CE Test Report

Equipment	:	**802.11ac Professional Wi-Fi + BT5.0 Module**
Model No.	:	**SU60-SOMC (453-00003), SU60-SOMC-2G (453-00004) (please refer to section 1.1.1 for more details.)**
Brand Name	:	**Laird**
Applicant	:	**Laird Technologies**
Address	:	**W66N220 Commerce Court, Cedarburg, Wisconsin 53012, USA**
Standard	:	**EN 301 893 V2.1.1 (2017-05)**
Received Date	:	**Apr. 11, 2018**
Tested Date	:	**Sep. 18 ~ Oct. 03, 2018**

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by: **Approved by:**

Alex Huang

Alex Huang / Supervisor **Gary Chang / Manager**

Testing Laboratory 2732

Table of Contents

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Local Support Equipment List 10
1.3 Test Setup Chart 10
1.4 Test Equipment and Calibration Data 11
1.5 Testing Applied Standards 12
1.6 Measurement Uncertainty 13

2 TEST CONFIGURATION 14

2.1 Testing Condition 14
2.2 The Worst Test Modes and Channel Details 14

3 TRANSMITTER TEST RESULTS 15

3.1 Carrier Frequencies 15
3.2 Occupied Channel Bandwidth 20
3.3 RF Output Power, Transmit Power Control (TPC) and Power density 23
3.4 Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands 61
3.5 Transmitter Unwanted Emissions within the 5 GHz RLAN Band 127

4 RECEIVER TEST RESULTS 136

4.1 Receiver Spurious Emissions 136

5 ADAPTIVITY TEST RESULTS 202

5.1 Adaptivity 202

6 RECEIVER BLOCKING TEST RESULTS 217

6.1 Receiver Blocking 217

7 PHOTOGRAPHS OF THE TEST CONFIGURATION 220

8 TEST LABORATORY INFORMATION 223

Release Record

Report No.	Version	Description	Issued Date
ER841101AN	Rev. 01	Initial issue	Dec. 21, 2018
ER841101AN	Rev. 02	Typing error of modulation mode of section 5.1 is corrected	Aug. 17, 2022
ER841101AN	Rev. 03	The Frequency Range is corrected (page 5 & 8)	Sep. 13, 2024

Summary of Test Result

Ref. Std. Clause	Test Items	Measured	Result
4.2.1	Carrier Frequencies	Meet the requirement of limit.	Pass
4.2.2	Nominal Channel Bandwidth and Occupied Channel Bandwidth	Meet the requirement of limit.	Pass
4.2.3	RF Output Power & Transmit Power Control (TPC)	5.15-5.25GHz: 21.94 dBm 5.25-5.35GHz: 21.81 dBm 5.47-5.725GHz: 22.05 dBm	Pass
4.2.3	Power Density	Meet the requirement of limit.	Pass
4.2.4	Transmitter Unwanted Emissions	Meet the requirement of limit.	Pass
4.2.5	Receiver Spurious Emissions	Meet the requirement of limit.	Pass
4.2.6	Dynamic Frequency Selection (DFS)	Meet the requirement of limit.	Pass
4.2.7	Adaptivity (Channel Access Mechanism)	Meet the requirement of limit.	Pass
4.2.8	Receiver Blocking	Meet the requirement of limit.	Pass
4.2.9	User Access Restrictions	Meet the requirement of limit.	Pass
4.2.10	Geo-location capability	This test is not required since the device does not support this function	NA

Note: The DFS measurement was recorded in Report No.: EY841101.

Declaration of Conformity:
The judgement of conformity in the report is based on the measurement results excluding the measurement uncertainty.
Comments and Explanations:
None

1 General Description

1.1 Information

1.1.1 Product Details

The following models are provided to this EUT.

Brand Name	Model Name	Product Name	Description
Laird	SU60-SOMC (453-00003)	802.11ac Professional Wi-Fi + BT5.0 Module	2G/1G MCP
	SU60-SOMC-2G (453-00004)		4G/2G MCP
✦ The above models, both options were assessed and **SU60-SOMC-2G (453-00004)** was found to be worst case and was selected for the final testing.			

1.1.2 Specification of the Equipment under Test (EUT)

RF General Information					
IEEE Std. 802.11	**Frequency Range (MHz)**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
a	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [11]	1	6-54 Mbps
				2	6-54 Mbps
n (HT20)	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [11]	1	MCS 0-7
				2	MCS 0-7
				2	MCS 8-15
n (HT40)	5150-5250 5250-5350 5470-5725	5190-5230 5270-5310 5510-5670	38-46 [2] 54-62 [2] 102-134 [5]	1	MCS 0-7
				2	MCS 0-7
				2	MCS 8-15
ac (VHT20)	5150-5250 5250-5350 5470-5725	5180-5240 5260-5320 5500-5700	36-48 [4] 52-64 [4] 100-140 [11]	1	MCS 0-9
				2	
ac (VHT40)	5150-5250 5250-5350 5470-5725	5190-5230 5270-5310 5510-5670	38-46 [2] 54-62 [2] 102-134 [5]	1	MCS 0-9
				2	
ac (VHT80)	5150-5250 5250-5350 5470-5725	5210 5290 5530-5610	42 [1] 58 [1] 106-122 [2]	1	MCS 0-9
				2	
Note 1: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. Note 2: The device supports TX antenna diversity function. The conducted power of single chain is same for 1TX and 2TX operating mode. Therefore, Ant1 + Ant 2 configuration is chosen for final testing.					

1.1.3 Antenna Details

Brand	Model	Type	Connector	Operating Frequency (MHz) / Gain (dBi)			
				2400~2483.5	5150~5250	5250~5350	5470~5725
LSR	001-0009	Dipole	IPEX U.FL	2	2		
Laird	NanoBlade-IP04	PCB Dipole	IPEX U.FL	2	3.9	3.9	4
Laird	MAF95310 Mini NanoBlade Flex	PCB Dipole	IPEX U.FL	2.79	3.38		
LSR	FlexPIFA 001-0016	PIFA	IPEX U.FL	2.5	3		
Ethertronics	WLAN_1000146	Magnetic Dipole	IPEX U.FL	2.5	3.5	3.5	3.5
Laird	MIMO FlexPIFA Antenna	PIFA	IPEX U.FL	2	3		
LSR	001-0009 (with filter)	Dipole	IPEX U.FL	2	2		

1.1.4 EUT Operational Condition

Power Supply Type	3.3 Vdc from host		
SW Version	6.0.0.x		
Operational Voltage	☒ Vnom (3.30 V)	☒ Vmax (3.63 V)	☒ Vmin (2.97V)
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (85°C)	☒ Tmin (-30°C)

1.1.5 Accessories

Accessories		
No.	**Equipment**	**Description**
1	AC Adapter	Brand Name: I.T.E POWER SUPPLY Model Name: MU12AY120100-A1 Power Rating: I/P: 100-240Vac, 50/60Hz, 0.3A O/P: 12Vdc, 1A Power Line: 1.48m non-shielded cable without core

1.1.6 Adaptive Equipment

Adaptive Equipment		
☒	Adaptive Equipment without the possibility to switch to a non-adaptive mode:	
	☒	The equipment has implemented an LBT based DAA mechanism:
		☐ The equipment is Frame Based equipment
		☒ The equipment is Load Based equipment
		☐ The equipment can switch dynamically between Frame Based and Load Based equipment
	☐	The equipment has implemented an non-LBT based DAA mechanism
	☐	The equipment can operate in more than one adaptive mode
☐	Adaptive Equipment which can also operate in a non-adaptive mode	

1.1.7 Channel List

Frequency band (MHz)		5150~5350	
802.11a / n HT20 / ac VHT20		802.11n HT40 / ac VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	802.11ac VHT80	
56	5280	42	5210
60	5300	58	5290
64	5320	--	--

Frequency band (MHz)		5470-5725	
802.11a / n HT20 / ac VHT20		802.11n HT40 / ac VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
100	5500	102	5510
104	5520	110	5550
108	5540	118	5590
112	5560	126	5630
116	5580	134	5670
120	5600	802.11ac VHT80	
124	5620	106	5530
128	5640	122	5610
132	5660	--	--
136	5680	--	--
140	5700	--	--

1.1.8 Test Tool and Duty Cycle

Test Tool	Test Command	
Modulation Mode	Duty Cycle Of Test Signal (%)	Duty Factor (dB)
a	100.00%	0.00
ac (VHT20)	100.00%	0.00
ac (VHT40)	100.00%	0.00
ac (VHT80)	100.00%	0.00

1.1.9 Power Setting

Modulation Mode	Test Frequency (MHz)											
	a / ac (VHT20)				ac (VHT40)				ac (VHT80)			
	5180	5320	5500	5700	5190	5310	5510	5670	5210	5290	5530	5610
a	Default	Default	Default	Default	--	--	--	--	--	--	--	--
ac (VHT20)	Default	Default	Default	Default	--	--	--	--	--	--	--	--
ac (VHT40)	--	--	--	--	Default	Default	Default	Default	--	--	--	--
ac (VHT80)	--	--	--	--	--	--	--	--	Default	Default	Default	Default

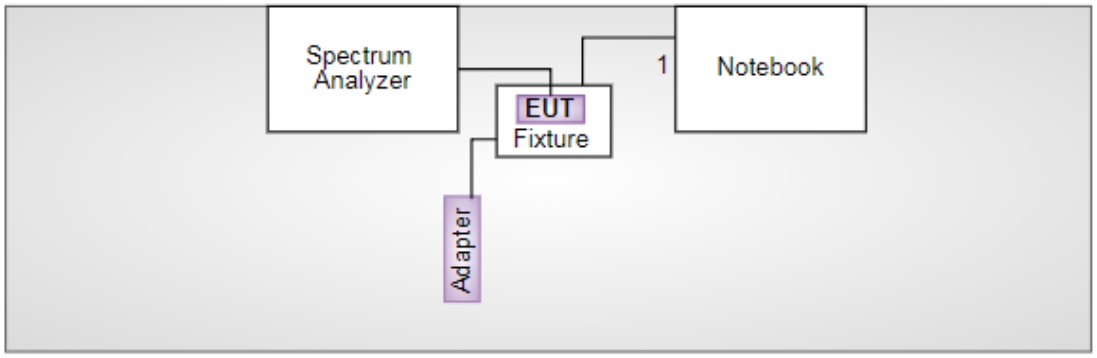
1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**S/N**	**Remarks**
1	Notebook	DELL	Latitude E6430	F2JB4X1	---
2	Notebook	DELL	Latitude E6430	D3LNYW1	---
3	Fixture	---	---	---	Provided by applicant.

Note: Fixture is provided by applicant.

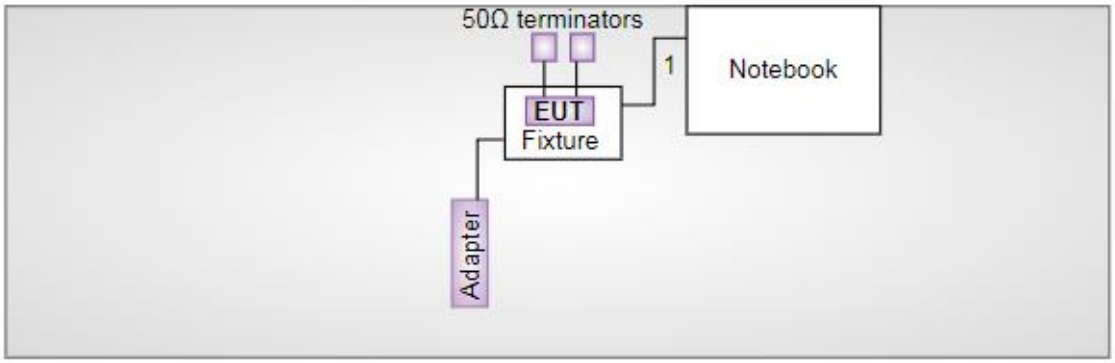
1.3 Test Setup Chart

Test Setup Diagram (Conducted)



No.	Signal cable / Length (m)
1	USB, 1m shielded.

Test Setup Diagram (Radiated)



No.	Signal cable / Length (m)
1	USB, 1m shielded.

1.4 Test Equipment and Calibration Data

Test Item	Radiated Emissions				
Test Site	Fully-anechoic chamber 2 / (05CH02-WS)				
Tested Date	Sep. 18 ~ Sep. 25, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	Agilent	N9010A	MY52221474	Oct. 16, 2017	Oct. 15, 2018
Bilog Antenna 30-1000MHz	SCHWARZBECK	VULB9168	9168-563	Jan. 02, 2018	Jan. 01, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	9120D-1205	Jan. 11, 2018	Jan. 10, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 19, 2017	Dec. 18, 2018
Preamplifier	Agilent	83017A	MY53270013	Dec. 26, 2017	Dec. 25, 2018
Preamplifier	EMC	EMC02325	980188	Dec. 12, 2017	Dec. 11, 2018
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22622/4	Dec. 05, 2017	Dec. 04, 2018
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22623/4	Dec. 05, 2017	Dec. 04, 2018
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22621/4	Dec. 05, 2017	Dec. 04, 2018
RF cable-4M	HUBER+SUHNER	SUCOFLEX104	MY22579/4	Dec. 05, 2017	Dec. 04, 2018
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-002	Dec. 05, 2017	Dec. 04, 2018
LF cable-3M	EMC	EMC8D-NM-NM-3000	131102	Dec. 05, 2017	Dec. 04, 2018
LF cable-10M	EMC	EMC8D-NM-NM-10000	131101	Dec. 05, 2017	Dec. 04, 2018
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Adaptivity				
Test Site	(TH01-WS)				
Tested Date	Sep. 26, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum	R&S	FSV-7	101607	Dec. 14, 2017	Dec. 13, 2018
RF cable-4M	HUBER+SUHNER	SUCOFLEX_104	MY15686/4	Dec. 04, 2017	Dec. 03, 2018
RF cable-0.5M	HUBER+SUHNER	SUCOFLEX_104	296081/4	Dec. 04, 2017	Dec. 03, 2018
RF cable-0.2M	HUBER+SUHNER	SUCOFLEX_104	329023/4	Dec. 04, 2017	Dec. 03, 2018
RF cable-0.2M	HUBER+SUHNER	SUCOFLEX_104	329021/4	Dec. 04, 2017	Dec. 03, 2018
MXG-B RF Vector Signal Generator	Agilent	N5182B	MY53050081	Apr. 16, 2018	Apr. 15, 2019
Preamplifier	Burgeon	BPA-530	100219	Nov. 08, 2017	Nov. 07, 2018
Oscilloscope	National Instruments	USB-5133	F651FF	Jun. 19, 2018	Jun. 18, 2019
Measurement Software	Sporton	Sporton_3	1.0.0.22	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Oct. 03, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101486	Nov. 21, 2017	Nov. 20, 2018
Power Sensor	Agilent	U2021XA	MY53480019	Jan. 29, 2018	Jan. 28, 2019
Power Sensor	Agilent	U2021XA	MY53510003	Jan. 29, 2018	Jan. 28, 2019
Power Sensor	Agilent	U2021XA	MY54070003	Feb. 08, 2018	Feb. 07, 2019
Power Sensor	Agilent	U2021XA	MY54060013	Feb. 08, 2018	Feb. 07, 2019
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 01, 2017	Nov. 30, 2018
Combiner(1X2)	woken	0120A02201801O	DOM2AEW1A23	Dec. 04, 2017	Dec. 03, 2018
Combiner(1X4)	woken	0120A04056002D	111204	Dec. 04, 2017	Dec. 03, 2018
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Measurement Software	Agilent	EN RF test	1.1501125	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Receiver Blocking				
Test Site	(05CH02-WS)				
Tested Date	Oct. 02, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Wireless connectivity tester	ROHDE&SCHWARZ	CMW270	100856	Nov. 13, 2017	Nov. 12, 2018
Signal Generator	R&S	SMB100A	175727	Oct. 26, 2017	Oct. 25, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500202/4	Dec. 07, 2017	Dec. 06, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296088/4	Dec. 07, 2017	Dec. 06, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329023/4	Dec. 07, 2017	Dec. 06, 2018
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied 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)

1.6 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)

Measurement Uncertainty		
Parameters	**Uncertainty**	**Limit**
Radio Frequency	±1.4 x 10^{-9}	±1 × 10^{-5}
RF power conducted	±0.808 dB	±1,5 dB
RF power radiated	±3.398 dB	±6 dB
Spurious emission, conducted	±2.470 dB	±3 dB
Spurious emission, radiated	±3.398 dB	±6 dB
Humidity	±4.7%	±5 %
Temperature	±0.8 ºC	±2 °C
Time	±0.1 %	±10 %

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
RF Conducted	TH01-WS	25°C / 65%	Ryan Lee
Radiated Emission	05CH02-WS	24°C / 65%	Ryan Lee
Adaptivity	TH01-WS	23°C / 67%	Jack Li
Receiver Blocking	05CH02-WS	22.5°C / 64%	Jack Li

2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Carrier Frequencies Occupied Channel Bandwidth	11a VHT20 VHT40 VHT80	5180 / 5320 / 5500 / 5700 5180 / 5320 / 5500 / 5700 5190 / 5310 / 5510 / 5670 5210 / 5290 / 5530 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	2
RF Output Power Power Spectral Density	11a VHT20 VHT40 VHT80	5180 / 5320 / 5500 / 5700 5180 / 5320 / 5500 / 5700 5190 / 5310 / 5510 / 5670 5210 / 5290 / 5530 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	1, 2, 3, 4
Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands	11a VHT20 VHT40 VHT80	5180 / 5700 5180 / 5700 5190 / 5670 5210 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	2
Transmitter Unwanted Emissions within the 5 GHz RLAN Band	11a VHT20 VHT40 VHT80	5180 / 5320 / 5500 / 5700 5180 / 5320 / 5500 / 5700 5190 / 5310 / 5510 / 5670 5210 / 5290 / 5530 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	2
Receiver Spurious Emissions	11a VHT20 VHT40 VHT80	5180 / 5700 5180 / 5700 5190 / 5670 5210 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	2
Adaptivity	VHT20 VHT40	5180 / 5500 5190 / 5510	MCS 0 MCS 0	2
Receiver Blocking	11a	5180 / 5700	6 Mbps	2

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane result was found as the worst case and was shown in this report.
2. 4 types antenna are used for this device, highest gain antenna of each type is selected to perform test as below test configuration.

   Configuration 1 : Dipole antenna with 2 dBi gain

   Configuration 2 : PCB Dipole antenna with 3.9 dBi (5.15~5.35GHz) / 4dBi gain (5.47~5.725GHz)

   Configuration 3 : PIFA antenna with 3dBi gain

   Configuration 4 : Magnetic Dipole with 3.5dBi gain
3. 50Ω terminator is connected to antenna port of EUT for radiated emission measurement.

3 Transmitter Test Results

3.1 Carrier Frequencies

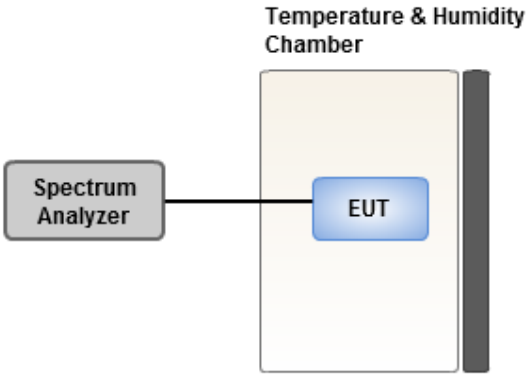
3.1.1 Limit of Carrier Frequencies

The actual centre frequency for any given channel declared by the manufacturer shall be maintained within the range f_c ± 20 ppm.

3.1.2 Test Procedures

Reference to clause 5.4.2.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.1.3 Test Setup



3.1.4 Test Result of Carrier Frequencies

Test Configuration 2

Summary

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
5.15-5.25GHz	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	5.18G	5.18009011G	17.396	20	1	-
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	5.18G	5.18009007G	17.388	20	1	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	5.19G	5.19009704G	18.697	20	1	-
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	5.21G	5.21009309G	17.868	20	1	-
5.25-5.35GHz	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	5.32G	5.32009563G	17.976	20	1	-
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	5.32G	5.32009575G	17.998	20	1	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	5.31G	5.3101004G	18.908	20	1	-
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	5.29G	5.29009477G	17.915	20	1	-
5.47-5.725GHz	-	-	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	Pass	5.7G	5.70010108G	17.733	20	1	-
802.11ac VHT20_Nss1,(MCS0)_2TX	Pass	5.7G	5.70010114G	17.744	20	1	-
802.11ac VHT40_Nss1,(MCS0)_2TX	Pass	5.67G	5.67010593G	18.683	20	1	-
802.11ac VHT80_Nss1,(MCS0)_2TX	Pass	5.53G	5.53009587G	17.336	20	1	-

Result

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	5.18G	5.18000843G	1.628	20	1	-
5180MHz_TminVmax	Pass	5.18G	5.18001255G	2.423	20	1	-
5180MHz_TminVmin	Pass	5.18G	5.18001264G	2.441	20	1	-
5180MHz_TmaxVmax	Pass	5.18G	5.18008989G	17.354	20	1	-
5180MHz_TmaxVmin	Pass	5.18G	5.18009011G	17.396	20	1	-
5320MHz_TnomVnom	Pass	5.32G	5.32000859G	1.614	20	1	-
5320MHz_TminVmax	Pass	5.32G	5.32001263G	2.374	20	1	-
5320MHz_TminVmin	Pass	5.32G	5.32001254G	2.358	20	1	-
5320MHz_TmaxVmax	Pass	5.32G	5.32009523G	17.9	20	1	-
5320MHz_TmaxVmin	Pass	5.32G	5.32009563G	17.976	20	1	-
5500MHz_TnomVnom	Pass	5.5G	5.50000938G	1.706	20	1	-
5500MHz_TminVmax	Pass	5.5G	5.50001135G	2.064	20	1	-
5500MHz_TminVmin	Pass	5.5G	5.50001168G	2.124	20	1	-
5500MHz_TmaxVmax	Pass	5.5G	5.50009566G	17.393	20	1	-
5500MHz_TmaxVmin	Pass	5.5G	5.50009608G	17.469	20	1	-
5700MHz_TnomVnom	Pass	5.7G	5.70000933G	1.637	20	1	-
5700MHz_TminVmax	Pass	5.7G	5.70001262G	2.214	20	1	-
5700MHz_TminVmin	Pass	5.7G	5.70001255G	2.202	20	1	-
5700MHz_TmaxVmax	Pass	5.7G	5.70009969G	17.489	20	1	-
5700MHz_TmaxVmin	Pass	5.7G	5.70010108G	17.733	20	1	-
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	5.18G	5.18000842G	1.625	20	1	-
5180MHz_TminVmax	Pass	5.18G	5.1800125G	2.413	20	1	-
5180MHz_TminVmin	Pass	5.18G	5.18001262G	2.437	20	1	-
5180MHz_TmaxVmax	Pass	5.18G	5.18009003G	17.38	20	1	-
5180MHz_TmaxVmin	Pass	5.18G	5.18009007G	17.388	20	1	-
5320MHz_TnomVnom	Pass	5.32G	5.32000857G	1.612	20	1	-
5320MHz_TminVmax	Pass	5.32G	5.3200126G	2.368	20	1	-
5320MHz_TminVmin	Pass	5.32G	5.32001253G	2.354	20	1	-
5320MHz_TmaxVmax	Pass	5.32G	5.32009539G	17.931	20	1	-
5320MHz_TmaxVmin	Pass	5.32G	5.32009575G	17.998	20	1	-
5500MHz_TnomVnom	Pass	5.5G	5.50000941G	1.712	20	1	-

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
5500MHz_TminVmax	Pass	5.5G	5.50001127G	2.048	20	1	-
5500MHz_TminVmin	Pass	5.5G	5.50001156G	2.103	20	1	-
5500MHz_TmaxVmax	Pass	5.5G	5.50009557G	17.376	20	1	-
5500MHz_TmaxVmin	Pass	5.5G	5.50009582G	17.422	20	1	-
5700MHz_TnomVnom	Pass	5.7G	5.70000933G	1.637	20	1	-
5700MHz_TminVmax	Pass	5.7G	5.70001258G	2.207	20	1	-
5700MHz_TminVmin	Pass	5.7G	5.70001254G	2.201	20	1	-
5700MHz_TmaxVmax	Pass	5.7G	5.70009968G	17.488	20	1	-
5700MHz_TmaxVmin	Pass	5.7G	5.70010114G	17.744	20	1	-
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	5.19G	5.19000901G	1.736	20	1	-
5190MHz_TminVmax	Pass	5.19G	5.19001305G	2.513	20	1	-
5190MHz_TminVmin	Pass	5.19G	5.19001287G	2.48	20	1	-
5190MHz_TmaxVmax	Pass	5.19G	5.19009649G	18.592	20	1	-
5190MHz_TmaxVmin	Pass	5.19G	5.19009704G	18.697	20	1	-
5310MHz_TnomVnom	Pass	5.31G	5.31000823G	1.549	20	1	-
5310MHz_TminVmax	Pass	5.31G	5.31001336G	2.516	20	1	-
5310MHz_TminVmin	Pass	5.31G	5.31001339G	2.522	20	1	-
5310MHz_TmaxVmax	Pass	5.31G	5.31010017G	18.865	20	1	-
5310MHz_TmaxVmin	Pass	5.31G	5.3101004G	18.908	20	1	-
5510MHz_TnomVnom	Pass	5.51G	5.5100096G	1.742	20	1	-
5510MHz_TminVmax	Pass	5.51G	5.51001253G	2.274	20	1	-
5510MHz_TminVmin	Pass	5.51G	5.51001264G	2.294	20	1	-
5510MHz_TmaxVmax	Pass	5.51G	5.51010061G	18.259	20	1	-
5510MHz_TmaxVmin	Pass	5.51G	5.51010122G	18.371	20	1	-
5670MHz_TnomVnom	Pass	5.67G	5.67000923G	1.627	20	1	-
5670MHz_TminVmax	Pass	5.67G	5.67001366G	2.409	20	1	-
5670MHz_TminVmin	Pass	5.67G	5.67001367G	2.411	20	1	-
5670MHz_TmaxVmax	Pass	5.67G	5.67010562G	18.627	20	1	-
5670MHz_TmaxVmin	Pass	5.67G	5.67010593G	18.683	20	1	-
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	5.21G	5.21000903G	1.732	20	1	-
5210MHz_TminVmax	Pass	5.21G	5.21001134G	2.177	20	1	-
5210MHz_TminVmin	Pass	5.21G	5.21001069G	2.051	20	1	-
5210MHz_TmaxVmax	Pass	5.21G	5.21009211G	17.679	20	1	-

Mode	Result	Ch (Hz)	Center (Hz)	ppm	Limit (ppm)	Port	Remark
5210MHz_TmaxVmin	Pass	5.21G	5.21009309G	17.868	20	1	-
5290MHz_TnomVnom	Pass	5.29G	5.29000869G	1.643	20	1	-
5290MHz_TminVmax	Pass	5.29G	5.29001181G	2.233	20	1	-
5290MHz_TminVmin	Pass	5.29G	5.29001186G	2.243	20	1	-
5290MHz_TmaxVmax	Pass	5.29G	5.29009473G	17.907	20	1	-
5290MHz_TmaxVmin	Pass	5.29G	5.29009477G	17.915	20	1	-
5530MHz_TnomVnom	Pass	5.53G	5.53000959G	1.733	20	1	-
5530MHz_TminVmax	Pass	5.53G	5.53001117G	2.02	20	1	-
5530MHz_TminVmin	Pass	5.53G	5.53001127G	2.038	20	1	-
5530MHz_TmaxVmax	Pass	5.53G	5.53009587G	17.336	20	1	-
5530MHz_TmaxVmin	Pass	5.53G	5.53009505G	17.189	20	1	-
5610MHz_TnomVnom	Pass	5.61G	5.6100096G	1.711	20	1	-
5610MHz_TminVmax	Pass	5.61G	5.61001187G	2.116	20	1	-
5610MHz_TminVmin	Pass	5.61G	5.61001175G	2.094	20	1	-
5610MHz_TmaxVmax	Pass	5.61G	5.61009673G	17.242	20	1	-
5610MHz_TmaxVmin	Pass	5.61G	5.61009682G	17.259	20	1	-

3.2 Occupied Channel Bandwidth

3.2.1 Limit of Occupied Channel Bandwidth

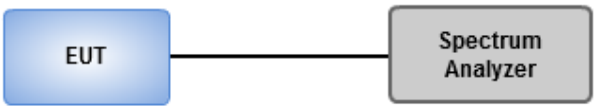
The Nominal Channel Bandwidth for a single Operating Channel shall be 20 MHz

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.

