



RADIO TEST REPORT

Equipment : Industrial Wireless Router
Brand Name : Atop
Model Name : AWR5805P/AWR5805
Applicant : Atop Technologies, Inc.
1F, No. 30 R&D Rd. II, Science-Based Industrial
Park, Hsinchu 30076, Tawian , R.O.C
Manufacturer : Atop Technologies, Inc.
1F, No. 30 R&D Rd. II, Science-Based Industrial
Park, Hsinchu 30076, Tawian , R.O.C
Standard : EN 301 893 V2.1.1 (2017-05)

The product was received on Aug. 23, 2022, and testing was started from Sep. 03, 2022 and completed on Oct. 14, 2022. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in EN 301 893 V2.1.1 (2017-05) and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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Appendix I. Test Results of Receiver Blocking

Appendix J. Test Photos

Photographs of EUT v01



History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-E11_3 Ver1.1

Page Number : 4 of 34
Issued Date : Nov. 24, 2022
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	4.2.1	Nominal Centre Frequency	PASS	-
3.2	4.2.2	Nominal Channel Bandwidth (NCB) and Occupied Channel Bandwidth (OCB)	PASS	-
3.3	4.2.3	RF Output Power	PASS	-
-	4.2.3	Transmit Power Control (TPC)	N/A	Operating in 5150~5250MHz w/o test
3.4	4.2.3	Power Density	PASS	-
3.5	4.2.4	Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands	PASS	-
3.6	4.2.4	Transmitter Unwanted Emissions within the 5 GHz RLAN Bands	PASS	-
4.1	4.2.5	Receiver Spurious Emissions	PASS	-
5.1	4.2.7	Adaptivity (Channel Access Mechanism)	PASS	-
6.1	4.2.8	Receiver Blocking	PASS	-
1.1.7	4.2.10	Geo-location capability	N/A	Declared by manufacturer

Declaration of Conformity:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Sophia Shiung

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20),	5180-5240	36-48 [4]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5150-5250	ac (VHT80)	5210	42 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	2TX
5.15-5.25GHz	802.11n HT20	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11n HT40	40	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM and 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port		Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
	2.4GHz	5GHz					2.4GHz	5GHz
1	1	1	PSA	RFDPA141300SBLB301	Dipole	Reversed-SMA	4.35	6.59
2	2	2	PSA	RFDPA141300SBLB301	Dipole	Reversed-SMA	4.35	6.59

Note 1: The above information was declared by manufacturer.

Note 2: **For 2.4GHz function:**

For IEEE 802.11 b/g/n (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

**1.1.3 Duty Cycle**

Mode	DC	DCF (dB)
802.11a	0.961	0.17
802.11ac VHT20	0.968	0.14
802.11ac VHT40	0.968	0.14
802.11ac VHT80	0.934	0.3

1.1.4 EUT Information

EUT Power Type	For EUT 1 (AWR5805P): From DC internal power supply or PoE			
	For EUT 2 (AWR5805): From DC internal power supply			
DFS Operating Mode	<input checked="" type="checkbox"/>	Master		
	<input type="checkbox"/>	Slave with radar detection		
	<input type="checkbox"/>	Slave without radar detection		
Device Types (Adaptivity)	<input checked="" type="checkbox"/>	Initiating Device		
	<input checked="" type="checkbox"/>	Responding Device		
	<input type="checkbox"/>	Supervised Device, which implements:		
	<input type="checkbox"/>	Priority class 1	<input type="checkbox"/>	Priority class 2
	<input type="checkbox"/>	Priority class 1 implements EN 301 893 Table 7 Note1		
	<input type="checkbox"/>	Priority class 2 implements EN 301 893 Table 7 Note1		
	<input type="checkbox"/>	Priority class 3	<input type="checkbox"/>	Priority class 4
	<input checked="" type="checkbox"/>	Supervising Device, which implements:		
	<input checked="" type="checkbox"/>	Priority class 1	<input checked="" type="checkbox"/>	Priority class 2
	<input type="checkbox"/>	Priority class 1 implements EN 301 893 Table 8 Note1		
	<input type="checkbox"/>	Priority class 2 implements EN 301 893 Table 8 Note1		
	<input type="checkbox"/>	Priority class 2 implements EN 301 893 Table 8 Note2		
	<input checked="" type="checkbox"/>	Priority class 3	<input checked="" type="checkbox"/>	Priority class 4
Communication Mode	<input checked="" type="checkbox"/>	IP Based (Load Based)		<input type="checkbox"/> Frame Based
Beamforming Function	<input type="checkbox"/>	With beamforming		<input checked="" type="checkbox"/> Without beamforming
Operational Voltage	<input checked="" type="checkbox"/>	Vnom (230 Vac)		
Operational Temperature	<input checked="" type="checkbox"/>	Tnom (20°C)	<input checked="" type="checkbox"/> Tmax (50°C)	<input checked="" type="checkbox"/> Tmin (-20°C)
Test Software Version	For Conducted measurement / Radiated measurement (CTX)			QSPR_V5.0-00188
	For Radiated measurement (CRX)			QRCT_V4.0.00166.0
Software / Firmware Version for Adaptivity & Receiver Blocking				AWR_1.0.1_CE02

Note: The above information was declared by manufacturer.



1.1.5 Table for Multiple Listing

The difference for each model is show as below:

EUT	Model Name	PoE Function
1	AWR5805P	V
2	AWR5805	X

Note 1: From the above models, model: AWR5805P (EUT 1) was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

**1.1.6 Adaptive Equipment**

Adaptive Equipment	
Channel Access Mechanism:	
<input checked="" type="checkbox"/>	Option A: Procedure to verify the Channel Access Mechanism. The test procedure which defined in clause 5.4.9.3.2.4.1 should be verified.
<input type="checkbox"/>	Option B: Compliance by declaration for the Channel Access Mechanism. The requirements contained in clause 4.2.7.3.2.6 and 4.2.7.3.2.7 should be declared compliance with by the manufacturer.
<input type="checkbox"/>	The related parameters are identical to EN 301 893 Table 7 for Supervised Device
<input type="checkbox"/>	The related parameters are identical to EN 301 893 Table 8 for Supervising Device
<input type="checkbox"/>	Other parameters
Maximum Channel Occupancy Time(s):	
<input checked="" type="checkbox"/>	Option A: Procedure to verify the maximum Channel Occupancy Time(s) The test procedure which defined in clause 5.4.9.3.2.5.1 should be verified.
<input type="checkbox"/>	Option B: Compliance by declaration for the maximum Channel Occupancy Time(s) The maximum Channel Occupancy Times which defined in clause 4.2.7.3.2.4 should be declared by the manufacturer.
<input type="checkbox"/>	The related parameters are identical to EN 301 893 Table 7 for Supervised Device
<input type="checkbox"/>	The related parameters are identical to EN 301 893 Table 8 for Supervising Device
<input type="checkbox"/>	Other parameters
Channel Operation Mode:	
<input checked="" type="checkbox"/>	Single Channel Operation
<input checked="" type="checkbox"/>	Multi-channel Operation
<input checked="" type="checkbox"/>	Option 1: Load Based Equipment may use any combination/grouping of 20 MHz Operating Channels out of the list of channels (Nominal Centre Frequencies) provided in clause 4.2.1, if it satisfies the channel access requirements (Channel Access Mechanism) for an Initiating Device as described in clause 4.2.7.3.2.6 on each such 20 MHz Operating Channel.
<input type="checkbox"/>	Option 2: EN 301 893 figure 3 defines bonded 40 MHz, 80 MHz or 160 MHz channels. Load Based Equipment that uses a combination/grouping of 20 MHz Operating Channels that is a subset of bonded 40 MHz, 80 MHz or 160 MHz channels, may transmit on any of the 20 MHz Operating Channels.

Note: The above information was declared by manufacturer.

1.1.7 Geo-location capability supported by the equipment

Geo-location capability supported by the equipment	
<input type="checkbox"/>	Yes
<input type="checkbox"/>	The geographical location determined by the equipment as defined in EN 301 893, clause 4.2.10.3 is not accessible to the user.
<input checked="" type="checkbox"/>	No

Note: The above information was declared by manufacturer.



1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ EN 301 893 V2.1.1 (2017-05)

1.3 Testing Location Information

Testing Location Information		
Test Lab. : Sporton International Inc. Hsinchu Laboratory		
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065	FAX: 886-3-656-9085

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
RF Conducted (Other Test Items)	TH02-CB	Sean Ku	22.2~24.4 / 53~58	Sep. 03, 2022
Radiated	05CH01-CB	KJ Chang	25.1~25.6 / 63~65	Sep. 03, 2022~ Sep. 05, 2022
RF Conducted (Adaptivity)	DF02-CB	Kevin Huang	25.1~26.8 / 61~66	Sep. 12, 2022~ Sep. 13, 2022
RF Conducted (Receiver Blocking)	DF02-CB	Kevin Huang	22.6~24.6 / 56~59	Sep. 14, 2022~ Oct. 14, 2022

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Parameter	Uncertainty	Remark
RF Frequency	9.98 x 10 ⁻⁷ MHz	Confidence levels of 95%
RF Power Conducted	0.8 dB	Confidence levels of 95%
RF Power Radiated	4.9 dB	Confidence levels of 95%
Conducted Emission	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 26.5GHz)	5.2 dB	Confidence levels of 95%
Temperature	1.2 °C	Confidence levels of 95%
Humidity	3.2 %	Confidence levels of 95%
Time	1.2 %	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	PowerSetting
802.11a_Nss1,(6Mbps)_2TX	-
5180MHz	12
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5180MHz	12
802.11ac VHT40_Nss1,(MCS0)_2TX	-
5190MHz	12
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5210MHz	12

Note:

- ♦ VHT20 / VHT40 covers HT20 / HT40 due to similar modulation. The power setting of HT20 / HT40 modes are the same or lower than VHT20 / VHT40.

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Test Item	Nominal Centre Frequencies
Test Condition	Conducted measurement at transmit chains. One channel out of the declared channels for each sub-band. 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.

The Worst Case Mode for Following Conformance Tests	
Test Item	Nominal Channel Bandwidth (NCB) and Occupied Channel Bandwidth (OCB)
Test Condition	Conducted measurement at transmit chains. One channel out of the declared channels for each sub-band. For Occupied Channel Bandwidth, testing has been repeated for every declared nominal channel bandwidth within this sub-band.

The Worst Case Mode for Following Conformance Tests	
Test Items	RF Output Power Transmitter Unwanted Emissions within the 5 GHz RLAN Bands
Test Condition	Conducted measurement at transmit chains



The Worst Case Mode for Following Conformance Tests	
Test Items	Power Density
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Test Item	Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands
Test Condition	Radiated measurement One channel out of the declared channels for each sub-band. 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. If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Test Mode	After evaluation, EUT in Z axis was the worst case at Radiated Emissions test, and it was tested and recorded in this report.
1	EUT 1 in Z axis_DC internal power supply

The Worst Case Mode for Following Conformance Tests	
Test Item	Receiver Spurious Emissions
Test Condition	Radiated measurement One channel out of the declared channels for each sub-band. 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. If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Test Mode	After evaluation, EUT in Y axis was the worst case at Radiated Emissions test, and it was tested and recorded in this report.
1	EUT 1 in Y axis_DC internal power supply

The Worst Case Mode for Following Conformance Tests	
Test Item	Adaptivity
Test Condition	Conducted measurement at transmit chains. One channel out of the declared channels



The Worst Case Mode for Following Conformance Tests	
Test Item	Receiver blocking
Test Condition	Conducted measurement at one receiver chain. One channel with the lowest data rate out of the declared channels for each sub-band.

2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting/receiving mode.

2.4 Accessories

DC jack*1



2.5 Support Equipment

For RF Conducted (Adaptivity test):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Notebook	DELL	E4300	N/A
C	WLAN module	Intel	AX210NGW	PD9AX210NG
D	DC Power Supply	MOTECH	LPS-305	N/A

For RF Conducted (Receiver Blocking test):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	DC Power Supply	MOTECH	LPS-305	N/A

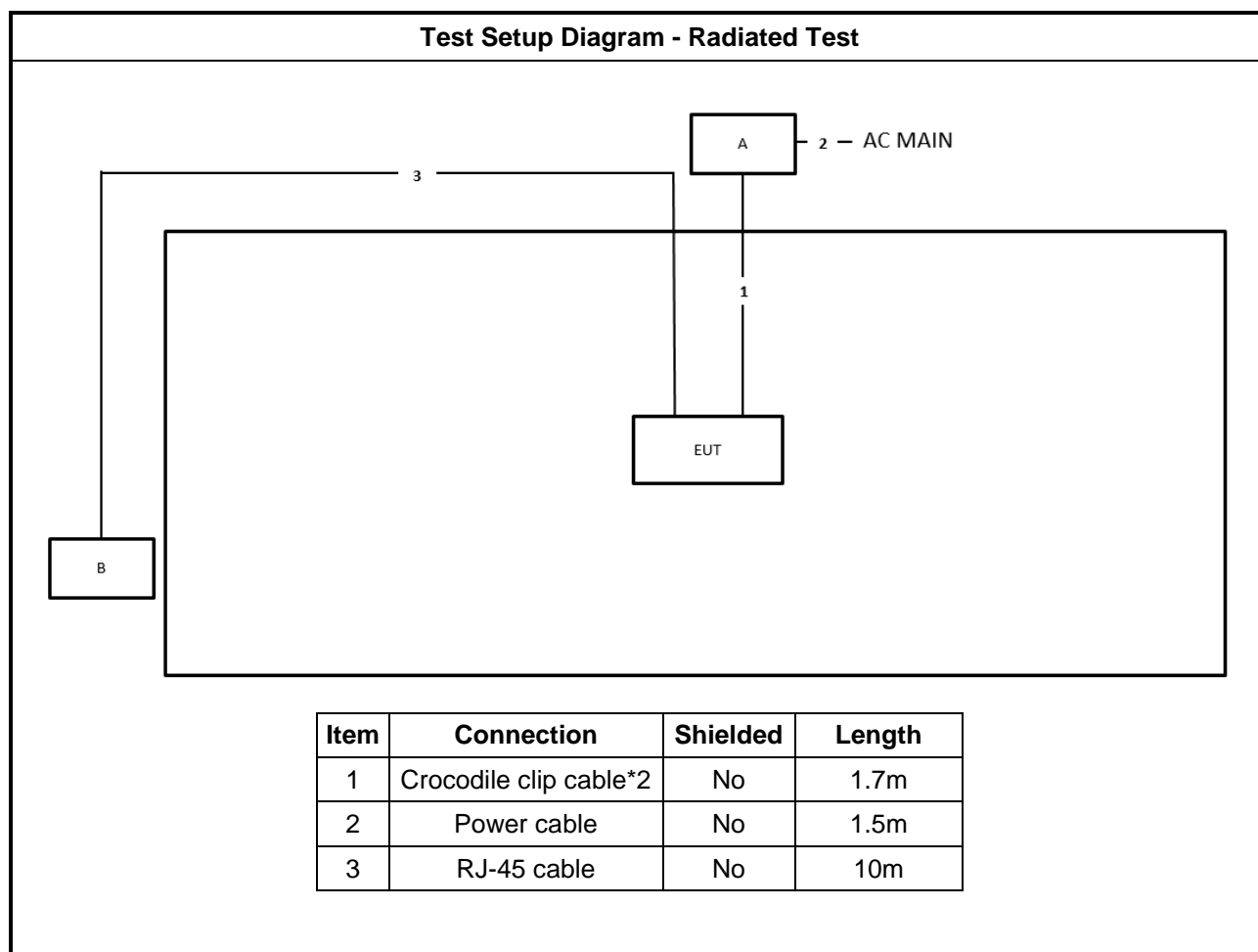
For RF Conducted (Other tests):

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Power Supply	Advanced	LPS-305	N/A

For Radiated Emission:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	DC Power Supply	MOTECH	LPS-305	N/A
B	Notebook	DELL	E4300	N/A

2.6 Test Setup Diagram



3 Transmitter Test Result

3.1 Nominal Centre Frequency

3.1.1 Nominal Centre Frequencies Limit

Nominal Centre Frequency Limit
The actual centre frequency for any given channel declared by the manufacturer shall be maintained within the range $f_c \pm 20$ ppm.

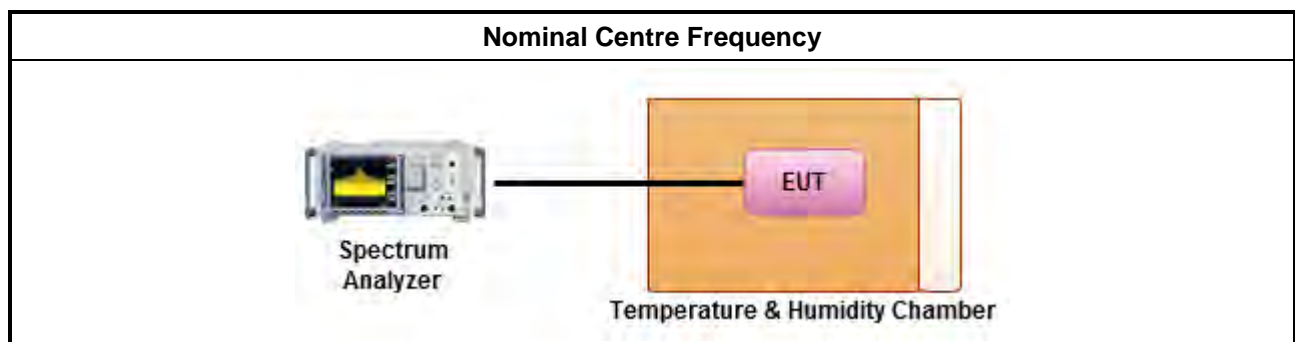
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as EN 301 893, clause 5.3.2 for test channel. 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.
<input checked="" type="checkbox"/> Refer as EN 301 893, clause 5.4.2 for the carrier frequencies shall be measured using one of the options below.
<input checked="" type="checkbox"/> Refer as EN 301 893, clause 5.4.2.2.1.1 for equipment operating without modulation method
<input type="checkbox"/> Refer as EN 301 893, clause 5.4.2.2.1.2 for equipment operating with modulation method
<input checked="" type="checkbox"/> Refer as EN 301 893, clause 5.4.2.2.1 for conducted measurement.
<input checked="" type="checkbox"/> Refer as EN 301 893, clause 5.4.2.1 for conducted measurements on smart antenna systems (equipment with multiple transmit chains) measurements need only to be performed on one of the active transmit chains (antenna outputs).
<input type="checkbox"/> Refer as EN 301 893, clause 5.4.2.2.2 for radiated measurement.

3.1.4 Test Setup



3.1.5 Test Result of Nominal Centre Frequency

Refer as Appendix A

3.2 Nominal Channel Bandwidth and Occupied Channel Bandwidth

3.2.1 Nominal Channel Bandwidth and Occupied Channel Bandwidth Limit

Nominal Channel Bandwidth and Occupied Channel Bandwidth 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. The Occupied Channel Bandwidth shall be between 80 % and 100 % of the declared Nominal Channel Bandwidth. During an established communication, the device is allowed to operate temporarily with an Occupied Channel Bandwidth below 80 % of its Nominal Channel Bandwidth with a minimum of 2 MHz.	
Nominal Channel Bandwidth (MHz)	Occupied Channel Bandwidth (MHz)
20	16 – 20
40	32 – 40
80	64 – 80
160	128 – 160

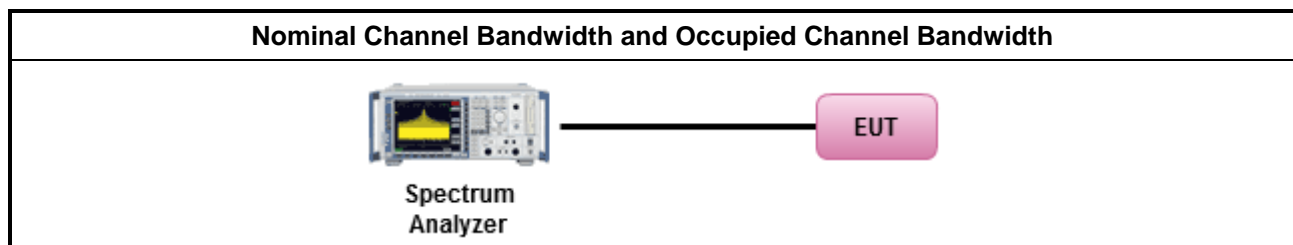
3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.3.2 for test channel. One channel out of the declared channels for each sub-band. For Occupied Channel Bandwidth, testing shall be repeated for every declared nominal channel bandwidth within this sub-band.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.3.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.3.2.1 for conducted measurements on smart antenna systems (equipment with multiple transmit chains) measurements need only to be performed on one of the active transmit chains (antenna outputs).
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.3.2.2 for radiated measurement.

