851	45.99	24.40	54.0	-8.01	AV	324.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1907.000	51.22	-13.74	74.0	-22.78	Peak	323.00	150	Vertical	Pass
1**	1907.000	41.45	-13.74	54.0	-12.55	AV	323.00	150	Vertical	Pass
2	2416.000	98.80	-10.27	74.0	24.80	Peak	228.00	150	Vertical	N/A
2**	2416.000	92.06	-10.27	54.0	38.06	AV	228.00	150	Vertical	N/A
3	4826.600	55.59	-1.36	74.0	-18.41	Peak	188.00	150	Vertical	Pass
3**	4826.600	47.93	-1.36	54.0	-6.07	AV	188.00	150	Vertical	Pass
4	6994.400	51.95	4.05	74.0	-22.05	Peak	287.00	150	Vertical	Pass
4**	6994.400	44.25	4.05	54.0	-9.75	AV	287.00	150	Vertical	Pass
5	11772.787	49.74	18.76	74.0	-24.26	Peak	297.00	150	Vertical	Pass
5**	11772.787	36.99	18.76	54.0	-17.01	AV	297.00	150	Vertical	Pass
6	17258.963	56.18	24.24	74.0	-17.82	Peak	34.00	150	Vertical	Pass
6**	17258.963	44.82	24.24	54.0	-9.18	AV	34.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1801.400	46.47	-14.75	74.0	-27.53	Peak	203.00	150	Horizontal	Pass
1**	1801.400	27.23	-14.75	54.0	-26.77	AV	203.00	150	Horizontal	Pass
2	2438.200	100.92	-10.41	74.0	26.92	Peak	180.00	150	Horizontal	N/A
2**	2438.200	94.33	-10.41	54.0	40.33	AV	180.00	150	Horizontal	N/A
3	4865.800	58.87	-1.59	74.0	-15.13	Peak	284.00	150	Horizontal	Pass
3**	4865.800	52.43	-1.59	54.0	-1.57	AV	284.00	150	Horizontal	Pass
4	6981.800	52.88	4.75	74.0	-21.12	Peak	20.00	150	Horizontal	Pass
4**	6981.800	42.70	4.75	54.0	-11.30	AV	20.00	150	Horizontal	Pass
5	12201.162	49.83	20.43	74.0	-24.17	Peak	192.00	150	Horizontal	Pass
5**	12201.162	37.70	20.43	54.0	-16.30	AV	192.00	150	Horizontal	Pass
6	17239.538	56.19	24.20	74.0	-17.81	Peak	360.00	150	Horizontal	Pass
6**	17239.538	44.77	24.20	54.0	-9.23	AV	360.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1893.000	52.17	-14.05	74.0	-21.83	Peak	302.00	150	Vertical	Pass
1**	1893.000	40.18	-14.05	54.0	-13.82	AV	302.00	150	Vertical	Pass
2	2438.900	101.78	-10.38	74.0	27.78	Peak	220.00	150	Vertical	N/A
2**	2438.900	94.46	-10.38	54.0	40.46	AV	220.00	150	Vertical	N/A
3	4870.200	57.72	-1.47	74.0	-16.28	Peak	204.00	150	Vertical	Pass
3**	4870.200	50.90	-1.47	54.0	-3.10	AV	204.00	150	Vertical	Pass
4	6992.600	52.79	4.20	74.0	-21.21	Peak	327.00	150	Vertical	Pass
4**	6992.600	42.15	4.20	54.0	-11.85	AV	327.00	150	Vertical	Pass
5	10606.687	49.79	18.53	74.0	-24.21	Peak	149.00	150	Vertical	Pass
5**	10606.687	38.21	18.53	54.0	-15.79	AV	149.00	150	Vertical	Pass
6	17477.626	55.87	23.94	74.0	-18.13	Peak	358.00	150	Vertical	Pass
6**	17477.626	44.34	23.94	54.0	-9.66	AV	358.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1809.500	47.16	-14.60	74.0	-26.84	Peak	194.00	150	Horizontal	Pass
1**	1809.500	26.89	-14.60	54.0	-27.11	AV	194.00	150	Horizontal	Pass
2	2465.900	100.91	-10.62	74.0	26.91	Peak	273.00	150	Horizontal	N/A
2**	2465.900	93.67	-10.62	54.0	39.67	AV	273.00	150	Horizontal	N/A
3	4915.800	55.83	-1.13	74.0	-18.17	Peak	298.00	150	Horizontal	Pass
3**	4915.800	45.70	-1.13	54.0	-8.30	AV	298.00	150	Horizontal	Pass
4	6951.000	52.09	4.33	74.0	-21.91	Peak	12.00	150	Horizontal	Pass
4**	6951.000	41.86	4.33	54.0	-12.14	AV	12.00	150	Horizontal	Pass
5	12142.800	50.24	19.87	74.0	-23.76	Peak	324.00	150	Horizontal	Pass
5**	12142.800	38.24	19.87	54.0	-15.76	AV	324.00	150	Horizontal	Pass
6	17328.787	57.47	24.16	74.0	-16.53	Peak	52.00	150	Horizontal	Pass
6**	17328.787	45.28	24.16	54.0	-8.72	AV	52.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1909.200	49.48	-13.74	74.0	-24.52	Peak	353.00	150	Vertical	Pass
1**	1909.200	29.98	-13.74	54.0	-24.02	AV	353.00	150	Vertical	Pass
2	2461.200	102.41	-10.44	74.0	28.41	Peak	216.00	150	Vertical	N/A
2**	2461.200	95.45	-10.44	54.0	41.45	AV	216.00	150	Vertical	N/A
3	4917.400	54.73	-1.12	74.0	-19.27	Peak	208.00	150	Vertical	Pass
3**	4917.400	41.72	-1.12	54.0	-12.28	AV	208.00	150	Vertical	Pass
4	6912.800	52.30	4.75	74.0	-21.70	Peak	46.00	150	Vertical	Pass
4**	6912.800	44.11	4.75	54.0	-9.89	AV	46.00	150	Vertical	Pass
5	11536.463	49.99	19.59	74.0	-24.01	Peak	217.00	150	Vertical	Pass
5**	11536.463	38.32	19.59	54.0	-15.68	AV	217.00	150	Vertical	Pass
6	17256.600	56.61	24.23	74.0	-17.39	Peak	38.00	150	Vertical	Pass
6**	17256.600	45.73	24.23	54.0	-8.27	AV	38.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1792.900	44.86	-14.70	74.0	-29.14	Peak	214.00	150	Horizontal	Pass
1**	1792.900	28.66	-14.70	54.0	-25.34	AV	214.00	150	Horizontal	Pass
2	2428.900	98.15	-10.38	74.0	24.15	Peak	186.00	150	Horizontal	N/A
2**	2428.900	89.65	-10.38	54.0	35.65	AV	186.00	150	Horizontal	N/A
3	4843.400	54.90	-1.28	74.0	-19.10	Peak	280.00	150	Horizontal	Pass
3**	4843.400	50.73	-1.28	54.0	-1.67	AV	280.00	150	Horizontal	Pass
4	6917.800	52.47	4.62	74.0	-21.53	Peak	57.00	150	Horizontal	Pass
4**	6917.800	43.43	4.62	54.0	-10.57	AV	57.00	150	Horizontal	Pass
5	12436.625	49.44	18.79	74.0	-24.56	Peak	54.00	150	Horizontal	Pass
5**	12436.625	38.33	18.79	54.0	-15.67	AV	54.00	150	Horizontal	Pass
6	17911.276	57.69	24.51	74.0	-16.31	Peak	215.00	150	Horizontal	Pass
6**	17911.276	44.68	24.51	54.0	-9.32	AV	215.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1912.300	51.67	-13.86	74.0	-22.33	Peak	320.00	150	Vertical	Pass
1**	1912.300	34.62	-13.86	54.0	-19.38	AV	320.00	150	Vertical	Pass
2	2417.000	97.58	-10.20	74.0	23.58	Peak	230.00	150	Vertical	N/A
2**	2417.000	91.38	-10.20	54.0	37.38	AV	230.00	150	Vertical	N/A
3	4835.000	54.37	-1.30	74.0	-19.63	Peak	270.00	150	Vertical	Pass
3**	4835.000	45.66	-1.30	54.0	-8.34	AV	270.00	150	Vertical	Pass
4	6923.800	51.98	4.25	74.0	-22.02	Peak	96.00	150	Vertical	Pass
4**	6923.800	42.75	4.25	54.0	-11.25	AV	96.00	150	Vertical	Pass
5	11594.537	49.72	20.06	74.0	-24.28	Peak	199.00	150	Vertical	Pass
5**	11594.537	38.46	20.06	54.0	-15.54	AV	199.00	150	Vertical	Pass
6	17277.338	55.93	24.46	74.0	-18.07	Peak	90.00	150	Vertical	Pass
6**	17277.338	45.13	24.46	54.0	-8.87	AV	90.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1808.500	45.17	-14.60	74.0	-28.83	Peak	213.00	150	Horizontal	Pass
1**	1808.500	26.52	-14.60	54.0	-27.48	AV	213.00	150	Horizontal	Pass
2	2427.700	99.23	-10.28	74.0	25.23	Peak	348.00	150	Horizontal	N/A
2**	2427.700	92.38	-10.28	54.0	38.38	AV	348.00	150	Horizontal	N/A
3	4869.800	55.32	-1.46	74.0	-18.68	Peak	268.00	150	Horizontal	Pass
3**	4869.800	51.30	-1.46	54.0	-2.70	AV	268.00	150	Horizontal	Pass
4	6954.800	52.54	4.57	74.0	-21.46	Peak	154.00	150	Horizontal	Pass
4**	6954.800	42.79	4.57	54.0	-11.21	AV	154.00	150	Horizontal	Pass
5	12347.787	49.47	19.73	74.0	-24.53	Peak	278.00	150	Horizontal	Pass
5**	12347.787	38.63	19.73	54.0	-15.37	AV	278.00	150	Horizontal	Pass
6	17276.551	56.33	24.45	74.0	-17.67	Peak	16.00	150	Horizontal	Pass
6**	17276.551	44.90	24.45	54.0	-9.10	AV	16.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1891.400	51.57	-13.98	74.0	-22.43	Peak	306.00	150	Vertical	Pass
1**	1891.400	33.66	-13.98	54.0	-20.34	AV	306.00	150	Vertical	Pass
2	2443.800	98.94	-10.23	74.0	24.94	Peak	234.00	150	Vertical	N/A
2**	2443.800	93.16	-10.23	54.0	39.16	AV	234.00	150	Vertical	N/A
3	4852.600	52.88	-1.41	74.0	-21.12	Peak	180.00	150	Vertical	Pass
3**	4852.600	48.98	-1.41	54.0	-5.02	AV	180.00	150	Vertical	Pass
4	9070.576	48.92	18.17	74.0	-25.08	Peak	58.00	150	Vertical	Pass
4**	9070.576	36.70	18.17	54.0	-17.30	AV	58.00	150	Vertical	Pass
5	11930.912	49.64	18.15	74.0	-24.36	Peak	10.00	150	Vertical	Pass
5**	11930.912	38.65	18.15	54.0	-15.35	AV	10.00	150	Vertical	Pass
6	17859.824	56.20	24.24	74.0	-17.80	Peak	267.00	150	Vertical	Pass
6**	17859.824	46.58	24.24	54.0	-7.42	AV	267.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1682.000	44.20	-15.24	74.0	-29.80	Peak	137.00	150	Horizontal	Pass
1**	1682.000	26.60	-15.24	54.0	-27.40	AV	137.00	150	Horizontal	Pass
2	2440.800	98.28	-10.41	74.0	24.28	Peak	353.00	150	Horizontal	N/A
2**	2440.800	91.16	-10.41	54.0	37.16	AV	353.00	150	Horizontal	N/A
3	4883.800	52.93	-1.12	74.0	-21.07	Peak	259.00	150	Horizontal	Pass
3**	4883.800	47.22	-1.12	54.0	-6.78	AV	259.00	150	Horizontal	Pass
4	6914.800	51.97	4.81	74.0	-22.03	Peak	360.00	150	Horizontal	Pass
4**	6914.800	42.56	4.81	54.0	-11.44	AV	360.00	150	Horizontal	Pass
5	11727.938	49.35	19.31	74.0	-24.65	Peak	25.00	150	Horizontal	Pass
5**	11727.938	36.01	19.31	54.0	-17.99	AV	25.00	150	Horizontal	Pass
6	17275.501	56.14	24.44	74.0	-17.86	Peak	166.00	150	Horizontal	Pass
6**	17275.501	45.62	24.44	54.0	-8.38	AV	166.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1909.100	52.65	-13.73	74.0	-21.35	Peak	358.00	150	Vertical	Pass
1**	1909.100	30.17	-13.73	54.0	-23.83	AV	358.00	150	Vertical	Pass
2	2444.500	98.81	-10.23	74.0	24.81	Peak	234.00	150	Vertical	N/A
2**	2444.500	92.76	-10.23	54.0	38.76	AV	234.00	150	Vertical	N/A
3	4886.200	51.82	-0.97	74.0	-22.18	Peak	189.00	150	Vertical	Pass
3**	4886.200	43.01	-0.97	54.0	-10.99	AV	189.00	150	Vertical	Pass
4	6971.800	52.42	5.08	74.0	-21.58	Peak	40.00	150	Vertical	Pass
4**	6971.800	42.38	5.08	54.0	-11.62	AV	40.00	150	Vertical	Pass
5	11628.463	49.92	20.29	74.0	-24.08	Peak	25.00	150	Vertical	Pass
5**	11628.463	36.79	20.29	54.0	-17.21	AV	25.00	150	Vertical	Pass
6	17395.724	56.17	23.66	74.0	-17.83	Peak	361.00	150	Vertical	Pass
6**	17395.724	44.69	23.66	54.0	-9.31	AV	361.00	150	Vertical	Pass

