EN 301 893 Test Report

Project No.	:	1711C142
Equipment	:	AC1200 Smart Dual-Band WiFi Router
Test Model	:	AC5
Series Model	:	N/A
Applicant	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052

Date of Receipt	:	Nov. 16, 2017
Date of Test	:	Nov. 16, 2017 ~ Dec. 01, 2017
Issued Date	:	Dec. 04, 2017
Tested by	:	BTL Inc.

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Testing Laboratory 2640

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents Page

Table of Contents Page

REPORT ISSUED HISTORY

Issue No.	Description	Issued Date
BTL-ETSP-2-1711C142	Original Issue	Dec. 04, 2017

1. CERTIFICATION

Equipment	:	AC1200 Smart Dual-Band WiFi Router
Brand Name	:	Tenda
Test Model	:	AC5
Series Model	:	N/A
Applicant	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Manufacturer	:	SHENZHEN TENDA TECHNOLOGY CO.,LTD
Address	:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052
Date of Test	:	Nov. 16, 2017 ~ Dec. 01, 2017
Standard(s)	:	EN 301 893 V2.1.1 (2017-05)

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc..
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-ETSP-2-1711C142) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for RLAN 5GHz part.

2. RF EMISSIONS MEASUREMENT

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB12/OVEN** at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) k=1.96 or k=2(which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, U=2xUc(y).

The BTL measurement uncertainty as below table:

Item	Uncertainty
Radio frequency	±2.3 ppm
RF power, conducted	±1.25 dB
RF power, radiated	±3.26 dB
Temperature	±0.88℃
Humidity	±4.6 %
Time	±0.58 %
Spurious emissions, conducted	±2.74 dB
Spurious emissions, radiated	±3.96 dB

2.3 TEST CHANNEL

For 802.11a / 802.11n(20 MHz) / 802.11ac(20 MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
low	36	5180
high	48	5240

For 802.11n 40MHz / 802.11ac(40 MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
low	38	5190
high	46	5230

802.11ac(80 MHz)		
Test Channel	EUT Channel	Test Frequency (MHz)
high	42	5210

2.4 TEST METHODOLOGY AND RESULTS

Harmonised Standard ETSI EN 301 893					
Requirement			Requirement Conditionality		Observations
No	Description	Reference: Clause No	U/C	Condition	
1	Carrier frequencies	4.2.1	U	-	Pass
2	Nominal, and occupied channel bandwidth	4.2.2	U	-	Pass
3	RF output power	4.2.3	U	-	Pass
	Transmit Power Control (TPC)	4.2.3	C	1) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 2) Not required for devices that operate at a maximum mean e.i.r.p. of 20 dBm when operating in 5 250 MHz to 5 350 MHz or 27 dBm when operating in 5 470 MHz to 5 725 MHz.	N/A
	Power Density	4.2.3	U	-	Pass
4	Transmitter unwanted emissions outside the 5 GHz RLAN bands	4.2.4.1	U	-	Pass
5	Transmitter unwanted emissions within the 5 GHz RLAN bands	4.2.4.2	U	-	Pass
6	Receiver spurious emissions	4.2.5	U	-	Pass
7	DFS: Channel Availability Check	4.2.6.2.2	C	1) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 2) Not required for Slave devices with a maximum transmit power of less than 200 mW e.i.r.p. 3) Not required at initial use of a channel for slave devices with a maximum transmit power of 200 mW e.i.r.p.	N/A
8	DFS: Off-Channel CAC – Radar Detection Threshold	4.2.6.2.3	C	1) Where implemented by the manufacturer. 2) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 3) Not required for slave devices with a maximum transmit power of less than 200 mW e.i.r.p. 4) Not required at initial use of a channel for Slave devices with a maximum transmit power of 200 mW e.i.r.p.	N/A
9	DFS: Off-Channel CAC – Detection Probability	4.2.6.2.3	C	1) Where implemented by the manufacturer. 2) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 3) Not required for slave devices with a maximum transmit power of less than 200 mW e.i.r.p. 4) Not required at initial use of a channel for Slave devices with a maximum transmit power of 200 mW e.i.r.p.	N/A
10	DFS: In service Monitoring	4.2.6.2.4	C	1) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 2) Not required for Slave devices with a maximum transmit power of less than 200 mW e.i.r.p.	N/A
11	DFS: Channel shutdown	4.2.6.2.5	C	Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz.	N/A

Requirement			Requirement Conditionality		Observations
No	Description	Reference: Clause No	U/C	Condition	
12	DFS: Non-occupancy period	4.2.6.2.6	C	1) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 2) Not required for Slave devices with a maximum transmit power of less than 200 mW e.i.r.p.	N/A
13	DFS: Uniform spreading	4.2.6.2.7	C	1) Not required for channels whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz. 2) Not required for slave devices.	N/A
14	Adaptivity(Channel Access Mechanism)	4.2.7	U	-	Pass
15	Receiver Blocking	4.2.8	U	-	Pass
16	User Access Restrictions	4.2.9	U	**Note 1**	Pass
17	Geo-location capability	4.2.10	C	Where implemented by the manufacturer.	N/A

Note:

1. No related options for DFS functions will be provided in the software interfaces.
   DFS functions can be changed only by telnet command. Before the shipment of the product the telnet will be closed so that it will be inaccessible for the end user.
2. **U/C** Indicates whether the requirement is to be unconditionally applicable (U) or is conditional upon the manufacturers claimed functionality of the equipment (C).
3. “N/A” indicates that it does not apply to this device.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	AC1200 Smart Dual-Band WiFi Router	
Brand Name	Tenda	
Test Model	AC5	
Series Model	NA	
Model Difference	NA	
Power Source	DC voltage supplied from AC/DC adapter.	
Power Rating	9Vdc, 1A	
Product Description	Operation Frequency	5150MHz~5250MHz
	Modulation Technology	802.11a:OFDM 802.11n:OFDM 802.11ac:OFDM
	Bit Rate of Transmitter	802.11a: 54/48/36/24/18/12/9/6 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 867 Mbps
	E.I.R.P. Power (Max.)	802.11a: 22.95 dBm 802.11n(20 MHz): 22.85 dBm 802.11n(40 MHz): 22.86 dBm 802.11ac(20 MHz): 22.96 dBm 802.11ac(40 MHz): 22.91 dBm 802.11ac(80 MHz): 22.85 dBm

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

802.11a 802.11n 20MHz 802.11ac 20MHz		802.11n 40MHz 802.11ac 40MHz		802.11ac 80MHz	
Band 1		Band 1		Band 1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	5
2	N/A	N/A	Dipole	N/A	5

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R).

4. The worst case for 1TX/ 2TX as follow:

Operating Mode / TX Mode	1TX	2TX
802.11a	V (ANT 1)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)
802.11ac(20MHz)	-	V (ANT 1 + ANT 2)
802.11ac(40MHz)	-	V (ANT 1 + ANT 2)
802.11ac(80MHz)	-	V (ANT 1 + ANT 2)

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test	Clause	Test channels		
		Lower sub-band (5150 MHz to 5350 MHz)		Higher sub-band 5470 MHz to 5725 MHz
		5150 MHz to 5250 MHz	5250 MHz to 5350 MHz	-
Centre frequencies	5.4.2	C7(see note 1)		C8(see note 1)
Occupied Channel Bandwidth	5.4.3	C7		C8
Power, power density	5.4.4	C1	C2	C3,C4
Transmitter unwanted emissions outside the 5 GHz RLAN bands	5.4.5	C7(see note 1)		C8(see note 1)
Transmitter unwanted emissions within the 5 GHz RLAN bands	5.4.6	C1	C2	C3,C4
Receiver spurious emissions	5.4.7	C7(see note 1)		C8(see note 1)
Transmit Power Control (TPC)	5.4.4	N/A(see note 2)	C2(see note 1)	C3,C4(see note 1)
Dynamic Frequency Selection (DFS)	5.4.8	N/A(see note 2)	C5	C6(see note 3)
Adaptivity	5.4.9	C9		
Receiver Blocking	5.4.10	C7		C8

C1,C3	The lowest declared channel for every declared Nominal Channel Bandwidth within this band. For the Power Density testing, it is sufficient to only perform this test using the lowest Nominal Channel Bandwidth.
C2, C4	The highest declared channel for every declared Nominal Channel Bandwidth withinthis band. For the Power Density testing, it is sufficient to only perform this test using the lowest Nominal Channel Bandwidth.
C5,C6	One channel out of the declared channels for this frequency range. If more than one Nominal Channel Bandwidth has been declared for this sub-band, testing shall be performed using the lowest and highest Nominal Channel Bandwidth.
C7, C8	One channel out of the declared channels for this sub-band. For Occupied Channel Bandwidth, testing shall be repeated for every declared Nominal Channel Bandwidth within this sub-band.
C9	One channel (in case of single-channel testing) or a group of channels (in case of multi-channel testing) out of the declared channels.

Note :

(1) In case of more than 1 channel plan has been declared, testing of these specific requirements need only be performed using one of the declared channel plans.

(2) Testing is not required for nominal channel bandwidths that fall completely within the frequency range 5150 MHz to 5250 MHz.

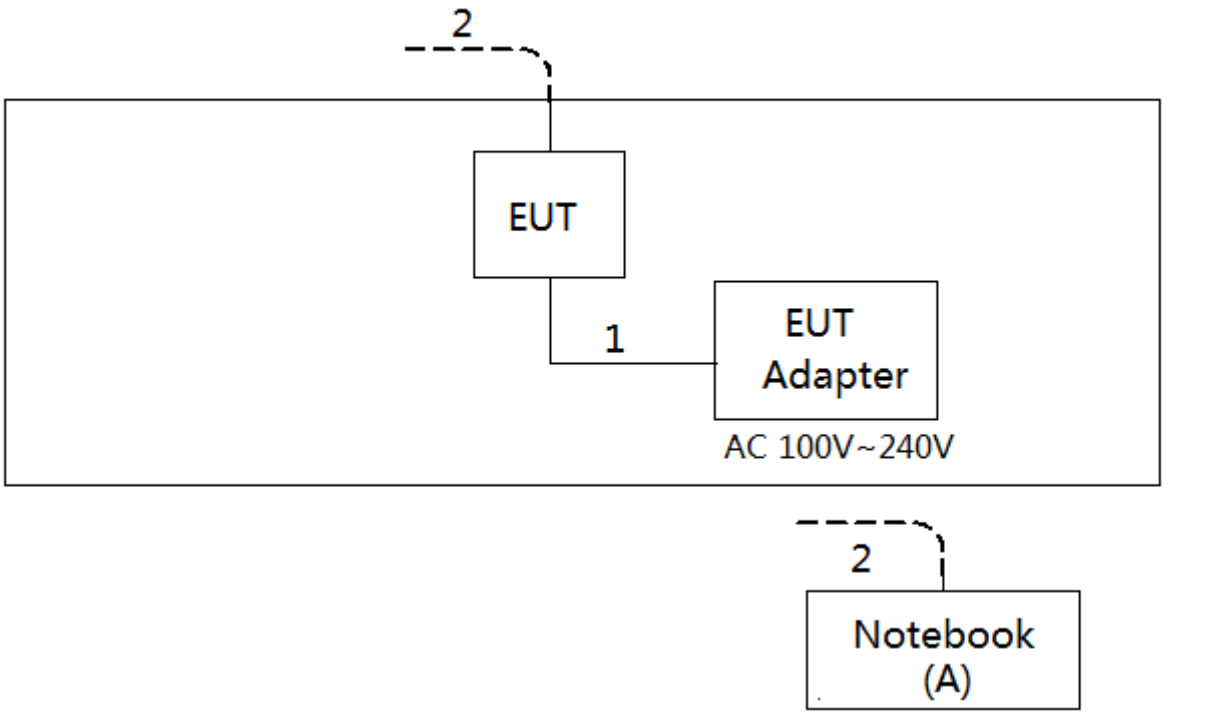
(3) Where the declared channel plan includes channels whose nominal channel bandwidth falls completely or partly within the 5600 MHz to 5650 MHz band, the tests for the *Channel* Availability Check (and where implemented, for the Off-Channel CAC) shall be performed on one of these channels in addition to a channel within the band 5470 MHz to 5600 MHz or 5650 MHz to 5725 MHz band.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & 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

Test software version	MP_Test	
Frequency (MHz)	5180	5240
IEEE 802.11a OFDM	48	48
Frequency (MHz)	5180	5240
IEEE 802.11n(20 MHz) OFDM	43/45	44/42
Frequency (MHz)	5190	5230
IEEE 802.11n(40 MHz) OFDM	44/44	45/43
Frequency (MHz)	5180	5240
IEEE 802.11ac(20 MHz) OFDM	45/45	45/44
Frequency (MHz)	5190	5230
IEEE 802.11ac(40 MHz) OFDM	45/44	45/44
Frequency (MHz)	5210	
IEEE 802.11ac(80 MHz) OFDM	47/46	

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
A	Notebook	Lenovo	INSPIRON 1420	DOC	JX193A01SDC2

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.2m	AC Cable
2	NO	NO	10m	RJ45 Cable

3.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4. CENTRE FREQUENCY

4.1 LIMIT

Clause	Test Item	Limit
4.2.1	Centre Frequency	F(c) ±20ppm

4.2 SETTING

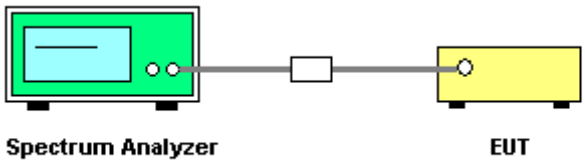
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	50MHz(for Bandwith 20MHz) 100MHz(for Bandwith 40MHz & 80MHz)
RBW	100 kHz
VBW	100 kHz
Sweep Time	Auto

4.3 TEST PROCEDURES

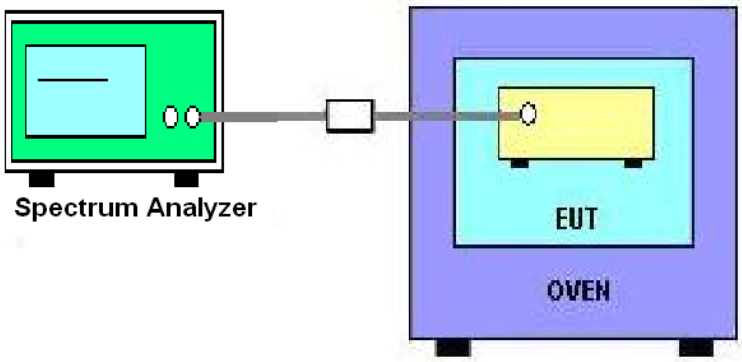
a. The EUT shall be connected to spectrum analyzer and operated in an un-modulated mode.
b. The settings of the spectrum analyzer shall be adjusted to optimize the instruments frequency accuracy.
c. Max Hold shall be selected and the centre frequency adjusted to that of the EUT.
d. The peak value of the power envelope shall be measured and noted. The span shall be reduced and the marker moved in a positive frequency increment until the upper, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f1.
e. The marker shall then be moved in a negative frequency increment until the lower, (relative to the centre frequency), -10 dBc point is reached. This value shall be noted as f2.
f. The centre frequency is calculated as (f1 + f2) / 2.
g. These measurements shall also be performed at normal and extreme test conditions.

4.4 TEST SETUP LAYOUT

Normal Condition



Extreme Condition



4.5 TEST DEVIATION

There is no deviation with the original standard.

4.6 TEST RESULTS

Please refer to the Appendix A.

5. NOMINAL / OCCUPIED CHANNEL BANDWIDTH

5.1 LIMIT

The Nominal Channel Bandwidth for a single Operating Channel shall be 20 MHz.

Alternatively, equipment may implement a lower Nominal Channel Bandwidth with a minimum of 5 MHz, providing they still comply with the Nominal Centre Frequencies defined in clause 4.2.1 of EN 301 893 (20 MHz raster).

The Occupied Channel Bandwidth shall be between 80 % and 100 % of the Nominal Channel Bandwidth. In case of smart antenna systems (devices with multiple transmit chains) each of the transmit chains shall meet this requirement. The Occupied Channel Bandwidth might change with time/payload.

During a Channel Occupancy Time (COT), equipment may operate temporarily with an Occupied Channel Bandwidth of less than 80 % of its Nominal Channel Bandwidth with a minimum of 2 MHz.

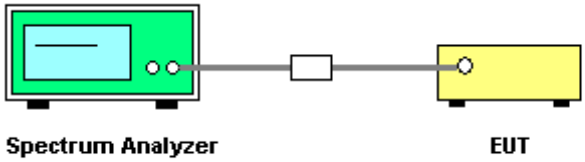
5.2 SETTING

Spectrum Analyzer	Setting
Centre Frequency	The centre frequency of the channel under test
Resolution Bandwidth	100 kHz
Video Bandwidth	300 kHz
Frequency Span	2 × Nominal Bandwidth (e.g. 40 MHz for a 20 MHz channel)
Sweep time	> 1 s; for larger Nominal Bandwidths, the sweep time may be increased until a value where the sweep time has no impact on the RMS value of the signal
Detector Mode	RMS
Trace Mode:	Max Hold

5.3 TEST PROCEDURES

a. The EUT shall be connected to spectrum analyzer and the spectrum analyzer setting of section 5.2 were used.
b. Wait for the trace to stabilize.
c. Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.
d. Use the 99 % bandwidth function of the spectrum analyser to measure the Occupied Channel Bandwidth of the EUT. This value shall be recorded.
e. The measurement described in step b to step e above shall be repeated in case of simultaneous transmissions in non-adjacent channels.

5.4 TEST SETUP LAYOUT



5.5 TEST DEVIATION

There is no deviation with the original standard.

5.6 TEST RESULTS

Please refer to the Appendix B.

6. EFFECTIVE ISOTROPICALLY RADIATED POWER

6.1 LIMIT

Mean EIRP Limits for RF Output Power and Power Density at the Highest Power Level				
Frequency Range (MHz)	Mean EIRP Limit for P_H (dBm)		Mean EIRP Density Limit (dBm/MHz)	
	With TPC	Without TPC	With TPC	Without TPC
5150 to 5350	23	20/23 (see note1)	10	7/10 (see note2)
5470 to 5725	30 (see note3)	27 (see note3)	17 (see note3)	14 (see note3)

Note:	
(1)	The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz, in which case the applicable limit is 23 dBm.
(2)	The applicable limit is 7 dBm/MHz, except for transmissions whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz, in which case the applicable limit is 10 dBm/MHz.
(3)	Slave devices without a Radar Interference Detection function shall comply with the limits for the band 5250 MHz to 5350 MHz.

Mean EIRP Limits for RF Output Power at the Lowest Power Level(Note 1)	
Frequency Range	Mean EIRP for P_L
5250 MHz to 5350 MHz	17 dBm
5470 MHz to 5725 MHz	24 dBm (see Note 2)

Note:	
(1)	For devices without TPC, the limits in the table do not apply.
(2)	Slave devices without a Radar Interference Detection function shall comply with the limits for the band 5250 MHz to 5350 MHz.

6.2 SETTING

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Used Average Sensor	MA 2411B

6.3 TEST PROCEDURES

Option 1:

Step 1:

For equipment configured into a continuous transmit mode (x = 1), proceed immediately with step 2.

a. The output power of the transmitter shall be coupled to a matched diode detector or equivalent thereof. The output of the diode detector shall be connected to the vertical channel of an oscilloscope.
b. The combination of the diode detector and the oscilloscope shall be capable of faithfully reproducing the duty cycle of the transmitter output signal.
c. The observed duty cycle of the transmitter (Tx on / (Tx on + Tx off)) shall be noted as x ($0 < x \leq 1$), and recorded in the test report.

Step 2:

a. The RF output power shall be determined using a wideband RF power meter with a thermocouple detector or an equivalent thereof and with an integration period that exceeds the repetition period of the transmitter by a factor 5 or more. The observed value shall be noted as A (in dBm).
b. In case of conducted measurements on smart antenna systems operating in a mode with multiple transmit chains active simultaneously, the output power of each transmit chain shall be measured separately to calculate the total power (value A in dBm) for the EUT.

Step 3:

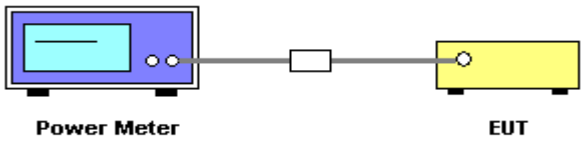
a. The RF output power at the highest power level P_H (e.i.r.p.) shall be calculated from the above measured power output A (in dBm), the observed duty cycle x, the stated antenna gain G in dBi and if applicable the beamforming gain Y in dB, according to the formula below. This value shall be recorded in the test report.
   If more than one antenna assembly is intended for this power setting or TPC range, the gain of the antenna assembly with the highest gain shall be used.

$$P_H = A + G + Y + 10 \times \log (1 / x) \text{ (dBm)}.$$

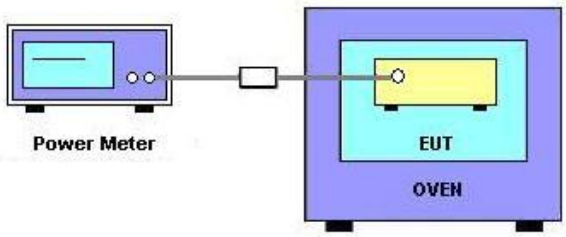
b. This value P_H shall be compared to the applicable limit contained in table of section 6.1.
c. The measurement shall be repeated at the lowest, the middle, and the highest channel of the stated frequency range. These measurements shall also be performed at normal and extreme test conditions.

6.4 TEST SETUP LAYOUT

Normal Condition



Extreme Condition



6.5 TEST DEVIATION

There is no deviation with the original standard.

6.6 TEST RESULTS

Please refer to the Appendix C.

7. POWER DENSITY

7.1 LIMIT

Mean EIRP Limits for RF Output Power and Power Density at the Highest Power Level				
Frequency Range (MHz)	Mean EIRP Limit for P_H (dBm)		Mean EIRP Density Limit (dBm/MHz)	
	With TPC	Without TPC	With TPC	Without TPC
5150 to 5350	23	20/23 (see note1)	10	7/10 (see note2)
5470 to 5725	30 (see note 3)	27 (see note3)	17 (see note3)	14 (see note3)

Note:	
(1)	The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz, in which case the applicable limit is 23 dBm.
(2)	The applicable limit is 7 dBm/MHz, except for transmissions whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz, in which case the applicable limit is 10 dBm/MHz.
(3)	Slave devices without a Radar Interference Detection function shall comply with the limits for the band 5250 MHz to 5350 MHz.

7.2 SETTING

Spectrum Analyzer	Setting	
	Step 1	Step 3
Start Frequency	The centre frequency of the channel under test	Equal to the frequency recorded in b of 7.1.2
RBW	1MHz	1MHz
VBW	3MHz	3MHz
Frequency Span	2 × Nominal Bandwidth (e.g. 40 MHz for a 20 MHz channel)	3MHz
Detector Mode	Peak	RMS
Trace Mode	Max Hold	Max Hold
Sweep Time	-	1 minute

7.3 TEST PROCEDURES

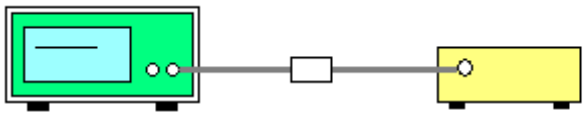
Option 1:

a. The EUT shall be connected to spectrum analyzer and the spectrum analyzer setting of step 1 for section 7.2 was used.
b. When the trace is complete, find the peak value of the power envelope and record the frequency.
c. The spectrum analyzer setting of step 2 for section 7.2 was used.
d. When the trace is complete, the trace shall be captured using the "Hold" or "View" option on the spectrum analyser.
e. Find the peak value of the trace and place the analyser marker on this peak. This level is recorded as the highest mean power (power density) D in a 1 MHz band.
f. Alternatively, where a spectrum analyser is equipped with a function to measure spectral power density, this function may be used to display the power density D in dBm / MHz.
g. In case of conducted measurements on smart antenna systems operating in a mode with multiple transmit chains active simultaneously, the power density of each transmit chain shall be measured separately to calculate the total power density (value D in dBm / MHz) for the UUT.
h. The maximum spectral power density e.i.r.p. is calculated from the above measured power density D, the observed duty cycle x (see step 1), the applicable antenna assembly gain G in dBi and if applicable the beamforming gain Y in dB, according to the formula below. This value shall be recorded in the test report. If more than one antenna assembly is intended for this power setting, the gain of the antenna assembly with the highest gain shall be used.

$$PD = D + G + Y + 10 \times \log (1 / x) \text{ (dBm / MHz)}$$

i. From all the saved results, the highest value is the maximum Power Density (e.i.r.p.) for the EUT and recorded in the test report.

7.4 TEST SETUP LAYOUT



7.5 TEST DEVIATION

There is no deviation with the original standard.

7.6 TEST RESULTS

Please refer to the Appendix D.

8. SPURIOUS EMISSIONS – TRANSMITTER

8.1 LIMIT

Clause	Test Item	Frequency(MHz)	Limit (dBm)
4.2.4.1	Transmit Unwanted Emissions (Outside The 5 GHz RLAN Band)	47MHz to 74MHz 87,5MHz to 118MHz 174MHz to 230MHz 470MHz to 862MHz	-54
		Other frequencies Below 1GHz	-36
		1GHz~26 GHz (Outside frequency ranges)	-30

8.2 SETTING

30MHz ~1GHz	
Spectrum Analyzer	**Setting**
Start Frequency	30 MHz
Stop Frequency	1 GHz
RBW / VBW	100 kHz / 300 kHz
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Points	≥ 9 700
Sweep Time	For non-continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 100 kHz frequency step, the measurement time is greater than two transmissions of the EUT.

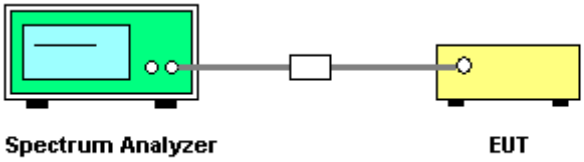
1GHz~ 26GHz	
Spectrum Analyzer	**Setting**
Start Frequency	1 GHz
Stop Frequency	26 GHz
RBW / VBW	1 MHz / 3 MHz
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Points	≥ 25000
Sweep Time	For non-continuous transmissions (duty cycle less than 100 %), the sweep time shall be sufficiently long, such that for each 1 MHz frequency step, the measurement time is greater than two transmissions of the EUT.

8.3 TEST PROCEDURES

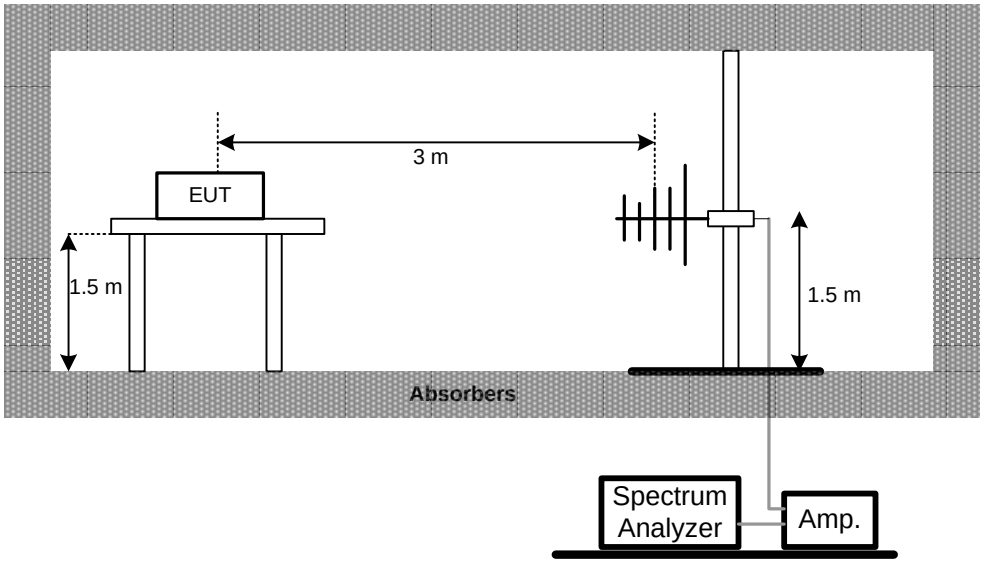
a. The EUT was placed on the top of the turntable in fully-anechoic chamber.
b. The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
c. This measurement shall be repeated with the transmitter in standby mode where applicable.
d. For spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. (Below 1 GHz)
e. For spurious emissions measurement, the receiving horn antenna was placed 1 meter far away from the turntable. (Above 1 GHz)
f. The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level.
g. Replace the EUT by standard antenna and feed the RF port by signal generator.
h. Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.
(If the EUT was tested in the open air test site, the test antenna shall vary between 1 m and 4m.)
i. Adjust the power level of the signal generator to reach the same reading with Read Level.
j. The level of the spurious emission is the power level of (h) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.
k. If the level calculated in (i) is higher than limit by more than 6dB, then lower the RBW of the spectrum analyzer to 30KHz. If the level of this emission does not change by more than 2dB, then it is taken as narrowband emission, otherwise, wideband emission.
l. The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.
m. In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted) and to the emissions radiated by the cabinet. In case of integral antenna equipment (without temporary antenna connectors), these limits apply to emissions radiated by the equipment.

8.4 TEST SETUP LAYOUT

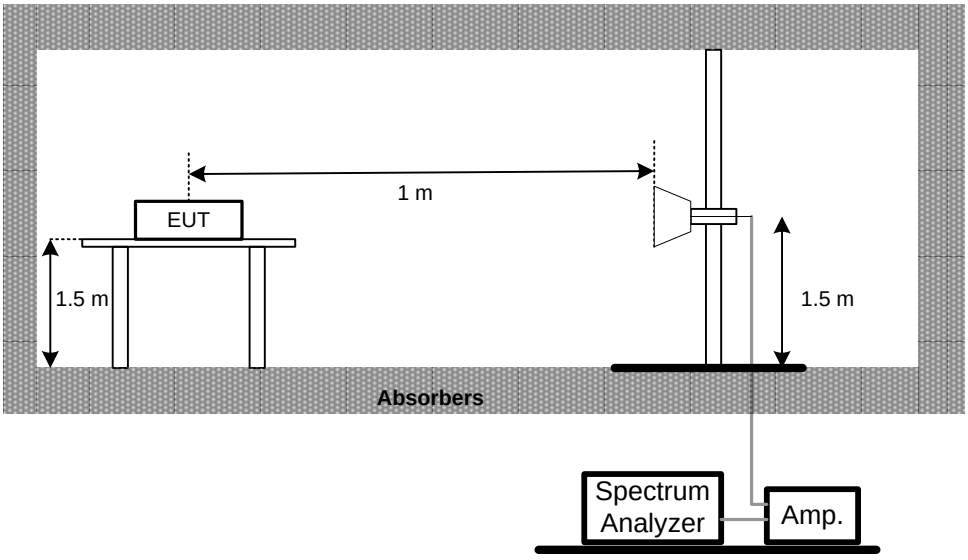
Emission_ Conducted Measurement Test Set-Up



Emission_ Radiated Measurement Test Set-Up Frequency Below 1 GHz



Emission_ Radiated Measurement Test Set-Up Frequency Above 1 GHz



8.5 TEST DEVIATION
There is no deviation with the original standard.

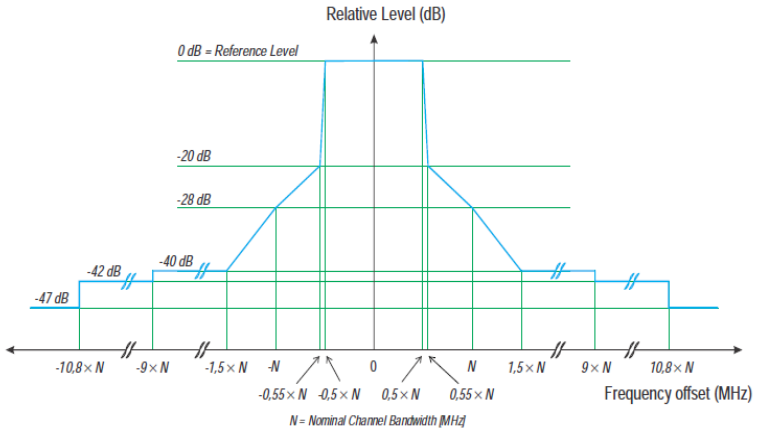
8.6 EUT OPERATION DURING TEST
The measurements shall be performed during continuously transmitting.

8.7 TEST RESULTS (30MHZ TO 1000MHZ)
Please refer to the Appendix E.

8.8 TEST RESULTS (ABOVE 1000MHZ)
Please refer to the Appendix F.

9. SPURIOUS EMISSIONS – TRANSMITTER (SPECTRUM MASK)

9.1 LIMIT

Clause	Test Item	Limit
4.2.4.2	Transmit Unwanted Emissions (Within the 5 GHz RLAN bands shall not exceed the following spectrum mask.)	

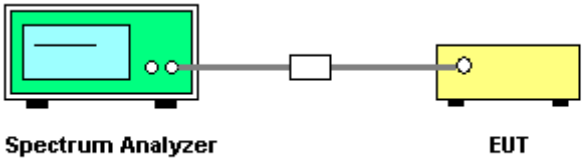
9.2 SETTING

Spectrum Parameter	Setting
RBW	1 MHz
VBW	30 kHz
Detector mode	Peak
Trace mode:	Video Average
Sweep Time	Coupled
Centre Frequency	Centre frequency of the channel being tested
Span	2 times the Nominal Channel Bandwidth

9.3 TEST PROCEDURES

a. The EUT shall be connected to spectrum analyzer and the spectrum analyzer setting of section 9.2 was used.
b. Use the marker to find the highest average power level of the power envelope of the EUT. This level shall be used as the reference level for the relative measurements.
d. Determination of the relative average power levels: Adjust the frequency range of the spectrum analyzer to allow the measurement to be performed within the sub-bands 5150 MHz to 5350 MHz and 5470 MHz to 5725 MHz. No other parameter of the spectrum analyzer should be changed.
c. Compare the relative power envelope of the EUT with the limits defined in clause 4.2.4.2.2 of EN 301 893

9.4 TEST SETUP LAYOUT



9.5 TEST DEVIATION

There is no deviation with the original standard.

9.6 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

9.7 TEST RESULTS

Please refer to the Appendix G.

10. SPURIOUS EMISSIONS – RECEIVER

10.1 LIMIT

Clause	Test Item	Frequency(MHz)	Limit
4.2.5.2	Spurious emissions	30-1000	-57dBm
		1000~26000	-47dBm

10.2 SETTING

30MHz ~1GHz	
Spectrum Analyzer	**Setting**
Start Frequency	30 MHz
Stop Frequency	1 GHz
RBW / VBW	100 kHz / 300 kHz
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Points	≥ 9 700
Sweep Time	Auto

1GHz~ 26GHz	
Spectrum Analyzer	**Setting**
Start Frequency	1 GHz
Stop Frequency	26 GHz
RBW / VBW	1 MHz / 3 MHz
Detector Mode	RMS
Trace Mode	Max Hold
Sweep Points	≥ 25000
Sweep Time	Auto

10.3 TEST PROCEDURES

a. The EUT was placed on the top of the turntable in fully-anechoic chamber.
b. The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
c. For spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. (Below 1 GHz)
d. For spurious emissions measurement, the receiving horn antenna was placed 1 meter far away from the turntable. (Above 1 GHz)
e. The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).
f. Replace the EUT by standard antenna and feed the RF port by signal generator.
g. Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.
h. Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).
i. The level of the spurious emission is the power level of (g) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.
j. The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.
k. In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted) and to the emissions radiated by the cabinet. In case of integral antenna equipment (without temporary antenna connectors), these limits apply to emissions radiated by the equipment.

10.4 TEST SETUP LAYOUT

Please refer to section 9.4

10.5 TEST DEVIATION

There is no deviation with the original standard.

10.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously receiving mode.

10.7 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix H.

10.8 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix I.

11. ADAPTIVITY (CHANNEL ACCESS MECHANISM)

11.1 LIMITS

Refer as EN 301 893, clause 4.2.7.3

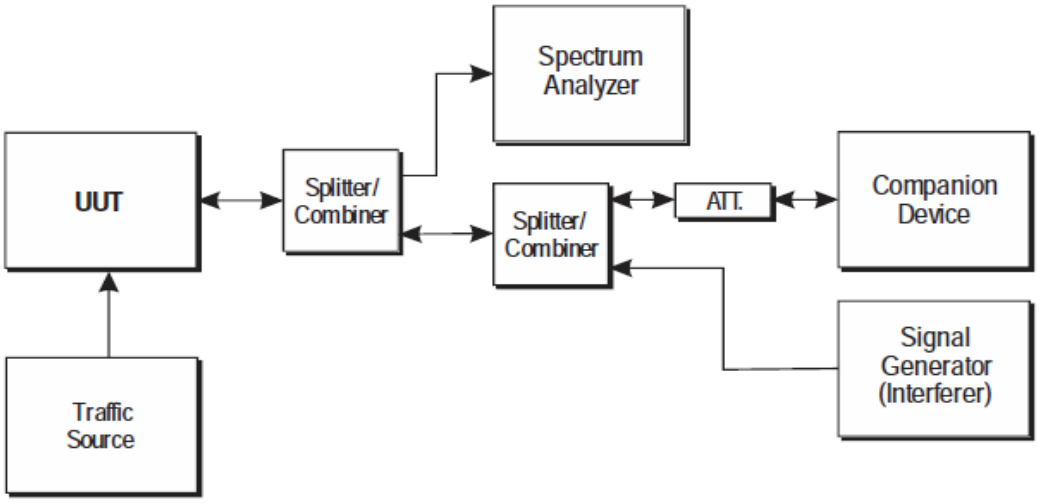
11.2 SETTING

Spectrum Analyzer	Setting
RBW	⩾ Occupied Channel Bandwidth (if the analyser does not support this setting, the highest available setting shall be used)
VBW	3 × RBW (if the analyser does not support this setting, the highest available setting shall be used)
Detector Mode	RMS
Center Frequency	Equal to the centre frequency of the operating channel
Span	0 Hz
Sweep time	> 2 × Channel Occupancy Time
Trace Mode	Clear/Write
Trigger Mode	Video or RF/IF Power

11.3 TEST PROCEDURES

For Procedure to verify the capability to detect other RLAN transmissions on the Operating Channel when operating on a **single channel**, Refer as EN 301 893, clause 5.4.9.3.2.2
For Procedure to verify the capability to detect other RLAN transmissions in case of multichannel Operation - **Equipment implementing Option 1 for multi-channel operation**, Refer as EN 301 893, clause 5.4.9.3.2.3.1
For **Channel Access Mechanism** Procedure, Refer as EN 301 893, clause 5.4.9.3.2.4
For **Maximum Channel Occupancy Time(s)** Procedure, Refer as EN 301 893, clause 5.4.9.3.2.5

11.4 TEST SETUP



11.5 TEST DEVIATION

There is no deviation with the original standard.

11.6 TEST RESULTS

Please refer to the Appendix J.

12. RECEIVER BLOCKING

12.1 LIMITS

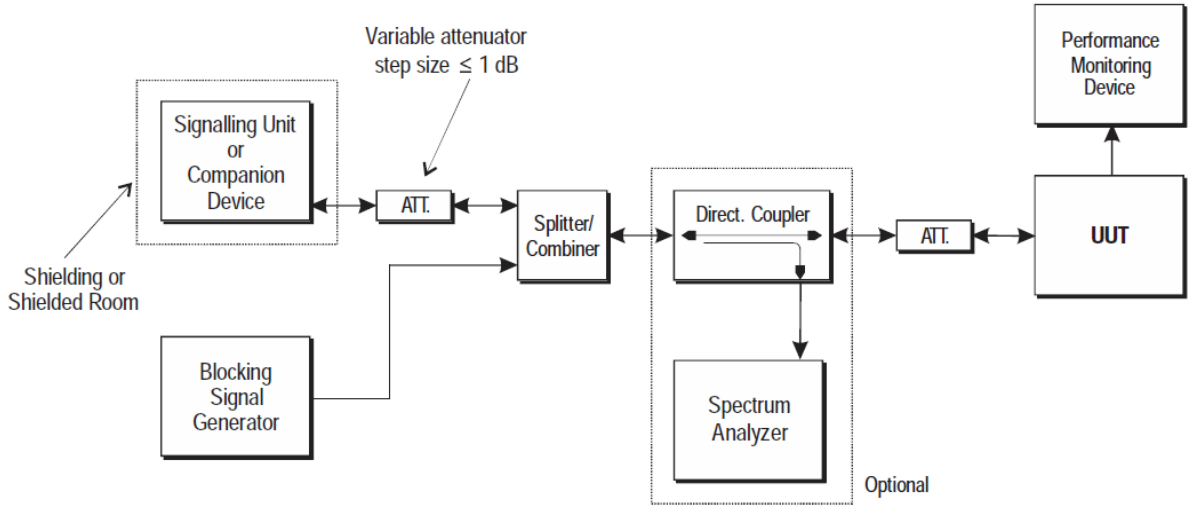
The minimum performance criterion shall be a PER of less than or equal to 10 %.

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)		Type of blocking signal
		Master or Slave with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)	
Pmin + 6 dB	5 100	-53	-59	Continuous Wave
Pmin + 6 dB	4 900 5 000 5 975	-47	-53	Continuous Wave
NOTE 1: P_{min} is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.8.3 in the absence of any blocking signal. NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the same levels should be used at the antenna connector irrespective of antenna gain.				

12.2 TEST PROCEDURES

a. The EUT shall be set to the first operating frequency to be tested(see section 3.2 of test report.)
b. The blocking signal generator is set to the first frequency as defined in above table of section 12.1 of test report.
c. With the blocking signal generator switched off a communication link is set up between the UUT and the associated companion device using the test setup shown in figure 18. The attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as limit is still met. The resulting level for the wanted signal at the input of the UUT is Pmin.
d. This signal level (Pmin) is increased by 6 dB resulting in a new level (Pmin + 6 dB) of the wanted signal at the EUT receiver input.
e. The level of the blocking signal at the EUT input is set to the level provided in above table of test report . It shall be verified and recorded in the test report that the performance criteria as limit are met.
f. If the performance criteria are met, the level of the blocking signal at the EUT may be further increased (e.g. in steps of 1 dB) until the level whereby the performance criteria as specified in limit are no longer met. The highest level at which the performance criteria are met is recorded in the test report.
g. Repeat step f for each remaining combination of frequency and level as specified in above table of section 12.1 of test report.
h. Repeat step b to step g with the EUT operating at the other operating frequencies at which the blocking test has to be performed.

12.3 TEST SETUP



12.4 TEST DEVIATION

There is no deviation with the original standard.

12.5 TEST RESULTS

Please refer to the Appendix K.

13. INFORMATION AS REQUIRED BY EN 301 893 V2.1.1, CLAUSE 5.4.1

In accordance with EN 301 893, clause 5.4.1, the following information is provided by the supplier.

a) The Nominal Channel Bandwidth(s):

Nominal Channel Bandwidth 1: 20 MHz

Nominal Channel Bandwidth 2: 40 MHz

Nominal Channel Bandwidth 3: 80 MHz

The associated centre frequencies: in section 2.3 of the test report.

b) For Load Based Equipment that supports multi-channel operation:

☐ The LBE equipment supports Option 1 as described in clause 4.2.7.3.2.3

☒ The LBE equipment supports Option 2 as described in clause 4.2.7.3.2.3

• The (maximum) number of channels used for multi-channel operation: 18

• These channels are adjacent channels: ☐ Yes ☒ No

• In case of non-adjacent channels, whether or not these channels are in different sub-bands: ☐ Yes ☒ No

• for LBE equipment implementing option 1 (see clause 4.2.7.3.2.3), the number of channels used for multichannel operation when performing the test described in clause 5.4.9.3.2.3.1: N/A

In case of multi-channel operation, further information defining the channels used for these simultaneous transmissions may be required.

c) The different transmit operating modes (see clause 5.3.3.2) (tick all that apply):

☐ **Operating mode 1:** Single Antenna Equipment

☐ a) Equipment with only 1 antenna

☐ b) Equipment with diversity antennas but only 1 antenna active at any moment in time

☐ c) Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used.

☒ **Operating mode 2:** Smart Antenna Systems - Multiple Antennas without beamforming

☒ a) Single spatial stream/Standard throughput

☒ b) High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1

☒ c) High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

☒ d) High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 3

☐ **Operating mode 3:** Smart Antenna Systems - Multiple Antennas with beamforming

☐ a) Single spatial stream/Standard throughput

☐ b) High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1

☐ c) High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2

d) In case of Smart Antenna Systems or multiple antenna systems:

• The number of Receive chains: 2

• The number of Transmit chains: 2

• Equal power distribution among the transmit chains: ☒ Yes ☐ No

• In case of beamforming, the maximum (additional) beamforming gain: N/A dB

NOTE: Beamforming gain does not include the basic gain of a single antenna (assembly).

e) TPC feature available: ☐ Yes ☒ No

f) The DFS related operating mode(s) of the equipment:

☒Master

☐Slave with radar detection

☐Slave without radar detection

g) User access restrictions (please check box below to confirm):

☒the equipment is constructed to comply with the requirements contained in clause 4.10 in ETSI EN 301 893 V2.1.1.

h) For equipment with Off-Channel CAC functionality:

The equipment has an *"Off-Channel CAC"* function: ☐Yes ☒No

If yes, specify the *"Off-Channel CAC Time"*

• For channels outside the 5 600 MHz to 5 650 MHz range: ____ hours

• If applicable, for channels (partially) within the 5 600 MHz to 5 650 MHz range: ____ hours

i) The equipment can operate in ad-hoc mode:

☒ no ad-hoc operation

☐ ad-hoc operation in the frequency range 5 150 MHz to 5 250 MHz without DFS

☐ ad-hoc operation with DFS

j) Operating Frequency Range(s):

Range 1: ☐5 150 MHz to 5 350 MHz and 5 470 MHz to 5 725 MHz

Range 2: ☐5 470 MHz to 5 725 MHz

Range 3: ☒5 150 MHz to 5 250 MHz (ad-hoc without DFS)

Range 4: ☐other, please specify:____

If the equipment has more than one Operating Frequency Range, tick all that apply.

k) The extreme operating temperature and supply voltage range that apply to the equipment:

☐-20 °C to +55 °C (Outdoor & Indoor usage)

☐0 °C to +35 °C (Indoor usage only)

☒Other: 0 °C to 40 °C .