3.2.2 Test Procedures

Reference to clause 5.4.3.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.2.3 Test Setup



3.2.4 Test Result of Occupied Channel Bandwidth

Test Configuration 2

Summary

Mode	OBW (Hz)	ITU-Code
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	16.436M	16M4D1D
802.11ac VHT20_Nss1,(MCS0)_2TX	17.616M	17M6D1D
802.11ac VHT40_Nss1,(MCS0)_2TX	36.171M	36M2D1D
802.11ac VHT80_Nss1,(MCS0)_2TX	75.821M	75M8D1D
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	16.446M	16M4D1D
802.11ac VHT20_Nss1,(MCS0)_2TX	17.626M	17M6D1D
802.11ac VHT40_Nss1,(MCS0)_2TX	36.191M	36M2D1D
802.11ac VHT80_Nss1,(MCS0)_2TX	75.981M	76M0D1D
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	16.446M	16M4D1D
802.11ac VHT20_Nss1,(MCS0)_2TX	17.626M	17M6D1D
802.11ac VHT40_Nss1,(MCS0)_2TX	36.191M	36M2D1D
802.11ac VHT80_Nss1,(MCS0)_2TX	76.021M	76M0D1D

OBW = Minimum99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	fl-OBW (Hz)	fh-OBW (Hz)	OBW (Hz)	N dB (Hz)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	16M~20M	5.171782G	5.188218G	16.436M	16.56M
5320MHz_TnomVnom	Pass	16M~20M	5.311772G	5.328218G	16.446M	16.56M
5500MHz_TnomVnom	Pass	16M~20M	5.491772G	5.508218G	16.446M	16.55M
5700MHz_TnomVnom	Pass	16M~20M	5.691772G	5.708218G	16.446M	16.56M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz_TnomVnom	Pass	16M~20M	5.171192G	5.188808G	17.616M	17.78M
5320MHz_TnomVnom	Pass	16M~20M	5.311182G	5.328808G	17.626M	17.78M
5500MHz_TnomVnom	Pass	16M~20M	5.491182G	5.508808G	17.626M	17.77M
5700MHz_TnomVnom	Pass	16M~20M	5.691182G	5.708808G	17.626M	17.76M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz_TnomVnom	Pass	32M~40M	5.171925G	5.208095G	36.171M	36.48M
5310MHz_TnomVnom	Pass	32M~40M	5.291905G	5.328095G	36.191M	36.48M
5510MHz_TnomVnom	Pass	32M~40M	5.491905G	5.528095G	36.191M	36.5M
5670MHz_TnomVnom	Pass	32M~40M	5.651925G	5.688095G	36.171M	36.48M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz_TnomVnom	Pass	64M~80M	5.172129G	5.247951G	75.821M	76.52M
5290MHz_TnomVnom	Pass	64M~80M	5.252009G	5.327991G	75.981M	76.56M
5530MHz_TnomVnom	Pass	64M~80M	5.49197G	5.567991G	75.981M	76.56M
5610MHz_TnomVnom	Pass	64M~80M	5.572009G	5.64803G	76.021M	76.56M

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;

3.3 RF Output Power, Transmit Power Control (TPC) and Power density

3.3.1 Limit of RF Output Power, Transmit Power Control (TPC) and Power Density

Mean e.i.r.p. limits for RF output power and Power Density at the highest power level (P_H)

Frequency range (MHz)	Mean e.i.r.p. limit for P_H (dBm)		Mean e.i.r.p. density limit (dBm/MHz)	
	With TPC	Without TPC	With TPC	Without TPC
5 150 to 5 350	23	20/23 (see note 1)	10	7/10 (see note 2)
5 470 to 5 725	30 (see note 3)	27 (see note 3)	17 (see note 3)	14 (see note 3)

Note 1: The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 23 dBm.
Note 2: The applicable limit is 7 dBm/MHz except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 10 dBm/MHz.
Note 3: Slave devices without a *Radar Interference Detection* function shall comply with the limits for the frequency range 5 250 MHz to 5 350 MHz.

Mean e.i.r.p. limits for RF Output Power at the lowest power level of the TPC range

Frequency range (MHz)	Mean e.i.r.p. (dBm) limit for P_L
5 250 to 5 350	17
5 470 to 5 725	24 (see note)

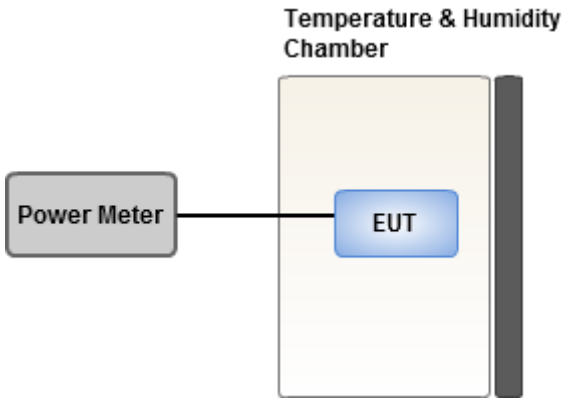
Note: Slave devices without a *Radar Interference Detection* function shall comply with the limits for the band 5 250 MHz to 5 350 MHz.

3.3.2 Test Procedures

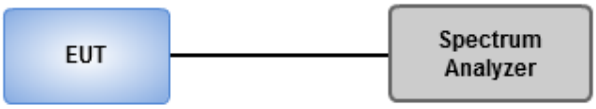
Reference to clause 5.4.4.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.3.3 Test Setup

For RF Output Power, Transmit Power Control (TPC)



For Power Density



3.3.4 Test Result of RF Output Power at the Highest Power

Test Configuration 1

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	18.51	23
$T_{min}V_{max}$	5180	19.15	23
$T_{min}V_{min}$	5180	19.17	23
$T_{max}V_{max}$	5180	17.49	23
$T_{max}V_{min}$	5180	17.46	23
$T_{nom}V_{nom}$	5320	18.44	23
$T_{min}V_{max}$	5320	19.07	23
$T_{min}V_{min}$	5320	19.09	23
$T_{max}V_{max}$	5320	17.31	23
$T_{max}V_{min}$	5320	17.29	23
$T_{nom}V_{nom}$	5500	18.30	23
$T_{min}V_{max}$	5500	18.95	23
$T_{min}V_{min}$	5500	18.97	23
$T_{max}V_{max}$	5500	17.11	23
$T_{max}V_{min}$	5500	17.08	23
$T_{nom}V_{nom}$	5700	18.27	23
$T_{min}V_{max}$	5700	19.09	23
$T_{min}V_{min}$	5700	19.12	23
$T_{max}V_{max}$	5700	16.76	23
$T_{max}V_{min}$	5700	16.74	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	18.60	23
$T_{min}V_{max}$	5180	19.21	23
$T_{min}V_{min}$	5180	19.24	23
$T_{max}V_{max}$	5180	17.43	23
$T_{max}V_{min}$	5180	17.41	23
$T_{nom}V_{nom}$	5320	18.57	23
$T_{min}V_{max}$	5320	19.18	23
$T_{min}V_{min}$	5320	19.20	23
$T_{max}V_{max}$	5320	17.45	23
$T_{max}V_{min}$	5320	17.43	23
$T_{nom}V_{nom}$	5500	18.39	23
$T_{min}V_{max}$	5500	19.09	23
$T_{min}V_{min}$	5500	19.12	23
$T_{max}V_{max}$	5500	17.22	23
$T_{max}V_{min}$	5500	17.20	23
$T_{nom}V_{nom}$	5700	18.44	23
$T_{min}V_{max}$	5700	19.26	23
$T_{min}V_{min}$	5700	19.28	23
$T_{max}V_{max}$	5700	17.24	23
$T_{max}V_{min}$	5700	17.22	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	19.39	23
$T_{min}V_{max}$	5190	20.02	23
$T_{min}V_{min}$	5190	20.04	23
$T_{max}V_{max}$	5190	18.18	23
$T_{max}V_{min}$	5190	18.16	23
$T_{nom}V_{nom}$	5310	19.26	23
$T_{min}V_{max}$	5310	19.89	23
$T_{min}V_{min}$	5310	19.91	23
$T_{max}V_{max}$	5310	17.05	23
$T_{max}V_{min}$	5310	17.03	23
$T_{nom}V_{nom}$	5510	18.13	23
$T_{min}V_{max}$	5510	18.78	23
$T_{min}V_{min}$	5510	18.80	23
$T_{max}V_{max}$	5510	16.92	23
$T_{max}V_{min}$	5510	16.90	23
$T_{nom}V_{nom}$	5670	19.11	23
$T_{min}V_{max}$	5670	20.03	23
$T_{min}V_{min}$	5670	20.05	23
$T_{max}V_{max}$	5670	17.86	23
$T_{max}V_{min}$	5670	17.84	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	18.69	23
$T_{min}V_{max}$	5210	19.33	23
$T_{min}V_{min}$	5210	19.36	23
$T_{max}V_{max}$	5210	17.48	23
$T_{max}V_{min}$	5210	17.46	23
$T_{nom}V_{nom}$	5290	18.61	23
$T_{min}V_{max}$	5290	19.24	23
$T_{min}V_{min}$	5290	19.28	23
$T_{max}V_{max}$	5290	17.38	23
$T_{max}V_{min}$	5290	17.35	23
$T_{nom}V_{nom}$	5530	17.51	23
$T_{min}V_{max}$	5530	18.22	23
$T_{min}V_{min}$	5530	18.25	23
$T_{max}V_{max}$	5530	16.33	23
$T_{max}V_{min}$	5530	16.31	23
$T_{nom}V_{nom}$	5610	17.82	23
$T_{min}V_{max}$	5610	18.62	23
$T_{min}V_{min}$	5610	18.64	23
$T_{max}V_{max}$	5610	16.51	23
$T_{max}V_{min}$	5610	16.49	23

Test Configuration 2

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.41	23
$T_{min}V_{max}$	5180	21.05	23
$T_{min}V_{min}$	5180	21.07	23
$T_{max}V_{max}$	5180	19.39	23
$T_{max}V_{min}$	5180	19.36	23
$T_{nom}V_{nom}$	5320	20.34	23
$T_{min}V_{max}$	5320	20.97	23
$T_{min}V_{min}$	5320	20.99	23
$T_{max}V_{max}$	5320	19.21	23
$T_{max}V_{min}$	5320	19.19	23
$T_{nom}V_{nom}$	5500	20.30	23
$T_{min}V_{max}$	5500	20.95	23
$T_{min}V_{min}$	5500	20.97	23
$T_{max}V_{max}$	5500	19.11	23
$T_{max}V_{min}$	5500	19.08	23
$T_{nom}V_{nom}$	5700	20.27	23
$T_{min}V_{max}$	5700	21.09	23
$T_{min}V_{min}$	5700	21.12	23
$T_{max}V_{max}$	5700	18.76	23
$T_{max}V_{min}$	5700	18.74	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.50	23
$T_{min}V_{max}$	5180	21.11	23
$T_{min}V_{min}$	5180	21.14	23
$T_{max}V_{max}$	5180	19.33	23
$T_{max}V_{min}$	5180	19.31	23
$T_{nom}V_{nom}$	5320	20.47	23
$T_{min}V_{max}$	5320	21.08	23
$T_{min}V_{min}$	5320	21.10	23
$T_{max}V_{max}$	5320	19.35	23
$T_{max}V_{min}$	5320	19.33	23
$T_{nom}V_{nom}$	5500	20.39	23
$T_{min}V_{max}$	5500	21.09	23
$T_{min}V_{min}$	5500	21.12	23
$T_{max}V_{max}$	5500	19.22	23
$T_{max}V_{min}$	5500	19.20	23
$T_{nom}V_{nom}$	5700	20.44	23
$T_{min}V_{max}$	5700	21.26	23
$T_{min}V_{min}$	5700	21.28	23
$T_{max}V_{max}$	5700	19.24	23
$T_{max}V_{min}$	5700	19.22	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	21.29	23
$T_{min}V_{max}$	5190	21.92	23
$T_{min}V_{min}$	5190	**21.94**	23
$T_{max}V_{max}$	5190	20.08	23
$T_{max}V_{min}$	5190	20.06	23
$T_{nom}V_{nom}$	5310	21.16	23
$T_{min}V_{max}$	5310	21.79	23
$T_{min}V_{min}$	5310	**21.81**	23
$T_{max}V_{max}$	5310	18.95	23
$T_{max}V_{min}$	5310	18.93	23
$T_{nom}V_{nom}$	5510	20.13	23
$T_{min}V_{max}$	5510	20.78	23
$T_{min}V_{min}$	5510	20.80	23
$T_{max}V_{max}$	5510	18.92	23
$T_{max}V_{min}$	5510	18.90	23
$T_{nom}V_{nom}$	5670	21.11	23
$T_{min}V_{max}$	5670	22.03	23
$T_{min}V_{min}$	5670	**22.05**	23
$T_{max}V_{max}$	5670	19.86	23
$T_{max}V_{min}$	5670	19.84	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	20.59	23
$T_{min}V_{max}$	5210	21.23	23
$T_{min}V_{min}$	5210	21.26	23
$T_{max}V_{max}$	5210	19.38	23
$T_{max}V_{min}$	5210	19.36	23
$T_{nom}V_{nom}$	5290	20.51	23
$T_{min}V_{max}$	5290	21.14	23
$T_{min}V_{min}$	5290	21.18	23
$T_{max}V_{max}$	5290	19.28	23
$T_{max}V_{min}$	5290	19.25	23
$T_{nom}V_{nom}$	5530	19.51	23
$T_{min}V_{max}$	5530	20.22	23
$T_{min}V_{min}$	5530	20.25	23
$T_{max}V_{max}$	5530	18.33	23
$T_{max}V_{min}$	5530	18.31	23
$T_{nom}V_{nom}$	5610	19.82	23
$T_{min}V_{max}$	5610	20.62	23
$T_{min}V_{min}$	5610	20.64	23
$T_{max}V_{max}$	5610	18.51	23
$T_{max}V_{min}$	5610	18.49	23

Test Configuration 3

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	19.51	23
$T_{min}V_{max}$	5180	20.15	23
$T_{min}V_{min}$	5180	20.17	23
$T_{max}V_{max}$	5180	18.49	23
$T_{max}V_{min}$	5180	18.46	23
$T_{nom}V_{nom}$	5320	19.44	23
$T_{min}V_{max}$	5320	20.07	23
$T_{min}V_{min}$	5320	20.09	23
$T_{max}V_{max}$	5320	18.31	23
$T_{max}V_{min}$	5320	18.29	23
$T_{nom}V_{nom}$	5500	19.30	23
$T_{min}V_{max}$	5500	19.95	23
$T_{min}V_{min}$	5500	19.97	23
$T_{max}V_{max}$	5500	18.11	23
$T_{max}V_{min}$	5500	18.08	23
$T_{nom}V_{nom}$	5700	19.27	23
$T_{min}V_{max}$	5700	20.09	23
$T_{min}V_{min}$	5700	20.12	23
$T_{max}V_{max}$	5700	17.76	23
$T_{max}V_{min}$	5700	17.74	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	19.60	23
$T_{min}V_{max}$	5180	20.21	23
$T_{min}V_{min}$	5180	20.24	23
$T_{max}V_{max}$	5180	18.43	23
$T_{max}V_{min}$	5180	18.41	23
$T_{nom}V_{nom}$	5320	19.57	23
$T_{min}V_{max}$	5320	20.18	23
$T_{min}V_{min}$	5320	20.20	23
$T_{max}V_{max}$	5320	18.45	23
$T_{max}V_{min}$	5320	18.43	23
$T_{nom}V_{nom}$	5500	19.39	23
$T_{min}V_{max}$	5500	20.09	23
$T_{min}V_{min}$	5500	20.12	23
$T_{max}V_{max}$	5500	18.22	23
$T_{max}V_{min}$	5500	18.20	23
$T_{nom}V_{nom}$	5700	19.44	23
$T_{min}V_{max}$	5700	20.26	23
$T_{min}V_{min}$	5700	20.28	23
$T_{max}V_{max}$	5700	18.24	23
$T_{max}V_{min}$	5700	18.22	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	20.39	23
$T_{min}V_{max}$	5190	21.02	23
$T_{min}V_{min}$	5190	21.04	23
$T_{max}V_{max}$	5190	19.18	23
$T_{max}V_{min}$	5190	19.16	23
$T_{nom}V_{nom}$	5310	20.26	23
$T_{min}V_{max}$	5310	20.89	23
$T_{min}V_{min}$	5310	20.91	23
$T_{max}V_{max}$	5310	18.05	23
$T_{max}V_{min}$	5310	18.03	23
$T_{nom}V_{nom}$	5510	19.13	23
$T_{min}V_{max}$	5510	19.78	23
$T_{min}V_{min}$	5510	19.80	23
$T_{max}V_{max}$	5510	17.92	23
$T_{max}V_{min}$	5510	17.90	23
$T_{nom}V_{nom}$	5670	20.11	23
$T_{min}V_{max}$	5670	21.03	23
$T_{min}V_{min}$	5670	21.05	23
$T_{max}V_{max}$	5670	18.86	23
$T_{max}V_{min}$	5670	18.84	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	19.69	23
$T_{min}V_{max}$	5210	20.33	23
$T_{min}V_{min}$	5210	20.36	23
$T_{max}V_{max}$	5210	18.48	23
$T_{max}V_{min}$	5210	18.46	23
$T_{nom}V_{nom}$	5290	19.61	23
$T_{min}V_{max}$	5290	20.24	23
$T_{min}V_{min}$	5290	20.28	23
$T_{max}V_{max}$	5290	18.38	23
$T_{max}V_{min}$	5290	18.35	23
$T_{nom}V_{nom}$	5530	18.51	23
$T_{min}V_{max}$	5530	19.22	23
$T_{min}V_{min}$	5530	19.25	23
$T_{max}V_{max}$	5530	17.33	23
$T_{max}V_{min}$	5530	17.31	23
$T_{nom}V_{nom}$	5610	18.82	23
$T_{min}V_{max}$	5610	19.62	23
$T_{min}V_{min}$	5610	19.64	23
$T_{max}V_{max}$	5610	17.51	23
$T_{max}V_{min}$	5610	17.49	23

Test Configuration 4

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.01	23
$T_{min}V_{max}$	5180	20.65	23
$T_{min}V_{min}$	5180	20.67	23
$T_{max}V_{max}$	5180	18.99	23
$T_{max}V_{min}$	5180	18.96	23
$T_{nom}V_{nom}$	5320	19.94	23
$T_{min}V_{max}$	5320	20.57	23
$T_{min}V_{min}$	5320	20.59	23
$T_{max}V_{max}$	5320	18.81	23
$T_{max}V_{min}$	5320	18.79	23
$T_{nom}V_{nom}$	5500	19.80	23
$T_{min}V_{max}$	5500	20.45	23
$T_{min}V_{min}$	5500	20.47	23
$T_{max}V_{max}$	5500	18.61	23
$T_{max}V_{min}$	5500	18.58	23
$T_{nom}V_{nom}$	5700	19.77	23
$T_{min}V_{max}$	5700	20.59	23
$T_{min}V_{min}$	5700	20.62	23
$T_{max}V_{max}$	5700	18.26	23
$T_{max}V_{min}$	5700	18.24	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.10	23
$T_{min}V_{max}$	5180	20.71	23
$T_{min}V_{min}$	5180	20.74	23
$T_{max}V_{max}$	5180	18.93	23
$T_{max}V_{min}$	5180	18.91	23
$T_{nom}V_{nom}$	5320	20.07	23
$T_{min}V_{max}$	5320	20.68	23
$T_{min}V_{min}$	5320	20.70	23
$T_{max}V_{max}$	5320	18.95	23
$T_{max}V_{min}$	5320	18.93	23
$T_{nom}V_{nom}$	5500	19.89	23
$T_{min}V_{max}$	5500	20.59	23
$T_{min}V_{min}$	5500	20.62	23
$T_{max}V_{max}$	5500	18.72	23
$T_{max}V_{min}$	5500	18.70	23
$T_{nom}V_{nom}$	5700	19.94	23
$T_{min}V_{max}$	5700	20.76	23
$T_{min}V_{min}$	5700	20.78	23
$T_{max}V_{max}$	5700	18.74	23
$T_{max}V_{min}$	5700	18.72	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	20.89	23
$T_{min}V_{max}$	5190	21.52	23
$T_{min}V_{min}$	5190	21.54	23
$T_{max}V_{max}$	5190	19.68	23
$T_{max}V_{min}$	5190	19.66	23
$T_{nom}V_{nom}$	5310	20.76	23
$T_{min}V_{max}$	5310	21.39	23
$T_{min}V_{min}$	5310	21.41	23
$T_{max}V_{max}$	5310	18.55	23
$T_{max}V_{min}$	5310	18.53	23
$T_{nom}V_{nom}$	5510	19.63	23
$T_{min}V_{max}$	5510	20.28	23
$T_{min}V_{min}$	5510	20.30	23
$T_{max}V_{max}$	5510	18.42	23
$T_{max}V_{min}$	5510	18.40	23
$T_{nom}V_{nom}$	5670	20.61	23
$T_{min}V_{max}$	5670	21.53	23
$T_{min}V_{min}$	5670	21.55	23
$T_{max}V_{max}$	5670	19.36	23
$T_{max}V_{min}$	5670	19.34	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	20.19	23
$T_{min}V_{max}$	5210	20.83	23
$T_{min}V_{min}$	5210	20.86	23
$T_{max}V_{max}$	5210	18.98	23
$T_{max}V_{min}$	5210	18.96	23
$T_{nom}V_{nom}$	5290	20.11	23
$T_{min}V_{max}$	5290	20.74	23
$T_{min}V_{min}$	5290	20.78	23
$T_{max}V_{max}$	5290	18.88	23
$T_{max}V_{min}$	5290	18.85	23
$T_{nom}V_{nom}$	5530	19.01	23
$T_{min}V_{max}$	5530	19.72	23
$T_{min}V_{min}$	5530	19.75	23
$T_{max}V_{max}$	5530	17.83	23
$T_{max}V_{min}$	5530	17.81	23
$T_{nom}V_{nom}$	5610	19.32	23
$T_{min}V_{max}$	5610	20.12	23
$T_{min}V_{min}$	5610	20.14	23
$T_{max}V_{max}$	5610	18.01	23
$T_{max}V_{min}$	5610	17.99	23

3.3.5 Test Result of RF Output Power at the Lowest Power

Test Configuration 1

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	12.44	17
$T_{min}V_{max}$	5320	13.07	17
$T_{min}V_{min}$	5320	13.09	17
$T_{max}V_{max}$	5320	11.31	17
$T_{max}V_{min}$	5320	11.29	17
$T_{nom}V_{nom}$	5500	12.30	17
$T_{min}V_{max}$	5500	12.95	17
$T_{min}V_{min}$	5500	12.97	17
$T_{max}V_{max}$	5500	11.11	17
$T_{max}V_{min}$	5500	11.08	17
$T_{nom}V_{nom}$	5700	12.27	17
$T_{min}V_{max}$	5700	13.09	17
$T_{min}V_{min}$	5700	13.12	17
$T_{max}V_{max}$	5700	10.76	17
$T_{max}V_{min}$	5700	10.74	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	12.57	17
$T_{min}V_{max}$	5320	13.18	17
$T_{min}V_{min}$	5320	13.20	17
$T_{max}V_{max}$	5320	11.45	17
$T_{max}V_{min}$	5320	11.43	17
$T_{nom}V_{nom}$	5500	12.39	17
$T_{min}V_{max}$	5500	13.09	17
$T_{min}V_{min}$	5500	13.12	17
$T_{max}V_{max}$	5500	11.22	17
$T_{max}V_{min}$	5500	11.20	17
$T_{nom}V_{nom}$	5700	12.44	17
$T_{min}V_{max}$	5700	13.26	17
$T_{min}V_{min}$	5700	13.28	17
$T_{max}V_{max}$	5700	11.24	17
$T_{max}V_{min}$	5700	11.22	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	13.26	17
$T_{min}V_{max}$	5310	13.89	17
$T_{min}V_{min}$	5310	13.91	17
$T_{max}V_{max}$	5310	11.05	17
$T_{max}V_{min}$	5310	11.03	17
$T_{nom}V_{nom}$	5510	12.13	17
$T_{min}V_{max}$	5510	12.78	17
$T_{min}V_{min}$	5510	12.80	17
$T_{max}V_{max}$	5510	10.92	17
$T_{max}V_{min}$	5510	10.90	17
$T_{nom}V_{nom}$	5670	13.11	17
$T_{min}V_{max}$	5670	14.03	17
$T_{min}V_{min}$	5670	14.05	17
$T_{max}V_{max}$	5670	11.86	17
$T_{max}V_{min}$	5670	11.84	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	12.61	17
$T_{min}V_{max}$	5290	13.24	17
$T_{min}V_{min}$	5290	13.28	17
$T_{max}V_{max}$	5290	11.38	17
$T_{max}V_{min}$	5290	11.35	17
$T_{nom}V_{nom}$	5530	11.51	17
$T_{min}V_{max}$	5530	12.22	17
$T_{min}V_{min}$	5530	12.25	17
$T_{max}V_{max}$	5530	10.33	17
$T_{max}V_{min}$	5530	10.31	17
$T_{nom}V_{nom}$	5610	11.82	17
$T_{min}V_{max}$	5610	12.62	17
$T_{min}V_{min}$	5610	12.64	17
$T_{max}V_{max}$	5610	10.51	17
$T_{max}V_{min}$	5610	10.49	17

Test Configuration 2

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.34	17
$T_{min}V_{max}$	5320	14.97	17
$T_{min}V_{min}$	5320	14.99	17
$T_{max}V_{max}$	5320	13.21	17
$T_{max}V_{min}$	5320	13.19	17
$T_{nom}V_{nom}$	5500	14.30	17
$T_{min}V_{max}$	5500	14.95	17
$T_{min}V_{min}$	5500	14.97	17
$T_{max}V_{max}$	5500	13.11	17
$T_{max}V_{min}$	5500	13.08	17
$T_{nom}V_{nom}$	5700	14.27	17
$T_{min}V_{max}$	5700	15.09	17
$T_{min}V_{min}$	5700	15.12	17
$T_{max}V_{max}$	5700	12.76	17
$T_{max}V_{min}$	5700	12.74	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.47	17
$T_{min}V_{max}$	5320	15.08	17
$T_{min}V_{min}$	5320	15.10	17
$T_{max}V_{max}$	5320	13.35	17
$T_{max}V_{min}$	5320	13.33	17
$T_{nom}V_{nom}$	5500	14.39	17
$T_{min}V_{max}$	5500	15.09	17
$T_{min}V_{min}$	5500	15.12	17
$T_{max}V_{max}$	5500	13.22	17
$T_{max}V_{min}$	5500	13.20	17
$T_{nom}V_{nom}$	5700	14.44	17
$T_{min}V_{max}$	5700	15.26	17
$T_{min}V_{min}$	5700	15.28	17
$T_{max}V_{max}$	5700	13.24	17
$T_{max}V_{min}$	5700	13.22	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	15.16	17
$T_{min}V_{max}$	5310	15.79	17
$T_{min}V_{min}$	5310	15.81	17
$T_{max}V_{max}$	5310	12.95	17
$T_{max}V_{min}$	5310	12.93	17
$T_{nom}V_{nom}$	5510	14.13	17
$T_{min}V_{max}$	5510	14.78	17
$T_{min}V_{min}$	5510	14.80	17
$T_{max}V_{max}$	5510	12.92	17
$T_{max}V_{min}$	5510	12.90	17
$T_{nom}V_{nom}$	5670	15.11	17
$T_{min}V_{max}$	5670	16.03	17
$T_{min}V_{min}$	5670	16.05	17
$T_{max}V_{max}$	5670	13.86	17
$T_{max}V_{min}$	5670	13.84	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	14.51	17
$T_{min}V_{max}$	5290	15.14	17
$T_{min}V_{min}$	5290	15.18	17
$T_{max}V_{max}$	5290	13.28	17
$T_{max}V_{min}$	5290	13.25	17
$T_{nom}V_{nom}$	5530	13.51	17
$T_{min}V_{max}$	5530	14.22	17
$T_{min}V_{min}$	5530	14.25	17
$T_{max}V_{max}$	5530	12.33	17
$T_{max}V_{min}$	5530	12.31	17
$T_{nom}V_{nom}$	5610	13.82	17
$T_{min}V_{max}$	5610	14.62	17
$T_{min}V_{min}$	5610	14.64	17
$T_{max}V_{max}$	5610	12.51	17
$T_{max}V_{min}$	5610	12.49	17

Test Configuration 3

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	13.44	17
$T_{min}V_{max}$	5320	14.07	17
$T_{min}V_{min}$	5320	14.09	17
$T_{max}V_{max}$	5320	12.31	17
$T_{max}V_{min}$	5320	12.29	17
$T_{nom}V_{nom}$	5500	13.30	17
$T_{min}V_{max}$	5500	13.95	17
$T_{min}V_{min}$	5500	13.97	17
$T_{max}V_{max}$	5500	12.11	17
$T_{max}V_{min}$	5500	12.08	17
$T_{nom}V_{nom}$	5700	13.27	17
$T_{min}V_{max}$	5700	14.09	17
$T_{min}V_{min}$	5700	14.12	17
$T_{max}V_{max}$	5700	11.76	17
$T_{max}V_{min}$	5700	11.74	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	13.57	17
$T_{min}V_{max}$	5320	14.18	17
$T_{min}V_{min}$	5320	14.20	17
$T_{max}V_{max}$	5320	12.45	17
$T_{max}V_{min}$	5320	12.43	17
$T_{nom}V_{nom}$	5500	13.39	17
$T_{min}V_{max}$	5500	14.09	17
$T_{min}V_{min}$	5500	14.12	17
$T_{max}V_{max}$	5500	12.22	17
$T_{max}V_{min}$	5500	12.20	17
$T_{nom}V_{nom}$	5700	13.44	17
$T_{min}V_{max}$	5700	14.26	17
$T_{min}V_{min}$	5700	14.28	17
$T_{max}V_{max}$	5700	12.24	17
$T_{max}V_{min}$	5700	12.22	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	14.26	17
$T_{min}V_{max}$	5310	14.89	17
$T_{min}V_{min}$	5310	14.91	17
$T_{max}V_{max}$	5310	12.05	17
$T_{max}V_{min}$	5310	12.03	17
$T_{nom}V_{nom}$	5510	13.13	17
$T_{min}V_{max}$	5510	13.78	17
$T_{min}V_{min}$	5510	13.80	17
$T_{max}V_{max}$	5510	11.92	17
$T_{max}V_{min}$	5510	11.90	17
$T_{nom}V_{nom}$	5670	14.11	17
$T_{min}V_{max}$	5670	15.03	17
$T_{min}V_{min}$	5670	15.05	17
$T_{max}V_{max}$	5670	12.86	17
$T_{max}V_{min}$	5670	12.84	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	13.61	17
$T_{min}V_{max}$	5290	14.24	17
$T_{min}V_{min}$	5290	14.28	17
$T_{max}V_{max}$	5290	12.38	17
$T_{max}V_{min}$	5290	12.35	17
$T_{nom}V_{nom}$	5530	12.51	17
$T_{min}V_{max}$	5530	13.22	17
$T_{min}V_{min}$	5530	13.25	17
$T_{max}V_{max}$	5530	11.33	17
$T_{max}V_{min}$	5530	11.31	17
$T_{nom}V_{nom}$	5610	12.82	17
$T_{min}V_{max}$	5610	13.62	17
$T_{min}V_{min}$	5610	13.64	17
$T_{max}V_{max}$	5610	11.51	17
$T_{max}V_{min}$	5610	11.49	17