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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 (Degree)	Height (cm)	Antenna	Verdict
1	1827.700	43.53	-14.49	74.0	-30.47	Peak	183.00	150	Horizontal	Pass
1**	1827.700	26.48	-14.49	54.0	-27.52	AV	183.00	150	Horizontal	Pass
2	2411.300	104.51	-10.39	74.0	30.51	Peak	25.00	150	Horizontal	N/A
2**	2411.300	97.78	-10.39	54.0	43.78	AV	25.00	150	Horizontal	N/A
3	4828.800	57.56	-1.45	74.0	-16.44	Peak	262.00	150	Horizontal	Pass
3**	4828.800	52.86	-1.45	54.0	-1.14	AV	262.00	150	Horizontal	Pass
4	6920.200	51.49	4.51	74.0	-22.51	Peak	3.00	150	Horizontal	Pass
4**	6920.200	41.65	4.51	54.0	-12.35	AV	3.00	150	Horizontal	Pass
5	12242.275	48.88	20.43	74.0	-25.12	Peak	12.00	150	Horizontal	Pass
5**	12242.275	36.80	20.43	54.0	-17.20	AV	12.00	150	Horizontal	Pass
6	17294.662	55.78	24.57	74.0	-18.22	Peak	131.00	150	Horizontal	Pass
6**	17294.662	44.84	24.57	54.0	-9.16	AV	131.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1848.700	49.55	-13.95	74.0	-24.45	Peak	70.00	150	Vertical	Pass
1**	1848.700	28.87	-13.95	54.0	-25.13	AV	70.00	150	Vertical	Pass
2	2416.000	103.97	-10.27	74.0	29.97	Peak	236.00	150	Vertical	N/A
2**	2416.000	97.25	-10.27	54.0	43.25	AV	236.00	150	Vertical	N/A
3	4828.200	59.74	-1.46	74.0	-14.26	Peak	193.00	150	Vertical	Pass
3**	4828.200	52.72	-1.46	54.0	-1.28	AV	193.00	150	Vertical	Pass
4	6880.600	51.29	3.58	74.0	-22.71	Peak	326.00	150	Vertical	Pass
4**	6880.600	39.59	3.58	54.0	-14.41	AV	326.00	150	Vertical	Pass
5	12704.287	49.27	18.96	74.0	-24.73	Peak	362.00	150	Vertical	Pass
5**	12704.287	36.27	18.96	54.0	-17.73	AV	362.00	150	Vertical	Pass
6	17286.787	55.92	24.53	74.0	-18.08	Peak	338.00	150	Vertical	Pass
6**	17286.787	44.19	24.53	54.0	-9.81	AV	338.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1993.000	45.64	-13.61	74.0	-28.36	Peak	262.00	150	Horizontal	Pass
1**	1993.000	29.59	-13.61	54.0	-24.41	AV	262.00	150	Horizontal	Pass
2	2438.600	106.02	-10.39	74.0	32.02	Peak	38.00	150	Horizontal	N/A
2**	2438.600	97.39	-10.39	54.0	43.39	AV	38.00	150	Horizontal	N/A
3	4869.000	57.04	-1.44	74.0	-16.96	Peak	280.00	150	Horizontal	Pass
3**	4869.000	51.84	-1.44	54.0	-2.16	AV	280.00	150	Horizontal	Pass
4	6414.600	51.86	4.00	74.0	-22.14	Peak	154.00	150	Horizontal	Pass
4**	6414.600	42.15	4.00	54.0	-11.85	AV	154.00	150	Horizontal	Pass
5	12034.700	49.34	18.85	74.0	-24.66	Peak	121.00	150	Horizontal	Pass
5**	12034.700	36.12	18.85	54.0	-17.88	AV	121.00	150	Horizontal	Pass
6	17877.150	56.12	24.40	74.0	-17.88	Peak	-2.00	150	Horizontal	Pass
6**	17877.150	43.83	24.40	54.0	-10.17	AV	-2.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1828.000	54.37	-14.50	74.0	-19.63	Peak	313.00	150	Vertical	Pass
1**	1828.000	35.98	-14.50	54.0	-18.02	AV	313.00	150	Vertical	Pass
2	2438.700	106.32	-10.39	74.0	32.32	Peak	243.00	150	Vertical	N/A
2**	2438.700	98.54	-10.39	54.0	44.54	AV	243.00	150	Vertical	N/A
3	4878.800	56.68	-1.30	74.0	-17.32	Peak	25.00	150	Vertical	Pass
3**	4878.800	52.77	-1.30	54.0	-1.23	AV	25.00	150	Vertical	Pass
4	6913.000	51.78	4.75	74.0	-22.22	Peak	322.00	150	Vertical	Pass
4**	6913.000	41.39	4.75	54.0	-12.61	AV	322.00	150	Vertical	Pass
5	12354.688	48.73	19.68	74.0	-25.27	Peak	184.00	150	Vertical	Pass
5**	12354.688	37.57	19.68	54.0	-16.43	AV	184.00	150	Vertical	Pass
6	17675.813	54.92	24.40	74.0	-19.08	Peak	89.00	150	Vertical	Pass
6**	17675.813	44.74	24.40	54.0	-9.26	AV	89.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1764.000	45.24	-14.68	74.0	-28.76	Peak	130.00	150	Horizontal	Pass
1**	1764.000	27.74	-14.68	54.0	-26.26	AV	130.00	150	Horizontal	Pass
2	2460.600	104.72	-10.42	74.0	30.72	Peak	31.00	150	Horizontal	N/A
2**	2460.600	97.79	-10.42	54.0	43.79	AV	31.00	150	Horizontal	N/A
3	4927.200	54.05	-1.18	74.0	-19.95	Peak	316.00	150	Horizontal	Pass
3**	4927.200	43.15	-1.18	54.0	-10.85	AV	316.00	150	Horizontal	Pass
4	6903.800	51.78	4.53	74.0	-22.22	Peak	118.00	150	Horizontal	Pass
4**	6903.800	41.94	4.53	54.0	-12.06	AV	118.00	150	Horizontal	Pass
5	12391.487	49.08	19.28	74.0	-24.92	Peak	273.00	150	Horizontal	Pass
5**	12391.487	37.77	19.28	54.0	-16.23	AV	273.00	150	Horizontal	Pass
6	17643.526	55.55	24.18	74.0	-18.45	Peak	108.00	150	Horizontal	Pass
6**	17643.526	44.62	24.18	54.0	-9.38	AV	108.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1679.200	50.44	-15.22	74.0	-23.56	Peak	340.00	150	Vertical	Pass
1**	1679.200	34.11	-15.22	54.0	-19.89	AV	340.00	150	Vertical	Pass
2	2463.400	105.59	-10.58	74.0	31.59	Peak	229.00	150	Vertical	N/A
2**	2463.400	98.61	-10.58	54.0	44.61	AV	229.00	150	Vertical	N/A
3	4926.600	54.93	-1.13	74.0	-19.07	Peak	88.00	150	Vertical	Pass
3**	4926.600	52.13	-1.13	54.0	-1.87	AV	88.00	150	Vertical	Pass
4	6977.800	51.59	5.05	74.0	-22.41	Peak	122.00	150	Vertical	Pass
4**	6977.800	41.30	5.05	54.0	-12.70	AV	122.00	150	Vertical	Pass
5	12348.363	49.76	19.72	74.0	-24.24	Peak	266.00	150	Vertical	Pass
5**	12348.363	37.66	19.72	54.0	-16.34	AV	266.00	150	Vertical	Pass
6	17951.963	55.50	24.28	74.0	-18.50	Peak	281.00	150	Vertical	Pass
6**	17951.963	44.03	24.28	54.0	-9.97	AV	281.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1848.500	45.37	-13.97	74.0	-28.63	Peak	200.00	150	Horizontal	Pass
1**	1848.500	27.51	-13.97	54.0	-26.49	AV	200.00	150	Horizontal	Pass
2	2419.300	103.10	-10.14	74.0	29.10	Peak	177.00	150	Horizontal	N/A
2**	2419.300	96.21	-10.14	54.0	42.21	AV	177.00	150	Horizontal	N/A
3	4836.600	56.94	-1.26	74.0	-17.06	Peak	290.00	150	Horizontal	Pass
3**	4836.600	52.54	-1.26	54.0	-1.46	AV	290.00	150	Horizontal	Pass
4	6421.800	51.20	3.87	74.0	-22.80	Peak	0.00	150	Horizontal	Pass
4**	6421.800	42.27	3.87	54.0	-11.73	AV	0.00	150	Horizontal	Pass
5	11156.388	49.39	18.59	74.0	-24.61	Peak	200.00	150	Horizontal	Pass
5**	11156.388	36.47	18.59	54.0	-17.53	AV	200.00	150	Horizontal	Pass
6	17296.501	55.11	24.58	74.0	-18.89	Peak	315.00	150	Horizontal	Pass
6**	17296.501	44.26	24.58	54.0	-9.74	AV	315.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1845.500	49.78	-14.08	74.0	-24.22	Peak	341.00	150	Vertical	Pass
1**	1845.500	40.54	-14.08	54.0	-13.46	AV	341.00	150	Vertical	Pass
2	2428.900	102.60	-10.38	74.0	28.60	Peak	229.00	150	Vertical	N/A
2**	2428.900	94.39	-10.38	54.0	40.39	AV	229.00	150	Vertical	N/A
3	4845.600	52.76	-1.26	74.0	-21.24	Peak	225.00	150	Vertical	Pass
3**	4845.600	52.49	-1.26	54.0	-1.51	AV	225.00	150	Vertical	Pass
4	6634.000	51.18	3.74	74.0	-22.82	Peak	250.00	150	Vertical	Pass
4**	6634.000	41.72	3.74	54.0	-12.28	AV	250.00	150	Vertical	Pass
5	12338.013	49.03	19.80	74.0	-24.97	Peak	330.00	150	Vertical	Pass
5**	12338.013	37.07	19.80	54.0	-16.93	AV	330.00	150	Vertical	Pass
6	17858.251	55.52	24.22	74.0	-18.48	Peak	260.00	150	Vertical	Pass
6**	17858.251	43.96	24.22	54.0	-10.04	AV	260.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1826.800	46.86	-14.54	74.0	-27.14	Peak	212.00	150	Horizontal	Pass
1**	1826.800	26.68	-14.54	54.0	-27.32	AV	212.00	150	Horizontal	Pass
2	2444.600	103.83	-10.23	74.0	29.83	Peak	351.00	150	Horizontal	N/A
2**	2444.600	97.11	-10.23	54.0	43.11	AV	351.00	150	Horizontal	N/A
3	4868.000	54.56	-1.47	74.0	-19.44	Peak	272.00	150	Horizontal	Pass
3**	4868.000	51.40	-1.47	54.0	-2.60	AV	272.00	150	Horizontal	Pass
4	9028.888	49.48	18.14	74.0	-24.52	Peak	138.00	150	Horizontal	Pass
4**	9028.888	36.34	18.14	54.0	-17.66	AV	138.00	150	Horizontal	Pass
5	12103.987	48.82	19.45	74.0	-25.18	Peak	138.00	150	Horizontal	Pass
5**	12103.987	36.43	19.45	54.0	-17.57	AV	138.00	150	Horizontal	Pass
6	17898.676	55.66	24.55	74.0	-18.34	Peak	-2.00	150	Horizontal	Pass
6**	17898.676	43.99	24.55	54.0	-10.01	AV	-2.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1849.700	51.21	-13.94	74.0	-22.79	Peak	335.00	150	Vertical	Pass
1**	1849.700	27.12	-13.94	54.0	-26.88	AV	335.00	150	Vertical	Pass
2	2438.400	101.91	-10.40	74.0	27.91	Peak	164.00	150	Vertical	N/A
2**	2438.400	95.48	-10.40	54.0	41.48	AV	164.00	150	Vertical	N/A
3	4862.800	57.37	-1.51	74.0	-16.63	Peak	93.00	150	Vertical	Pass
3**	4862.800	52.95	-1.51	54.0	-1.05	AV	93.00	150	Vertical	Pass
4	6694.000	51.43	3.05	74.0	-22.57	Peak	291.00	150	Vertical	Pass
4**	6694.000	41.24	3.05	54.0	-12.76	AV	291.00	150	Vertical	Pass
5	9335.650	47.96	17.03	74.0	-26.04	Peak	78.00	150	Vertical	Pass
5**	9335.650	35.74	17.03	54.0	-18.26	AV	78.00	150	Vertical	Pass
6	17151.600	55.02	23.34	74.0	-18.98	Peak	195.00	150	Vertical	Pass
6**	17151.600	43.69	23.34	54.0	-10.31	AV	195.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1810.400	51.57	-14.61	74.0	-22.43	Peak	199.00	150	Horizontal	Pass
1**	1810.400	26.46	-14.61	54.0	-27.54	AV	199.00	150	Horizontal	Pass
2	2453.400	103.55	-10.25	74.0	29.55	Peak	285.00	150	Horizontal	N/A
2**	2453.400	97.74	-10.25	54.0	43.74	AV	285.00	150	Horizontal	N/A
3	4881.400	49.65	-1.19	74.0	-24.35	Peak	10.00	150	Horizontal	Pass
3**	4881.400	48.92	-1.19	54.0	-5.08	AV	10.00	150	Horizontal	Pass
4	7535.325	48.27	17.61	74.0	-25.73	Peak	307.00	150	Horizontal	Pass
4**	7535.325	35.88	17.61	54.0	-18.12	AV	307.00	150	Horizontal	Pass
5	10666.488	48.73	18.17	74.0	-25.27	Peak	261.00	150	Horizontal	Pass
5**	10666.488	35.71	18.17	54.0	-18.29	AV	261.00	150	Horizontal	Pass
6	17299.913	55.58	24.59	74.0	-18.42	Peak	81.00	150	Horizontal	Pass
6**	17299.913	44.23	24.59	54.0	-9.77	AV	81.00	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 (Degree)	Height (cm)	Antenna	Verdict
1	1862.800	49.43	-13.67	74.0	-24.57	Peak	307.00	150	Vertical	Pass
1**	1862.800	30.02	-13.67	54.0	-23.98	AV	307.00	150	Vertical	Pass
2	2454.700	102.41	-10.29	74.0	28.41	Peak	134.00	150	Vertical	N/A
2**	2454.700	95.48	-10.29	54.0	41.48	AV	134.00	150	Vertical	N/A
3	4900.200	56.91	-0.93	74.0	-17.09	Peak	102.00	150	Vertical	Pass
3**	4900.200	50.76	-0.93	54.0	-3.24	AV	102.00	150	Vertical	Pass
4	6916.800	51.66	4.70	74.0	-22.34	Peak	122.00	150	Vertical	Pass
4**	6916.800	41.89	4.70	54.0	-12.11	AV	122.00	150	Vertical	Pass
5	9727.799	48.55	18.04	74.0	-25.45	Peak	284.00	150	Vertical	Pass
5**	9727.799	35.54	18.04	54.0	-18.46	AV	284.00	150	Vertical	Pass
6	17906.551	56.43	24.53	74.0	-17.57	Peak	37.00	150	Vertical	Pass
6**	17906.551	44.83	24.53	54.0	-9.17	AV	37.00	150	Vertical	Pass