The supply voltages of the stand-alone radio equipment or the supply voltages of the combined (host) equipment or test jig in case of plug-in devices:

Details provided are for the:

☒ stand-alone equipment

☐combined (or host) equipment

☐test jig

Supply Voltage ☒ DC State AC voltage 100-240 V

In case of DC, indicate the type of power source:

☐Internal Power Supply

☒External Power Supply or AC/DC adapter

☐Battery ☐Nickel Cadmium

☐Alkaline

☐Nickel-Metal Hydride

☐Lithium-Ion

☐Lead acid (Vehicle regulated)

☐Other

l) The test sequence/test software used (see also ETSI EN 301 893 (V2.1.1), clause 5.3.1.2):

MP Test

m) Type of Equipment:

☒Stand-alone

☐Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)

☐Plug-in radio device (Equipment intended for a variety of host systems)

☐Other_____

n) Adaptivity (Channel Access Mechanism):

☐Frame Based Equipment

☒Load Based Equipment

o) With regards to Adaptivity for Load Based Equipment:

☒ The Load Based Equipment operates as a Supervising Device

☐ The Load Based Equipment operates as a Supervised Device

☐ The Load Based Equipment can operate as a Supervising and as a Supervised Device

☐ The Load Based Equipment makes use of note 1 in table 7 or note 1 in table 8 of ETSI EN 301 893 V2.1.1

The Priority Classes implemented by the Load Based Equipment

- When operating as a Supervising Device

☐ Priority Class 4 (Highest priority)

☒ Priority Class 3

☐ Priority Class 2

☐ Priority Class 1 (Lowest priority)

- When operating as a Supervised Device

☐ Priority Class 4 (Highest priority)

☐ Priority Class 3

☐ Priority Class 2

☐ Priority Class 1 (Lowest priority)

☒ The Load Based Equipment operates as an Initiating Device

☐ The Load Based Equipment operates as an Responding Device

☐ The Load Based Equipment can operate as an Initiating Device and as a Responding Device

With regard to Energy Detection Threshold, the Load Based Equipment has implemented either option 1 of clause 4.2.7.3.2.5 of ETSI EN 301 893 V2.1.1 or option 2 of clause 4.2.7.3.2.5 of ETSI EN 301 893 V2.1.1:

☒ Option 1

☐ Option 2

Specify which protocol has been implemented: IEEE 802.11™ Other:____

p) The equipment supports a geo-location capability as defined in clause 4.2.10 of ETSI EN 301 893 V2.1.1:

☐ Yes

☒ No

14. MEASUREMENT INSTRUMENTS LIST

Centre Frequency					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	Test Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	C-100	N/A
3	Const Temp. & Humidity Chamber	GIANT FORCE	ITH-225-20-S	IAB0309-001	Sep. 03, 2018
4	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

Nominal / Occupied Channel Bandwidth					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	Test Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	C-100	N/A
3	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

Effective Isotropically Radiated Power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Cable	emci	EMC104-SM-SM-9000(0.01GHz－26.5GHz)	N/A	N/A
2	Cable	emci	EMC80-NM-NM-12000(9KHz-1GHz)	N/A	N/A
3	Power Sensor	Agilent	U2021XA	MY53020007	Jun. 20, 2018
4	Power Sensor	Agilent	U2021XA	MY53130004	Jun. 20, 2018
5	Power Sensor	Agilent	U2021XA	MY53260025	Jun. 20, 2018
6	Power Sensor	Agilent	U2021XA	MY53180019	Jun. 20, 2018
7	Const Temp. & Humidity Chamber	Giant Force	ITH-225-20-S	IAB0309-001	Sep. 03, 2018
8	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

Power Density					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	Test Cable	emci	EMC104-SM-SM-9000(0.01GHz－26.5GHz)	C-100	N/A
3	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

Transmitter and Receiver Spurious Emission (Conducted Measurement)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	Test Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	C-100	N/A
3	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

Transmitter and Receiver Spurious Emission (Radiated Measurement)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3231	Mar. 26, 2018
2	Double Ridged Guide Antenna	ETS	3115	75846	Mar. 26, 2018
3	Amplifier	Agilent	8449B	3008A02274	May. 16, 2018
4	Amplifier	HP	8447D	2944A08908	Feb. 22, 2018
5	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
6	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC012645B	980221	Sep. 03, 2018
7	Cable	emci	EMC104-SM-SM-9000(0.01GHz－26.5GHz)	N/A	N/A
8	Cable	emci	EMC80-NM-NM-12000(9KHz-1GHz)	N/A	N/A
9	Controller	ETS-Lindgren	2090	N/A	N/A
10	Horn Antenna	ETS	3116C	152324	Jun. 08, 2018
11	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

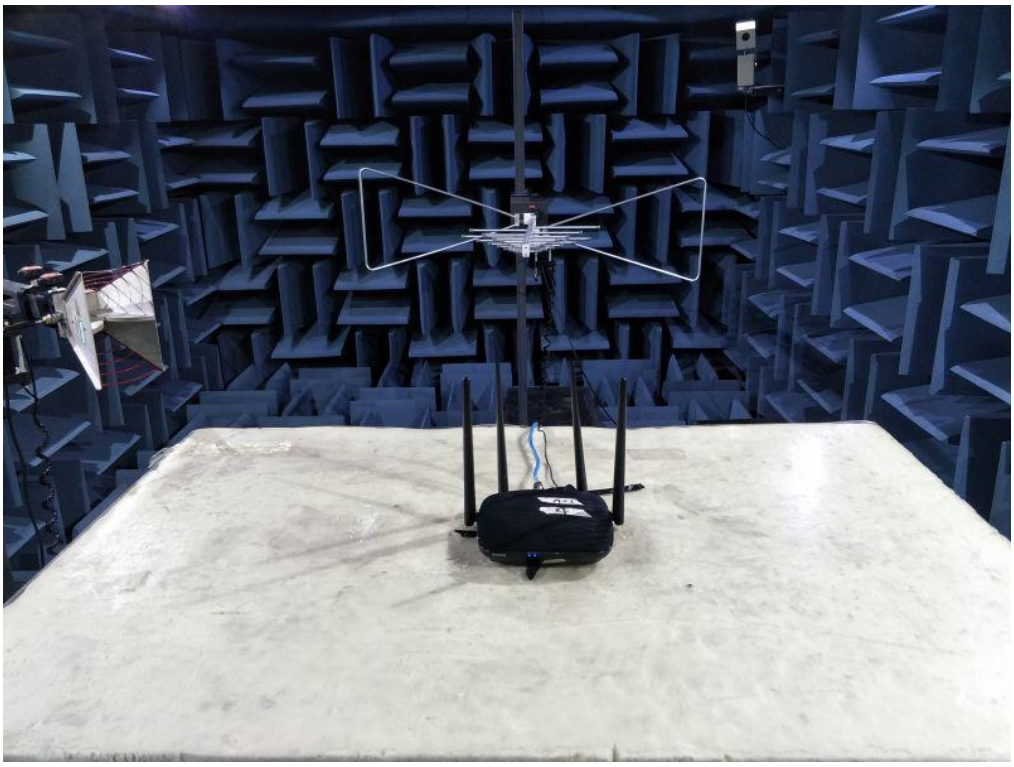
Adaptivity					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	POWER SPLITTER	Mini-Circuits	ZN4PD1-63-S+	SF9335D1045-2	Feb. 15, 2018
3	POWER SPLITTER	Mini-Circuits	ZFRSC-183-S+	SF601301339-1	Feb. 20, 2018
4	Coupler	Mini-Circuits	ZADC-10-63-S+	SF631801334	Feb. 15, 2018
5	EXG-B RF Vector Signal Generator	Agilent	N5172B	MY53050758	Mar. 26, 2018
6	Data collector	Keysight	AD211	TW54033508	N/A
7	Measurement Software	Keysight	EN301893V211 (V2.151229)	N/A	N/A

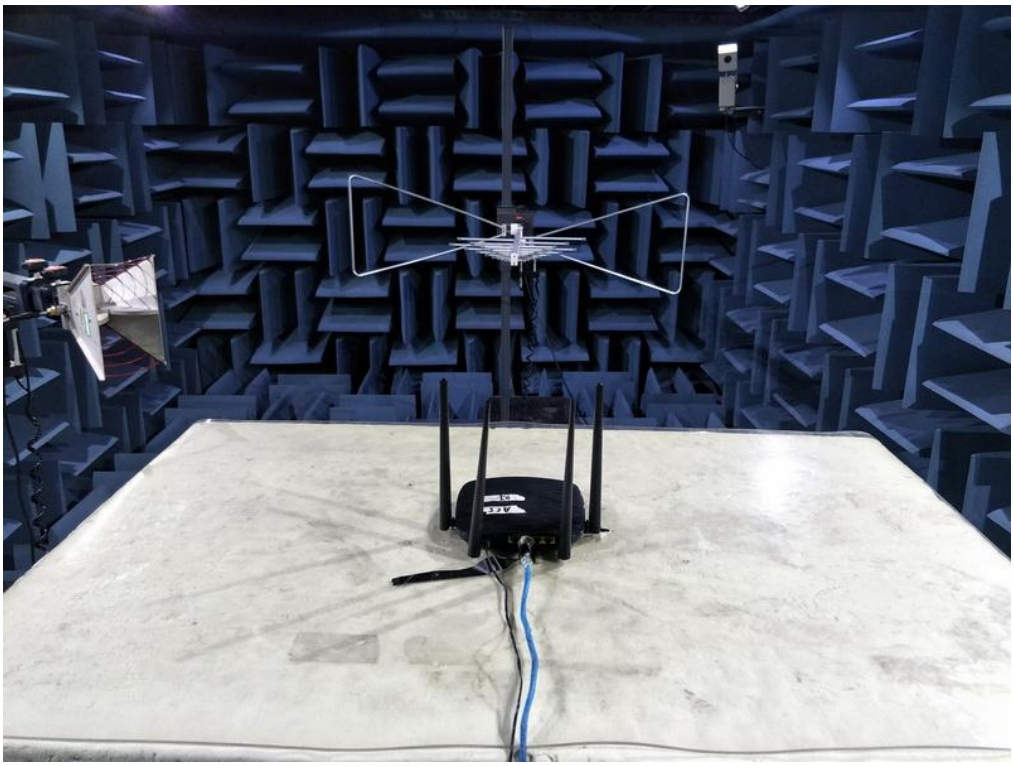
Receiver Blocking					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
2	POWER SPLITTER	Mini-Circuits	ZN4PD1-63-S+	SF9335D1045-2	Feb. 15, 2018
3	POWER SPLITTER	Mini-Circuits	ZFRSC-183-S+	SF601301339-1	Feb. 20, 2018
4	Coupler	Mini-Circuits	ZADC-10-63-S+	SF631801334	Feb. 15, 2018
5	EXG-B RF Vector Signal Generator	Agilent	N5172B	MY53050758	Mar. 26, 2018
6	Data collector	Keysight	AD211	TW54033508	N/A

Remark: “N/A” denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

15. EUT TEST PHOTO

Radiated Measurement Photos





APPENDIX A - CENTRE FREQUENCY

Test Mode: 802.11a Mode			
Test Conditions		Measurement Frequency (MHz)	
		5180	5240
T nom(°C)	25	5179.9858	5239.9839
T min(°C)	0	5179.9861	5239.9848
T max(°C)	40	5179.9871	5239.9858
Max. Deviation Frequency		0.0142	0.0161
Max. Frequency Error (ppm)		2.74	3.07
Limit (ppm)		20.00	
Result		Pass	

Test Mode: 802.11n(20 MHz) Mode			
Test Conditions		Measurement Frequency (MHz)	
		5180	5240
T nom(°C)	25	5179.9858	5239.9839
T min(°C)	0	5179.9875	5239.9846
T max(°C)	40	5179.9866	5239.9856
Max. Deviation Frequency		0.0142	0.0161
Max. Frequency Error (ppm)		2.74	3.07
Limit (ppm)		20.00	
Result		Pass	

Test Mode: 802.11n(40 MHz) Mode			
Test Conditions		Measurement Frequency (MHz)	
		5190	5230
T nom(°C)	25	5189.9922	5229.9961
T min(°C)	0	5189.9933	5229.9966
T max(°C)	40	5189.9924	5229.9976
Max. Deviation Frequency		0.0078	0.0039
Max. Frequency Error (ppm)		1.50	0.75
Limit (ppm)		20.00	
Result		Pass	

Test Mode: 802.11ac(20 MHz) Mode			
Test Conditions		Measurement Frequency (MHz)	
		5180	5240
T nom(°C)	25	5179.9858	5239.9839
T min(°C)	0	5179.9866	5239.9853
T max(°C)	40	5179.9876	5239.9844
Max. Deviation Frequency		0.0142	0.0161
Max. Frequency Error (ppm)		2.74	3.07
Limit (ppm)		20.00	
Result		Pass	

Test Mode: 802.11ac(40 MHz) Mode			
Test Conditions		Measurement Frequency (MHz)	
		5190	5230
T nom(°C)	25	5189.9922	5229.9961
T min(°C)	0	5189.9924	5229.9980
T max(°C)	40	5189.9934	5229.9971
Max. Deviation Frequency		0.0078	0.0039
Max. Frequency Error (ppm)		1.50	0.75
Limit (ppm)		20.00	
Result		Pass	

Test Mode: 802.11ac(80 MHz) Mode		
Test Conditions		Measurement Frequency (MHz)
		5210
T nom(°C)	25	5210.0239
T min(°C)	0	5210.0247
T max(°C)	40	5210.0256
Max. Deviation Frequency		0.0256
Max. Frequency Error (ppm)		4.91
Limit (ppm)		20.00
Result		Pass

APPENDIX B - NOMINAL / OCCUPIED CHANNEL BANDWIDTH

Test Mode: 802.11a Mode			
Test Conditions		Occupied Channel Bandwidth	
		5180	5240
T nom (°C)	25	16.349	16.350
Limits (MHz)		16~20	
Result		Pass	

Test Mode: 802.11n(20 MHz) Mode			
Test Conditions		Occupied Channel Bandwidth	
		5180	5240
T nom (°C)	25	17.515	17.519
Limits (MHz)		16~20	
Result		Pass	

Test Mode: 802.11n(40 MHz) Mode			
Test Conditions		Occupied Channel Bandwidth	
		5190	5230
T nom (°C)	25	35.899	35.911
Limits (MHz)		32~40	
Result		Pass	

Test Mode: 802.11ac(20MHz) Mode			
Test Conditions		Occupied Channel Bandwidth	
		5180	5240
T nom (°C)	25	17.553	17.521
Limits (MHz)		16~20	
Result		Pass	

Test Mode: 802.11ac(40 MHz) Mode			
Test Conditions		Occupied Channel Bandwidth	
		5190	5230
T nom (°C)	25	36.061	36.087
Limits (MHz)		32~40	
Result		Pass	

Test Mode: 802.11ac(80 MHz) Mode		
Test Conditions		Occupied Channel Bandwidth
		5210
T nom (°C)	25	75.192
Limits (MHz)		64~80
Result		Pass

APPENDIX C - EFFECTIVE ISOTROPICALLY RADIATED POWER

Test Mode: 802.11a Mode at the Highest Power Level			
Test Conditions		Max. EIRP Power (dBm)	
		5180	5240
T nom (°C)	25	22.84	22.63
T min (°C)	0	22.95	22.75
T max (°C)	40	22.75	22.61
Max EIRP Power		22.95	
Limits		23	
Result		Pass	

Test Mode: 802.11n(20 MHz) Mode at the Highest Power Level			
Test Conditions		Max. EIRP Power (dBm)	
		5180	5240
T nom (°C)	25	22.77	22.69
T min (°C)	0	22.85	22.75
T max (°C)	40	22.64	22.57
Max EIRP Power		22.85	
Limits		23	
Result		Pass	

Test Mode: 802.11n(40 MHz) Mode at the Highest Power Level			
Test Conditions		Max. EIRP Power (dBm)	
		5190	5230
T nom (°C)	25	22.49	22.79
T min (°C)	0	22.59	22.86
T max (°C)	40	22.16	22.68
Max EIRP Power		22.86	
Limits		23	
Result		Pass	

Test Mode: 802.11ac(20 MHz) Mode at the Highest Power Level			
Test Conditions		Max. EIRP Power (dBm)	
		5180	5240
T nom (°C)	25	22.74	22.86
T min (°C)	0	22.78	22.96
T max (°C)	40	22.69	22.68
Max EIRP Power		22.96	
Limits		23	
Result		Pass	

Test Mode: 802.11ac(40 MHz) Mode at the Highest Power Level			
Test Conditions		Max. EIRP Power (dBm)	
		5190	5230
T nom (°C)	25	22.54	22.86
T min (°C)	0	22.68	22.91
T max (°C)	40	22.49	22.51
Max EIRP Power		22.91	
Limits		23	
Result		Pass	

Test Mode: 802.11ac(80 MHz) Mode at the Highest Power Level		
Test Conditions		Max. EIRP Power (dBm)
		5210
T nom (°C)	25	22.71
T min (°C)	0	22.85
T max (°C)	40	22.69
Max EIRP Power		22.85
Limits		23
Result		Pass

APPENDIX D - POWER DENSITY

Test Mode: 802.11a Mode			
Test Conditions		EIRP Spectral Power Density (dBm / MHz)	
		5180	5240
T nom (°C)	25	6.52	5.87
Limits		10	
Result		Pass	

Test Mode: 802.11n(20 MHz) Mode			
Test Conditions		EIRP Spectral Power Density (dBm / MHz)	
		5180	5240
T nom (°C)	25	6.30	6.15
Limits		10	
Result		Pass	

Test Mode: 802.11n(40 MHz) Mode			
Test Conditions		EIRP Spectral Power Density (dBm / MHz)	
		5190	5230
T nom (°C)	25	3.88	3.57
Limits		10	
Result		Pass	

Test Mode: 802.11ac(20 MHz) Mode			
Test Conditions		EIRP Spectral Power Density (dBm / MHz)	
		5180	5240
T nom (°C)	25	6.56	6.80
Limits		10	
Result		Pass	

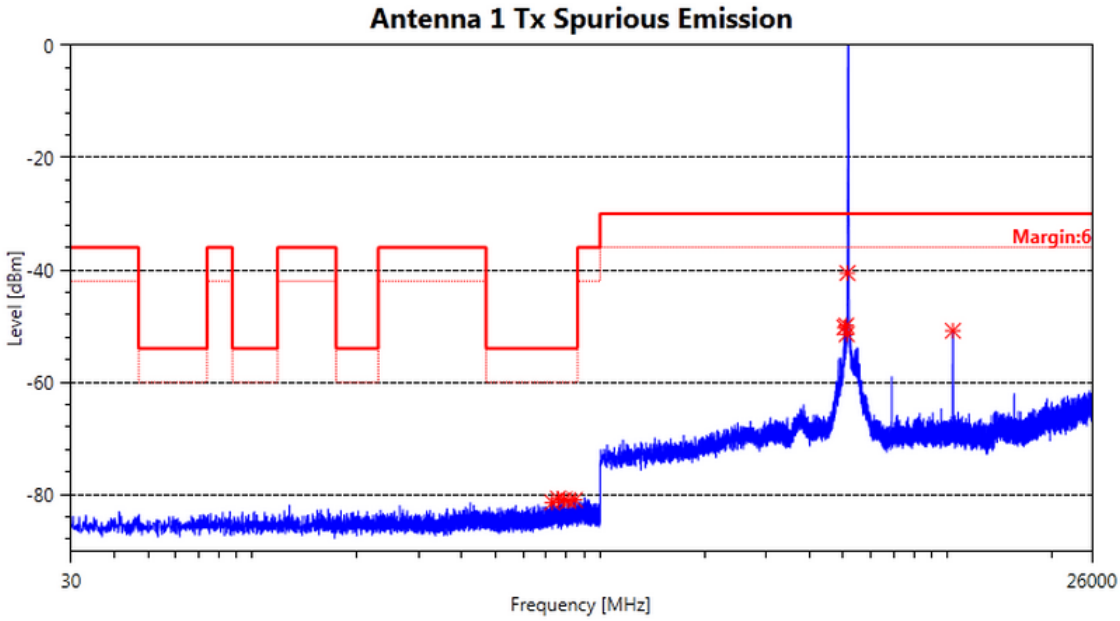
Test Mode: 802.11ac(40 MHz) Mode			
Test Conditions		EIRP Spectral Power Density (dBm / MHz)	
		5190	5230
T nom (°C)	25	3.81	3.96
Limits		10	
Result		Pass	

Test Mode: 802.11ac(80 MHz) Mode		
Test Conditions		EIRP Spectral Power Density (dBm / MHz)
		5210
T nom (°C)	25	1.97
Limits		10
Result		Pass

APPENDIX E - TRANSMITTER SPURIOUS EMISSIONS (30MHZ TO 1000MHZ)