Test Configuration 4

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	13.94	17
$T_{min}V_{max}$	5320	14.57	17
$T_{min}V_{min}$	5320	14.59	17
$T_{max}V_{max}$	5320	12.81	17
$T_{max}V_{min}$	5320	12.79	17
$T_{nom}V_{nom}$	5500	13.80	17
$T_{min}V_{max}$	5500	14.45	17
$T_{min}V_{min}$	5500	14.47	17
$T_{max}V_{max}$	5500	12.61	17
$T_{max}V_{min}$	5500	12.58	17
$T_{nom}V_{nom}$	5700	13.77	17
$T_{min}V_{max}$	5700	14.59	17
$T_{min}V_{min}$	5700	14.62	17
$T_{max}V_{max}$	5700	12.26	17
$T_{max}V_{min}$	5700	12.24	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.07	17
$T_{min}V_{max}$	5320	14.68	17
$T_{min}V_{min}$	5320	14.70	17
$T_{max}V_{max}$	5320	12.95	17
$T_{max}V_{min}$	5320	12.93	17
$T_{nom}V_{nom}$	5500	13.89	17
$T_{min}V_{max}$	5500	14.59	17
$T_{min}V_{min}$	5500	14.62	17
$T_{max}V_{max}$	5500	12.72	17
$T_{max}V_{min}$	5500	12.70	17
$T_{nom}V_{nom}$	5700	13.94	17
$T_{min}V_{max}$	5700	14.76	17
$T_{min}V_{min}$	5700	14.78	17
$T_{max}V_{max}$	5700	12.74	17
$T_{max}V_{min}$	5700	12.72	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	14.76	17
$T_{min}V_{max}$	5310	15.39	17
$T_{min}V_{min}$	5310	15.41	17
$T_{max}V_{max}$	5310	12.55	17
$T_{max}V_{min}$	5310	12.53	17
$T_{nom}V_{nom}$	5510	13.63	17
$T_{min}V_{max}$	5510	14.28	17
$T_{min}V_{min}$	5510	14.30	17
$T_{max}V_{max}$	5510	12.42	17
$T_{max}V_{min}$	5510	12.40	17
$T_{nom}V_{nom}$	5670	14.61	17
$T_{min}V_{max}$	5670	15.53	17
$T_{min}V_{min}$	5670	15.55	17
$T_{max}V_{max}$	5670	13.36	17
$T_{max}V_{min}$	5670	13.34	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	14.11	17
$T_{min}V_{max}$	5290	14.74	17
$T_{min}V_{min}$	5290	14.78	17
$T_{max}V_{max}$	5290	12.88	17
$T_{max}V_{min}$	5290	12.85	17
$T_{nom}V_{nom}$	5530	13.01	17
$T_{min}V_{max}$	5530	13.72	17
$T_{min}V_{min}$	5530	13.75	17
$T_{max}V_{max}$	5530	11.83	17
$T_{max}V_{min}$	5530	11.81	17
$T_{nom}V_{nom}$	5610	13.32	17
$T_{min}V_{max}$	5610	14.12	17
$T_{min}V_{min}$	5610	14.14	17
$T_{max}V_{max}$	5610	12.01	17
$T_{max}V_{min}$	5610	11.99	17

3.3.6 Test Result of Power Density

Test Configuration 1

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	7.07	10	Pass
11a	5320	6.99	10	Pass
11a	5500	6.94	10	Pass
11a	5700	6.83	10	Pass
802.11ac VHT20	5180	6.93	10	Pass
802.11ac VHT20	5320	6.89	10	Pass
802.11ac VHT20	5500	6.72	10	Pass
802.11ac VHT20	5700	6.75	10	Pass
802.11ac VHT40	5190	4.94	10	Pass
802.11ac VHT40	5310	4.78	10	Pass
802.11ac VHT40	5510	3.74	10	Pass
802.11ac VHT40	5670	4.66	10	Pass
802.11ac VHT80	5210	0.37	10	Pass
802.11ac VHT80	5290	0.22	10	Pass
802.11ac VHT80	5530	-0.70	10	Pass
802.11ac VHT80	5610	-0.54	10	Pass

Test Configuration 2

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	8.97	10	Pass
11a	5320	8.89	10	Pass
11a	5500	8.94	10	Pass
11a	5700	8.83	10	Pass
802.11ac VHT20	5180	8.83	10	Pass
802.11ac VHT20	5320	8.79	10	Pass
802.11ac VHT20	5500	8.72	10	Pass
802.11ac VHT20	5700	8.75	10	Pass
802.11ac VHT40	5190	6.84	10	Pass
802.11ac VHT40	5310	6.68	10	Pass
802.11ac VHT40	5510	5.74	10	Pass
802.11ac VHT40	5670	6.66	10	Pass
802.11ac VHT80	5210	2.27	10	Pass
802.11ac VHT80	5290	2.12	10	Pass
802.11ac VHT80	5530	1.30	10	Pass
802.11ac VHT80	5610	1.46	10	Pass

Test Configuration 3

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	8.07	10	Pass
11a	5320	7.99	10	Pass
11a	5500	7.94	10	Pass
11a	5700	7.83	10	Pass
802.11ac VHT20	5180	7.93	10	Pass
802.11ac VHT20	5320	7.89	10	Pass
802.11ac VHT20	5500	7.72	10	Pass
802.11ac VHT20	5700	7.75	10	Pass
802.11ac VHT40	5190	5.94	10	Pass
802.11ac VHT40	5310	5.78	10	Pass
802.11ac VHT40	5510	4.74	10	Pass
802.11ac VHT40	5670	5.66	10	Pass
802.11ac VHT80	5210	1.37	10	Pass
802.11ac VHT80	5290	1.22	10	Pass
802.11ac VHT80	5530	0.30	10	Pass
802.11ac VHT80	5610	0.46	10	Pass

Test Configuration 4

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	8.57	10	Pass
11a	5320	8.49	10	Pass
11a	5500	8.44	10	Pass
11a	5700	8.33	10	Pass
802.11ac VHT20	5180	8.43	10	Pass
802.11ac VHT20	5320	8.39	10	Pass
802.11ac VHT20	5500	8.22	10	Pass
802.11ac VHT20	5700	8.25	10	Pass
802.11ac VHT40	5190	6.44	10	Pass
802.11ac VHT40	5310	6.28	10	Pass
802.11ac VHT40	5510	5.24	10	Pass
802.11ac VHT40	5670	6.16	10	Pass
802.11ac VHT80	5210	1.87	10	Pass
802.11ac VHT80	5290	1.72	10	Pass
802.11ac VHT80	5530	0.80	10	Pass
802.11ac VHT80	5610	0.96	10	Pass

3.4 Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands

3.4.1 Limit of Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands

Limit for Radiated Unwanted Emission outside the 5 GHz RLAN Bands

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 5,15 GHz	-30 dBm	1 MHz
5,35 GHz to 5,47 GHz	-30 dBm	1 MHz
5,725 GHz to 26 GHz	-30 dBm	1 MHz

Limit for Conducted Unwanted Emission outside the 5 GHz RLAN Bands

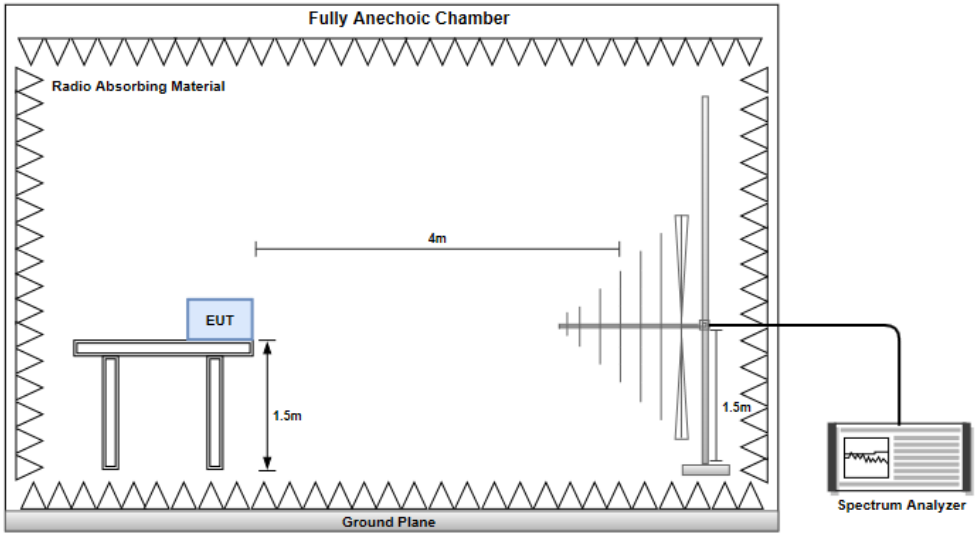
Frequency Range	Maximum Power	Bandwidth
30 MHz to 47 MHz	-39.01 dBm	100 kHz
47 MHz to 74 MHz	-57.01 dBm	100 kHz
74 MHz to 87,5 MHz	-39.01 dBm	100 kHz
87,5 MHz to 118 MHz	-57.01 dBm	100 kHz
118 MHz to 174 MHz	-39.01 dBm	100 kHz
174 MHz to 230 MHz	-57.01 dBm	100 kHz
230 MHz to 470 MHz	-39.01 dBm	100 kHz
470 MHz to 862 MHz	-57.01 dBm	100 kHz
862 MHz to 1 GHz	-39.01 dBm	100 kHz
1 GHz to 5,15 GHz	-33.01 dBm	1 MHz
5,35 GHz to 5,47 GHz	-33.01 dBm	1 MHz
5,725 GHz to 26 GHz	-33.01 dBm	1 MHz

3.4.2 Test Procedures

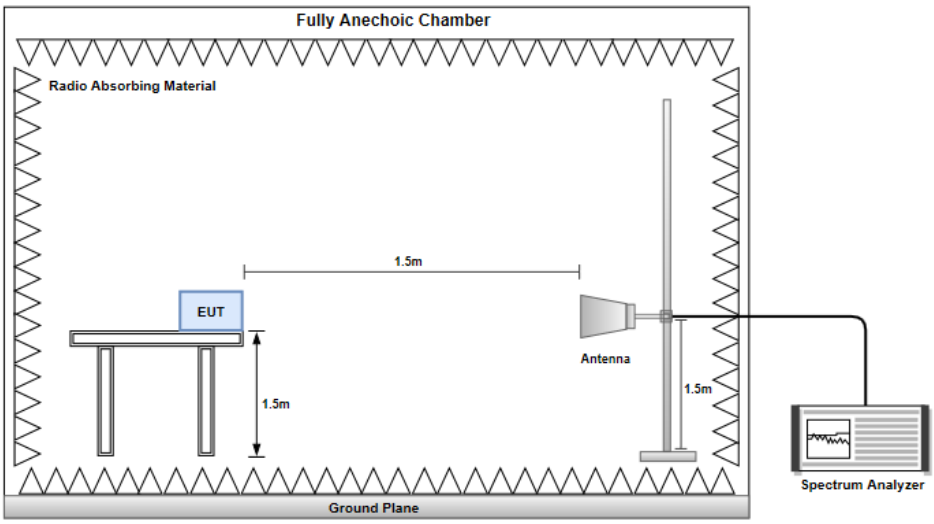
Reference to clause 5.4.5.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.4.3 Test Setup

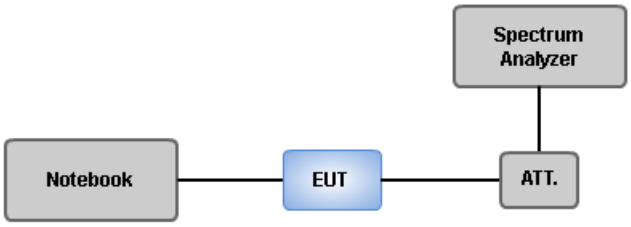
Below 1GHz



Above 1 GHz



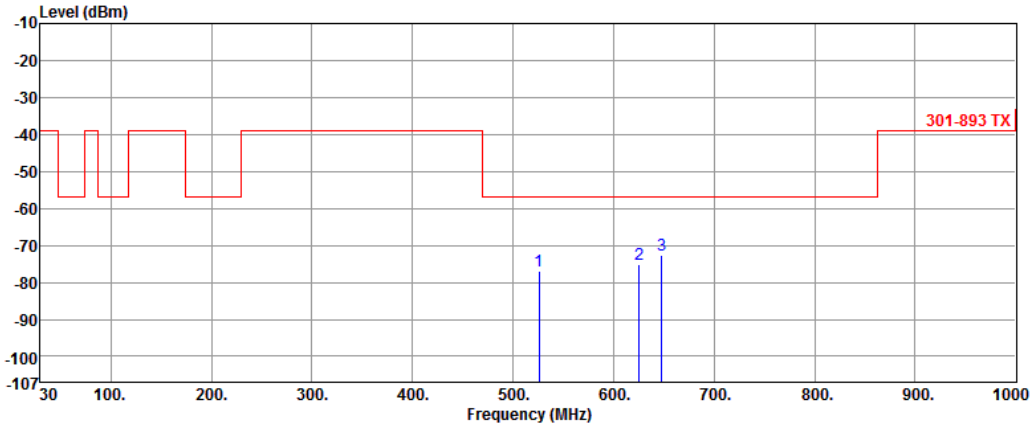
Conducted Emission



Main Port

3.4.4 Transmitter Conducted Unwanted Emissions (Below 1GHz)

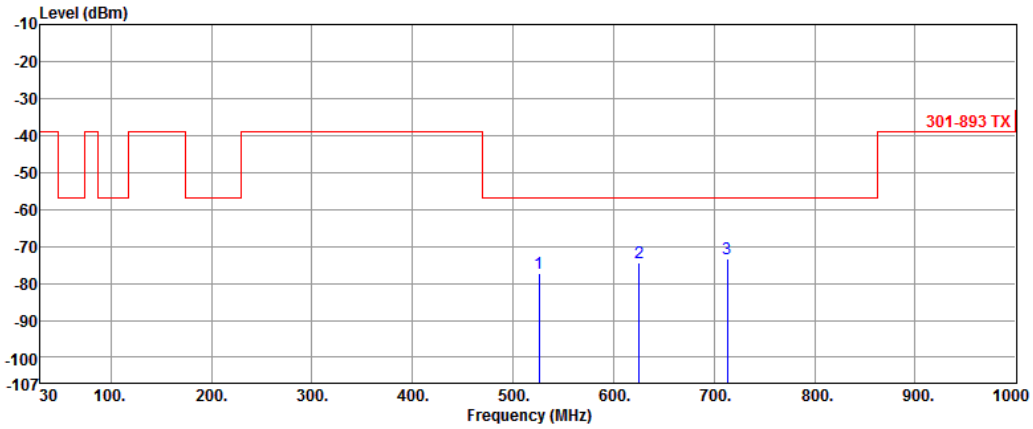
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-76.83	-57.01	-19.82	0.00	-76.83
2	625.58	-75.15	-57.01	-18.14	0.00	-75.15
3	647.89	-72.73	-57.01	-15.72	0.00	-72.73

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

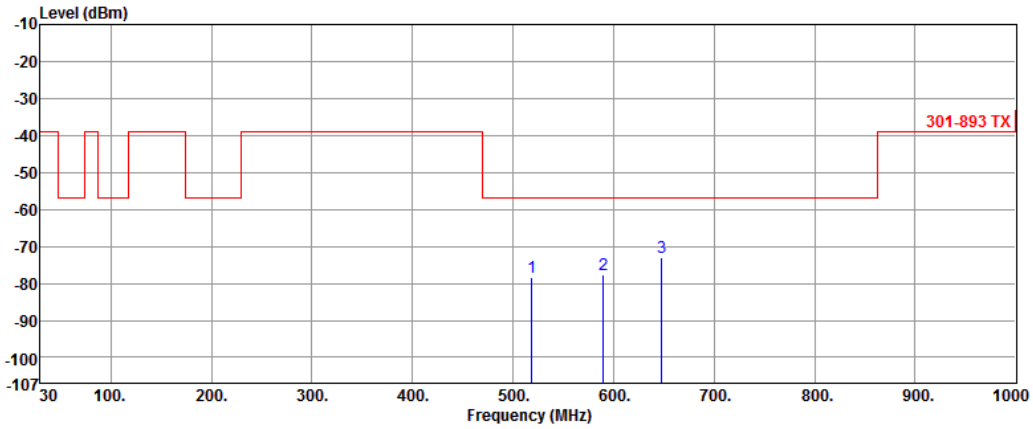
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-77.26	-57.01	-20.25	0.00	-77.26
2	625.58	-74.47	-57.01	-17.46	0.00	-74.47
3	712.88	-73.34	-57.01	-16.33	0.00	-73.34

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

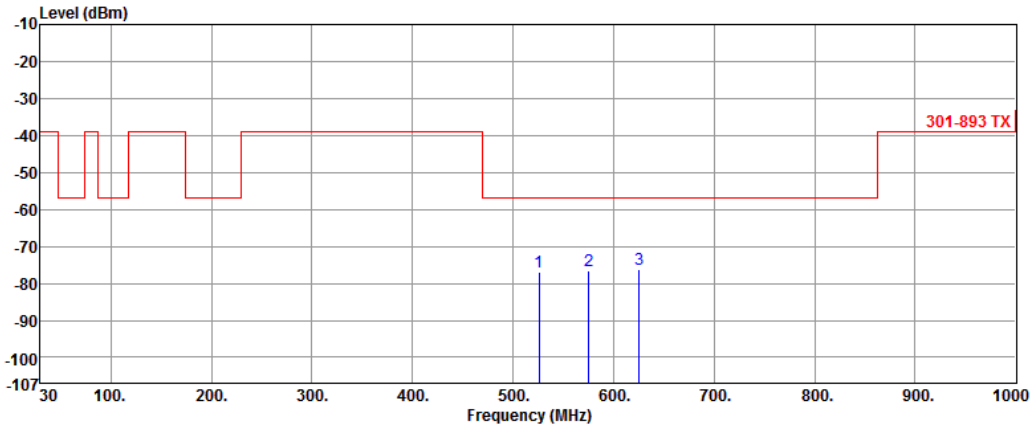
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	518.88	-78.44	-57.01	-21.43	0.00	-78.44
2	589.69	-77.73	-57.01	-20.72	0.00	-77.73
3	647.89	-73.08	-57.01	-16.07	0.00	-73.08

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

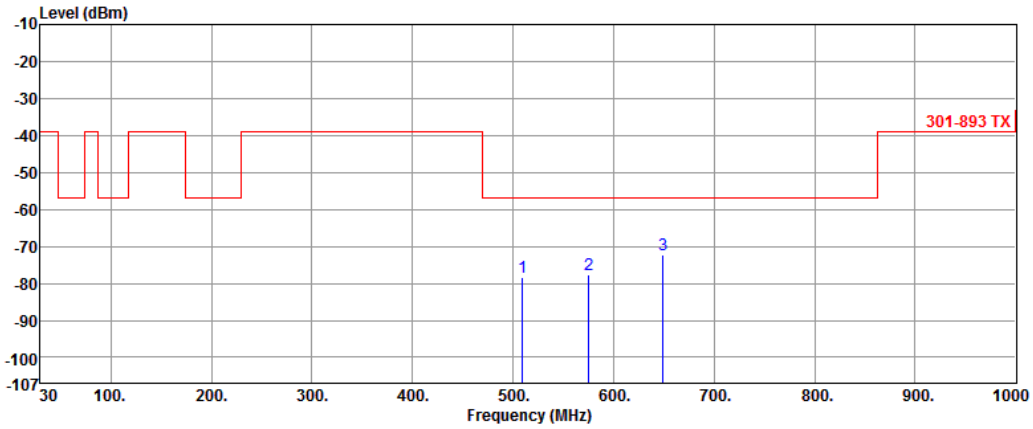
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-77.00	-57.01	-19.99	0.00	-77.00
2	575.14	-76.43	-57.01	-19.42	0.00	-76.43
3	625.58	-76.18	-57.01	-19.17	0.00	-76.18

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

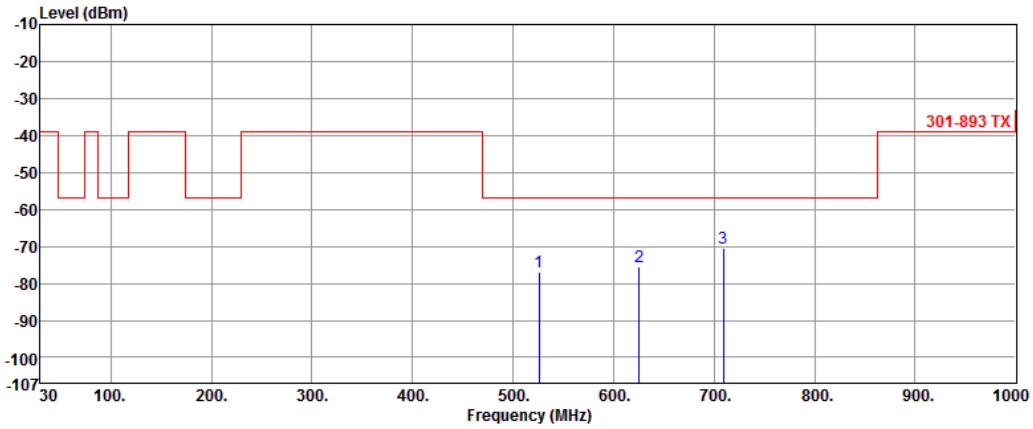
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	509.18	-78.22	-57.01	-21.21	0.00	-78.22
2	575.14	-77.72	-57.01	-20.71	0.00	-77.72
3	648.86	-72.19	-57.01	-15.18	0.00	-72.19

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

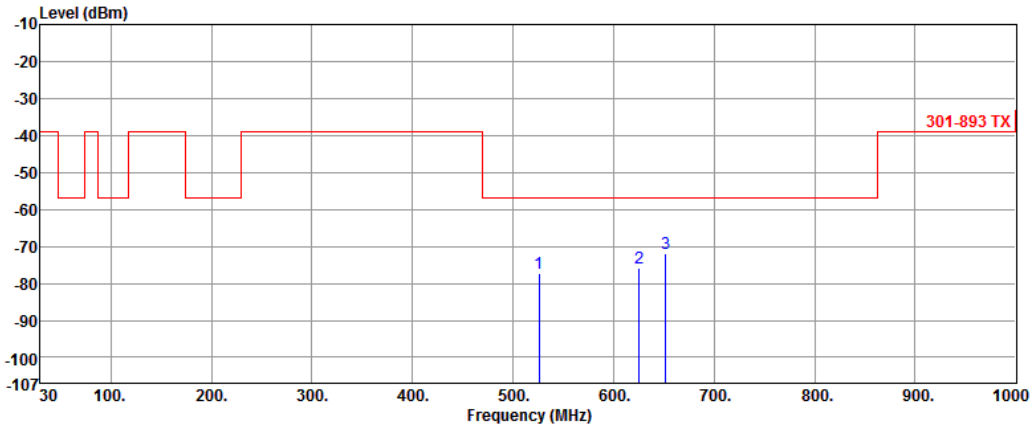
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-76.95	-57.01	-19.94	0.00	-76.95
2	625.58	-75.51	-57.01	-18.50	0.00	-75.51
3	709.00	-70.64	-57.01	-13.63	0.00	-70.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

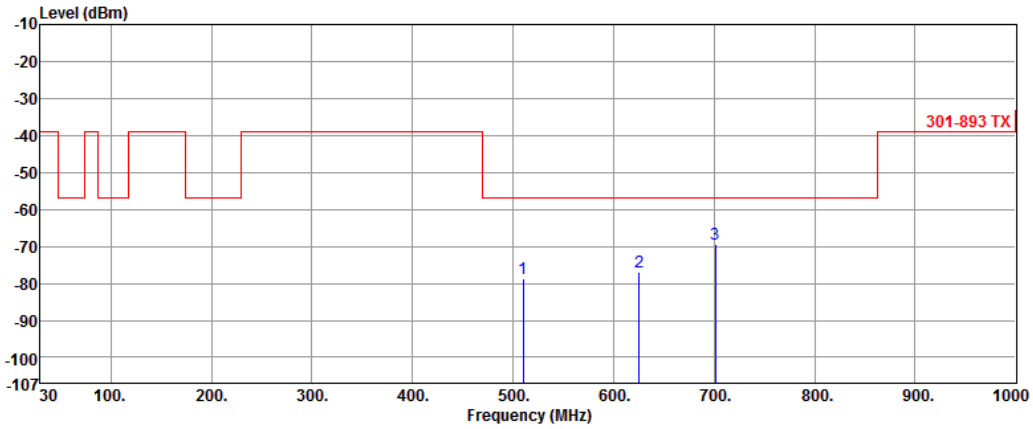
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-77.35	-57.01	-20.34	0.00	-77.35
2	625.58	-75.88	-57.01	-18.87	0.00	-75.88
3	651.77	-71.92	-57.01	-14.91	0.00	-71.92

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

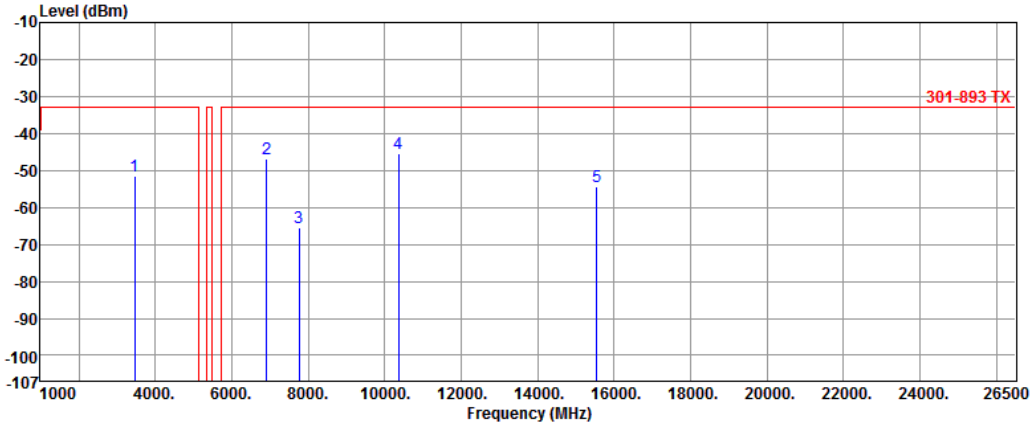


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	510.15	-78.71	-57.01	-21.70	0.00	-78.71
2	625.58	-76.79	-57.01	-19.78	0.00	-76.79
3	701.24	-69.57	-57.01	-12.56	0.00	-69.57

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.4.5 Transmitter Conducted Unwanted Emissions (Above 1GHz)

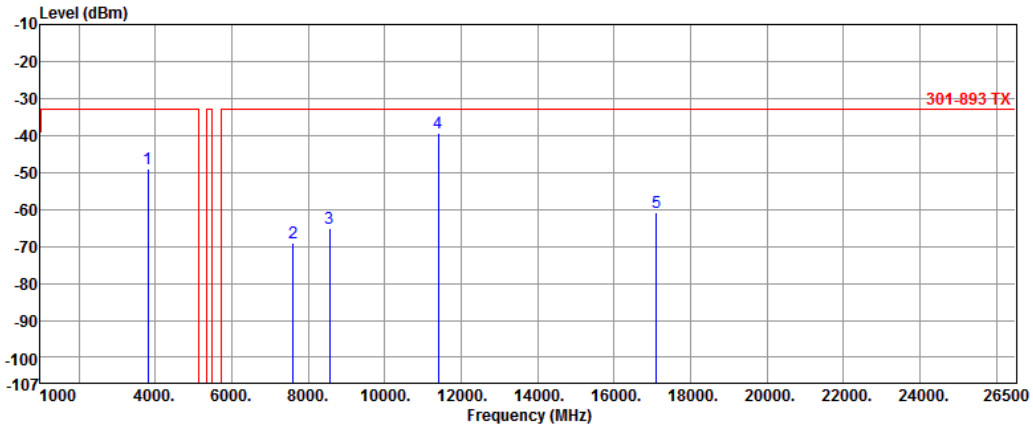
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.58	-51.43	-33.01	-18.42	0.00	-51.43
2	6906.66	-46.93	-33.01	-13.92	0.00	-46.93
3	7769.50	-65.56	-33.01	-32.55	0.00	-65.56
4	10360.40	-45.45	-33.01	-12.44	0.00	-45.45
5	15540.75	-54.54	-33.01	-21.53	0.00	-54.54