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

Test Data

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

Note ²: 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 ³: 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.

Test Data

Main Antenna

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Factor (dB)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11b	Low	2390	55.138	32.61	74	18.862	PEAK	Pass
		2390	45.379	32.61	54	8.621	AVERAGE	Pass
	HIGH	2483.5	54.952	32.54	74	19.048	PEAK	Pass
		2483.5	45.602	32.54	54	8.398	AVERAGE	Pass
802.11g	Low	2390	65.608	31.47	74	8.392	PEAK	Pass
		2390	52.479	31.47	54	1.521	AVERAGE	Pass
	HIGH	2483.5	69.220	31.40	74	4.780	PEAK	Pass
		2483.5	51.623	31.40	54	2.377	AVERAGE	Pass
802.11n20	Low	2390	66.262	31.47	74	7.738	PEAK	Pass
		2390	52.545	31.47	54	1.455	AVERAGE	Pass
	HIGH	2483.5	71.062	31.40	74	2.938	PEAK	Pass
		2483.5	52.197	31.40	54	1.803	AVERAGE	Pass
802.11n40	Low	2390	63.845	31.47	74	10.155	PEAK	Pass
		2390	52.541	31.47	54	1.459	AVERAGE	Pass
	HIGH	2483.5	69.989	31.40	74	4.011	PEAK	Pass
		2483.5	52.976	31.40	54	1.024	AVERAGE	Pass

Aux. Antenna

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Factor (dB)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11b	Low	2390	56.462	32.61	74	17.538	PEAK	Pass
		2390	47.871	32.61	54	6.129	AVERAGE	Pass
	HIGH	2483.5	54.640	32.54	74	19.360	PEAK	Pass
		2483.5	45.399	32.54	54	8.601	AVERAGE	Pass
802.11g	Low	2390	66.118	31.47	74	7.882	PEAK	Pass
		2390	52.808	31.47	54	1.192	AVERAGE	Pass
	HIGH	2483.5	69.724	31.40	74	4.276	PEAK	Pass
		2483.5	51.198	31.40	54	2.802	AVERAGE	Pass
802.11n20	Low	2390	68.542	31.47	74	5.458	PEAK	Pass
		2390	52.521	31.47	54	1.479	AVERAGE	Pass
	HIGH	2483.5	68.060	31.40	74	5.940	PEAK	Pass
		2483.5	52.944	31.40	54	1.056	AVERAGE	Pass
802.11n40	Low	2390	66.770	31.47	74	7.230	PEAK	Pass
		2390	52.143	31.47	54	1.857	AVERAGE	Pass
	HIGH	2483.5	65.821	31.40	74	8.179	PEAK	Pass
		2483.5	52.485	31.40	54	1.515	AVERAGE	Pass

MIMO

Test Mode	Test Channel	Frequency (MHz)	Level (dBuV/m)	Factor (dB)	Limit Line (dBuV/m)	Margin (dB)	Remark	Verdict
802.11n20	Low	2390	66.925	31.47	74	7.075	PEAK	Pass
		2390	52.308	31.47	54	1.692	AVERAGE	Pass
	HIGH	2483.5	70.529	31.40	74	3.471	PEAK	Pass
		2483.5	52.973	31.40	54	1.027	AVERAGE	Pass
802.11n40	Low	2390	67.619	31.47	74	6.381	PEAK	Pass
		2390	50.474	31.47	54	3.526	AVERAGE	Pass
	HIGH	2483.5	72.469	31.40	74	1.531	PEAK	Pass
		2483.5	52.397	31.40	54	1.603	AVERAGE	Pass

Test plots

Main Antenna

802.11b Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



802.11g Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



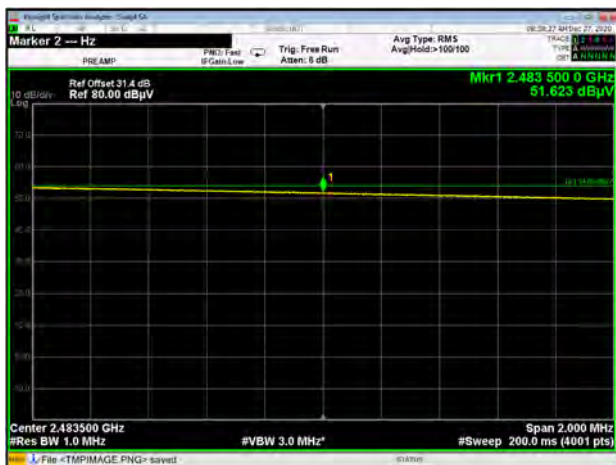
LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



802.11n-20 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV

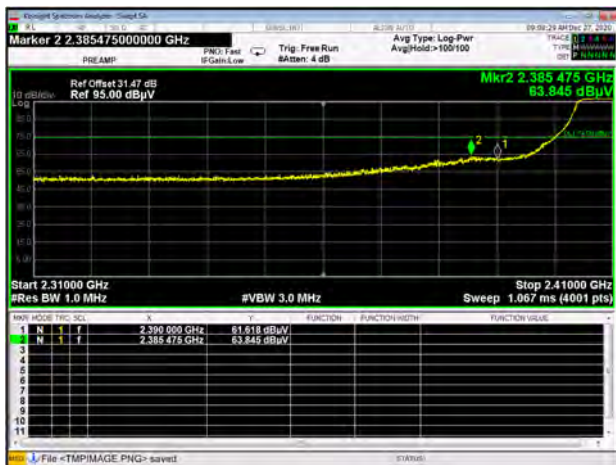


HIGH CHANNEL, AV



802.11n-40 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



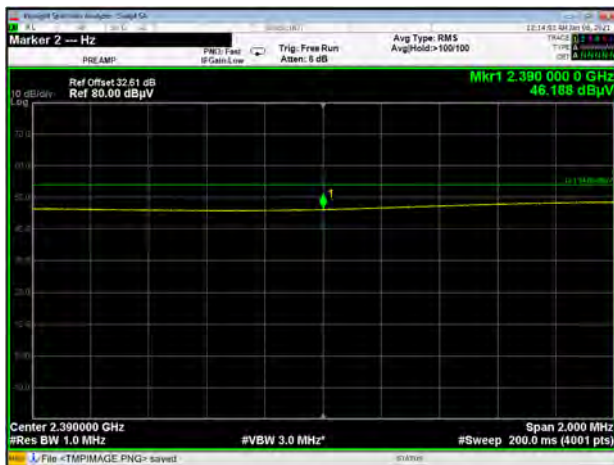
Aux. Antenna

802.11b Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



802.11g Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



802.11n-20 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



802.11n-40 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



MIMO

802.11n-20 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



802.11n-40 MHz Mode:

LOW CHANNEL, PEAK



LOW CHANNEL, AV



LOW CHANNEL, AV



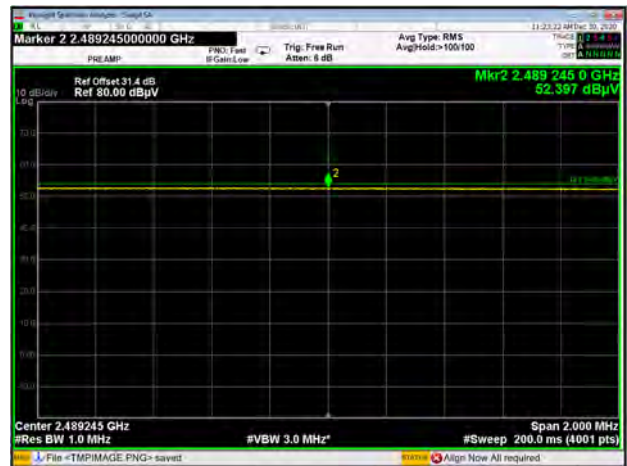
HIGH CHANNEL, PEAK



HIGH CHANNEL, AV



HIGH CHANNEL, AV



A.8 Power Spectral Density (PSD)