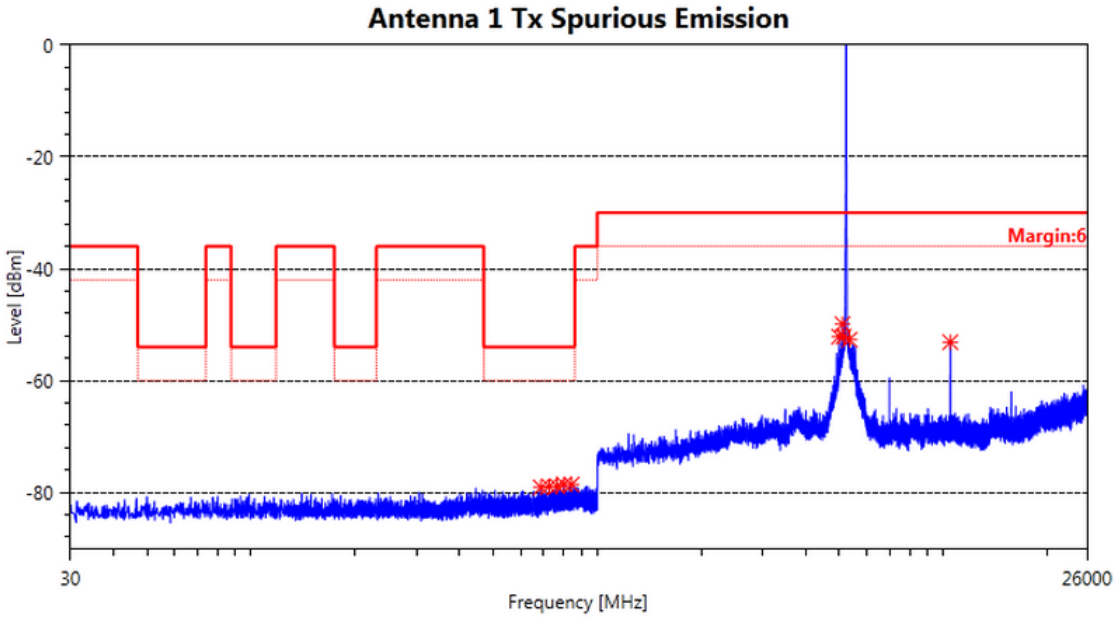
Test Mode:	TX Mode_802.11a_5180MHz

802.11a Mode_5180_ANT 1



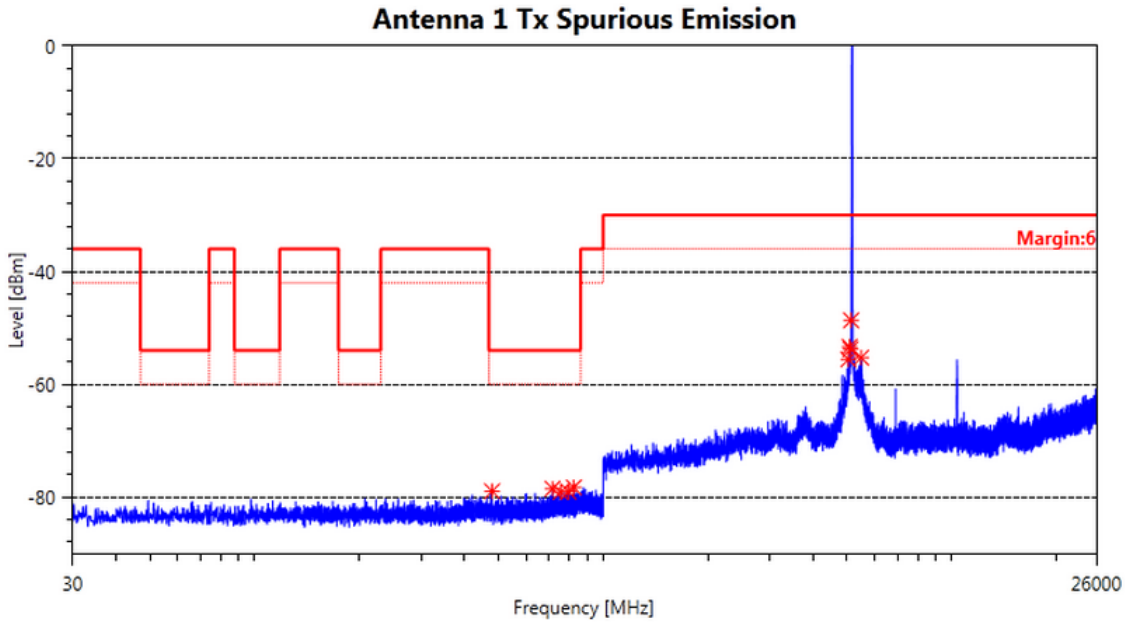
Test Mode:	TX Mode_802.11a_5240MHz

802.11a Mode_5240_ANT 1

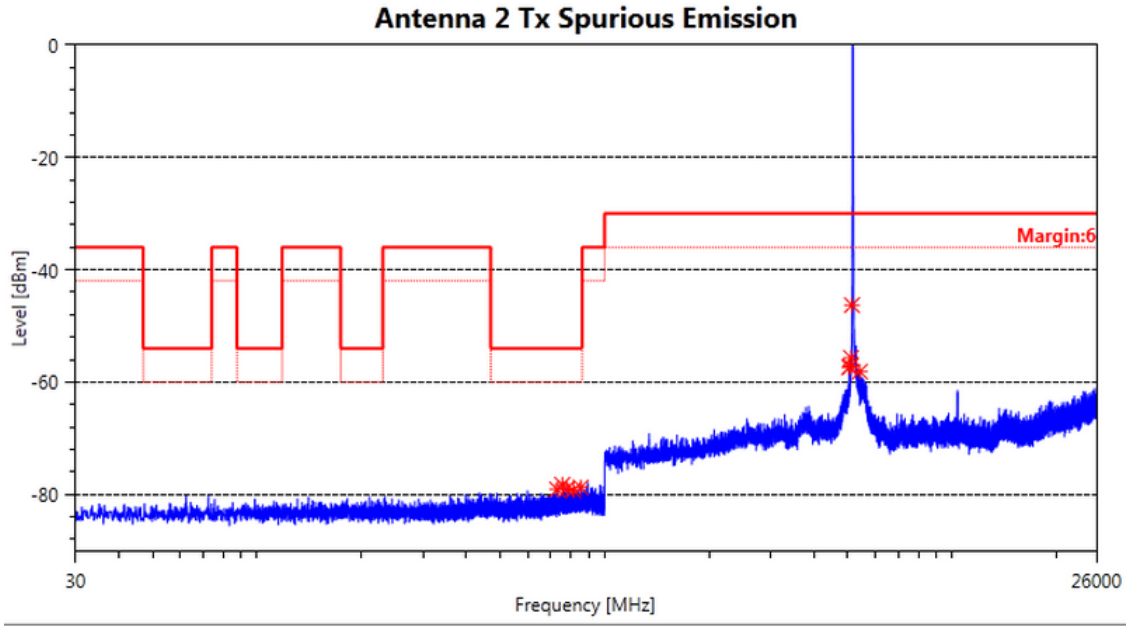


Test Mode:	TX Mode_802.11n(20 MHz)_5180MHz

802.11n 20M Mode_5180_ANT 1

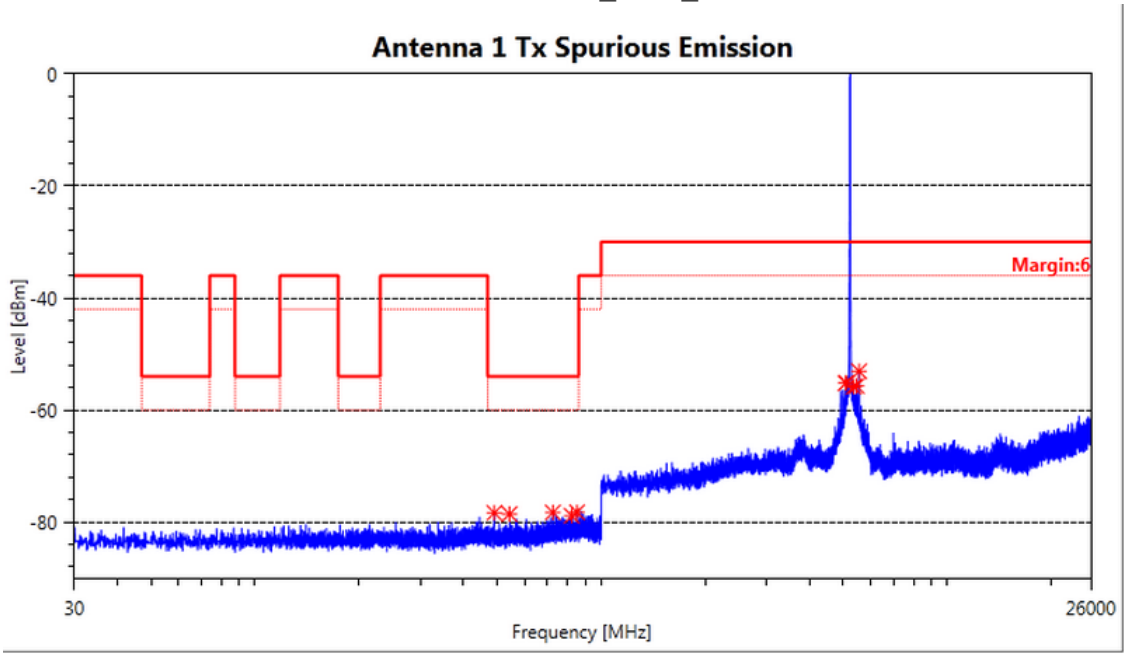


802.11n 20M Mode_5180_ANT 2

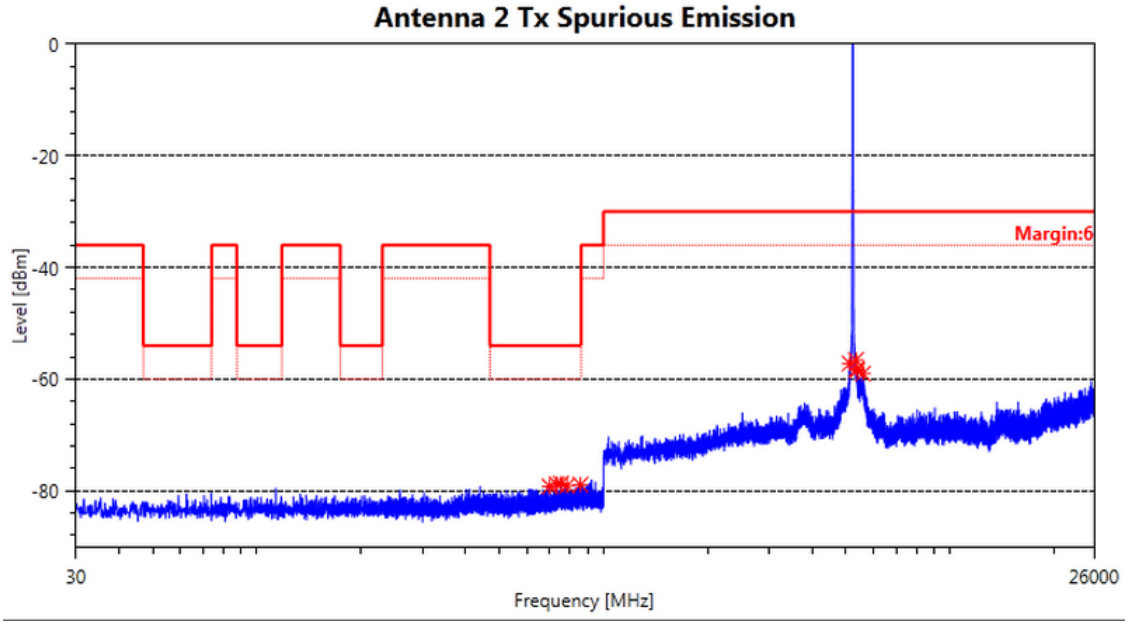


Test Mode:	TX Mode_802.11n(20 MHz)_5240MHz

802.11n 20M Mode_5240_ANT 1

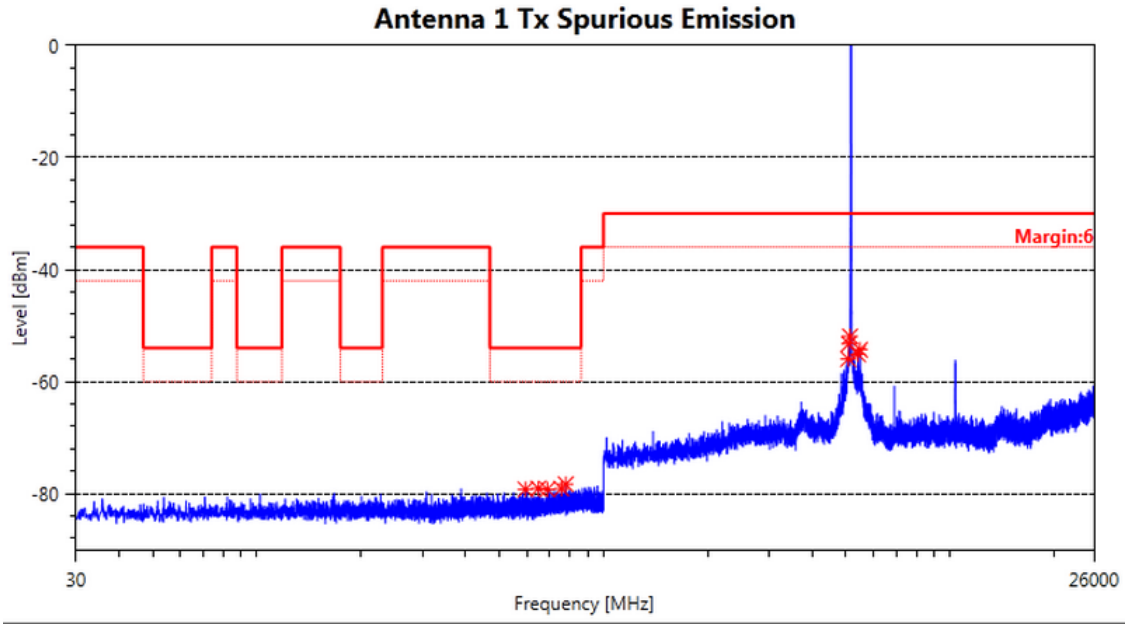


802.11n 20M Mode_5240_ANT 2

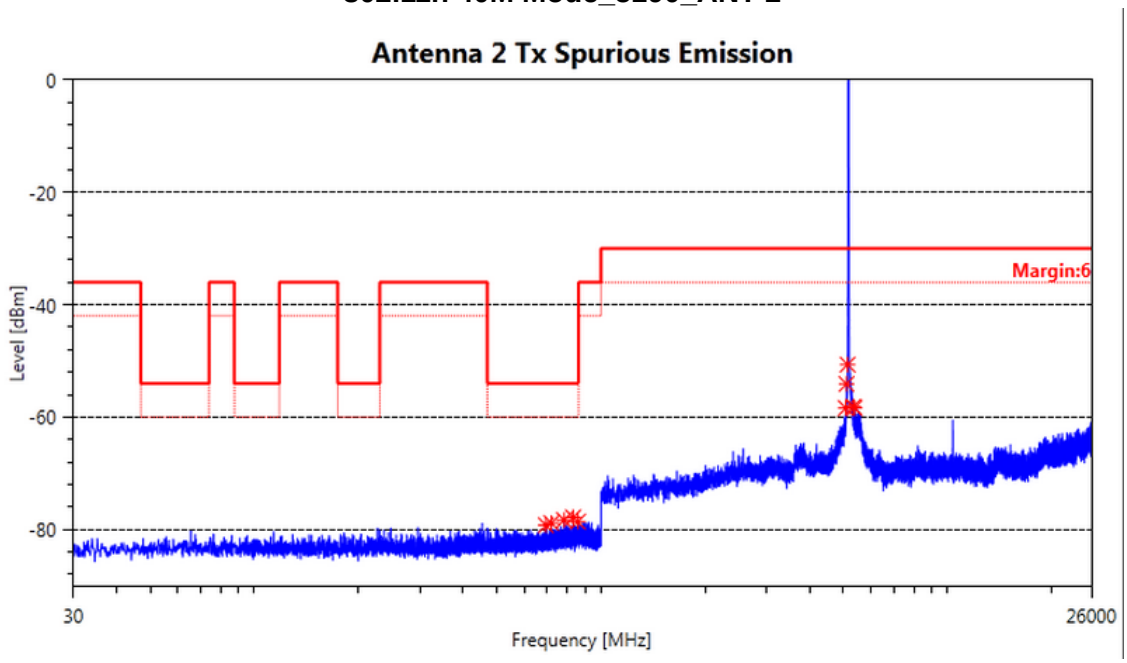


Test Mode:	TX Mode_802.11n(40 MHz)_5190MHz

802.11n 40M Mode_5190_ANT 1

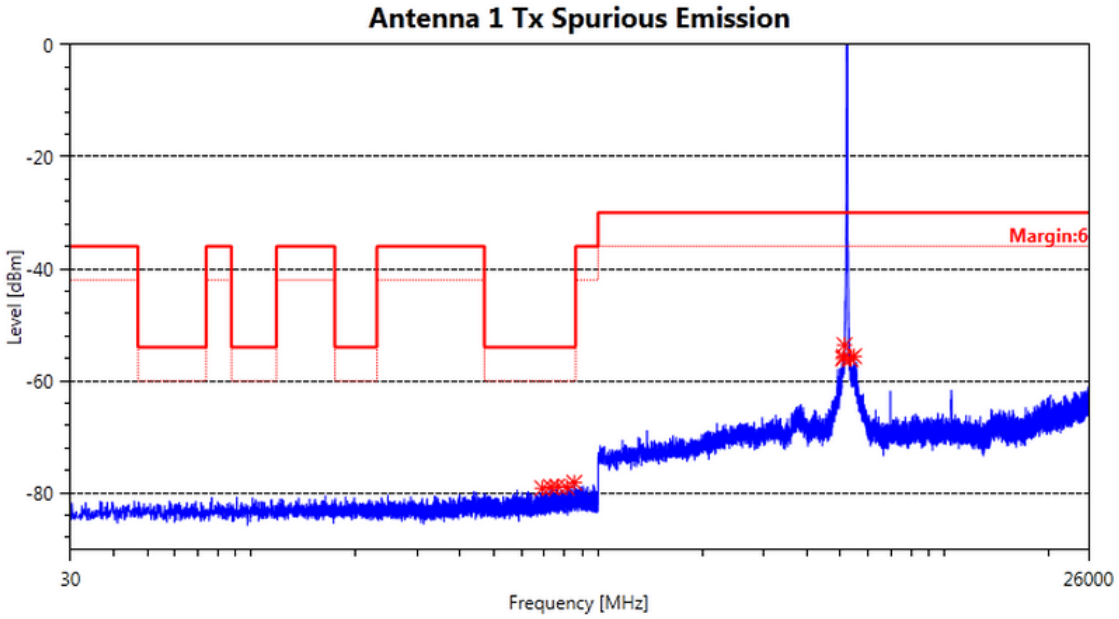


802.11n 40M Mode_5190_ANT 2

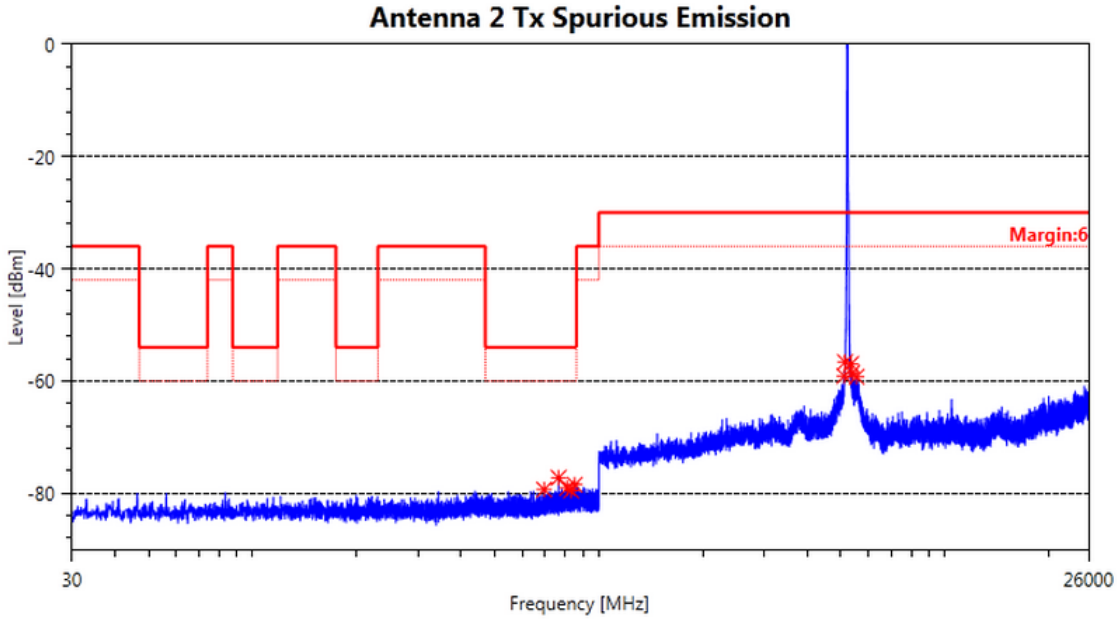


Test Mode:	TX Mode_802.11n(40 MHz)_5230MHz

802.11n 40M Mode_5230_ANT 1

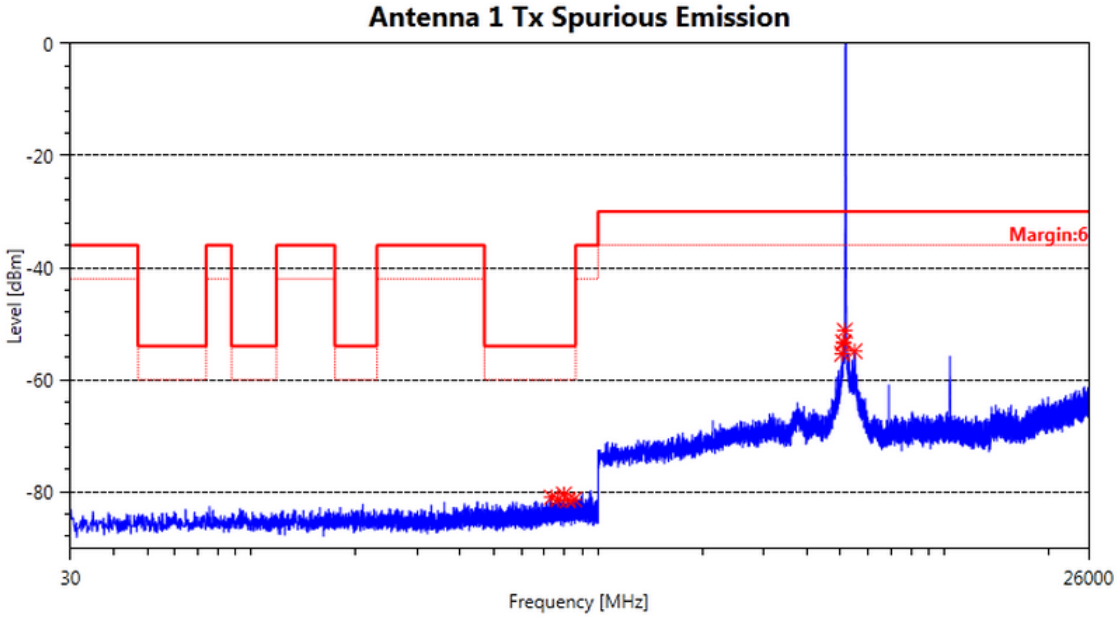


802.11n 40M Mode_5230_ANT 2

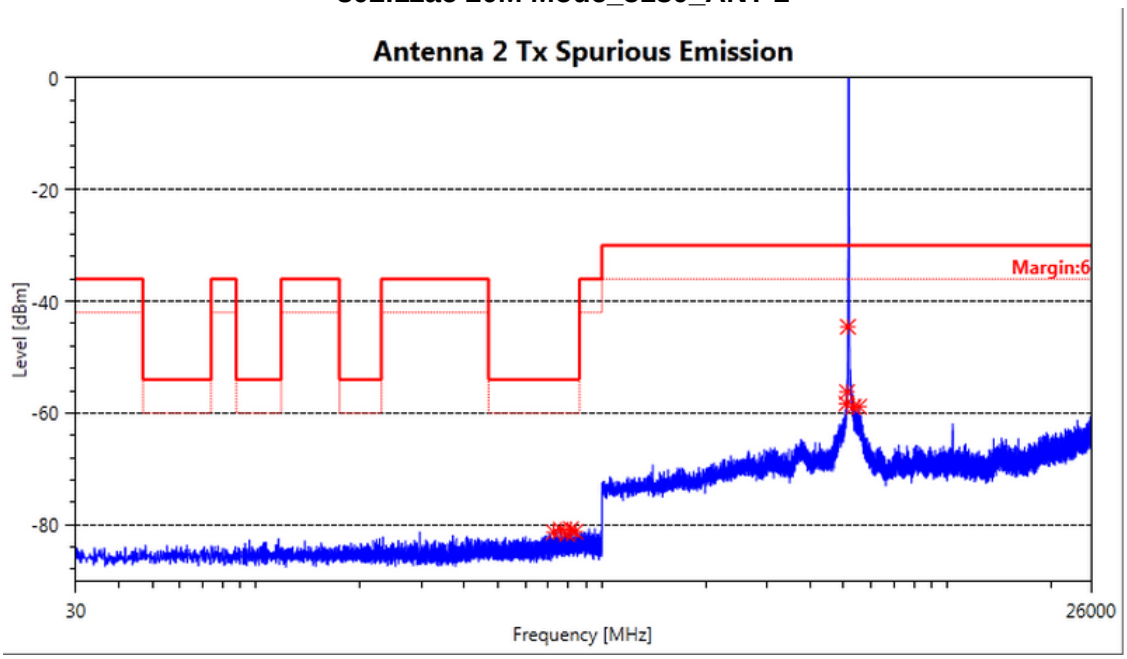


Test Mode:	TX Mode_802.11ac(20 MHz)_5180MHz

802.11ac 20M Mode_5180_ANT 1

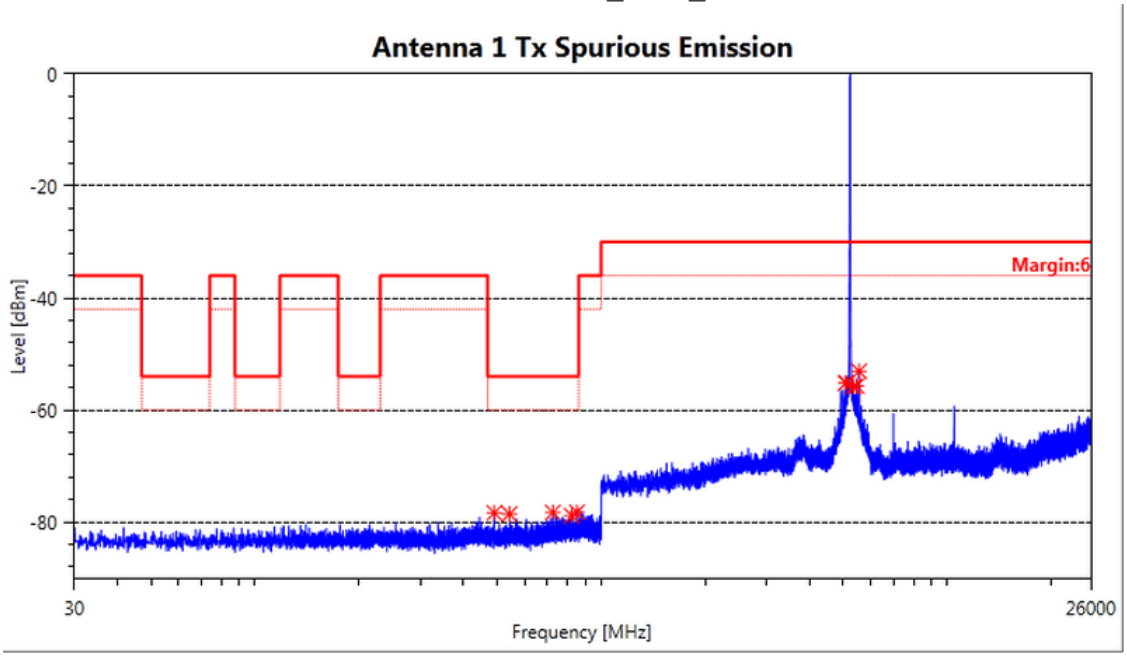


802.11ac 20M Mode_5180_ANT 2

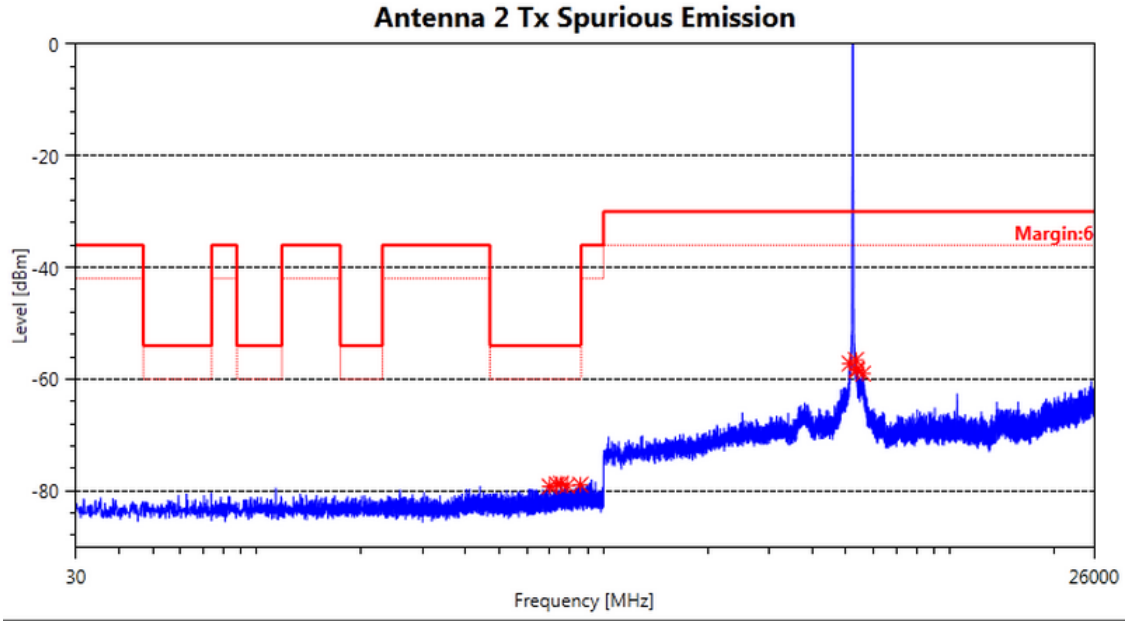


Test Mode:	TX Mode_802.11ac(20 MHz)_5240MHz

802.11ac 20M Mode_5240_ANT 1

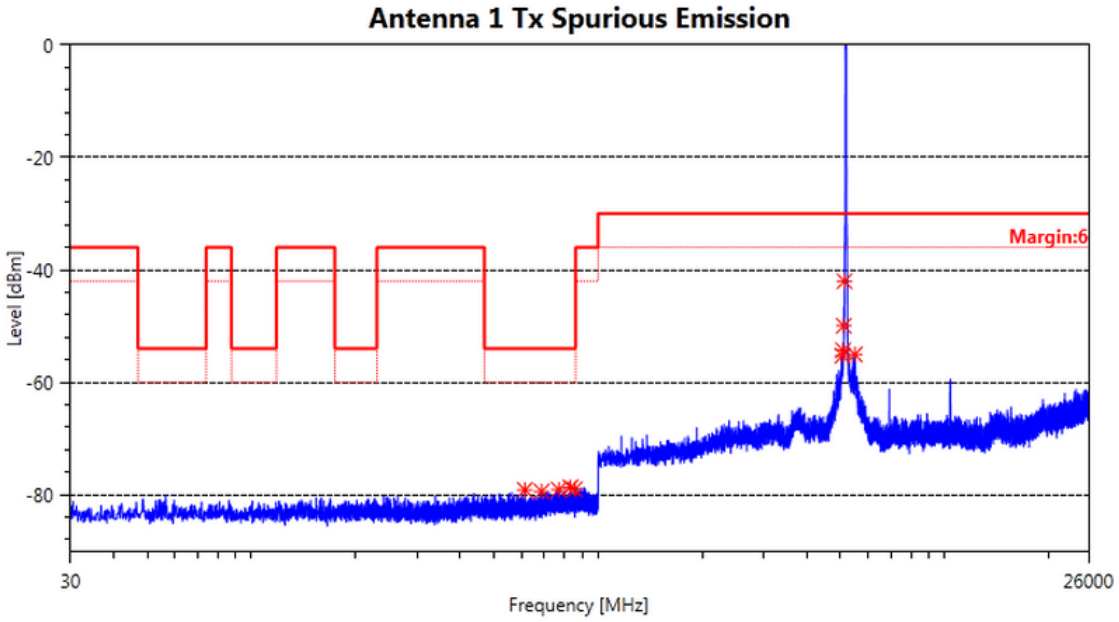


802.11ac 20M Mode_5240_ANT 2

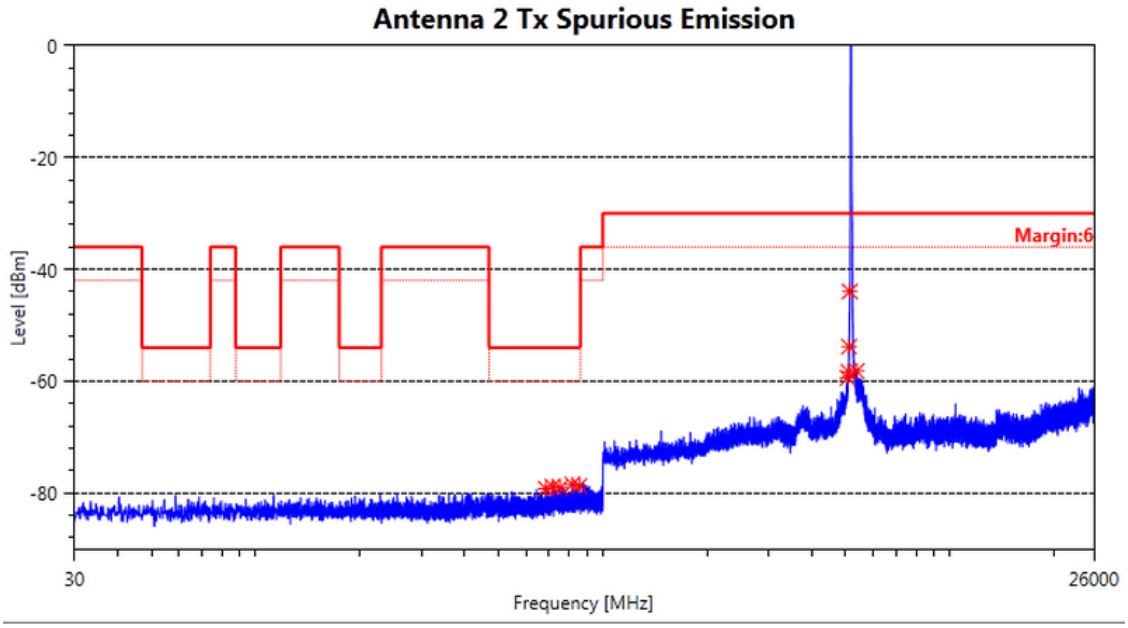


Test Mode:	TX Mode_802.11ac(40 MHz)_5190MHz

802.11ac 40M Mode_5190_ANT 1

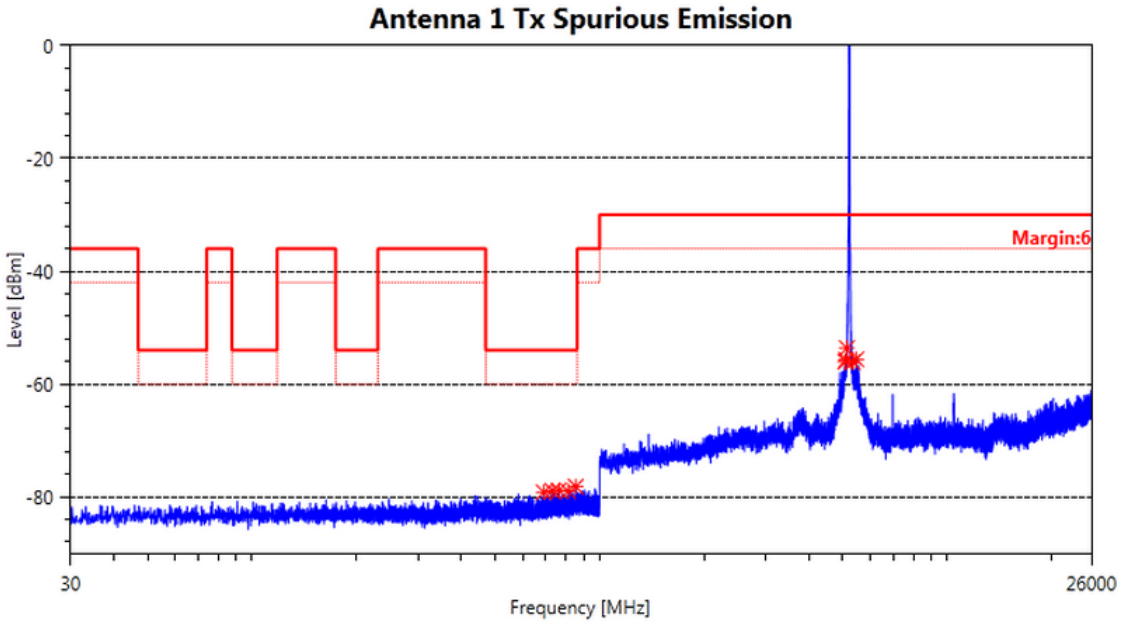


802.11ac 40M Mode_5190_ANT 2

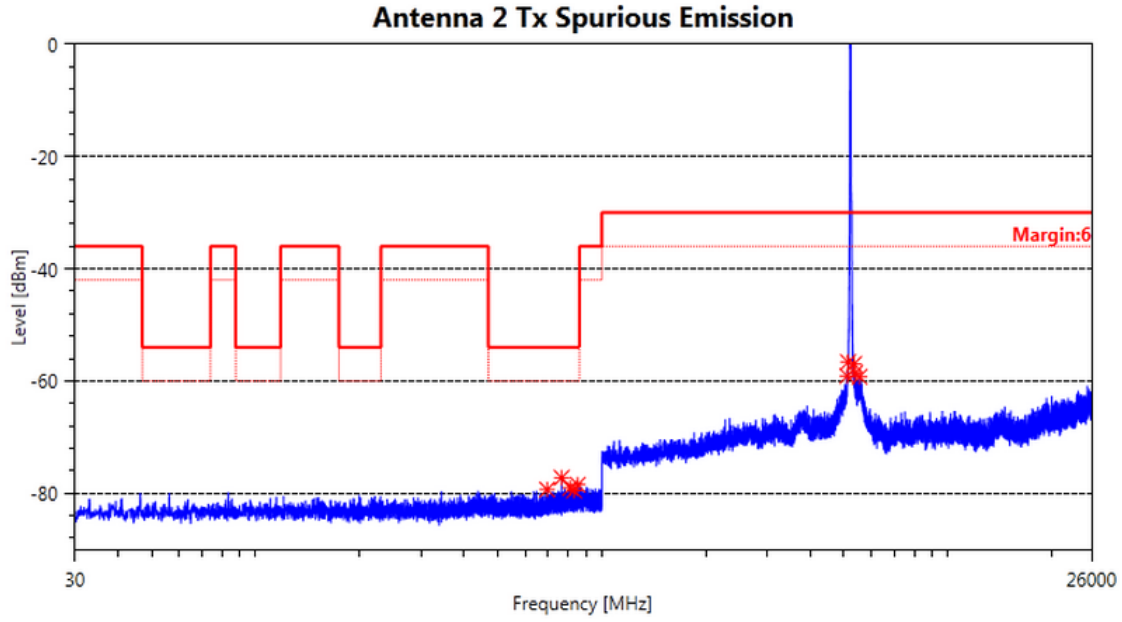


Test Mode:	TX Mode_802.11ac(40 MHz)_5230MHz

802.11ac 40M Mode_5230_ANT 1

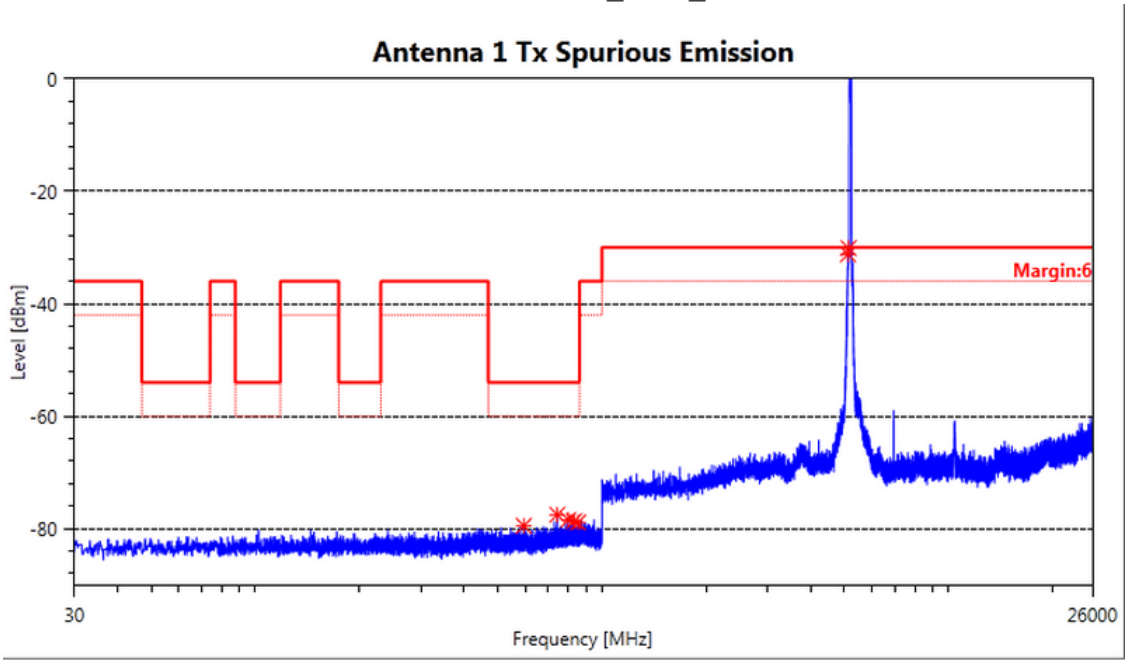


802.11ac 40M Mode_5230_ANT 2

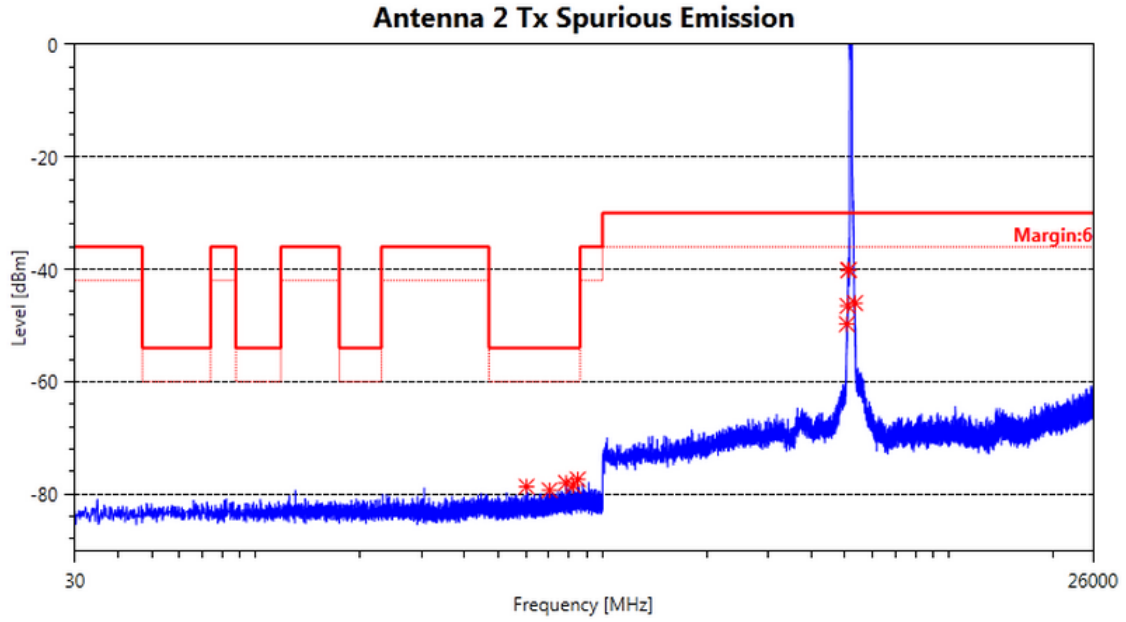


Test Mode:	TX Mode_802.11ac(80 MHz)_5210MHz

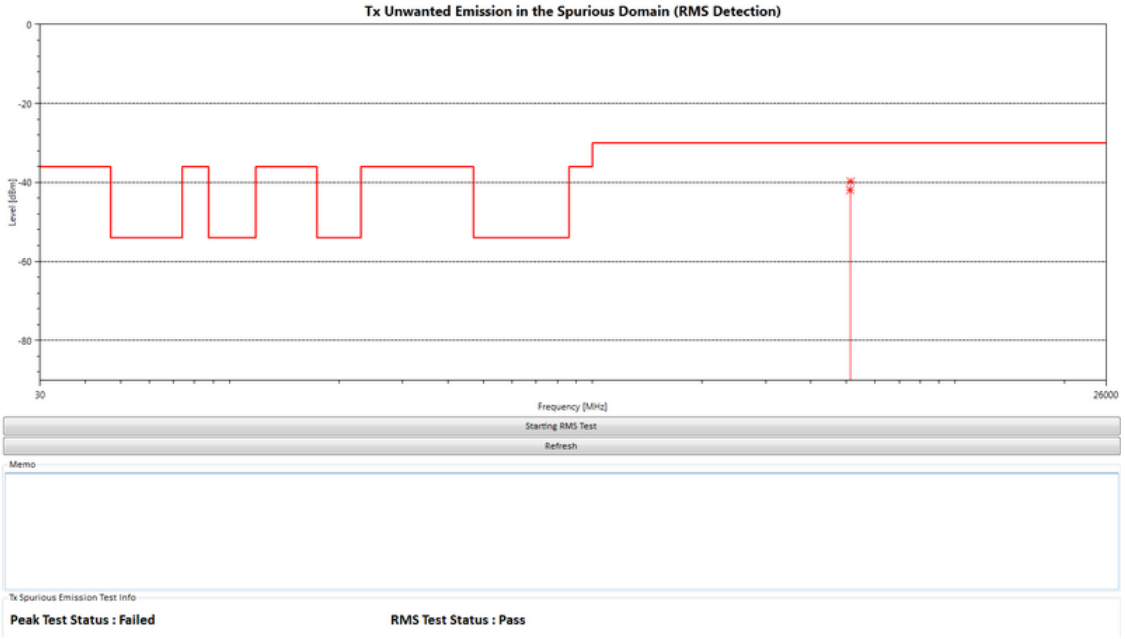
802.11ac 80M Mode_5210_ANT 1



802.11ac 80M Mode_5210_ANT 2

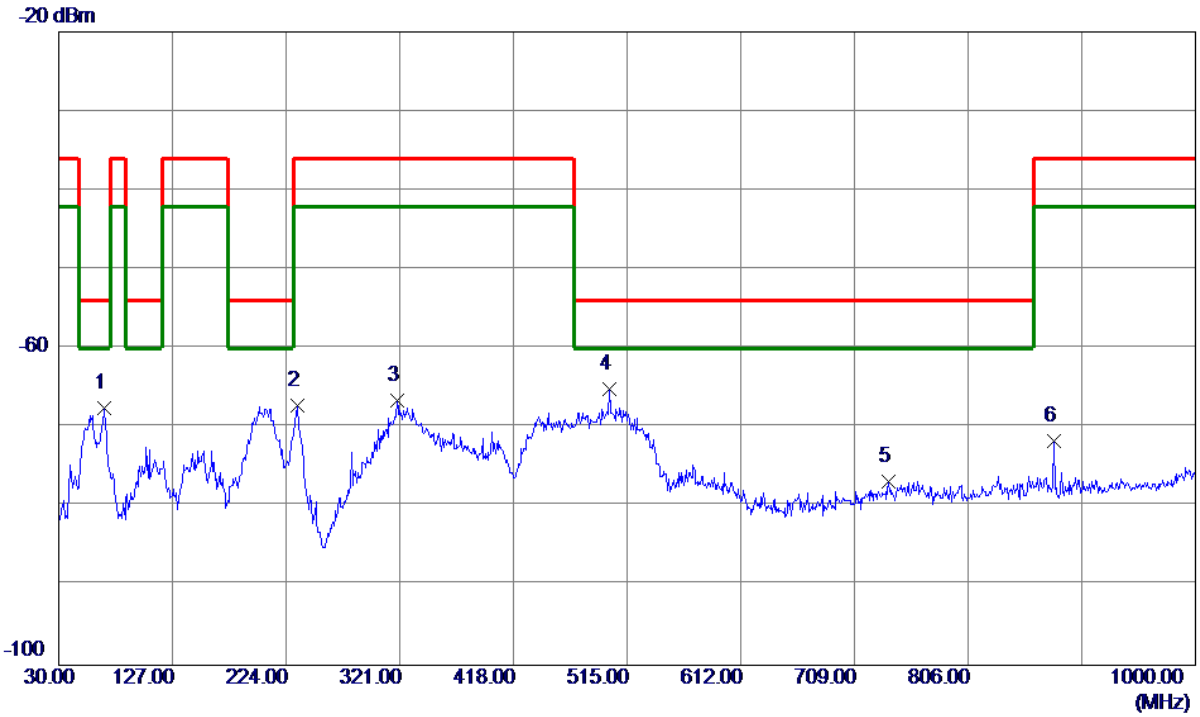


802.11ac 80M Mode_5210_RMS



Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5180MHz

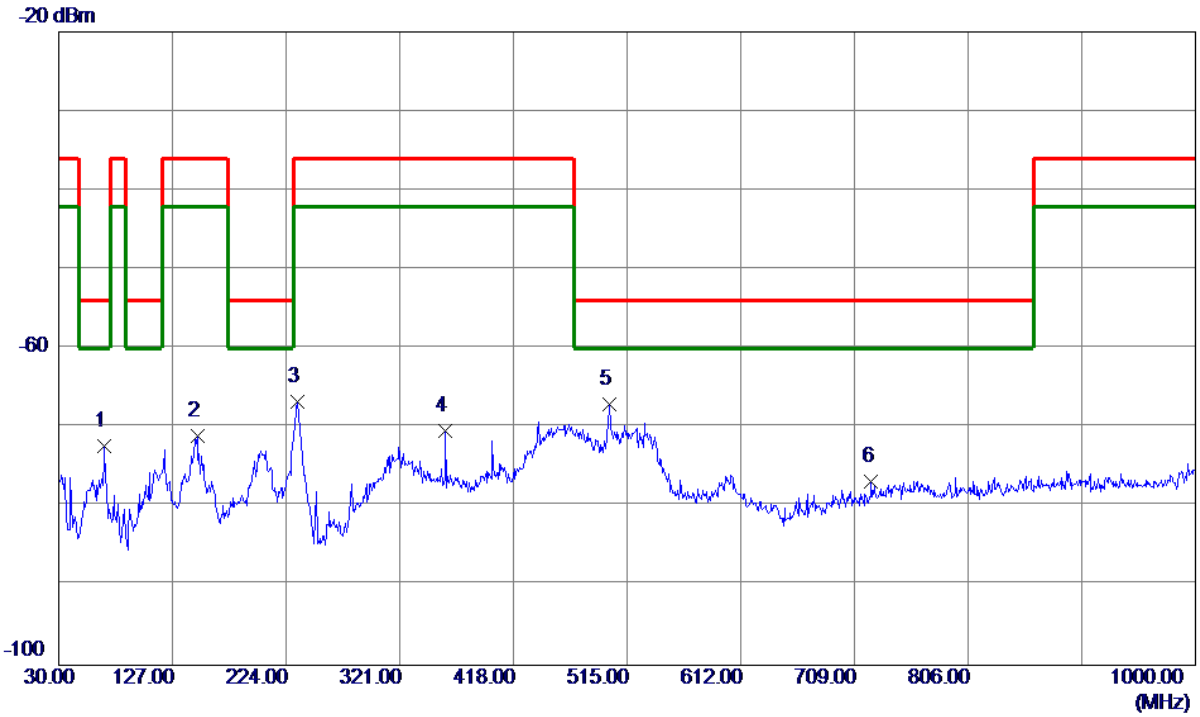
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.3150	-63.21	-4.36	-67.57	-54.00	-13.57	RMS	
2	233.8940	-63.12	-4.14	-67.26	-36.00	-31.26	RMS	
3	318.6719	-66.02	-0.58	-66.60	-36.00	-30.60	RMS	
4 *	499.9650	-69.25	4.10	-65.15	-54.00	-11.15	RMS	
5	738.0030	-85.01	8.23	-76.78	-54.00	-22.78	RMS	
6	879.5260	-80.89	9.28	-71.61	-36.00	-35.61	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5180MHz

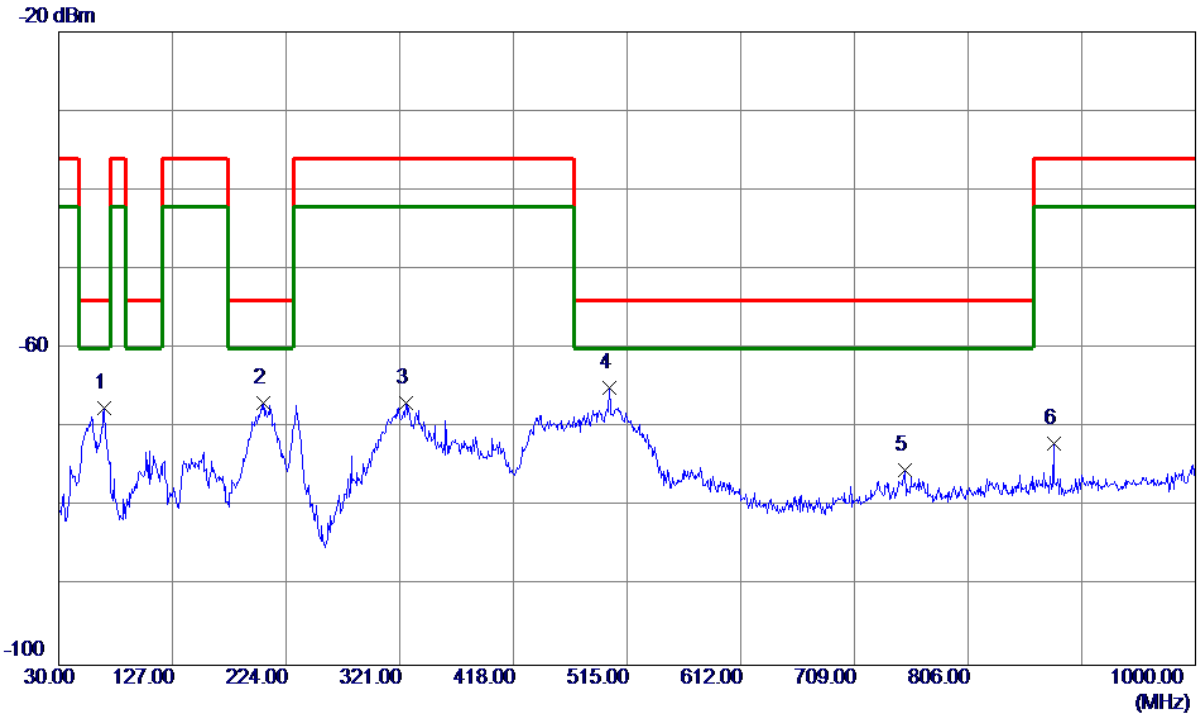
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.8970	-66.55	-5.79	-72.34	-54.00	-18.34	RMS	
2	148.0490	-70.38	-0.60	-70.98	-36.00	-34.98	RMS	
3	234.0880	-63.99	-2.80	-66.79	-36.00	-30.79	RMS	
4	359.9940	-71.02	0.58	-70.44	-36.00	-34.44	RMS	
5 *	499.9650	-71.10	4.09	-67.01	-54.00	-13.01	RMS	
6	723.5500	-84.69	7.90	-76.79	-54.00	-22.79	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5240MHz

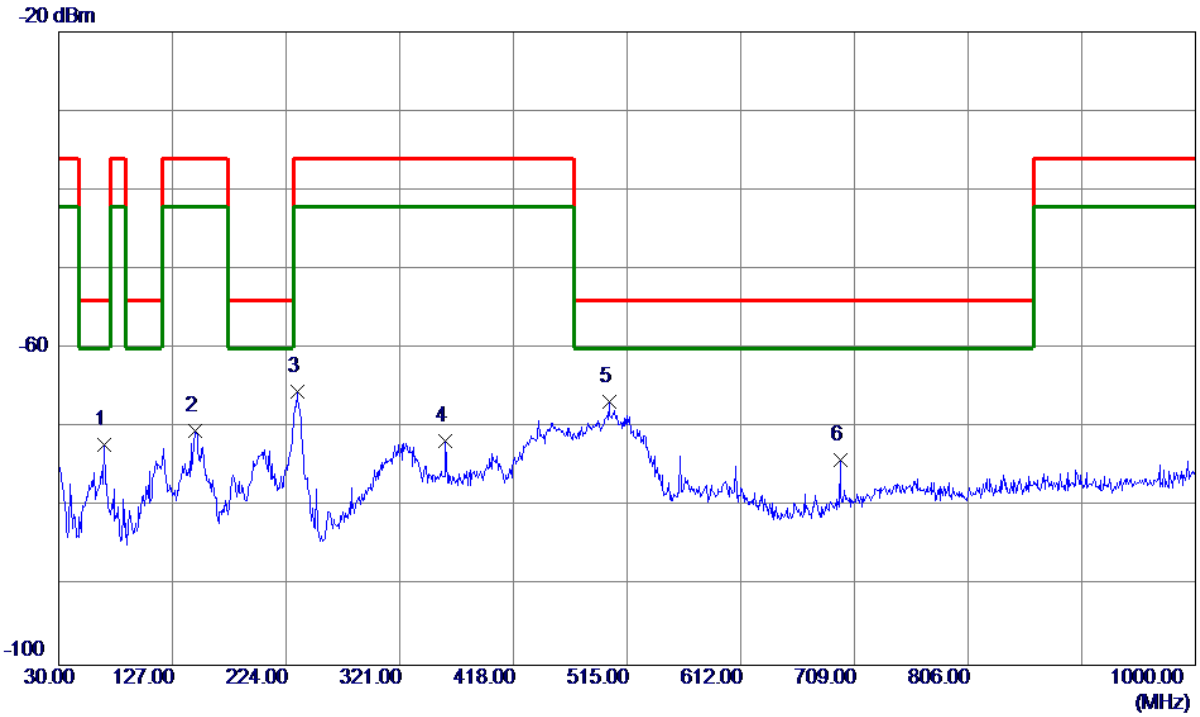
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	69.0910	-62.85	-4.68	-67.53	-54.00	-13.53	RMS	
2	204.1150	-61.42	-5.43	-66.85	-54.00	-12.85	RMS	
3	326.7230	-66.32	-0.57	-66.89	-36.00	-30.89	RMS	
4 *	499.9650	-69.00	4.10	-64.90	-54.00	-10.90	RMS	
5	752.4560	-84.08	8.67	-75.41	-54.00	-21.41	RMS	
6	879.5260	-81.29	9.28	-72.01	-36.00	-36.01	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5240MHz

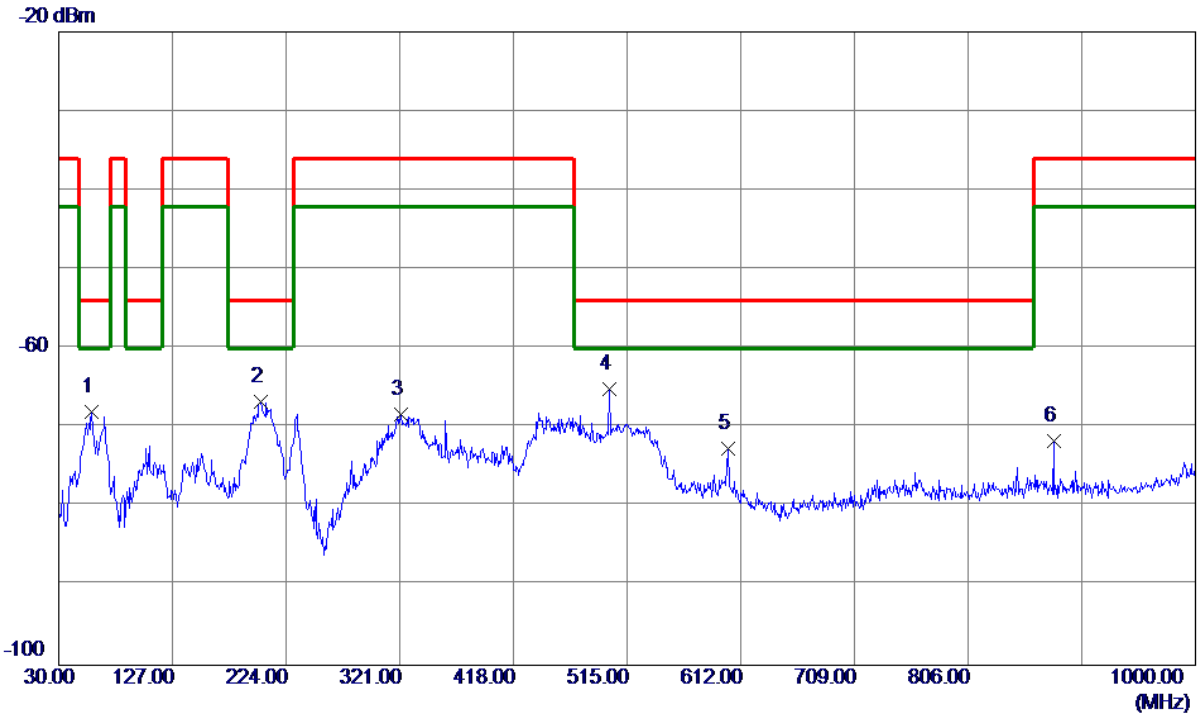
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.4120	-66.52	-5.61	-72.13	-54.00	-18.13	RMS	
2	146.8850	-69.73	-0.64	-70.37	-36.00	-34.37	RMS	
3	233.3120	-62.63	-2.84	-65.47	-36.00	-29.47	RMS	
4	359.9940	-72.25	0.58	-71.67	-36.00	-35.67	RMS	
5 *	499.9650	-70.82	4.09	-66.73	-54.00	-12.73	RMS	
6	697.1660	-80.89	6.87	-74.02	-54.00	-20.02	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5190MHz

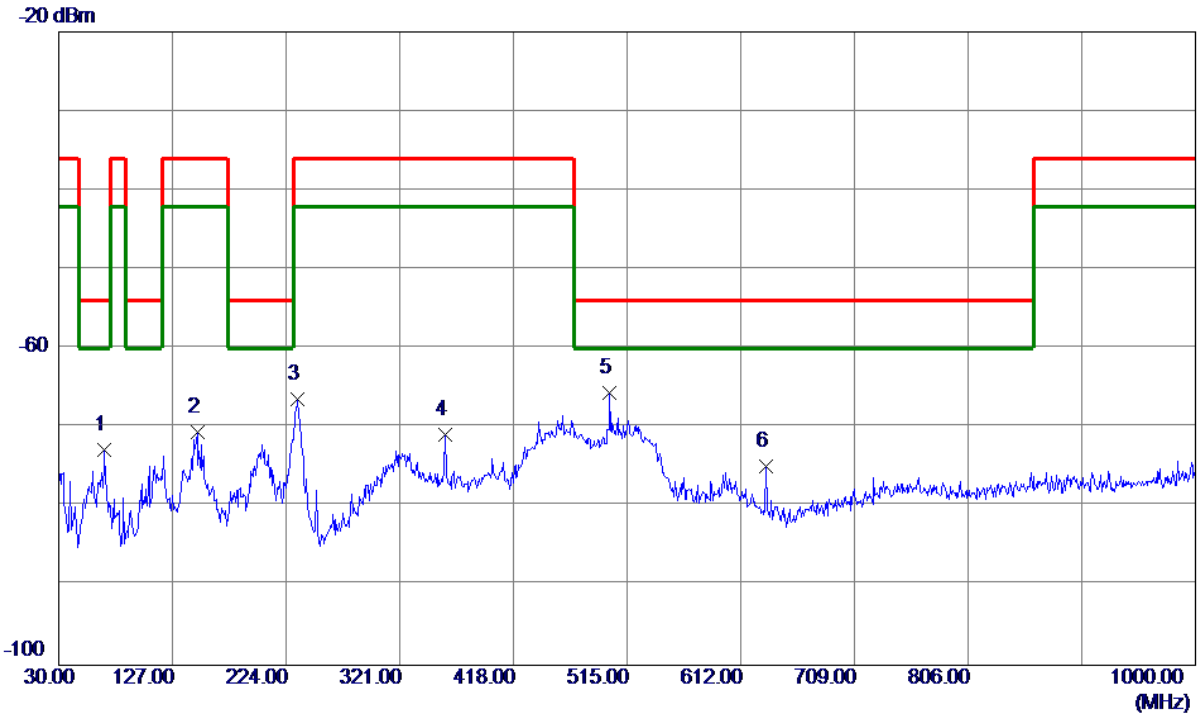
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	58.4210	-65.71	-2.24	-67.95	-54.00	-13.95	RMS	
2	201.9810	-61.14	-5.56	-66.70	-54.00	-12.70	RMS	
3	322.2610	-67.79	-0.55	-68.34	-36.00	-32.34	RMS	
4 *	499.9650	-69.25	4.10	-65.15	-54.00	-11.15	RMS	
5	601.1360	-79.86	7.19	-72.67	-54.00	-18.67	RMS	
6	879.5260	-80.99	9.28	-71.71	-36.00	-35.71	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5190MHz

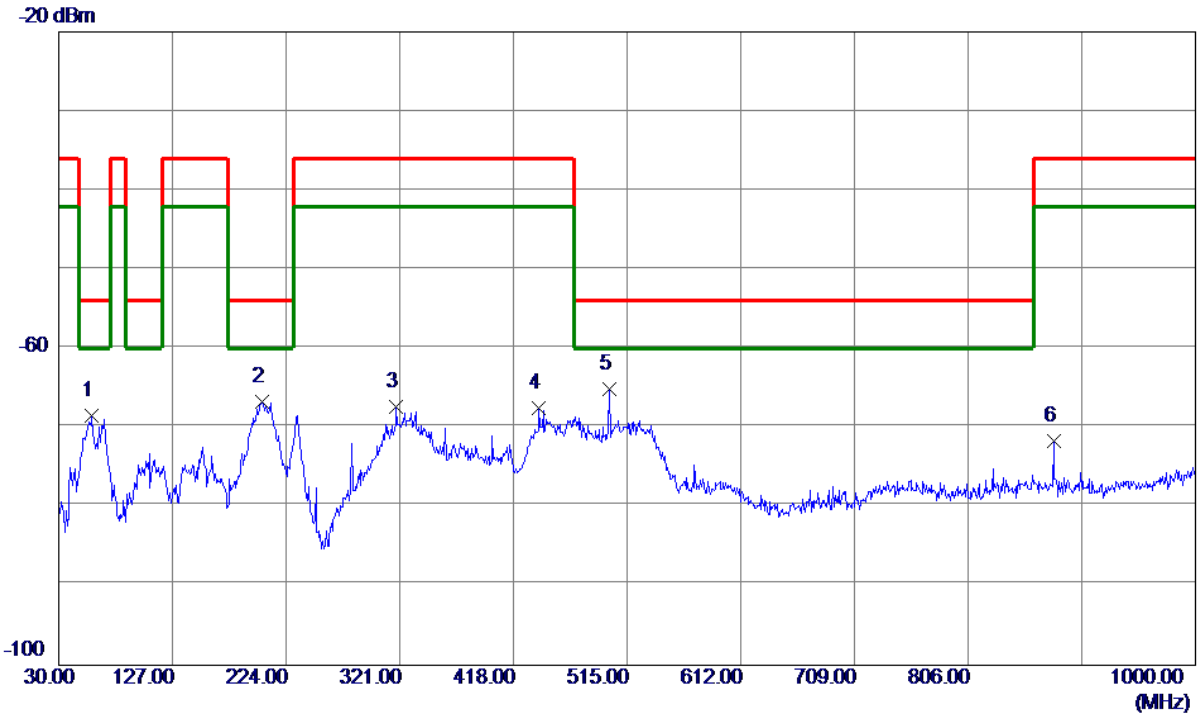
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.8970	-67.01	-5.79	-72.80	-54.00	-18.80	RMS	
2	148.0490	-69.92	-0.60	-70.52	-36.00	-34.52	RMS	
3	233.9910	-63.59	-2.80	-66.39	-36.00	-30.39	RMS	
4	359.9940	-71.49	0.58	-70.91	-36.00	-34.91	RMS	
5 *	499.9650	-69.72	4.09	-65.63	-54.00	-11.63	RMS	
6	633.5339	-80.83	5.89	-74.94	-54.00	-20.94	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5230MHz

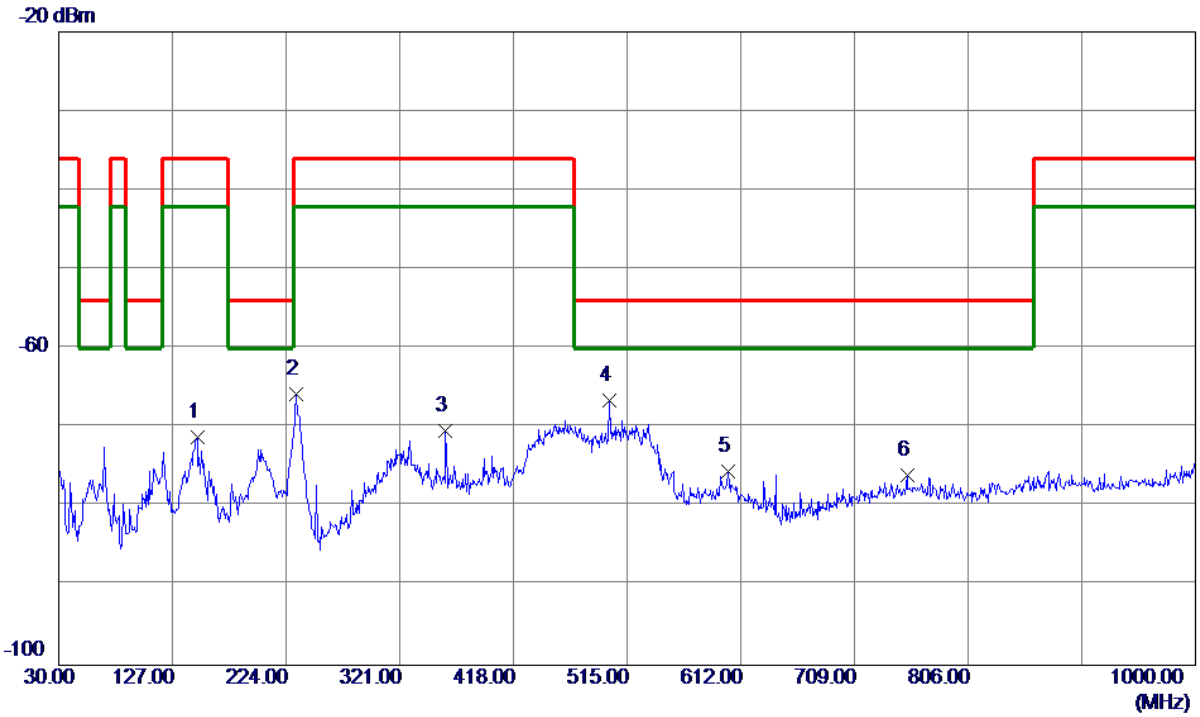
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	58.5180	-66.14	-2.30	-68.44	-54.00	-14.44	RMS	
2	203.7269	-61.32	-5.45	-66.77	-54.00	-12.77	RMS	
3	318.0900	-66.71	-0.59	-67.30	-36.00	-31.30	RMS	
4	439.9220	-69.14	1.56	-67.58	-36.00	-31.58	RMS	
5 *	499.9650	-69.29	4.10	-65.19	-54.00	-11.19	RMS	
6	879.5260	-80.96	9.28	-71.68	-36.00	-35.68	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5230MHz

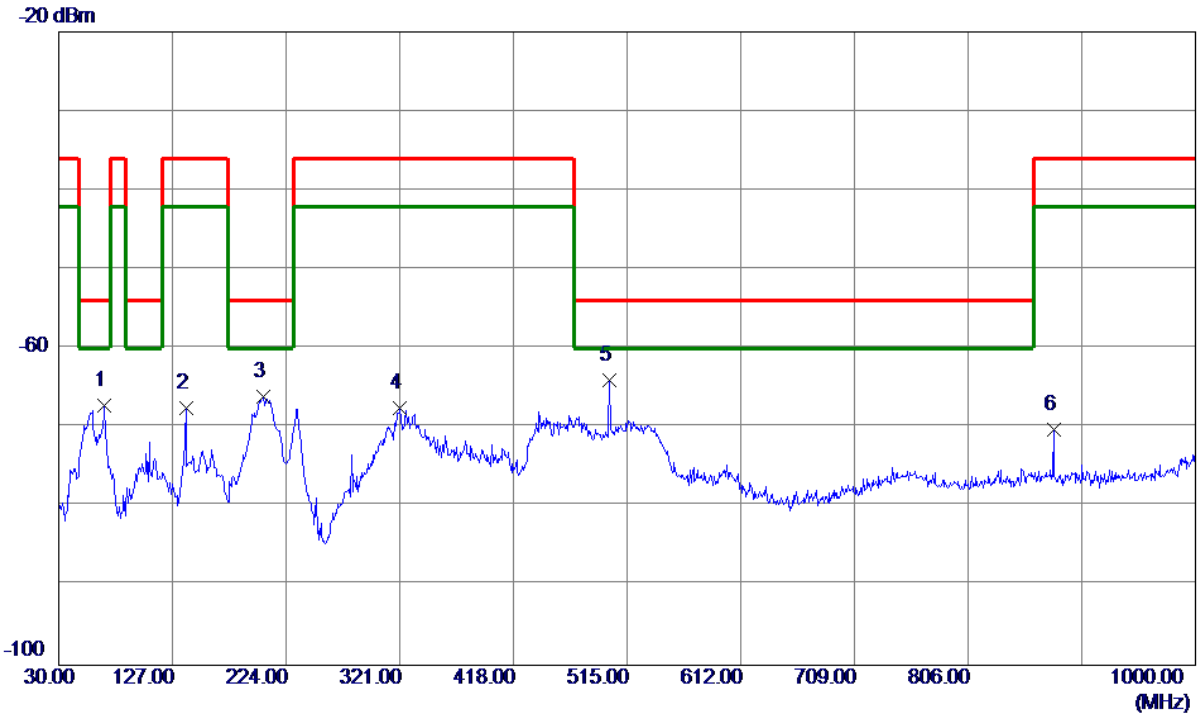
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	148.0490	-70.54	-0.60	-71.14	-36.00	-35.14	RMS	
2	232.9240	-62.82	-2.87	-65.69	-36.00	-29.69	RMS	
3	359.9940	-71.01	0.58	-70.43	-36.00	-34.43	RMS	
4 *	499.9650	-70.72	4.09	-66.63	-54.00	-12.63	RMS	
5	600.9420	-83.50	7.98	-75.52	-54.00	-21.52	RMS	
6	754.2020	-84.94	8.87	-76.07	-54.00	-22.07	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(80 MHz)_5210MHz

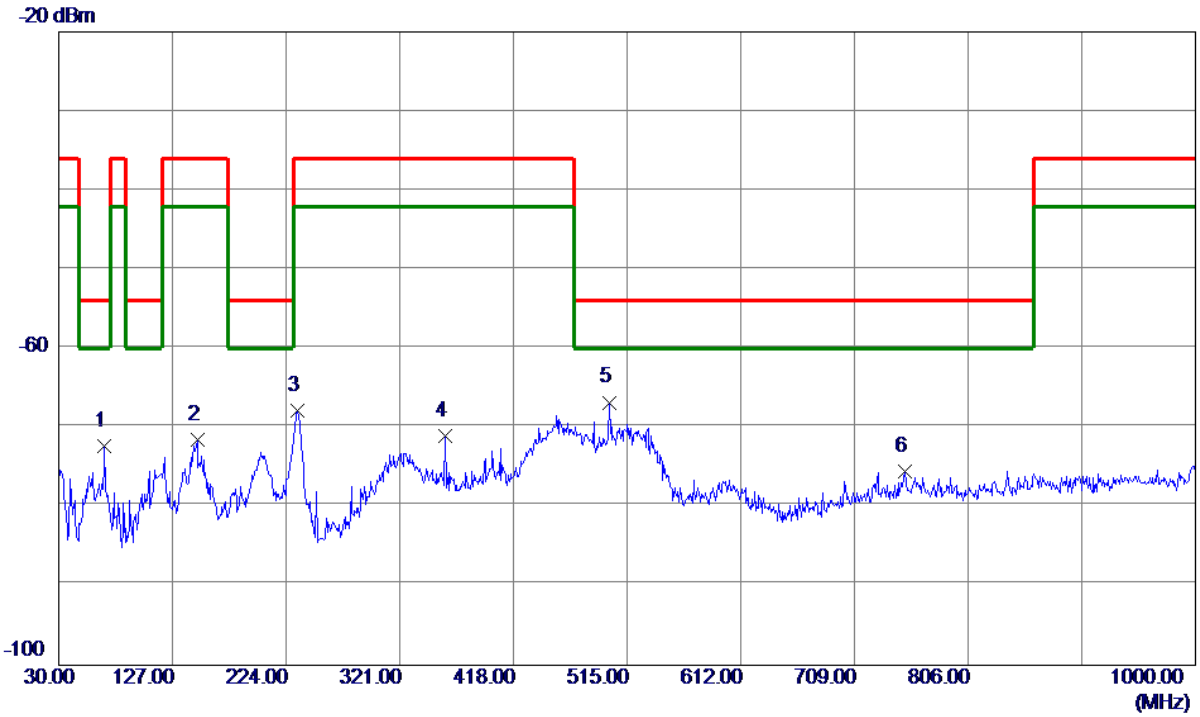
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.9940	-62.55	-4.64	-67.19	-54.00	-13.19	RMS	
2	138.3490	-66.20	-1.34	-67.54	-36.00	-31.54	RMS	
3	204.4060	-60.74	-5.41	-66.15	-54.00	-12.15	RMS	
4	321.4849	-66.97	-0.55	-67.52	-36.00	-31.52	RMS	
5 *	499.9650	-68.12	4.10	-64.02	-54.00	-10.02	RMS	
6	879.5260	-79.51	9.28	-70.23	-36.00	-34.23	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(80 MHz)_5210MHz

Horizontal

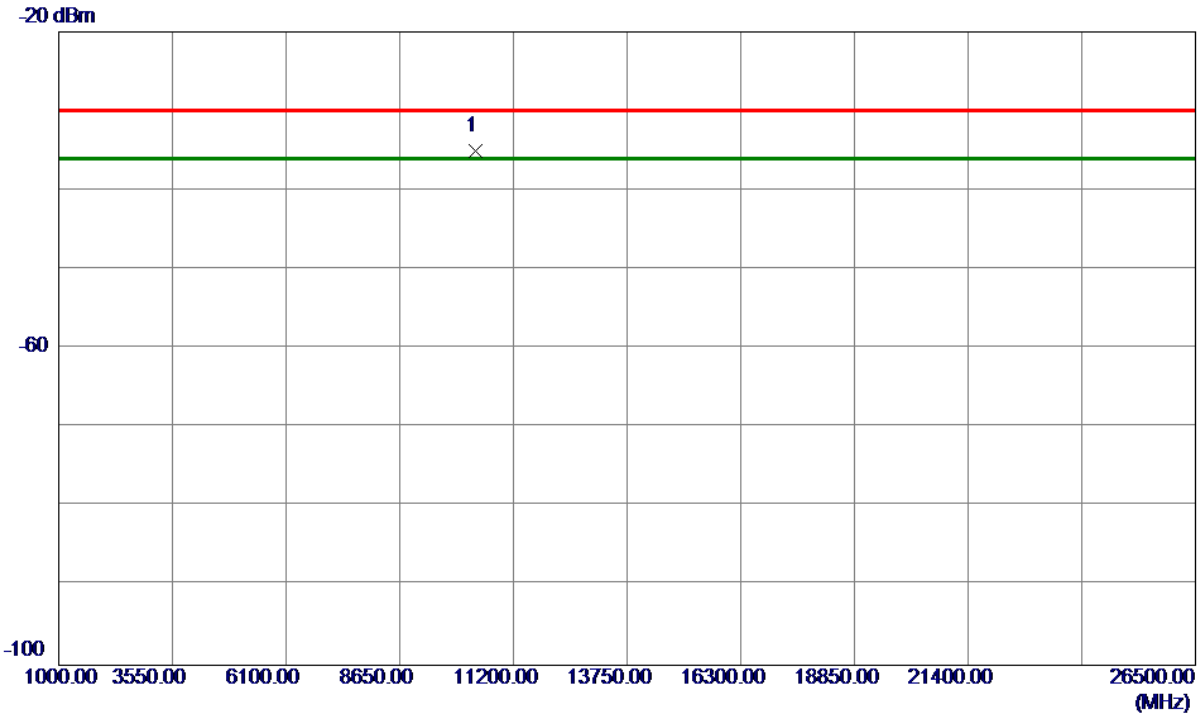


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.9940	-66.51	-5.82	-72.33	-54.00	-18.33	RMS	
2	148.0490	-70.89	-0.60	-71.49	-36.00	-35.49	RMS	
3	233.4090	-65.04	-2.84	-67.88	-36.00	-31.88	RMS	
4	359.9940	-71.67	0.58	-71.09	-36.00	-35.09	RMS	
5 *	499.9650	-70.89	4.09	-66.80	-54.00	-12.80	RMS	
6	752.4560	-84.36	8.89	-75.47	-54.00	-21.47	RMS	