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

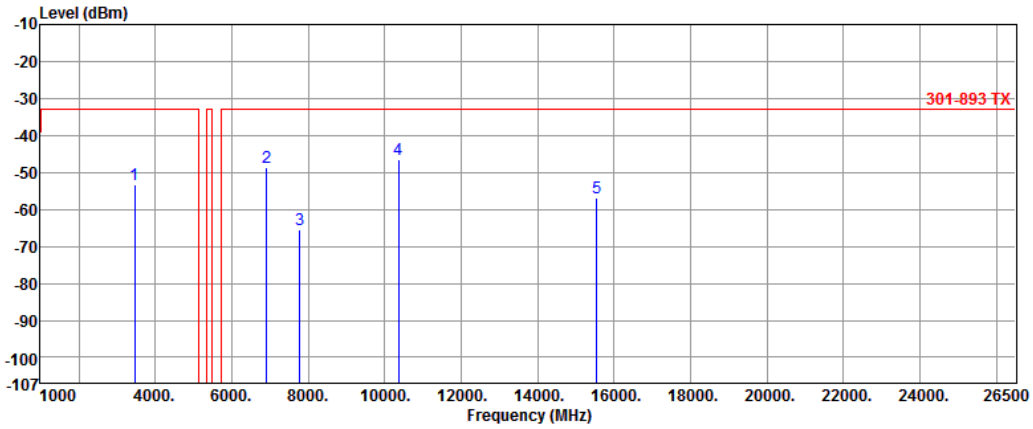
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.60	-48.86	-33.01	-15.85	0.00	-48.86
2	7600.06	-68.98	-33.01	-35.97	0.00	-68.98
3	8550.70	-65.13	-33.01	-32.12	0.00	-65.13
4	11400.45	-39.28	-33.01	-6.27	0.00	-39.28
5	17100.85	-60.80	-33.01	-27.79	0.00	-60.80

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

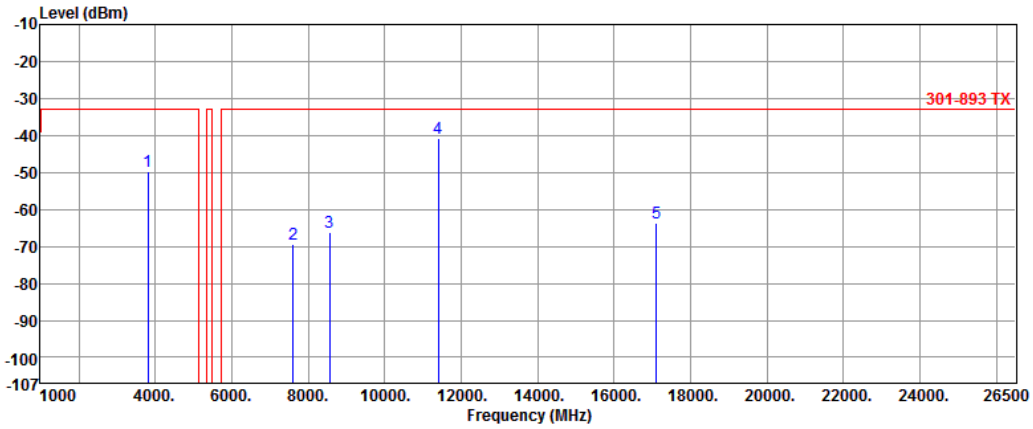
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.40	-53.14	-33.01	-20.13	0.00	-53.14
2	6906.66	-48.61	-33.01	-15.60	0.00	-48.61
3	7770.40	-65.33	-33.01	-32.32	0.00	-65.33
4	10360.70	-46.43	-33.01	-13.42	0.00	-46.43
5	15540.55	-56.99	-33.01	-23.98	0.00	-56.99

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

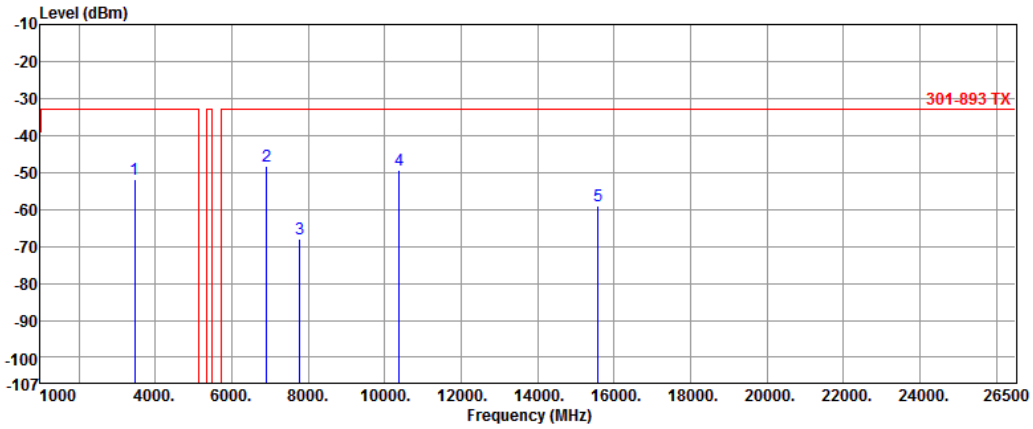
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.86	-49.87	-33.01	-16.86	0.00	-49.87
2	7599.92	-69.51	-33.01	-36.50	0.00	-69.51
3	8550.20	-66.10	-33.01	-33.09	0.00	-66.10
4	11400.50	-40.64	-33.01	-7.63	0.00	-40.64
5	17100.30	-63.62	-33.01	-30.61	0.00	-63.62

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

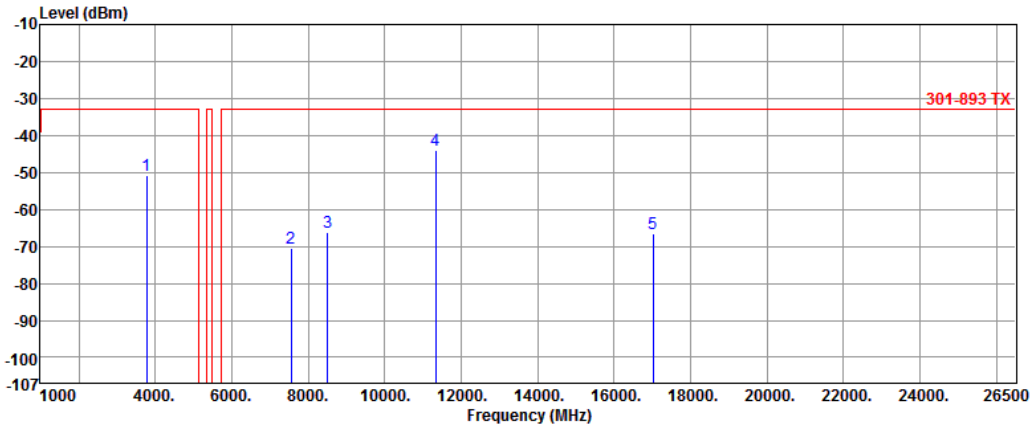
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3460.09	-51.91	-33.01	-18.90	0.00	-51.91
2	6919.96	-48.15	-33.01	-15.14	0.00	-48.15
3	7785.24	-67.87	-33.01	-34.86	0.00	-67.87
4	10380.50	-49.53	-33.01	-16.52	0.00	-49.53
5	15570.30	-59.06	-33.01	-26.05	0.00	-59.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

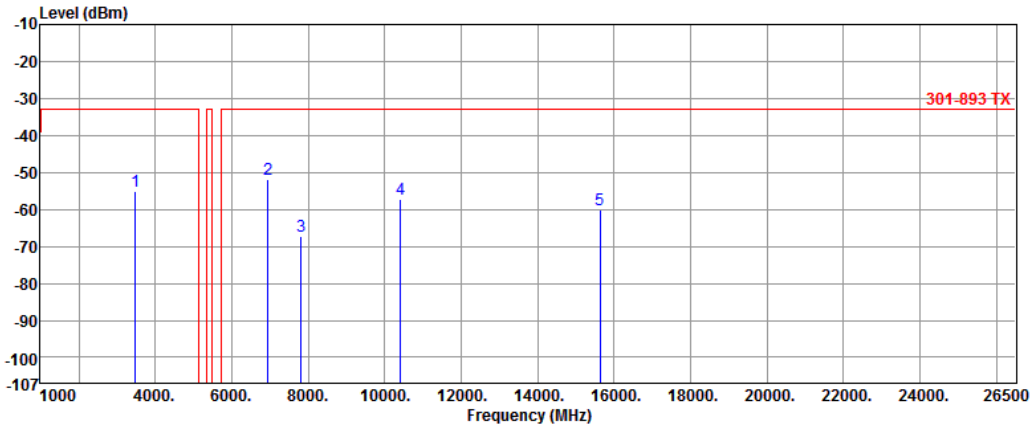
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.79	-50.85	-33.01	-17.84	0.00	-50.85
2	7560.11	-70.60	-33.01	-37.59	0.00	-70.60
3	8505.30	-66.13	-33.01	-33.12	0.00	-66.13
4	11340.20	-44.07	-33.01	-11.06	0.00	-44.07
5	17010.90	-66.57	-33.01	-33.56	0.00	-66.57

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

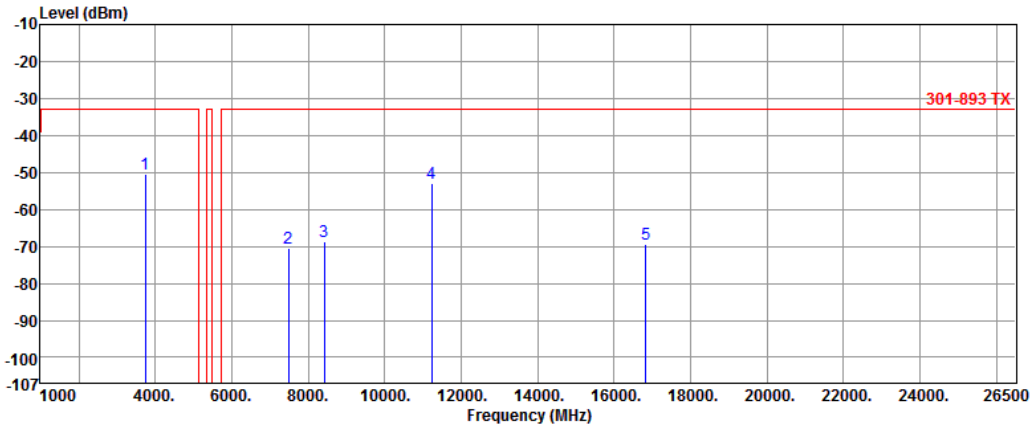
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.58	-55.10	-33.01	-22.09	0.00	-55.10
2	6946.73	-51.93	-33.01	-18.92	0.00	-51.93
3	7815.72	-67.26	-33.01	-34.25	0.00	-67.26
4	10420.40	-57.16	-33.01	-24.15	0.00	-57.16
5	15630.60	-60.25	-33.01	-27.24	0.00	-60.25

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610



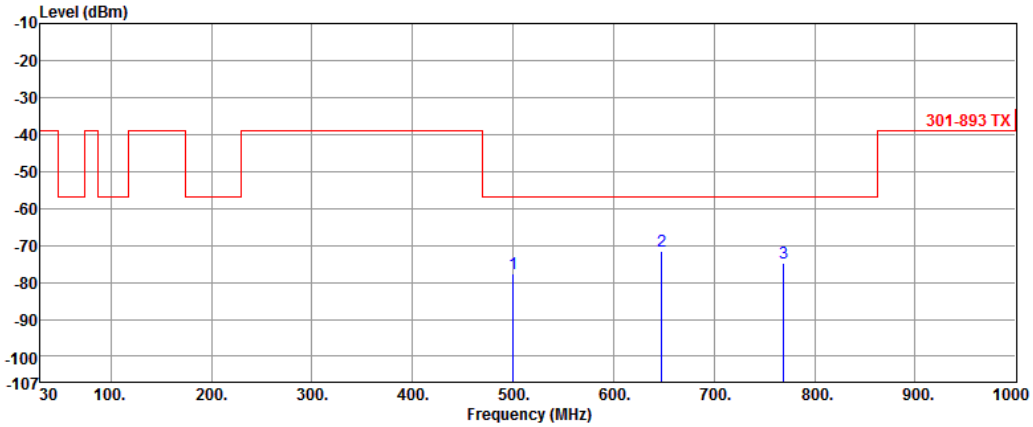
	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3739.99	-50.53	-33.01	-17.52	0.00	-50.53
2	7480.32	-70.45	-33.01	-37.44	0.00	-70.45
3	8415.20	-68.83	-33.01	-35.82	0.00	-68.83
4	11220.40	-52.90	-33.01	-19.89	0.00	-52.90
5	16830.80	-69.39	-33.01	-36.38	0.00	-69.39

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Aux Port

3.4.6 Transmitter Conducted Unwanted Emissions (Below 1GHz)

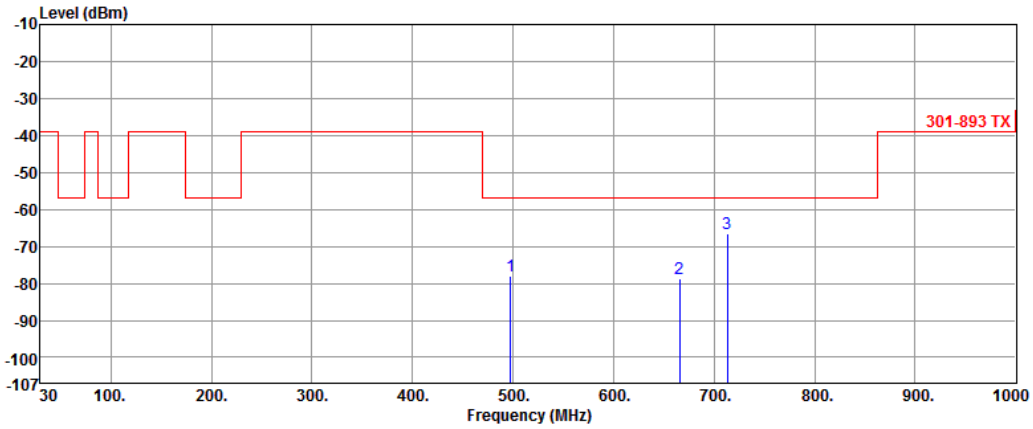
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-77.78	-57.01	-20.77	0.00	-77.78
2	647.89	-71.73	-57.01	-14.72	0.00	-71.73
3	769.14	-74.87	-57.01	-17.86	0.00	-74.87

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

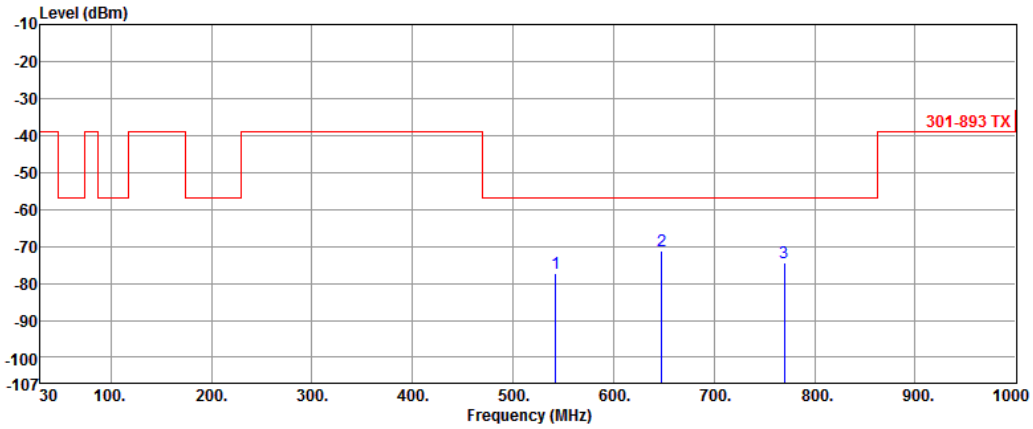
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	497.54	-77.93	-57.01	-20.92	0.00	-77.93
2	665.35	-78.66	-57.01	-21.65	0.00	-78.66
3	712.88	-66.49	-57.01	-9.48	0.00	-66.49

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

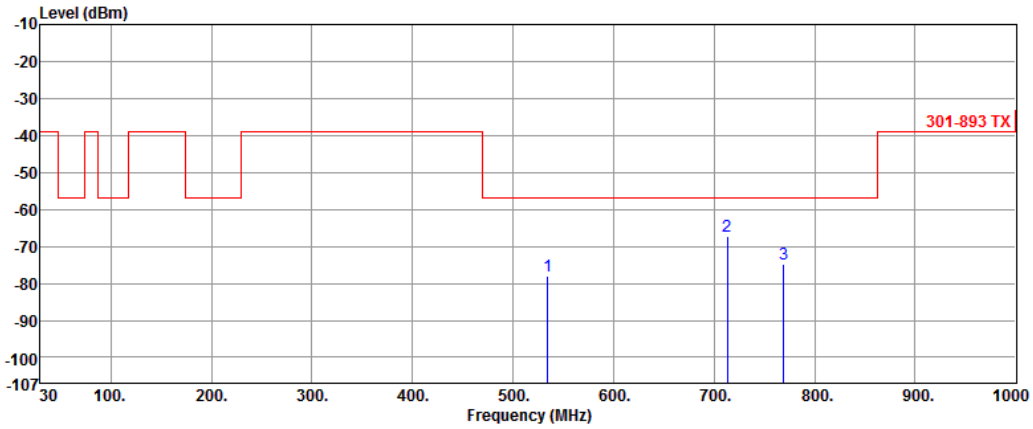
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	542.16	-77.18	-57.01	-20.17	0.00	-77.18
2	647.89	-71.16	-57.01	-14.15	0.00	-71.16
3	770.11	-74.58	-57.01	-17.57	0.00	-74.58

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

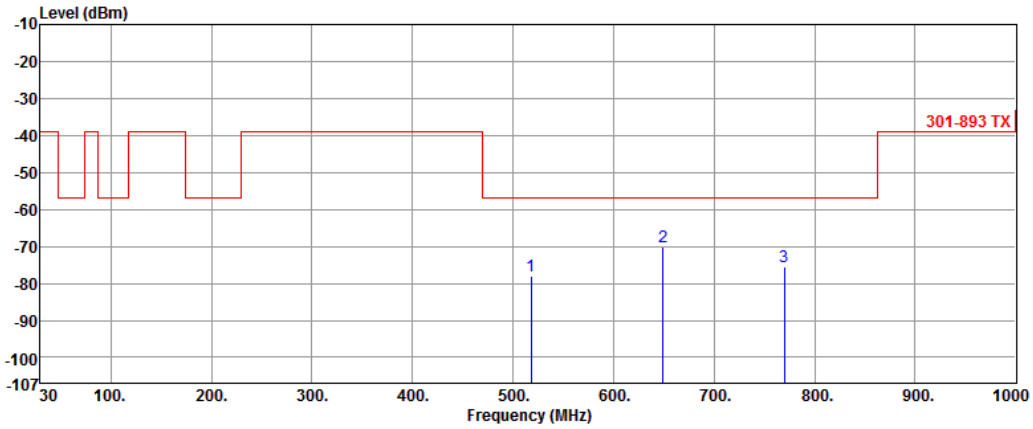
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	534.40	-78.06	-57.01	-21.05	0.00	-78.06
2	712.88	-67.11	-57.01	-10.10	0.00	-67.11
3	769.14	-74.90	-57.01	-17.89	0.00	-74.90

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

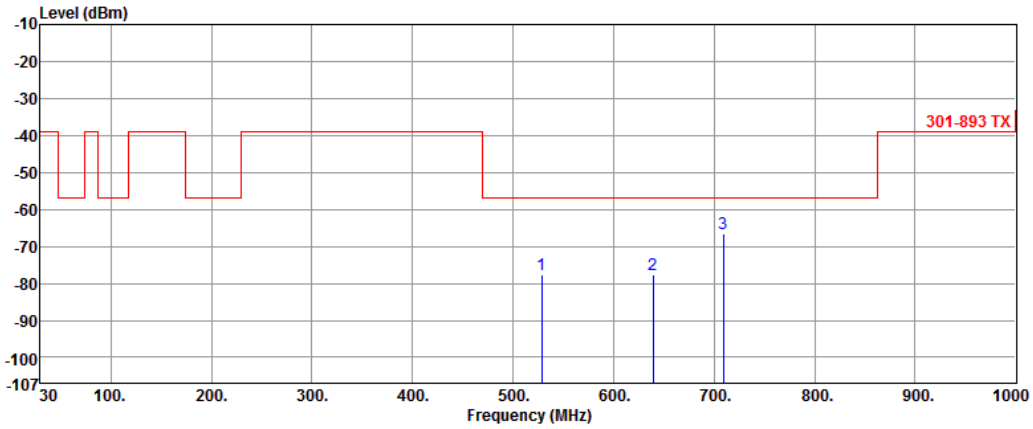
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	517.91	-78.09	-57.01	-21.08	0.00	-78.09
2	648.86	-70.27	-57.01	-13.26	0.00	-70.27
3	770.11	-75.56	-57.01	-18.55	0.00	-75.56

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

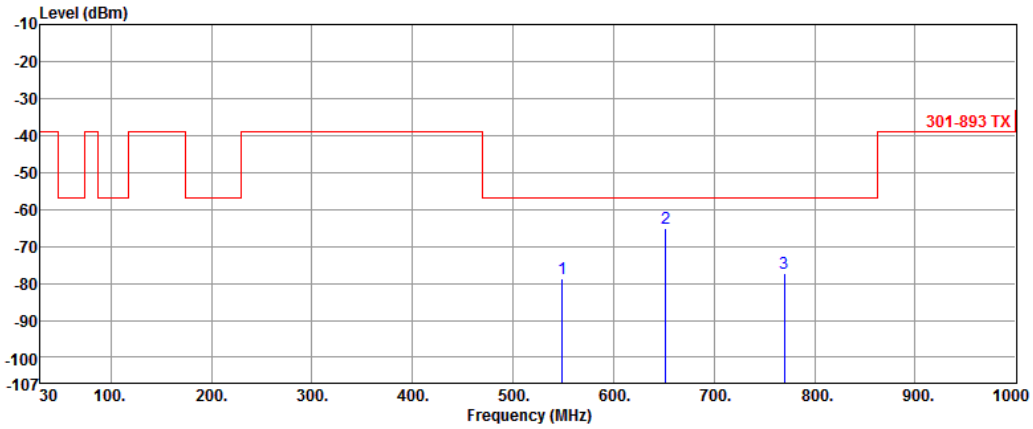
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	528.58	-77.52	-57.01	-20.51	0.00	-77.52
2	639.16	-77.62	-57.01	-20.61	0.00	-77.62
3	709.00	-66.59	-57.01	-9.58	0.00	-66.59

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

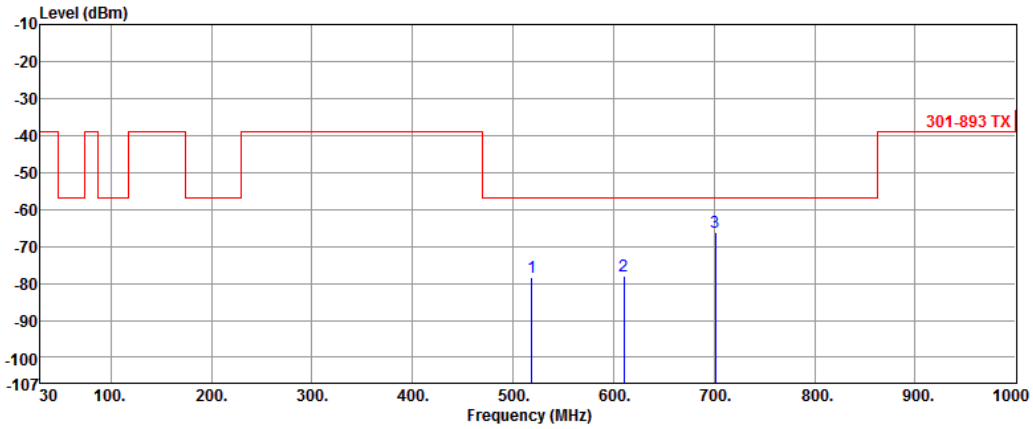
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	548.95	-78.60	-57.01	-21.59	0.00	-78.60
2	651.77	-65.11	-57.01	-8.10	0.00	-65.11
3	770.11	-77.44	-57.01	-20.43	0.00	-77.44

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

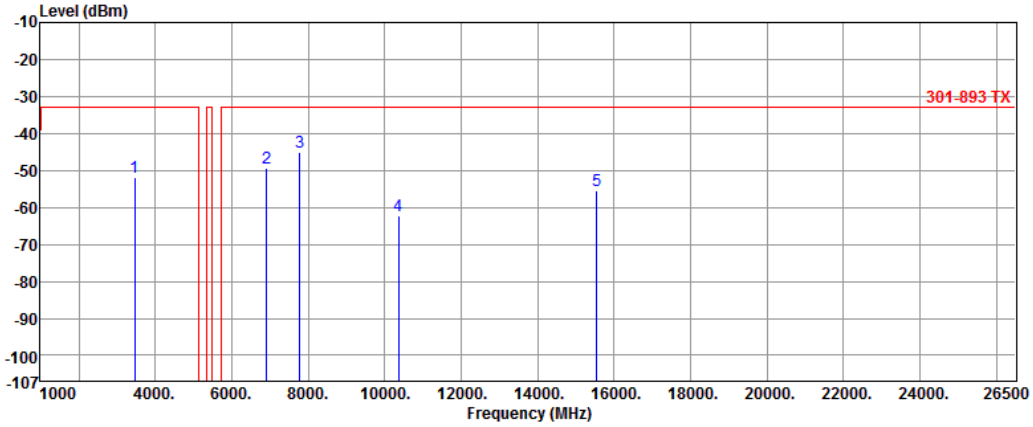


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	518.88	-78.21	-57.01	-21.20	0.00	-78.21
2	610.06	-78.15	-57.01	-21.14	0.00	-78.15
3	701.24	-66.06	-57.01	-9.05	0.00	-66.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.4.7 Transmitter Conducted Unwanted Emissions (Above 1GHz)

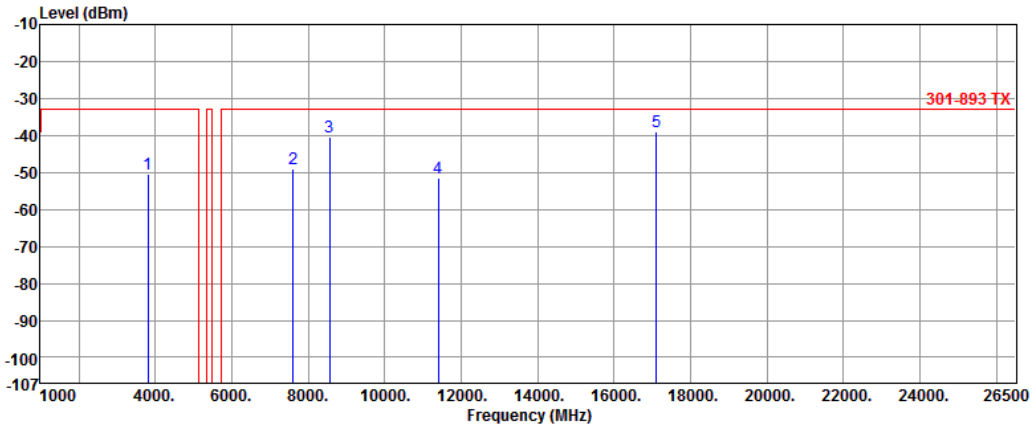
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.48	-51.99	-33.01	-18.98	0.00	-51.99
2	6906.91	-49.42	-33.01	-16.41	0.00	-49.42
3	7770.40	-45.16	-33.01	-12.15	0.00	-45.16
4	10360.55	-62.12	-33.01	-29.11	0.00	-62.12
5	15540.05	-55.60	-33.01	-22.59	0.00	-55.60

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

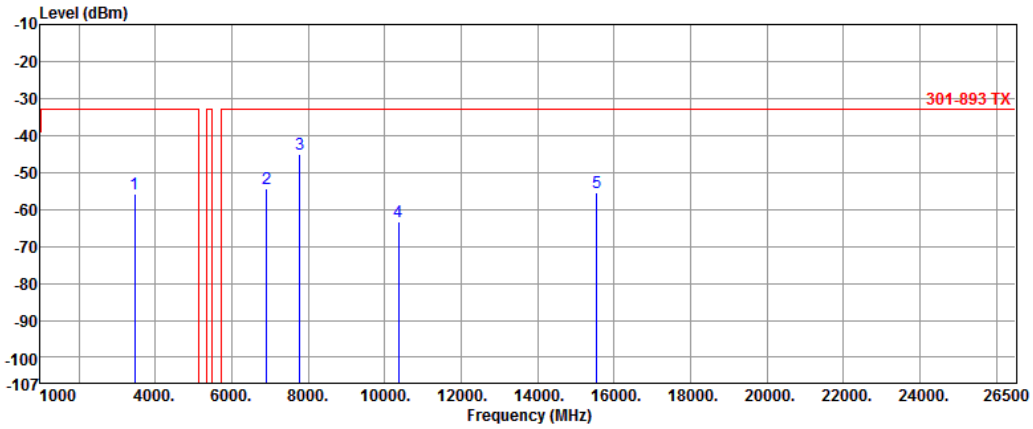
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.55	-50.50	-33.01	-17.49	0.00	-50.50
2	7600.45	-49.16	-33.01	-16.15	0.00	-49.16
3	8551.05	-40.31	-33.01	-7.30	0.00	-40.31
4	11400.40	-51.40	-33.01	-18.39	0.00	-51.40
5	17100.15	-39.11	-33.01	-6.10	0.00	-39.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