Test Data

Main Antenna

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-19.54	8
Middle	-17.12	8
High	-15.64	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-19.56	8
Middle	-16.89	8
High	-19.00	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-20.25	8
Middle	-17.42	8
High	-19.78	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-24.15	8
Middle	-20.19	8
High	-23.51	8

Aux. Antenna

802.11b Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-16.76	8
Middle	-13.52	8
High	-13.05	8

802.11g Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-21.29	8
Middle	-17.15	8
High	-17.13	8

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-20.86	8
Middle	-17.39	8
High	-17.41	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-22.15	8
Middle	-19.79	8
High	-21.43	8

MIMO-Main Antenna

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-21.41	8
Middle	-18.65	8
High	-20.86	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-23.60	8
Middle	-20.21	8
High	-23.79	8

MIMO-Aux. Antenna

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-21.57	8
Middle	-18.54	8
High	-20.50	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-23.74	8
Middle	-20.26	8
High	-23.82	8

MIMO

802.11n-20 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-18.48	8
Middle	-15.58	8
High	-17.67	8

802.11n-40 MHz Mode:

Channel	Spectral power density (dBm/3kHz)	Limit (dBm/3kHz)
Low	-20.66	8
Middle	-17.22	8
High	-20.79	8

Test plots

Main Antenna

802.11b LOW CHANNEL



Date: 6 JAN 2021 21:48:08

802.11b MIDDLE CHANNEL



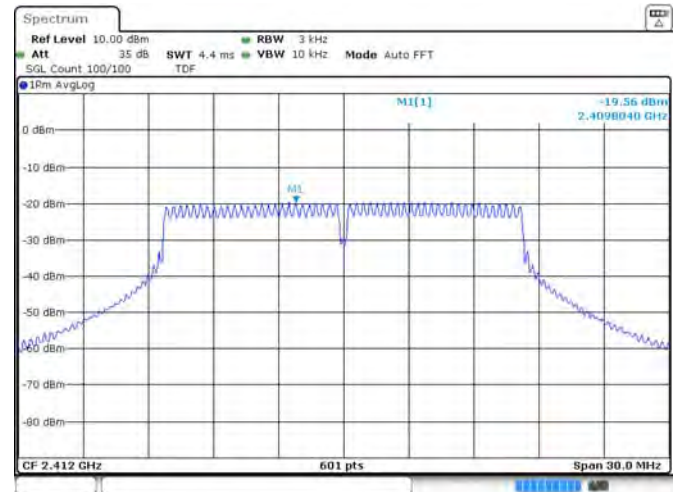
Date: 6 JAN 2021 21:54:14

802.11b HIGH CHANNEL



Date: 6 JAN 2021 22:02:20

802.11g LOW CHANNEL



Date: 6 JAN 2021 22:06:12

802.11g MIDDLE CHANNEL



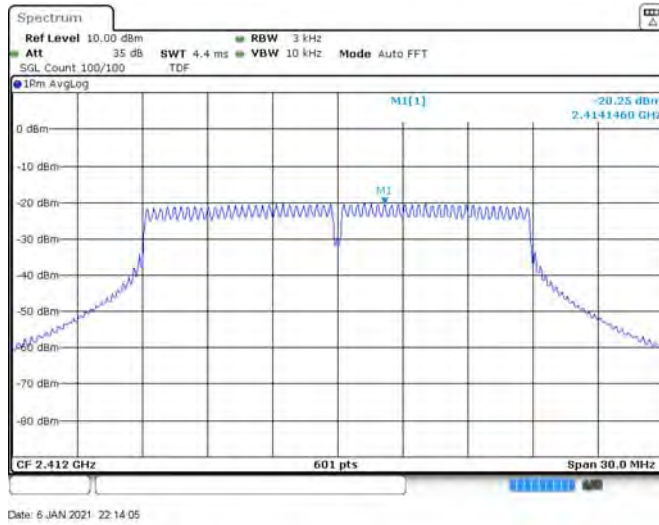
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802.11g HIGH CHANNEL

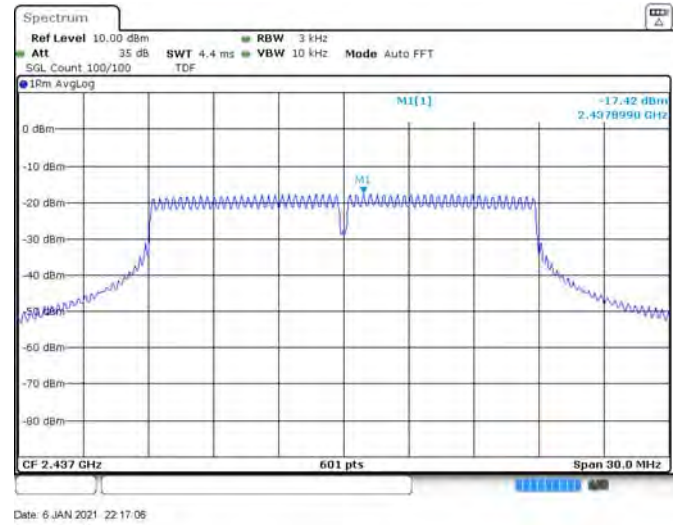


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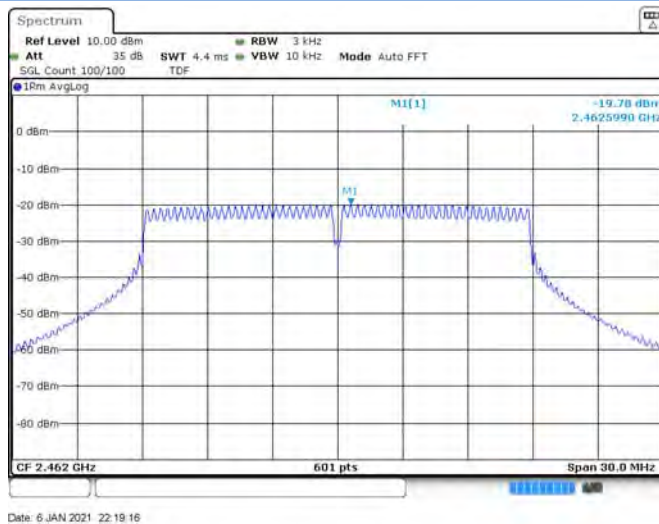
802.11n-20 MHz LOW CHANNEL



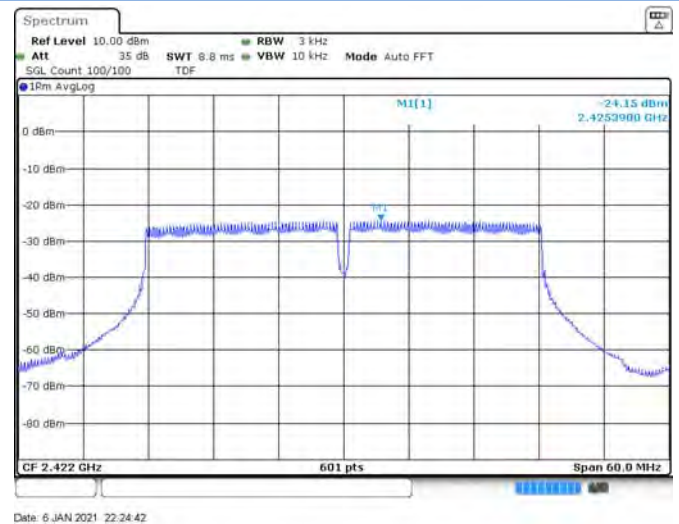
802.11n-20 MHz MIDDLE CHANNEL



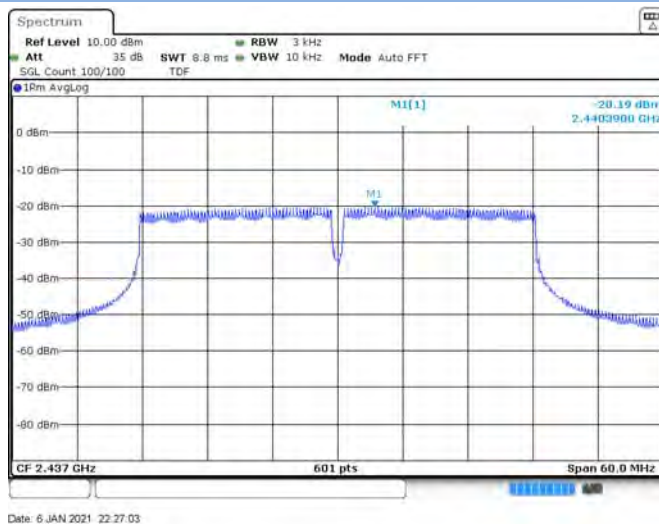
802.11n-20 MHz HIGH CHANNEL



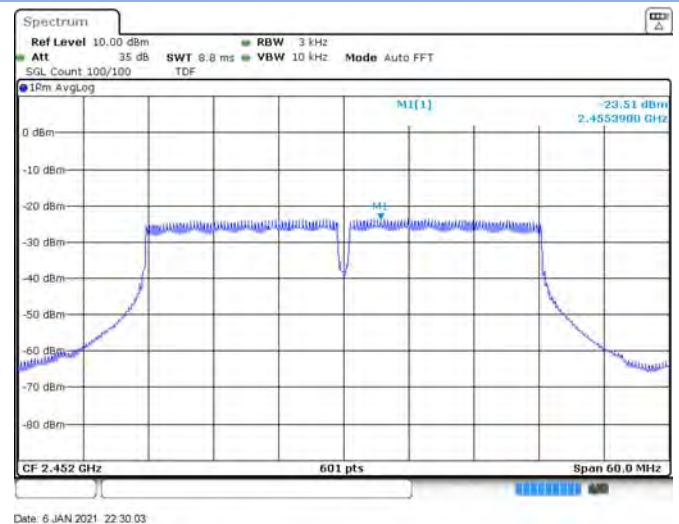
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