3.2.4 Test Setup



3.2.5 Test Result of NCB and OCB

Refer as Appendix B

3.3 RF Output Power

3.3.1 RF Output Power Limit

Frequency Range (MHz)	Mean e.i.r.p. Limit (dBm)	
	with TPC	w/o TPC
5150-5350	23	20/23 <small>(note1)</small>
5470-5725	30 <small>(note2)</small>	27 <small>(note2)</small>

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.

Note 2: Slave devices without a Radar Interference Detection function shall comply with limits for frequency range 5250 MHz to 5350 MHz.

Note 3: TPC is not required for channels whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz.

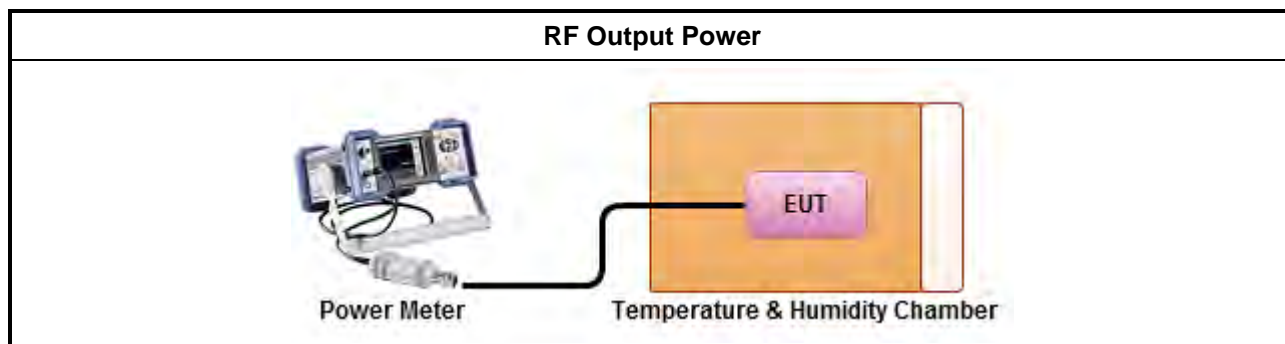
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	The measurements shall be performed at both normal environmental conditions and at the extremes of the operating temperature range.
<input checked="" type="checkbox"/>	The EUT shall be configured to operate at the maximum stated transmitter output power level.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.4 for the RF output power shall be measured using below options:
<input checked="" type="checkbox"/>	Option 1: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Based equipment). Refer as EN 301 893, clause 5.4.4.2.1.1.2.
<input type="checkbox"/>	Option 2: For equipment without continuous transmission capability and operating (or with the capability to operate) in only one sub-band. Refer as EN 301 893, clause 5.4.4.2.1.1.3.
<input type="checkbox"/>	Option 3: For equipment without continuous transmission capability and having simultaneous transmissions in both sub-bands. Refer as EN 301 893, clause 5.4.4.2.1.1.4.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.4.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	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.
<input checked="" type="checkbox"/>	If multiple transmit chains, EIRP calculation could be following as methods:
<input checked="" type="checkbox"/>	$EIRP_{total} = P_{total} + G$ If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used for EIRP.
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.4.2.2 for radiated measurement.

3.3.4 Test Setup



3.3.5 Test Result of RF Output Power

Refer as Appendix C

3.4 Power Density

3.4.1 Power Density Limit

Frequency Range (MHz)	Mean e.i.r.p. Density Limit (dBm/MHz)	
	with TPC	w/o TPC
5150-5350	10	7/10 <small>(note1)</small>
5470-5725	17 <small>(note2)</small>	14 <small>(note2)</small>

Note 1: 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.

Note 2: Slave devices without a Radar Interference Detection function shall comply with limits for frequency range 5250 MHz to 5350 MHz.

3.4.2 Measuring Instruments

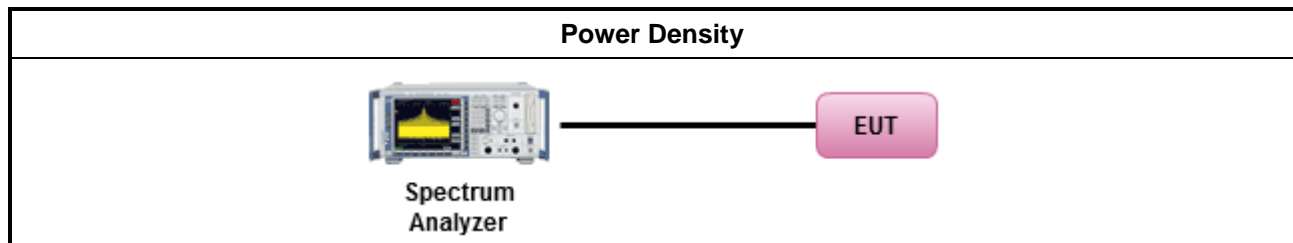
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	The measurements shall be performed at normal environmental conditions.
<input checked="" type="checkbox"/>	The EUT shall be configured to operate at the maximum stated transmitter output power level.
<input checked="" type="checkbox"/>	Power density shall be measured using one of the options below.
<input checked="" type="checkbox"/>	Option 1: For equipment with continuous transmission capability or for equipment operating (or with the capability to operate) with a constant duty cycle (e.g. Frame Based equipment). Refer as EN 301 893, clause 5.4.4.2.1.3.2.
<input type="checkbox"/>	Option 2: For equipment without continuous transmission capability and without the capability to transmit with a constant duty cycle. Refer as EN 301 893, clause 5.4.4.2.1.3.3.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.4.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	The EUT supports multiple transmit chains using options given below:
<input checked="" type="checkbox"/>	Option 1: connect the UUT to the spectrum analyzer and use the following 5.4.4.2.1.3.2 settings, find the peak value of the trace and place the analyzer marker on this peak. This level is recorded as the highest mean power (power density) D in a 1 MHz band. 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. The maximum spectral power density is calculated from the measured power density (D), the observed duty cycle x , the applicable antenna assembly gain "G" in dBi and if applicable the beamforming gain "Y" in dB, according to the formula below. $PD = D + G + Y + 10 \log (1/x) \text{ (dBm/MHz)}$.

<input type="checkbox"/>	<p>Option 2: connect the UUT to the spectrum analyzer and use the 5.4.4.2.1.3.3 settings, Add up the values of power for all the samples in the file using the formula below.</p> $P_{\text{Sum}} = \sum_{n=1}^k P_{\text{sample}}(n)$ <p>Normalize the individual values for power (in dBm) so that the sum is equal to the EIRP(PH) measured for this sub-band. The following formulas can be used:</p> $C_{\text{Corr}} = P_{\text{Sum}} - P_{\text{H e.i.r.p}}$ $P_{\text{Samplecorr}}(n) = P_{\text{Sample}}(n) - C_{\text{Corr}}$ <p>with 'n' being the actual sample number</p> <p>Starting from the first sample $P_{\text{Samplecorr}}(n)$ in the file, add up the power (in mW) of the following samples representing a 1 MHz segment and record the results for power and position (i.e. sample #1 to sample #100). This is the Power Density (e.i.r.p.) for the first 1 MHz segment which shall be saved.</p> <p>Shift the start point of the samples added up in step (i.e. sample #2 to sample #101).</p> <p>Repeat step until the end of the data set and save the radiated power density values for each of the 1 MHz segments.</p> <p>From all the saved results, the highest value is the maximum Power Density (e.i.r.p.) for the UUT.</p>
<input checked="" type="checkbox"/>	<p>If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used for EIRP PSD.</p>
<input type="checkbox"/> Refer as EN 301 893, clause 5.4.4.2.2 for radiated measurement.	

3.4.4 Test Setup



3.4.5 Test Result of Power Density

Refer as Appendix D

3.5 Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands

3.5.1 Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands Limit

Frequency Range	Maximum Power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 26 GHz	-30 dBm	1 MHz

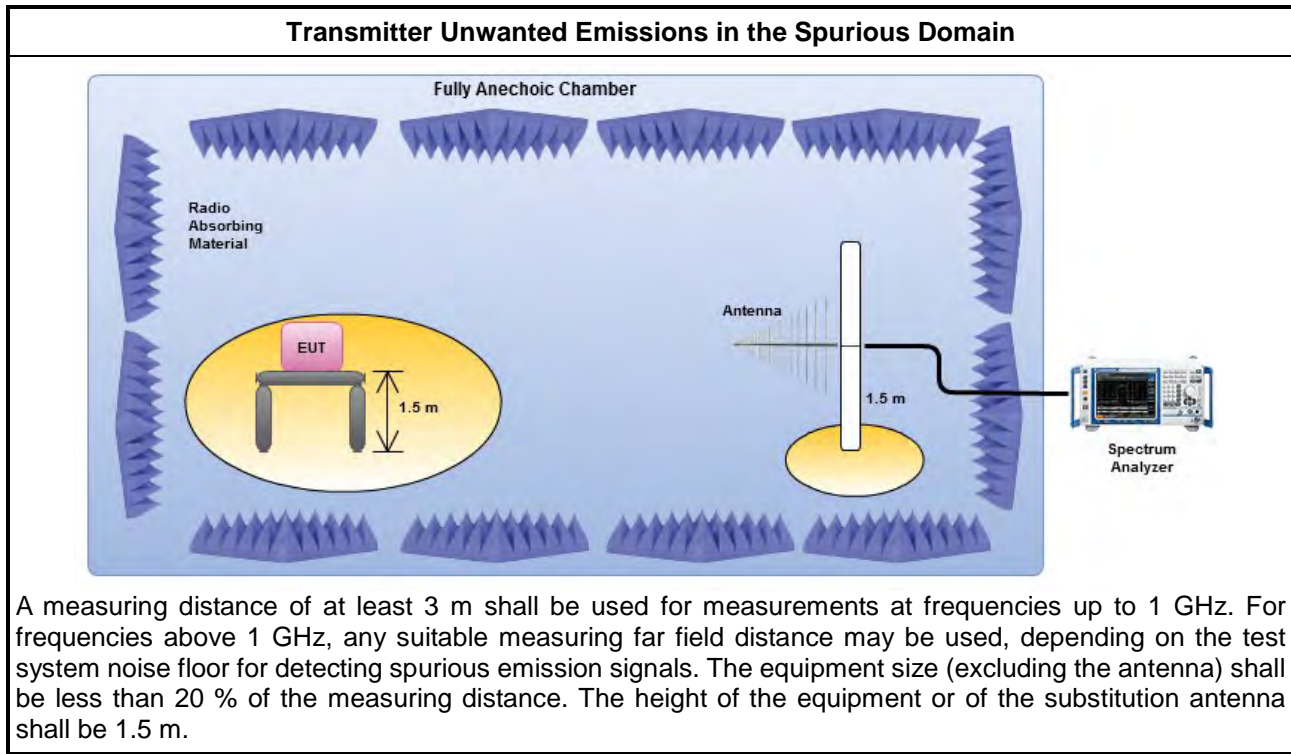
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.3.2 for test channel. One channel out of the declared channels for each sub-band. 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.
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.5.2.1 for conducted measurement. Conducted spurious emissions and radiated by the cabinet with the antenna connector(s) terminated by a specified load (cabinet radiation).
<input type="checkbox"/>	The EUT supports multiple transmit chains using options given below:
<input type="checkbox"/>	Option 1: The results for each of the transmit chains for the corresponding 1 MHz segments shall be added and compared with the transmitter spurious emissions limit.
<input type="checkbox"/>	Option 2: the results for each of the transmit chains shall be individually compared with the transmitter spurious emissions limit. After that these limits have been reduced with $10 \times \log_{10}(T_{ch})$. (Number of active transmit chains).
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.5.2.2 for radiated measurement.

3.5.4 Test Setup



3.5.5 Measurement Results Calculation

The measured Level is calculated using:

Factor: Transmit Antenna Gain + Signal Generator Level - SA reading - Transmit Cable Loss.

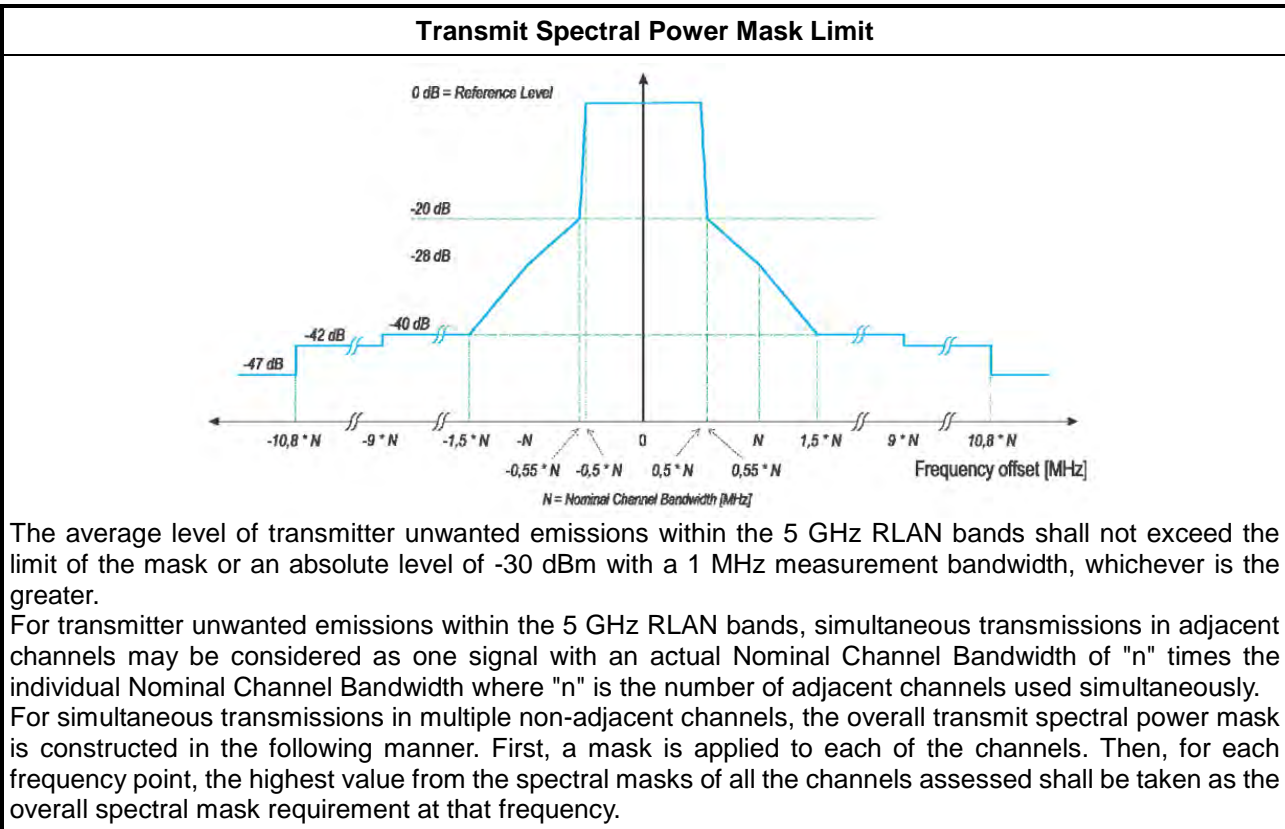
Level= Read Level + Factor.

3.5.6 Transmitter Radiated Unwanted Emissions

Refer as Appendix E

3.6 Transmitter Unwanted Emissions within the 5 GHz RLAN Band

3.6.1 Transmitter Unwanted Emissions within the 5 GHz RLAN Band Limit



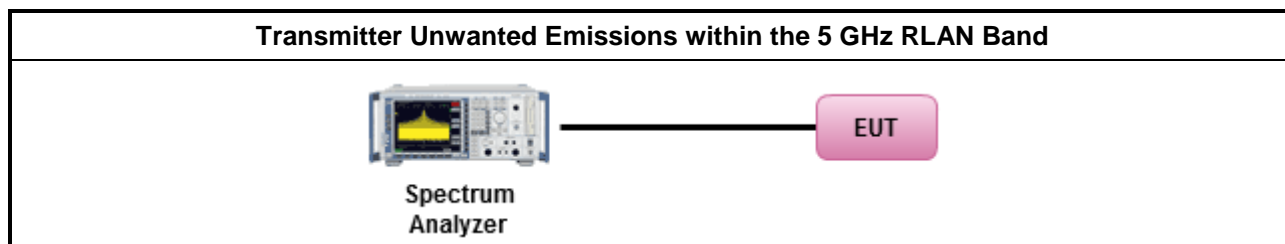
3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	The measurements shall be performed at both normal environmental conditions.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.6 for the transmit spectral power mask shall be measured using one of the options below:
<input type="checkbox"/>	Option 1: For equipment with continuous transmission capability (duty cycle equal to 100 %)
<input checked="" type="checkbox"/>	Option 2: For equipment without continuous transmission capability (duty cycle < 100 %)
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.6.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.6.1 for conducted measurements on smart antenna systems (equipment with multiple transmit chains) measurements need only to be performed on one of the active transmit chains (antenna outputs).
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.6.2.2 for radiated measurement.

3.6.4 Test Setup



3.6.5 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band

Refer as Appendix F

4 Receiver Test Result

4.1 Receiver Spurious Emissions

4.1.1 Receiver Spurious Emissions Limit

Frequency Range	Maximum Power	Measurement Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 26 GHz	-47 dBm	1 MHz

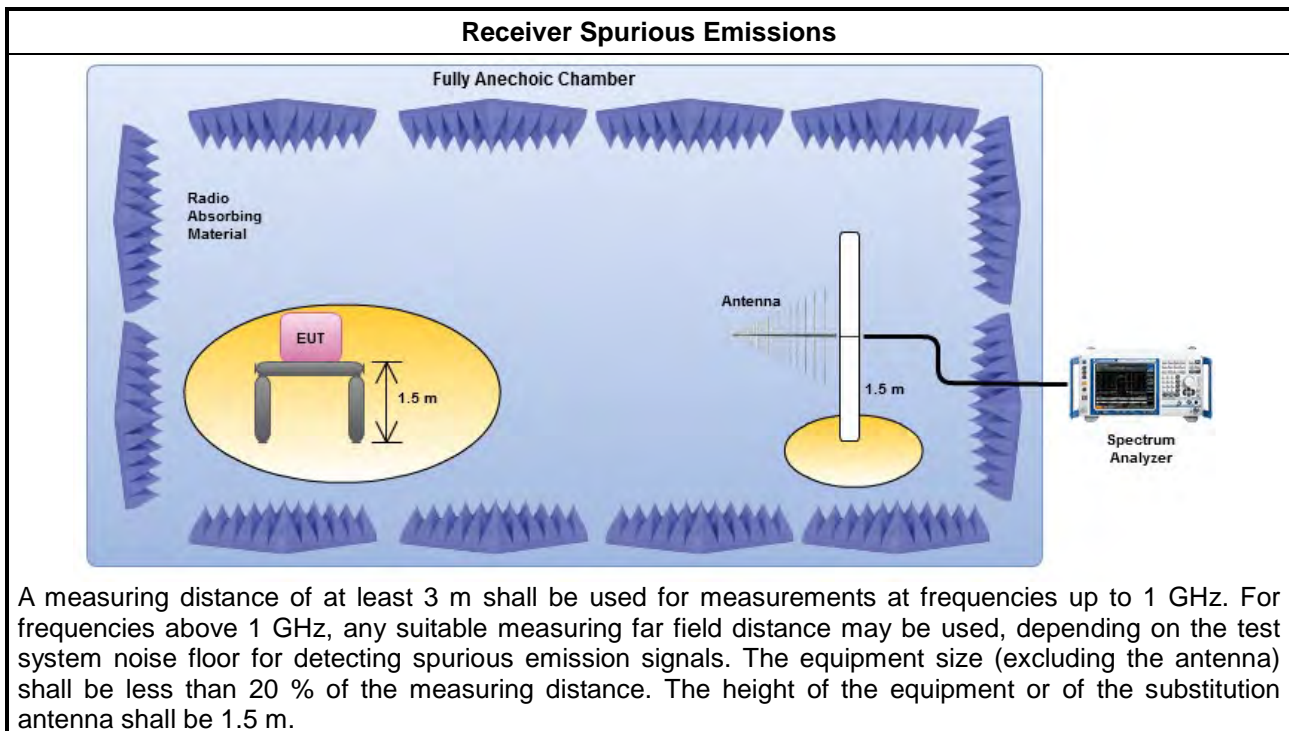
4.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

4.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.2.3 for test channel. One channel out of the declared channels for each sub-band. 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.
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.7.2.1 for conducted measurement. Conducted spurious emissions and radiated by the cabinet with the antenna connector(s) terminated by a specified load (cabinet radiation).
<input type="checkbox"/>	The EUT supports multiple receive chains, EN 301 893 clause 5.4.7.2.1 step 2 shall be repeated for each of the active receive chains, then sum the measured power (within the observed window) for each of the active receive chains.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.7.2.2 for radiated measurement.