APPENDIX F - TRANSMITTER SPURIOUS EMISSIONS (ABOVE 1000MHZ)

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5180MHz

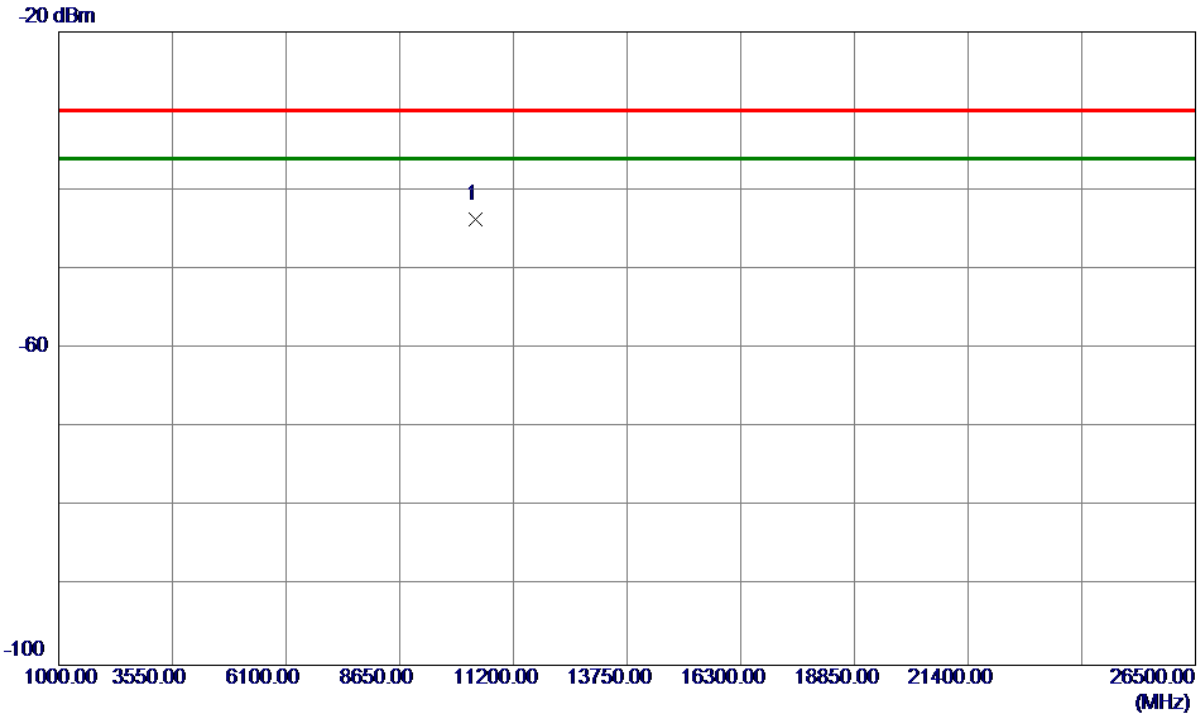
Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10361.9320	-48.99	13.99	-35.00	-30.00	-5.00	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5180MHz

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10362.7770	-56.85	13.22	-43.63	-30.00	-13.63	RMS	

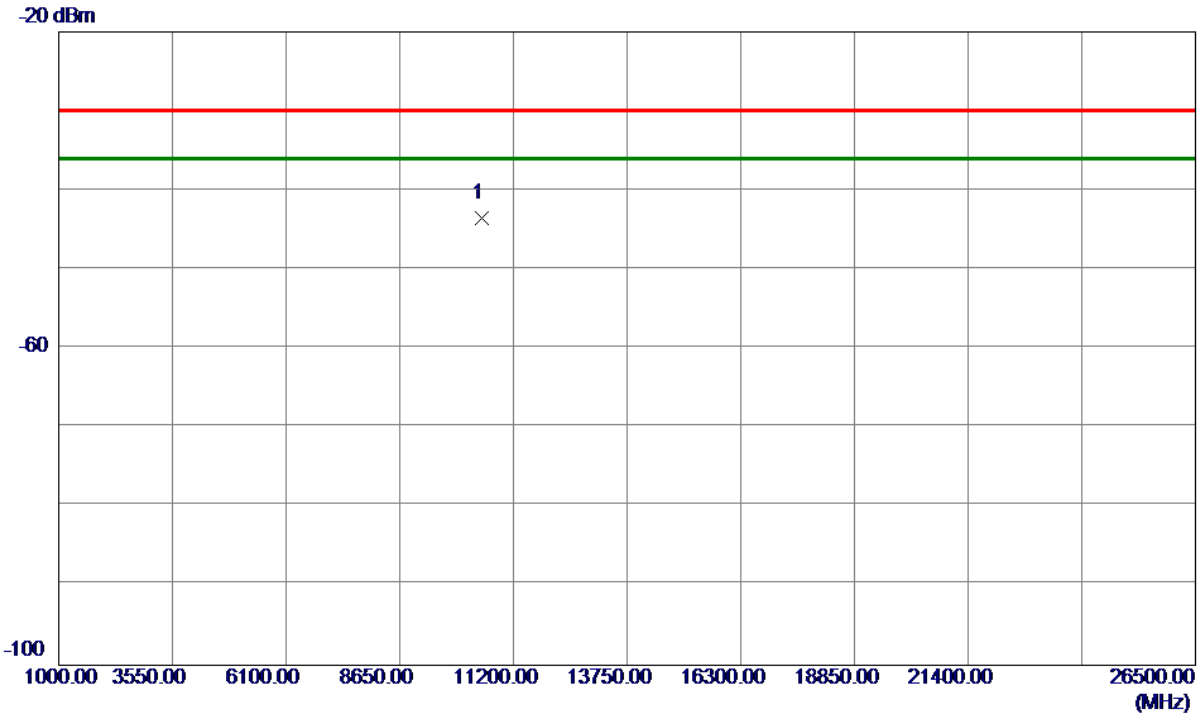
Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5240MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10482.2400	-47.47	14.05	-33.42	-30.00	-3.42	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11a_5240MHz

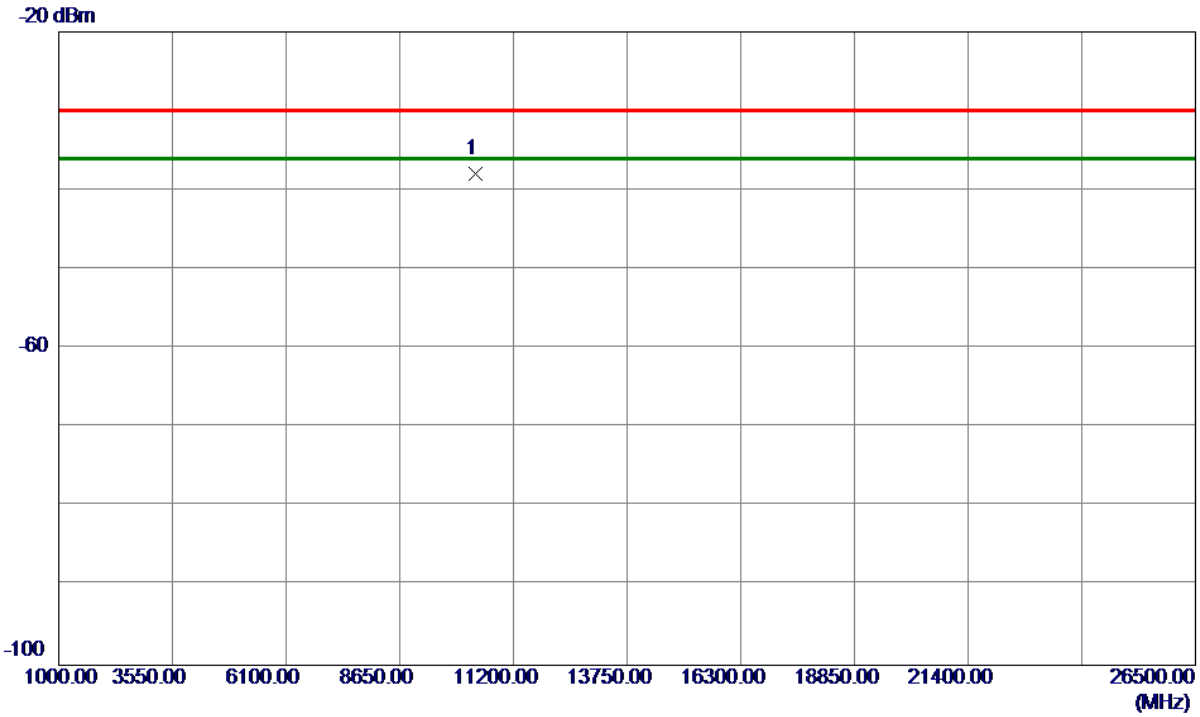
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10481.8920	-56.97	13.52	-43.45	-30.00	-13.45	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(20 MHz)_5180MHz

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10357.5620	-51.95	13.99	-37.96	-30.00	-7.96	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(20 MHz)_5180MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10361.6350	-61.34	13.21	-48.13	-30.00	-18.13	RMS	

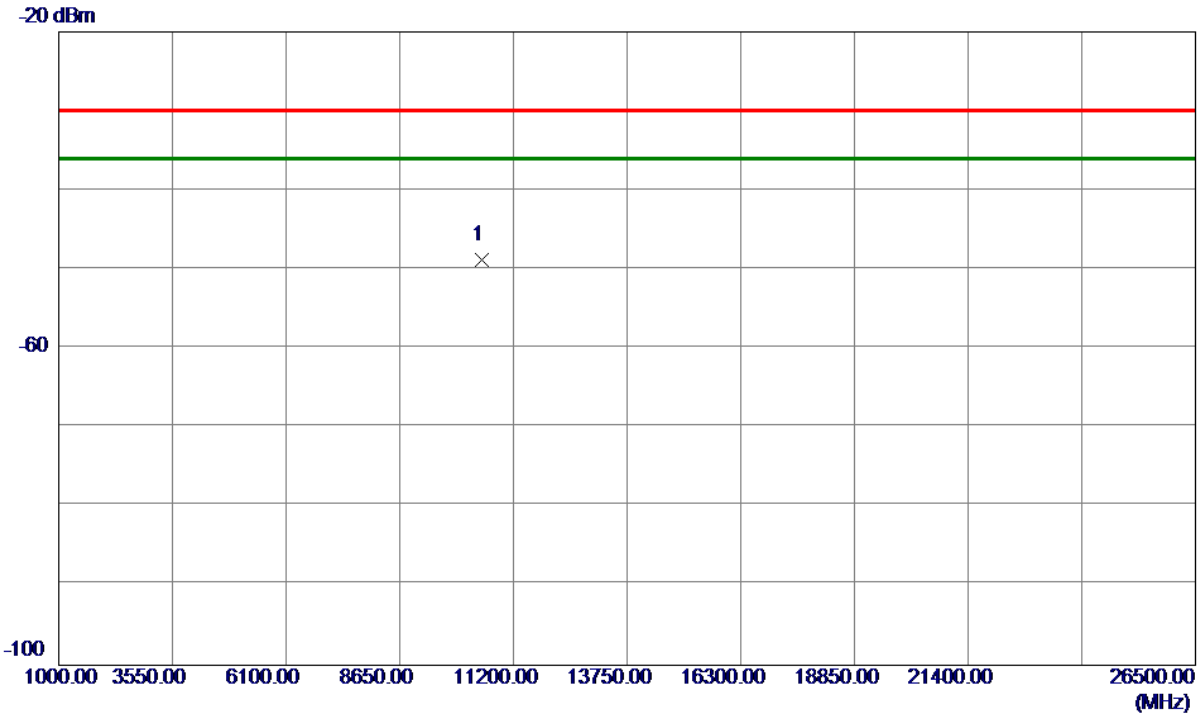
Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(20 MHz)_5240MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10479.4320	-55.26	14.05	-41.21	-30.00	-11.21	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(20 MHz)_5240MHz

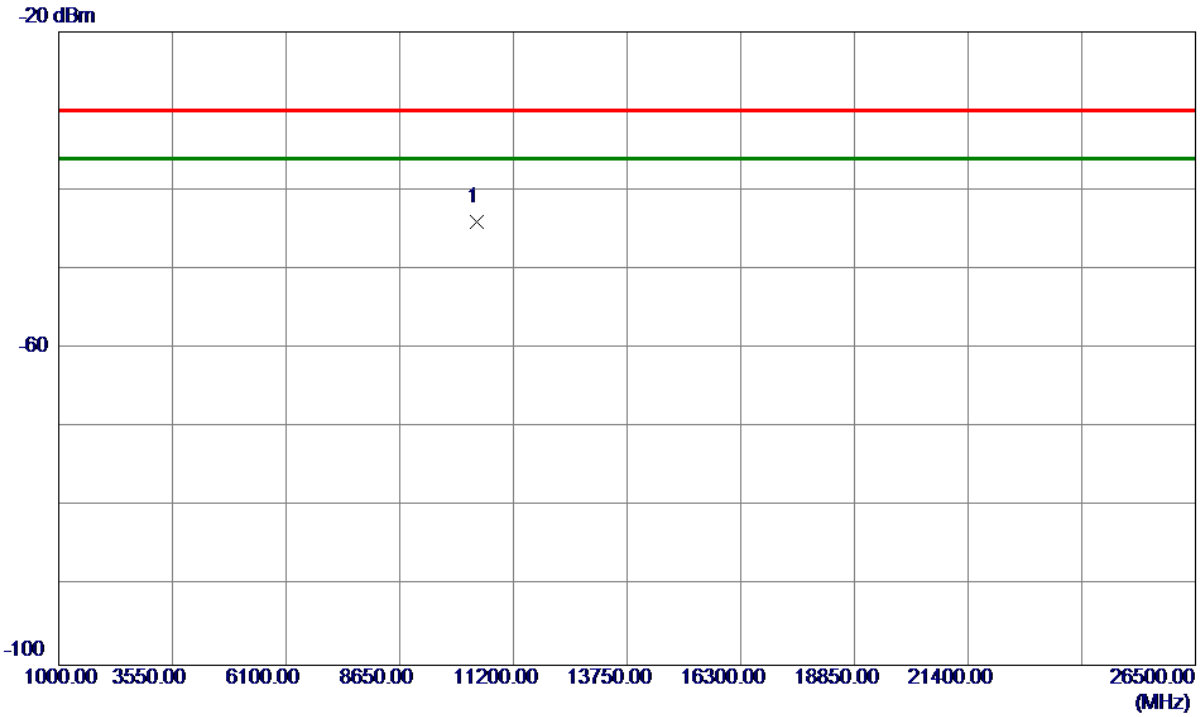
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10480.9320	-62.34	13.52	-48.82	-30.00	-18.82	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5190MHz

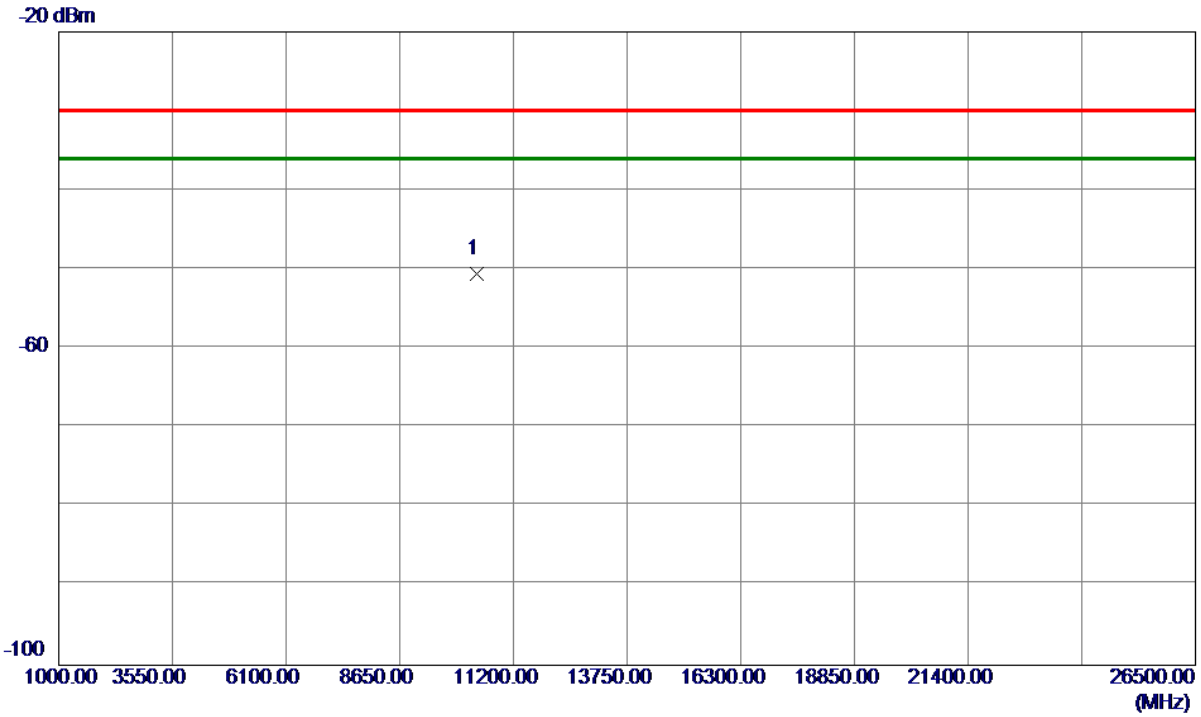
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10380.8300	-57.96	14.00	-43.96	-30.00	-13.96	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5190MHz

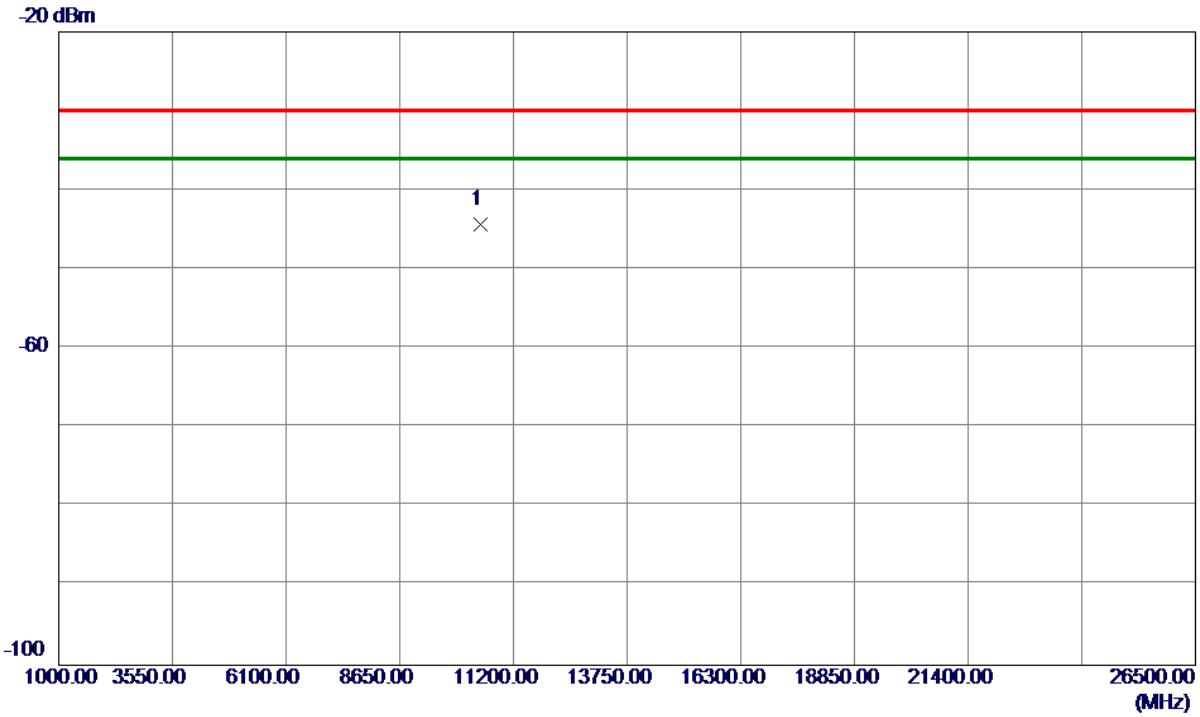
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10375.5270	-63.80	13.25	-50.55	-30.00	-20.55	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5230MHz

Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10469.5830	-58.42	14.04	-44.38	-30.00	-14.38	RMS	

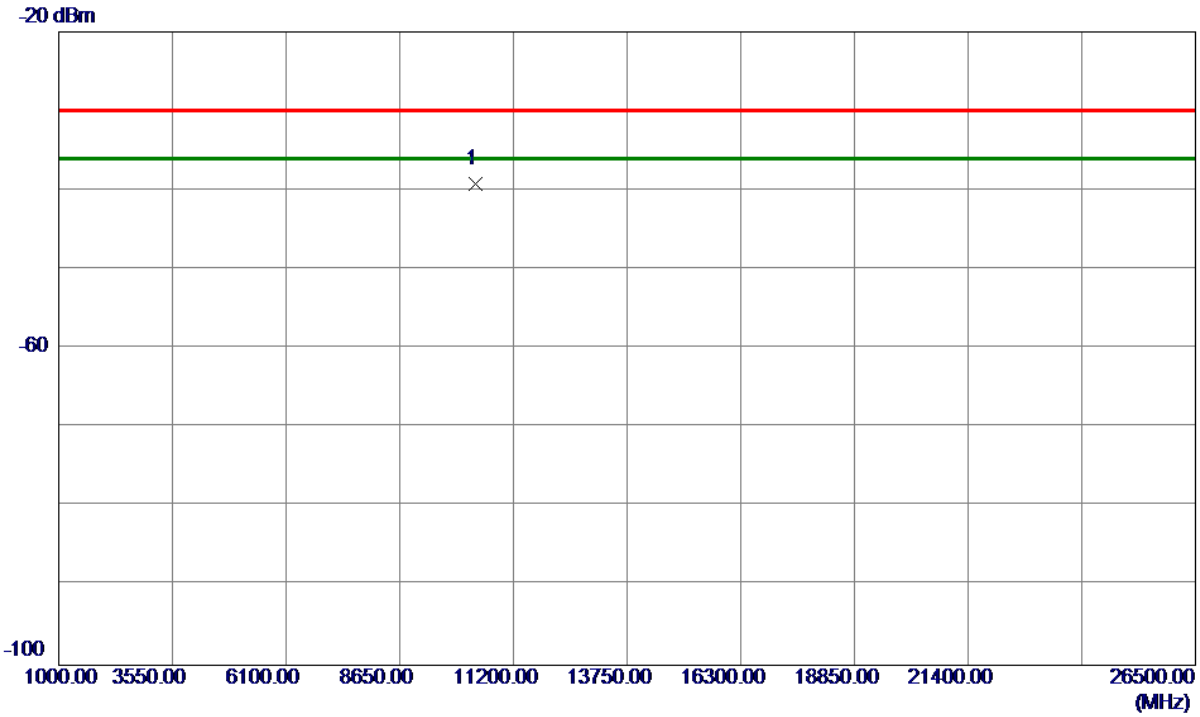
Orthogonal Axis	X
Test Mode:	TX Mode 802.11n(40 MHz)_5230MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10475.8400	-65.05	13.51	-51.54	-30.00	-21.54	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(20 MHz)_5180MHz

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10363.7400	-53.22	13.99	-39.23	-30.00	-9.23	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(20 MHz)_5180MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10352.4370	-61.36	13.19	-48.17	-30.00	-18.17	RMS	

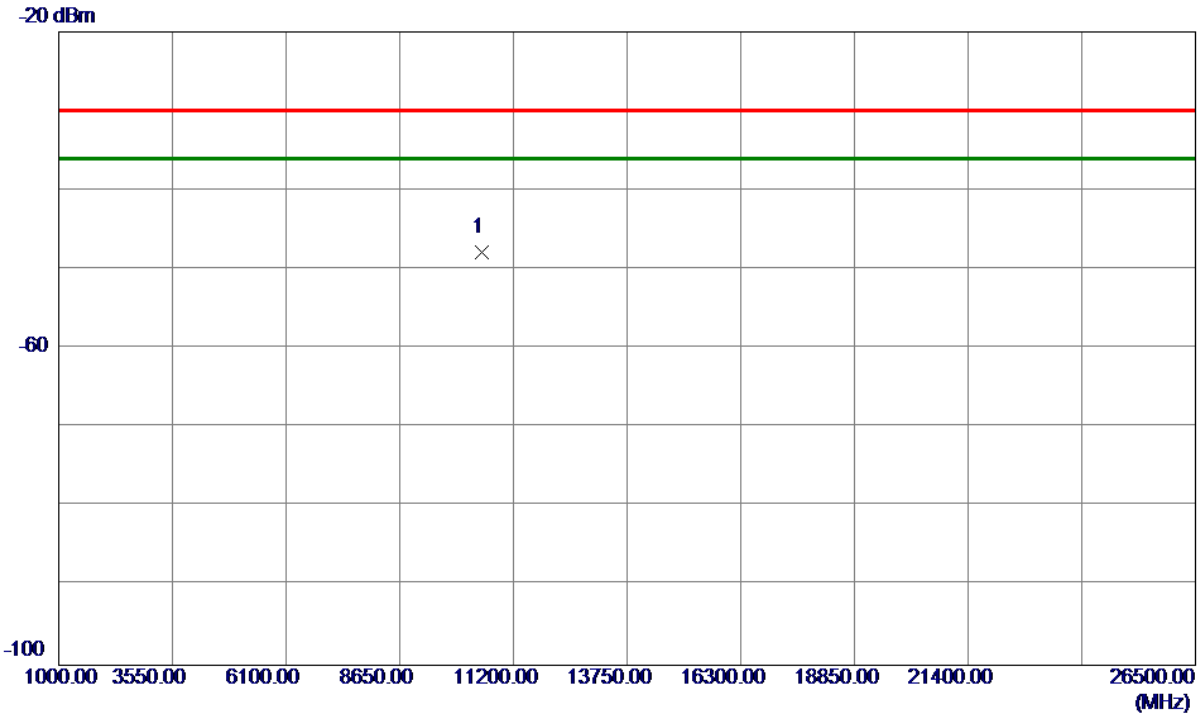
Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(20 MHz)_5240MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10480.3650	-55.28	14.05	-41.23	-30.00	-11.23	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(20 MHz)_5240MHz

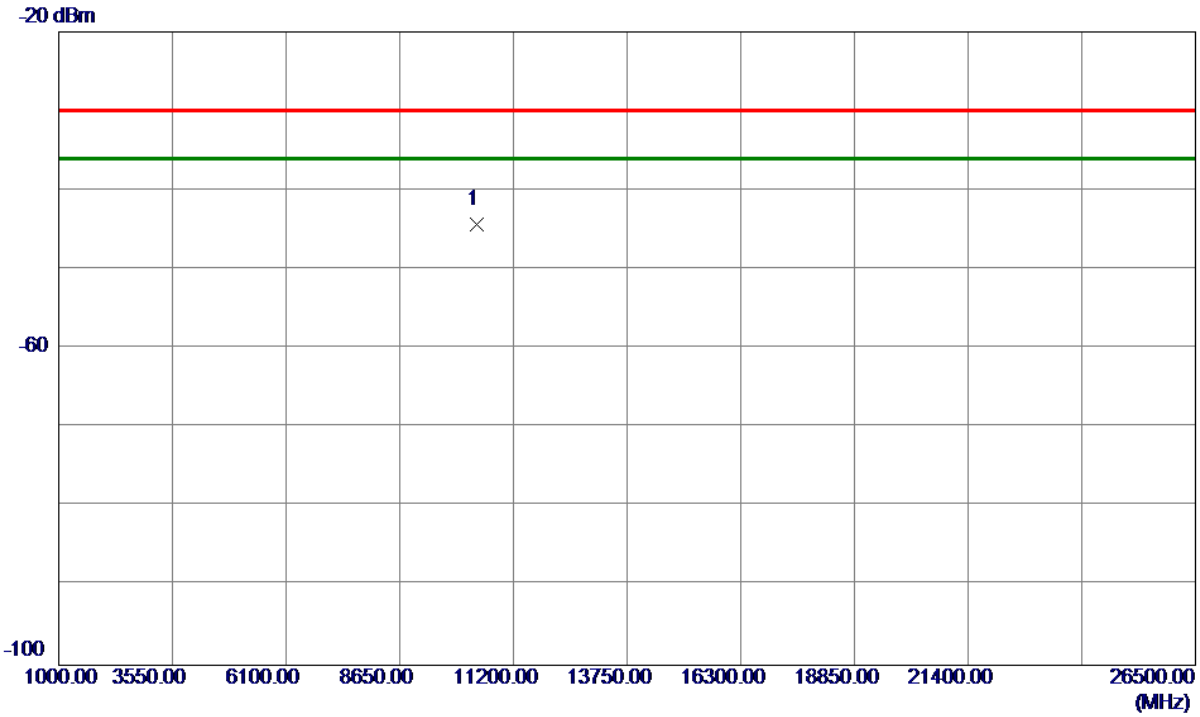
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10481.0000	-61.32	13.52	-47.80	-30.00	-17.80	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(40 MHz)_5190MHz

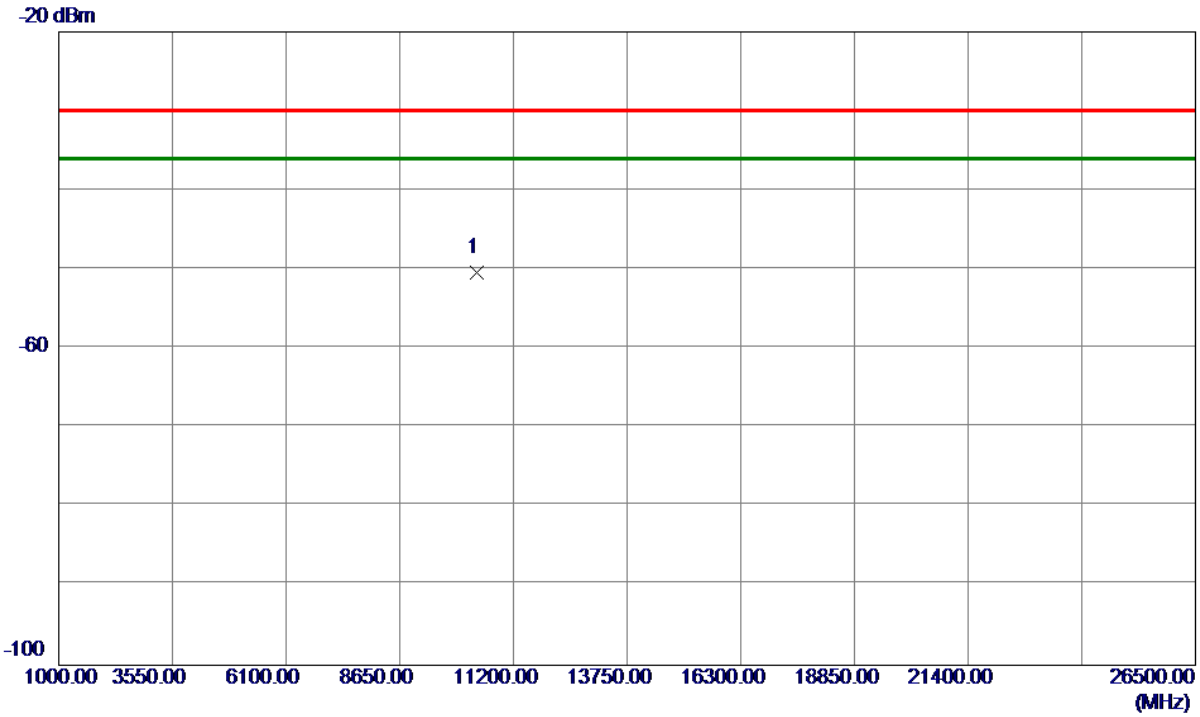
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10373.2270	-58.35	13.99	-44.36	-30.00	-14.36	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(40 MHz)_5190MHz

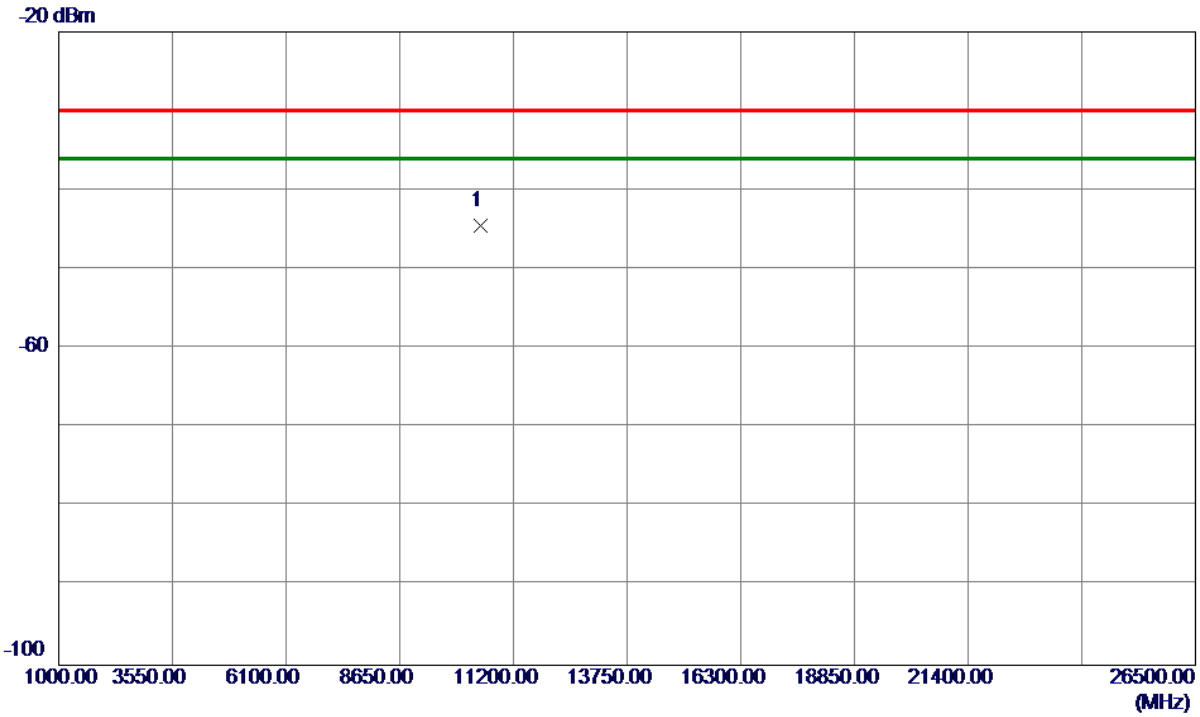
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10375.4770	-64.46	14.00	-50.46	-30.00	-20.46	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(40 MHz)_5230MHz

Vertical



No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10462.4800	-58.55	14.04	-44.51	-30.00	-14.51	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(40 MHz)_5230MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10456.5800	-64.96	13.46	-51.50	-30.00	-21.50	RMS	

Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(80 MHz)_5210MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10402.2970	-63.28	14.01	-49.27	-30.00	-19.27	RMS	

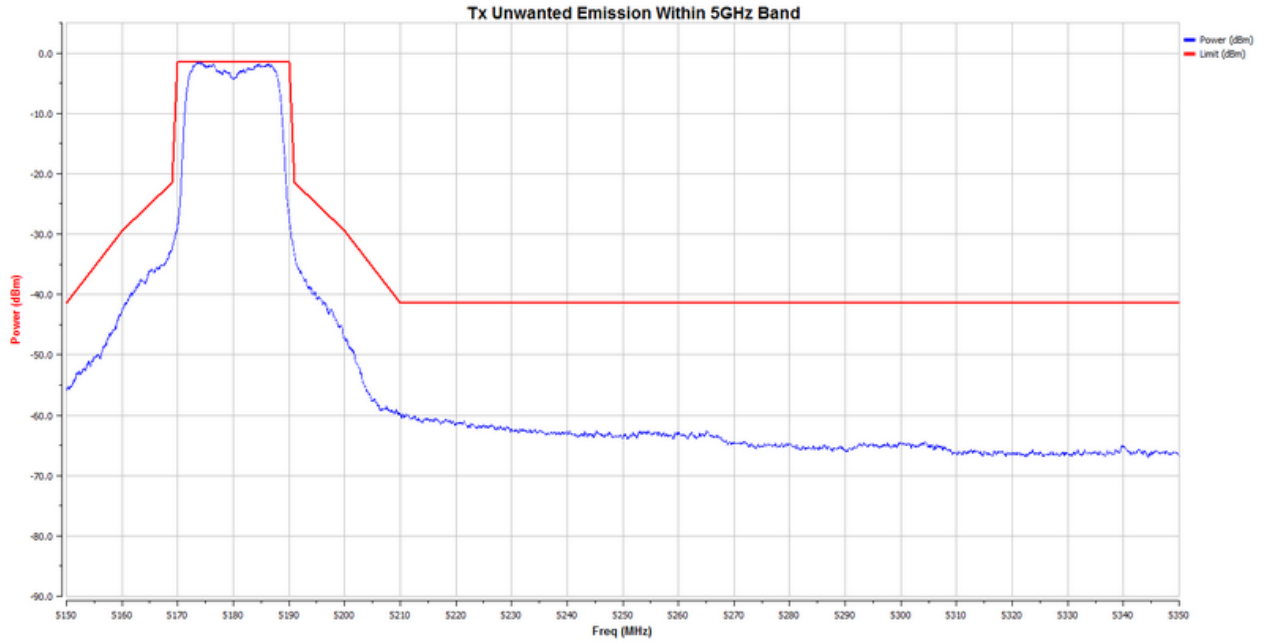
Orthogonal Axis	X
Test Mode:	TX Mode 802.11ac(80 MHz)_5210MHz

Horizontal

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10401.9000	-64.66	13.32	-51.34	-30.00	-21.34	RMS	