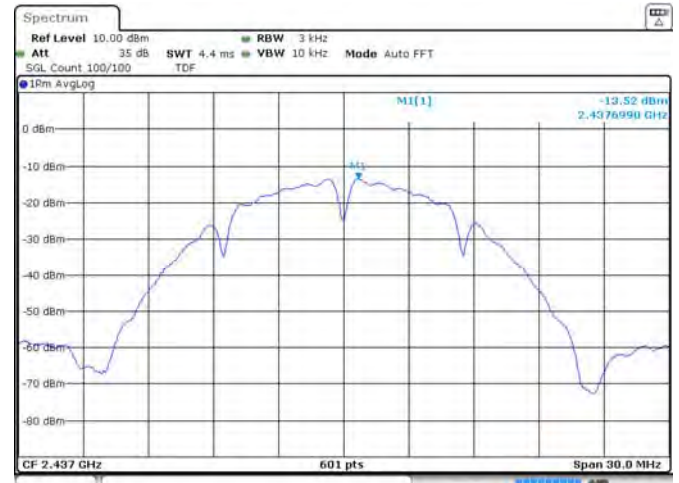
Aux. Antenna

802.11b LOW CHANNEL



Date: 7 JAN 2021 00:15:21

802.11b MIDDLE CHANNEL



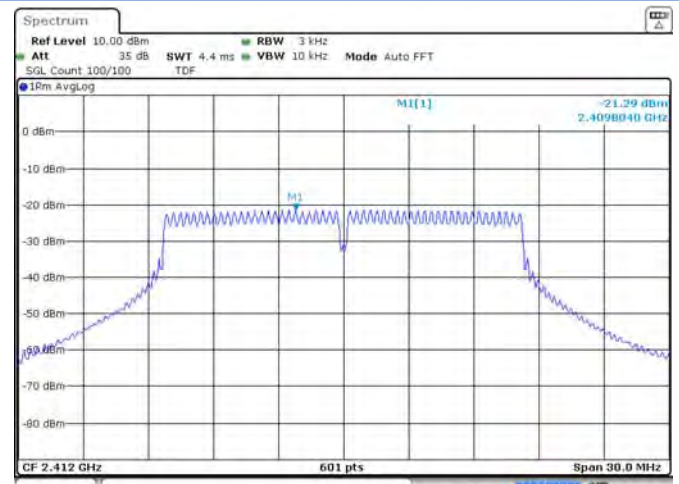
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802.11b HIGH CHANNEL



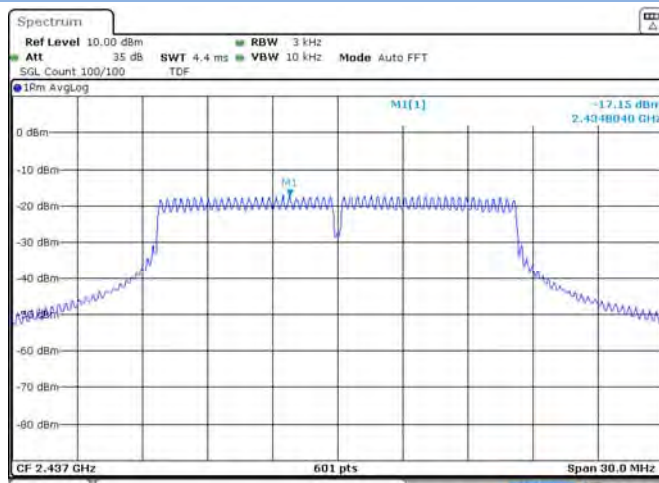
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802.11g LOW CHANNEL



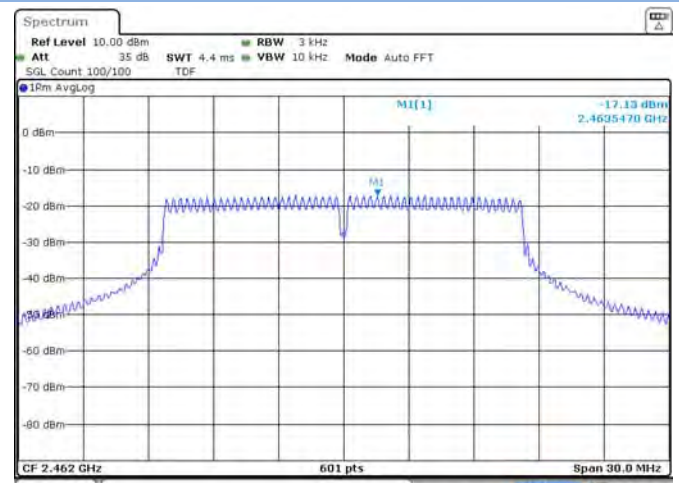
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802.11g MIDDLE CHANNEL



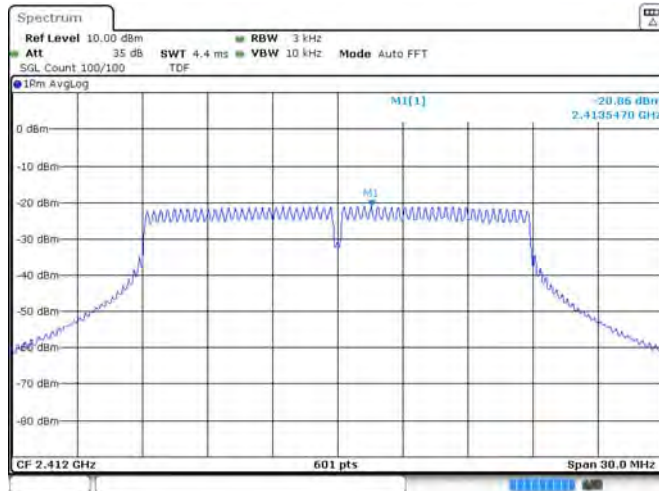
Date: 7 JAN 2021 01:02:28

802.11g HIGH CHANNEL



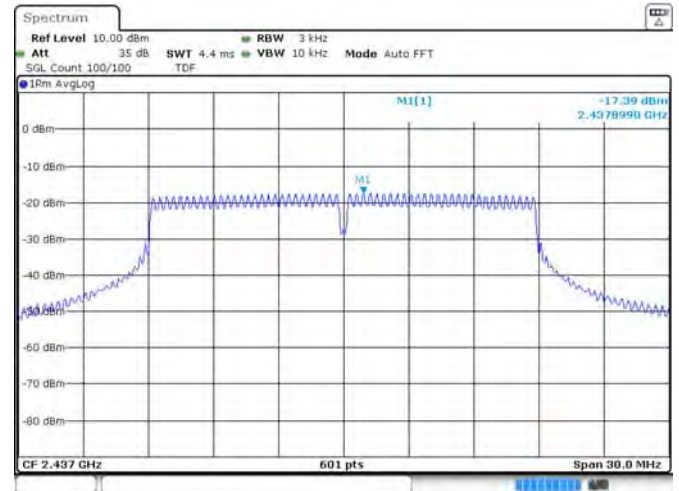
Date: 7 JAN 2021 01:04:49

802.11n-20 MHz LOW CHANNEL



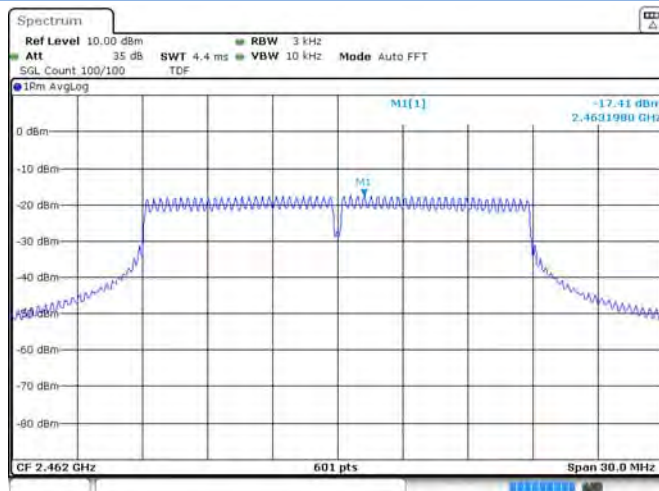
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802.11n-20 MHz MIDDLE CHANNEL