4.1.4 Test Setup



4.1.5 Measurement Results Calculation

The measured Level is calculated using:

Factor: Transmit Antenna Gain + Signal Generator Level - SA reading - Transmit Cable Loss.

Level= Read Level + Factor.

4.1.6 Receiver Radiated Spurious Emissions

Refer as Appendix G

5 Adaptivity Test Result

5.1 Adaptivity

5.1.1 Adaptivity Limit

Adaptivity Limit				
<input type="checkbox"/> Priority Class dependent Channel Access parameters for Supervised Devices:				
Class #	p₀	CW_{min}	CW_{max}	Maximum Channel Occupancy Time (COT)
<input type="checkbox"/> 4	2	3	7	2 ms
<input type="checkbox"/> 3	2	7	15	4 ms
<input type="checkbox"/> 2	3	15	1 023	6 ms (see note 1)
<input type="checkbox"/> 1	7	15	1 023	6 ms (see note 1)
NOTE 1: The maximum <i>Channel Occupancy Time</i> (COT) of 6 ms may be increased to 8 ms by inserting one or more pauses. The minimum duration of a pause shall be 100 μ s. The maximum duration (Channel Occupancy) before including any such pause shall be 6 ms. Pause duration is not included in the channel occupancy time. NOTE 2: the values for p ₀ , CW _{min} , CW _{max} are minimum values. Greater values are allowed.				
<input checked="" type="checkbox"/> Priority Class dependent Channel Access parameters for Supervising Devices:				
Class #	p₀	CW_{min}	CW_{max}	maximum Channel Occupancy Time (COT)
<input checked="" type="checkbox"/> 4	1	3	7	2 ms
<input checked="" type="checkbox"/> 3	1	7	15	4 ms
<input checked="" type="checkbox"/> 2	3	15	63	6 ms (see note 1 and note 2)
<input checked="" type="checkbox"/> 1	7	15	1 023	6 ms (see note 1)
NOTE 1: The maximum <i>Channel Occupancy Time</i> (COT) of 6 ms may be increased to 8 ms by inserting one or more pauses. The minimum duration of a pause shall be 100 μ s. The maximum duration (Channel Occupancy) before including any such pause shall be 6 ms. Pause duration is not included in the channel occupancy time. NOTE 2: The maximum Channel Occupancy Time (COT) of 6 ms may be increased to 10 ms by extending CW to CW \times 2 + 1 when selecting the random number q for any backoff(s) that precede the Channel Occupancy that may exceed 6 ms or which follow the Channel Occupancy that exceeded 6 ms. The choice between preceding or following a Channel Occupancy shall remain unchanged during the operation time of the device. NOTE 3: The values for p ₀ , CW _{min} , CW _{max} are minimum values. Greater values are allowed.				
Energy Detect Threshold (ED Threshold):				
<input checked="" type="checkbox"/> Option 1:	For equipment that for its operation in the 5 GHz bands is conforming to IEEE 802.11™-2016 [9], clause 17, clause 19 or clause 21, or any combination of these clauses, the ED Threshold Level (TL) is independent of the equipment's maximum transmit power (P _H). Assuming a 0 dBi receive antenna the ED Threshold Level (TL) shall be:			
	TL = -75 dBm/MHz			
<input type="checkbox"/> Option 2:	For equipment conforming to one or more of the clauses listed in Option 1, and to at least one other operating mode, and for equipment conforming to none of the clauses listed in Option 1, the Energy Detect Threshold (ED Threshold) shall be proportional to the equipment's maximum transmit power (P _H). Assuming a 0 dBi receive antenna the Energy Detect Threshold (ED Threshold) shall be:			
	For P _H \leq 13 dBm: TL= -75 dBm/MHz			

For 13 dBm < PH < 23 dBm: TL= -85 dBm/MHz + (23 dBm - PH)
 For PH ≥ 23 dBm: TL= -85 dBm/MHz

- ☒ Short Control Signalling Transmissions:
- ♦ Within an observation period of 50 ms, the number of Short Control Signalling Transmissions by the equipment shall be equal to or less than 50.
 - ♦ The total duration of the equipment's Short Control Signalling Transmissions shall be less than 2 500 µs within said observation period.

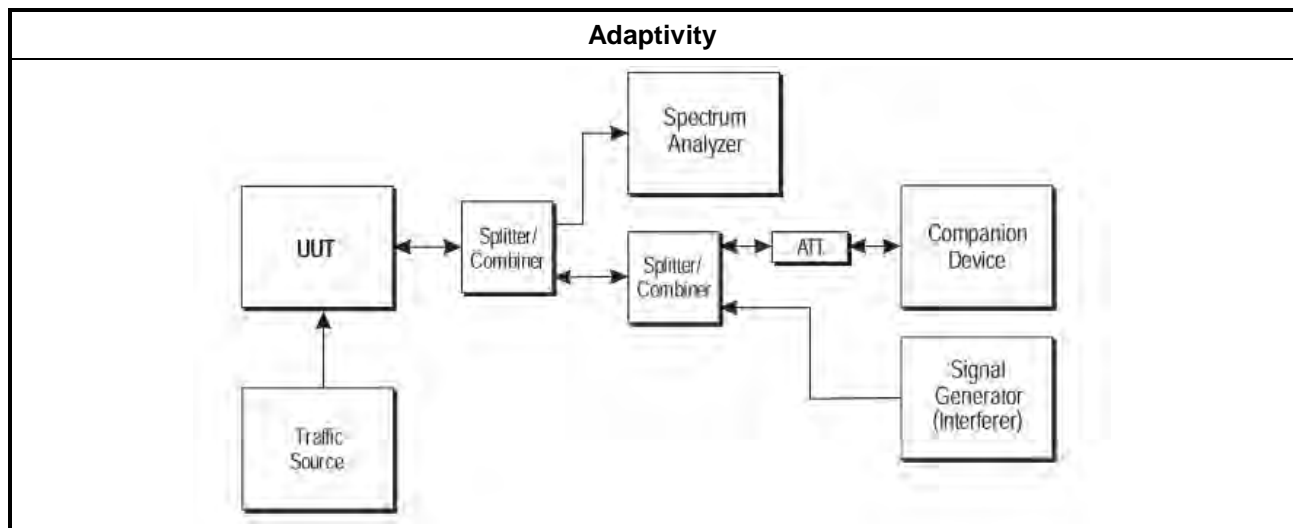
5.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

5.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.3.2 for test channel: One channel out of the declared channels.
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.9.3.2 for conducted measurement.
<input checked="" type="checkbox"/>	For conducted measurements on devices with multiple transmit chains and receive chains. The power splitter/combiner shall be used to combine all the transmit/receive chains (antenna outputs) into a single test point. The insertion loss of the power splitter/combiner shall be taken into account.
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.9.3.4 for radiated measurement.

5.1.4 Test Setup



5.1.5 Test Result of Adaptivity

Refer as Appendix H

6 Receiver Blocking Test Result

6.1 Receiver Blocking

6.1.1 Receiver Blocking Limit

Receiver Blocking Limit				
Receiver Blocking Parameters				
Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note2)		Type of blocking signal
		Master or Slave with radar detection	Slave without radar detection	
$P_{min} + 6 \text{ dB}$	5 100	-53	-59	CW
$P_{min} + 6 \text{ dB}$	4 900 5 000 5 975	-47	-53	CW
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.				

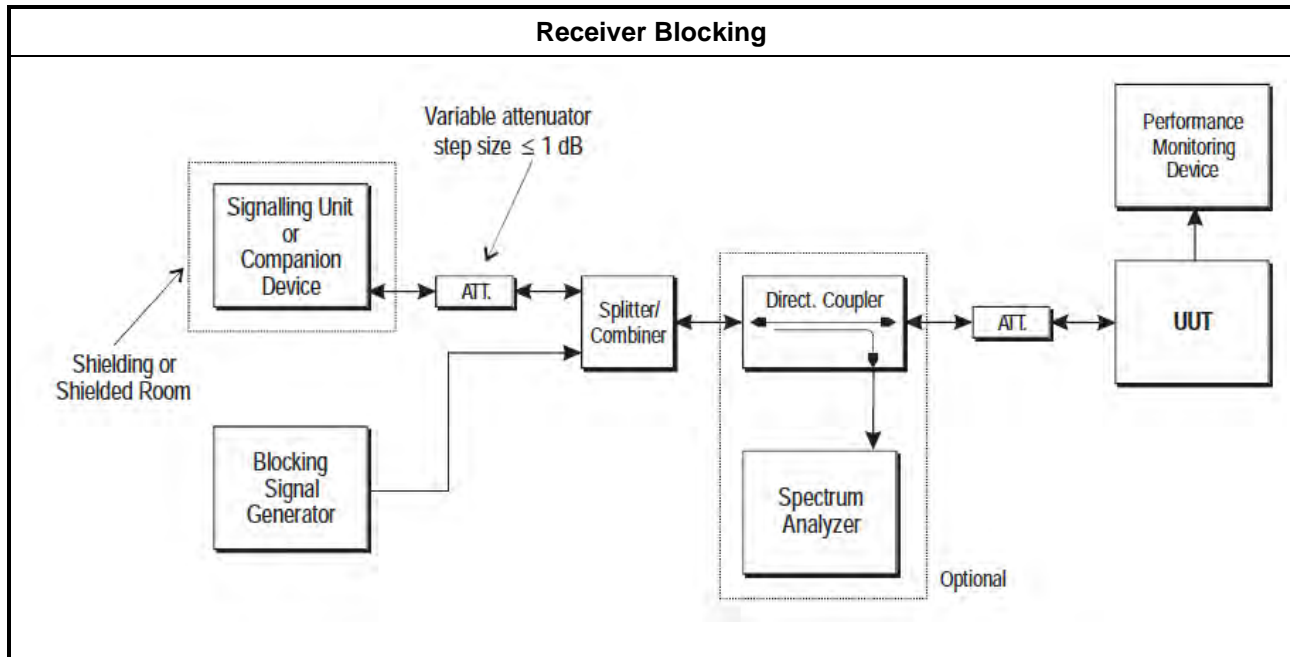
6.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

6.1.3 Test Procedures

Test Method	
<input checked="" type="checkbox"/>	Refer as EN 301 893, clause 5.4.10.2.1 for conducted measurement.
<input checked="" type="checkbox"/>	For systems using multiple receive chains only one chain (antenna port) need to be tested. All other receiver inputs shall be terminated.
<input type="checkbox"/>	Refer as EN 301 893, clause 5.4.10.2.2 for radiated measurement.

6.1.4 Test Setup



6.1.5 Test Result of Receiver Blocking

Refer as Appendix I



7 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101024	9kHz ~ 40GHz	Mar. 14, 2022	Mar. 23, 2023	Radiation (05CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980537	25MHz~1GHz	Mar. 04, 2022	Mar. 03, 2023	Radiation (05CH01-CB)
Pre-Amplifier	EMCI	EMC012645SE	980341	1GHz ~ 26.5GHz	Dec. 09, 2021	Dec. 08, 2022	Radiation (05CH01-CB)
Bilog Antenna	Schaffner	CBL6112B	2894	25MHz ~ 1GHz	Feb. 08, 2022	Feb. 07, 2023	Radiation (05CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120D-01816	1GHz~18GHz	Dec. 27, 2021	Dec. 26, 2022	Radiation (05CH01-CB)
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170507	15GHz ~ 40GHz	Jul. 05, 2022	Jul. 04, 2023	Radiation (05CH01-CB)
CABLE	Woken	N/A	Low Cable-06	25MHz ~ 1GHz	Mar. 04, 2022	Mar. 03, 2023	Radiation (05CH01-CB)
CABLE	Woken	N/A	High Cable-25+26	1GHz ~ 26.5GHz	Dec. 14, 2021	Dec. 13, 2022	Radiation (05CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (05CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 15, 2022	Aug. 14, 2023	Conducted (TH02-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-C2SP	TBN-1010206	-20~100 degree	Feb. 18, 2022	Feb. 17, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P1	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P2	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P3	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P4	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	SWI-02-P5	1 GHz –26.5 GHz	Dec. 13, 2021	Dec. 12, 2022	Conducted (TH02-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 05, 2021	Nov. 04, 2022	Conducted (TH02-CB)
Power Sensor	Agilent	U2021XA	MY53410002	50MHz~18GHz	Nov. 05, 2021	Nov. 04, 2022	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)
Spectrum Analyzer	R&S	FSV40	101025	9kHz ~ 40GHz	Nov. 06, 2021	Nov. 05, 2022	Conducted (DF02-CB)
Vector Signal generator	R&S	SMU200A	105352	25MHz-6GHz	Mar. 11, 2022	Mar. 10, 2023	Conducted (DF02-CB)
Signal generator	R&S	SMB100A	181239	1MHz-40GHz	Jan. 05, 2022	Jan. 04, 2023	Conducted (DF02-CB)
RF Power Divider	STI	2 Way	DV-2way -07	1GHz ~ 8GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Power Divider	STI	2 Way	DV-2way -07	1GHz ~ 8GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (DF02-CB)
RF Power Divider	STI	2 Way	DV-2way -08	1GHz ~ 8GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Power Divider	STI	2 Way	DV-2way -08	1GHz ~ 8GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-02	1GHz ~ 6GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-02	1GHz ~ 6GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-04	1GHz ~ 6GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-04	1GHz ~ 6GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-05	1GHz ~ 6GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Power Divider	Woken	4 Way	DFS02-DV-05	1GHz ~ 6GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~ 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~ 26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~ 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~ 26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~ 26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~ 26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)

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Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 04, 2021	Oct. 03, 2022	Conducted (DF02-CB)
RF Cable-high	Woken	RG402	High Cable-30	1 GHz –26.5 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (DF02-CB)
Wireless Connectivity Tester	R&S	CMW270	100854	70MHz – 6 GHz	Dec. 22, 2021	Dec. 21, 2022	Conducted (DF02-CB)
100MS/s Digitizer	N.I	USB-5133	F65206	N/A	Nov. 25, 2021	Nov. 24, 2022	Conducted (DF02-CB)

Note: Calibration Interval of instruments listed above is one year.

N.C.R. means Non-Calibration required.



Summary

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port
5.15-5.25GHz	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	5.18G	5.18006744G	13.0193	20	1
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	5.18G	5.18006735G	13.0015	20	1
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	5.19G	5.19006782G	13.0678	20	1
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	5.21G	5.21006778G	13.0096	20	1

Result

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_Tnom	Pass	5.18G	5.17999703G	0.5728	20	1
5180MHz_Tmin	Pass	5.18G	5.18006735G	13.0015	20	1
5180MHz_Tmax	Pass	5.18G	5.17995329G	9.0168	20	1
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_Tnom	Pass	5.19G	5.18999566G	0.8362	20	1
5190MHz_Tmin	Pass	5.19G	5.19006782G	13.0678	20	1
5190MHz_Tmax	Pass	5.19G	5.18995325G	9.0081	20	1
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_Tnom	Pass	5.21G	5.20999782G	0.419	20	1
5210MHz_Tmin	Pass	5.21G	5.21006778G	13.0096	20	1
5210MHz_Tmax	Pass	5.21G	5.20995311G	8.9996	20	1

Summary

Mode	OBW (Hz)	ITU-Code
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	16.344M	16M3D1D
802.11ac VHT20_Nss1,(MCS0)_2TX	17.542M	17M5D1D
802.11ac VHT40_Nss1,(MCS0)_2TX	36.115M	36M1D1D
802.11ac VHT80_Nss1,(MCS0)_2TX	75.784M	75M8D1D

OBW = 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	fl-OBW (Hz)	fh-OBW (Hz)	OBW (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-
5180MHz_Tnom	Pass	16M-20M	5.171814G	5.188158G	16.344M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-
5180MHz_Tnom	Pass	16M-20M	5.171234G	5.188776G	17.542M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-
5190MHz_Tnom	Pass	32M-40M	5.171931G	5.208046G	36.115M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-
5210MHz_Tnom	Pass	64M-80M	5.172076G	5.247861G	75.784M

fl-OBW = fl lower edge 99% occupied bandwidth; fh-OBW = fh higher edge 99% occupied bandwidth; OBW = 99% occupied bandwidth;
N dB = 6dB down bandwidth

Summary

Mode	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	22.85	0.19275
802.11ac VHT20_Nss1,(MCS0)_2TX	22.83	0.19187
802.11ac VHT40_Nss1,(MCS0)_2TX	22.84	0.19231
802.11ac VHT80_Nss1,(MCS0)_2TX	22.80	0.19055

Result

Mode	Result	Gain (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-
5180MHz_Tnom	Pass	6.59	12.68	12.98	15.84	22.43	23.00
5180MHz_Tmin	Pass	6.59	13.06	13.43	16.26	22.85	23.00
5180MHz_Tmax	Pass	6.59	12.71	13.05	15.89	22.48	23.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5180MHz_Tnom	Pass	6.59	12.87	12.96	15.93	22.52	23.00
5180MHz_Tmin	Pass	6.59	13.17	13.28	16.24	22.83	23.00
5180MHz_Tmax	Pass	6.59	12.75	12.76	15.77	22.36	23.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5190MHz_Tnom	Pass	6.59	13.08	13.14	16.12	22.71	23.00
5190MHz_Tmin	Pass	6.59	13.20	13.27	16.25	22.84	23.00
5190MHz_Tmax	Pass	6.59	12.94	13.09	16.03	22.62	23.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5210MHz_Tnom	Pass	6.59	13.28	12.68	16.00	22.59	23.00
5210MHz_Tmin	Pass	6.59	13.33	13.07	16.21	22.80	23.00
5210MHz_Tmax	Pass	6.59	13.10	12.82	15.97	22.56	23.00

Port X = Port X output power; Total Power = Total power measure all transmit ports simultaneously.

Summary

Mode	EIRP PD (dBm/MHz)
5.15-5.25GHz	-
802.11a_Nss1,(6Mbps)_2TX	9.95
802.11ac VHT20_Nss1,(MCS0)_2TX	9.47

RBW=1MHz

Result

Mode	Result	Gain (dBi)	PD (dBm/MHz)	EIRP PD (dBm/MHz)	EIRP PD Limit (dBm/MHz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-
5180MHz_Tnom	Pass	6.59	3.36	9.95	10.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-
5180MHz_Tnom	Pass	6.59	2.88	9.47	10.00

RBW=1MHz;

Port X = Port X power density;

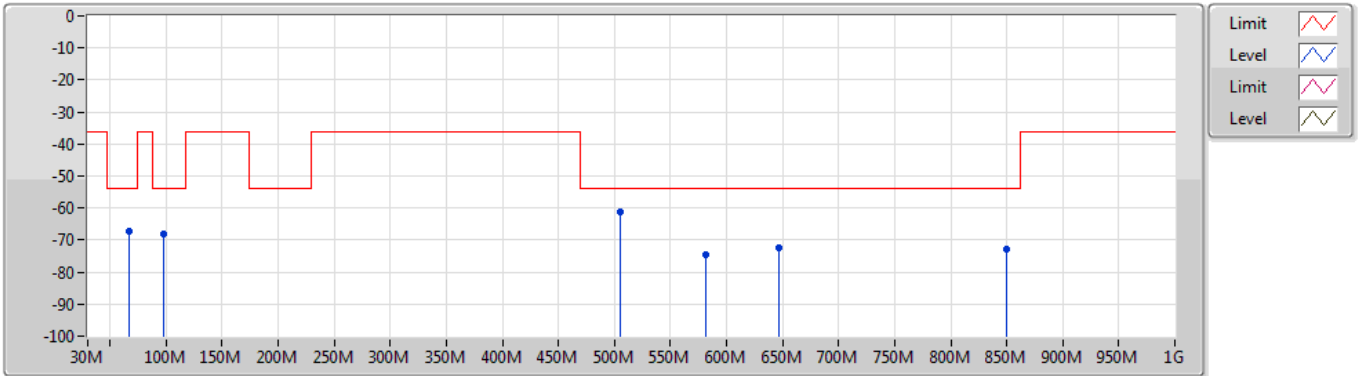
Summary

Mode	Result	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition
5.15-5.35GHz	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	505.4M	-61.10	-54.00	-7.10	-0.43	Vertical