APPENDIX G - SPECTRUM MASK

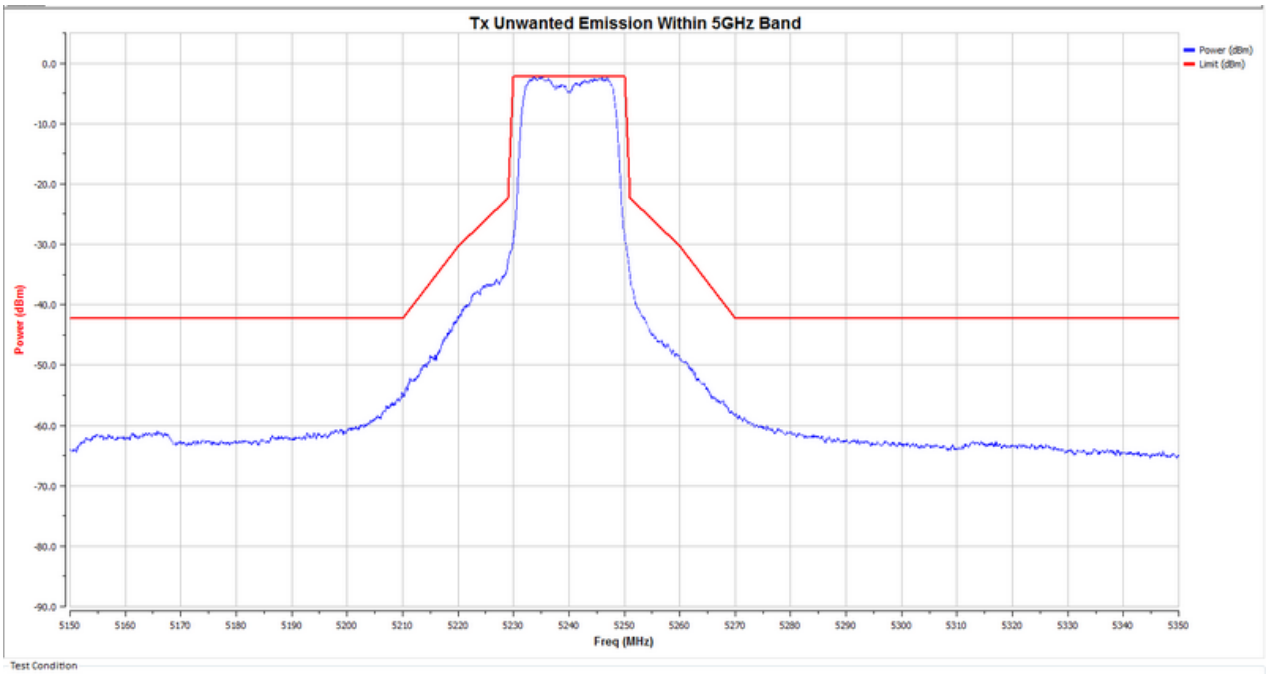
Test Mode :	802.11a_5180MHz



Test Condition

Test Result : Pass

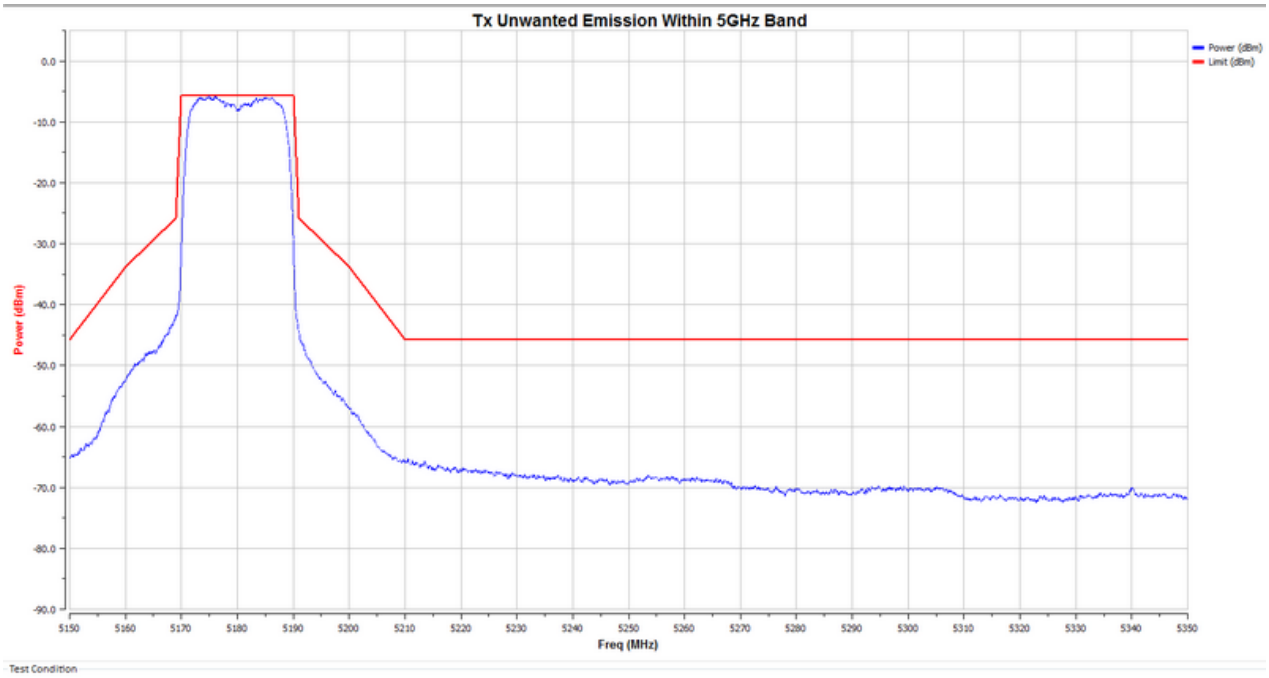
Test Mode :	802.11a_5240MHz



Test Condition

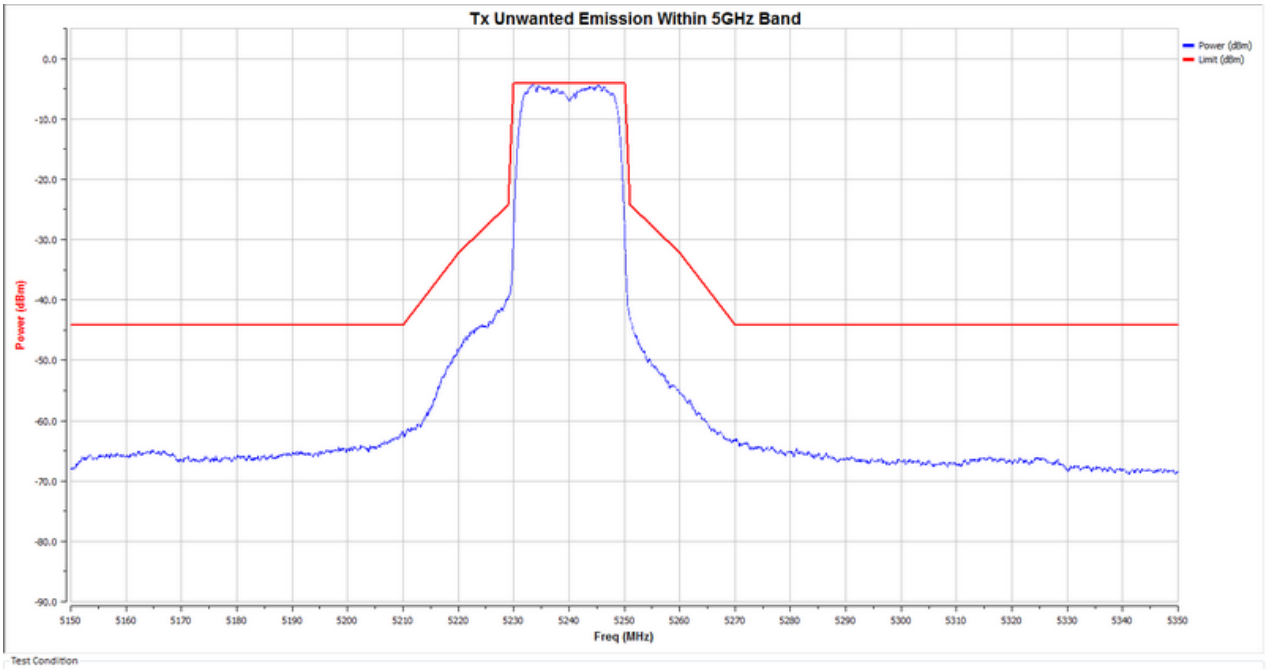
Test Result : Pass

Test Mode :	802.11n(20 MHz) _5180MHz



Test Result : Pass

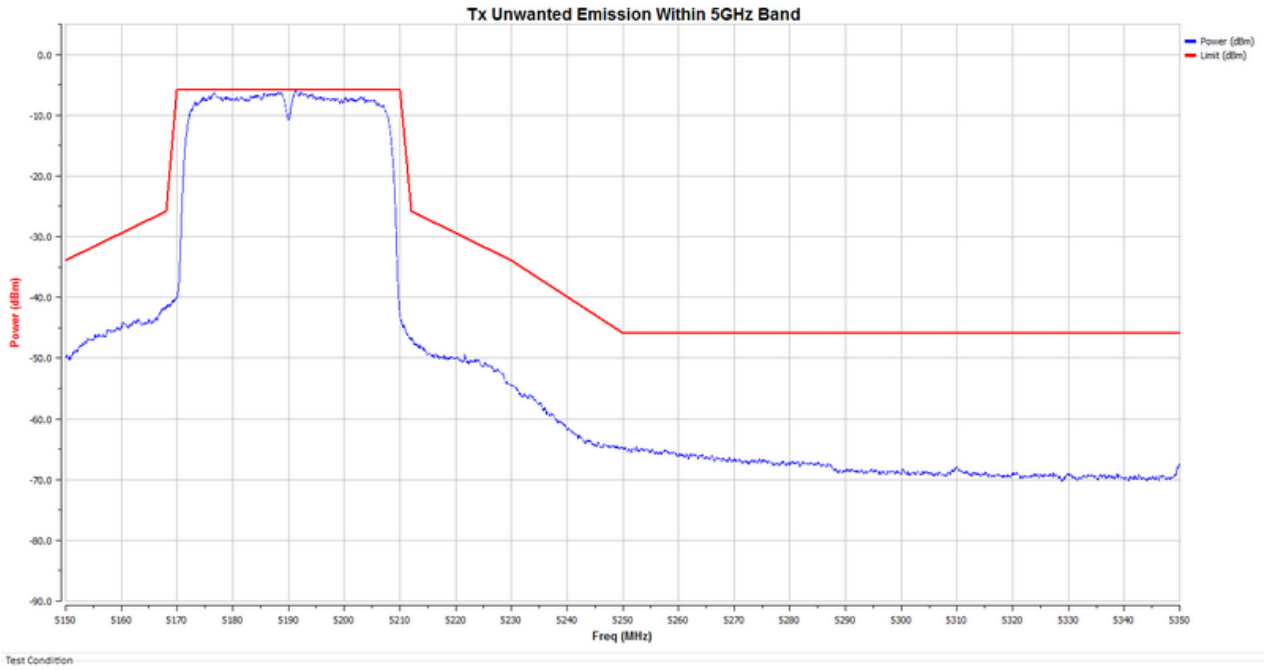
Test Mode :	802.11n(20 MHz)_5240MHz



Test Condition

Test Result : Pass

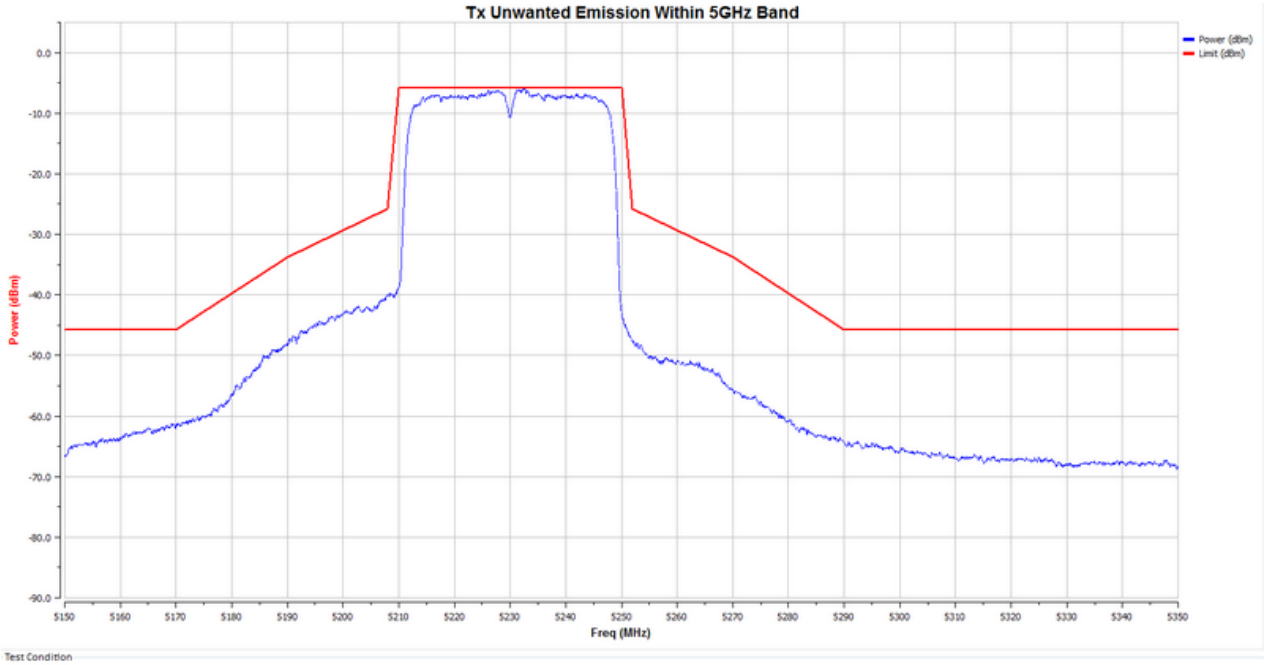
Test Mode :	802.11n(40 MHz)_5190MHz



Test Condition

Test Result : Pass

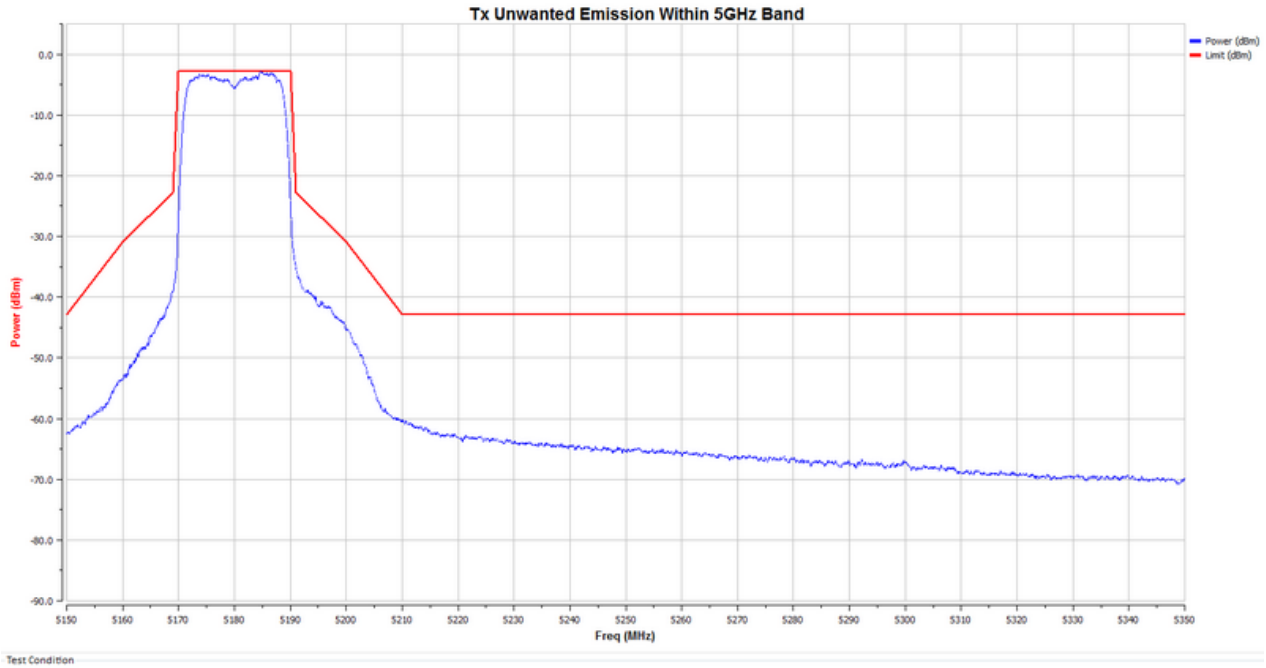
Test Mode :	802.11n(40 MHz)_5230MHz



Test Condition

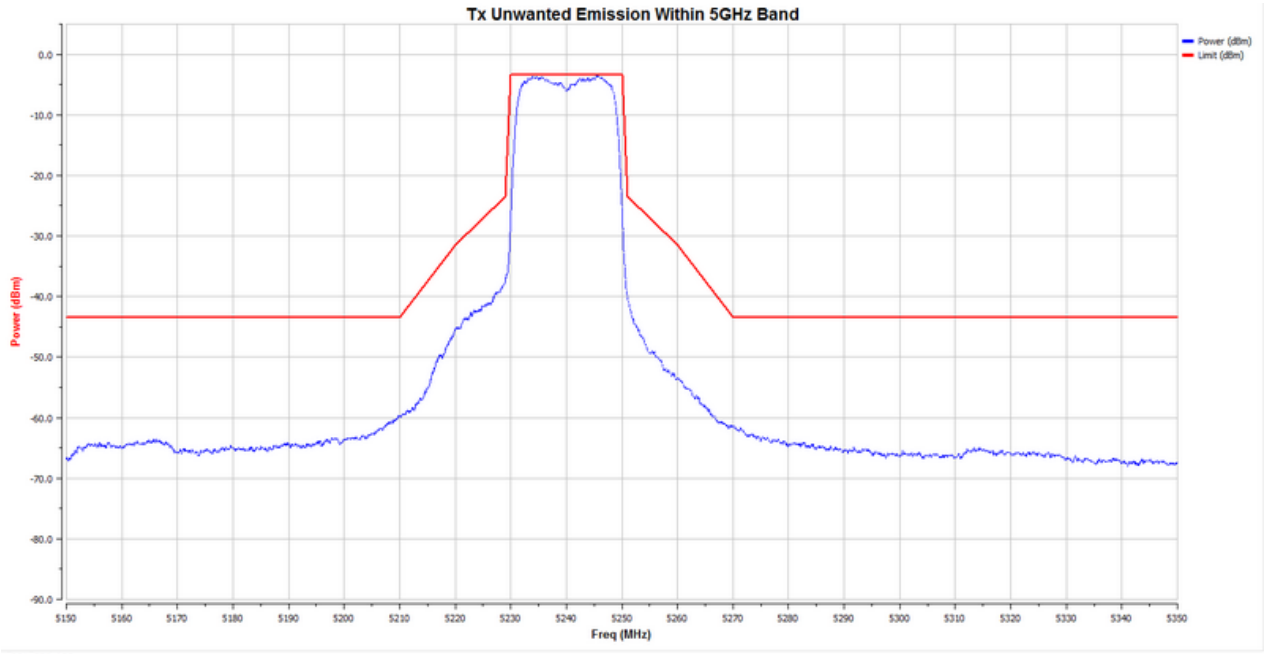
Test Result : Pass

Test Mode :	802.11ac(20 MHz) _5180MHz



Test Result : Pass

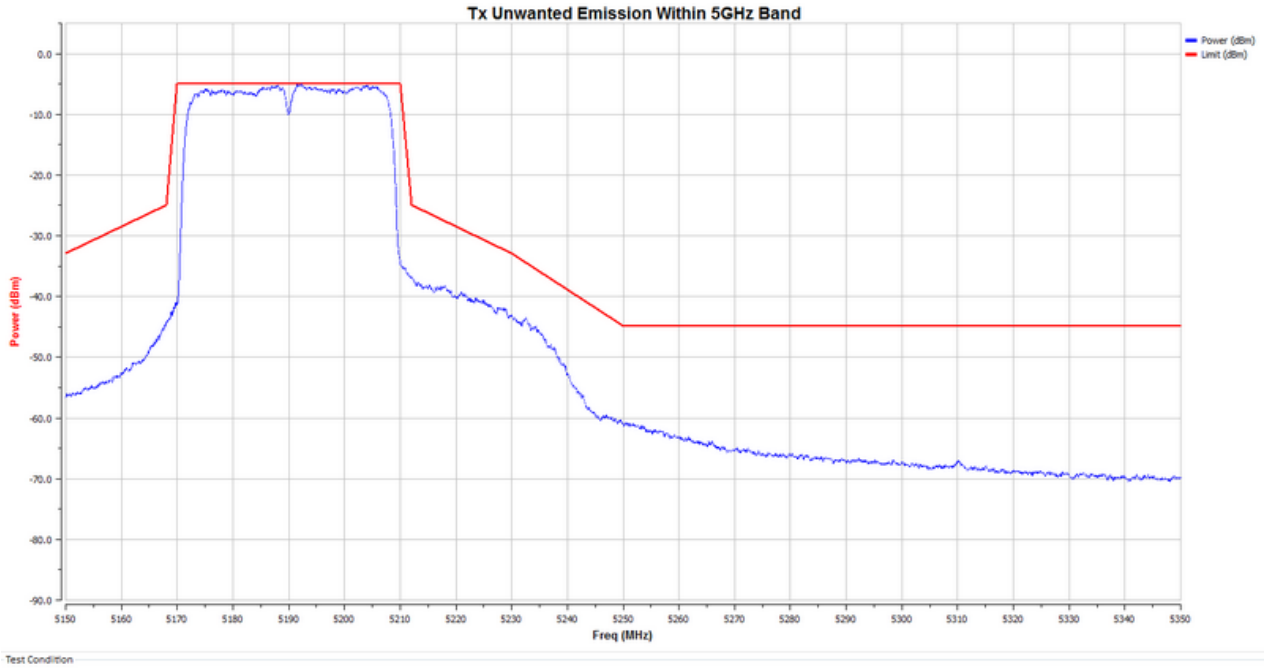
Test Mode :	802.11ac(20 MHz)_5240MHz



Test Condition

Test Result : Pass

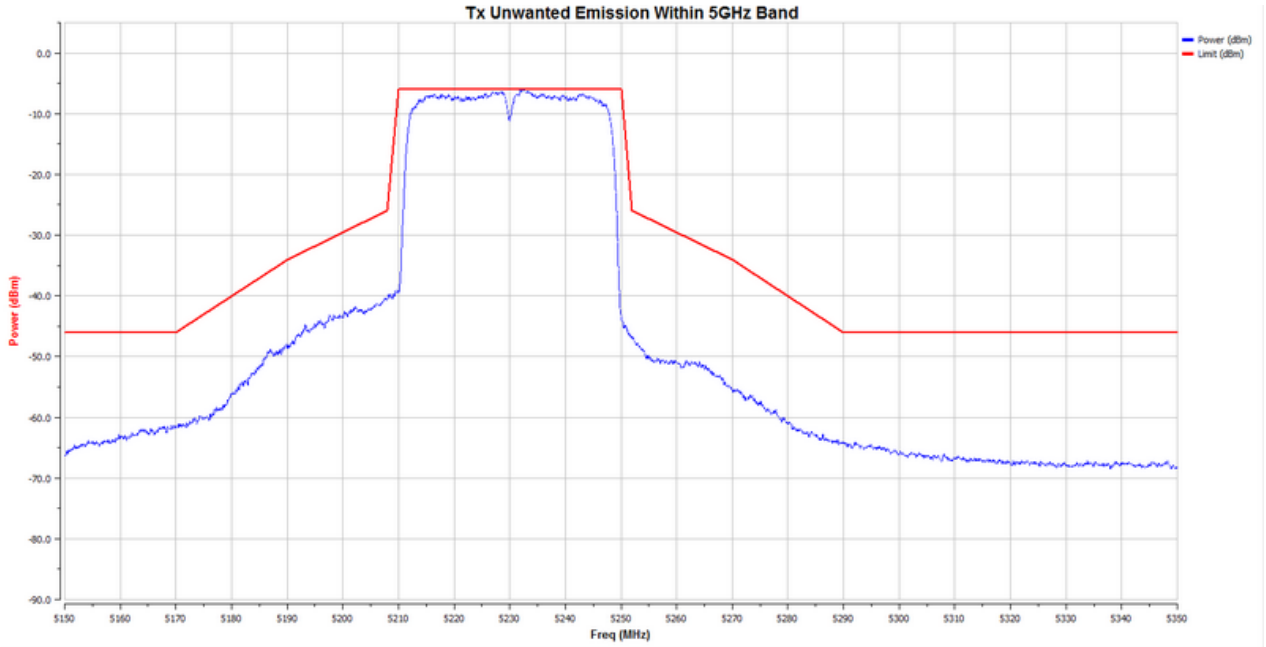
Test Mode :	802.11ac(40 MHz)_5190MHz



Test Condition

Test Result : Pass

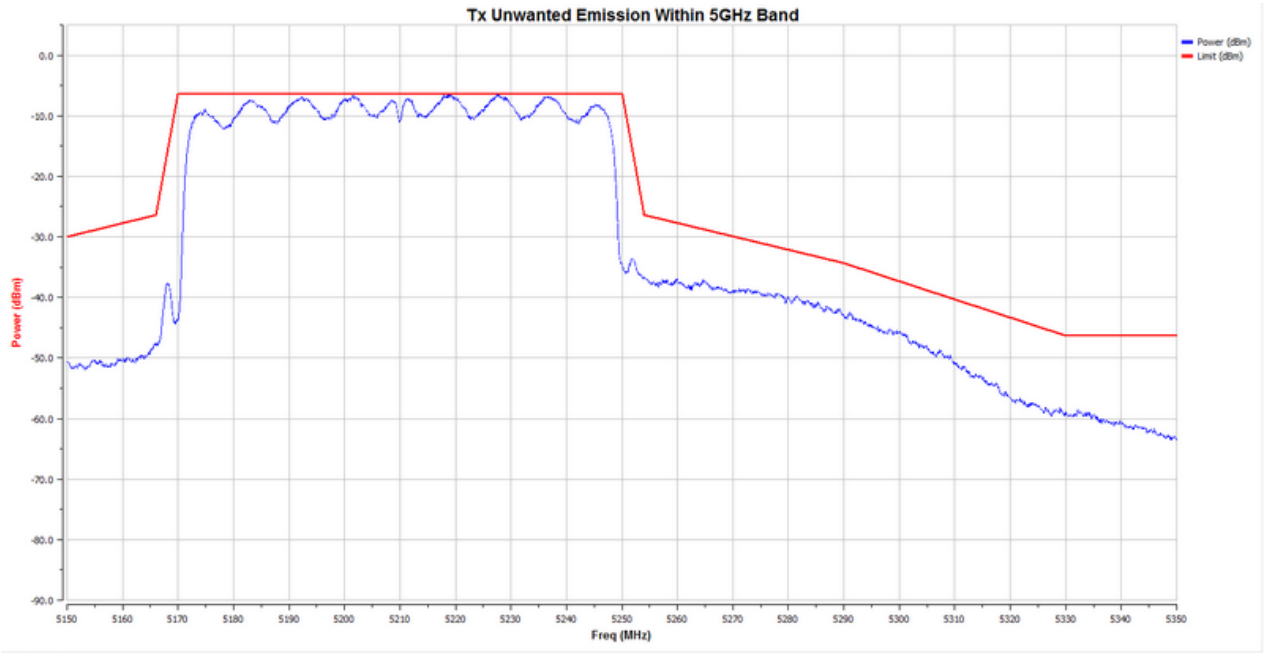
Test Mode :	802.11ac(40 MHz)_5230MHz



Test Condition

Test Result : Pass

Test Mode :	802.11ac(80 MHz)_5210MHz



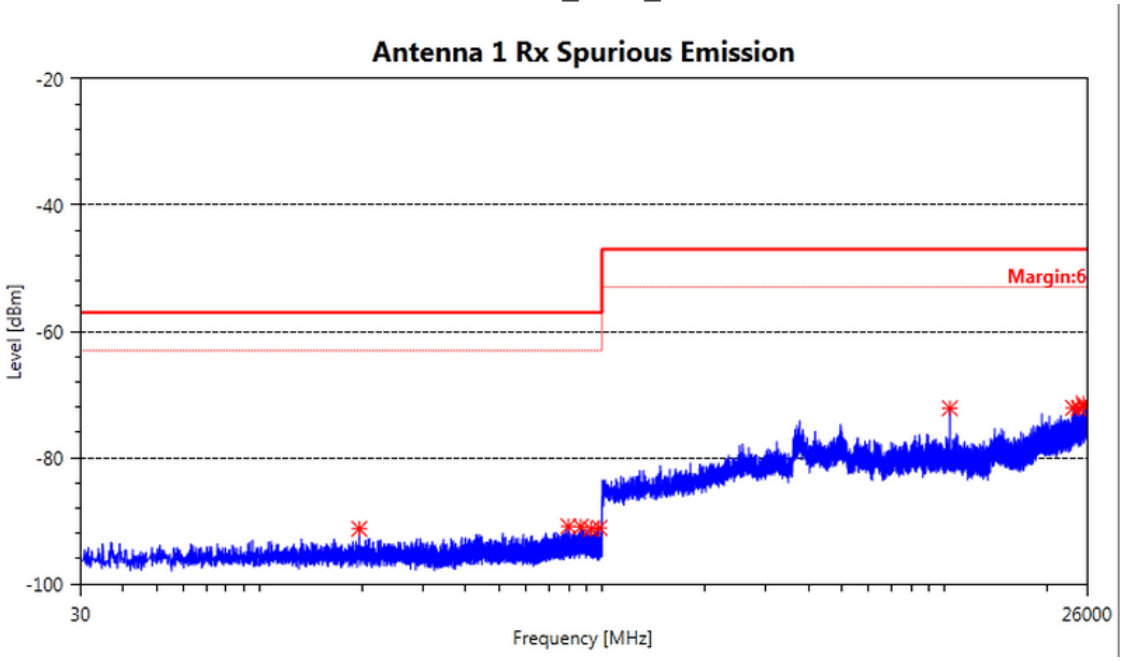
Test Condition

Test Result : Pass

APPENDIX H - RECEIVER SPURIOUS EMISSIONS (30MHZ TO 1000MHZ)