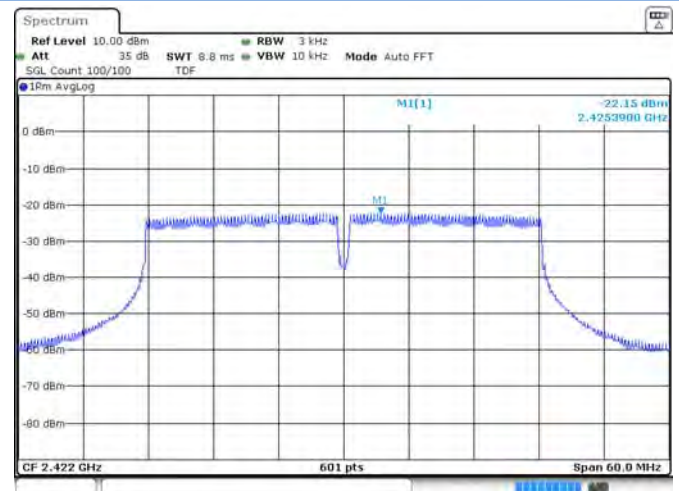
Date: 7 JAN 2021 01:09:15

802.11n-20 MHz HIGH CHANNEL



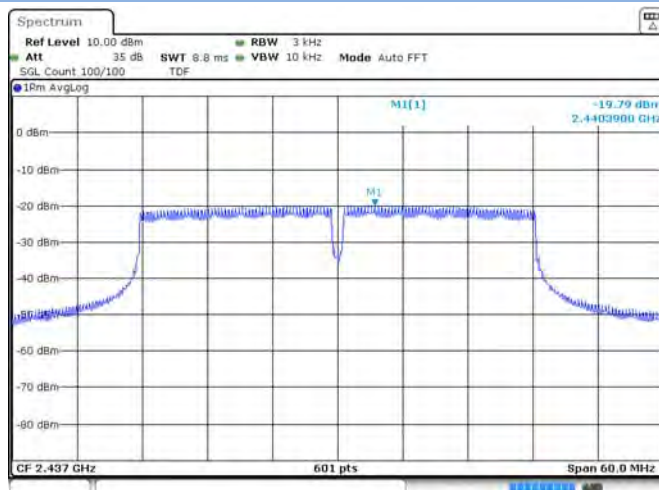
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802.11n-40 MHz LOW CHANNEL