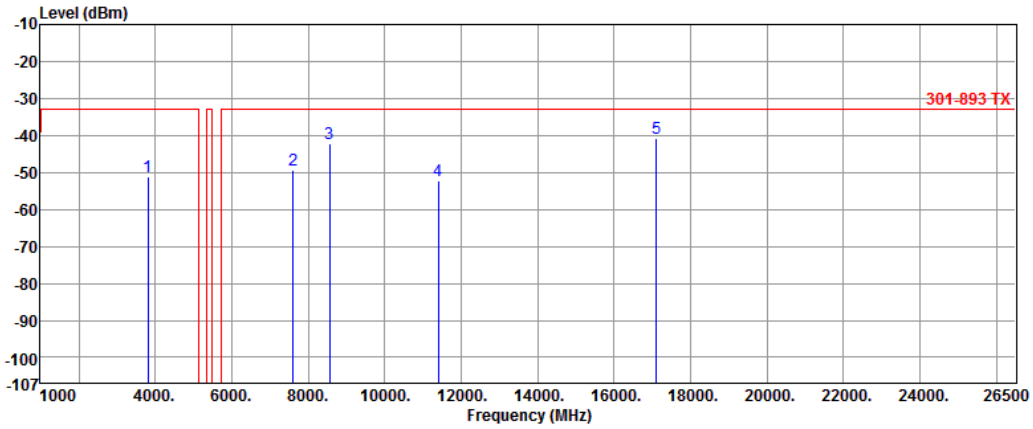
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.68	-55.65	-33.01	-22.64	0.00	-55.65
2	6906.56	-54.22	-33.01	-21.21	0.00	-54.22
3	7770.00	-45.08	-33.01	-12.07	0.00	-45.08
4	10359.80	-63.44	-33.01	-30.43	0.00	-63.44
5	15540.25	-55.64	-33.01	-22.63	0.00	-55.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

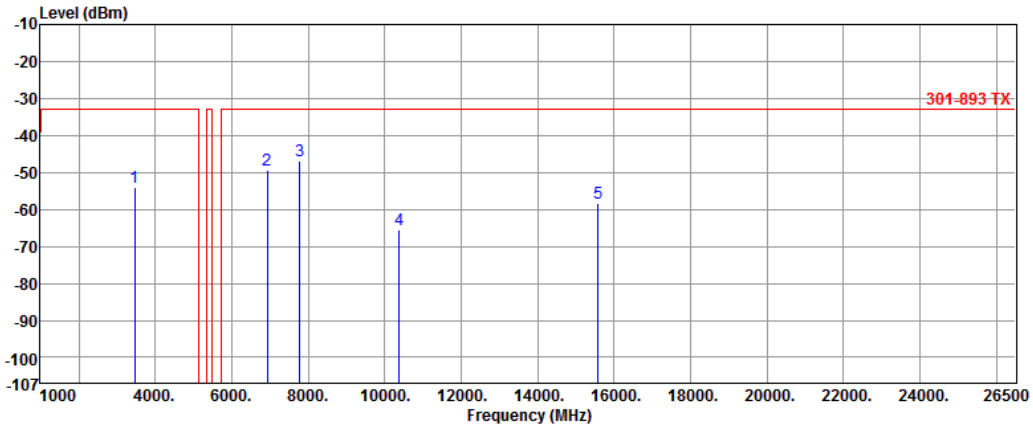
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.71	-51.24	-33.01	-18.23	0.00	-51.24
2	7600.13	-49.36	-33.01	-16.35	0.00	-49.36
3	8550.10	-42.10	-33.01	-9.09	0.00	-42.10
4	11399.05	-52.29	-33.01	-19.28	0.00	-52.29
5	17100.65	-40.92	-33.01	-7.91	0.00	-40.92

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

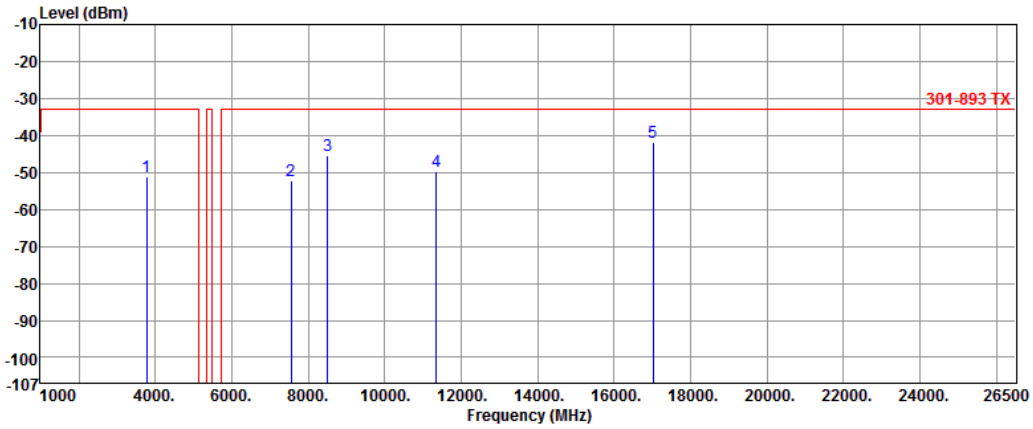
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3460.28	-54.17	-33.01	-21.16	0.00	-54.17
2	6920.83	-49.32	-33.01	-16.31	0.00	-49.32
3	7785.50	-46.81	-33.01	-13.80	0.00	-46.81
4	10380.40	-65.60	-33.01	-32.59	0.00	-65.60
5	15570.50	-58.42	-33.01	-25.41	0.00	-58.42

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

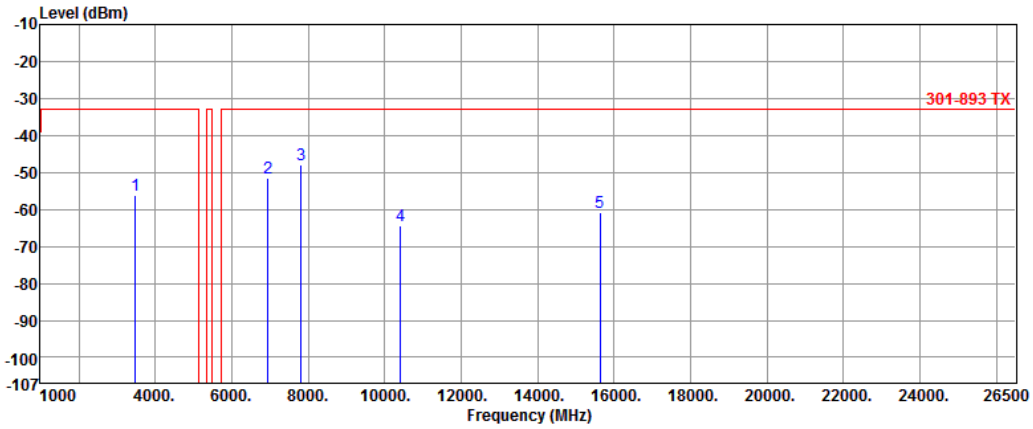
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.03	-51.32	-33.01	-18.31	0.00	-51.32
2	7560.08	-52.20	-33.01	-19.19	0.00	-52.20
3	8505.80	-45.46	-33.01	-12.45	0.00	-45.46
4	11340.70	-49.79	-33.01	-16.78	0.00	-49.79
5	17010.40	-41.70	-33.01	-8.69	0.00	-41.70

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

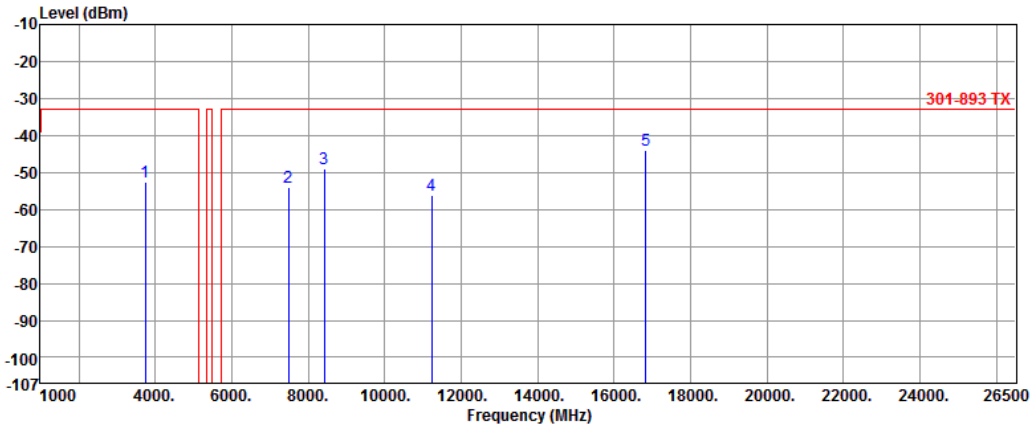
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.64	-56.07	-33.01	-23.06	0.00	-56.07
2	6946.81	-51.51	-33.01	-18.50	0.00	-51.51
3	7815.03	-47.89	-33.01	-14.88	0.00	-47.89
4	10420.40	-64.56	-33.01	-31.55	0.00	-64.56
5	15630.23	-60.76	-33.01	-27.75	0.00	-60.76

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

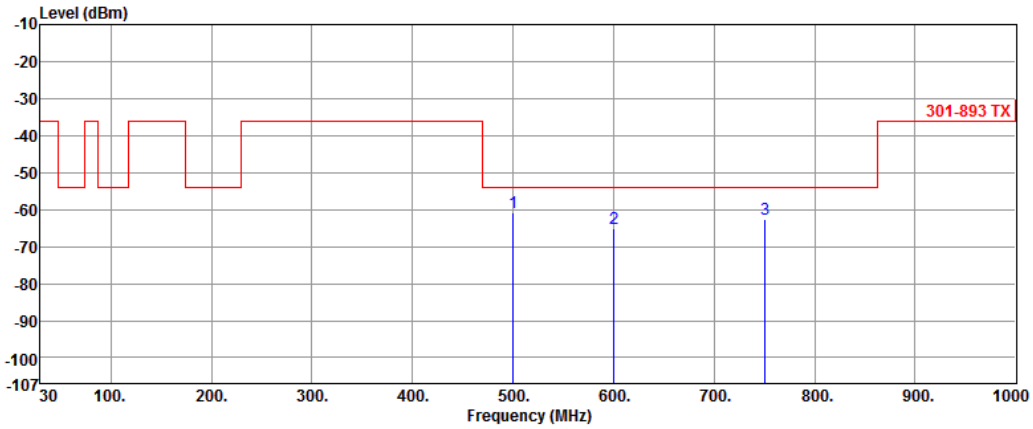


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.97	-52.49	-33.01	-19.48	0.00	-52.49
2	7480.14	-53.92	-33.01	-20.91	0.00	-53.92
3	8415.05	-49.17	-33.01	-16.16	0.00	-49.17
4	11220.40	-56.00	-33.01	-22.99	0.00	-56.00
5	16830.60	-44.07	-33.01	-11.06	0.00	-44.07

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.4.8 Transmitter Radiated Unwanted Emissions (Below 1GHz)

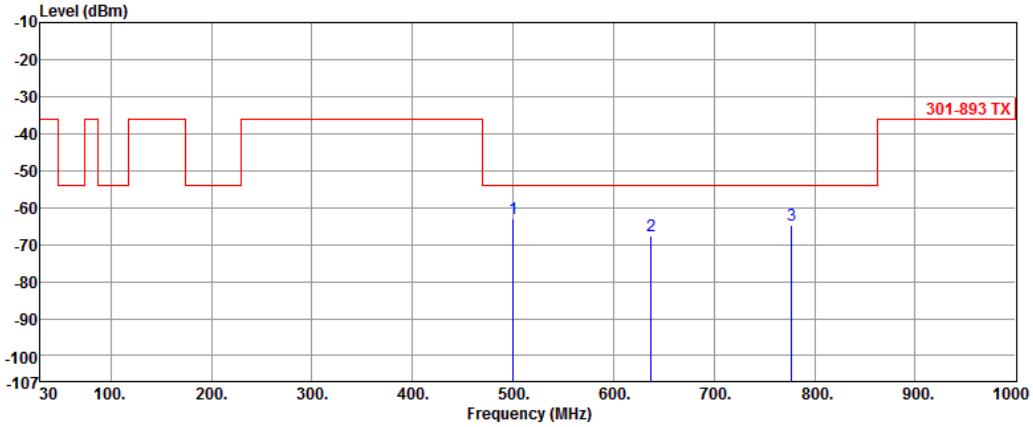
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.77	-54.00	-6.77	3.46	-64.23
2	600.36	-65.01	-54.00	-11.01	5.73	-70.74
3	750.71	-62.50	-54.00	-8.50	7.95	-70.45

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

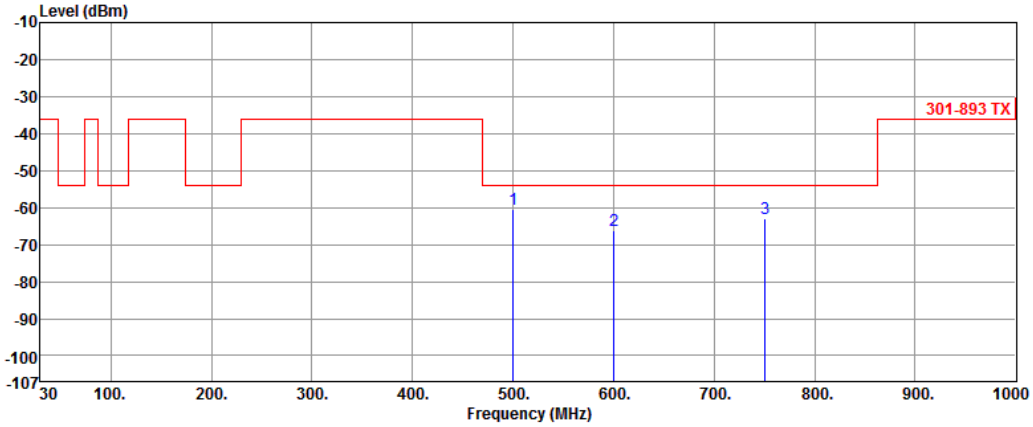
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.93	-54.00	-8.93	3.37	-66.30
2	637.22	-67.81	-54.00	-13.81	6.05	-73.86
3	776.90	-64.78	-54.00	-10.78	8.33	-73.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

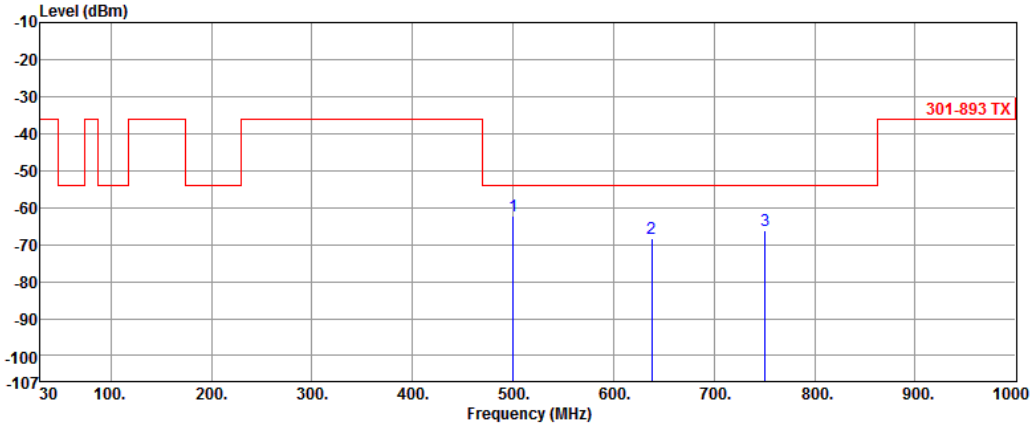
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.57	-54.00	-6.57	3.46	-64.03
2	600.36	-66.03	-54.00	-12.03	5.73	-71.76
3	750.71	-62.92	-54.00	-8.92	7.95	-70.87

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

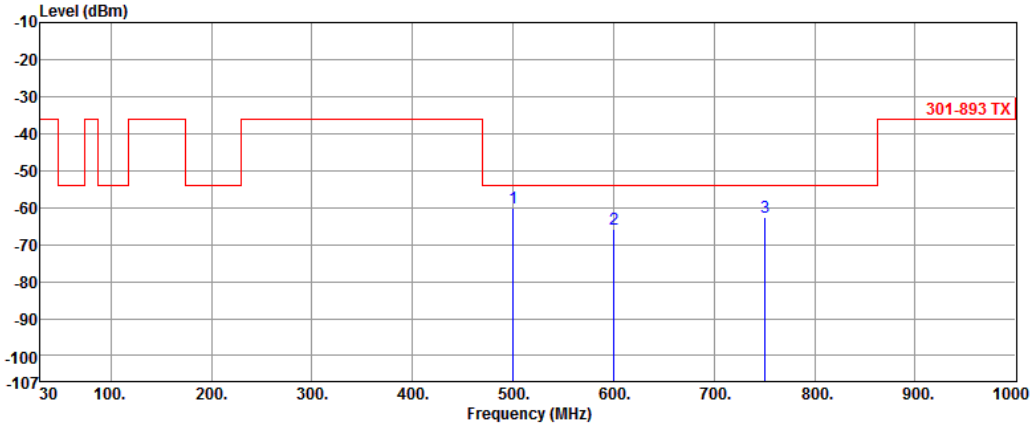
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.13	-54.00	-8.13	3.37	-65.50
2	638.19	-68.45	-54.00	-14.45	6.08	-74.53
3	750.71	-66.19	-54.00	-12.19	7.94	-74.13

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

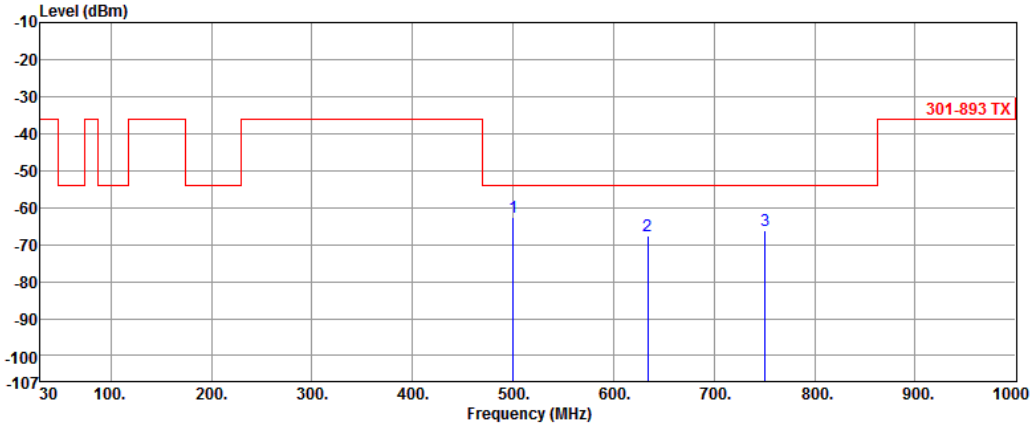
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.19	-54.00	-6.19	3.46	-63.65
2	600.36	-65.74	-54.00	-11.74	5.73	-71.47
3	750.71	-62.69	-54.00	-8.69	7.95	-70.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

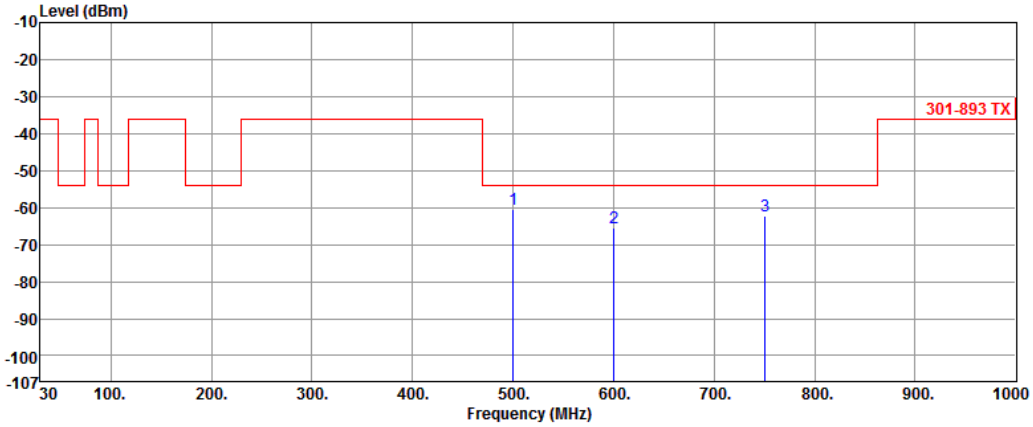
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.65	-54.00	-8.65	3.37	-66.02
2	634.31	-67.46	-54.00	-13.46	5.97	-73.43
3	750.71	-66.07	-54.00	-12.07	7.94	-74.01

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

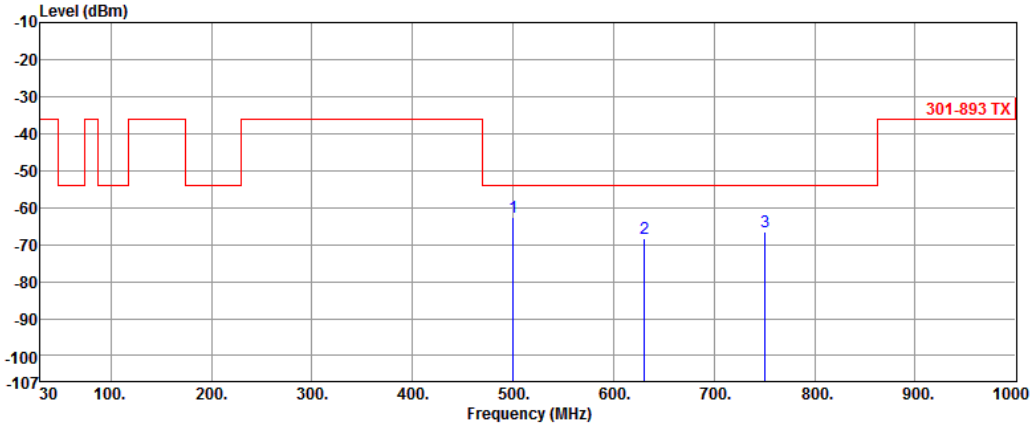
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.43	-54.00	-6.43	3.46	-63.89
2	600.36	-65.56	-54.00	-11.56	5.73	-71.29
3	750.71	-62.21	-54.00	-8.21	7.95	-70.16

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

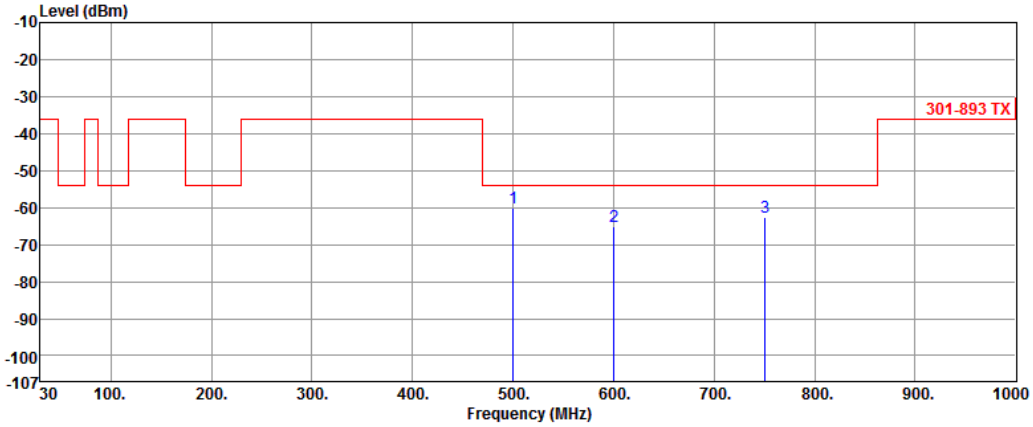
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.64	-54.00	-8.64	3.37	-66.01
2	630.43	-68.43	-54.00	-14.43	5.91	-74.34
3	750.71	-66.51	-54.00	-12.51	7.94	-74.45

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

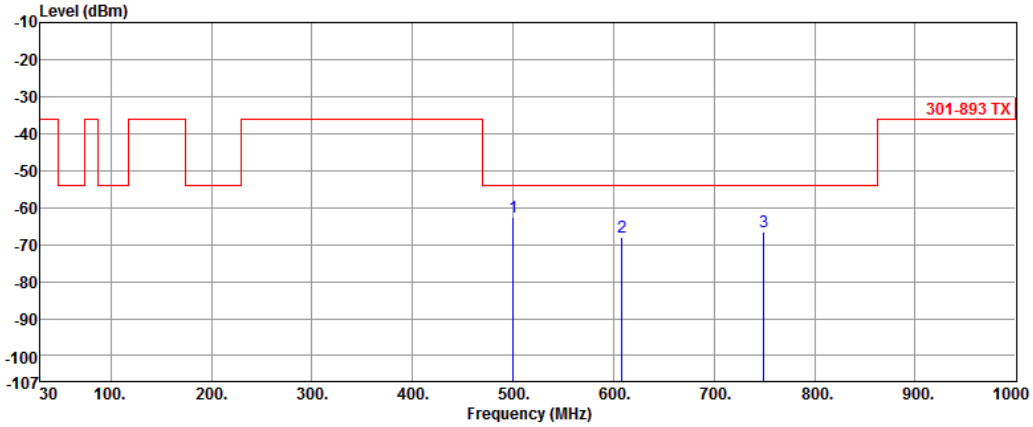
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.24	-54.00	-6.24	3.46	-63.70
2	600.36	-65.28	-54.00	-11.28	5.73	-71.01
3	750.71	-62.78	-54.00	-8.78	7.95	-70.73

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

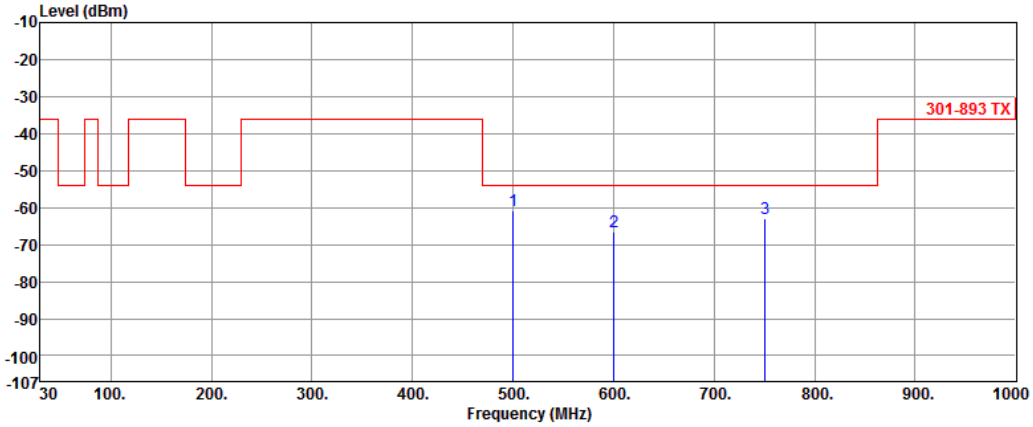
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.74	-54.00	-8.74	3.37	-66.11
2	608.12	-68.16	-54.00	-14.16	5.95	-74.11
3	749.74	-66.66	-54.00	-12.66	7.92	-74.58

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

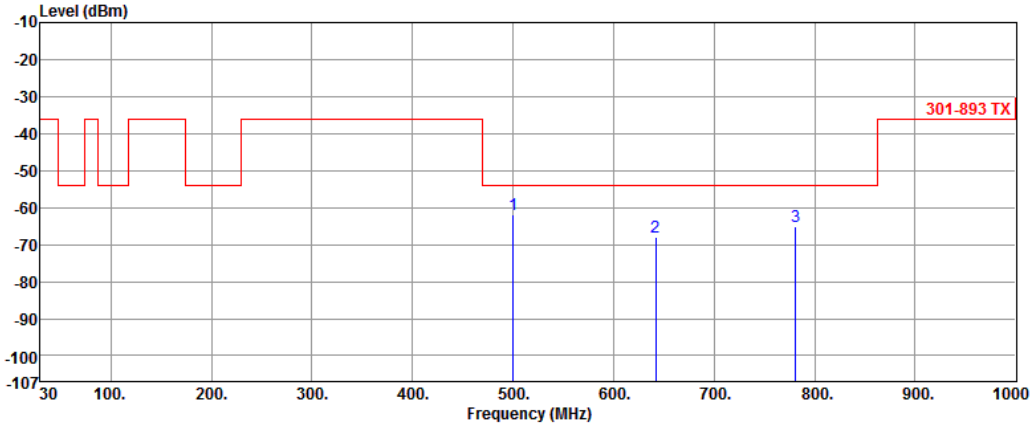
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.75	-54.00	-6.75	3.46	-64.21
2	600.36	-66.38	-54.00	-12.38	5.73	-72.11
3	750.71	-62.82	-54.00	-8.82	7.95	-70.77