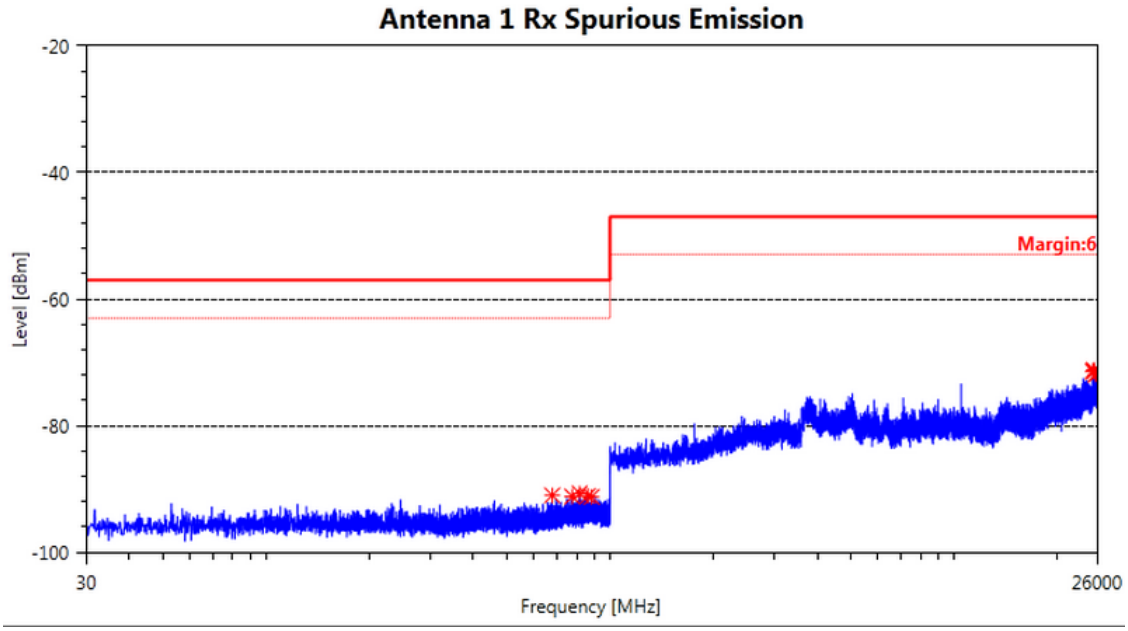
Test Mode:	RX Mode_802.11a_5180MHz

802.11a Mode_5180_ANT 1



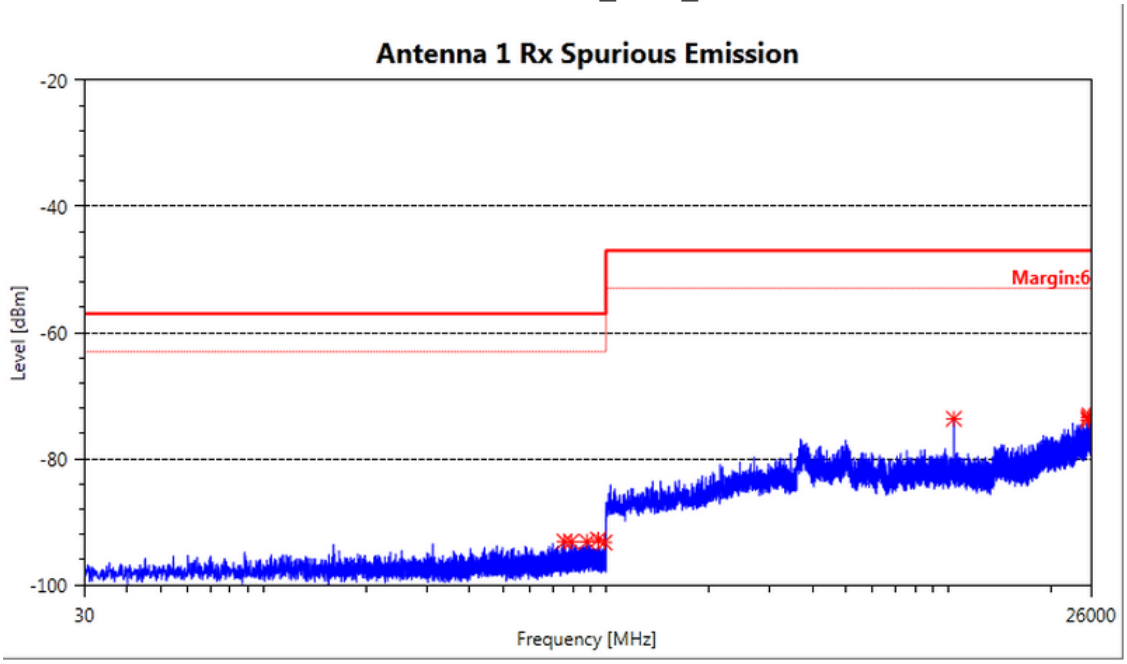
Test Mode:	RX Mode_802.11a_5240MHz

802.11a Mode_5240_ANT 1

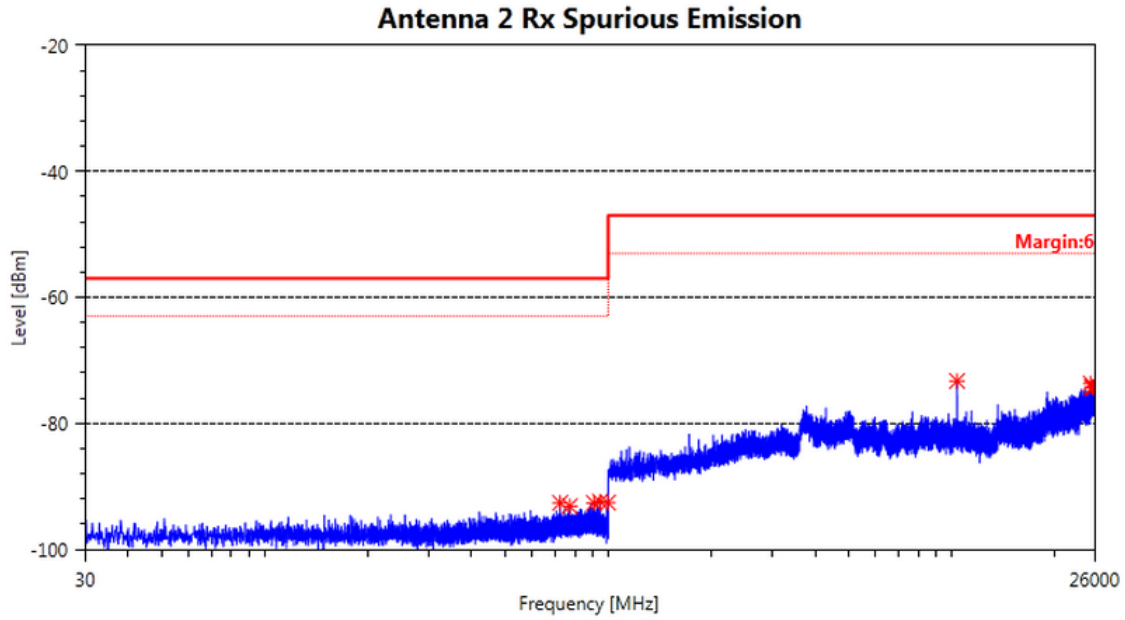


Test Mode:	RX Mode_802.11n(20 MHz)_5180MHz

802.11n 20M Mode_5180_ANT 1

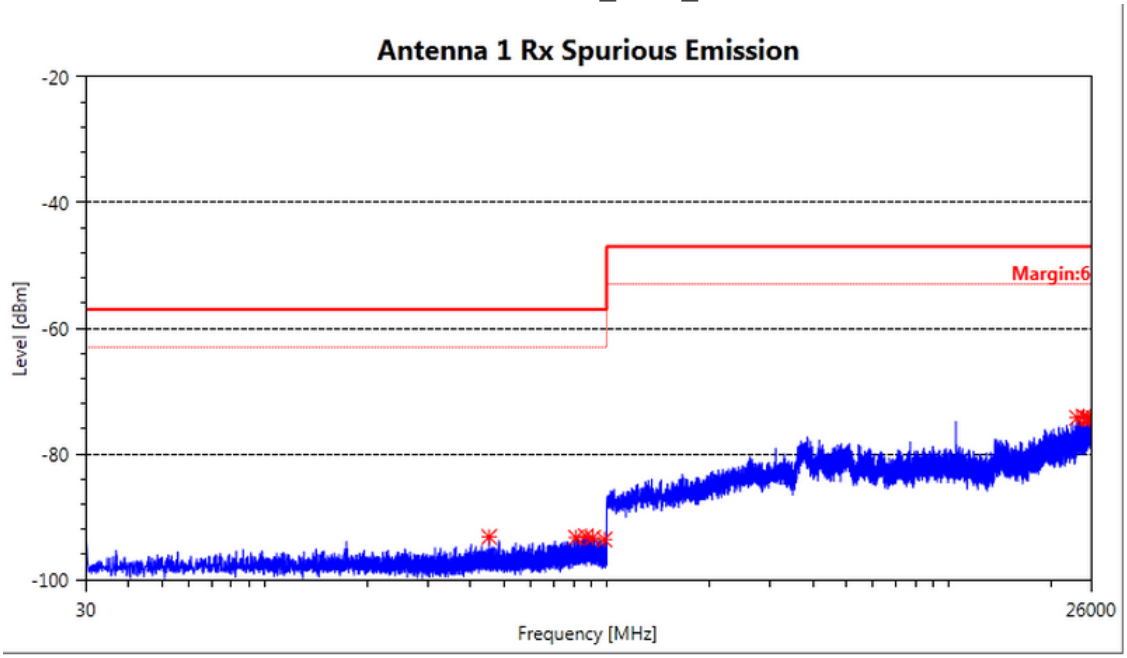


802.11n 20M Mode_5180_ANT 2

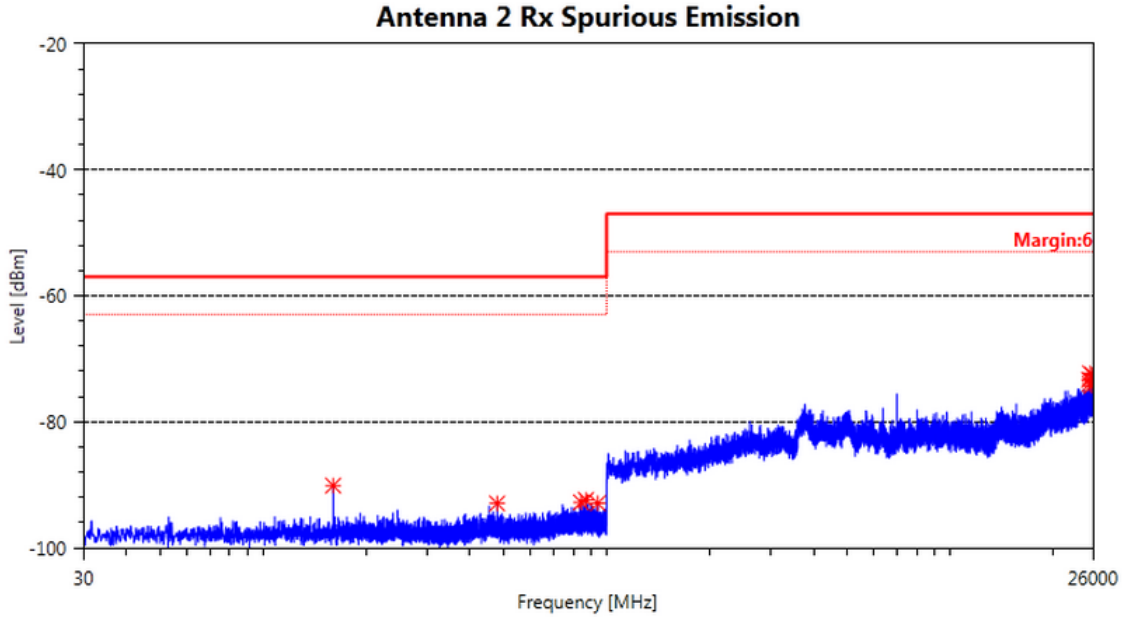


Test Mode:	RX Mode_802.11n(20 MHz)_5240MHz

802.11n 20M Mode_5240_ANT 1

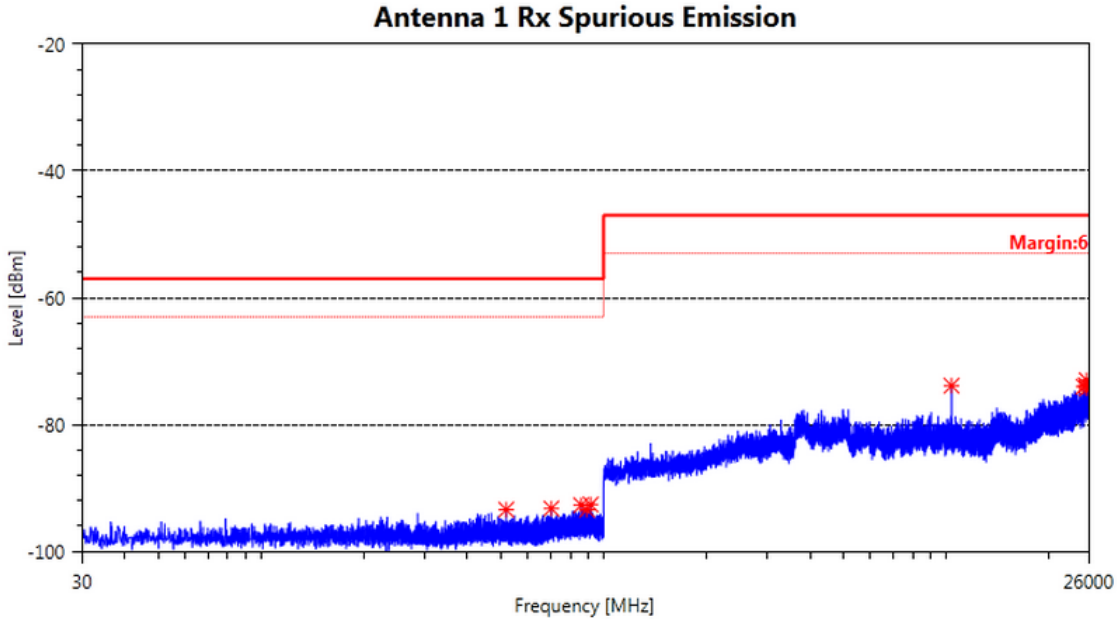


802.11n 20M Mode_5240_ANT 2

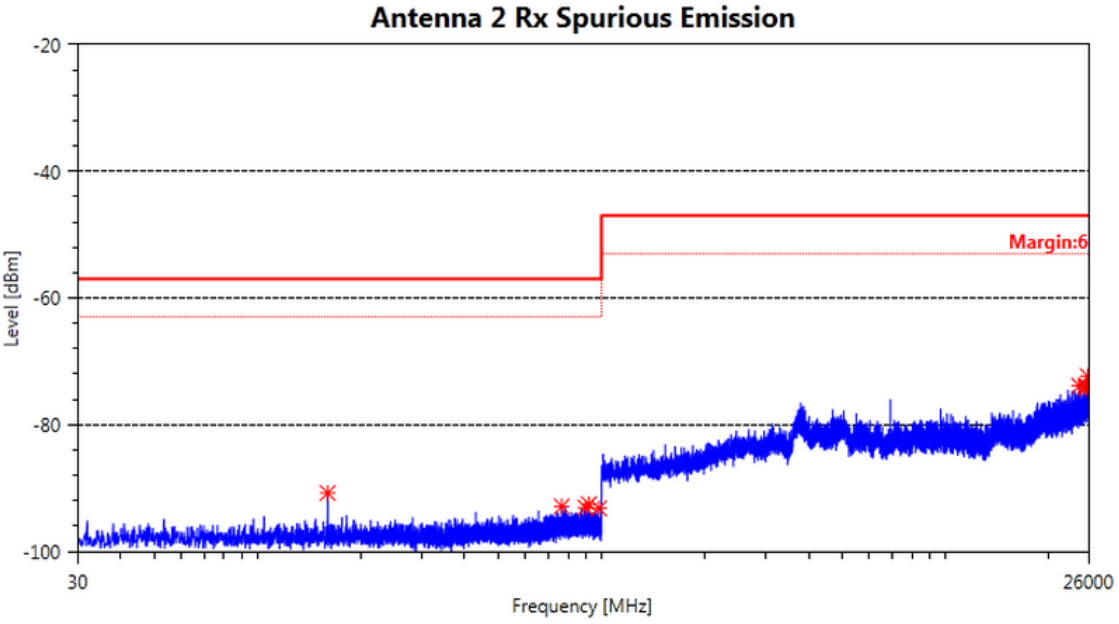


Test Mode:	RX Mode_802.11n(40 MHz)_5190MHz

802.11n 40M Mode_5190_ANT 1

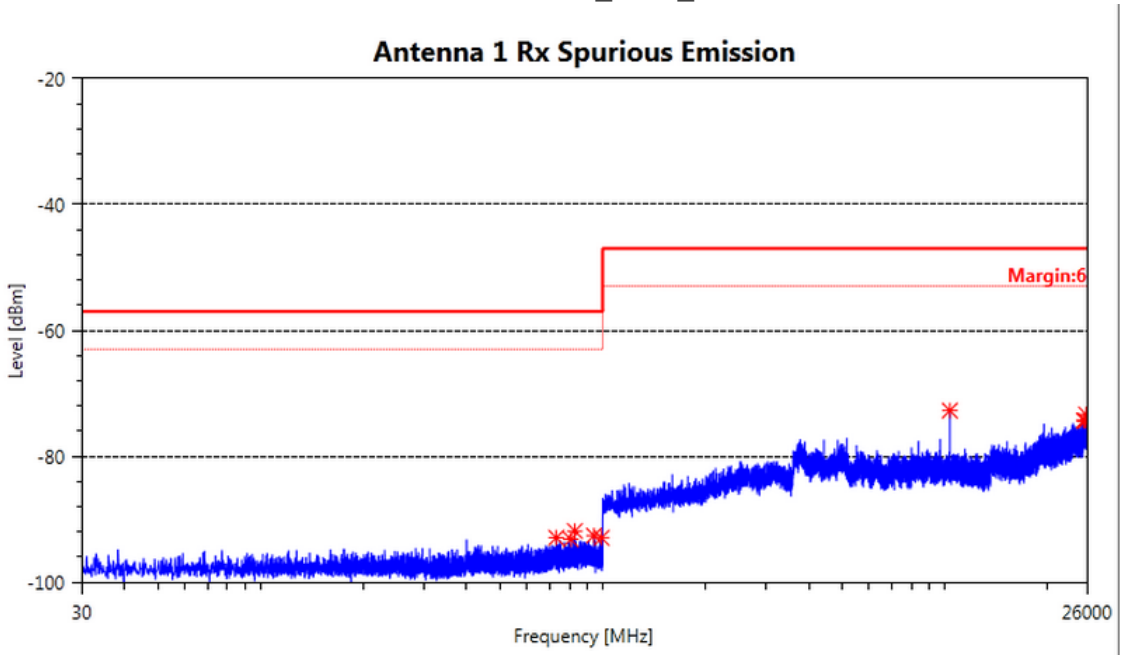


802.11n 40M Mode_5190_ANT 2

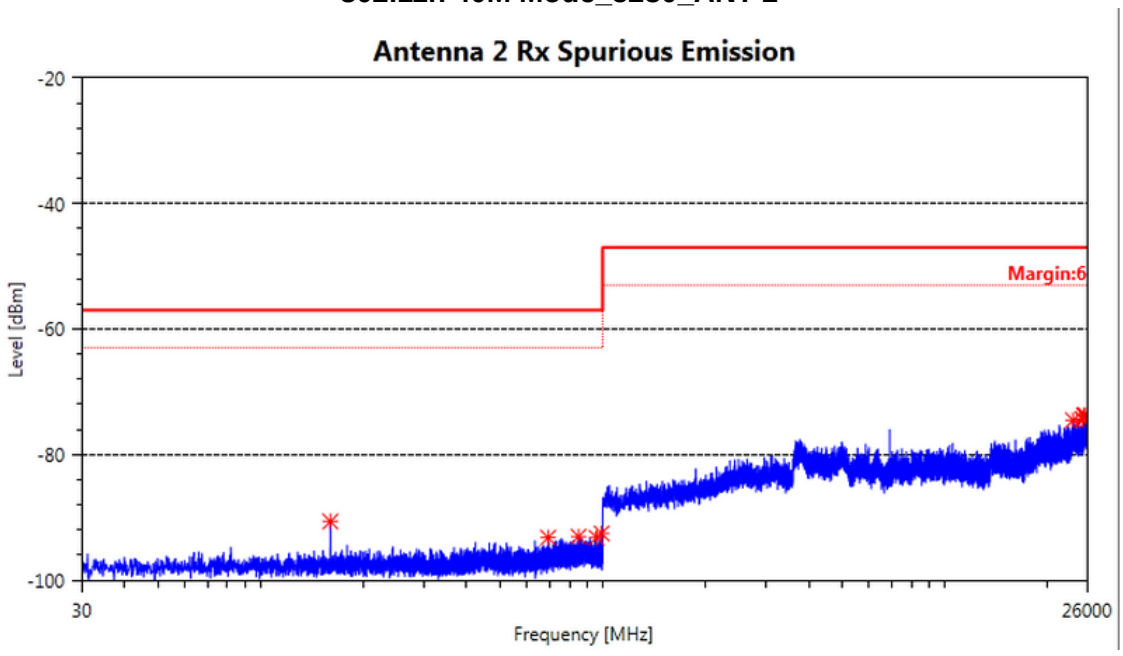


Test Mode:	RX Mode_802.11n(40 MHz)_5230MHz

802.11n 40M Mode_5230_ANT 1

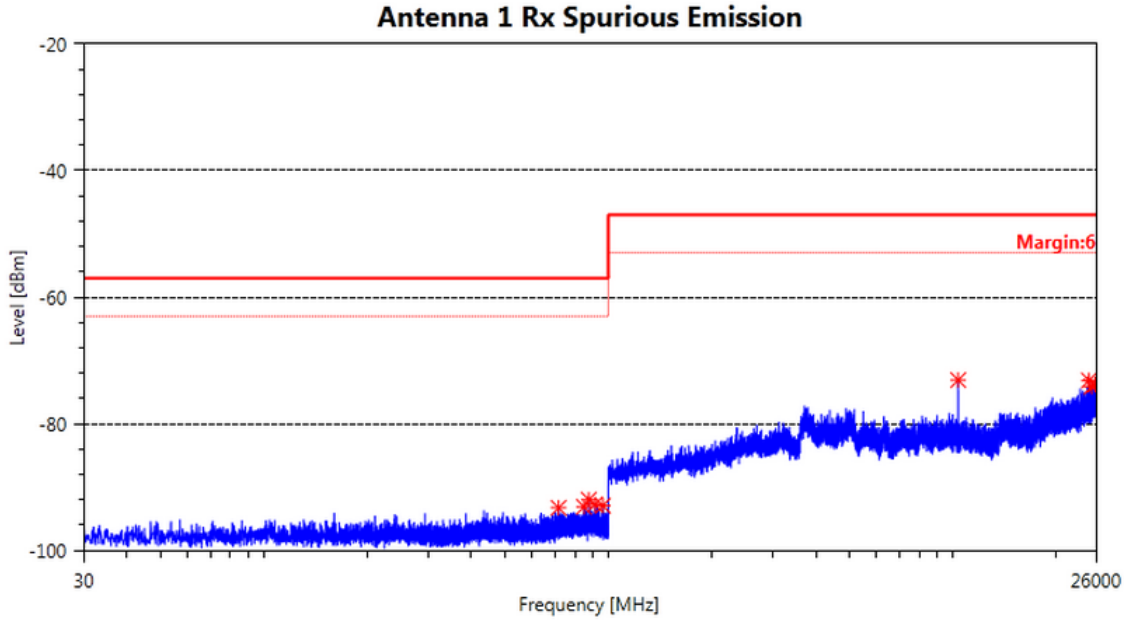


802.11n 40M Mode_5230_ANT 2

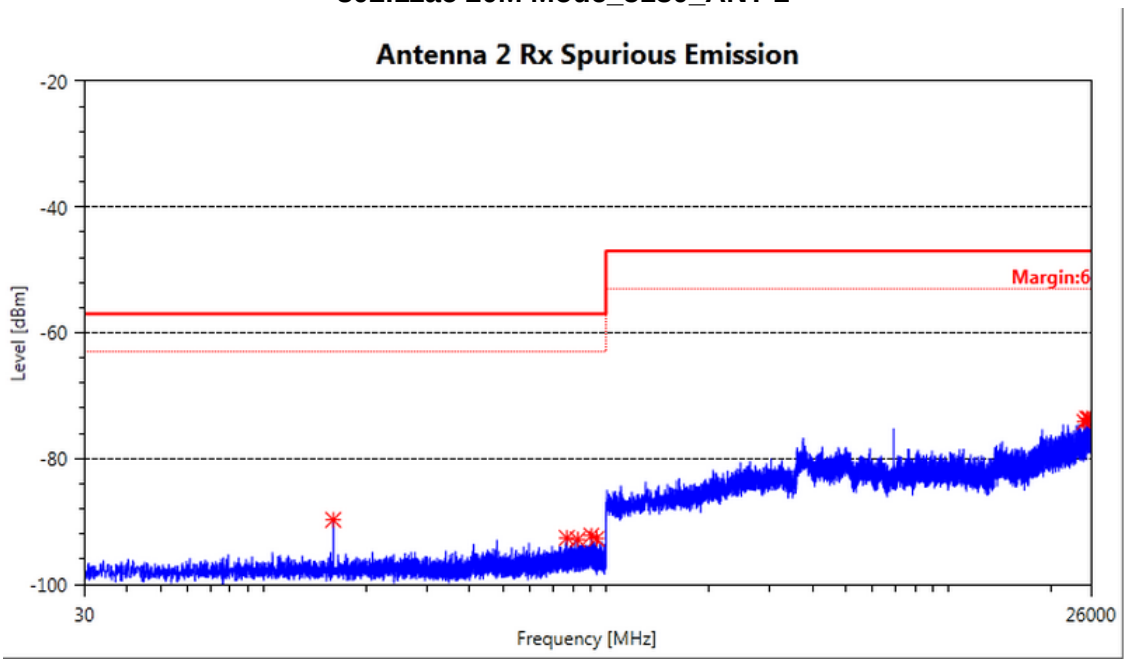


Test Mode:	RX Mode_802.11ac(20 MHz)_5180MHz

802.11ac 20M Mode_5180_ANT 1

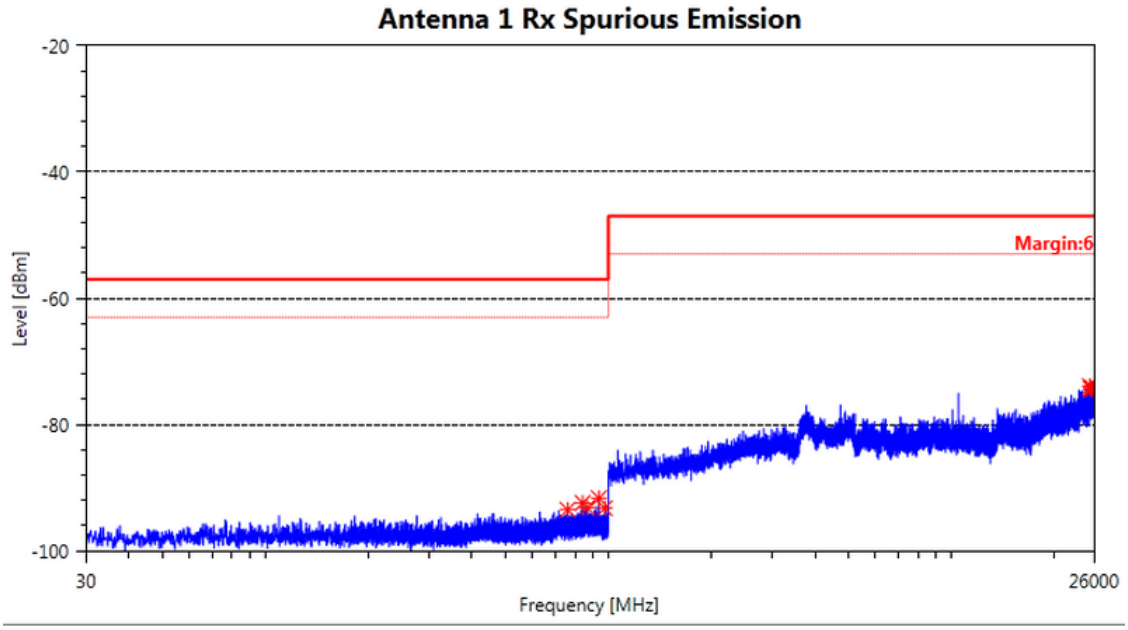


802.11ac 20M Mode_5180_ANT 2

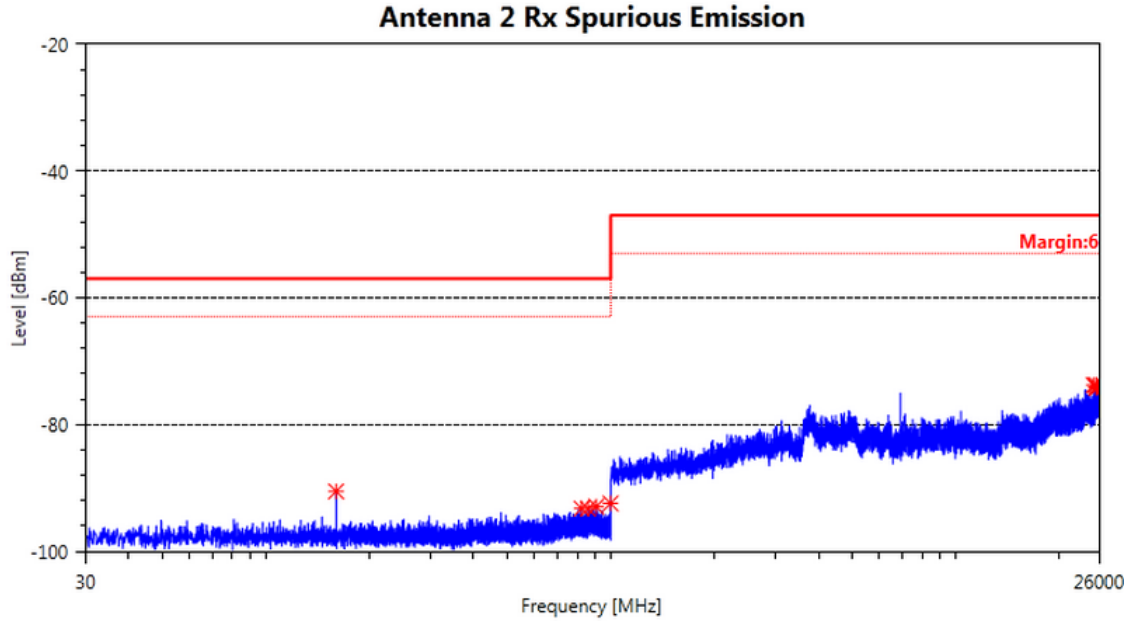


Test Mode:	RX Mode_802.11ac(20 MHz)_5240MHz

802.11ac 20M Mode_5240_ANT 1

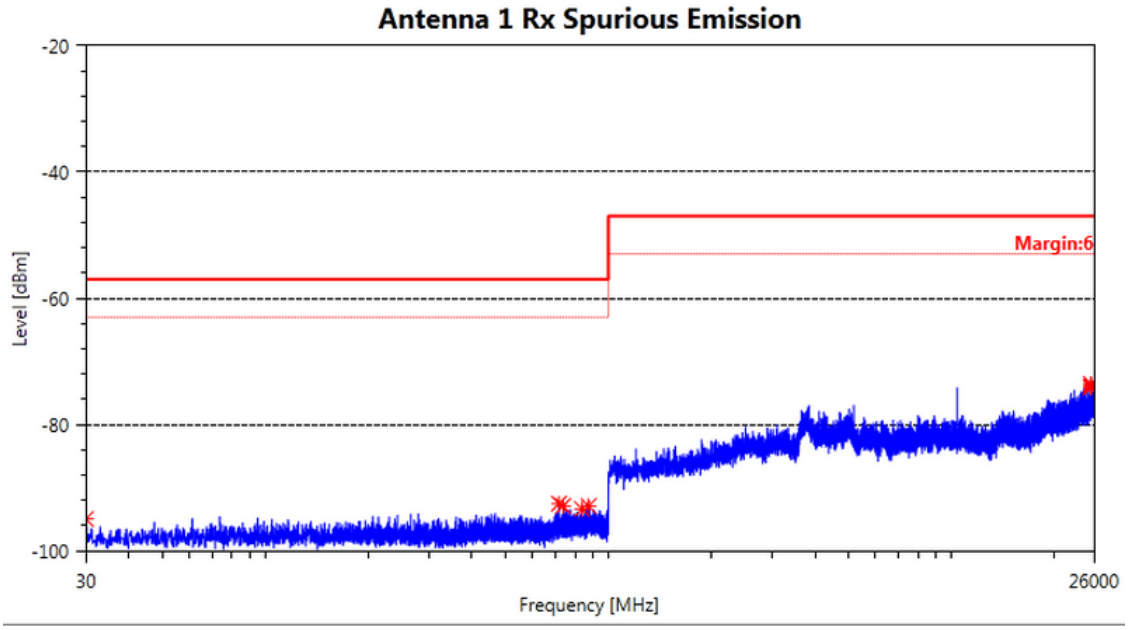


802.11ac 20M Mode_5240_ANT 2

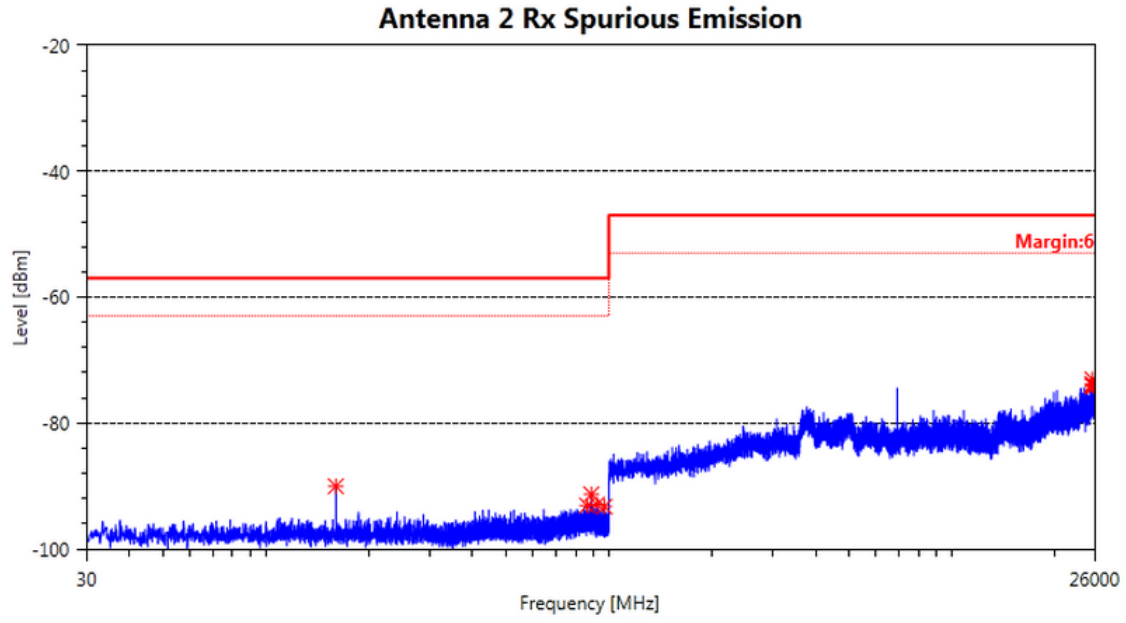


Test Mode:	RX Mode_802.11ac(40 MHz)_5190MHz

802.11ac 40M Mode_5190_ANT 1

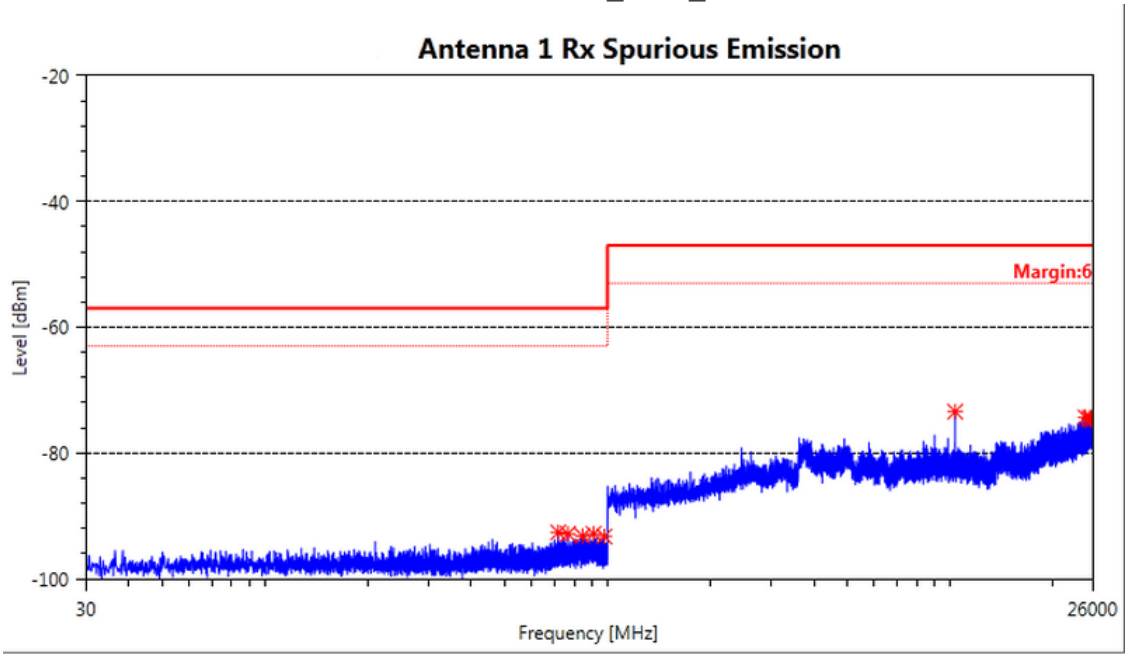


802.11ac 40M Mode_5190_ANT 2

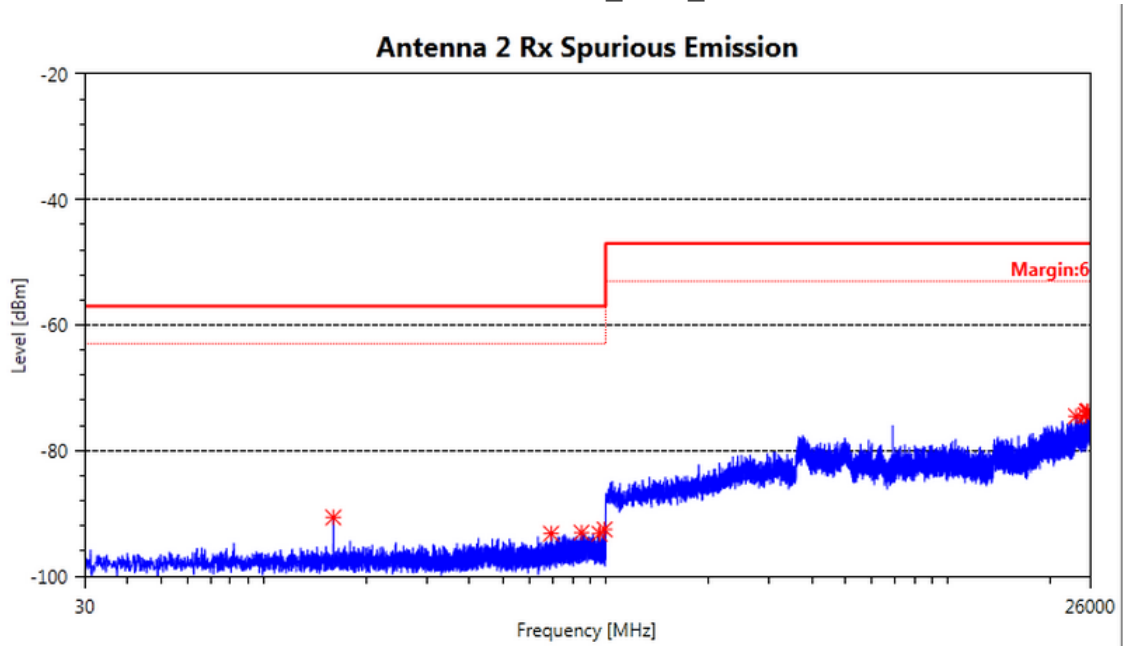


Test Mode:	RX Mode_802.11ac(40 MHz)_5230MHz

802.11ac 40M Mode_5230_ANT 1

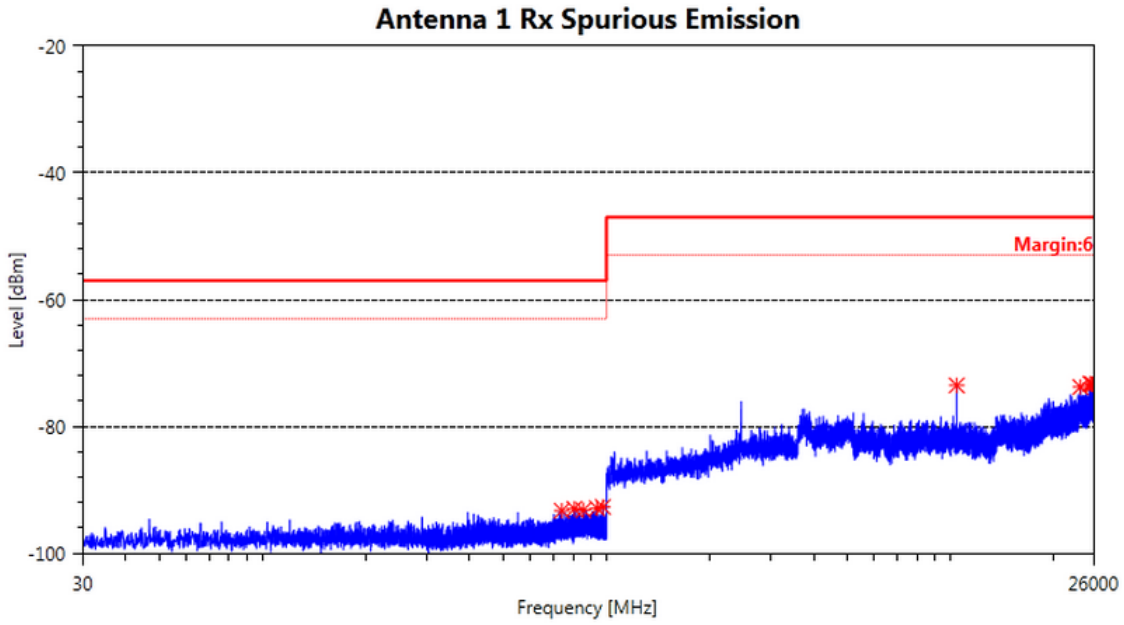


802.11ac 40M Mode_5230_ANT 2

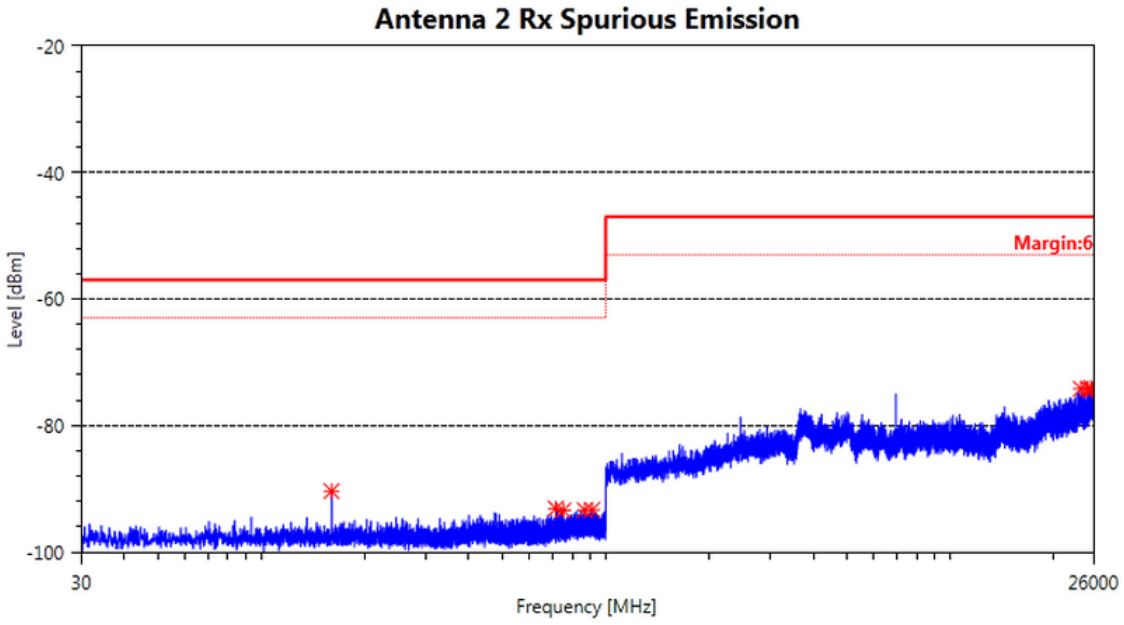


Test Mode:	RX Mode_802.11ac(80 MHz)_5210MHz

802.11ac 80M Mode_5210_ANT 1

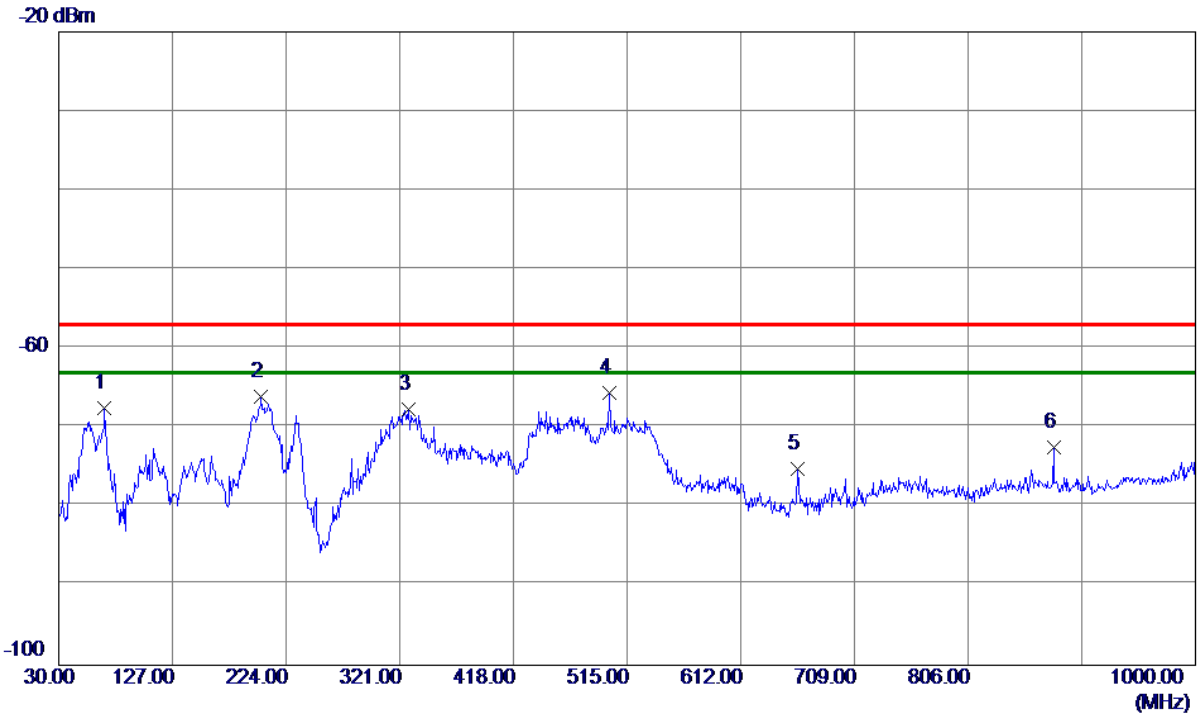


802.11ac 80M Mode_5210_ANT 2



Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5180MHz

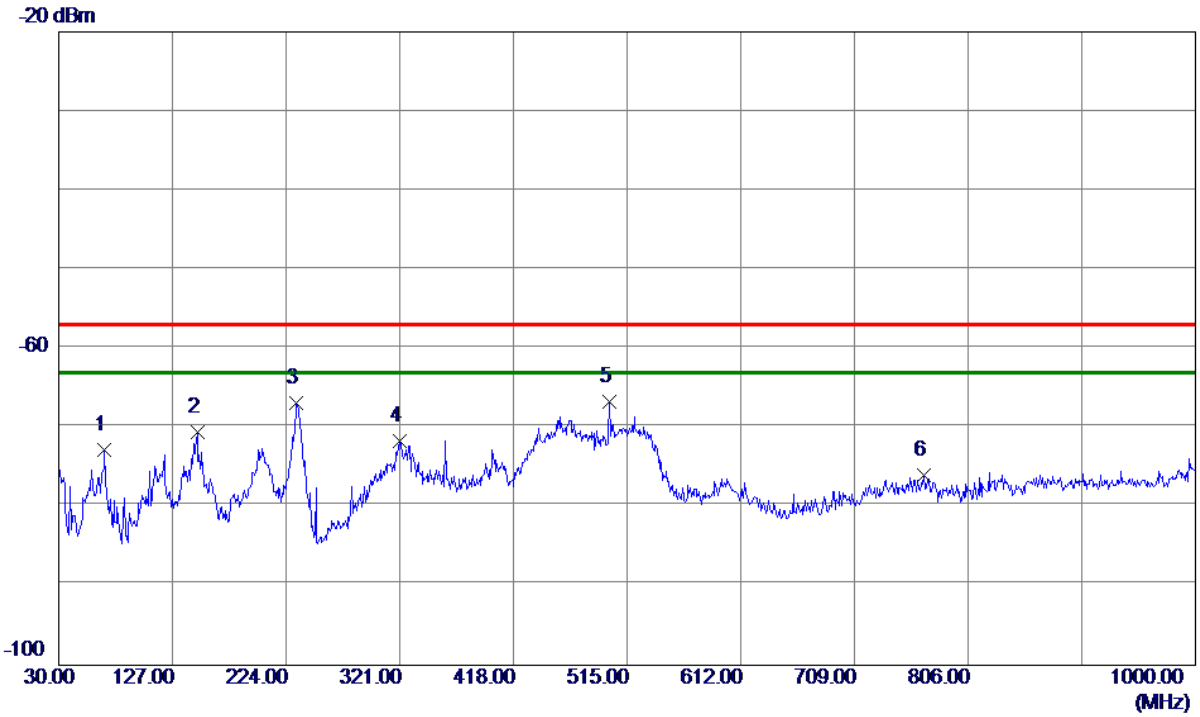
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.9940	-62.94	-4.64	-67.58	-57.00	-10.58	RMS	
2	202.8540	-60.54	-5.51	-66.05	-57.00	-9.05	RMS	
3	328.1780	-67.16	-0.57	-67.73	-57.00	-10.73	RMS	
4 *	499.9650	-69.66	4.10	-65.56	-57.00	-8.56	RMS	
5	660.6940	-80.82	5.66	-75.16	-57.00	-18.16	RMS	
6	879.6230	-81.76	9.28	-72.48	-57.00	-15.48	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5180MHz

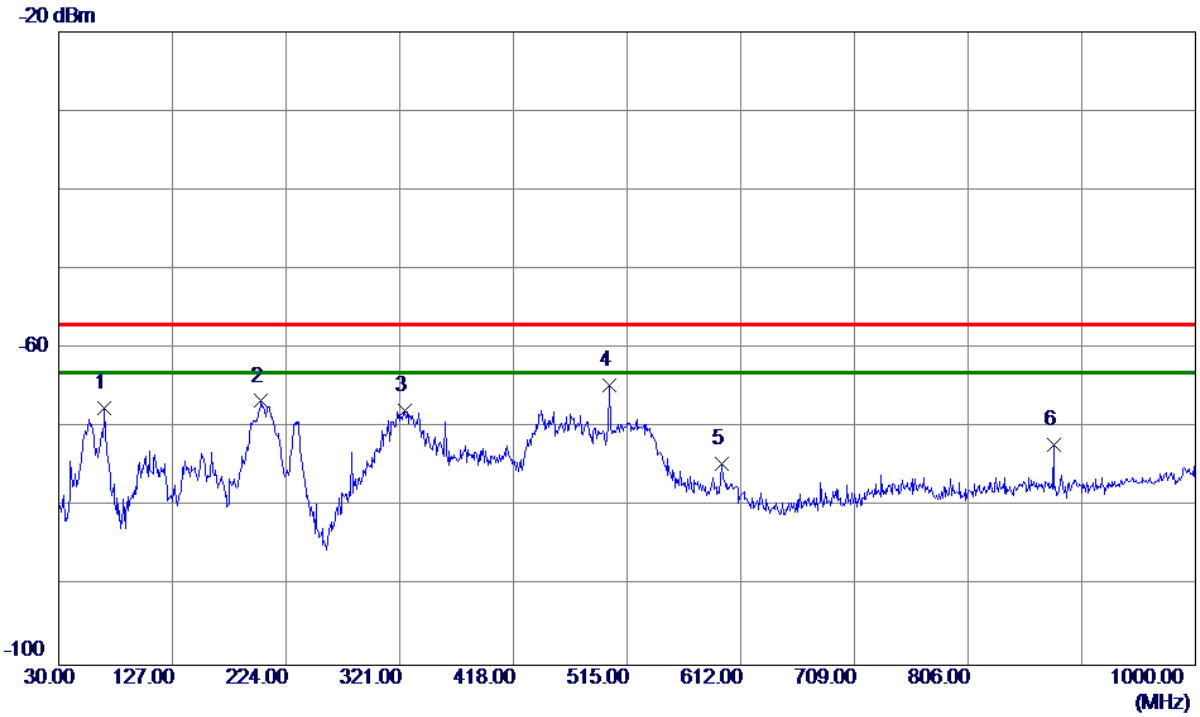
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	69.0910	-66.93	-5.86	-72.79	-57.00	-15.79	RMS	
2	148.0490	-70.02	-0.60	-70.62	-57.00	-13.62	RMS	
3	232.9240	-64.08	-2.87	-66.95	-57.00	-9.95	RMS	
4	320.8060	-70.33	-1.41	-71.74	-57.00	-14.74	RMS	
5 *	499.9650	-70.80	4.09	-66.71	-57.00	-9.71	RMS	
6	768.3640	-84.71	8.65	-76.06	-57.00	-19.06	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5240MHz

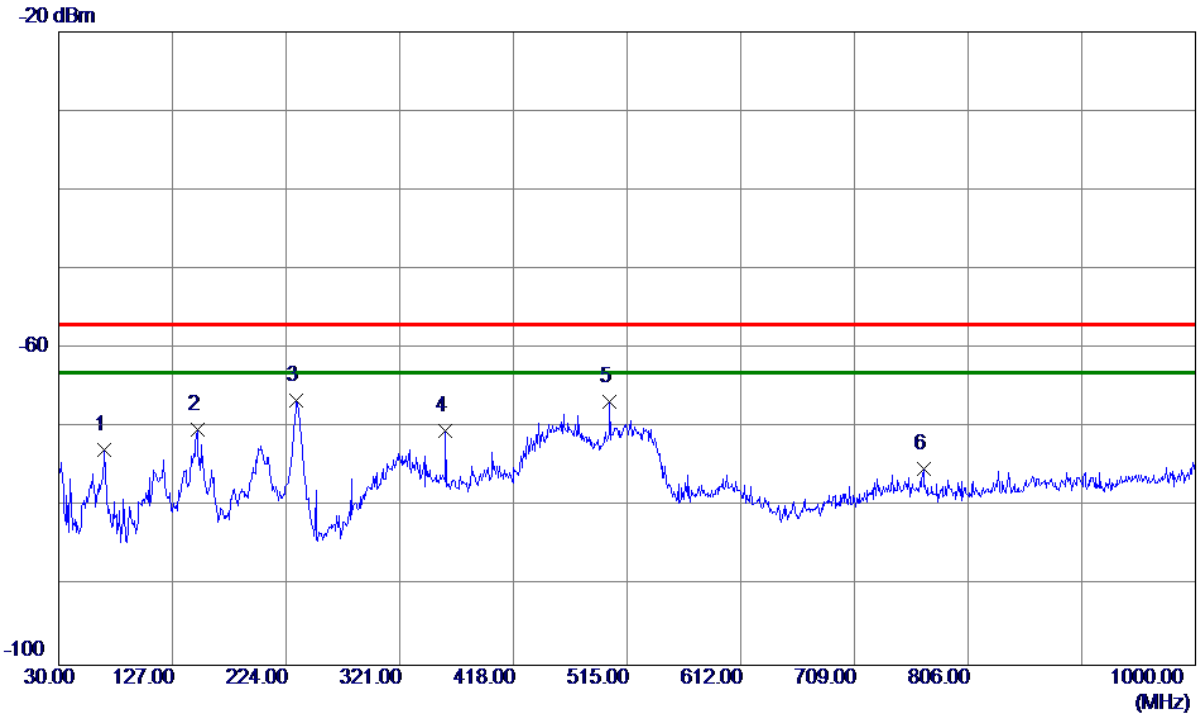
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.9940	-62.95	-4.64	-67.59	-57.00	-10.59	RMS	
2	202.8540	-61.13	-5.51	-66.64	-57.00	-9.64	RMS	
3	324.8800	-67.34	-0.56	-67.90	-57.00	-10.90	RMS	
4 *	499.9650	-68.76	4.10	-64.66	-57.00	-7.66	RMS	
5	596.0920	-81.62	6.99	-74.63	-57.00	-17.63	RMS	
6	879.5260	-81.51	9.28	-72.23	-57.00	-15.23	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5240MHz

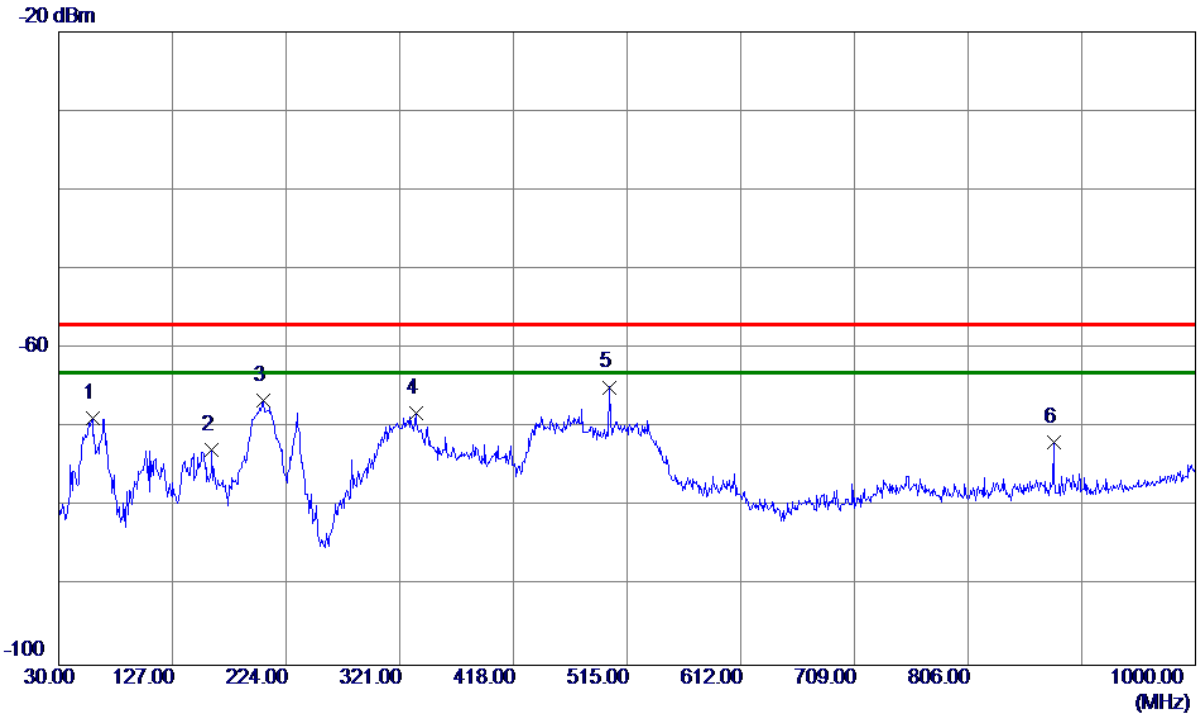
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.8970	-66.97	-5.79	-72.76	-57.00	-15.76	RMS	
2	148.0490	-69.63	-0.60	-70.23	-57.00	-13.23	RMS	
3 *	233.0210	-63.67	-2.86	-66.53	-57.00	-9.53	RMS	
4	359.8970	-71.01	0.57	-70.44	-57.00	-13.44	RMS	
5	499.9650	-70.74	4.09	-66.65	-57.00	-9.65	RMS	
6	767.9760	-83.90	8.66	-75.24	-57.00	-18.24	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5190MHz

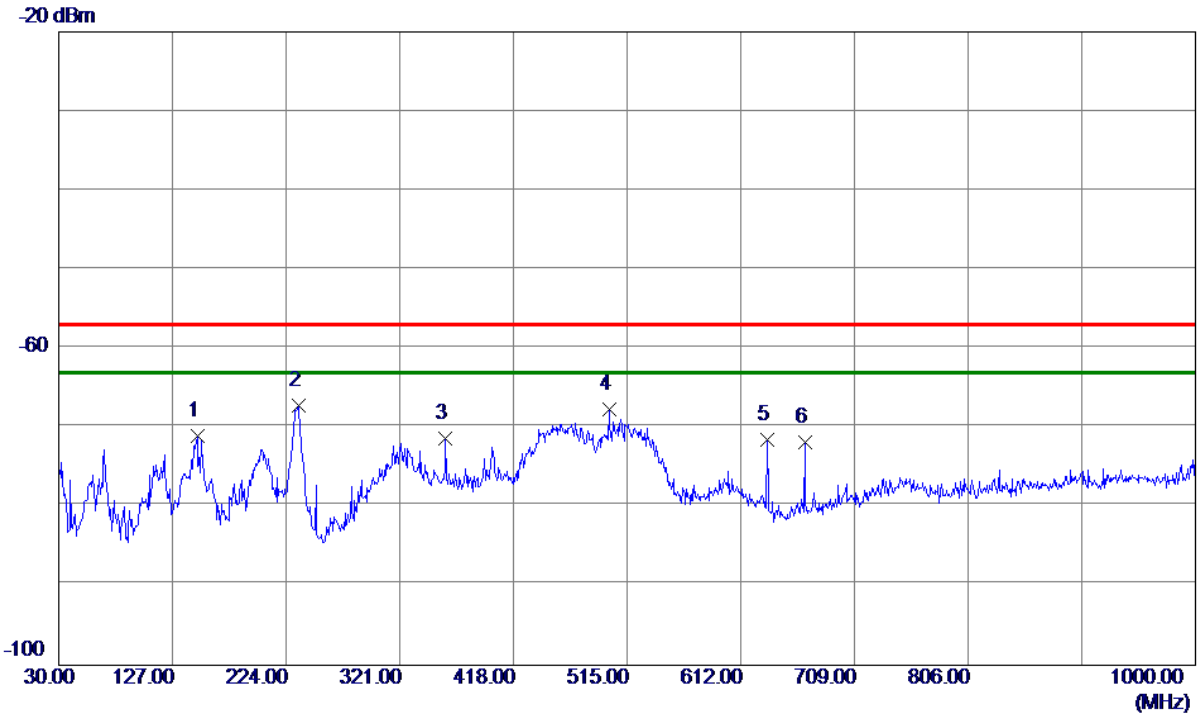
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	58.6150	-66.49	-2.35	-68.84	-57.00	-11.84	RMS	
2	159.9800	-71.50	-1.36	-72.86	-57.00	-15.86	RMS	
3	204.4060	-61.18	-5.41	-66.59	-57.00	-9.59	RMS	
4	334.4830	-67.62	-0.60	-68.22	-57.00	-11.22	RMS	
5 *	499.9650	-68.98	4.10	-64.88	-57.00	-7.88	RMS	
6	879.5260	-81.14	9.28	-71.86	-57.00	-14.86	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5190MHz

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	148.0490	-70.38	-0.60	-70.98	-57.00	-13.98	RMS	
2 *	234.4760	-64.46	-2.77	-67.23	-57.00	-10.23	RMS	
3	359.9940	-71.91	0.58	-71.33	-57.00	-14.33	RMS	
4	499.9650	-71.80	4.09	-67.71	-57.00	-10.71	RMS	
5	634.3100	-77.42	5.84	-71.58	-57.00	-14.58	RMS	
6	666.5140	-77.33	5.55	-71.78	-57.00	-14.78	RMS	

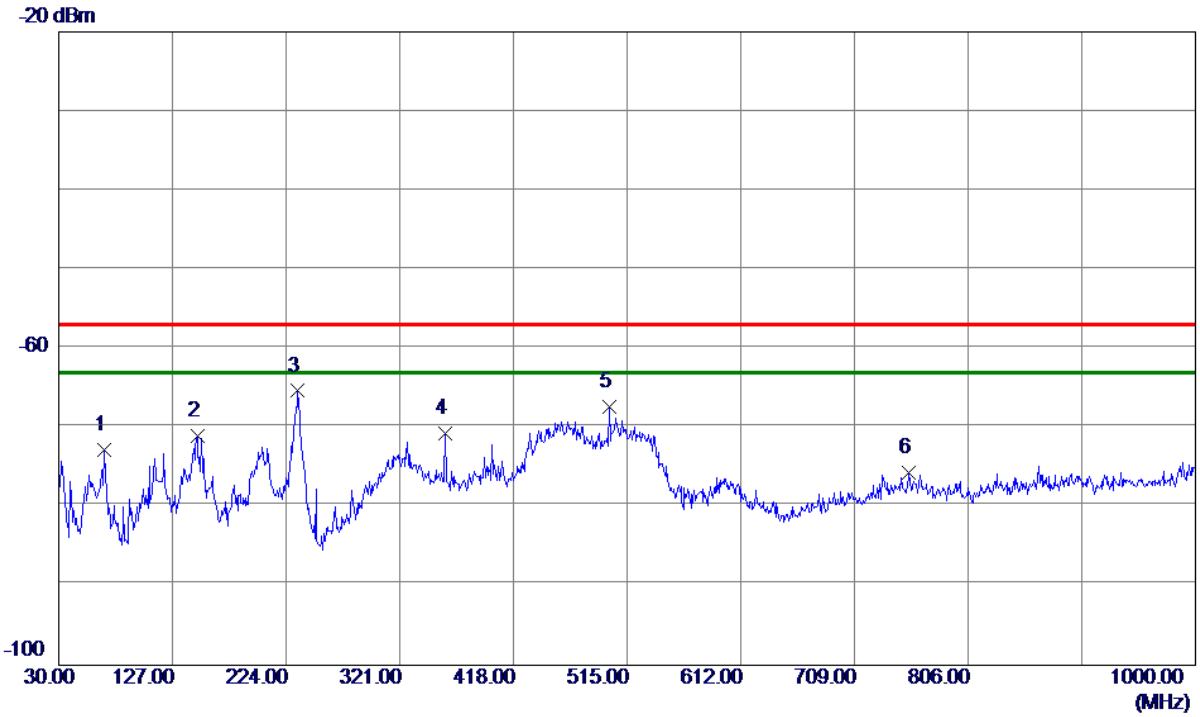
Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5230MHz

Vertical

No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	69.6730	-63.12	-4.92	-68.04	-57.00	-11.04	RMS	
2	203.4360	-61.24	-5.47	-66.71	-57.00	-9.71	RMS	
3	331.1850	-67.21	-0.58	-67.79	-57.00	-10.79	RMS	
4	439.9220	-68.58	1.56	-67.02	-57.00	-10.02	RMS	
5 *	499.9650	-68.44	4.10	-64.34	-57.00	-7.34	RMS	
6	879.5260	-80.87	9.28	-71.59	-57.00	-14.59	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5230MHz

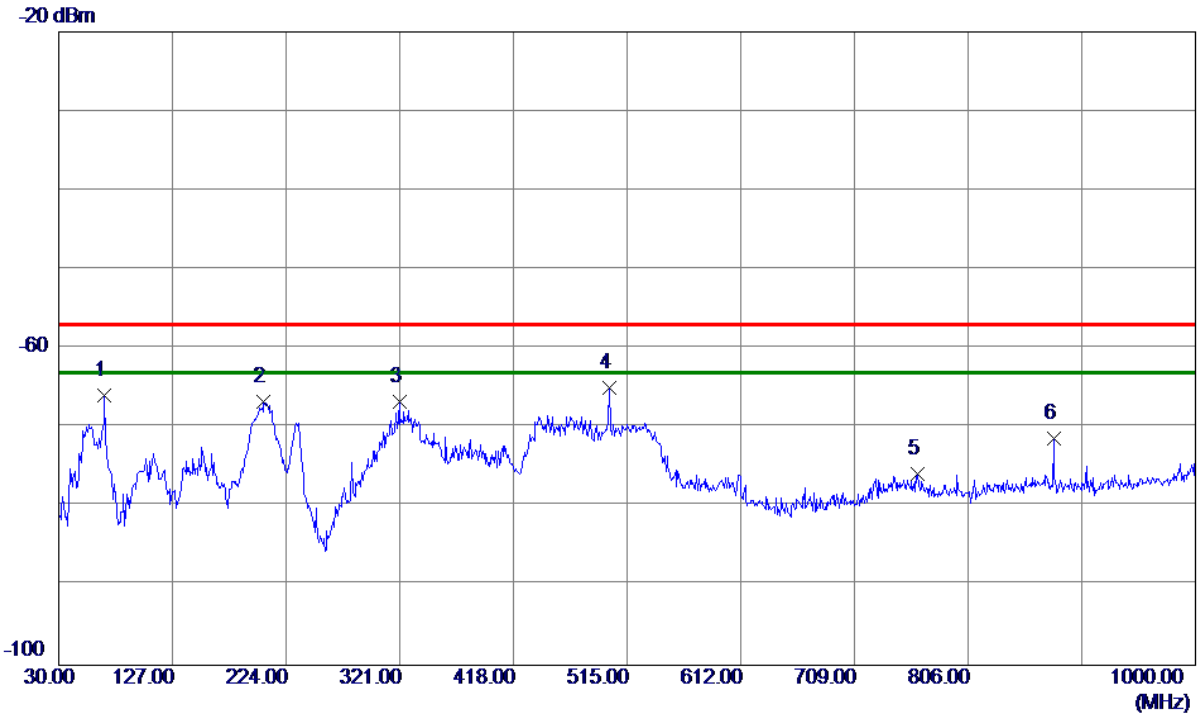
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	68.9940	-66.92	-5.82	-72.74	-57.00	-15.74	RMS	
2	148.0490	-70.50	-0.60	-71.10	-57.00	-14.10	RMS	
3 *	233.7970	-62.55	-2.81	-65.36	-57.00	-8.36	RMS	
4	359.9940	-71.23	0.58	-70.65	-57.00	-13.65	RMS	
5	499.9650	-71.51	4.09	-67.42	-57.00	-10.42	RMS	
6	755.6569	-84.49	8.84	-75.65	-57.00	-18.65	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(80 MHz)_5210MHz

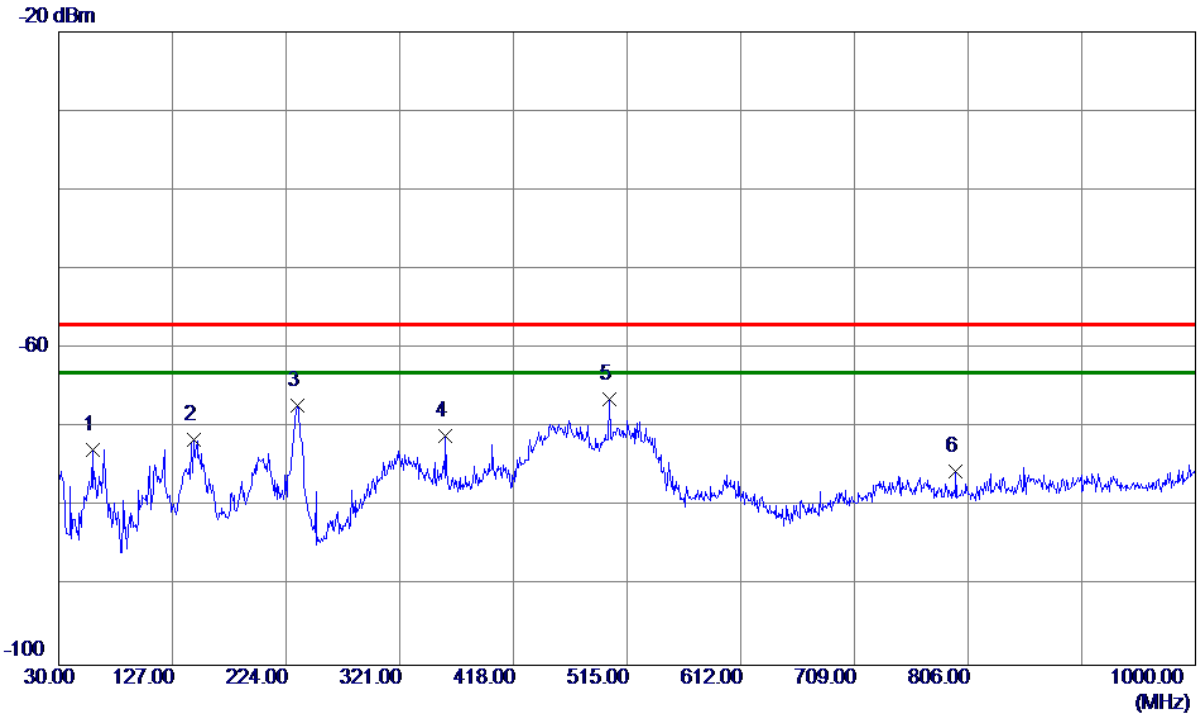
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	69.0910	-61.24	-4.68	-65.92	-57.00	-8.92	RMS	
2	204.6970	-61.33	-5.39	-66.72	-57.00	-9.72	RMS	
3	320.6119	-66.22	-0.54	-66.76	-57.00	-9.76	RMS	
4 *	499.9650	-69.00	4.10	-64.90	-57.00	-7.90	RMS	
5	763.0290	-84.41	8.55	-75.86	-57.00	-18.86	RMS	
6	879.5260	-80.67	9.28	-71.39	-57.00	-14.39	RMS	

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(80 MHz)_5210MHz

Horizontal

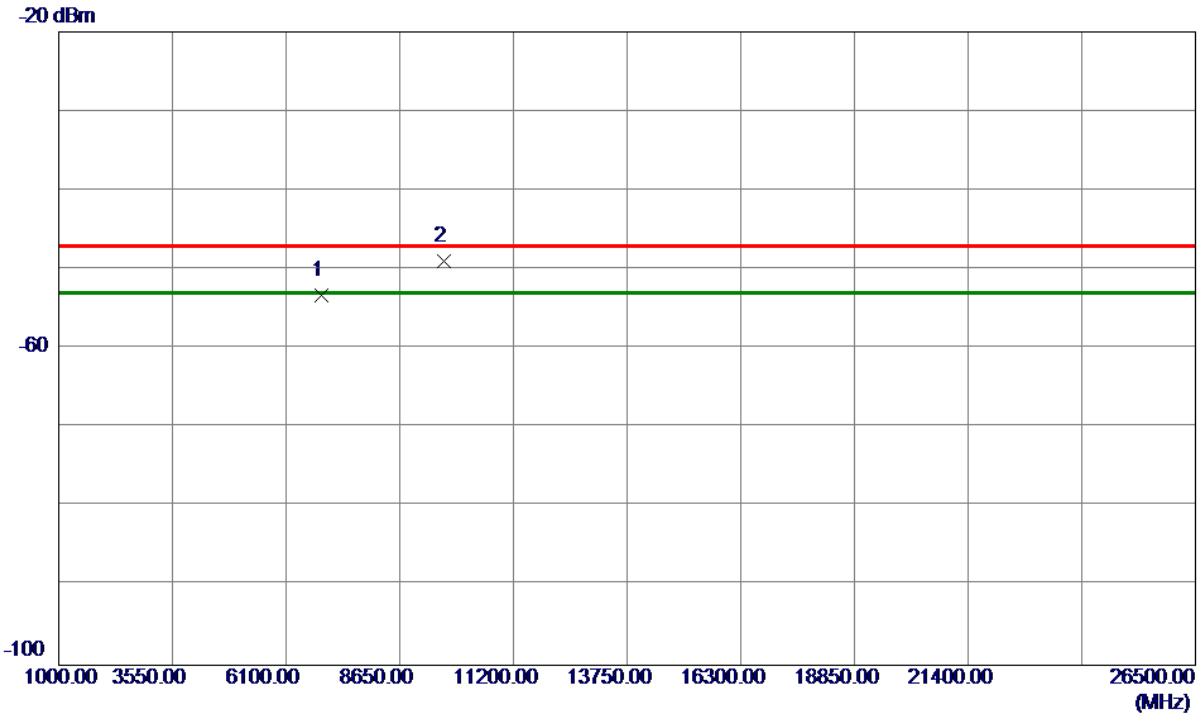


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	58.7120	-69.02	-3.80	-72.82	-57.00	-15.82	RMS	
2	145.2360	-70.91	-0.69	-71.60	-57.00	-14.60	RMS	
3	233.7970	-64.42	-2.81	-67.23	-57.00	-10.23	RMS	
4	359.9940	-71.58	0.58	-71.00	-57.00	-14.00	RMS	
5 *	499.9650	-70.50	4.09	-66.41	-57.00	-9.41	RMS	
6	795.4270	-83.73	8.24	-75.49	-57.00	-18.49	RMS	

APPENDIX I - RECEIVER SPURIOUS EMISSIONS (ABOVE 1000MHZ)

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5180MHz

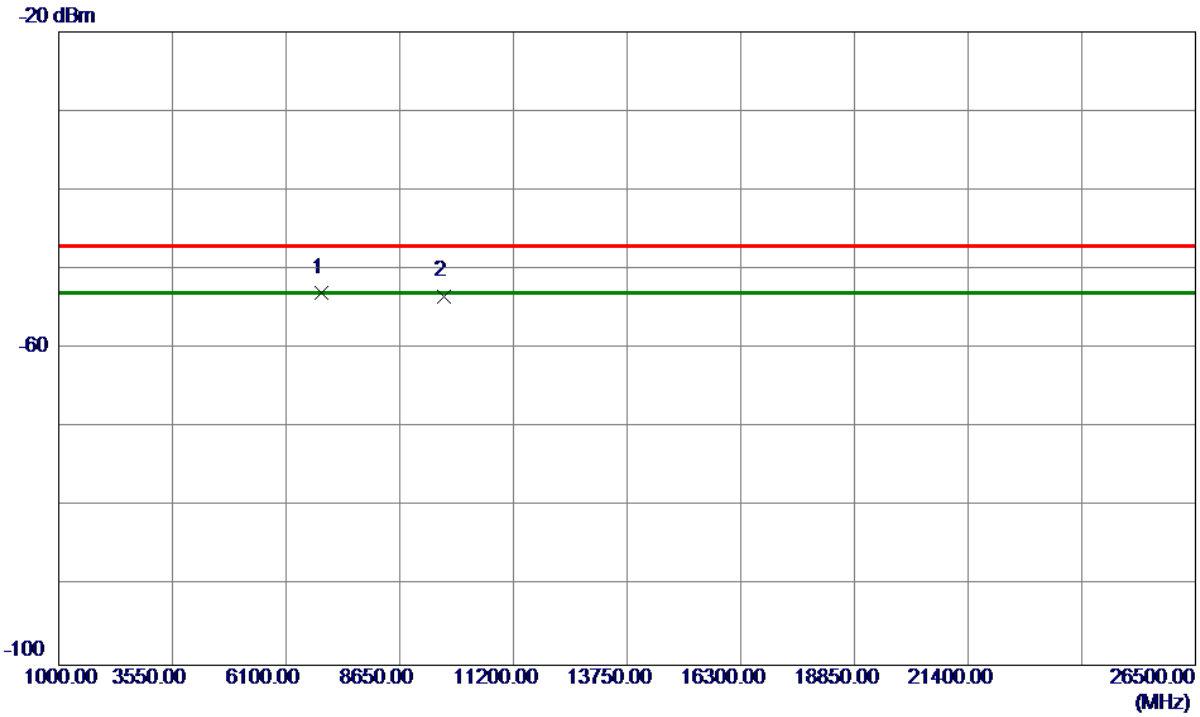
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6906.5720	-67.06	13.80	-53.26	-47.00	-6.26		
2 *	9647.9930	-62.44	13.45	-48.99	-47.00	-1.99		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5180MHz