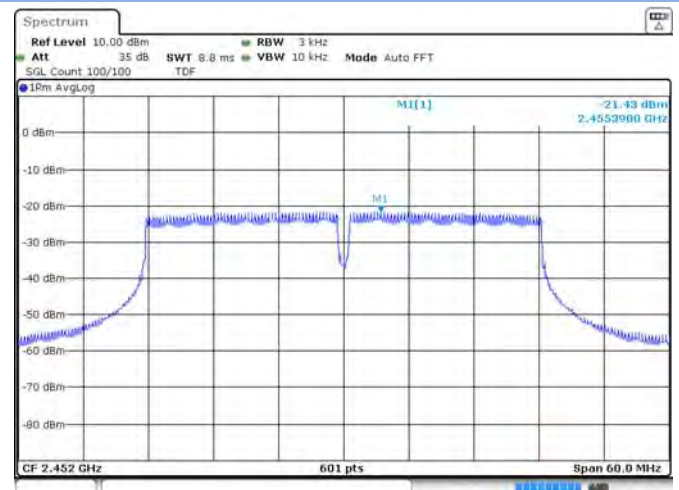
Date: 7 JAN 2021 01:15:21

802.11n-40 MHz MIDDLE CHANNEL



Date: 7 JAN 2021 01:17:24

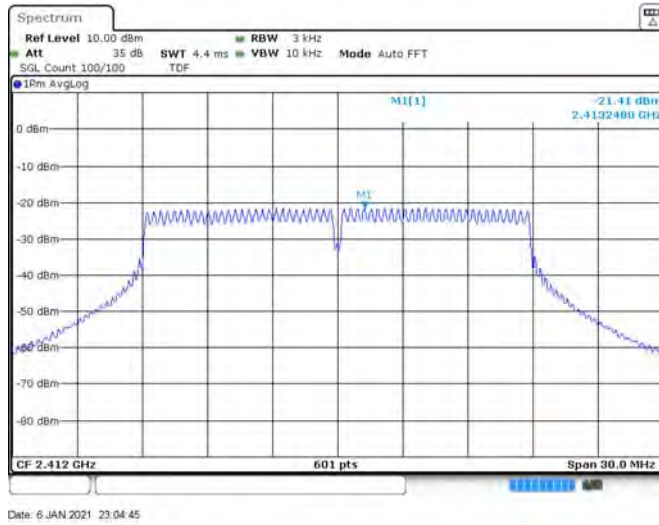
802.11n-40 MHz HIGH CHANNEL



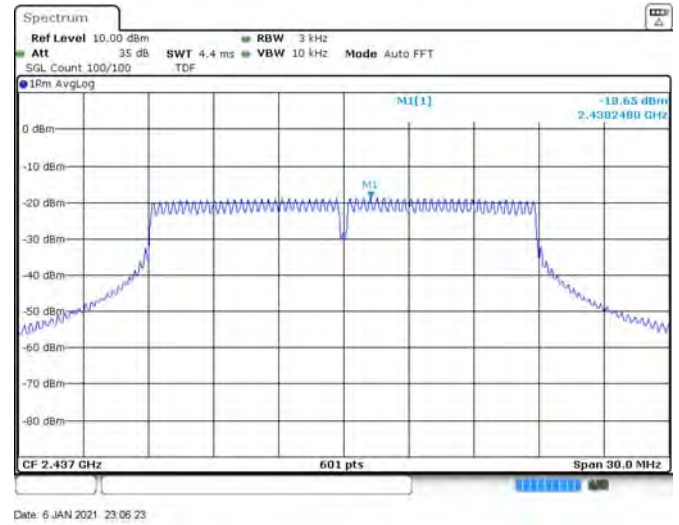
Date: 7 JAN 2021 01:20:25

MIMO-Main Antenna

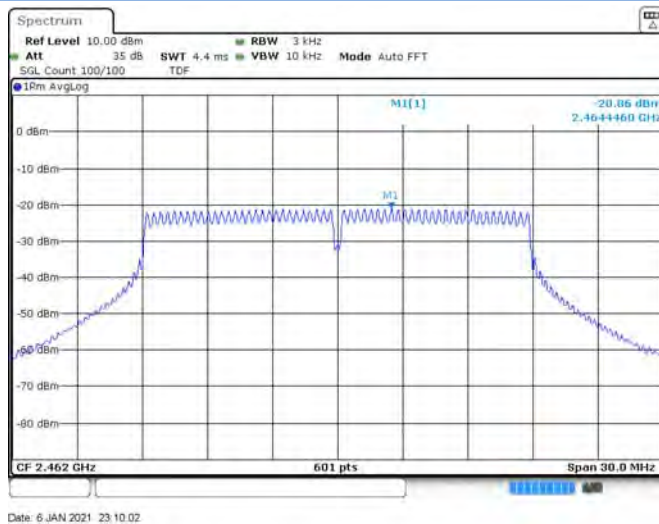
802.11n-20 MHz LOW CHANNEL



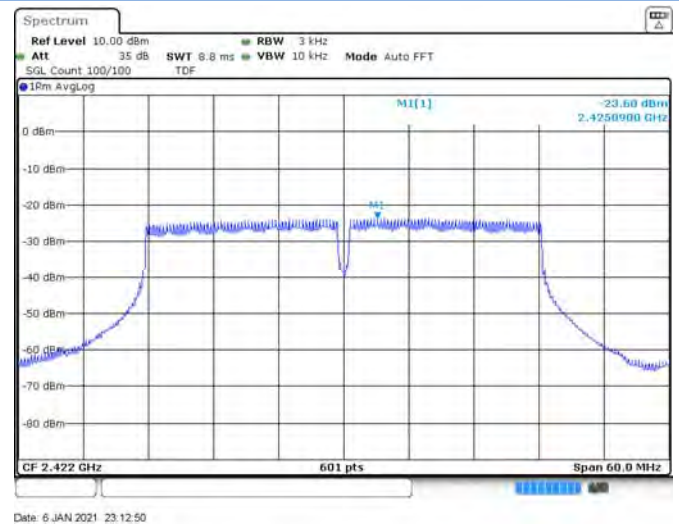
802.11n-20 MHz MIDDLE CHANNEL



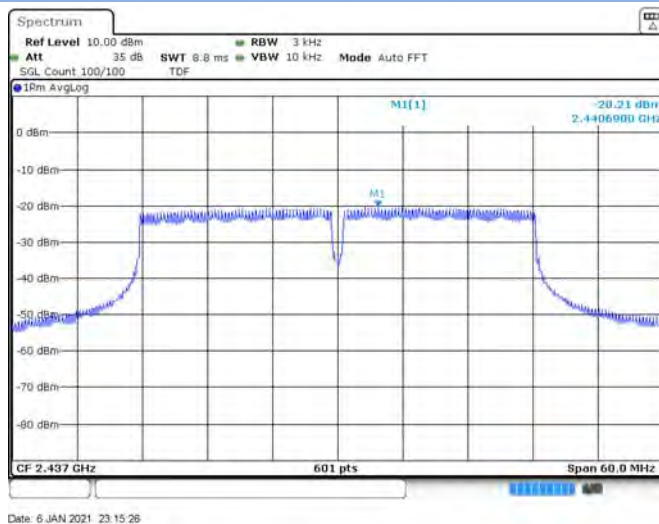
802.11n-20 MHz HIGH CHANNEL



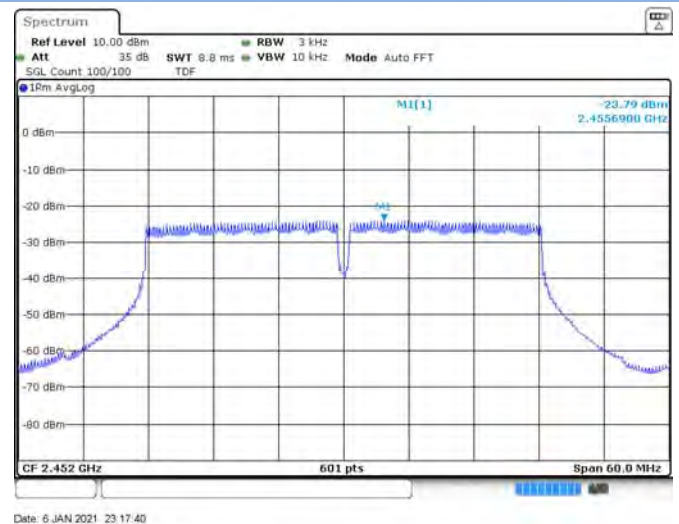
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL

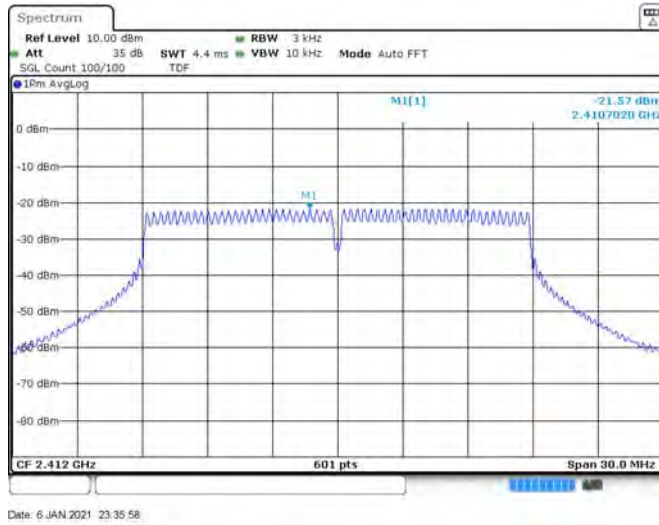


802.11n-40 MHz HIGH CHANNEL