802.11a_Nss1,(6Mbps)_2TX

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5180MHz_TX



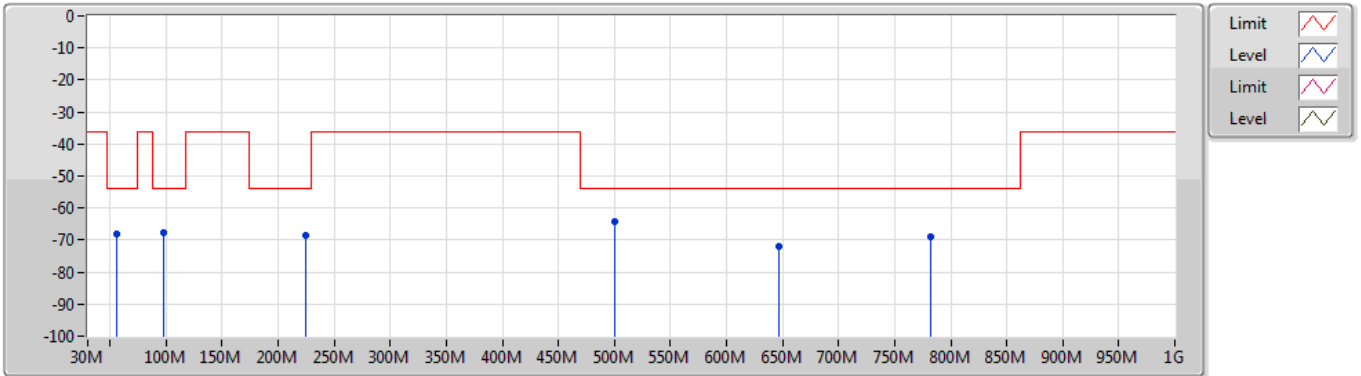
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
66.38M	-67.12	-54.00	-13.12	-13.81	Vertical	-53.31									
98.29M	-68.17	-54.00	-14.17	-7.84	Vertical	-60.33									
505.4M	-61.10	-54.00	-7.10	-0.43	Vertical	-60.67									
581.74M	-74.58	-54.00	-20.58	0.92	Vertical	-75.50									
647.21M	-72.20	-54.00	-18.20	1.54	Vertical	-73.74									
850.04M	-72.73	-54.00	-18.73	3.39	Vertical	-76.12									

802.11a_Nss1,(6Mbps)_2TX

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5180MHz_TX



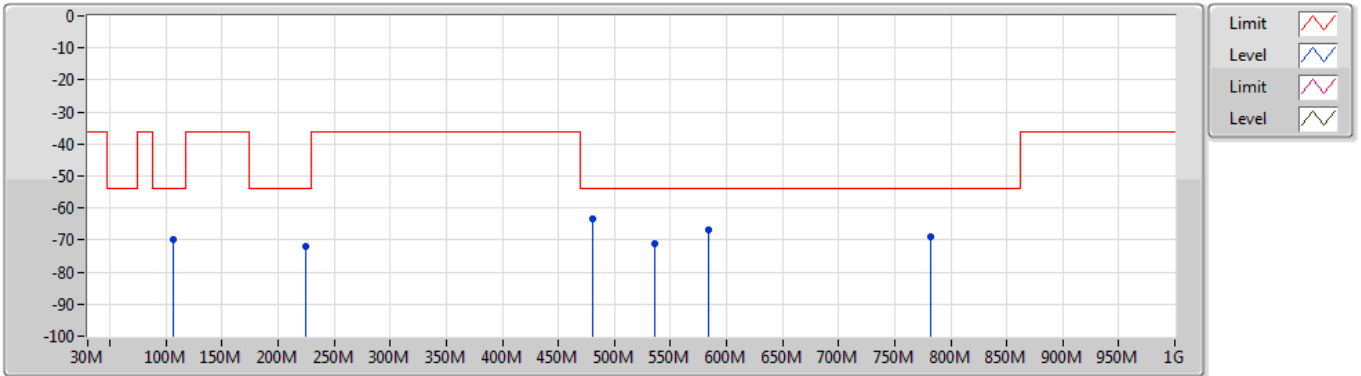
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
56M	-68.31	-54.00	-14.31	-12.86	Horizontal	-55.45								
98.29M	-67.82	-54.00	-13.82	-8.84	Horizontal	-58.98								
224.87M	-68.38	-54.00	-14.38	-6.97	Horizontal	-61.41								
500.26M	-64.27	-54.00	-10.27	-0.61	Horizontal	-63.66								
647.21M	-71.96	-54.00	-17.96	1.52	Horizontal	-73.48								
782.43M	-68.88	-54.00	-14.88	2.47	Horizontal	-71.35								

802.11ac VHT20_Nss1,(MCS0)_2TX

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5180MHz_TX



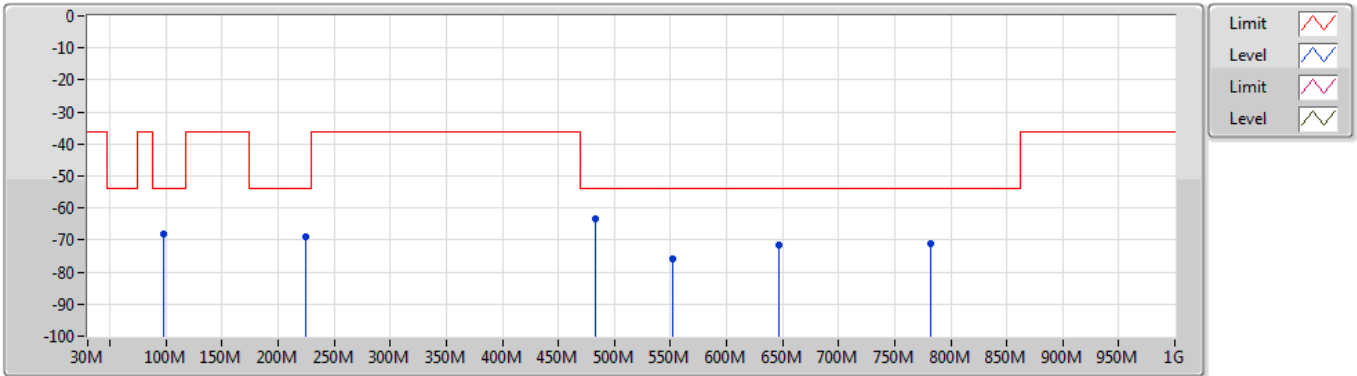
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)													
106.44M	-69.75	-54.00	-15.75	-7.45	Vertical	-62.30													
223.9M	-71.93	-54.00	-17.93	-8.36	Vertical	-63.57													
480.27M	-63.55	-54.00	-9.55	-0.99	Vertical	-62.56													
536.05M	-71.05	-54.00	-17.05	0.11	Vertical	-71.16													
583.97M	-66.82	-54.00	-12.82	0.96	Vertical	-67.78													
782.43M	-68.91	-54.00	-14.91	2.77	Vertical	-71.68													

802.11ac VHT20_Nss1,(MCS0)_2TX

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5180MHz_TX



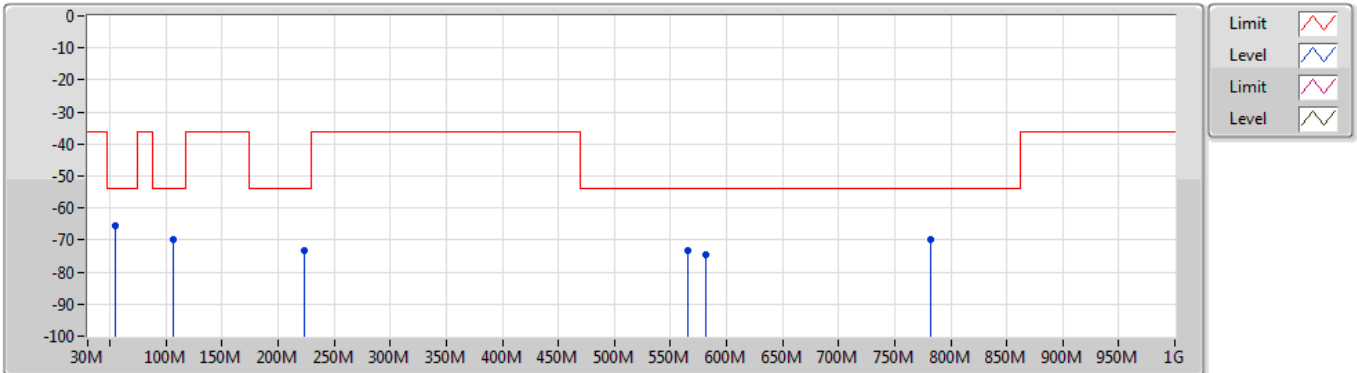
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
98.29M	-67.99	-54.00	-13.99	-8.84	Horizontal	-59.15									
224.87M	-68.77	-54.00	-14.77	-6.97	Horizontal	-61.80									
483.48M	-63.22	-54.00	-9.22	-1.08	Horizontal	-62.14									
551.38M	-76.04	-54.00	-22.04	0.13	Horizontal	-76.17									
647.21M	-71.73	-54.00	-17.73	1.52	Horizontal	-73.25									
782.43M	-70.95	-54.00	-16.95	2.47	Horizontal	-73.42									

802.11ac VHT40_Nss1,(MCS0)_2TX

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5190MHz_TX



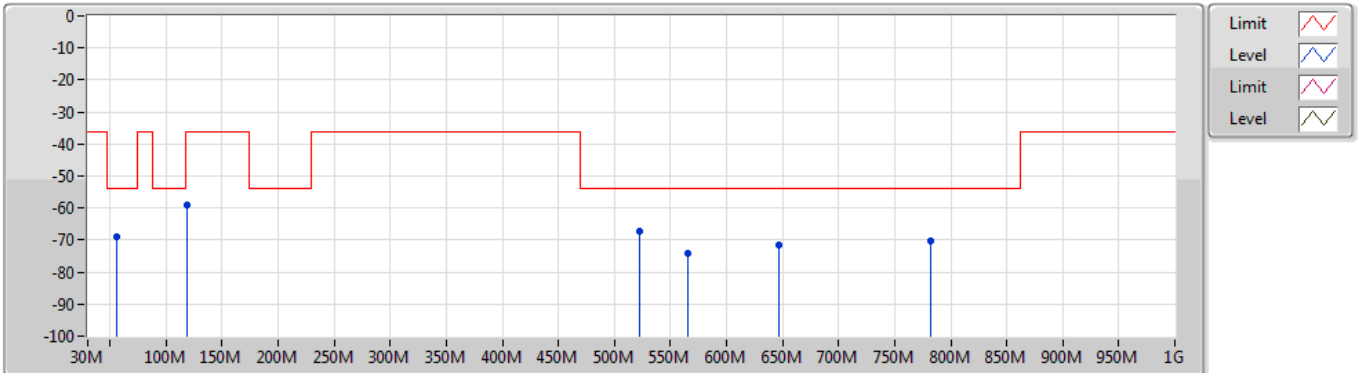
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
54.74M	-65.56	-54.00	-11.56	-11.71	Vertical	-53.85									
106.44M	-69.86	-54.00	-15.86	-7.45	Vertical	-62.41									
223.81M	-73.20	-54.00	-19.20	-8.36	Vertical	-64.84									
565.25M	-73.41	-54.00	-19.41	0.62	Vertical	-74.03									
581.74M	-74.39	-54.00	-20.39	0.92	Vertical	-75.31									
782.43M	-69.96	-54.00	-15.96	2.77	Vertical	-72.73									

802.11ac VHT40_Nss1,(MCS0)_2TX

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5190MHz_TX



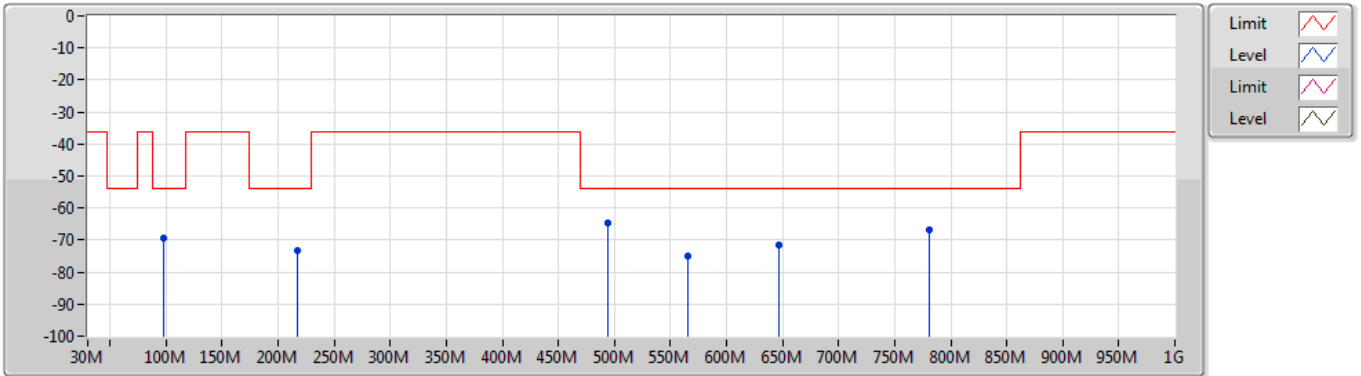
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
56M	-68.87	-54.00	-14.87	-12.86	Horizontal	-56.01									
118.85M	-59.07	-36.00	-23.07	-6.71	Horizontal	-52.36									
522.37M	-67.36	-54.00	-13.36	-0.29	Horizontal	-67.07									
565.25M	-74.32	-54.00	-20.32	0.34	Horizontal	-74.66									
647.21M	-71.44	-54.00	-17.44	1.52	Horizontal	-72.96									
782.33M	-70.12	-54.00	-16.12	2.47	Horizontal	-72.59									

802.11ac VHT80_Nss1,(MCS0)_2TX

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5210MHz_TX



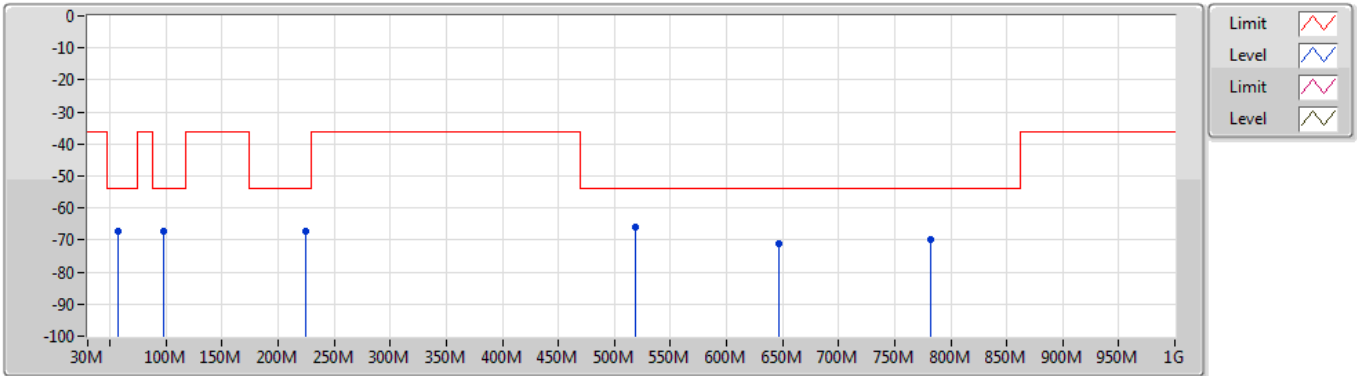
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
98.29M	-69.38	-54.00	-15.38	-7.84	Vertical	-61.54									
217.31M	-73.34	-54.00	-19.34	-8.70	Vertical	-64.64									
493.85M	-64.57	-54.00	-10.57	-0.67	Vertical	-63.90									
565.25M	-75.05	-54.00	-21.05	0.62	Vertical	-75.67									
647.21M	-71.40	-54.00	-17.40	1.54	Vertical	-72.94									
781.27M	-66.85	-54.00	-12.85	2.76	Vertical	-69.61									

802.11ac VHT80_Nss1,(MCS0)_2TX

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5210MHz_TX



EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
56.48M	-67.42	-54.00	-13.42	-13.06	Horizontal	-54.36									
98.29M	-67.21	-54.00	-13.21	-8.84	Horizontal	-58.37									
224.87M	-67.31	-54.00	-13.31	-6.97	Horizontal	-60.34									
518.88M	-65.87	-54.00	-11.87	-0.34	Horizontal	-65.53									
647.21M	-71.22	-54.00	-17.22	1.52	Horizontal	-72.74									
782.43M	-69.95	-54.00	-15.95	2.47	Horizontal	-72.42									



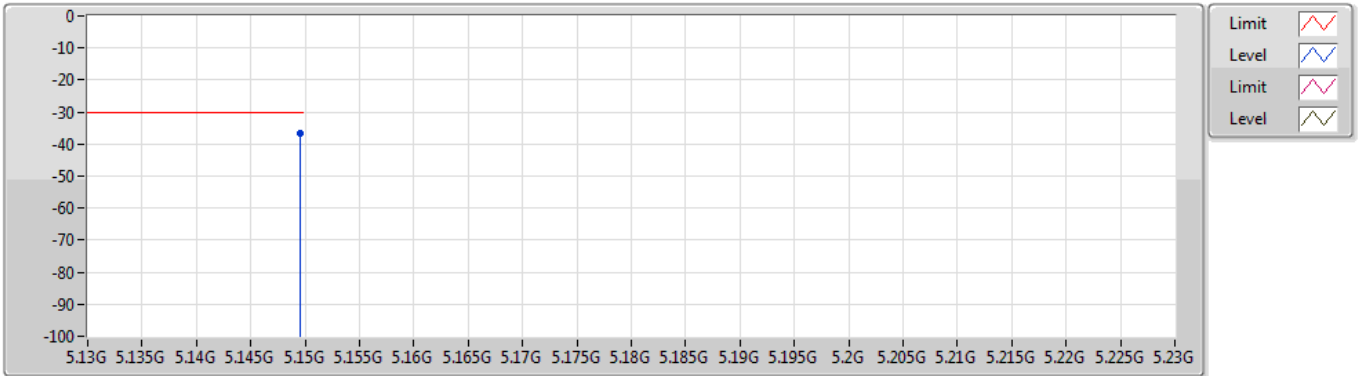
Summary

Mode	Result	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition
5.15-5.35GHz	-	-	-	-	-	-	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	5.14875G	-33.90	-30.00	-3.90	44.69	Vertical

802.11a_Nss1,(6Mbps)_2TX

05/09/2022

5180MHz_TX



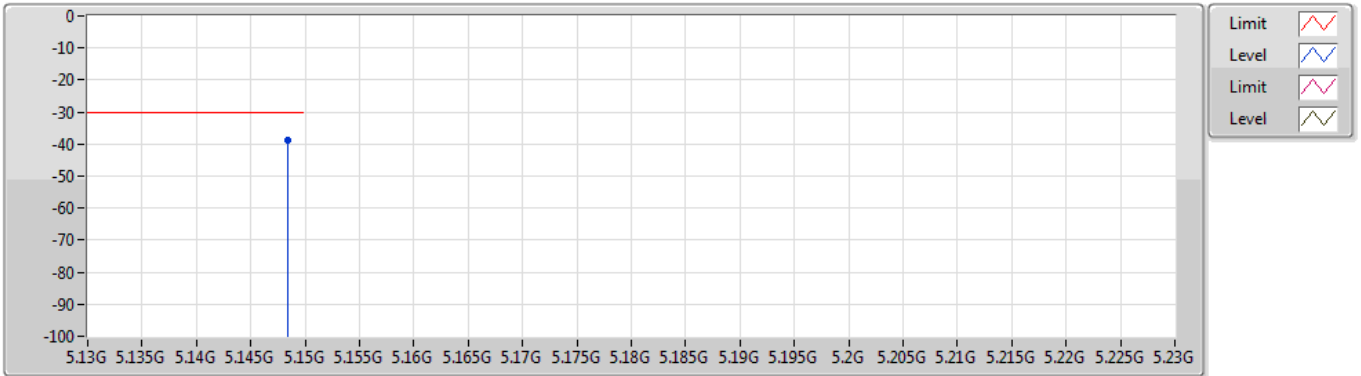
EUT Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw									
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)									
5.1495G	-36.54	-30.00	-6.54	44.69	Vertical	-81.23									

802.11a_Nss1,(6Mbps)_2TX

05/09/2022

5180MHz_TX



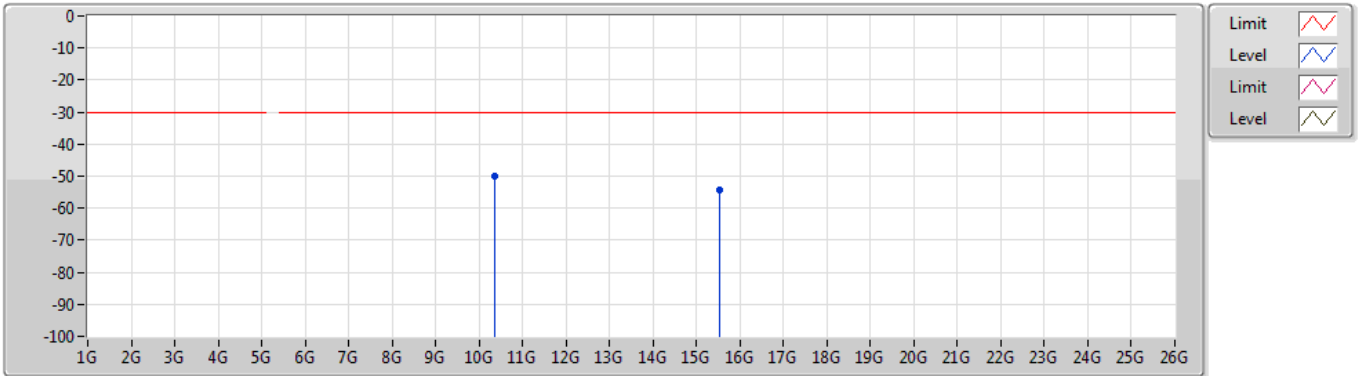
EUT Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw								
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)								
5.14843G	-38.66	-30.00	-8.66	43.46	Horizontal	-82.12								