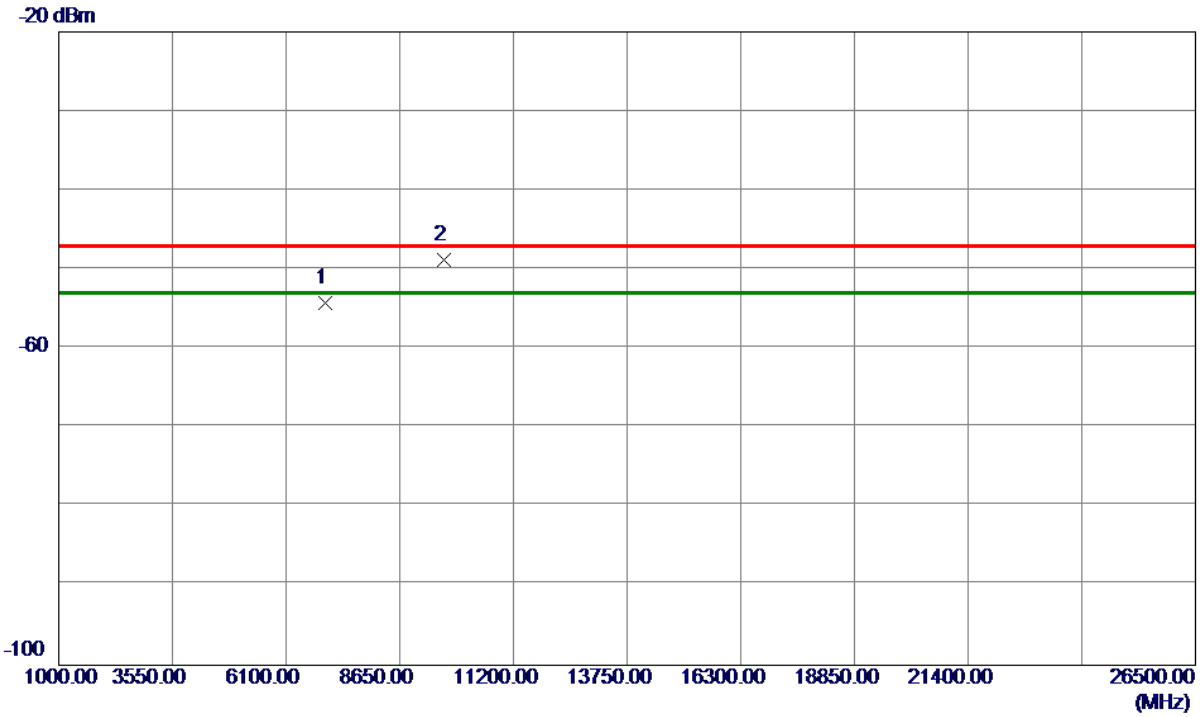
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	6906.5420	-66.24	13.27	-52.97	-47.00	-5.97		
2	9647.9290	-64.14	10.78	-53.36	-47.00	-6.36		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5240MHz

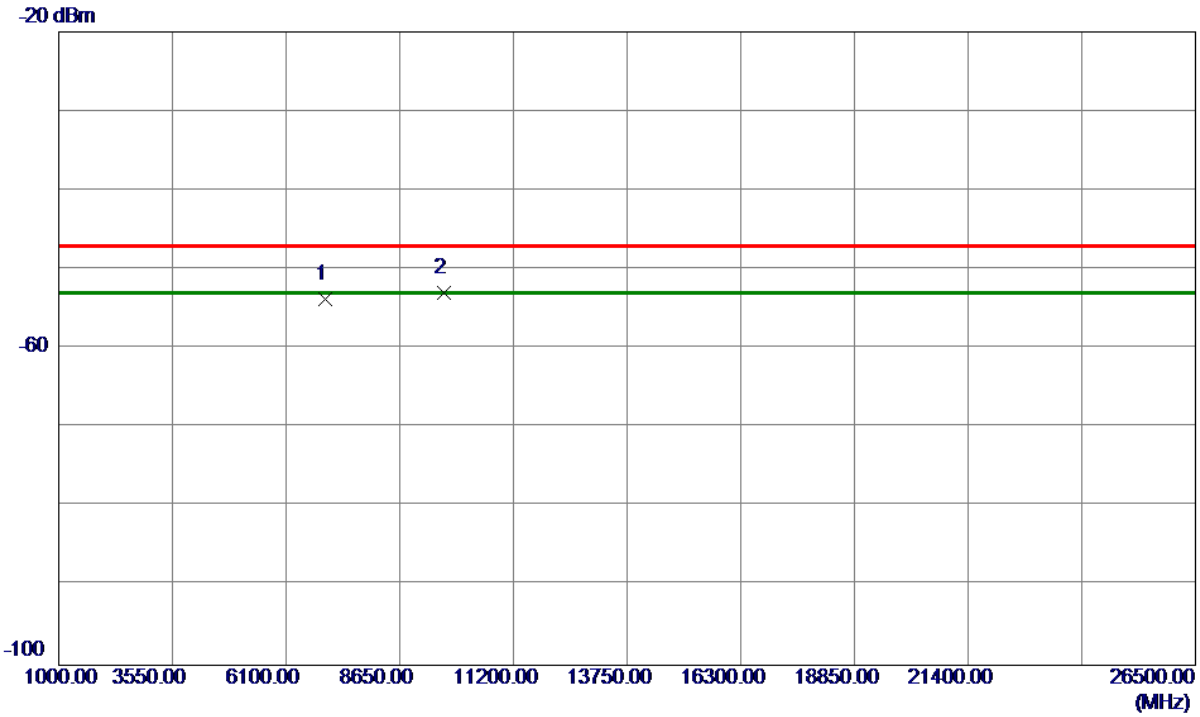
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.4810	-68.31	14.13	-54.18	-47.00	-7.18		
2 *	9647.9840	-62.31	13.45	-48.86	-47.00	-1.86		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11a_5240MHz

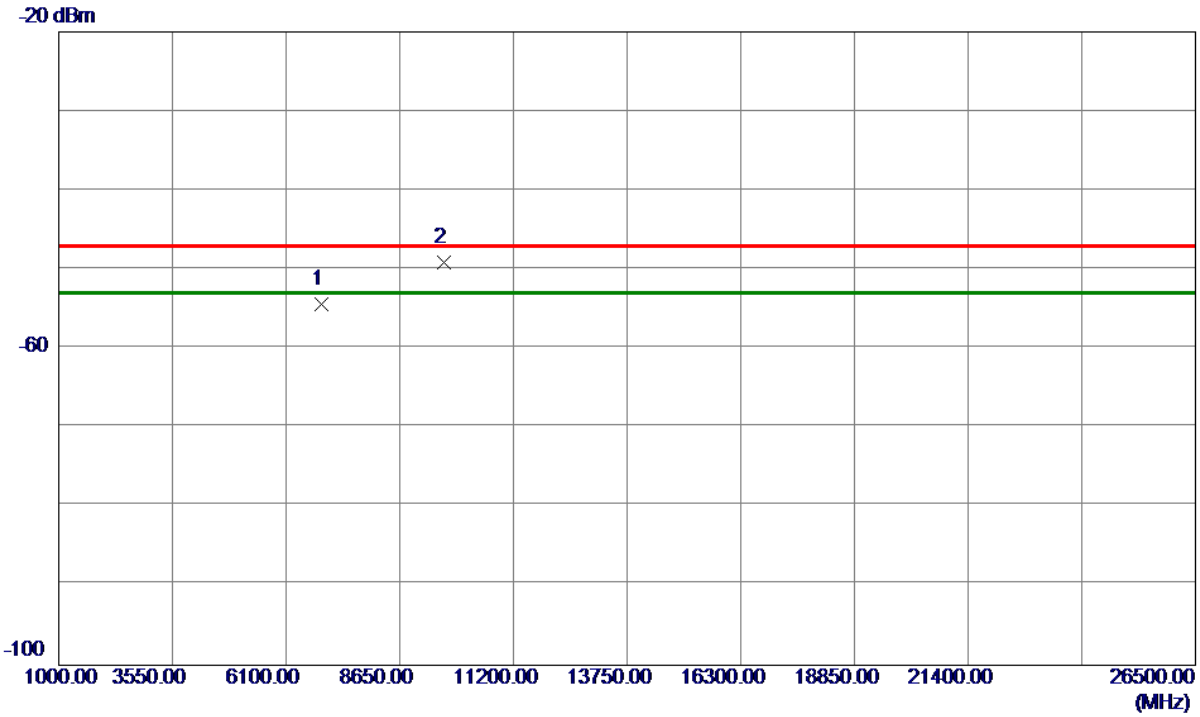
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.6160	-67.15	13.41	-53.74	-47.00	-6.74		
2 *	9647.8869	-63.78	10.78	-53.00	-47.00	-6.00		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(20 MHz)_5180MHz

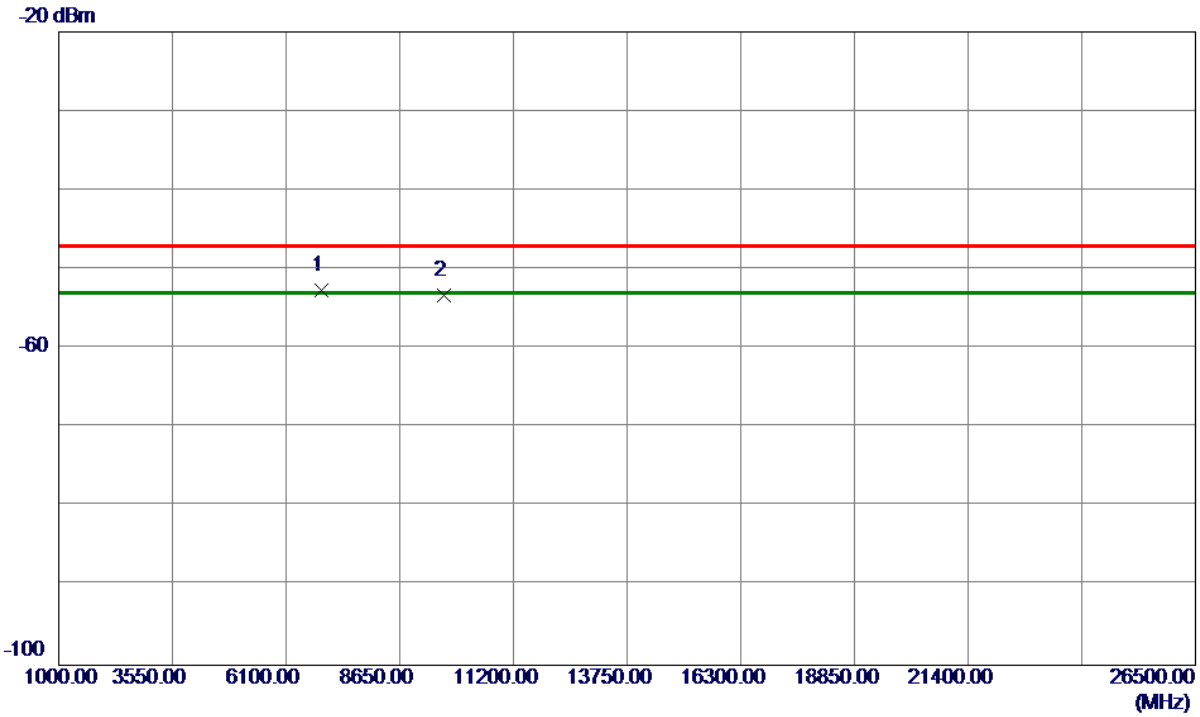
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6906.8350	-68.13	13.80	-54.33	-47.00	-7.33		
2 *	9647.8770	-62.51	13.45	-49.06	-47.00	-2.06		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(20 MHz)_5180MHz

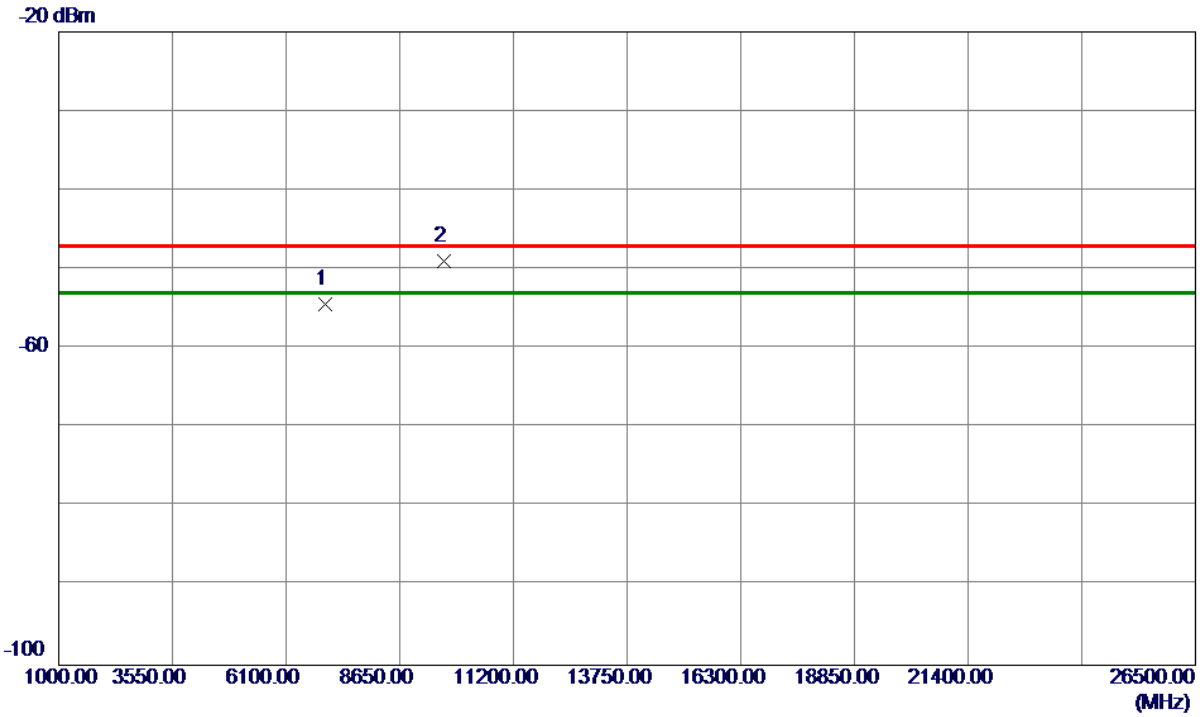
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	6906.6370	-65.90	13.27	-52.63	-47.00	-5.63		
2	9647.9750	-64.05	10.78	-53.27	-47.00	-6.27		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(20 MHz)_5240MHz

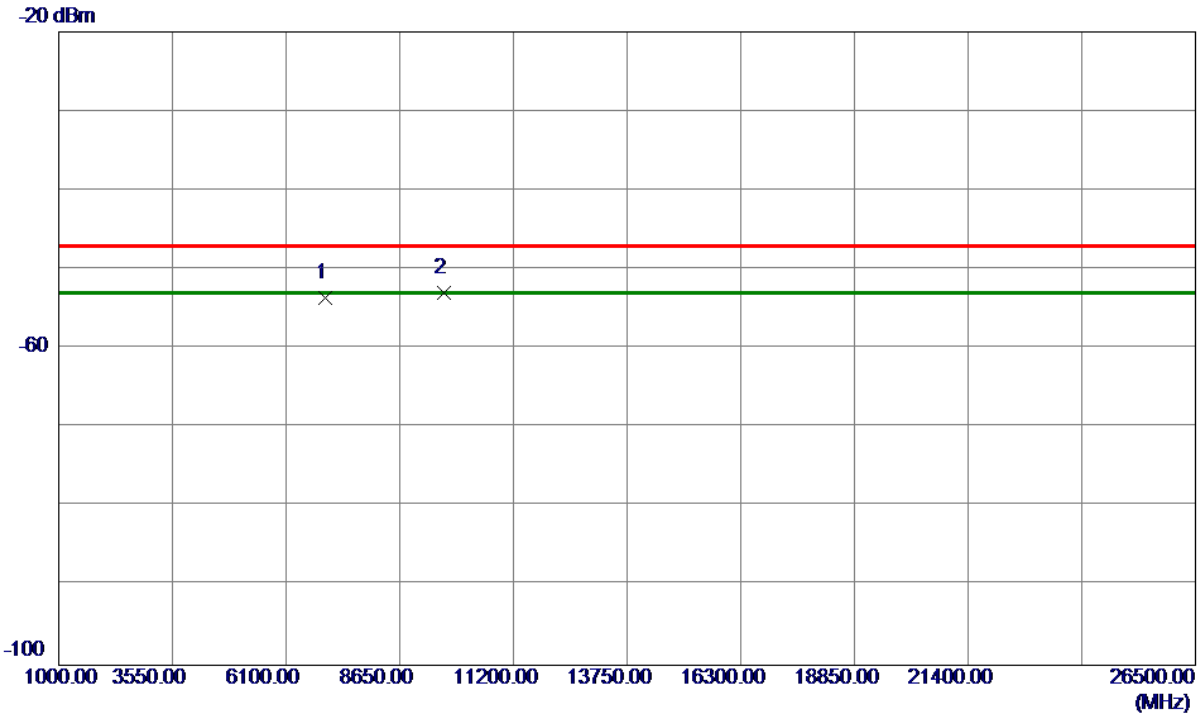
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.7150	-68.48	14.13	-54.35	-47.00	-7.35		
2 *	9647.9300	-62.43	13.45	-48.98	-47.00	-1.98		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(20 MHz)_5240MHz

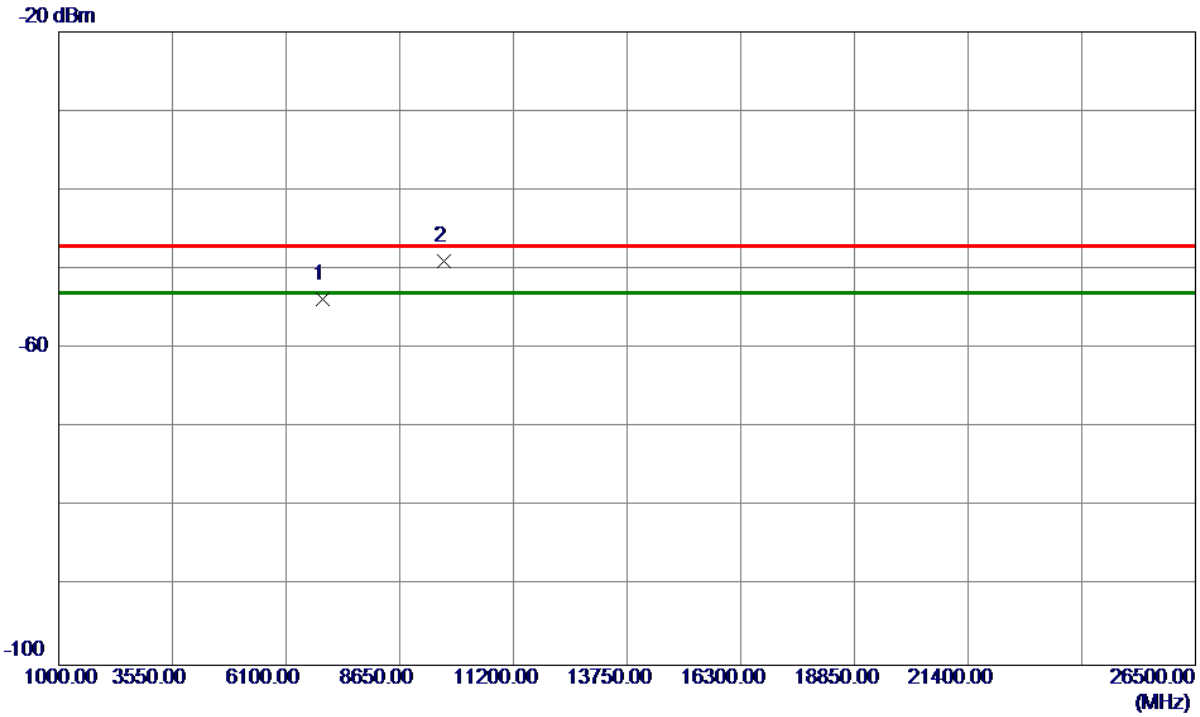
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.6880	-66.95	13.41	-53.54	-47.00	-6.54		
2 *	9648.1950	-63.75	10.78	-52.97	-47.00	-5.97		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5190MHz

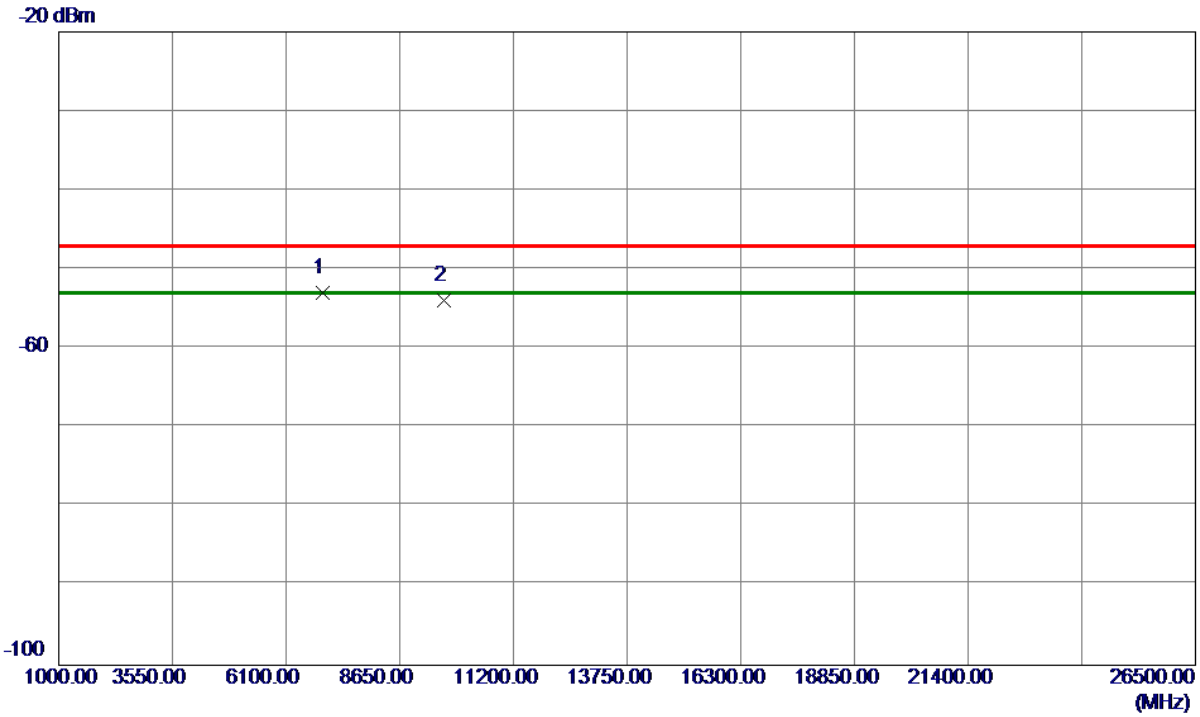
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6920.0430	-67.67	13.86	-53.81	-47.00	-6.81		
2 *	9647.9050	-62.37	13.45	-48.92	-47.00	-1.92		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5190MHz

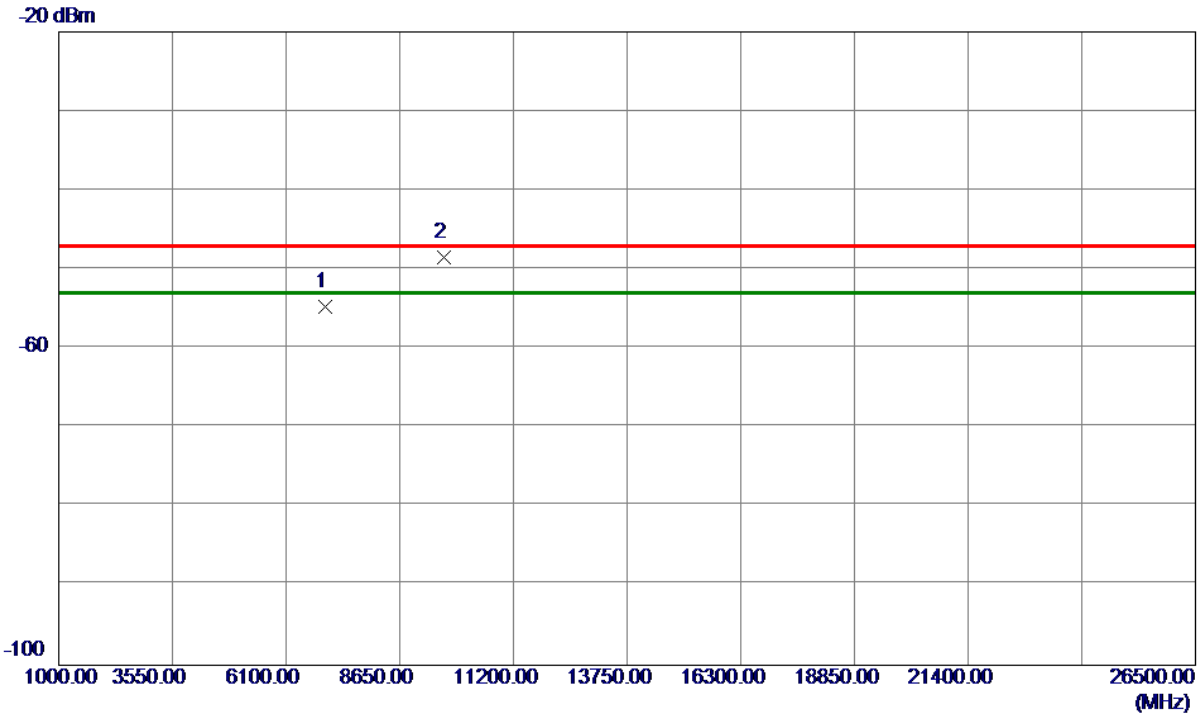
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	6919.9060	-66.27	13.29	-52.98	-47.00	-5.98		
2	9648.1860	-64.63	10.78	-53.85	-47.00	-6.85		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5230MHz

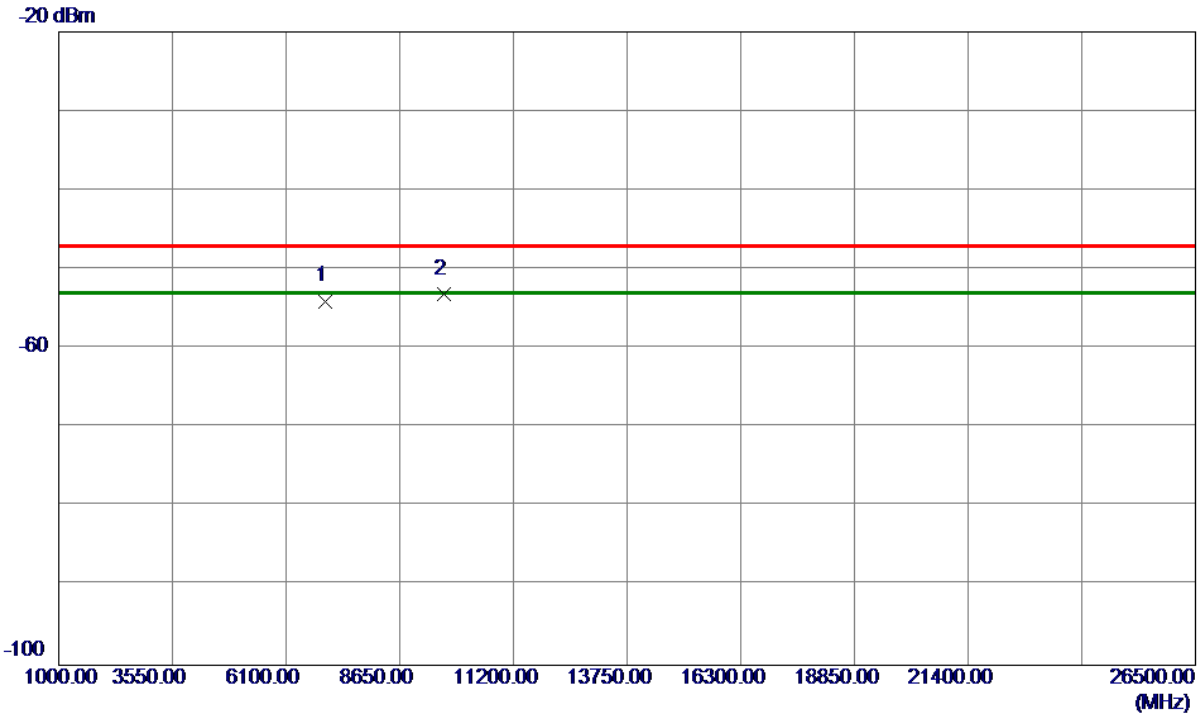
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6973.4440	-68.76	14.07	-54.69	-47.00	-7.69		
2 *	9648.0720	-61.97	13.45	-48.52	-47.00	-1.52		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11n(40 MHz)_5230MHz

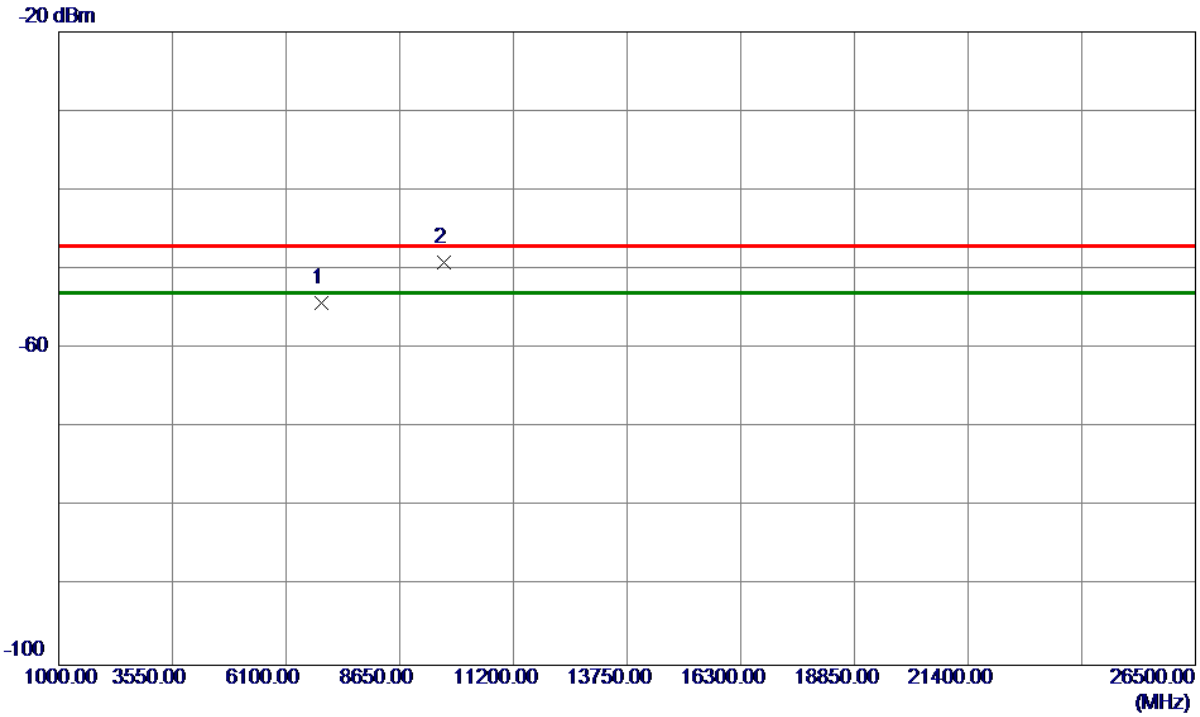
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6973.2570	-67.38	13.38	-54.00	-47.00	-7.00		
2 *	9648.0210	-63.96	10.78	-53.18	-47.00	-6.18		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(20 MHz)_5180MHz

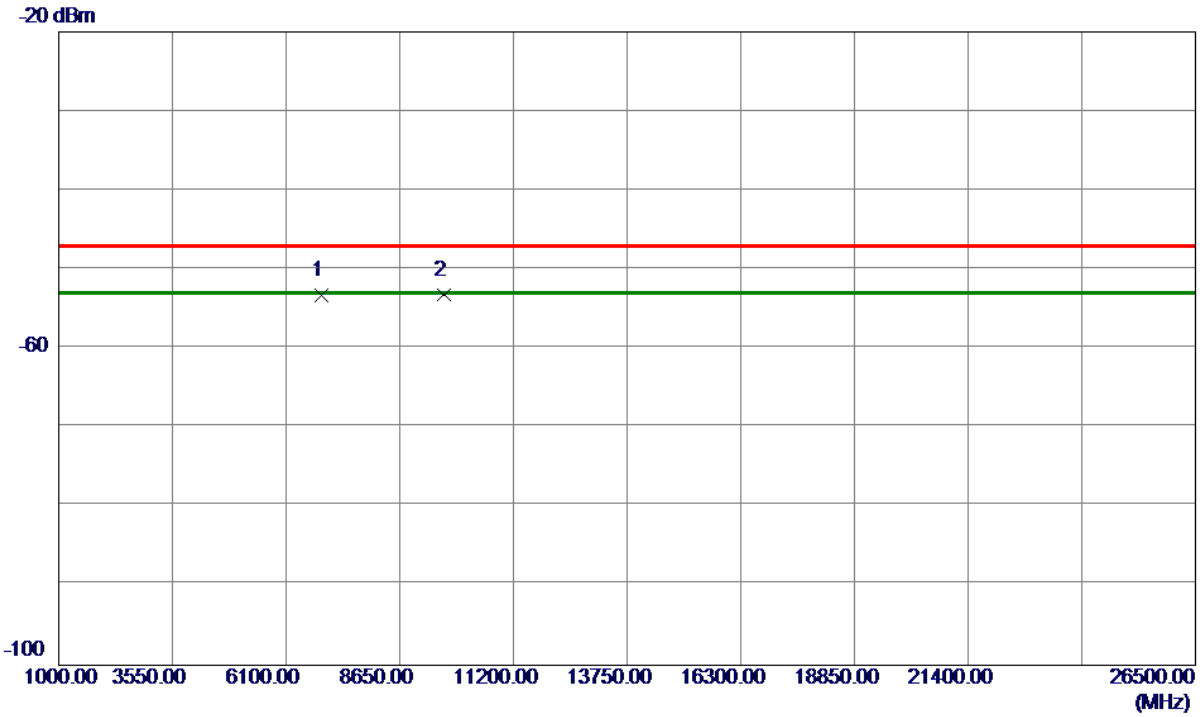
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6906.6580	-68.05	13.80	-54.25	-47.00	-7.25		
2 *	9648.0970	-62.52	13.45	-49.07	-47.00	-2.07		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(20 MHz)_5180MHz

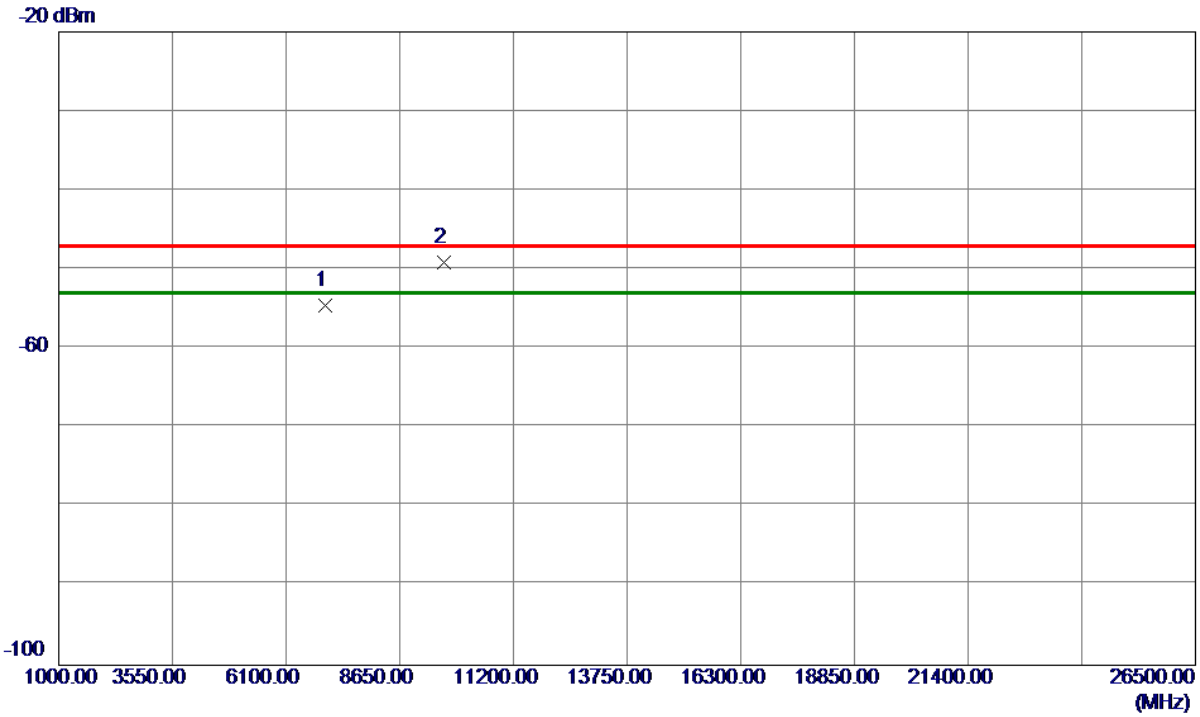
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6906.4830	-66.54	13.27	-53.27	-47.00	-6.27		
2 *	9647.9070	-63.98	10.78	-53.20	-47.00	-6.20		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(20 MHz)_5240MHz

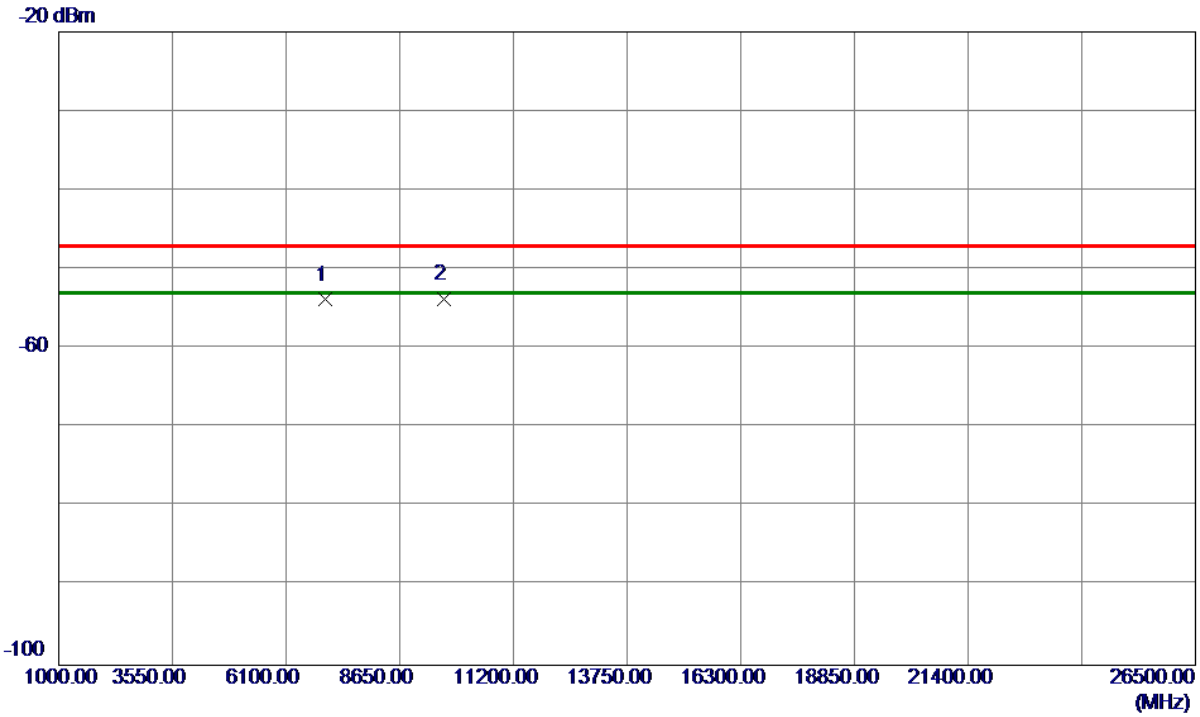
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.4700	-68.70	14.13	-54.57	-47.00	-7.57		
2 *	9647.9850	-62.52	13.45	-49.07	-47.00	-2.07		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(20 MHz)_5240MHz

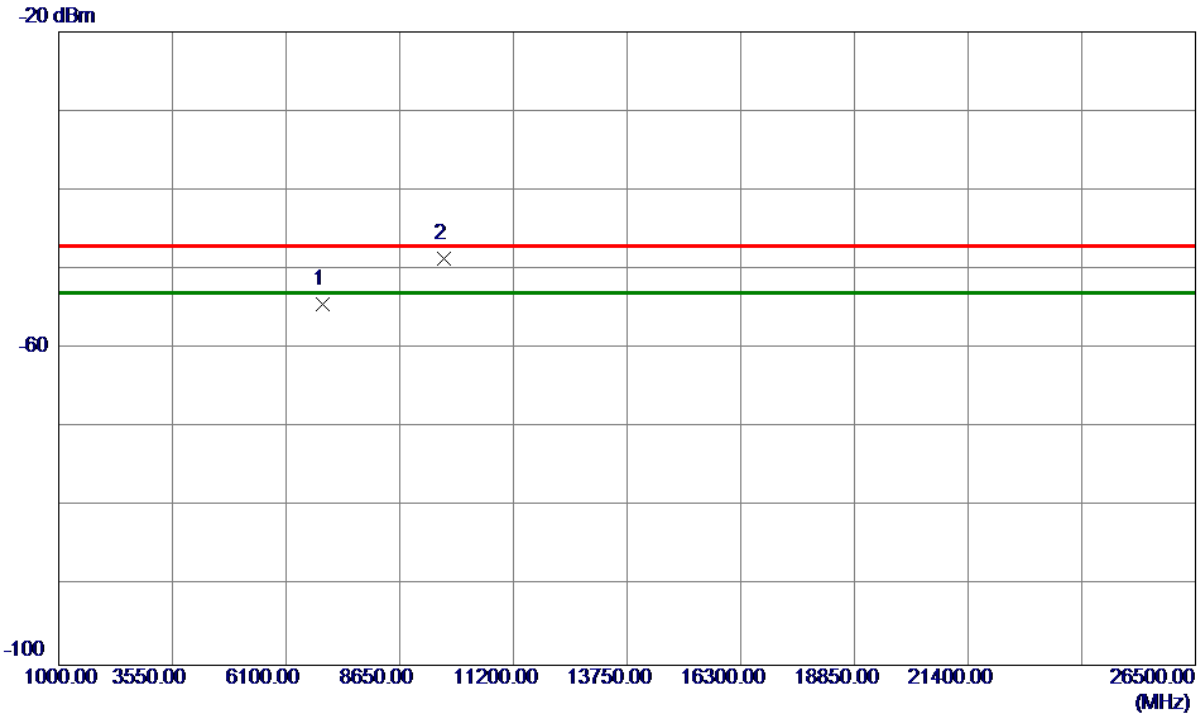
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6986.4540	-67.25	13.41	-53.84	-47.00	-6.84		
2 *	9647.8720	-64.49	10.78	-53.71	-47.00	-6.71		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(40 MHz)_5190MHz

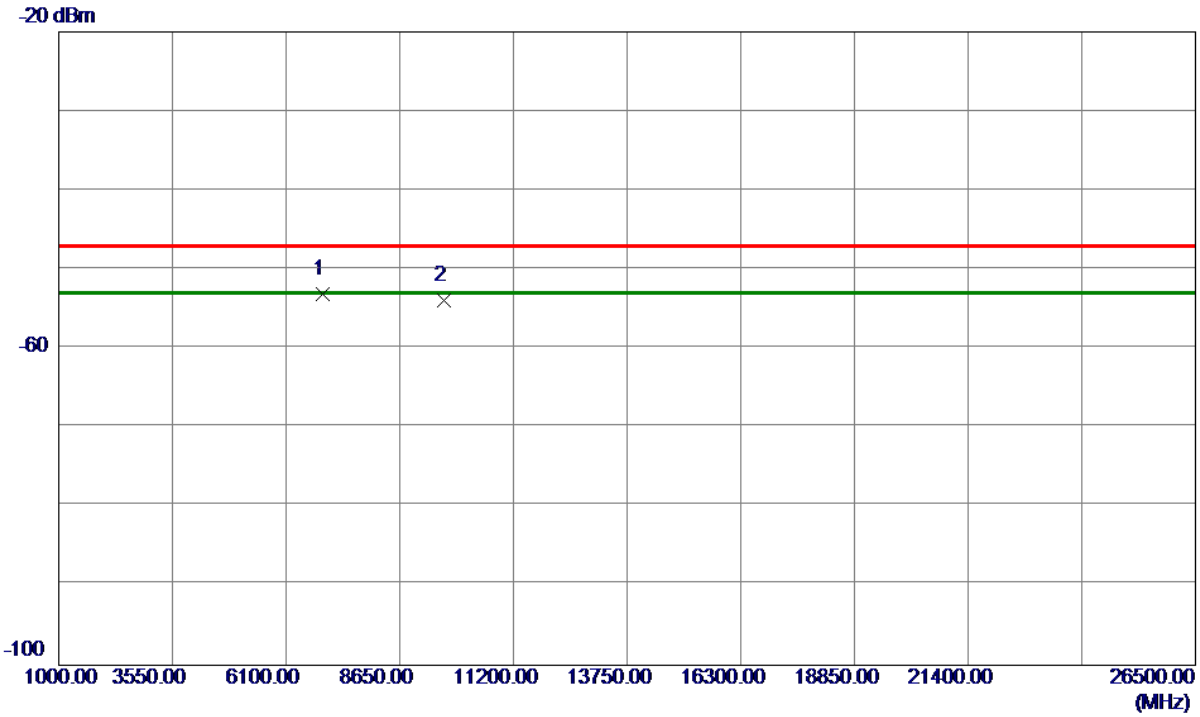
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6919.6200	-68.20	13.86	-54.34	-47.00	-7.34		
2 *	9648.0480	-62.09	13.45	-48.64	-47.00	-1.64		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(40 MHz)_5190MHz

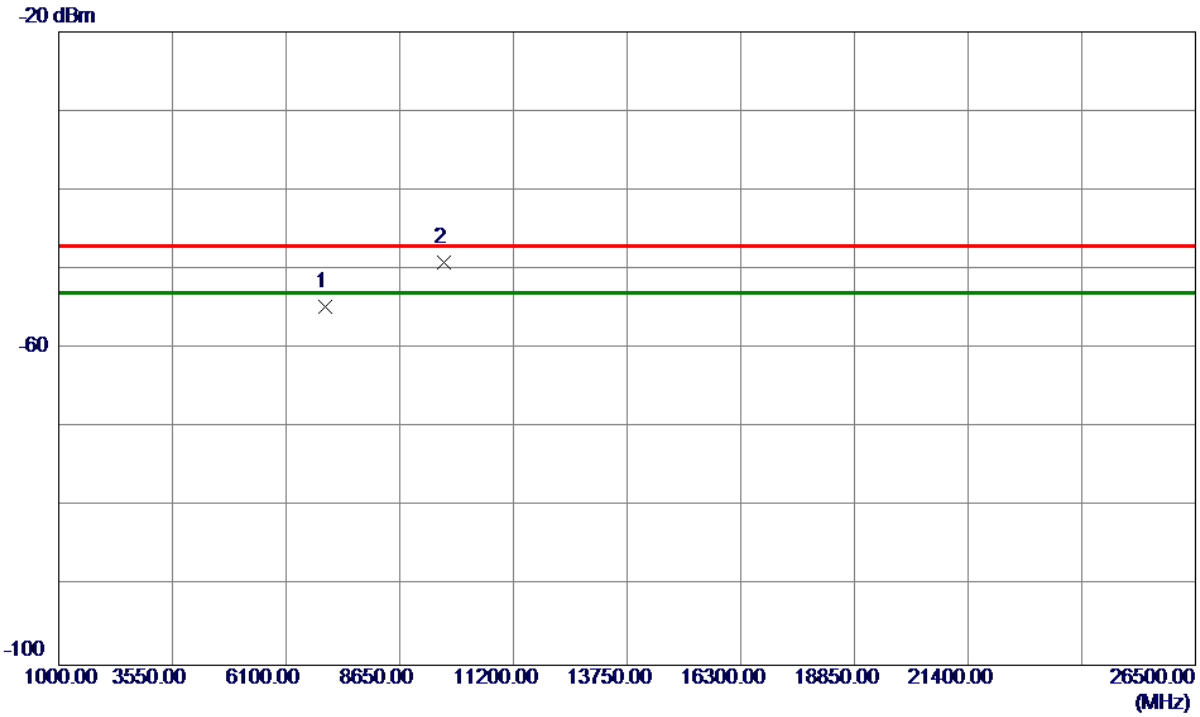
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	6920.0000	-66.40	13.29	-53.11	-47.00	-6.11		
2	9648.0650	-64.66	10.78	-53.88	-47.00	-6.88		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(40 MHz)_5230MHz