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

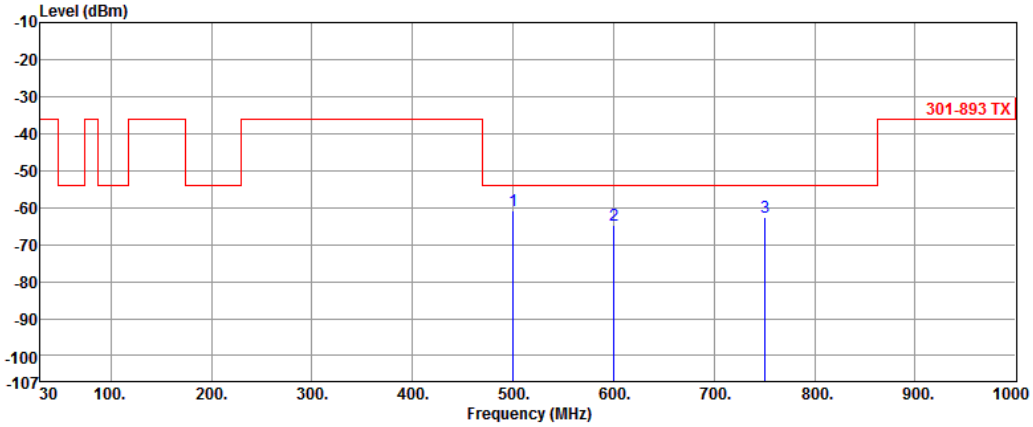
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.02	-54.00	-8.02	3.37	-65.39
2	642.07	-68.00	-54.00	-14.00	6.07	-74.07
3	780.78	-65.12	-54.00	-11.12	8.37	-73.49

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

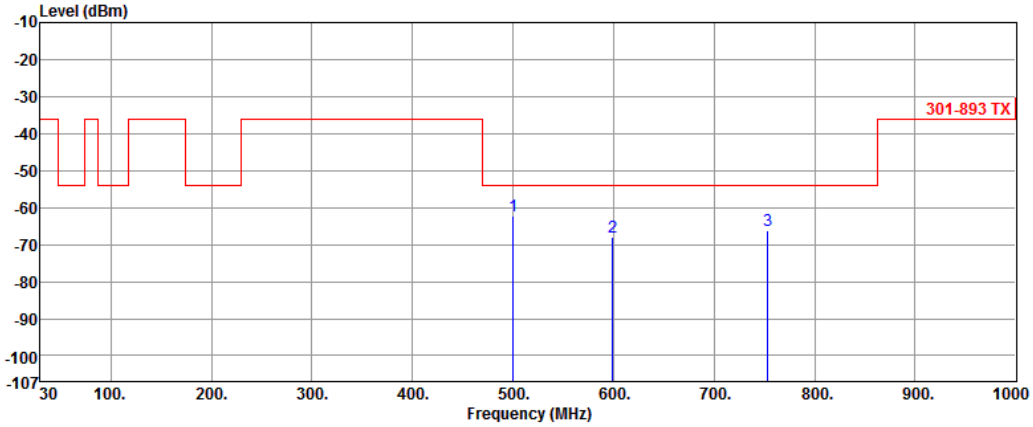
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.87	-54.00	-6.87	3.46	-64.33
2	600.36	-64.79	-54.00	-10.79	5.73	-70.52
3	750.71	-62.71	-54.00	-8.71	7.95	-70.66

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

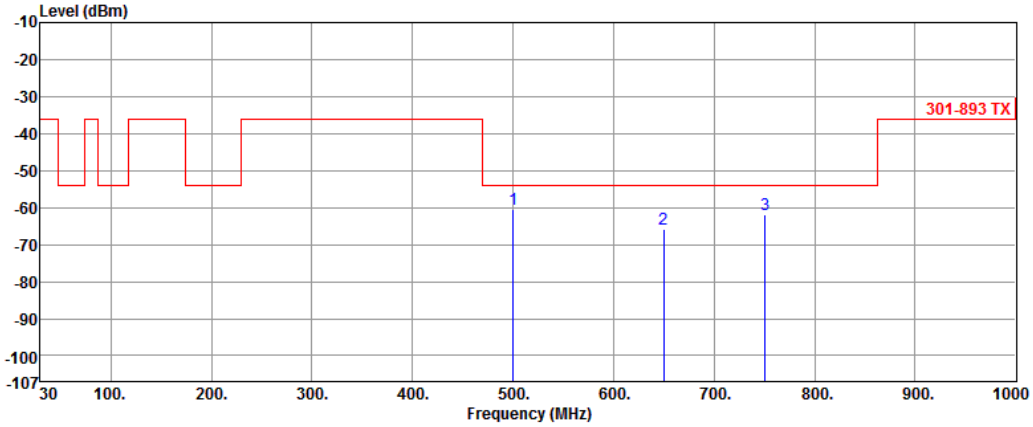
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.40	-54.00	-8.40	3.37	-65.77
2	599.39	-67.97	-54.00	-13.97	5.70	-73.67
3	753.62	-66.12	-54.00	-12.12	8.03	-74.15

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

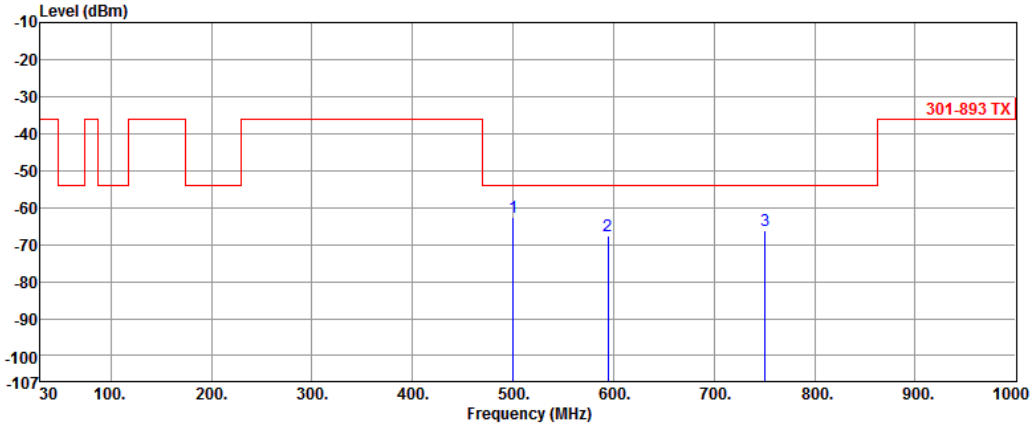
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-60.52	-54.00	-6.52	3.46	-63.98
2	649.83	-65.93	-54.00	-11.93	6.05	-71.98
3	750.71	-62.07	-54.00	-8.07	7.95	-70.02

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		

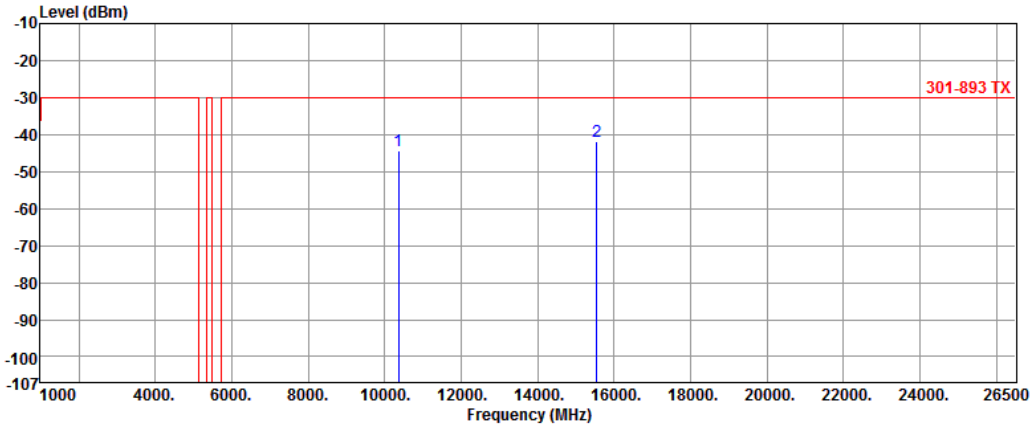


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	500.45	-62.73	-54.00	-8.73	3.37	-66.10
2	594.54	-67.72	-54.00	-13.72	5.62	-73.34
3	750.71	-66.27	-54.00	-12.27	7.94	-74.21

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.4.9 Transmitter Radiated Unwanted Emissions (Above 1GHz)

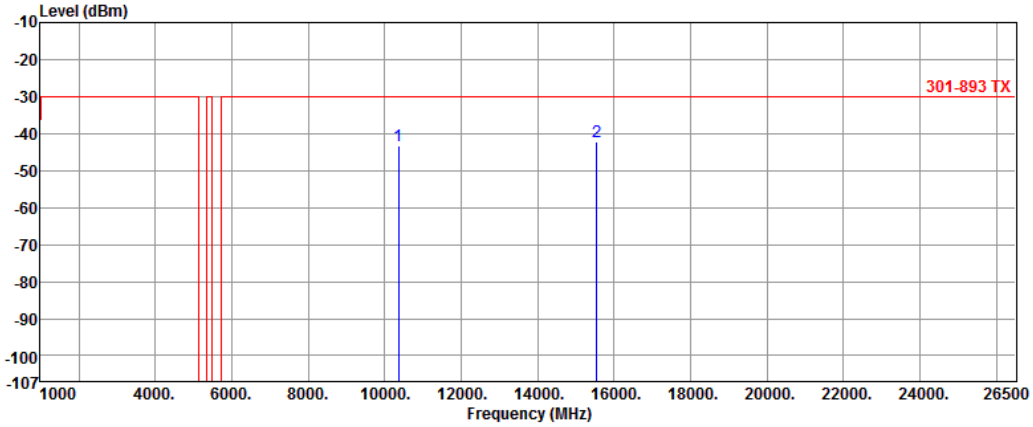
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10360.35	-44.33	-30.00	-14.33	22.22	-66.55
2	15540.55	-41.87	-30.00	-11.87	23.96	-65.83

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

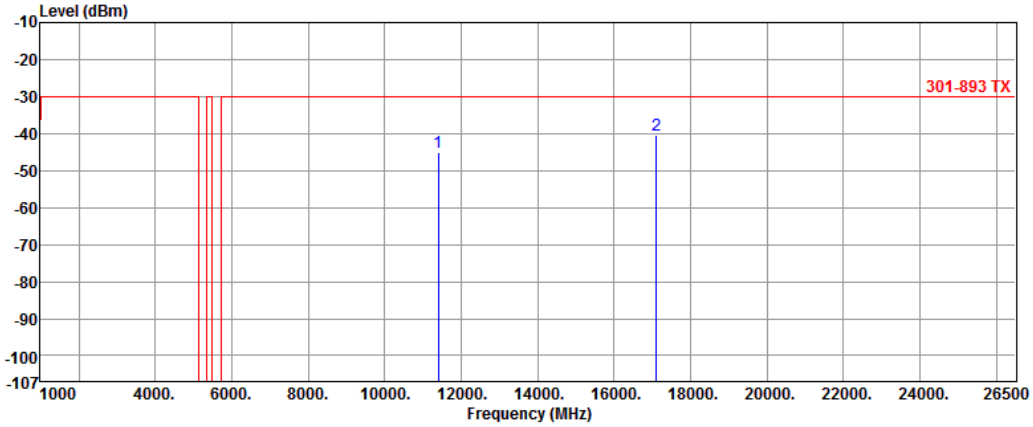
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10360.51	-43.33	-30.00	-13.33	22.02	-65.35
2	15540.23	-42.28	-30.00	-12.28	22.71	-64.99

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

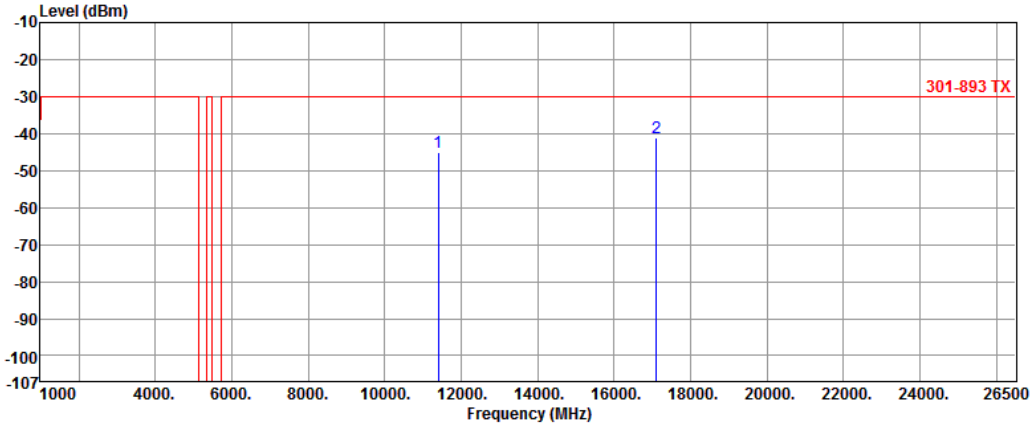
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11400.95	-45.10	-30.00	-15.10	20.80	-65.90
2	17100.40	-40.25	-30.00	-10.25	24.39	-64.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

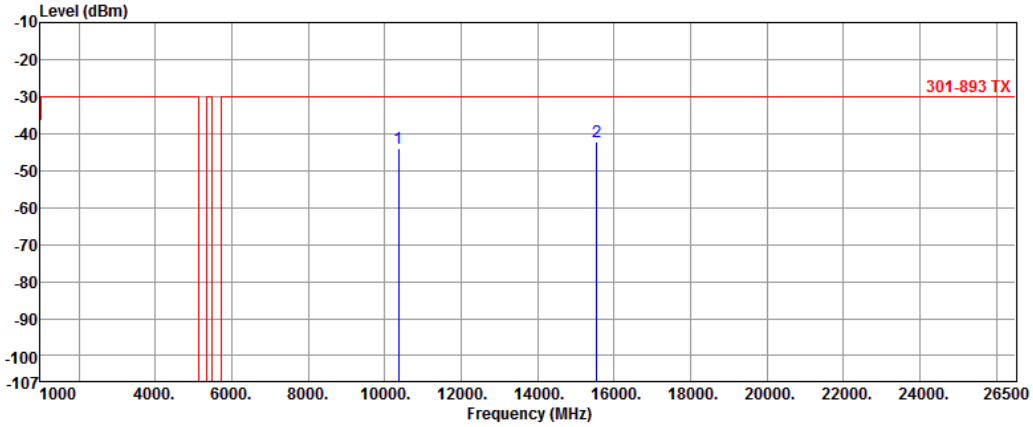
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11400.65	-44.99	-30.00	-14.99	21.19	-66.18
2	17100.50	-41.10	-30.00	-11.10	24.15	-65.25

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

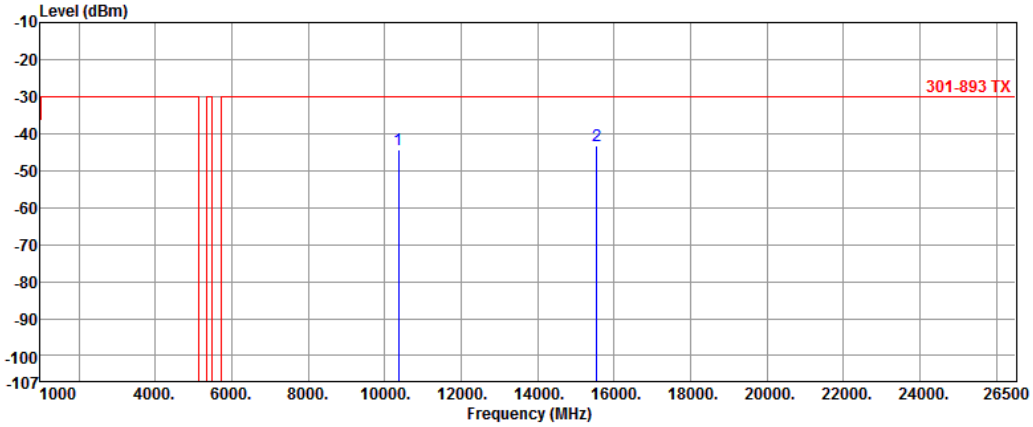
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10360.95	-44.14	-30.00	-14.14	22.22	-66.36
2	15540.60	-42.15	-30.00	-12.15	23.96	-66.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

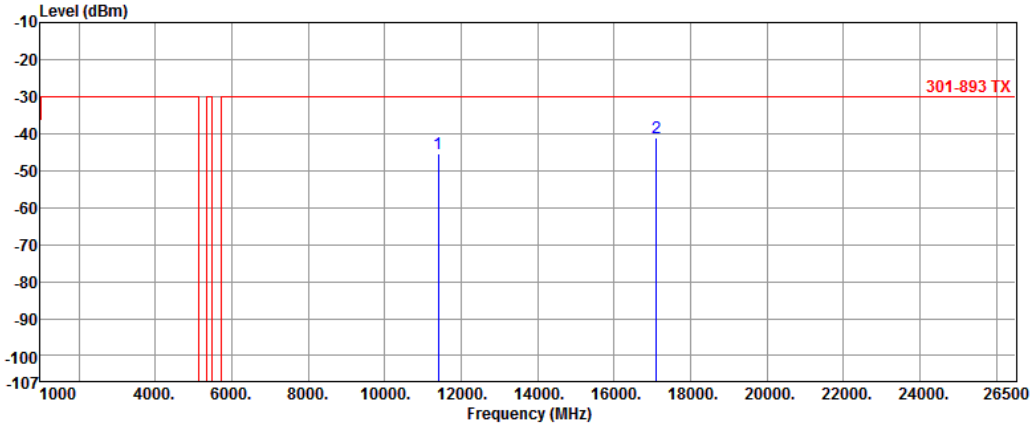
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10360.55	-44.48	-30.00	-14.48	22.02	-66.50
2	15540.25	-43.31	-30.00	-13.31	22.71	-66.02

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

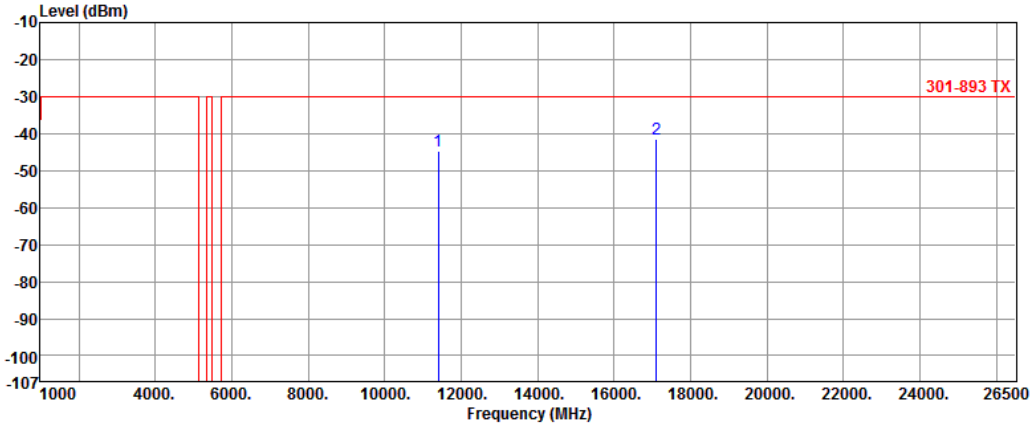
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11400.70	-45.53	-30.00	-15.53	20.80	-66.33
2	17100.70	-41.00	-30.00	-11.00	24.39	-65.39

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

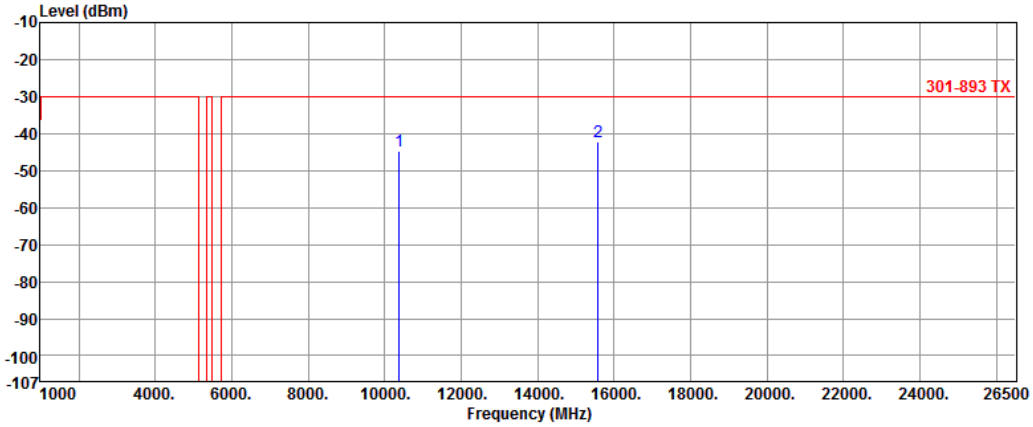
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11400.65	-44.86	-30.00	-14.86	21.19	-66.05
2	17100.10	-41.53	-30.00	-11.53	24.15	-65.68

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

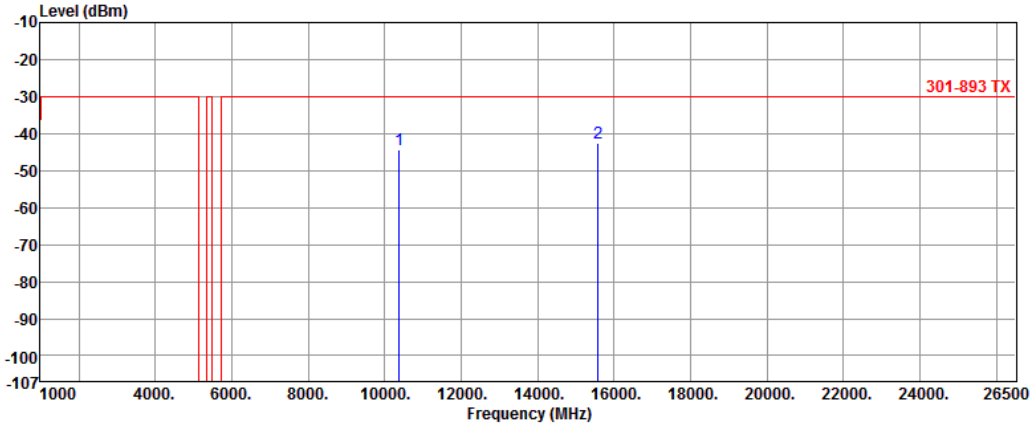
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10380.30	-44.71	-30.00	-14.71	22.15	-66.86
2	15570.90	-42.28	-30.00	-12.28	23.83	-66.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

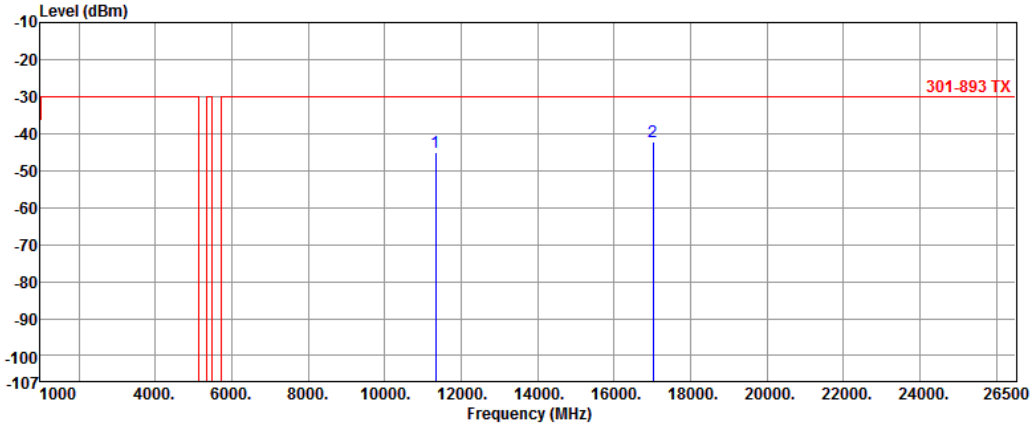
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10380.50	-44.42	-30.00	-14.42	22.10	-66.52
2	15570.60	-42.51	-30.00	-12.51	22.64	-65.15

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

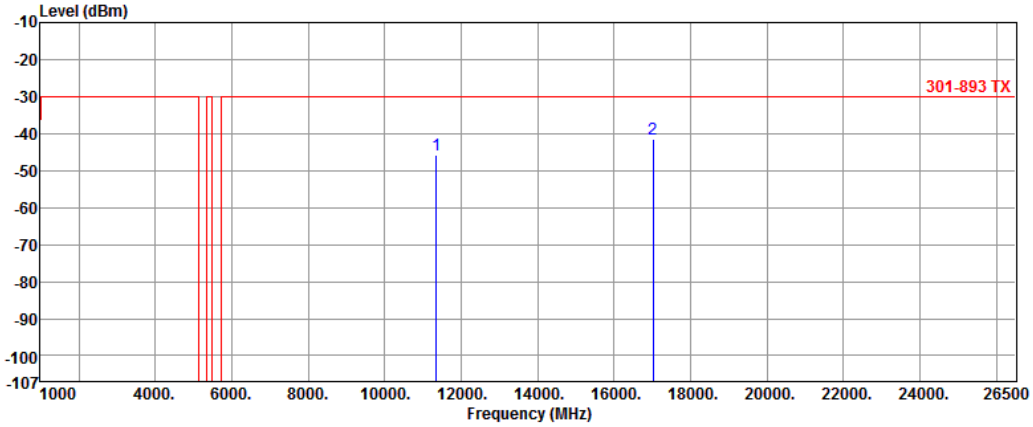
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11340.10	-45.01	-30.00	-15.01	20.85	-65.86
2	17010.20	-42.09	-30.00	-12.09	23.53	-65.62

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

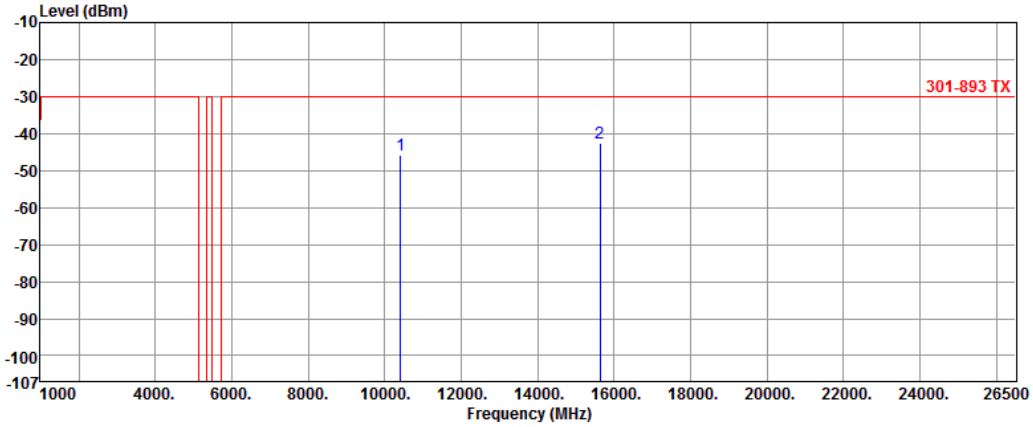
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11340.90	-45.64	-30.00	-15.64	21.25	-66.89
2	17010.90	-41.43	-30.00	-11.43	23.96	-65.39

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

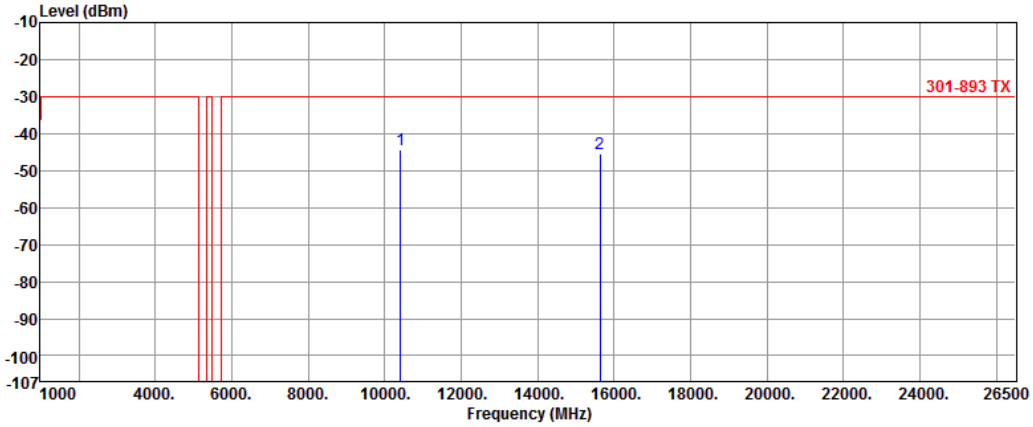
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10420.40	-45.67	-30.00	-15.67	22.11	-67.78
2	15630.90	-42.70	-30.00	-12.70	23.72	-66.42

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

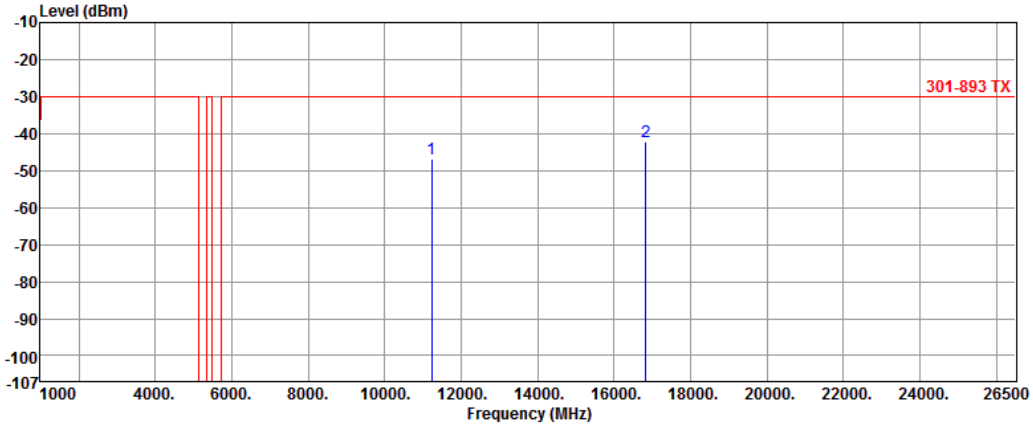
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10420.70	-44.41	-30.00	-14.41	22.24	-66.65
2	15630.30	-45.28	-30.00	-15.28	22.45	-67.73