802.11a_Nss1,(6Mbps)_2TX

05/09/2022

5180MHz_TX



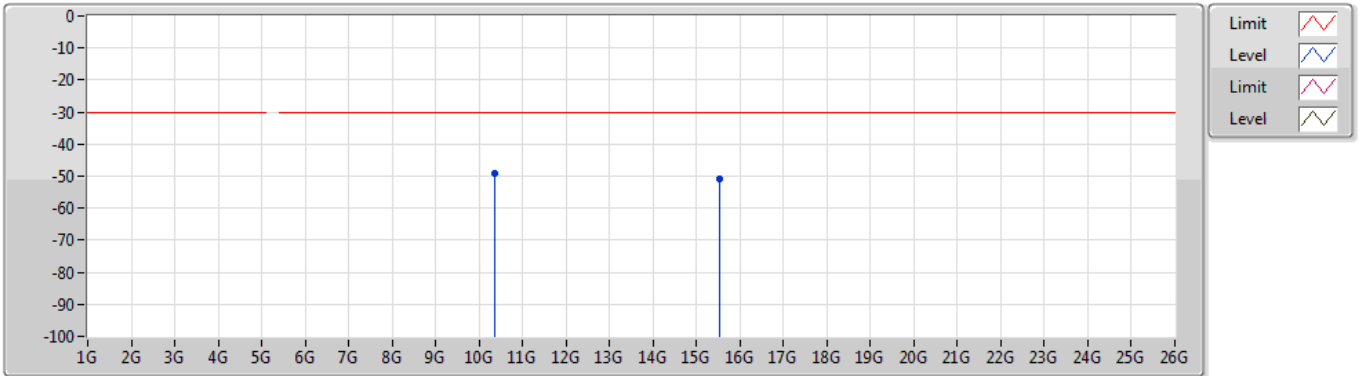
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
10.36175G	-50.02	-30.00	-20.02	7.30	Vertical	-57.32									
15.53306G	-54.45	-30.00	-24.45	8.30	Vertical	-62.75									

802.11a_Nss1,(6Mbps)_2TX

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5180MHz_TX



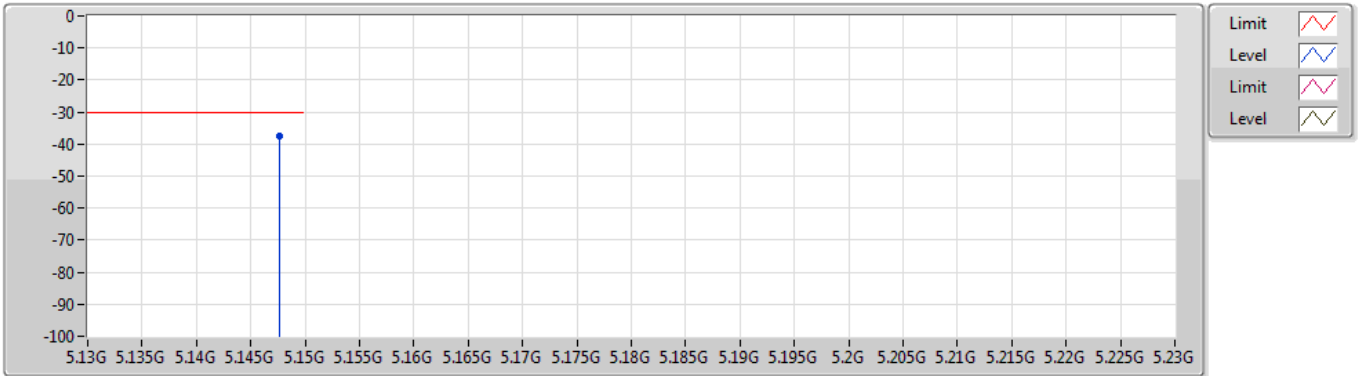
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
10.36423G	-49.00	-30.00	-19.00	6.56	Horizontal	-55.56									
15.5456G	-50.80	-30.00	-20.80	8.10	Horizontal	-58.90									

802.11ac VHT20_Nss1,(MCS0)_2TX

05/09/2022

5180MHz_TX



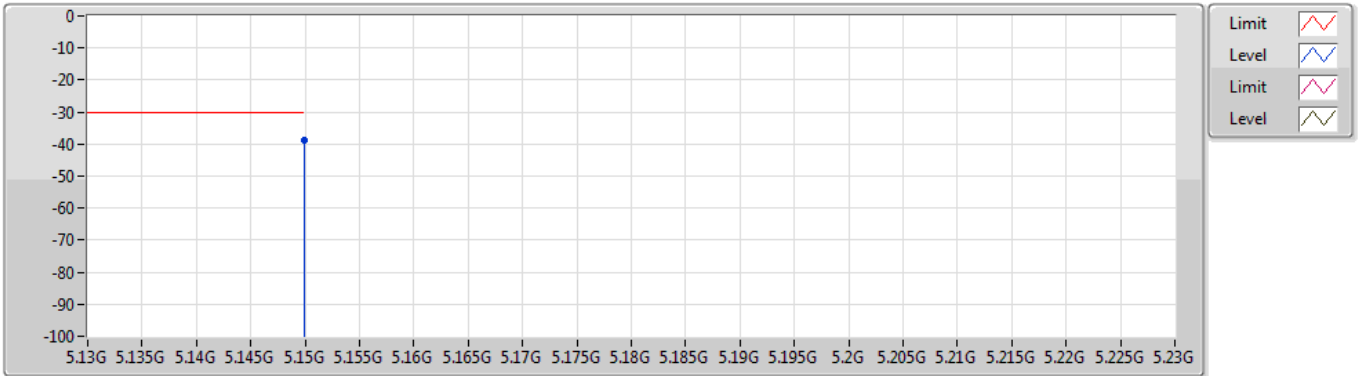
EUT Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw								
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)								
5.14762G	-37.36	-30.00	-7.36	44.69	Vertical	-82.05								

802.11ac VHT20_Nss1,(MCS0)_2TX

05/09/2022

5180MHz_TX



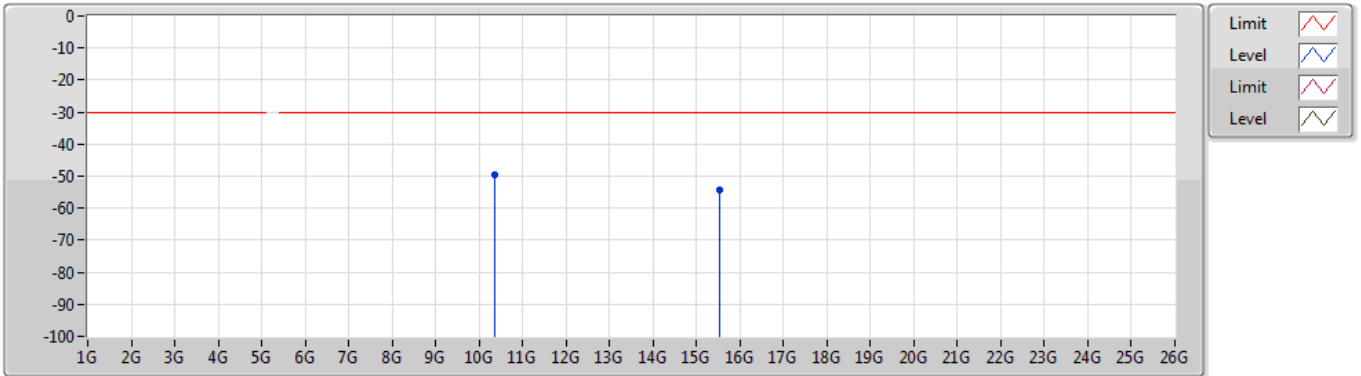
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw													
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)													
5.14987G	-38.72	-30.00	-8.72	43.47	Horizontal	-82.19													

802.11ac VHT20_Nss1,(MCS0)_2TX

05/09/2022

5180MHz_TX



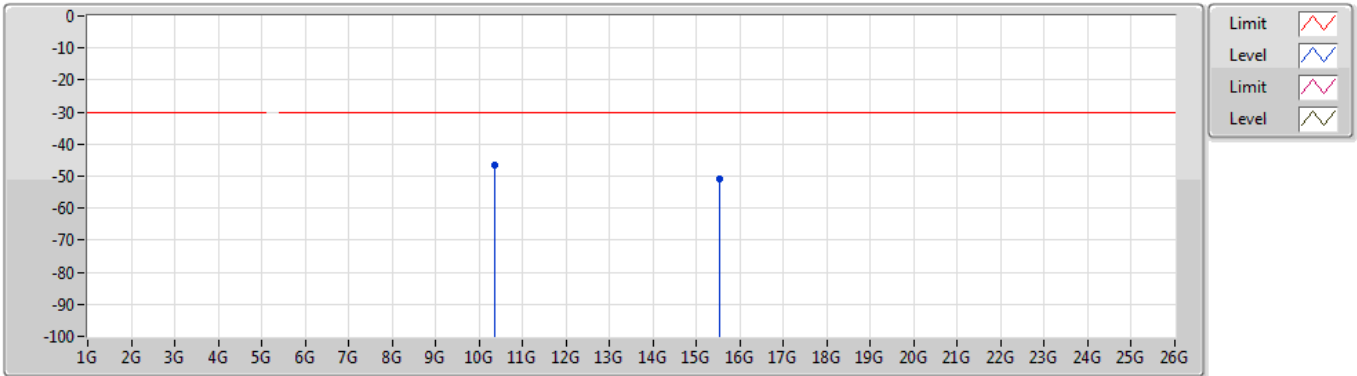
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
10.36701G	-49.39	-30.00	-19.39	7.33	Vertical	-56.72									
15.53791G	-54.23	-30.00	-24.23	8.30	Vertical	-62.53									

802.11ac VHT20_Nss1,(MCS0)_2TX

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5180MHz_TX



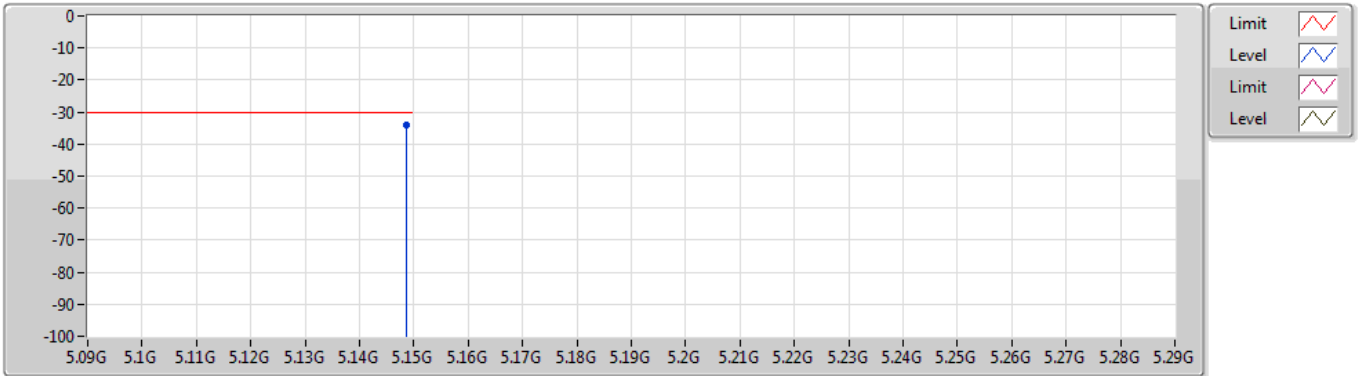
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
10.36972G	-46.65	-30.00	-16.65	6.58	Horizontal	-53.23									
15.5414G	-50.80	-30.00	-20.80	8.11	Horizontal	-58.91									

802.11ac VHT40_Nss1,(MCS0)_2TX

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5190MHz_TX



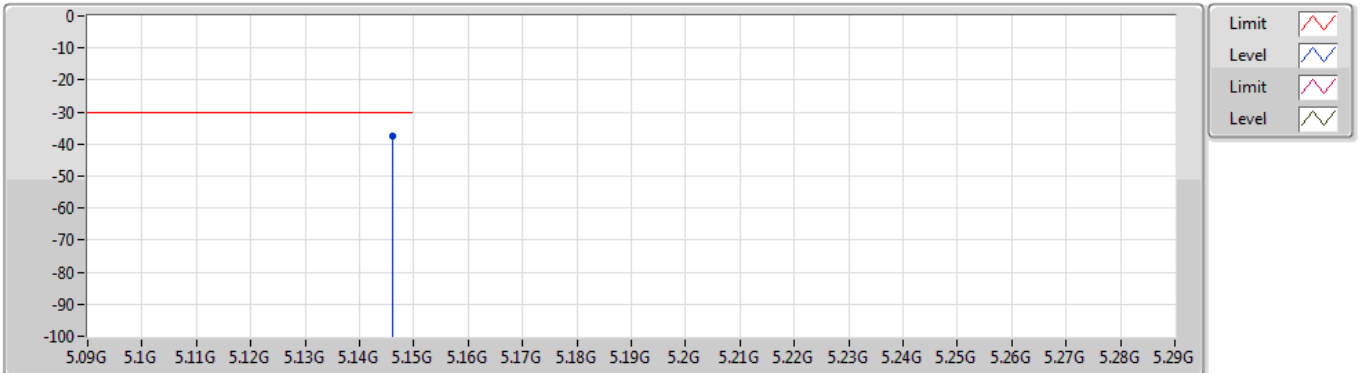
EUT Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw								
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)								
5.14875G	-33.90	-30.00	-3.90	44.69	Vertical	-78.59								

802.11ac VHT40_Nss1,(MCS0)_2TX

05/09/2022

5190MHz_TX



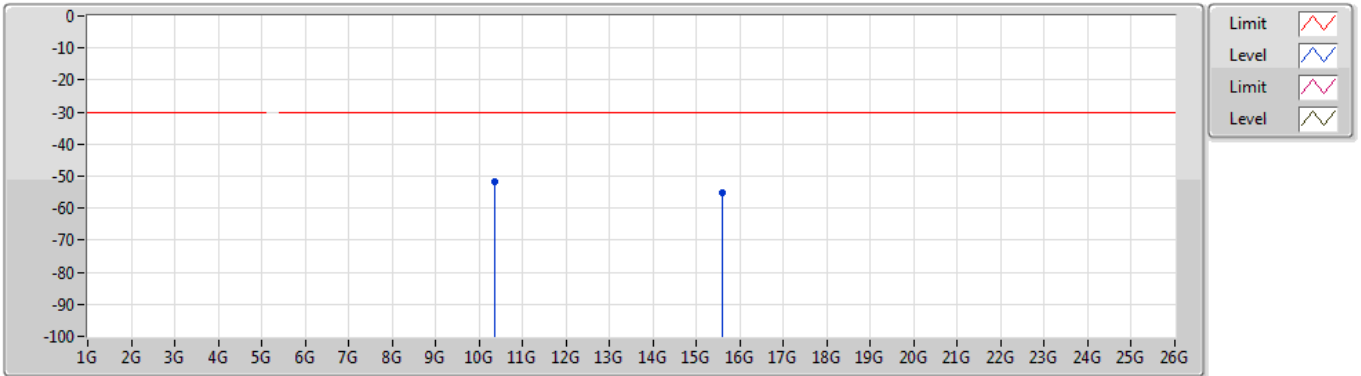
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw									
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)									
5.14598G	-37.68	-30.00	-7.68	43.46	Horizontal	-81.14									

802.11ac VHT40_Nss1,(MCS0)_2TX

05/09/2022

5190MHz_TX



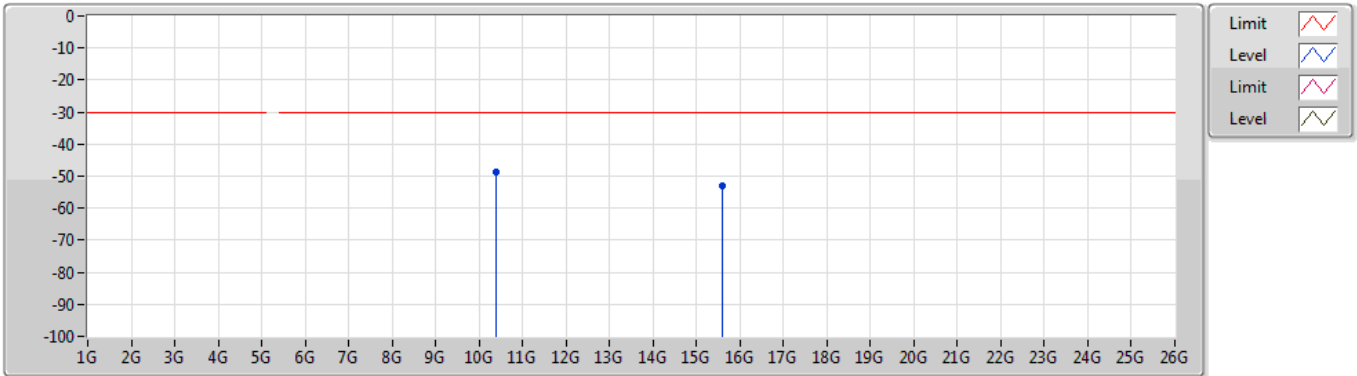
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
10.36948G	-51.69	-30.00	-21.69	7.34	Vertical	-59.03								
15.57828G	-55.02	-30.00	-25.02	8.26	Vertical	-63.28								

802.11ac VHT40_Nss1,(MCS0)_2TX

05/09/2022

5190MHz_TX



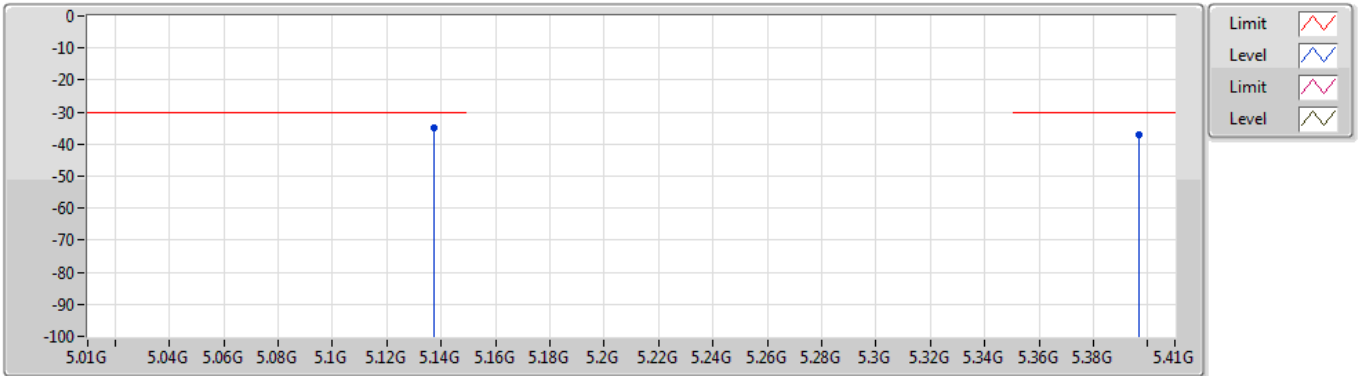
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
10.37713G	-48.84	-30.00	-18.84	6.60	Horizontal	-55.44									
15.58479G	-53.07	-30.00	-23.07	8.01	Horizontal	-61.08									