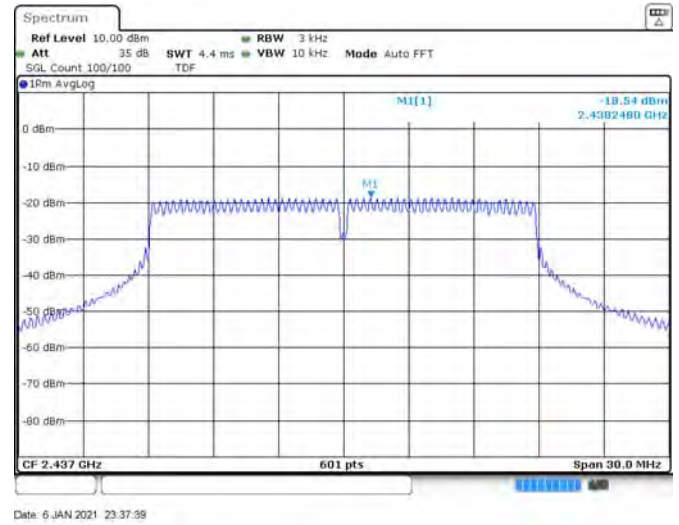


MIMO-Aux. Antenna

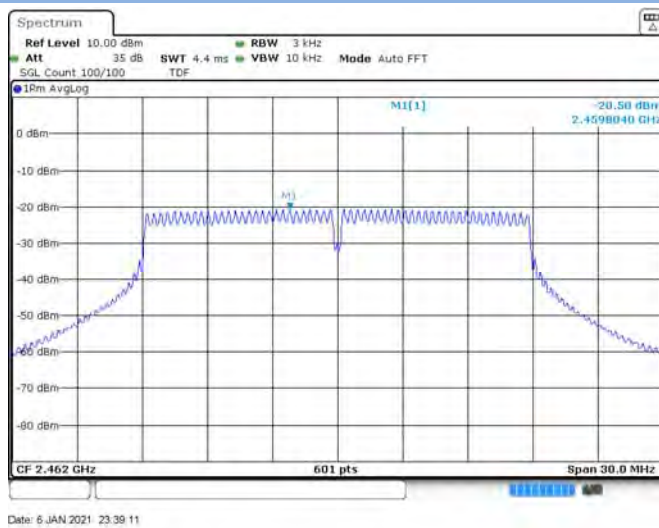
802.11n-20 MHz LOW CHANNEL



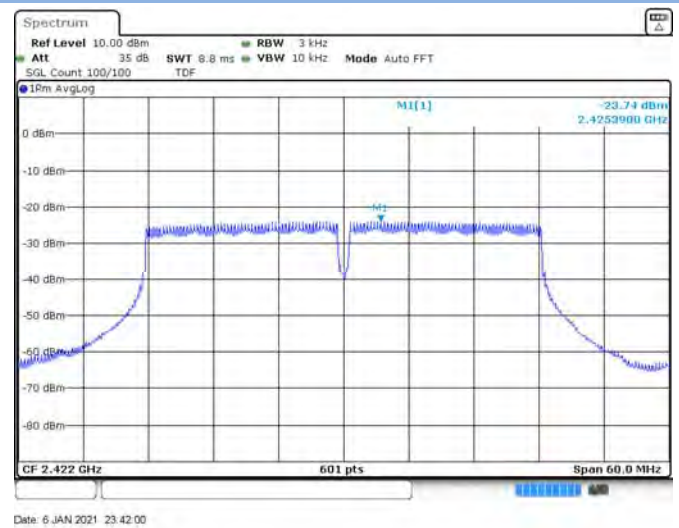
802.11n-20 MHz MIDDLE CHANNEL



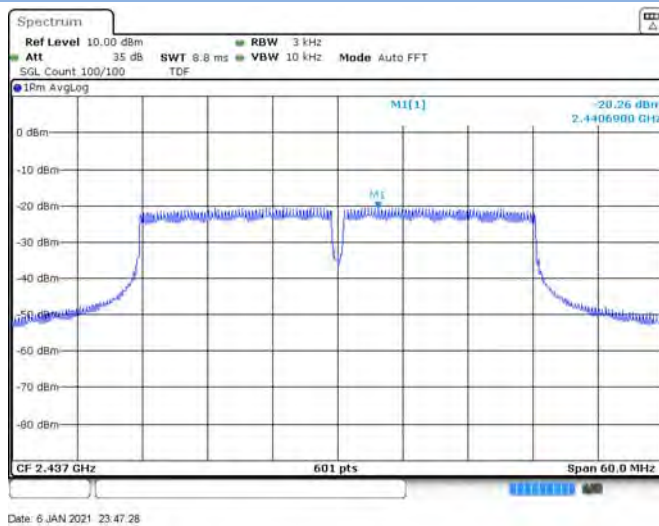
802.11n-20 MHz HIGH CHANNEL



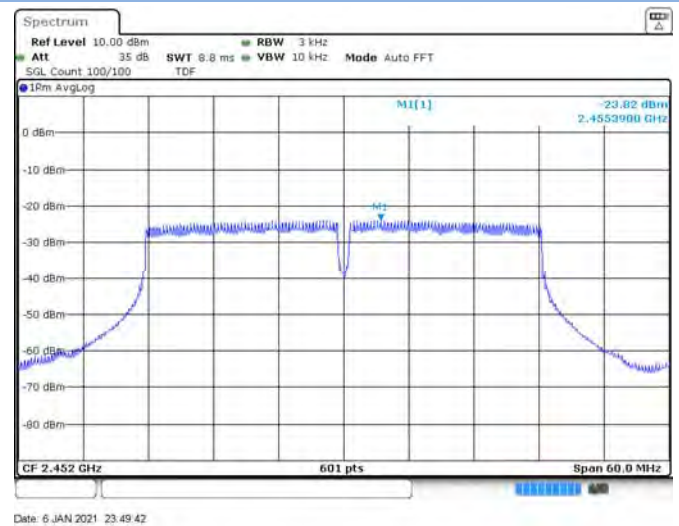
802.11n-40 MHz LOW CHANNEL



802.11n-40 MHz MIDDLE CHANNEL



802.11n-40 MHz HIGH CHANNEL



ANNEX B TEST SETUP PHOTOS

Please refer the document “BL-SZ20C0477-AR.pdf”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ20C0477-AW.pdf”.

ANNEX D EUT INTERNAL PHOTOS

Please refer the document “BL-SZ20C0477-AI.pdf”.

--END OF REPORT--