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

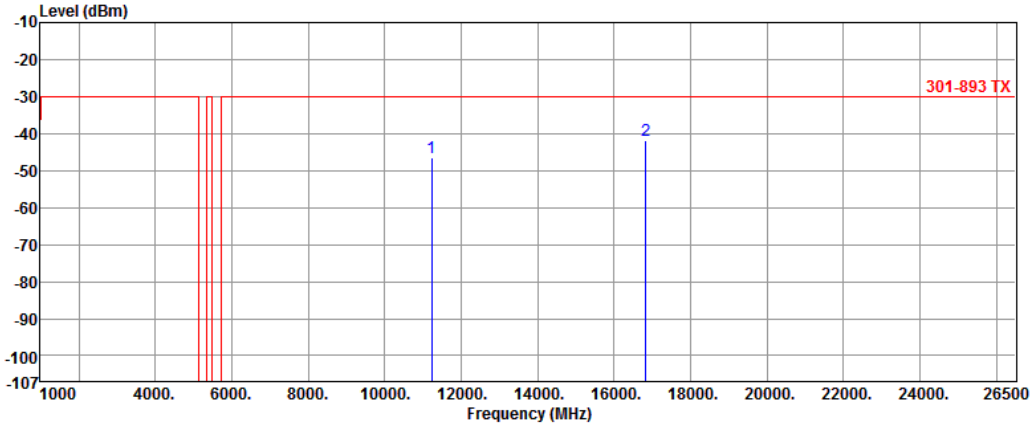
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11220.80	-46.88	-30.00	-16.88	20.69	-67.57
2	16830.30	-42.13	-30.00	-12.13	24.07	-66.20

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		

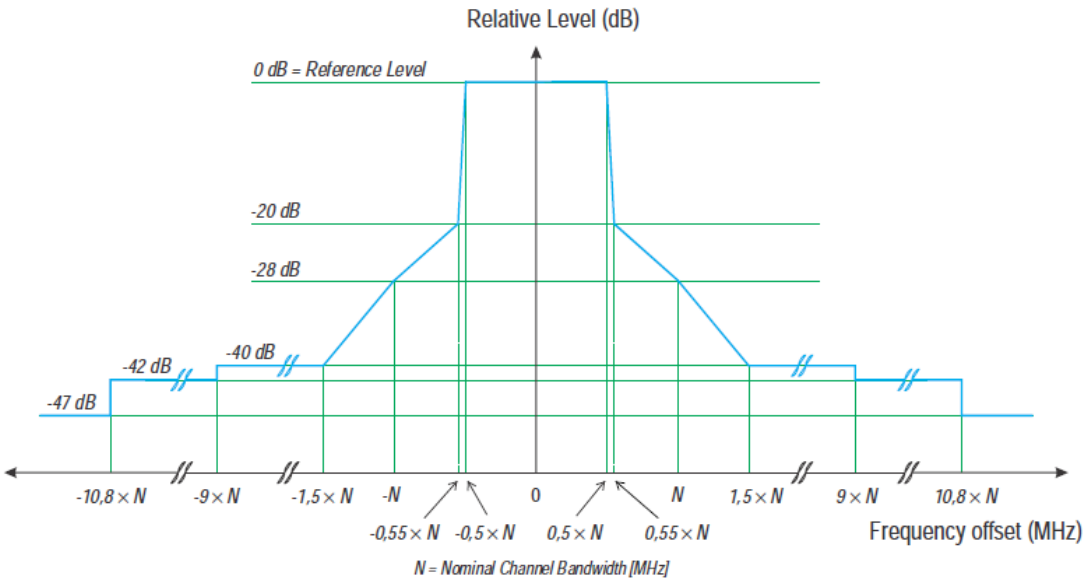


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11220.50	-46.66	-30.00	-16.66	21.00	-67.66
2	16830.40	-41.73	-30.00	-11.73	24.95	-66.68

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

3.5 Transmitter Unwanted Emissions within the 5 GHz RLAN Band

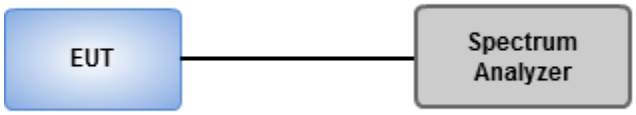
3.5.1 Limit of Transmitter Unwanted Emissions within the 5 GHz RLAN Band



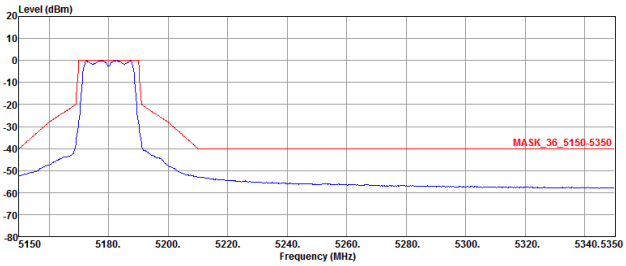
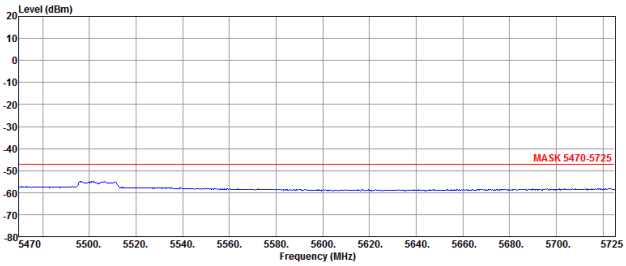
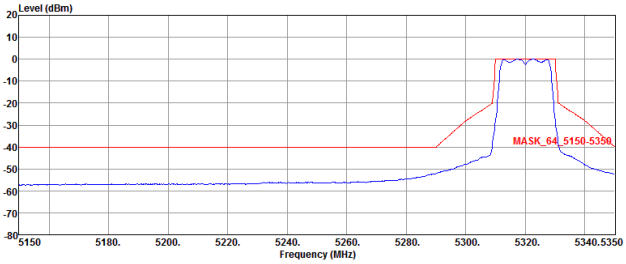
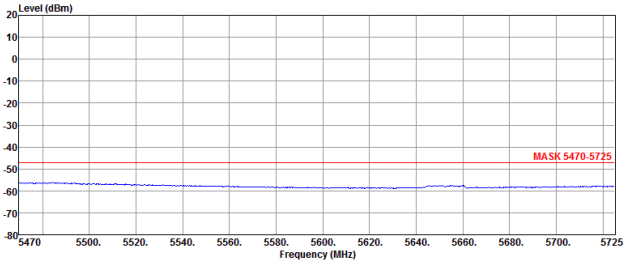
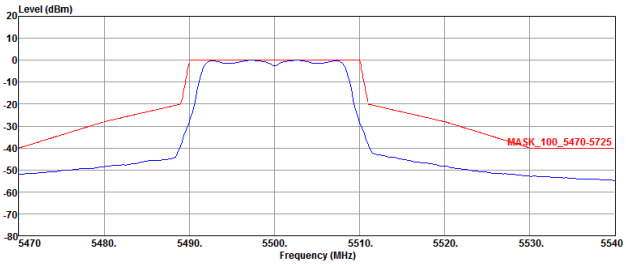
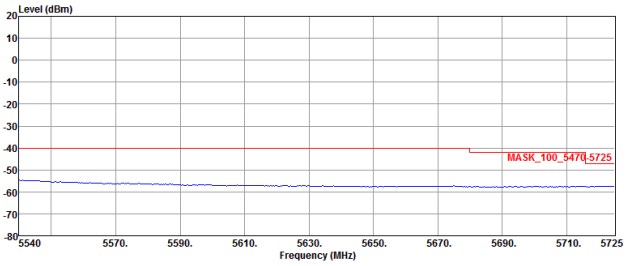
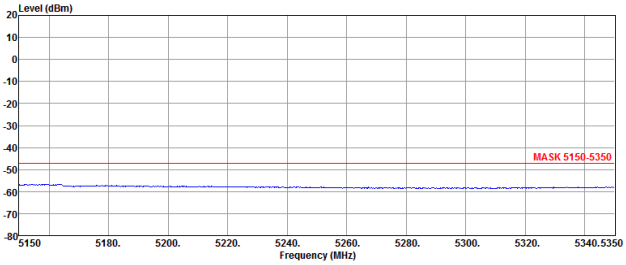
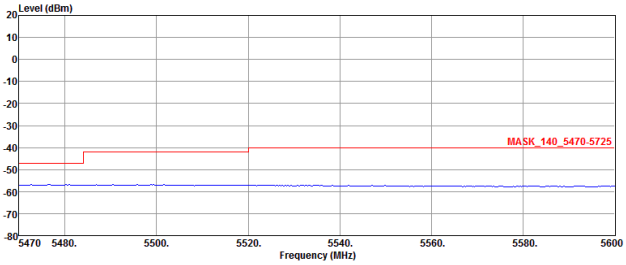
3.5.2 Test Procedures

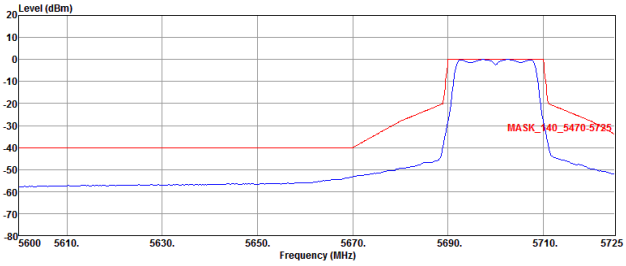
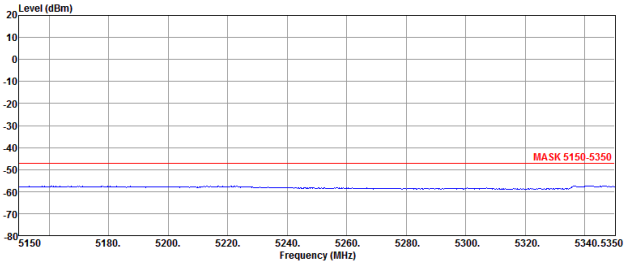
Reference to clause 5.4.6.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.5.3 Test Setup

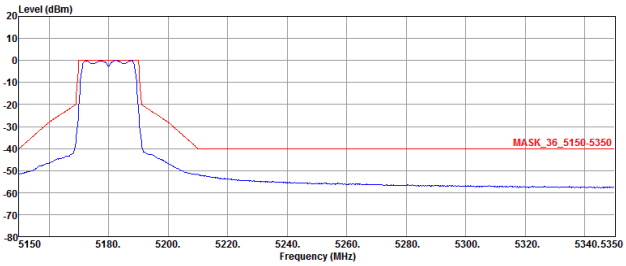
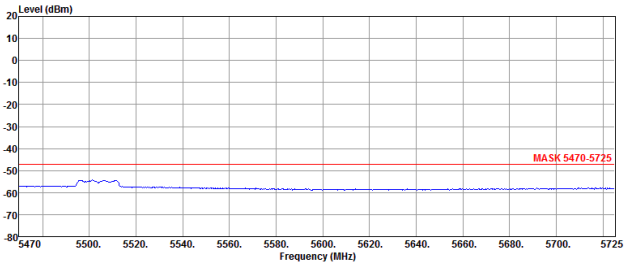
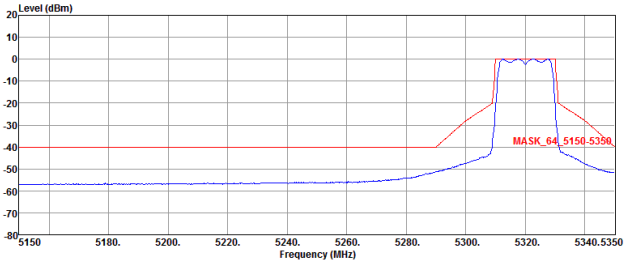
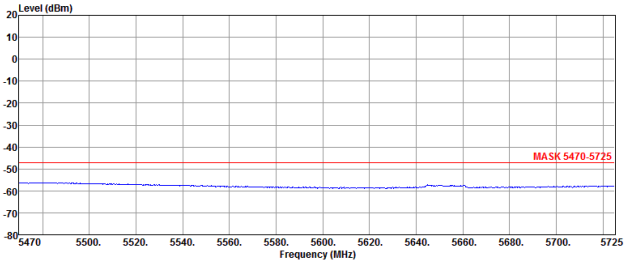
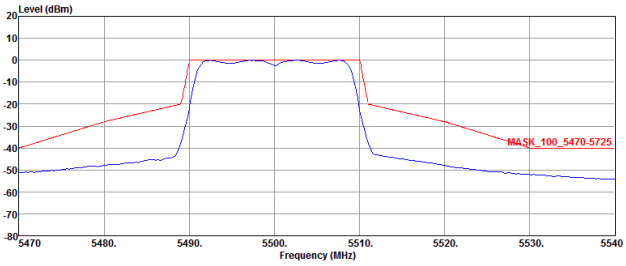
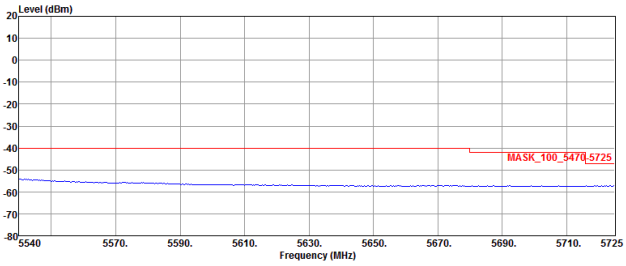
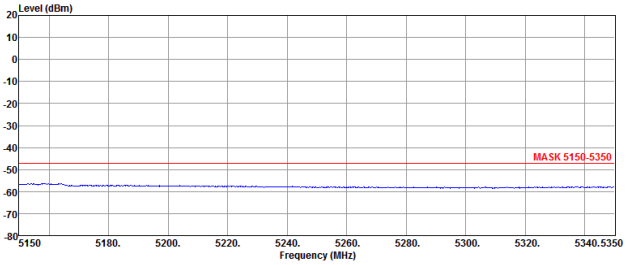
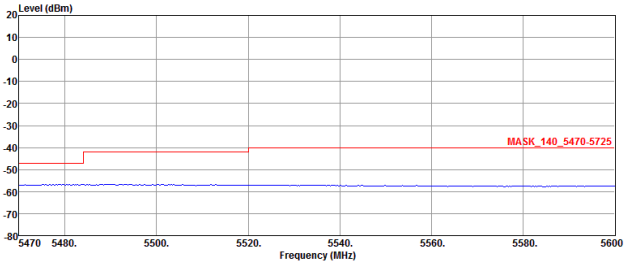


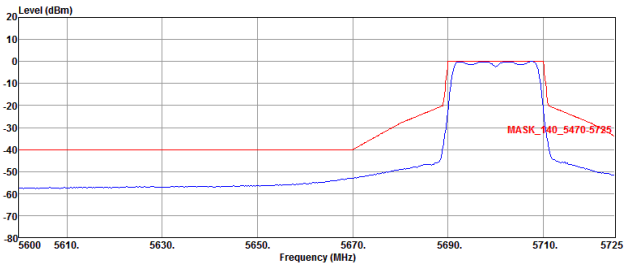
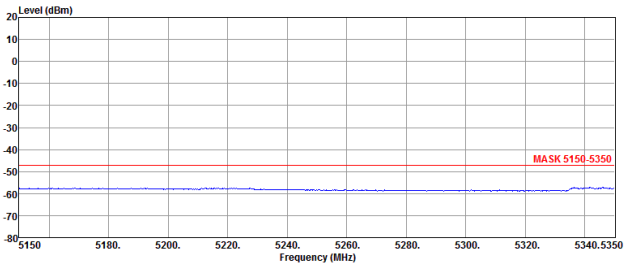
3.5.4 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11a

5180MHz	5180MHz
	
5320MHz	**5320MHz**
	
5500MHz	**5500MHz**
	
5500MHz	**5700MHz**
	

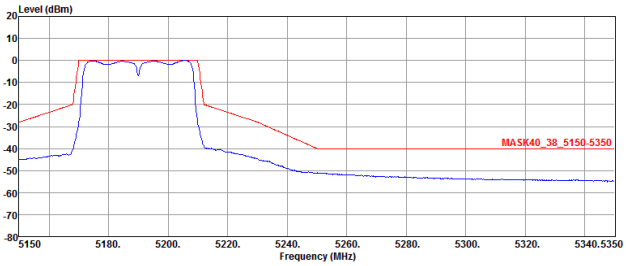
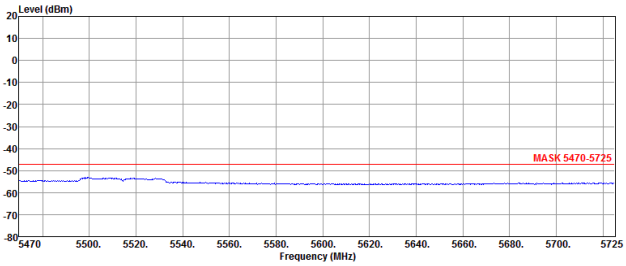
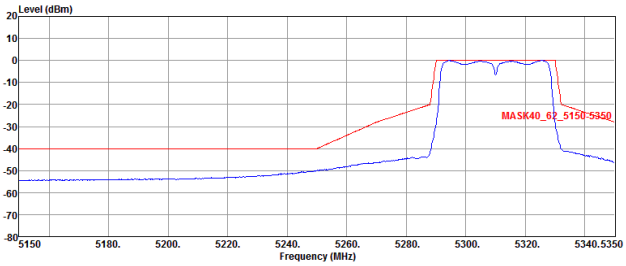
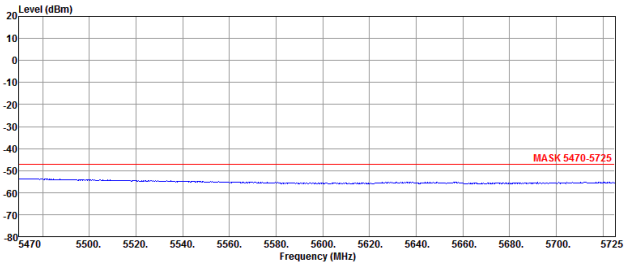
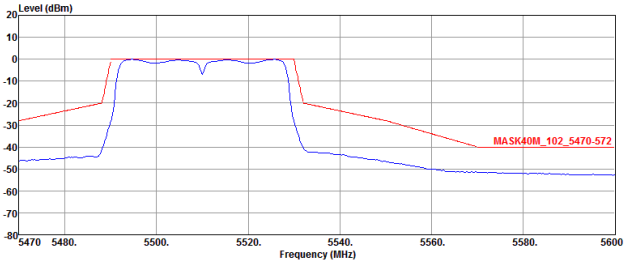
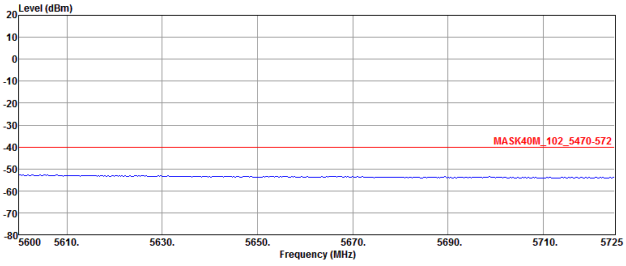
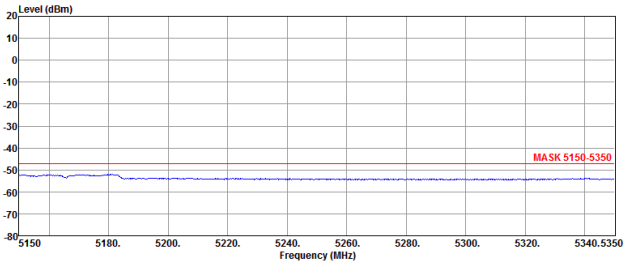
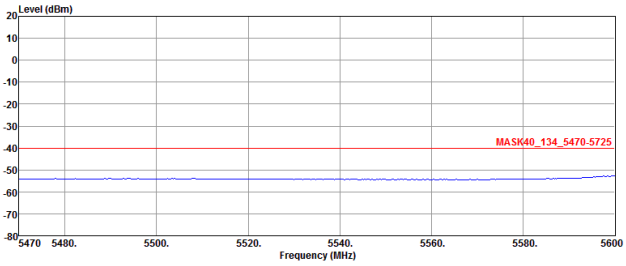
5700MHz	5700MHz
	

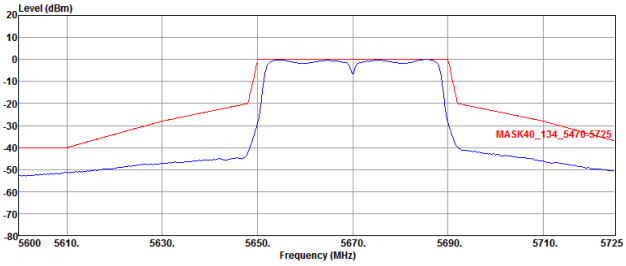
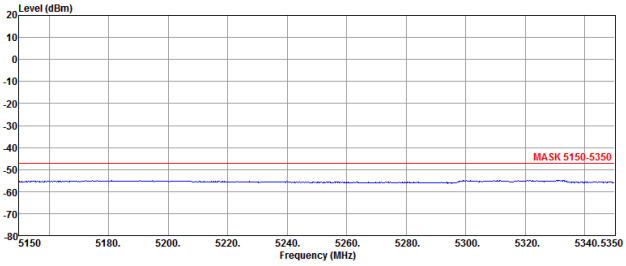
3.5.5 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11ac VHT20

5180MHz	5180MHz
	
5320MHz	**5320MHz**
	
5500MHz	**5500MHz**
	
5500MHz	**5700MHz**
	

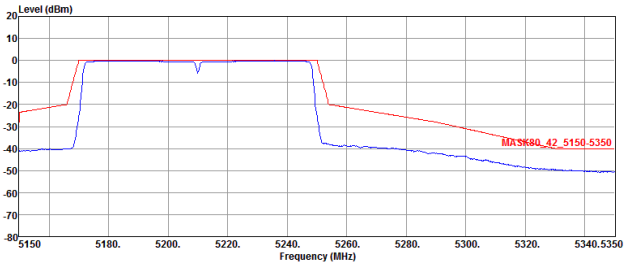
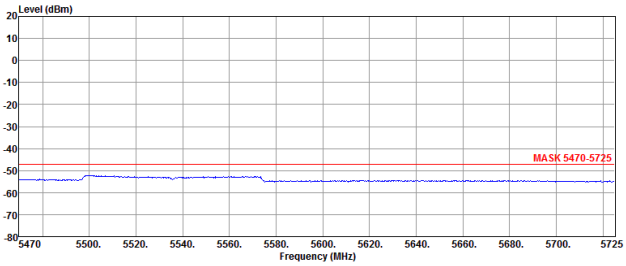
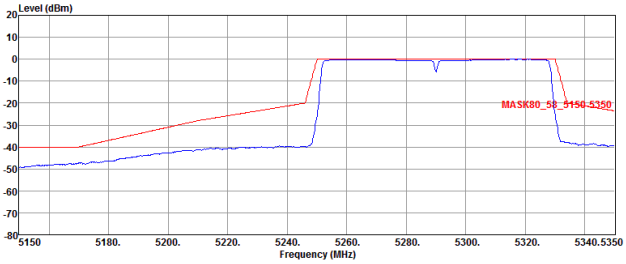
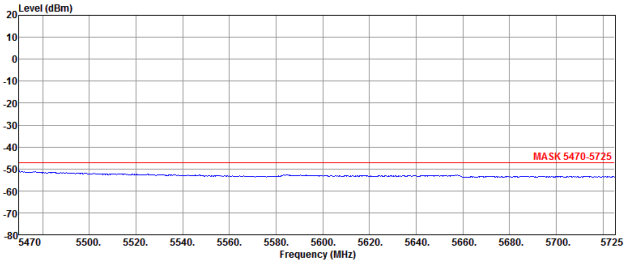
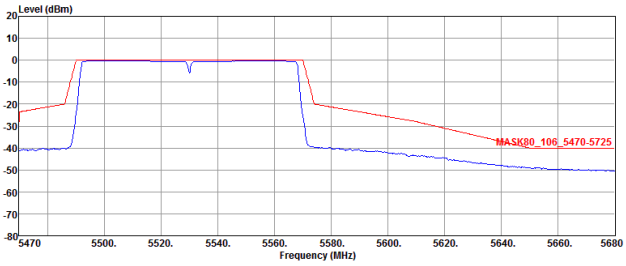
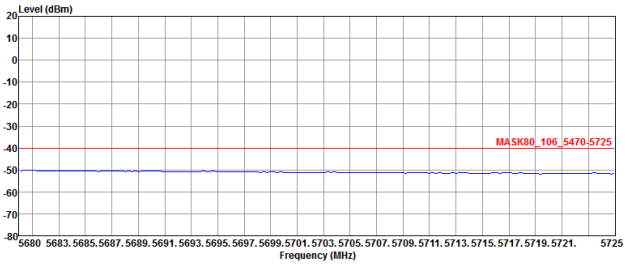
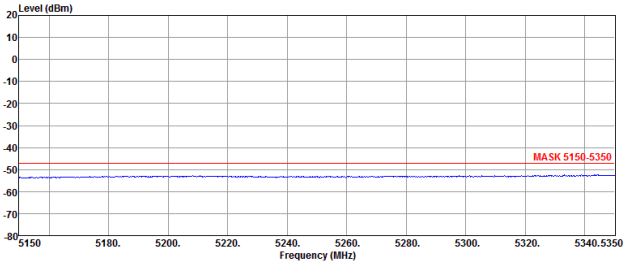
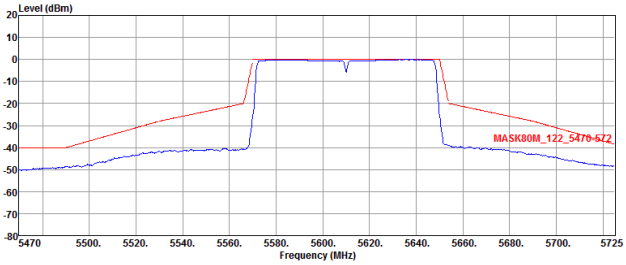
5700MHz	5700MHz
	

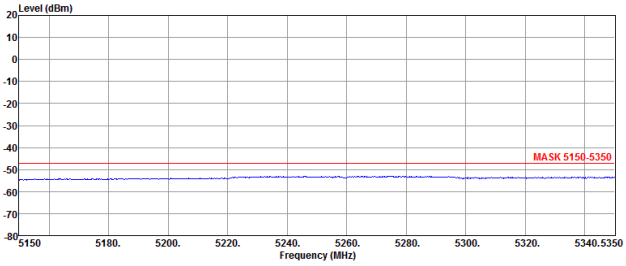
3.5.6 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11ac VHT40

5190MHz	5190MHz
	
5310MHz	**5310MHz**
	
5510MHz	**5510MHz**
	
5510MHz	**5670MHz**
	

5670MHz	5670MHz
	

3.5.7 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11ac VHT80

5210MHz	5210MHz
	
5290MHz	**5290MHz**
	
5530MHz	**5530MHz**
	
5530MHz	**5610MHz**
	

5610MHz	---
 Level (dBm) 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 MASK 5150-5350 5150 5180. 5200. 5220. 5240. 5260. 5280. 5300. 5320. 5340.5350 Frequency (MHz)	

4 Receiver Test Results

4.1 Receiver Spurious Emissions

4.1.1 Limit of Receiver Spurious Emissions

Limit for Radiated Spurious Emissions

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

Limit for Conducted Spurious Emissions

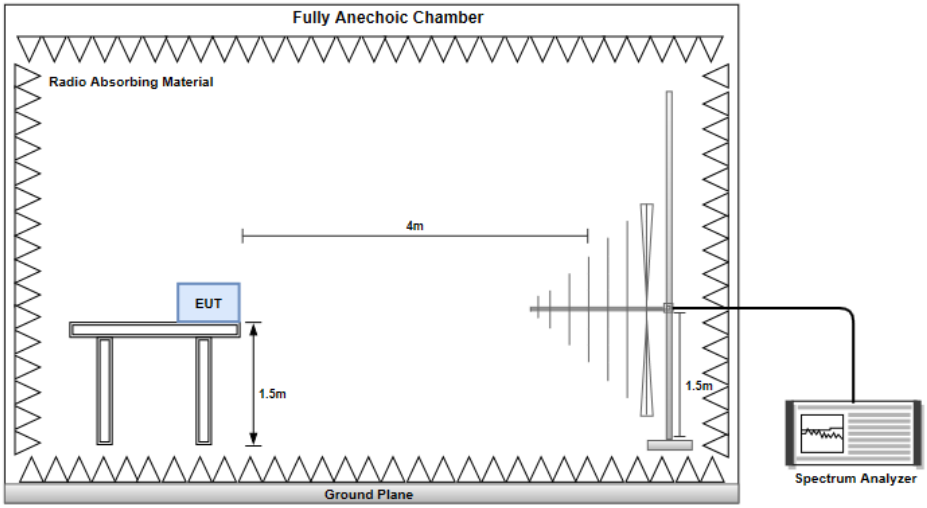
Frequency Range	Maximum Power	Measurement Bandwidth
30 MHz to 1 GHz	-60.01 dBm	100 kHz
1 GHz to 26 GHz	-50.01 dBm	1 MHz

4.1.2 Test Procedures

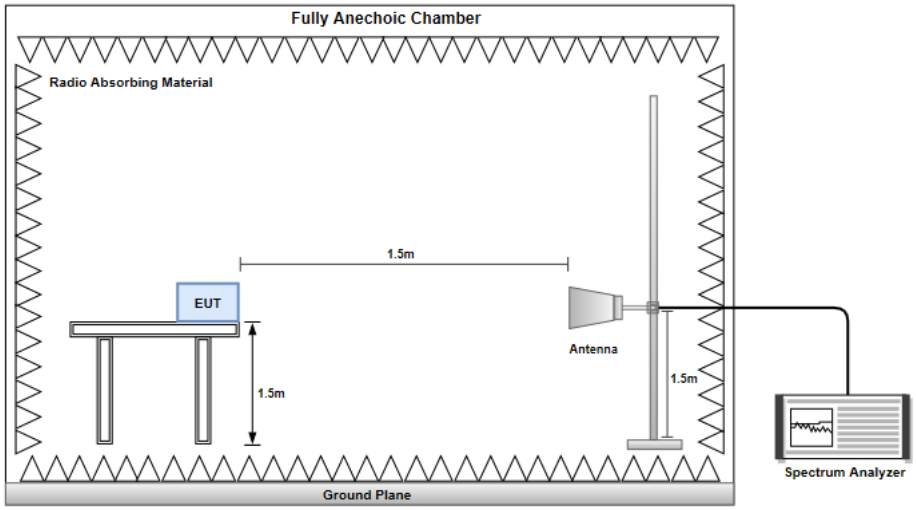
Reference to clause 5.4.7.2 of ETSI EN 301 893 V2.1.1 (2017-05).