802.11ac VHT80_Nss1,(MCS0)_2TX

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5210MHz_TX



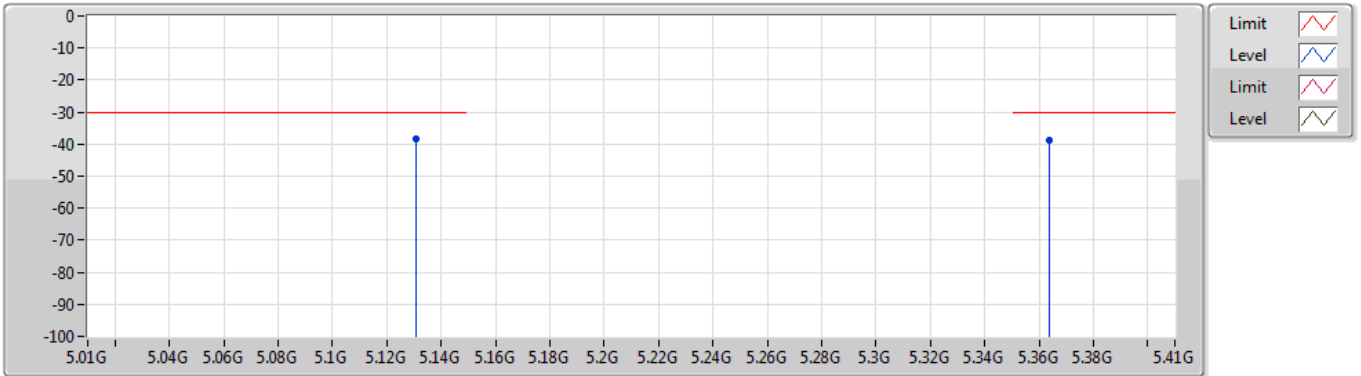
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq	Level	Limit	Margin	Factor	Condition	Raw													
(Hz)	(dBm)	(dBm)	(dB)	(dB)		(dBm)													
5.13721G	-34.75	-30.00	-4.75	44.67	Vertical	-79.42													
5.39663G	-36.95	-30.00	-6.95	45.16	Vertical	-82.11													

802.11ac VHT80_Nss1,(MCS0)_2TX

05/09/2022

5210MHz_TX



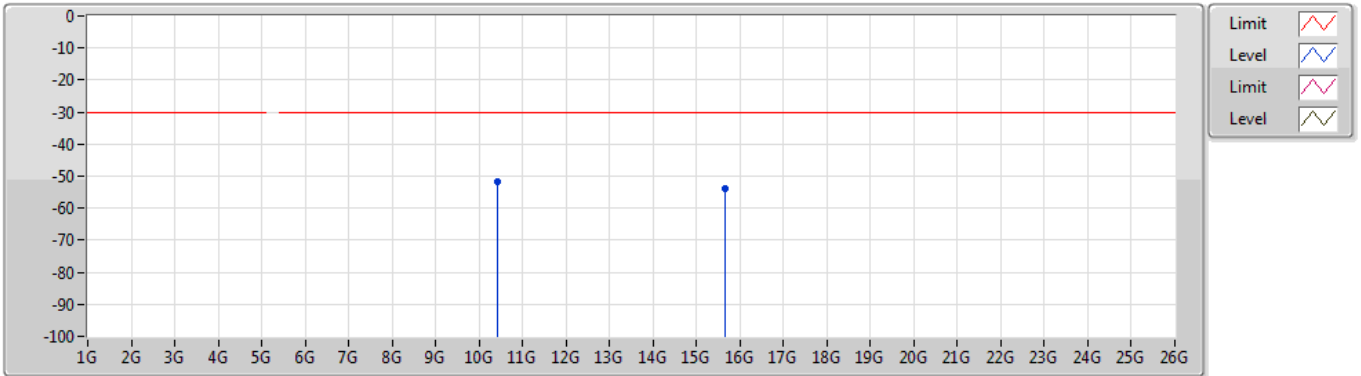
EUT_Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
5.13065G	-38.27	-30.00	-8.27	43.42	Horizontal	-81.69								
5.36366G	-38.58	-30.00	-8.58	44.02	Horizontal	-82.60								

802.11ac VHT80_Nss1,(MCS0)_2TX

05/09/2022

5210MHz_TX



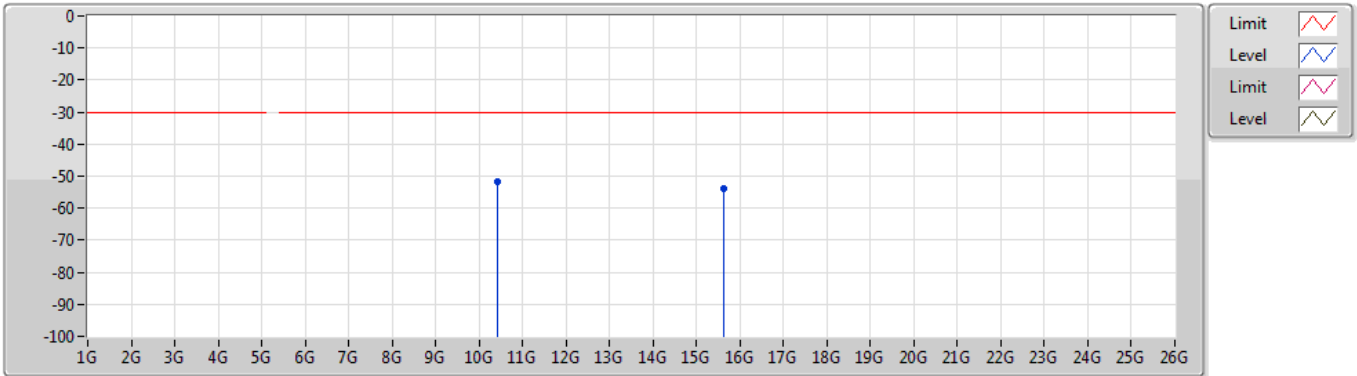
EUT Z_2TX
Setting 15
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
10.43036G	-51.51	-30.00	-21.51	7.61	Vertical	-59.12								
15.64355G	-54.00	-30.00	-24.00	8.18	Vertical	-62.18								

802.11ac VHT80_Nss1,(MCS0)_2TX

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5210MHz_TX



EUT_Z_2TX
Setting 15
1277-J-M-2

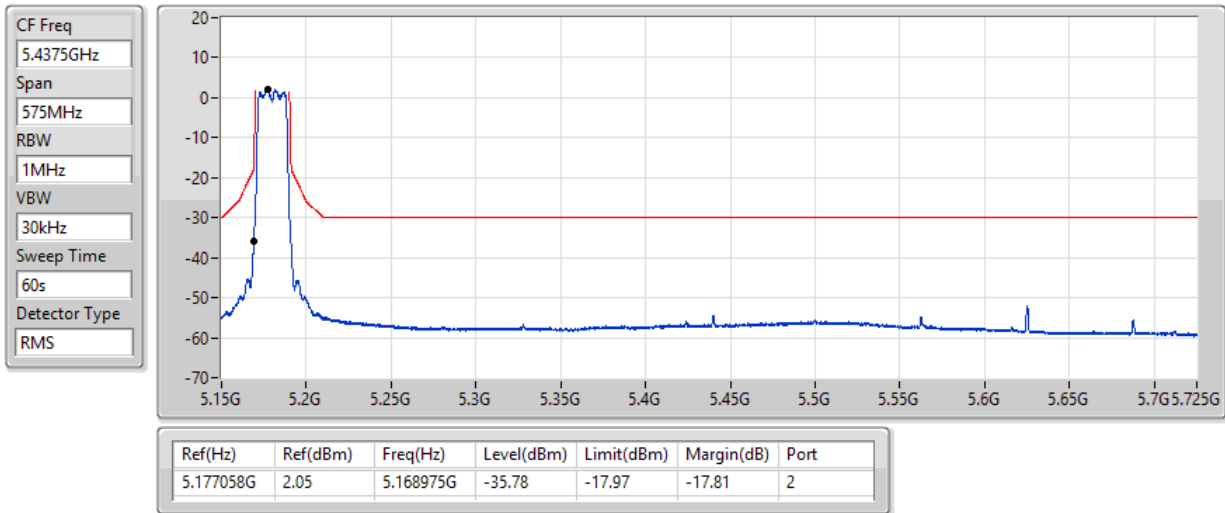
Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
10.43417G	-51.85	-30.00	-21.85	6.78	Horizontal	-58.63								
15.63379G	-53.88	-30.00	-23.88	7.90	Horizontal	-61.78								

802.11a_Nss1,(6Mbps)_2TX

MASK

5180MHz_Tnom

03/09/2022

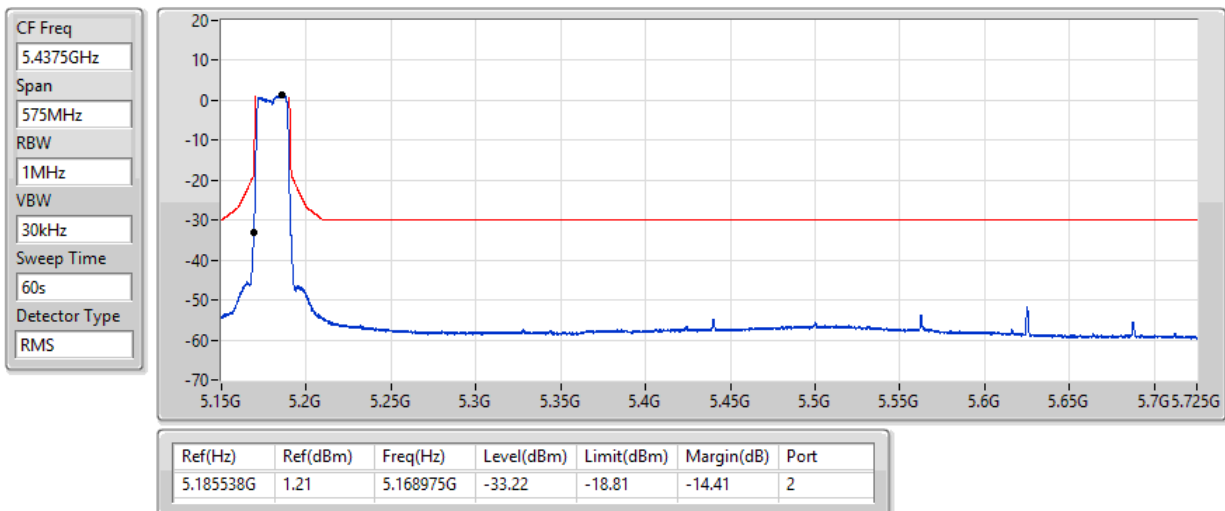


802.11ac VHT20_Nss1,(MCS0)_2TX

MASK

5180MHz_Tnom

03/09/2022

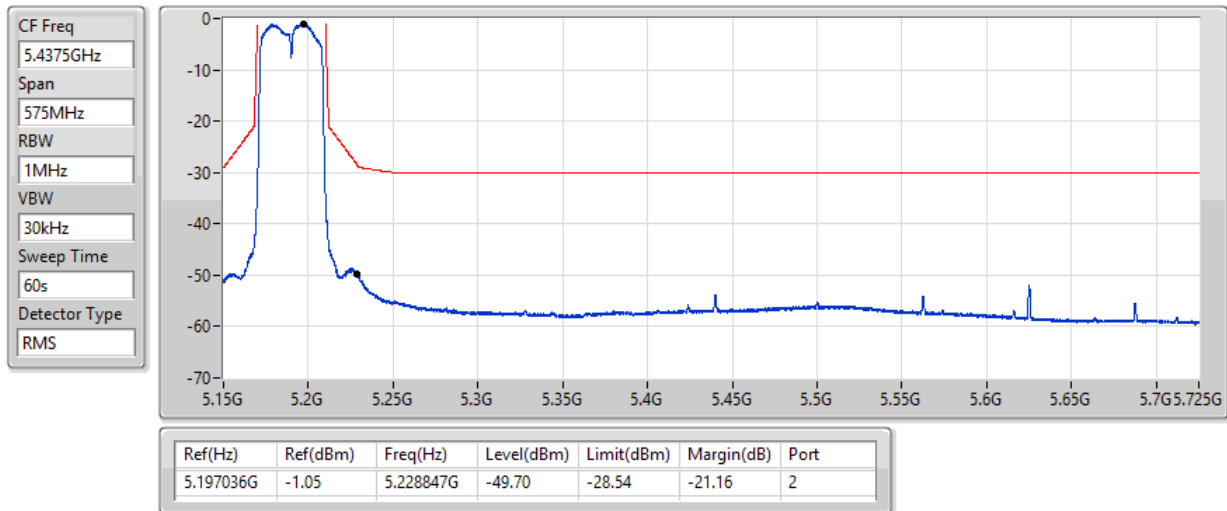


802.11ac VHT40_Nss1,(MCS0)_2TX

MASK

5190MHz_Tnom

03/09/2022

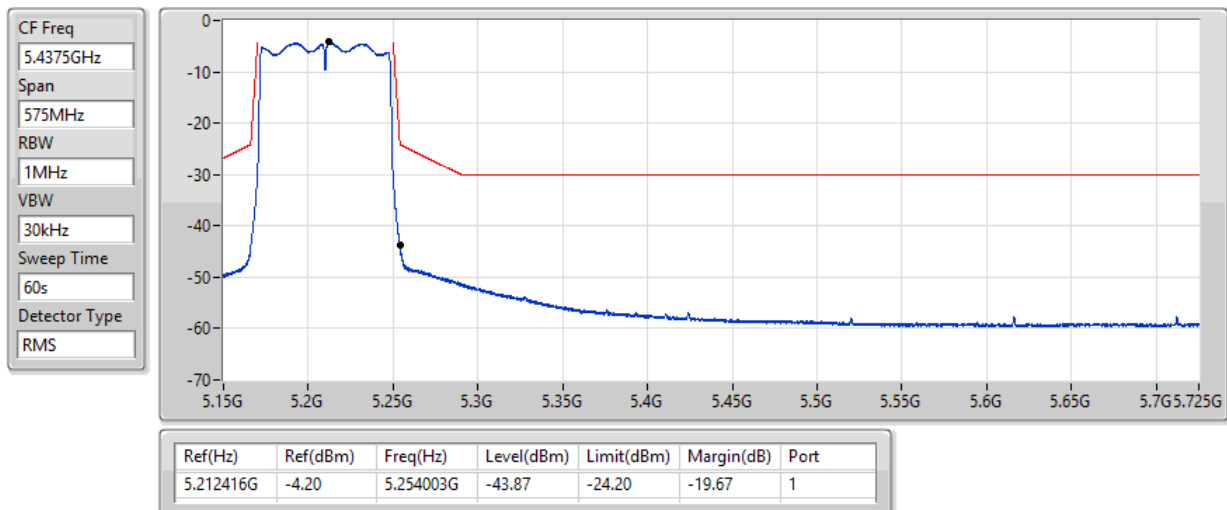


802.11ac VHT80_Nss1,(MCS0)_2TX

MASK

5210MHz_Tnom

03/09/2022





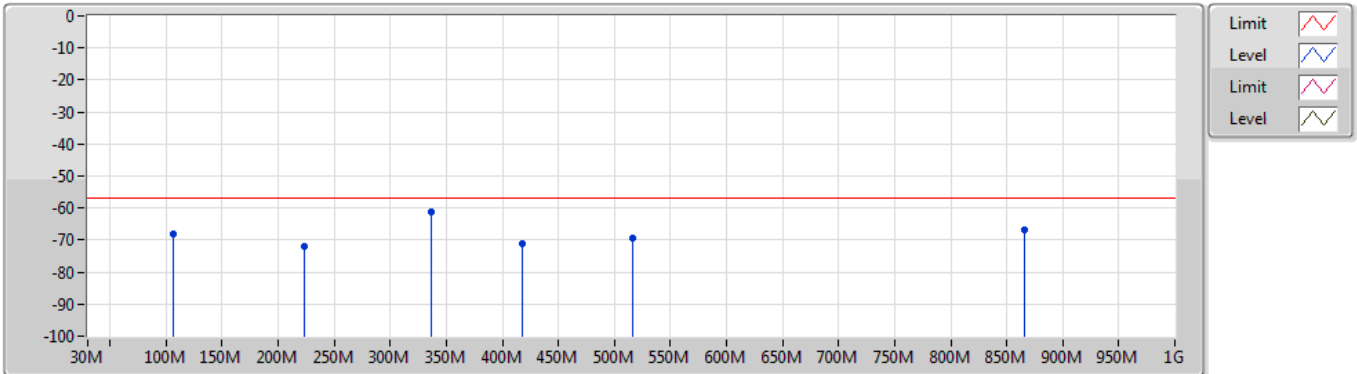
Summary

Mode	Result	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition
5.15-5.35GHz	-	-	-	-	-	-	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	490.27M	-60.55	-57.00	-3.55	-0.88	Horizontal

802.11ac VHT20_Nss1,(MCS0)_2RX

05/09/2022

5180MHz_RX



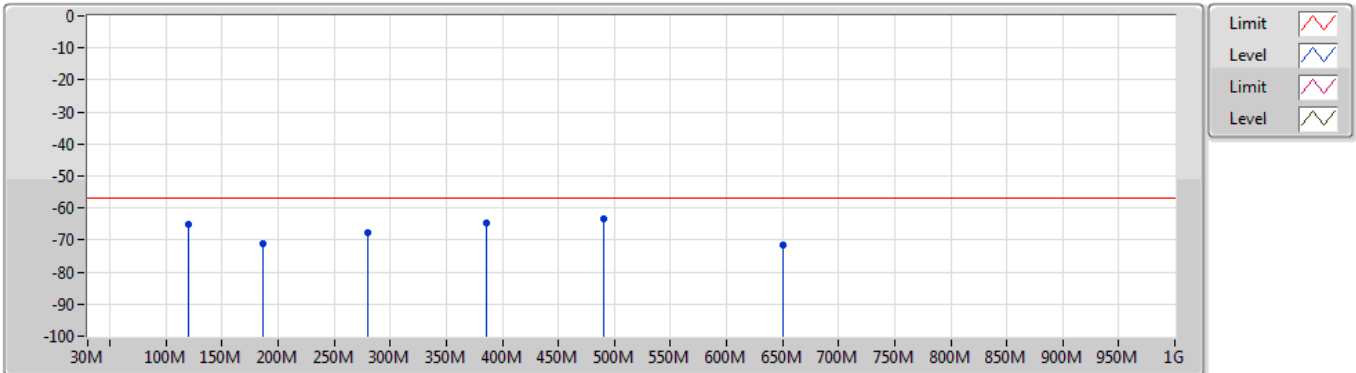
EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
106.44M	-68.26	-57.00	-11.26	-7.45	Vertical	-60.81								
223.81M	-71.86	-57.00	-14.86	-8.36	Vertical	-63.50								
336.04M	-61.02	-57.00	-4.02	-4.85	Vertical	-56.17								
417.81M	-71.19	-57.00	-14.19	-2.45	Vertical	-68.74								
516.07M	-69.23	-57.00	-12.23	-0.25	Vertical	-68.98								
866.04M	-66.74	-57.00	-9.74	3.53	Vertical	-70.27								

802.11ac VHT20_Nss1,(MCS0)_2RX

05/09/2022

5180MHz_RX



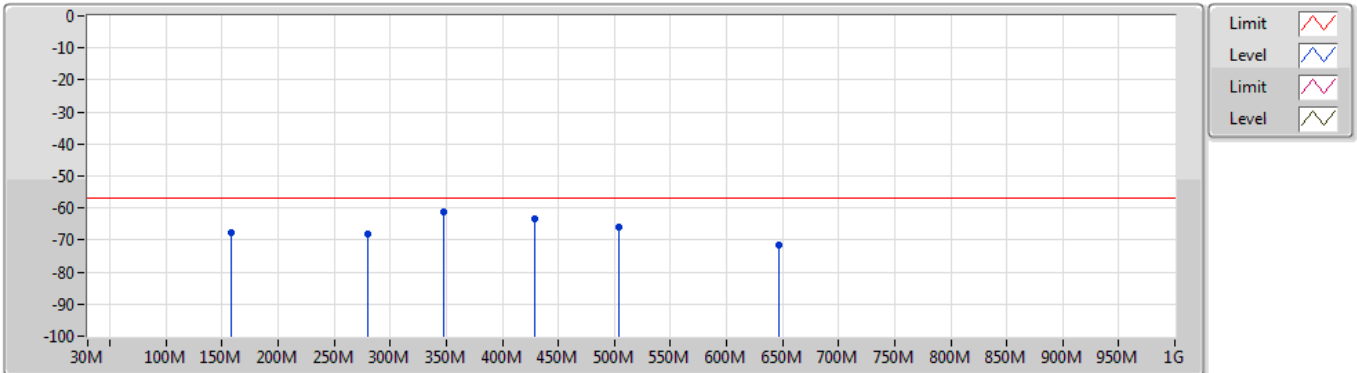
EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
119.34M	-65.16	-57.00	-8.16	-6.66	Horizontal	-58.50									
186.17M	-71.05	-57.00	-14.05	-8.72	Horizontal	-62.33									
279.97M	-67.80	-57.00	-10.80	-5.96	Horizontal	-61.84									
385.51M	-64.58	-57.00	-7.58	-3.82	Horizontal	-60.76									
490.85M	-63.41	-57.00	-6.41	-0.87	Horizontal	-62.54									
650.02M	-71.46	-57.00	-14.46	1.57	Horizontal	-73.03									