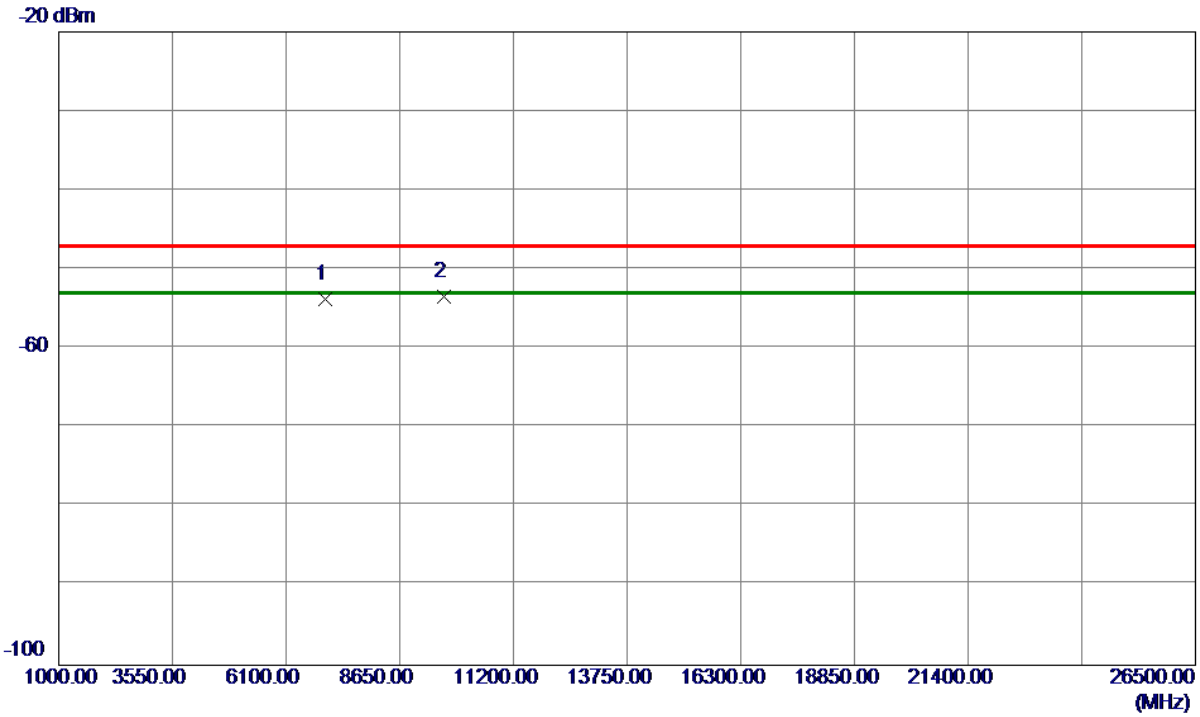
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6973.2840	-68.79	14.07	-54.72	-47.00	-7.72		
2 *	9648.0180	-62.50	13.45	-49.05	-47.00	-2.05		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(40 MHz)_5230MHz

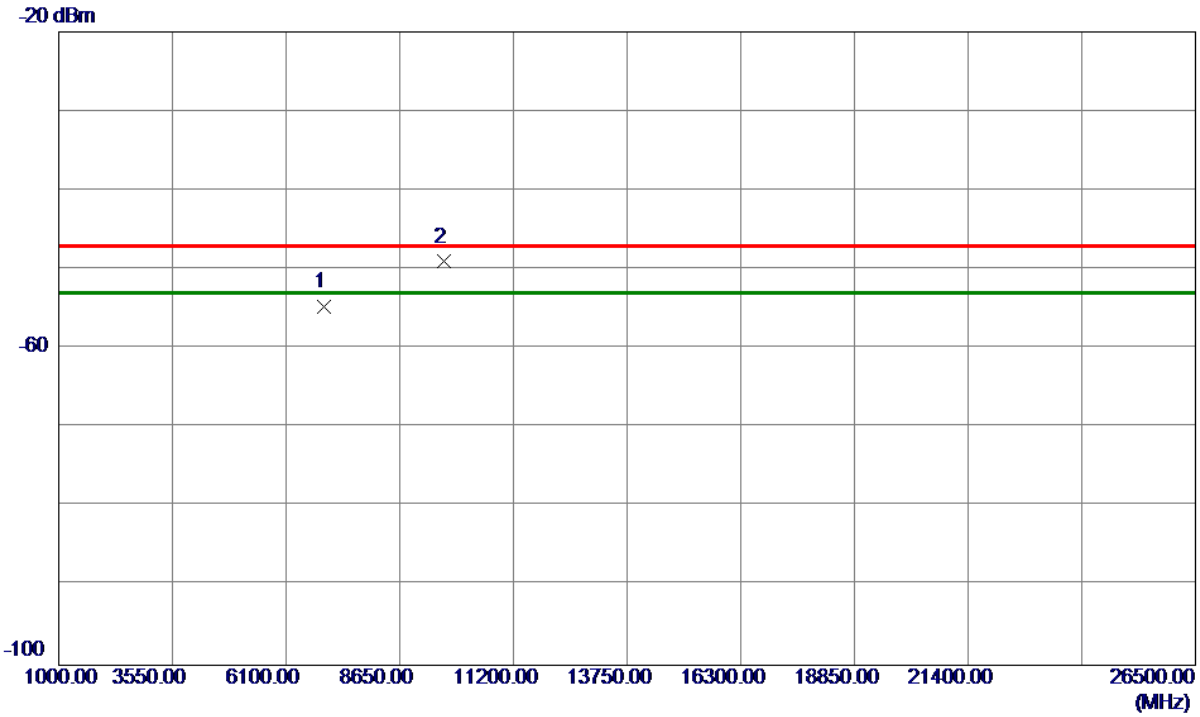
Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6973.4010	-67.11	13.38	-53.73	-47.00	-6.73		
2 *	9647.9780	-64.19	10.78	-53.41	-47.00	-6.41		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(80 MHz)_5210MHz

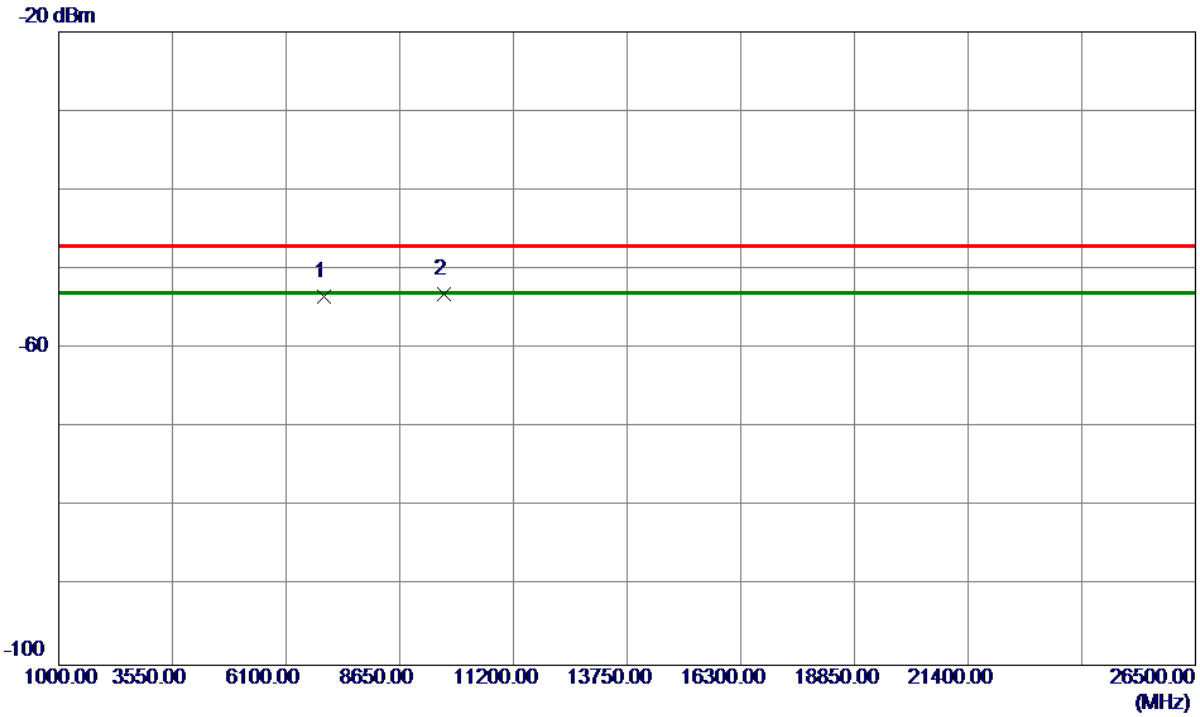
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6946.4930	-68.69	13.96	-54.73	-47.00	-7.73		
2 *	9648.0759	-62.49	13.45	-49.04	-47.00	-2.04		

Orthogonal Axis	X
Test Mode:	RX Mode 802.11ac(80 MHz)_5210MHz

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	6946.8280	-66.77	13.34	-53.43	-47.00	-6.43		
2 *	9647.8530	-63.96	10.78	-53.18	-47.00	-6.18		

APPENDIX J - ADAPTIVITY

1. List of measurements

EUT Operational Mode	Frame Based Equipment	
	Load Based Equipment (CCA using 'energy detect')	√
	Load Based Equipment (CCA not using any of the mechanisms referenced)	

Clause	Test Parameter	Remark	Pass/Fail
4.2.7.3.1	Adaptive (Frame Based Equipment)	Not Applicable	N/A
4.2.7.3.2	Adaptive (Load Based Equipment)	Applicable	Pass
4.2.7.3.3	Short Control Signaling Transmissions	Applicable	Pass

Test Mode:	TX Mode_ 802.11ac (20 MHz)_5180MHz, 802.11ac (40 MHz)_5190MHz

Channel Occupancy Time and Priority Class Measured Results		
Freq.(MHz)	Channel Occupancy Time (ms)	Priority Class
5180	3.713	3
5190	3.966	3

Adaptivity Results				
Detection Threshold Level				-70 dBm/MHz
Interference Signal	Freq.(MHz)		Adaptivity	Short Control Signalling Transmissions (ms)
AWGN	AC 20	5180	Pass	0.50
OFDM		5180	Pass	0.50
LTE		5180	Pass	0.50
AWGN	AC 40	5180	Pass	0.75
		5200	Pass	0.75
Limit			N/A	2.5
Result			Pass	

Note:

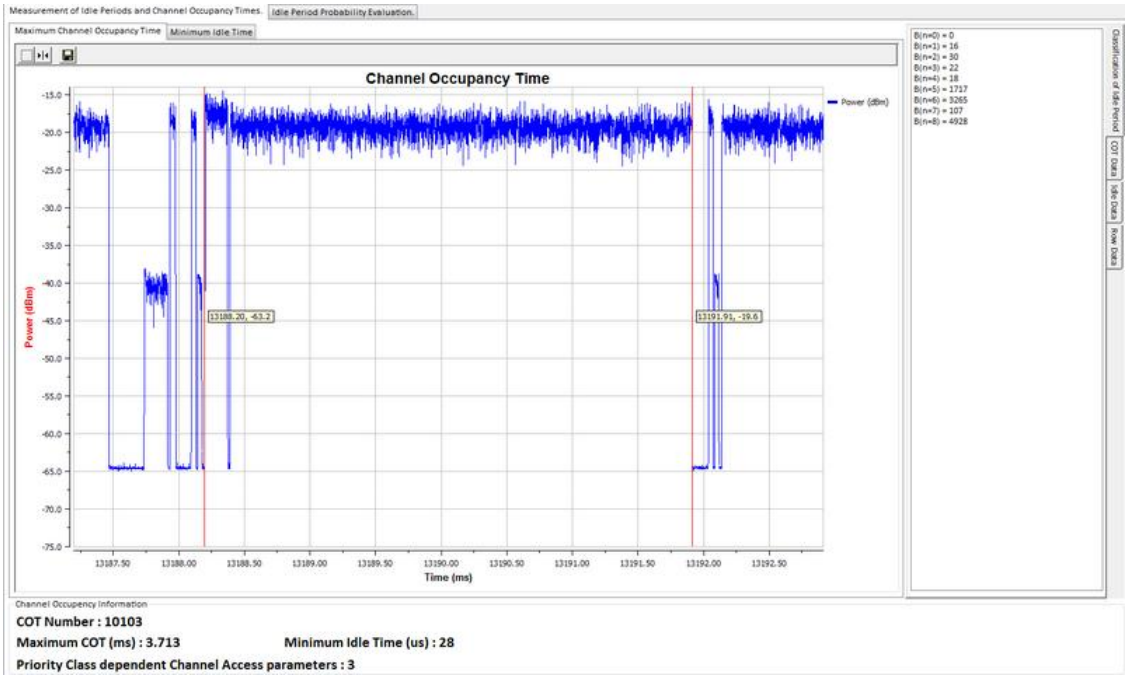
1. For an EUT with a non-zero dBi antenna gain, the final interference detection threshold level T_L at the port of the radio module in a conducted test setup shall be adjusted by the gain of the bypassed antenna and is calculated using below formulas:

   Threshold Level =-75 dBm/MHz +EUT Antenna Gain.

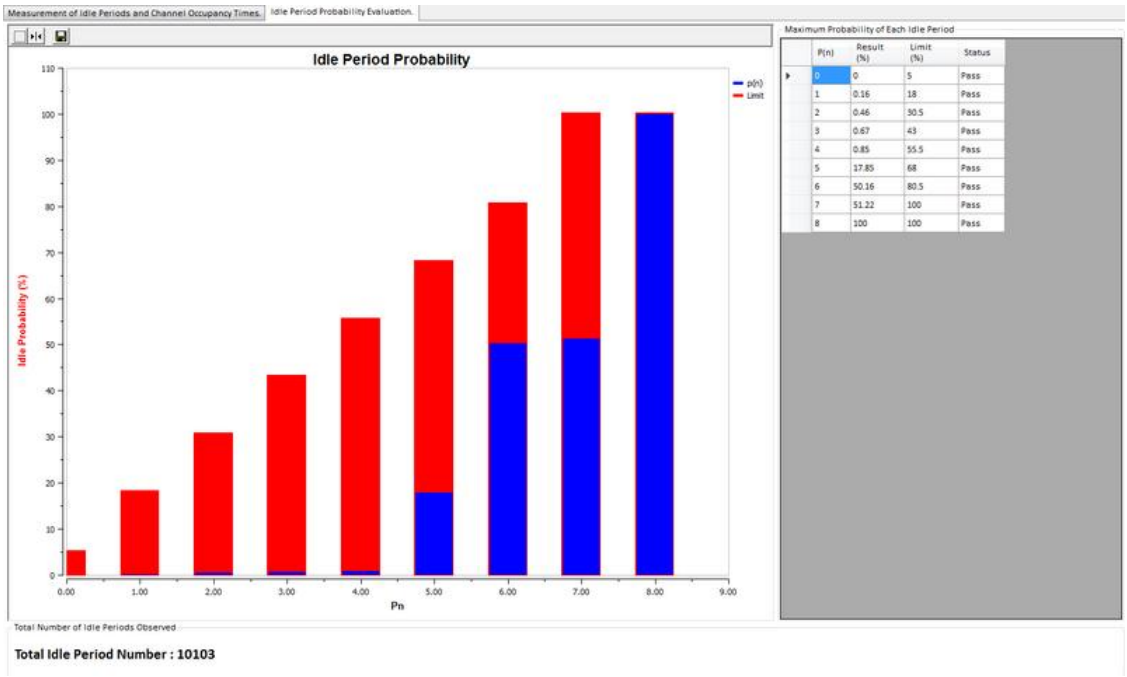
2. Short Control Signalling Transmissions = 50 (ms) * Duty cycle (%)

Single Channel device test results

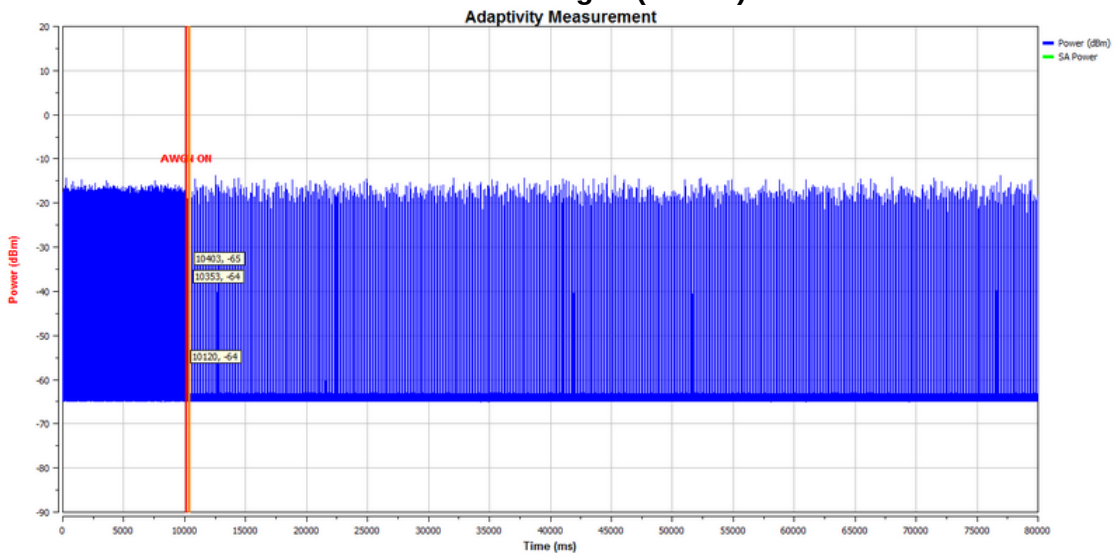
802.11ac 20MHz Mode 5180 MHz

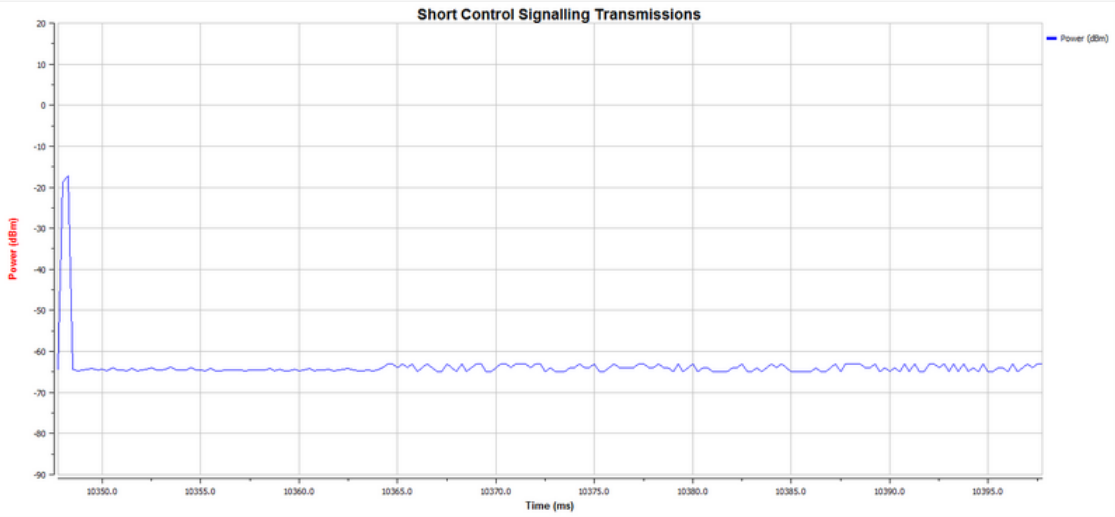


802.11ac 20MHz Mode 5180 MHz



802.11ac 20MHz Mode 5180 MHz
Interference Signal(AWGN)





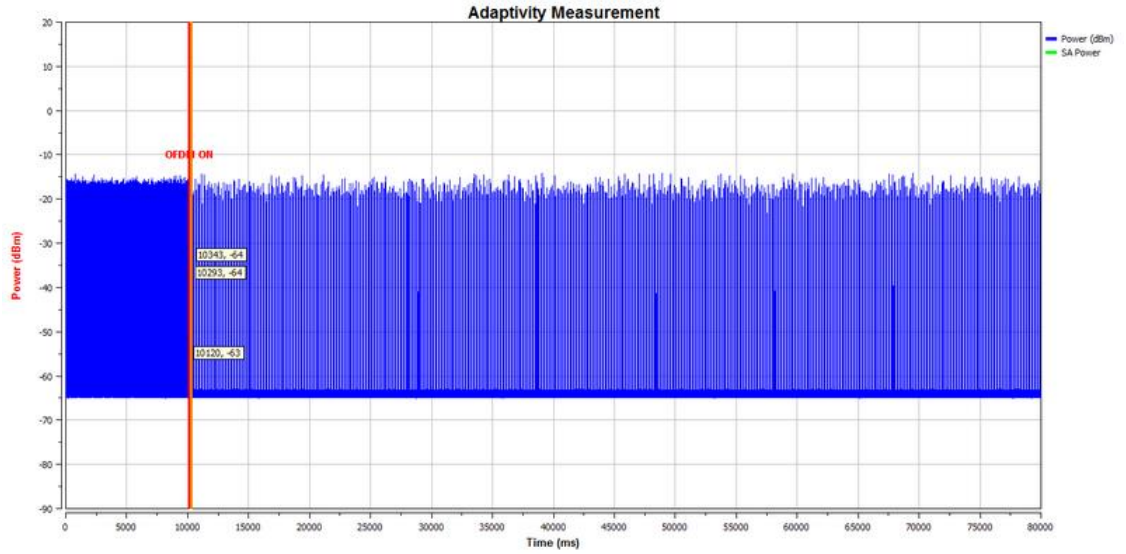
Duty Cycle Info

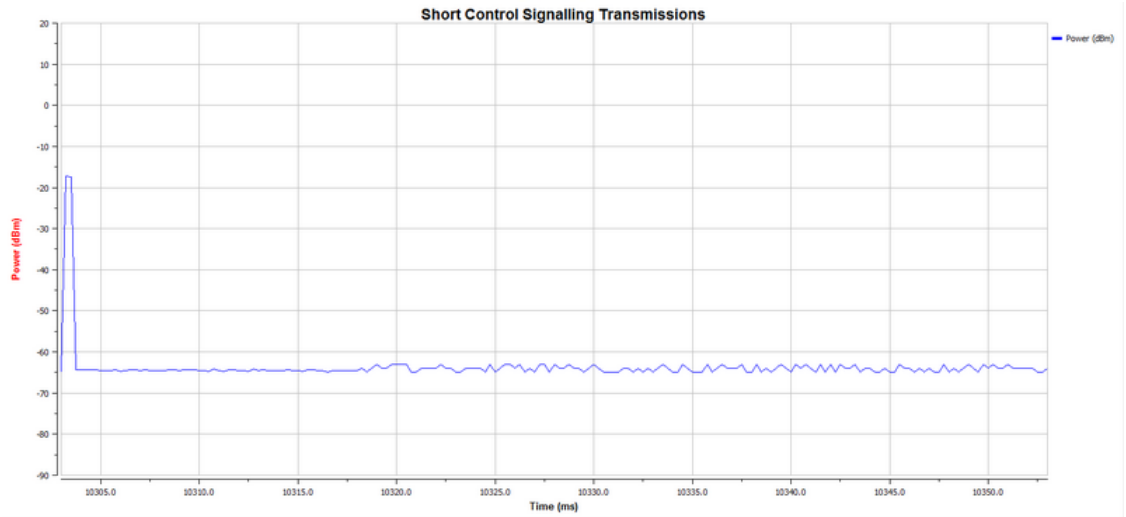
Test Result : Pass

Duty Cycle (%) : 1.00 Short Control Signalling Transmissions Number : 1

*The Duty Cycle must less than 5% in every 50ms after Interference signal was on.

802.11ac 20MHz Mode 5180 MHz
Interference Signal(OFDM)





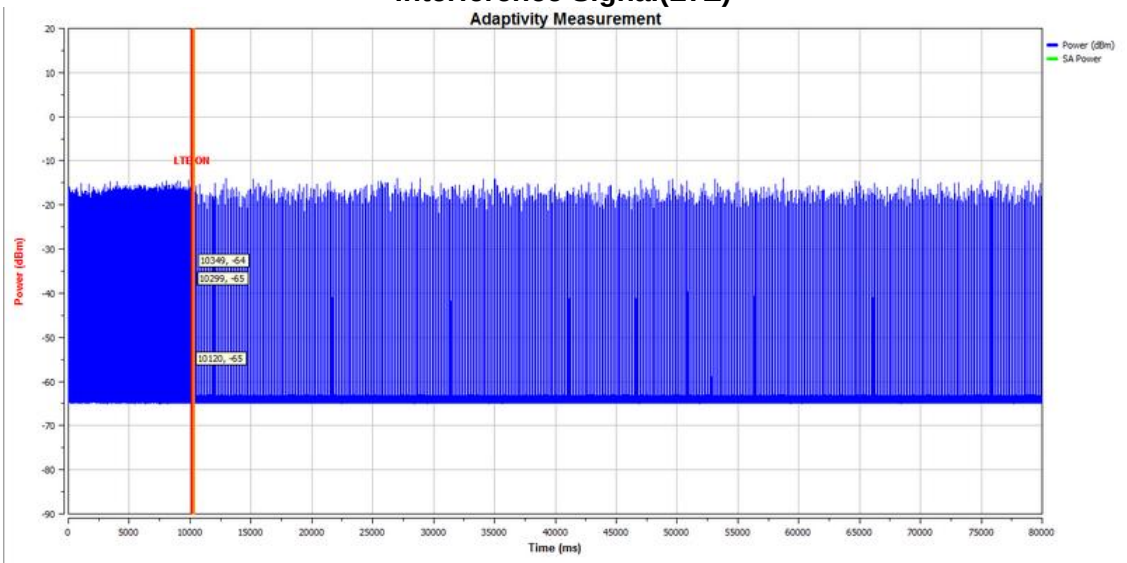
Duty Cycle Info

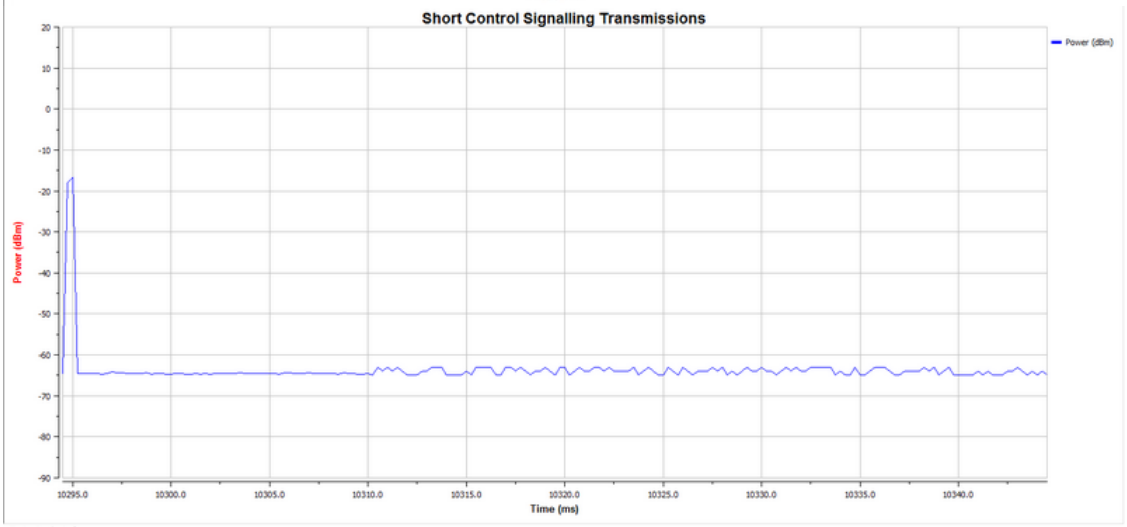
Test Result : Pass

Duty Cycle (%) : 1.00 Short Control Signalling Transmissions Number : 1

*The Duty Cycle must less than 5% in every 50ms after Interference signal was on.

802.11ac 20MHz Mode 5180 MHz
Interference Signal(LTE)





Duty Cycle Info

Test Result : Pass

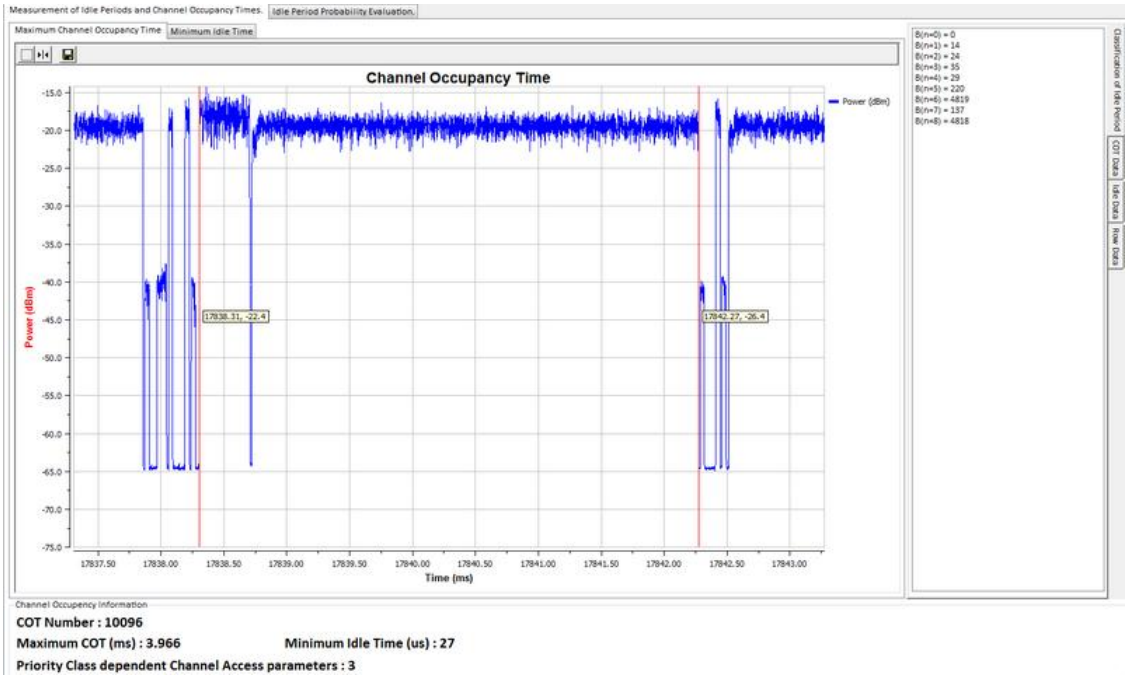
Duty Cycle (%) : 1.00 Short Control Signalling Transmissions Number : 1

*The Duty Cycle must less than 5% in every 50ms after Interference signal was on.

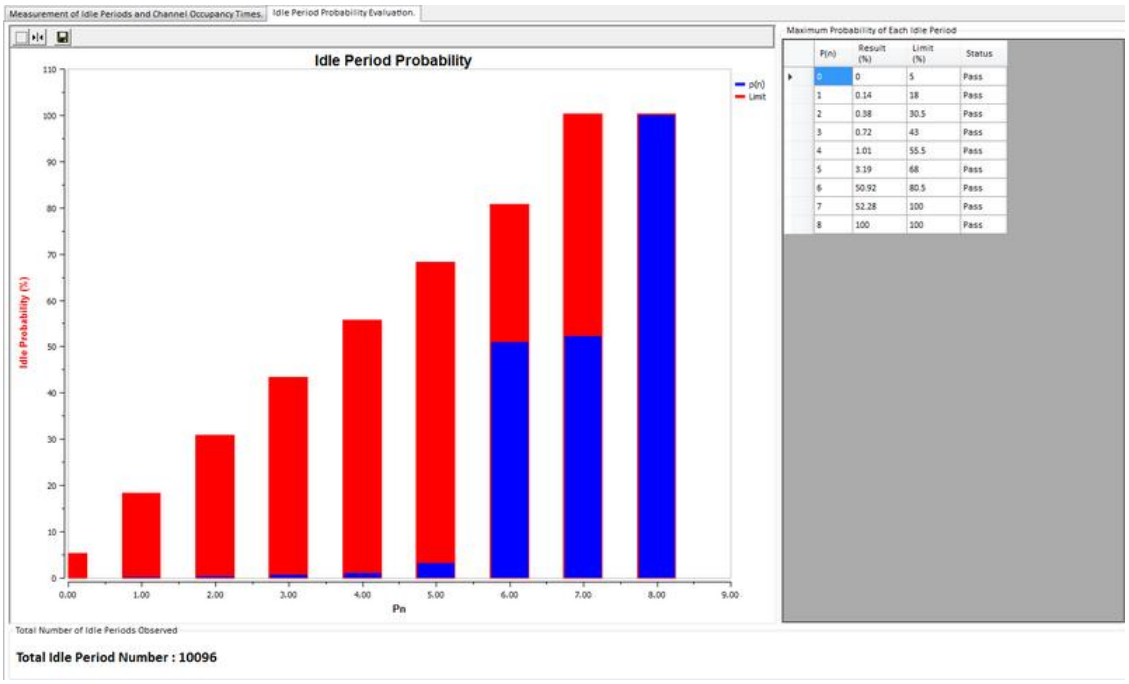
Multi-Channel device test results

Option 2:
The EUT is set to a channel bandwidth of 40MHz with the primary operating channel 5180MHz. One additional adjacent 20MHz operating channel that constructs the full 40 MHz channel bandwidth is located at 5200 MHz. Data traffic is started and then an interfering signal is injected into the EUT at 5200 MHz.

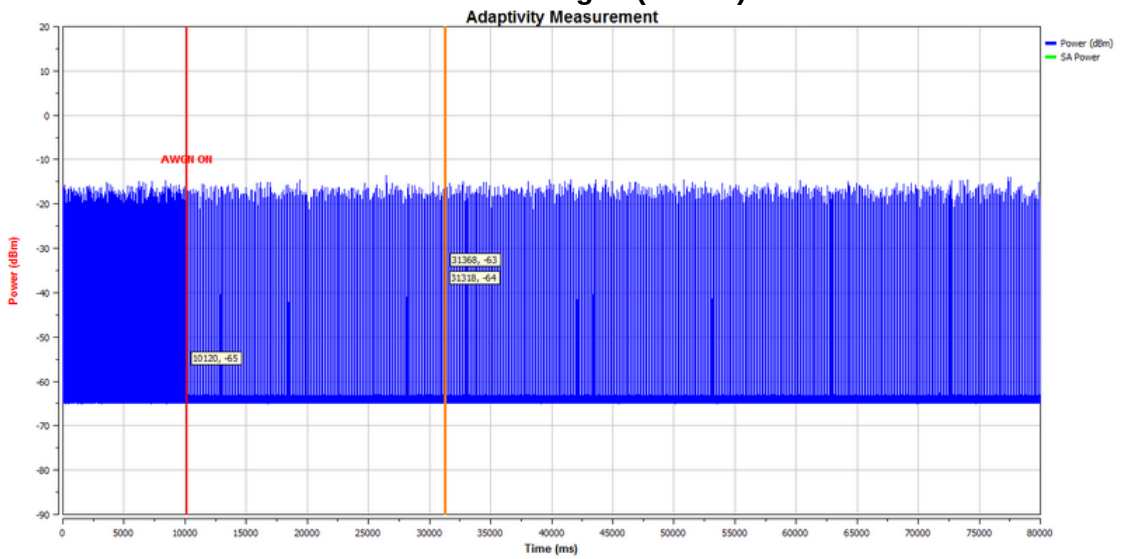
802.11ac 40MHz Mode 5190 MHz

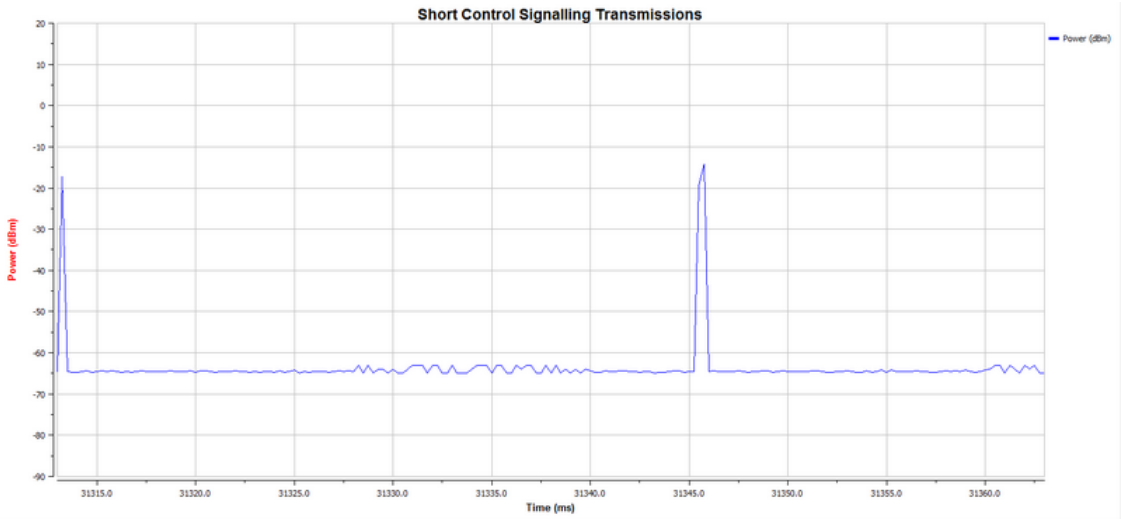


802.11ac 40MHz Mode 5190 MHz



802.11ac 40MHz Mode 5180 MHz
Interference Signal(AWGN)





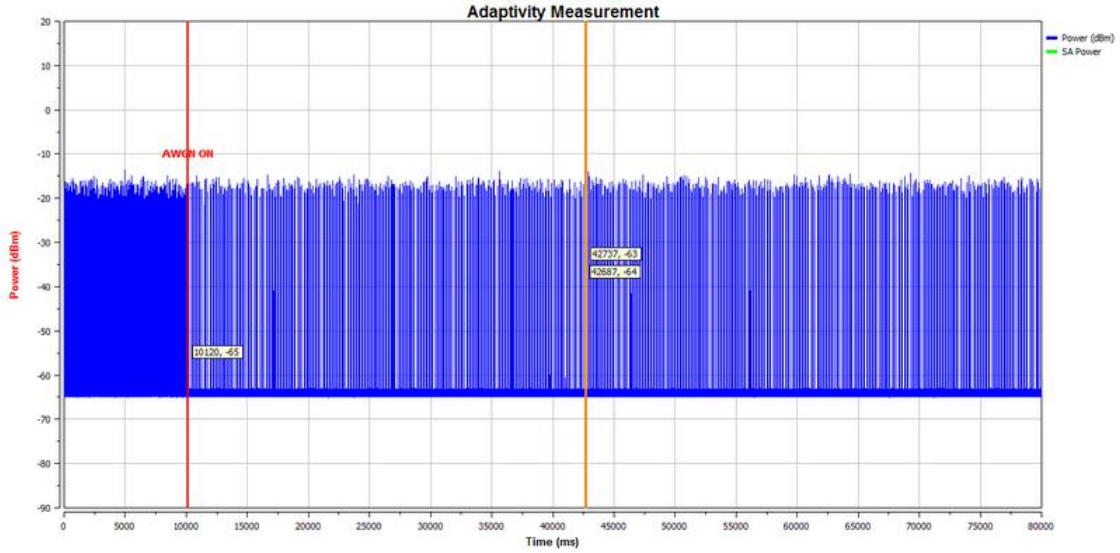
Duty Cycle Info

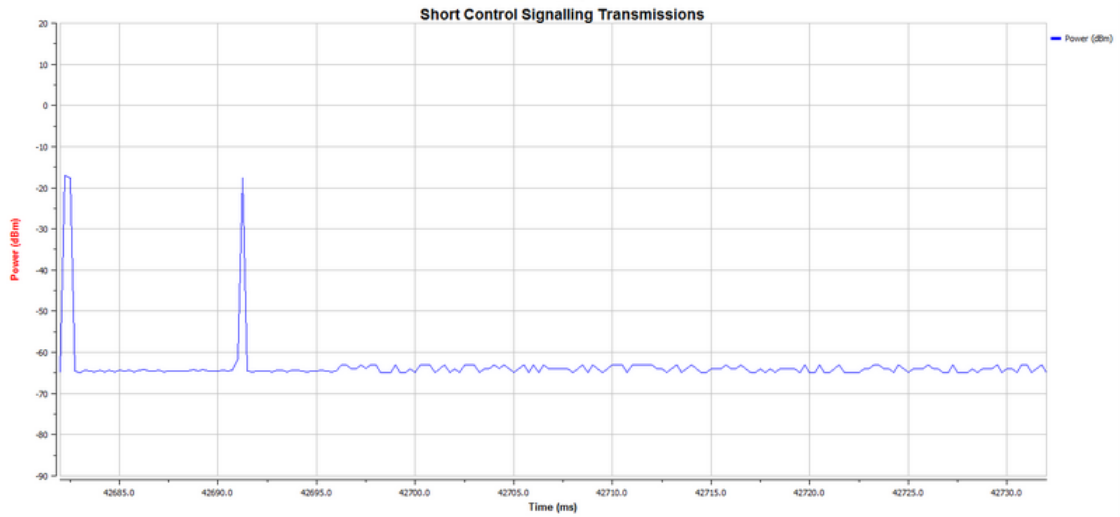
Test Result : Pass

Duty Cycle (%) : 1.50 Short Control Signalling Transmissions Number : 2

*The Duty Cycle must less than 5% in every 50ms after Interference signal was on.

802.11ac 40MHz Mode 5200 MHz
Interference Signal(AWGN)





Duty Cycle Info

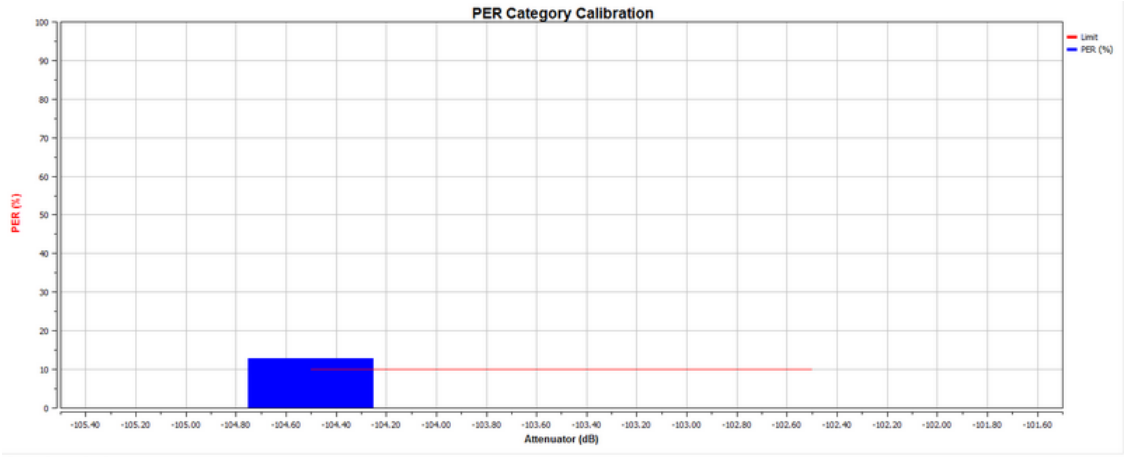
Test Result : Pass

Duty Cycle (%) : 1.50 Short Control Signalling Transmissions Number : 2

*The Duty Cycle must less than 5% in every 50ms after Interference signal was on.

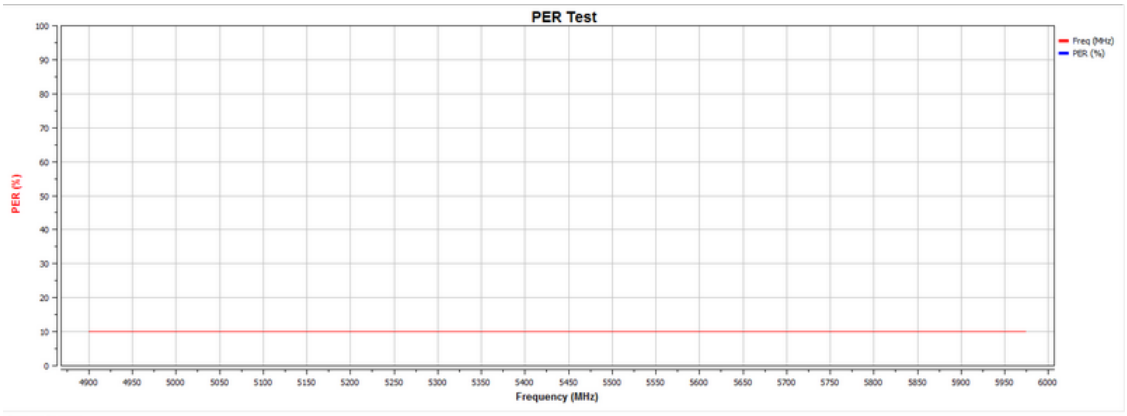
APPENDIX K - RECEIVER BLOCKING

802.11a Mode 5180 MHz



Receiver Blocking Test Data

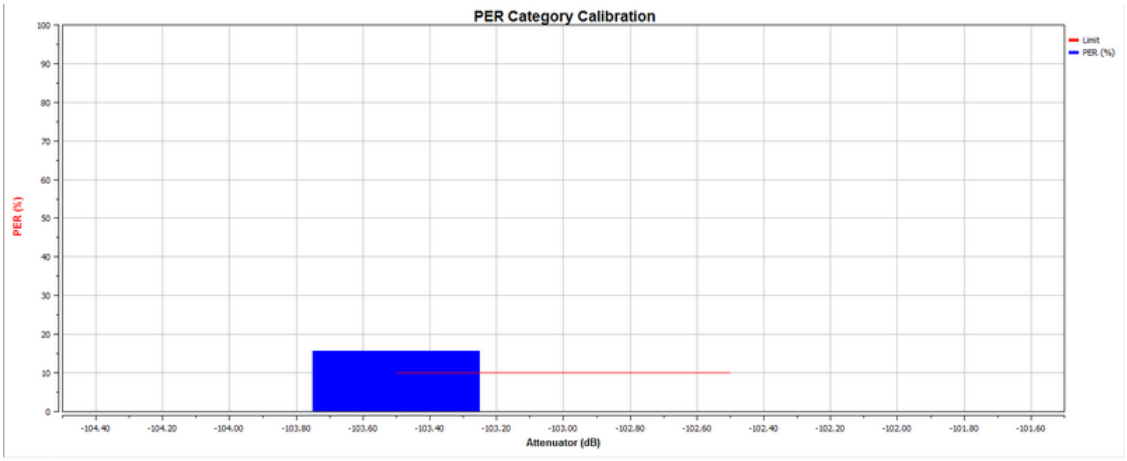
Sensitivity (dBm)	Attenuator (dB)	C Bin	U Bin	PER (%)
-102.5	102.5	544	544	0.00
-103.5	103.5	729	729	0.00
-104.5	104.5	517	451	12.77



Receiver Category

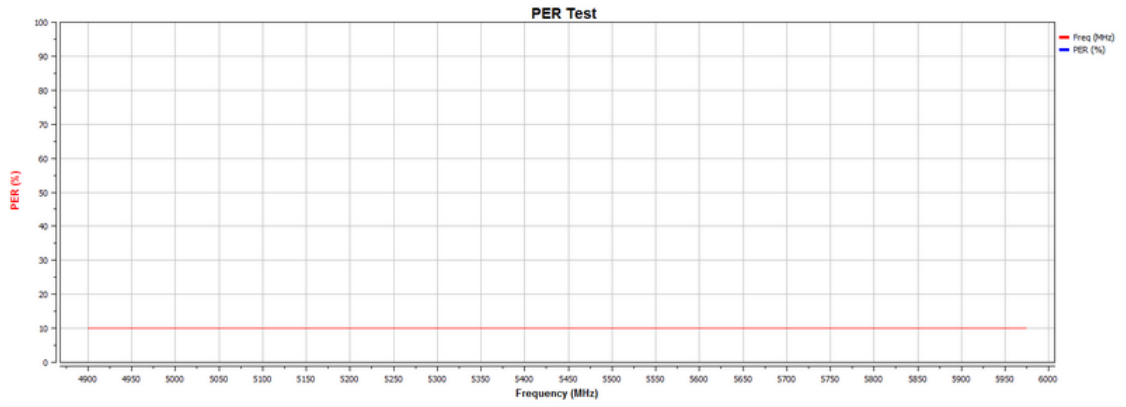
Blocking Signal Freq (MHz)	Blocking Level (dBm)	PER (%)	Limit (%)	Status
4900	-47	0.00	10	Pass
5000	-47	0.00	10	Pass
5100	-53	0.00	10	Pass
5975	-47	0.00	10	Pass

802.11a Mode 5240 MHz



Receiver Blocking Test Data

Sensitivity (dBm)	Attenuator (dB)	C Bin	U Bin	PER (%)
-102.5	102.5	543	543	0.00
-103.5	103.5	653	551	15.62



Receiver Category

Blocking Signal Freq (MHz)	Blocking Level (dBm)	PER (%)	Limit (%)	Status
4900	-47	0.00	10	Pass
5000	-47	0.00	10	Pass
5100	-53	0.00	10	Pass
5975	-47	0.00	10	Pass