802.11ac VHT40_Nss1,(MCS0)_2RX

05/09/2022

5190MHz_RX



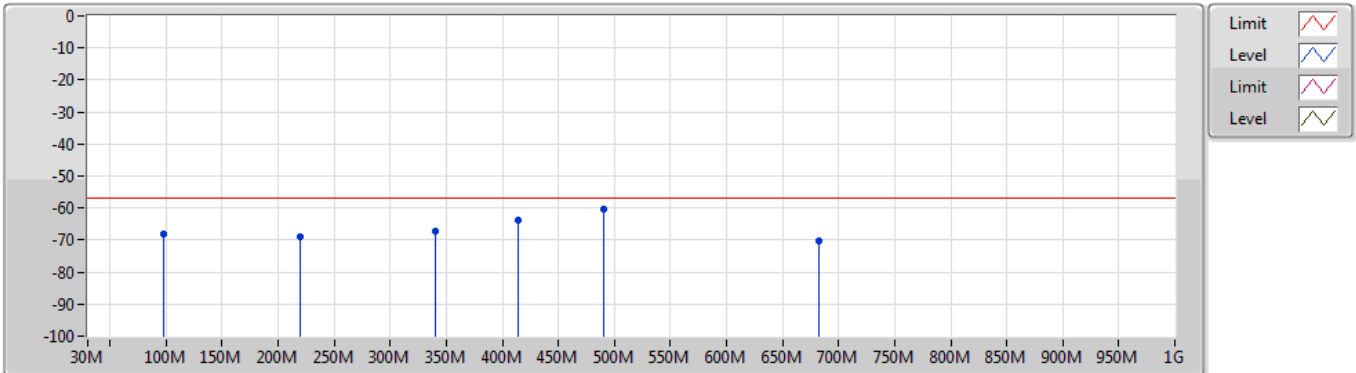
EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
158.53M	-67.81	-57.00	-10.81	-8.53	Vertical	-59.28									
279.97M	-67.94	-57.00	-10.94	-6.38	Vertical	-61.56									
347.97M	-61.12	-57.00	-4.12	-4.48	Vertical	-56.64									
428.96M	-63.39	-57.00	-6.39	-2.19	Vertical	-61.20									
503.36M	-66.12	-57.00	-9.12	-0.47	Vertical	-65.65									
647.21M	-71.51	-57.00	-14.51	1.54	Vertical	-73.05									

802.11ac VHT40_Nss1,(MCS0)_2RX

05/09/2022

5190MHz_RX



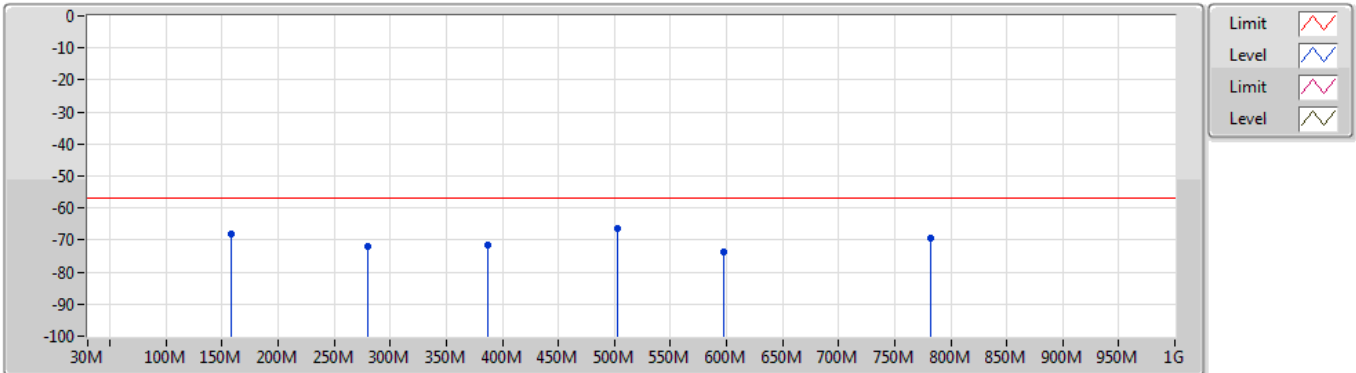
EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)
98.29M	-67.90	-57.00	-10.90	-8.84	Horizontal	-59.06
219.34M	-68.84	-57.00	-11.84	-7.25	Horizontal	-61.59
340.3M	-67.36	-57.00	-10.36	-5.05	Horizontal	-62.31
413.64M	-63.75	-57.00	-6.75	-3.05	Horizontal	-60.70
490.27M	-60.55	-57.00	-3.55	-0.88	Horizontal	-59.67
682.52M	-70.25	-57.00	-13.25	2.04	Horizontal	-72.29

802.11ac VHT80_Nss1,(MCS0)_2RX

05/09/2022

5210MHz_RX



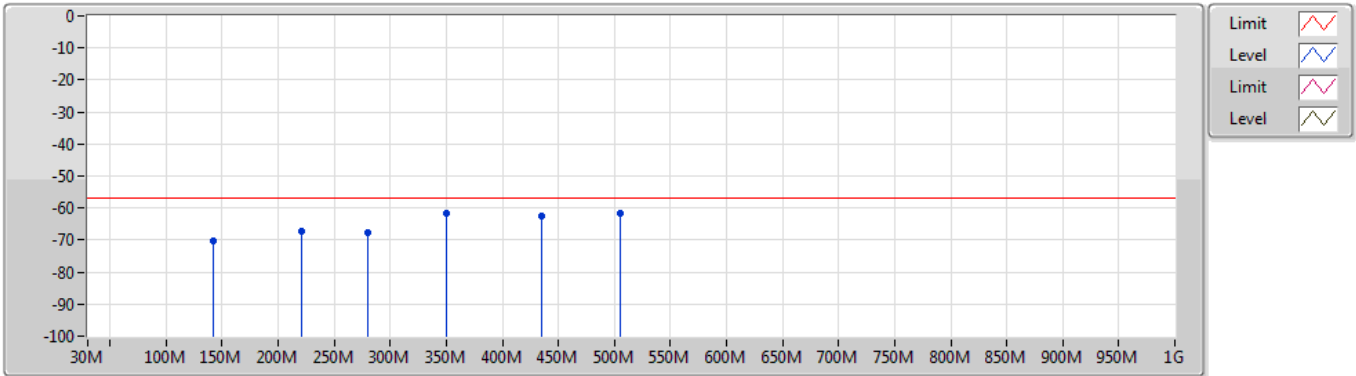
EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)													
158.53M	-68.23	-57.00	-11.23	-8.53	Vertical	-59.70													
279.97M	-71.77	-57.00	-14.77	-6.38	Vertical	-65.39													
387.06M	-71.55	-57.00	-14.55	-3.26	Vertical	-68.29													
503.17M	-66.58	-57.00	-9.58	-0.47	Vertical	-66.11													
598.03M	-73.52	-57.00	-16.52	1.21	Vertical	-74.73													
782.43M	-69.19	-57.00	-12.19	2.77	Vertical	-71.96													

802.11ac VHT80_Nss1,(MCS0)_2RX

05/09/2022

5210MHz_RX



EUT Y_2RX
Setting
1277-J-M-2

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
141.94M	-70.08	-57.00	-13.08	-7.48	Horizontal	-62.60									
221.19M	-67.27	-57.00	-10.27	-7.16	Horizontal	-60.11									
279.97M	-67.64	-57.00	-10.64	-5.96	Horizontal	-61.68									
349.81M	-61.56	-57.00	-4.56	-4.79	Horizontal	-56.77									
434.98M	-62.46	-57.00	-5.46	-2.44	Horizontal	-60.02									
505.11M	-61.57	-57.00	-4.57	-0.54	Horizontal	-61.03									



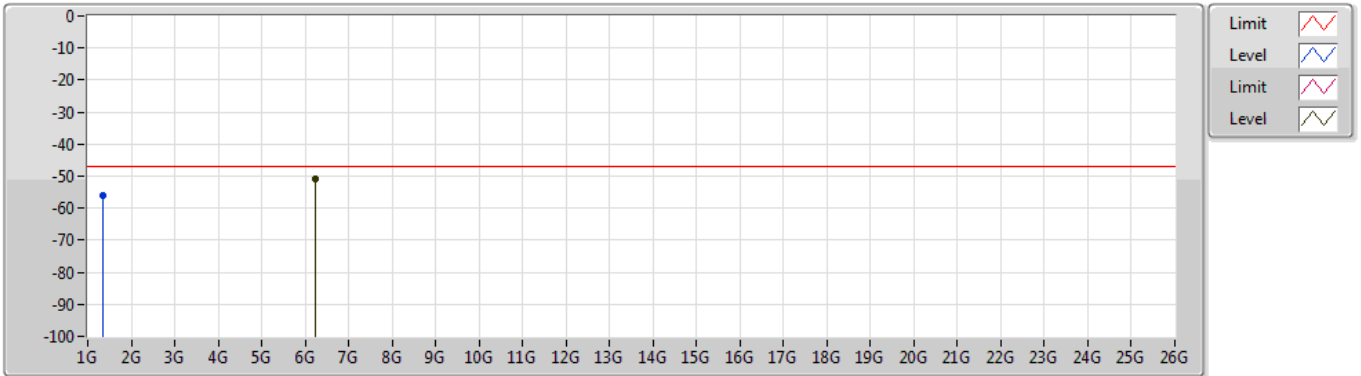
Summary

Mode	Result	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition
5.15-5.35GHz	-	-	-	-	-	-	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	6.24995G	-49.36	-47.00	-2.36	-3.17	Horizontal

802.11ac VHT20_Nss1,(MCS0)_2RX

03/09/2022

5180MHz_RX



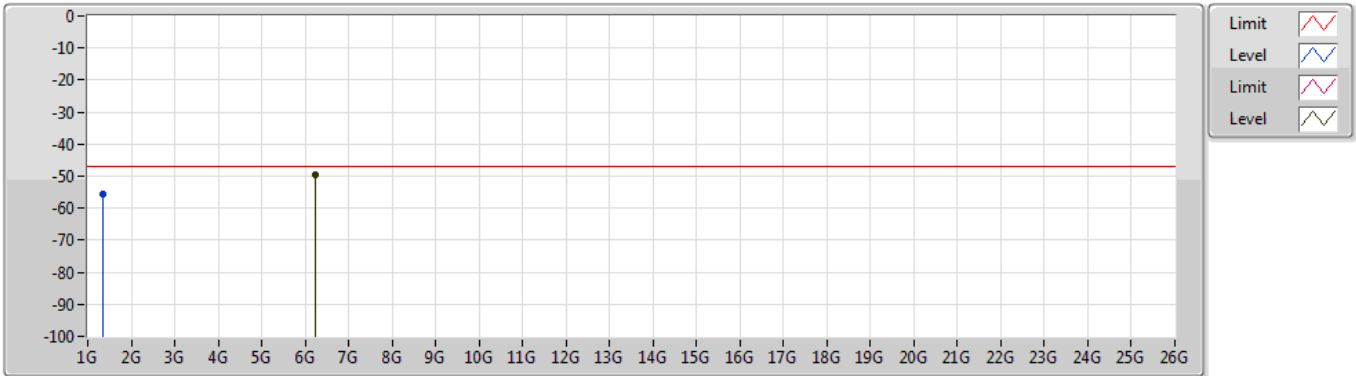
EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
1.34097G	-56.19	-47.00	-9.19	-17.54	Vertical	-38.65								
6.24998G	-50.70	-47.00	-3.70	-3.38	Vertical	-47.32								

802.11ac VHT20_Nss1,(MCS0)_2RX

03/09/2022

5180MHz_RX



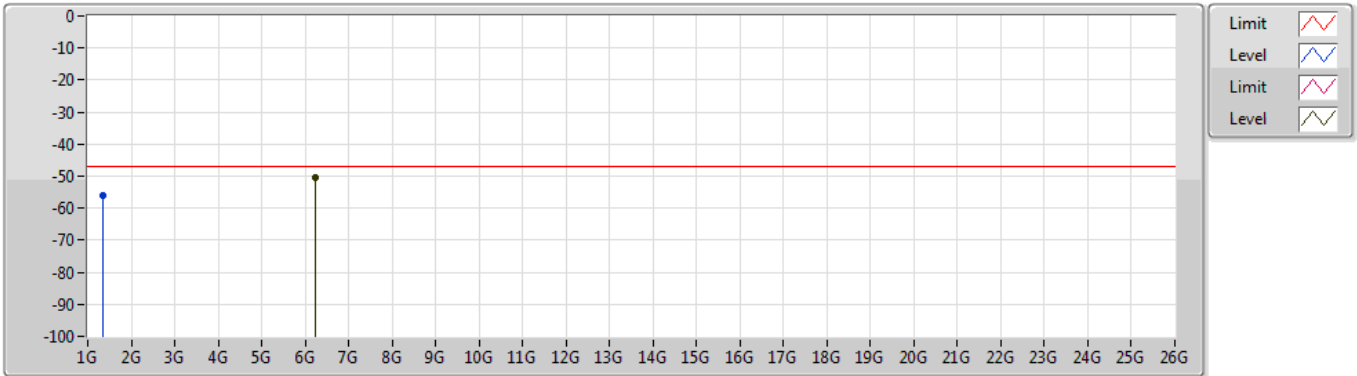
EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
1.34643G	-55.58	-47.00	-8.58	-17.29	Horizontal	-38.29									
6.24993G	-49.39	-47.00	-2.39	-3.17	Horizontal	-46.22									

802.11ac VHT40_Nss1,(MCS0)_2RX

03/09/2022

5190MHz_RX



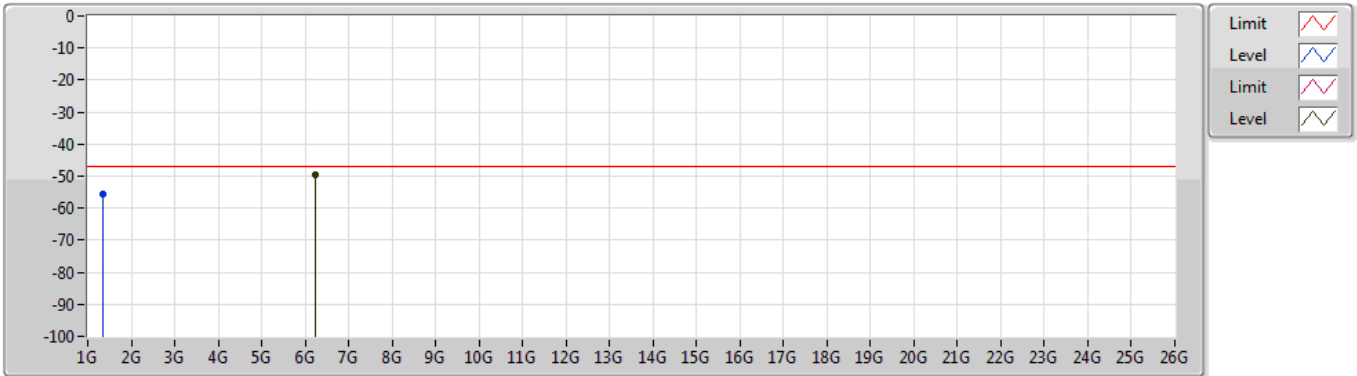
EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
1.34333G	-56.12	-47.00	-9.12	-17.53	Vertical	-38.59								
6.24995G	-50.42	-47.00	-3.42	-3.38	Vertical	-47.04								

802.11ac VHT40_Nss1,(MCS0)_2RX

03/09/2022

5190MHz_RX



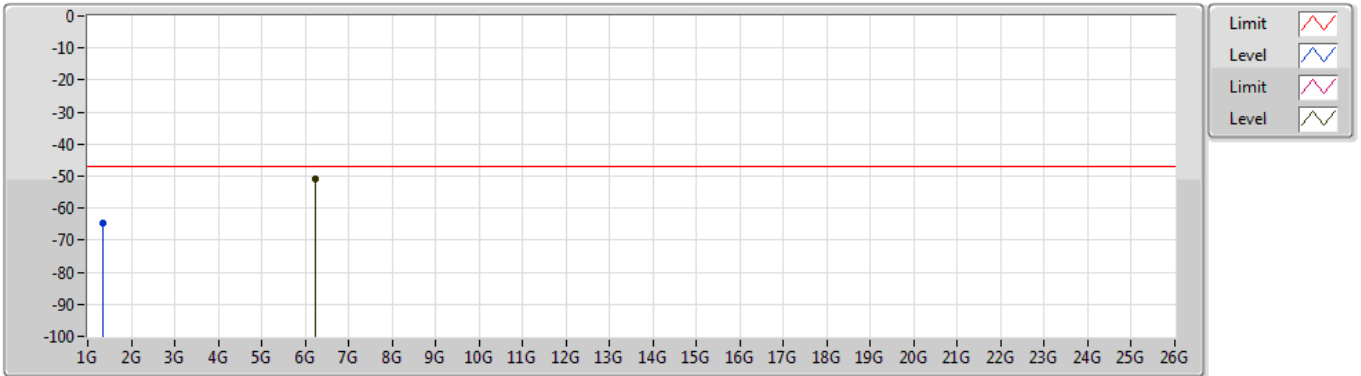
EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
1.34417G	-55.60	-47.00	-8.60	-17.30	Horizontal	-38.30									
6.24995G	-49.36	-47.00	-2.36	-3.17	Horizontal	-46.19									

802.11ac VHT80_Nss1,(MCS0)_2RX

03/09/2022

5210MHz_RX



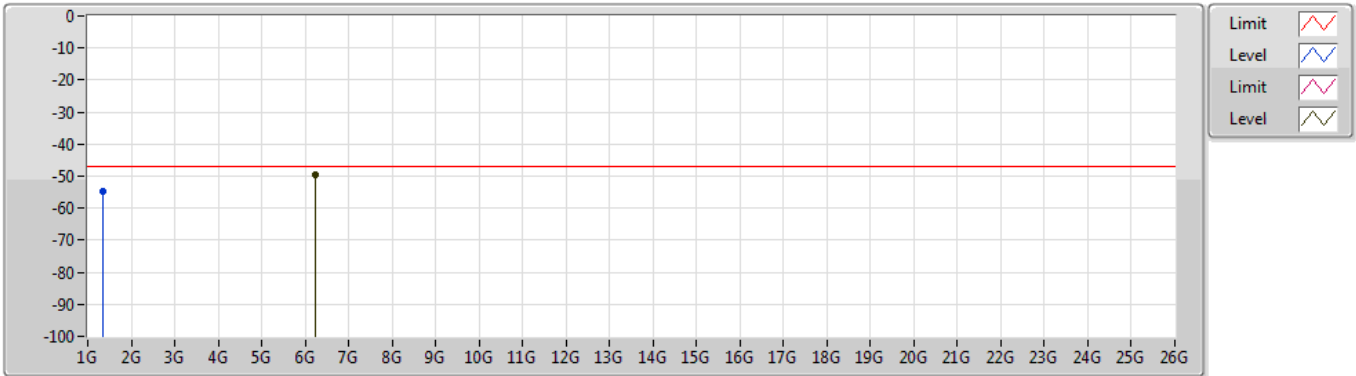
EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)								
1.34453G	-64.63	-47.00	-17.63	-17.52	Vertical	-47.11								
6.24998G	-51.02	-47.00	-4.02	-3.38	Vertical	-47.64								

802.11ac VHT80_Nss1,(MCS0)_2RX

03/09/2022

5210MHz_RX



EUT Y_2RX
Setting
1277-J-K-5

Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Factor (dB)	Condition	Raw (dBm)									
1.3468G	-54.58	-47.00	-7.58	-17.29	Horizontal	-37.29									
6.25001G	-49.56	-47.00	-2.56	-3.16	Horizontal	-46.40									

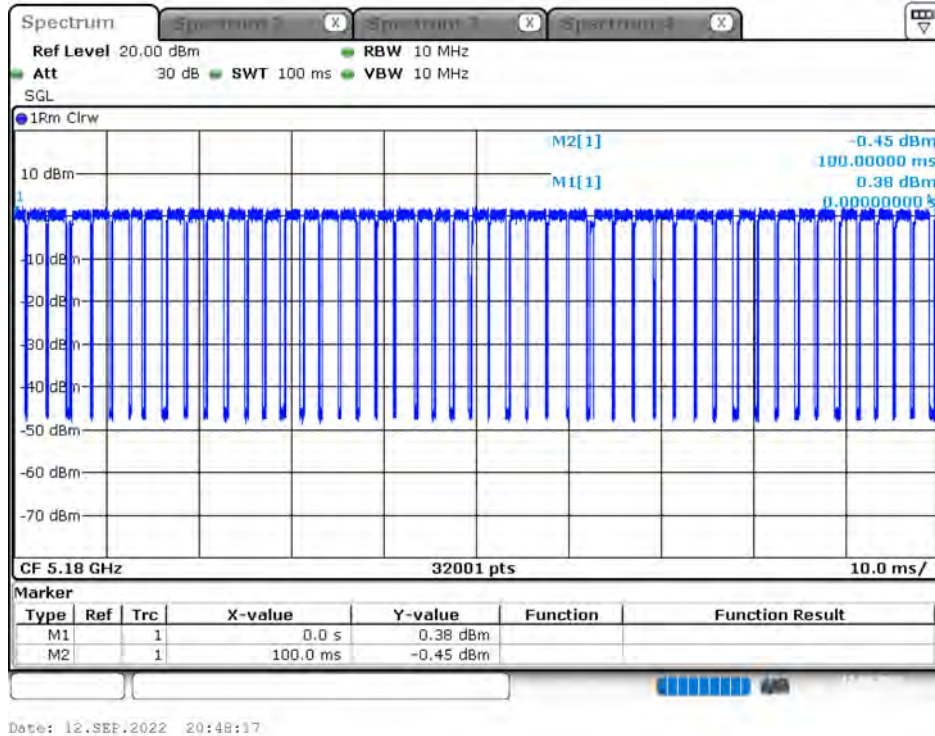
Adaptivity Result				
Detection Threshold Level		-68.41 dBm/MHz		
Modulation Mode	Freq. (MHz)	Adaptivity Interference Signals		
		AWGN	LTE	OFDM
802.11ac (VHT20)	5180	Pass	Pass	Pass
802.11ac (VHT80)	5210	Pass	-	-
Result		PASS		

Short Control Signal Transmissions Result									
Modulation Mode	Freq. (MHz)	Adaptivity Interference Signals							
		AWGN	LTE	OFDM	Limit (ms)	AWGN	LTE	OFDM	Limit
		SCST (ms)				Number of SCST			
802.11ac (VHT20)	5180	0.000	0.000	0.000	2.5	0	0	0	50
802.11ac (VHT80)	5210	0.000	-	-	2.5	0	-	-	50
Result	PASS								

Medium Access Mechanism & Maximum Channel Occupancy Time(s) Result					
Modulation Mode	Freq. (MHz)	Measured Data			
		Max. Value within 10000 Channel Occupancy Time(s)		Cumulative Probabilities p(n)	
		Result (ms)	Limit	Result	Limit
802.11ac (VHT20)	5180	2.001	Class 2	Pass	Class 2
802.11ac (VHT80)	5210	2.001	Class 2	Pass	Class 2
Result		PASS			

802.11ac (VHT20) – 5180MHz

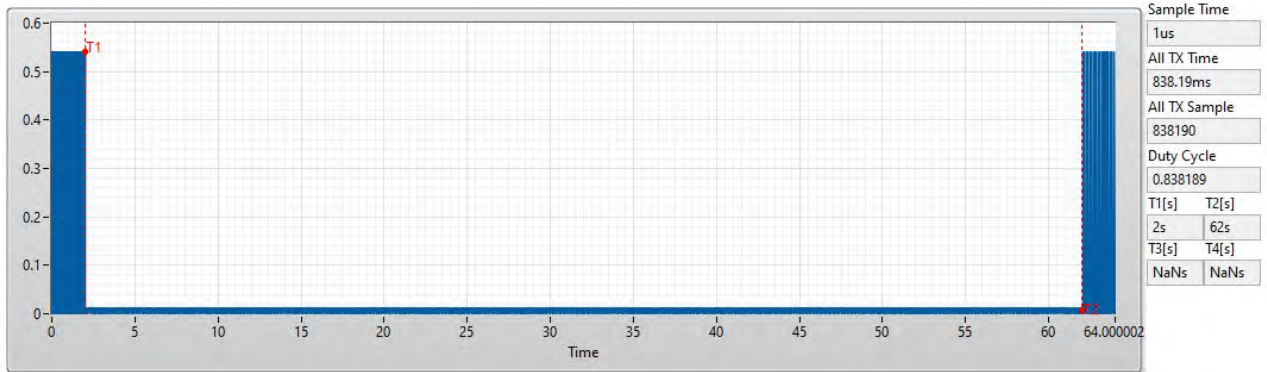
Duty Cycle Plot



R&S Agilent

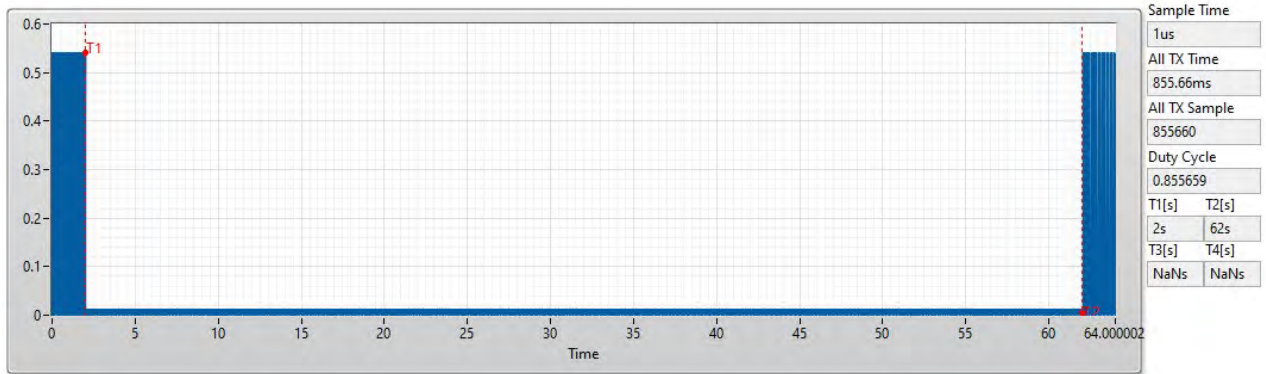
VISA session 1 GPIB0::20	Threshold (dBm) -30	Marker 1 (sec) 0	Space Time of Point 0.000003	No. of Pulse 26978
	Mean Level (dBm) 216.23m	Marker 2 (sec) 0.1	Mark 1 Point 1	Close TX Time(sec) 84.30625m
	RMS Level (dBm) 271.27m	Total Trace of Points 32001	Mark 2 Point 32001	Duty (%) 84.31

Adaptivity Result - AWGN



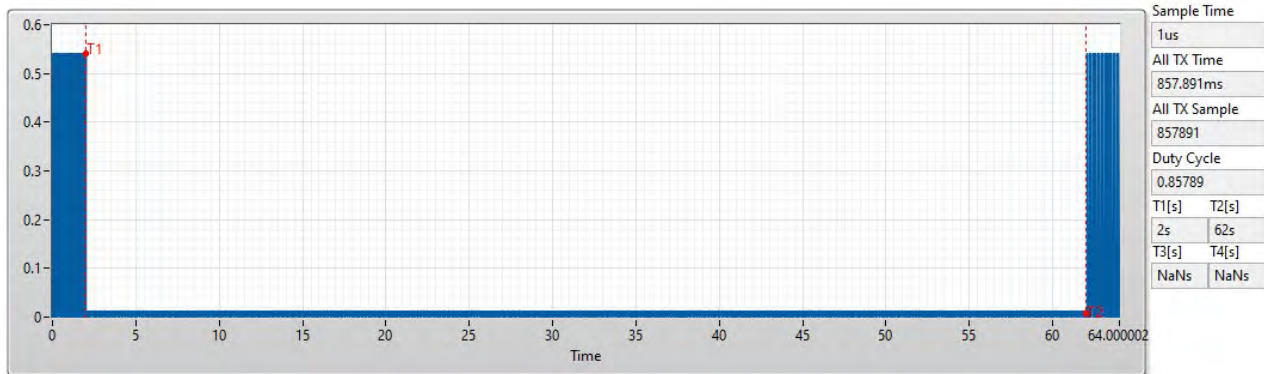
T1: Adding the interference signal.
T2: Removing the interference.

Adaptivity Result - LTE



T1: Adding the interference signal.
T2: Removing the interference.

Adaptivity Result - OFDM

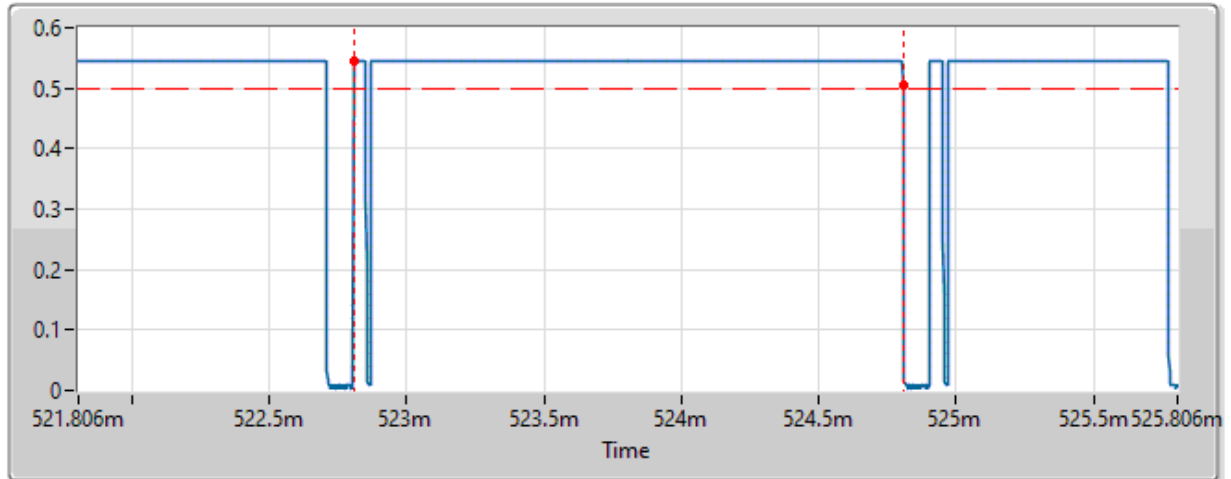


T1: Adding the interference signal.

T2: Removing the interference.

Max. Channel Occupancy Time

Max On Time



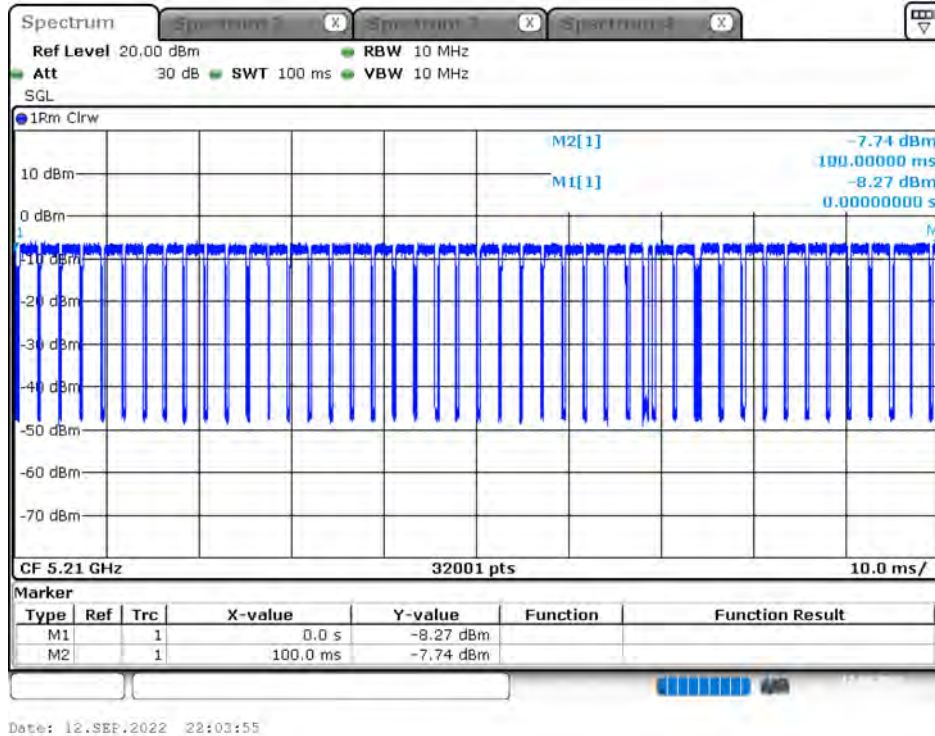
2.001ms

Cumulative Probabilities	
Priority Class	Class 2
Operating Type	Supervising Device

n	H(Bn)	Pn	Pn Limit	Result
0	67	0.0050	0.0500	PASS
1	26	0.0070	0.1200	PASS
2	140	0.0174	0.1825	PASS
3	89	0.0241	0.2450	PASS
4	26	0.0260	0.3075	PASS
5	36	0.0287	0.3700	PASS
6	36	0.0314	0.4325	PASS
7	48	0.0350	0.4950	PASS
8	47	0.0385	0.5575	PASS
9	50	0.0423	0.6200	PASS
10	80	0.0483	0.6825	PASS
11	629	0.0954	0.7450	PASS
12	149	0.1065	0.8075	PASS
13	322	0.1306	0.8700	PASS
14	1088	0.2120	0.9325	PASS
15	2792	0.4210	0.9950	PASS
16	7736	1.0000	1.0000	PASS

802.11ac (VHT80) – 5210MHz

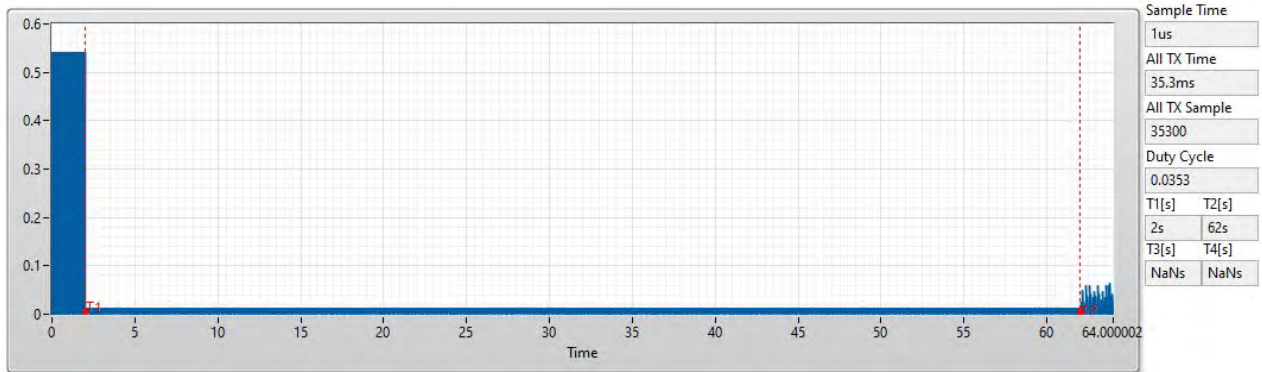
Duty Cycle Plot



R&S | Agilent

VISA session GPIB0::20	Threshold (dBm) -30	Marker 1 (sec) 0	Space Time of Point 0.000003	No. of Pulse 27356
	Mean Level (dBm) -7.85	Marker 2 (sec) 0.1	Mark 1 Point 1	Close TX Time(sec) 85.4875m
	RMS Level (dBm) -7.79	Total Trace of Points 32001	Mark 2 Point 32001	Duty (%) 85.49

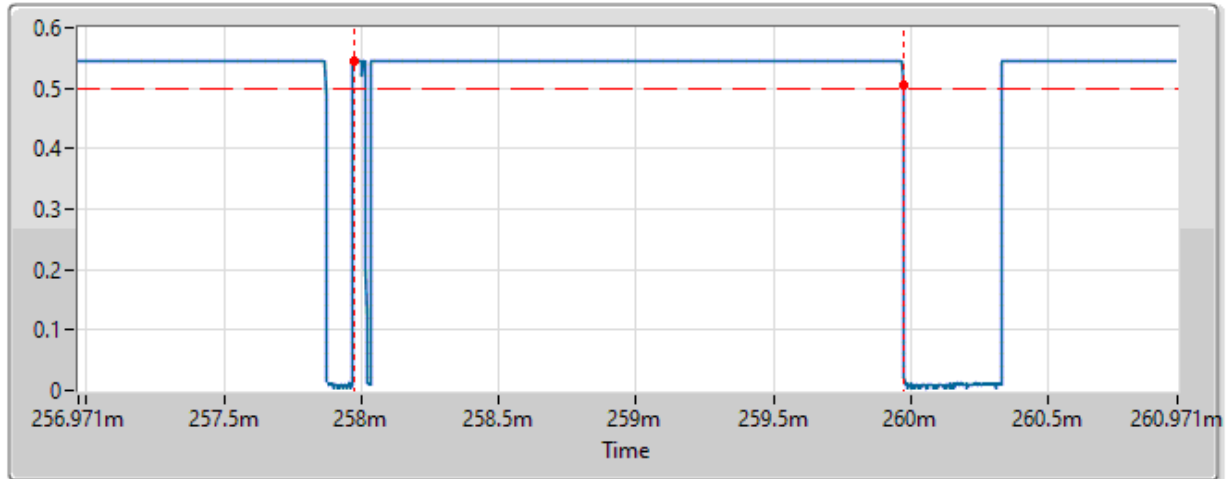
Adaptivity Result - AWGN



T1: Adding the interference signal.
T2: Removing the interference.

Max. Channel Occupancy Time

Max On Time



2.001ms

Cumulative Probabilities	
Priority Class	Class 2
Operating Type	Supervising Device

n	H(Bn)	Pn	Pn Limit	Result
0	125	0.0068	0.0500	PASS
1	18	0.0078	0.1200	PASS
2	54	0.0108	0.1825	PASS
3	102	0.0164	0.2450	PASS
4	11	0.0170	0.3075	PASS
5	25	0.0183	0.3700	PASS
6	27	0.0198	0.4325	PASS
7	40	0.0220	0.4950	PASS
8	28	0.0235	0.5575	PASS
9	27	0.0250	0.6200	PASS
10	32	0.0268	0.6825	PASS
11	35	0.0287	0.7450	PASS
12	25	0.0300	0.8075	PASS
13	40	0.0322	0.8700	PASS
14	24	0.0335	0.9325	PASS
15	59	0.0368	0.9950	PASS
16	17606	1.0000	1.0000	PASS

Receiver Blocking Result							
P _{min} (dBm)	-88.08						
Modulation Mode	Operation Freq. (MHz)	Wanted Signal Mean Power from Companion Device (dBm) P _{min} + 6 dB	Receiver Blocking Power (dBm)	Blocking Signal Freq. (MHz)	Type of Blocking Signal	Test Result	The highest level at which the performance criteria are met (dBm)
802.11a	5180	-82.08	-53	5100	CW	Pass	-38
	5180		-47	4900	CW	Pass	-33
	5180			5000	CW	Pass	-36
	5180			5975	CW	Pass	-25
Limit	PER(Packet Error Rate) ≤ 10%						
Result	PASS						

1. Photographs of Test Configuration

For Transmitter Unwanted Emissions outside the 5 GHz WLAN Bands:

FRONT VIEW

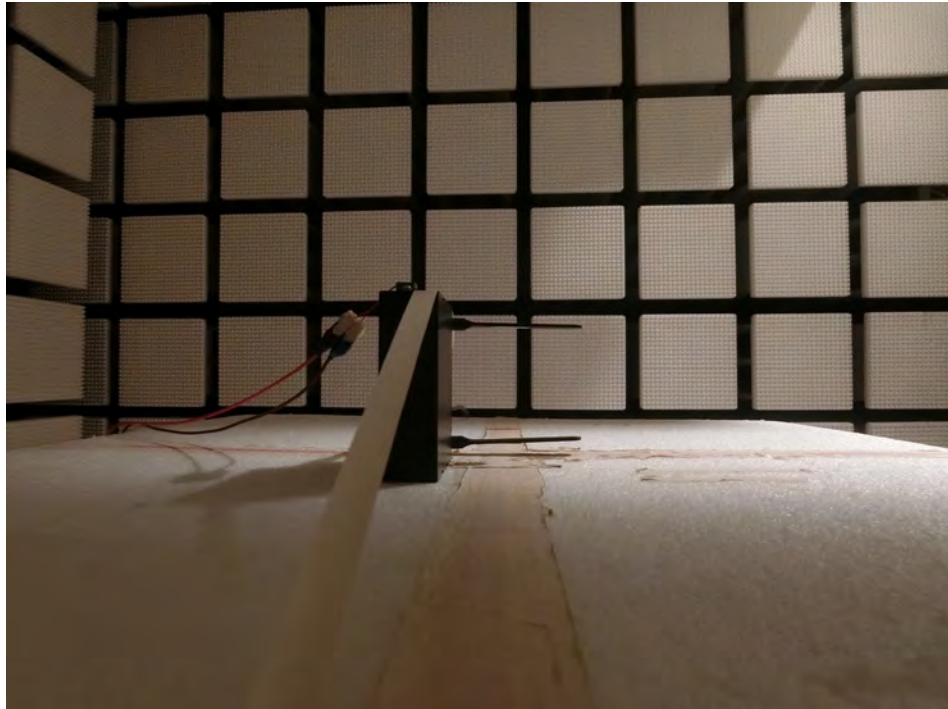


REAR VIEW



For Receiver Spurious Emissions:

FRONT VIEW



REAR VIEW



————THE END————