4.1.3 Test Setup

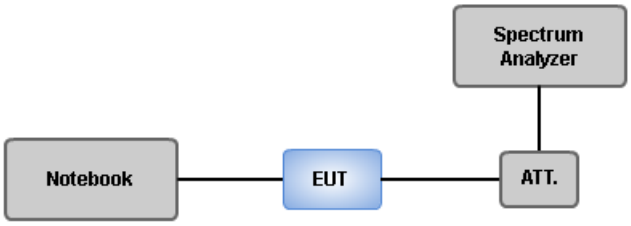
Below 1GHz



Above 1 GHz



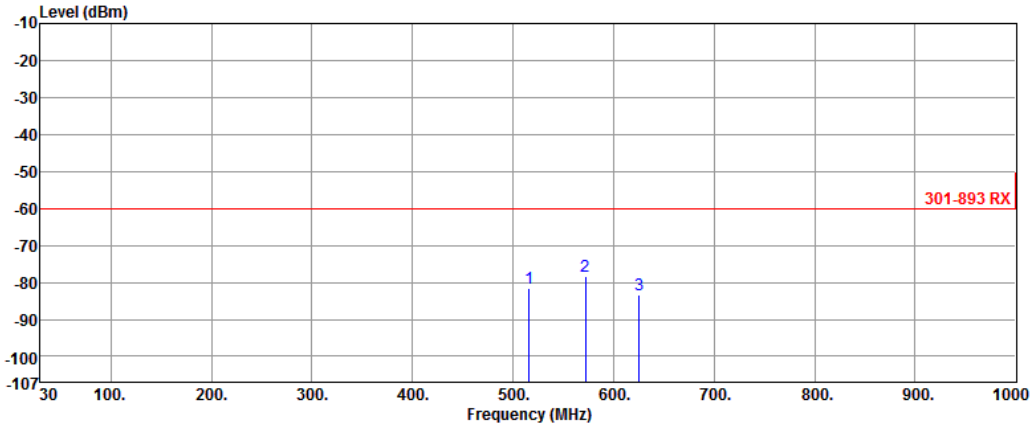
Conducted Emission



Main Port

4.1.4 Receiver Conducted Spurious Emissions (Below 1GHz)

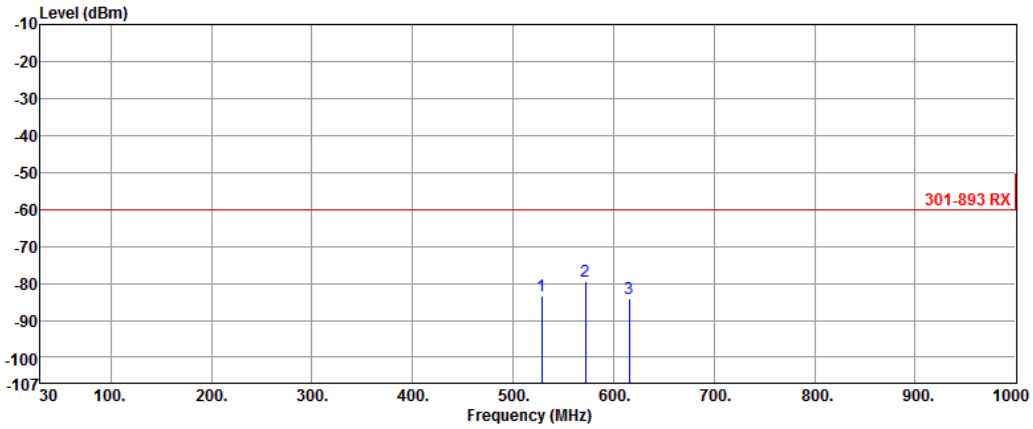
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	515.97	-81.65	-60.01	-21.64	0.00	-81.65
2	572.23	-78.50	-60.01	-18.49	0.00	-78.50
3	625.58	-83.36	-60.01	-23.35	0.00	-83.36

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

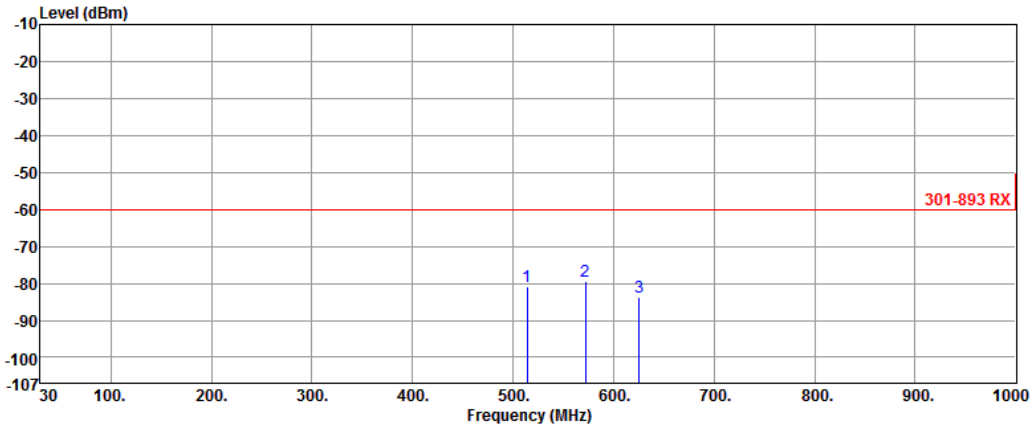
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	528.58	-83.54	-60.01	-23.53	0.00	-83.54
2	572.23	-79.28	-60.01	-19.27	0.00	-79.28
3	615.88	-84.11	-60.01	-24.10	0.00	-84.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

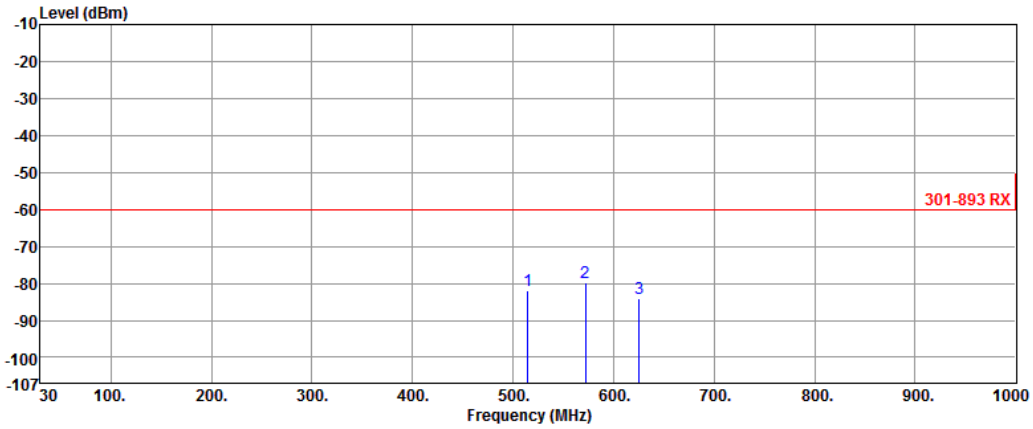
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	514.03	-80.75	-60.01	-20.74	0.00	-80.75
2	572.23	-79.36	-60.01	-19.35	0.00	-79.36
3	625.58	-83.70	-60.01	-23.69	0.00	-83.70

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

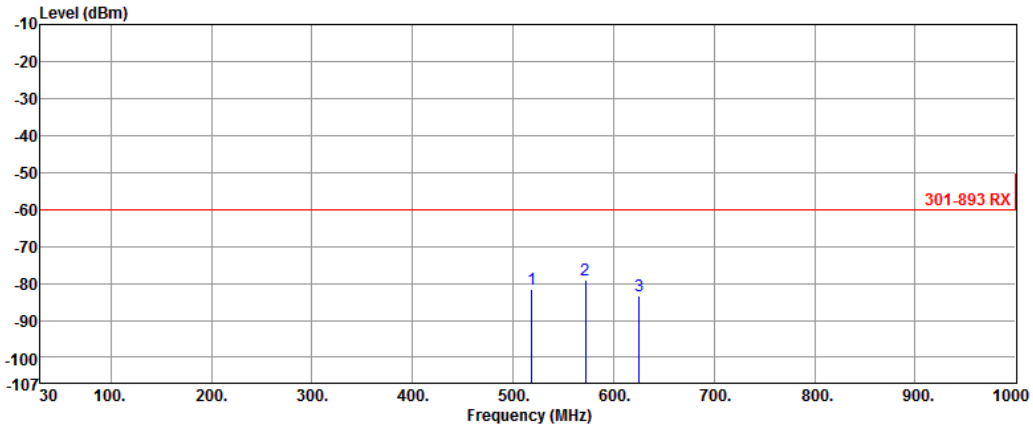
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	515.00	-81.77	-60.01	-21.76	0.00	-81.77
2	572.23	-79.65	-60.01	-19.64	0.00	-79.65
3	625.58	-84.08	-60.01	-24.07	0.00	-84.08

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

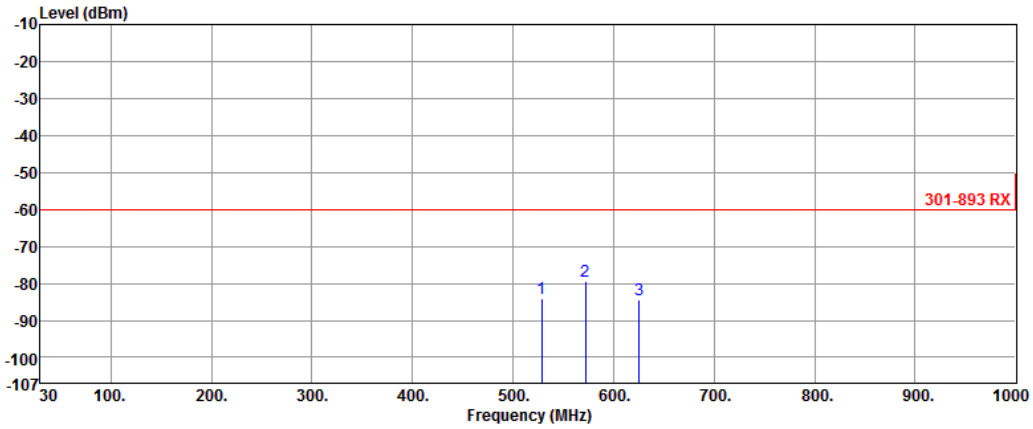
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	518.88	-81.44	-60.01	-21.43	0.00	-81.44
2	572.23	-79.12	-60.01	-19.11	0.00	-79.12
3	625.58	-83.24	-60.01	-23.23	0.00	-83.24

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

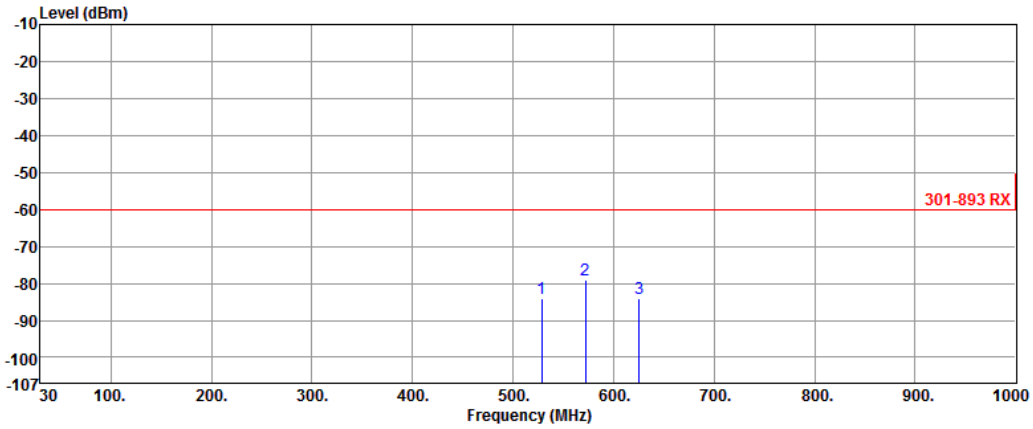
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	528.58	-84.23	-60.01	-24.22	0.00	-84.23
2	572.23	-79.41	-60.01	-19.40	0.00	-79.41
3	625.58	-84.48	-60.01	-24.47	0.00	-84.48

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

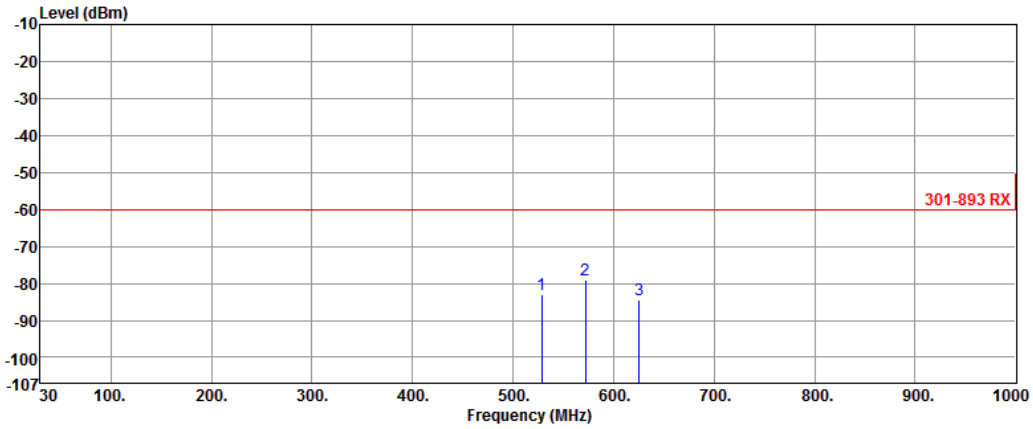
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	528.58	-84.24	-60.01	-24.23	0.00	-84.24
2	572.23	-79.25	-60.01	-19.24	0.00	-79.25
3	625.58	-84.21	-60.01	-24.20	0.00	-84.21

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

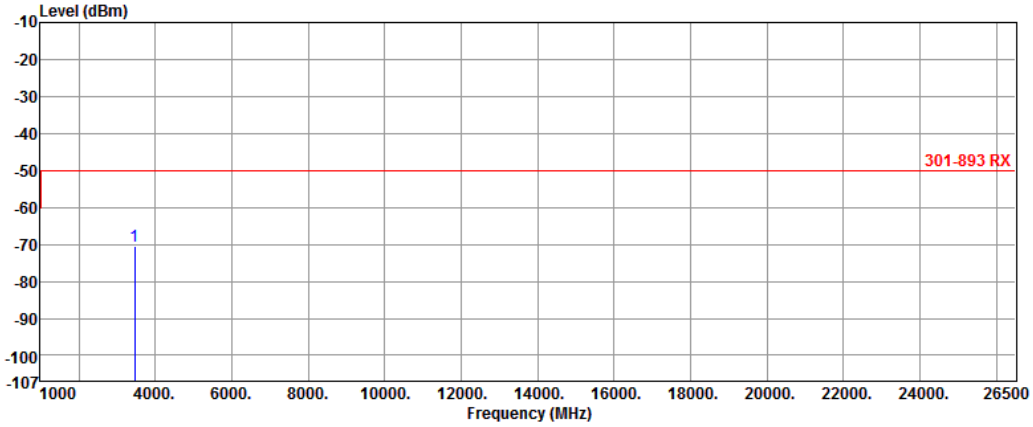


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	528.58	-83.19	-60.01	-23.18	0.00	-83.19
2	572.23	-78.91	-60.01	-18.90	0.00	-78.91
3	625.58	-84.30	-60.01	-24.29	0.00	-84.30

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.5 Receiver Conducted Spurious Emissions (Above 1GHz)

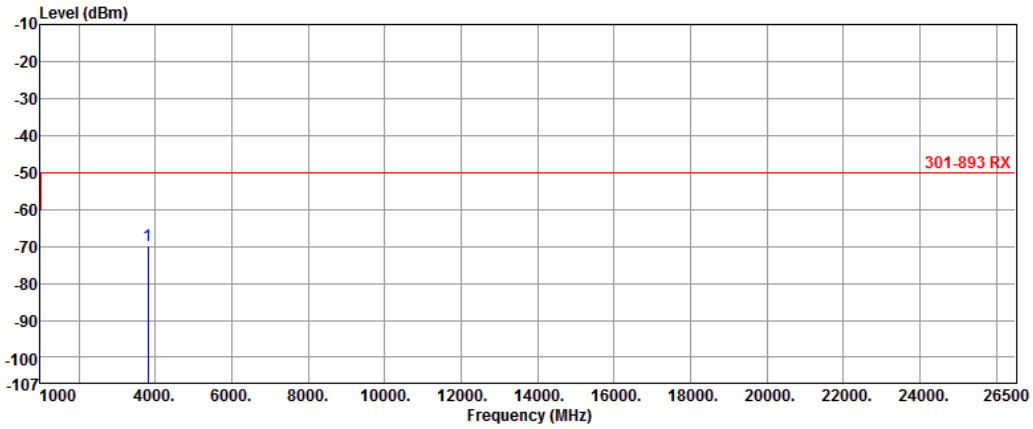
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.41	-70.63	-50.01	-20.62	0.00	-70.63

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

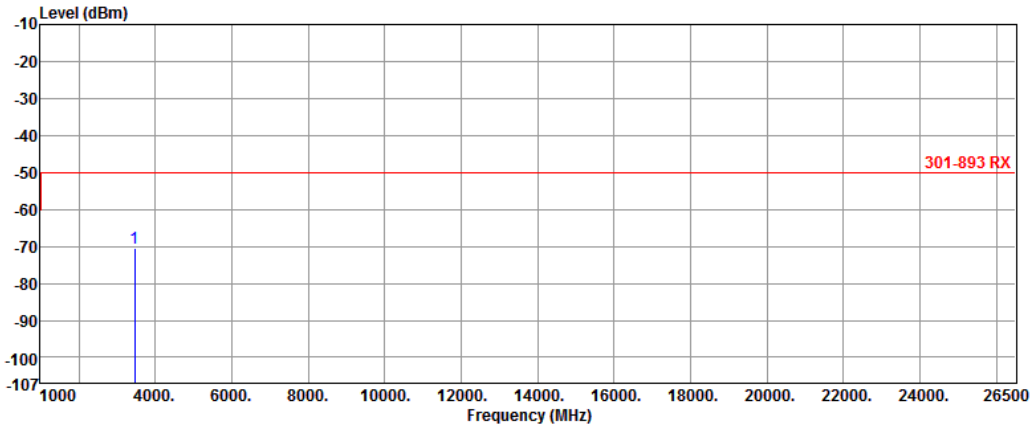
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3801.42	-69.87	-50.01	-19.86	0.00	-69.87

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

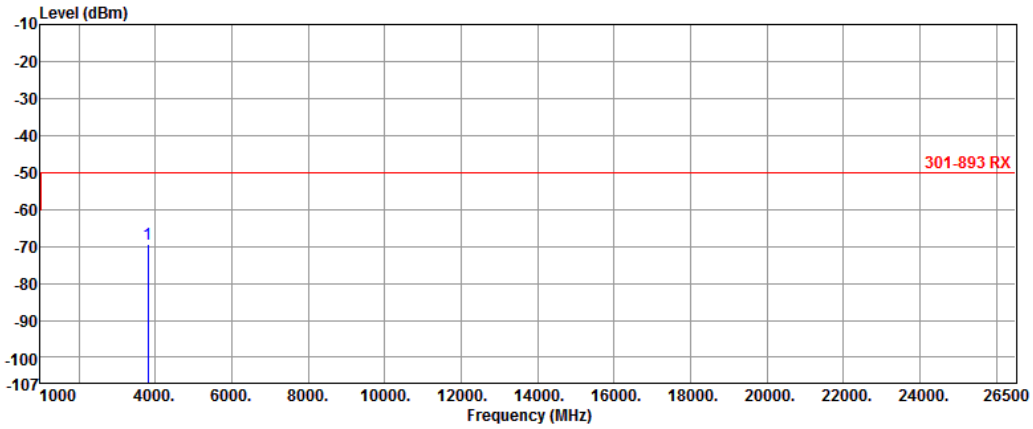
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.45	-70.64	-50.01	-20.63	0.00	-70.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

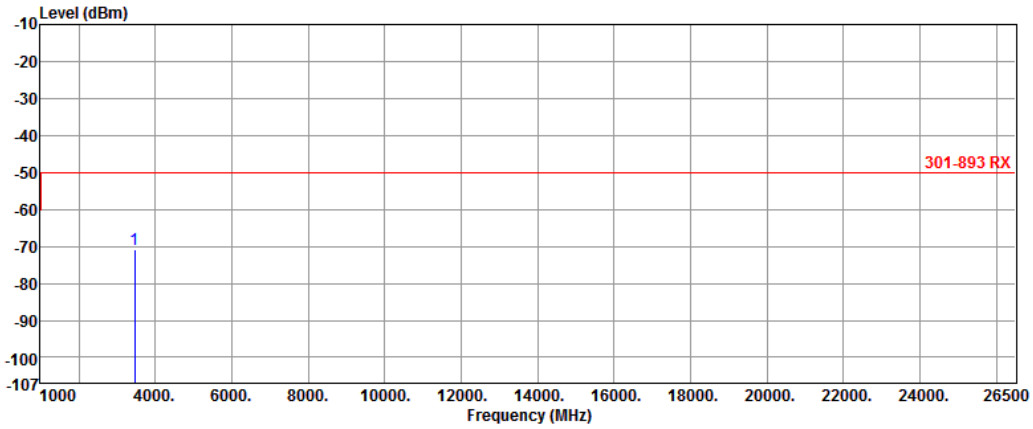
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.32	-69.59	-50.01	-19.58	0.00	-69.59

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

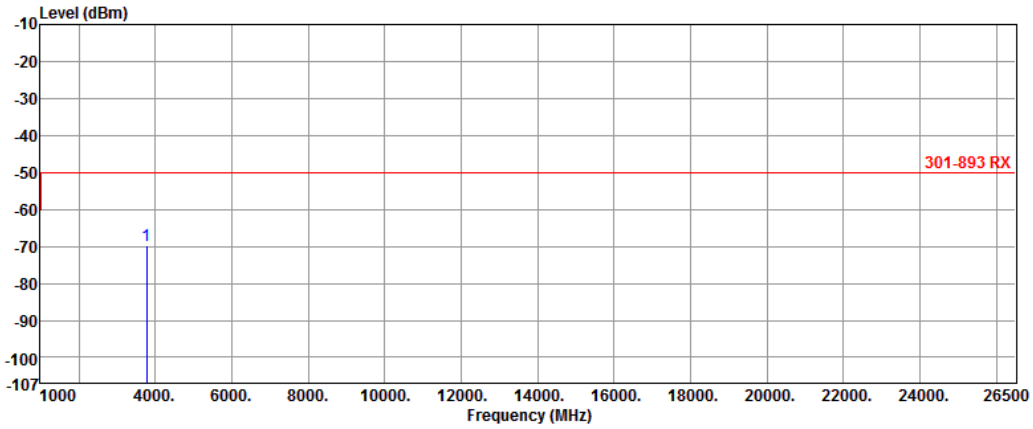
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.85	-70.92	-50.01	-20.91	0.00	-70.92

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

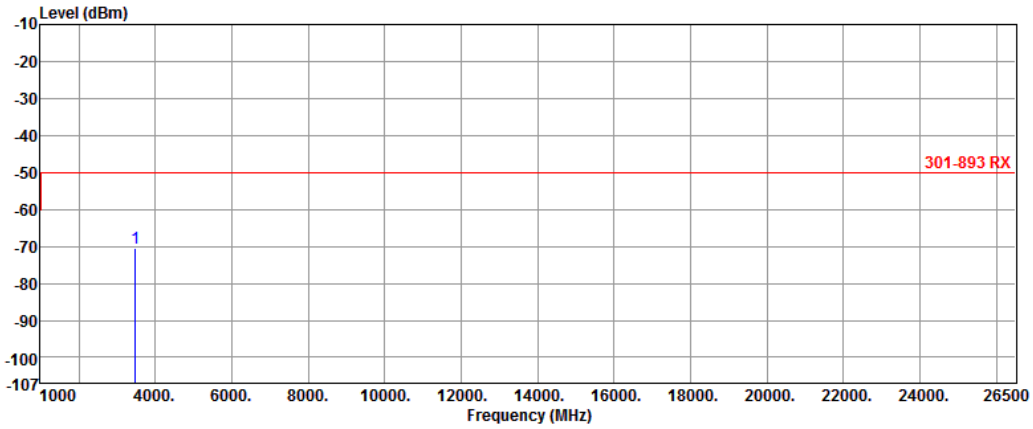
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.10	-69.67	-50.01	-19.66	0.00	-69.67

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

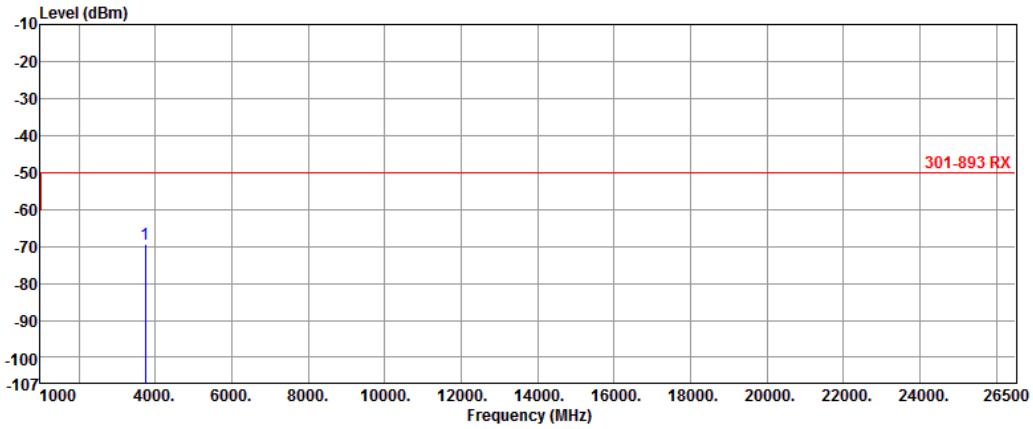
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.37	-70.64	-50.01	-20.63	0.00	-70.64

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610



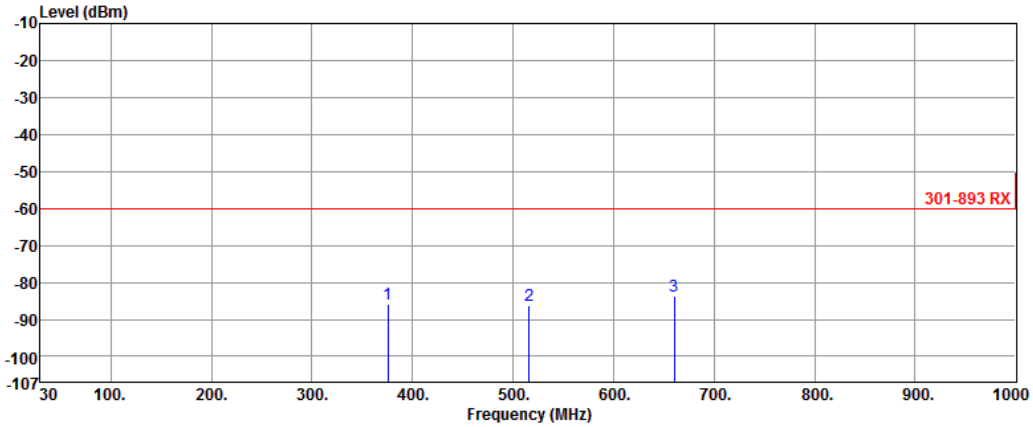
	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.15	-69.29	-50.01	-19.28	0.00	-69.29

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Aux Port

4.1.6 Receiver Conducted Spurious Emissions (Below 1GHz)

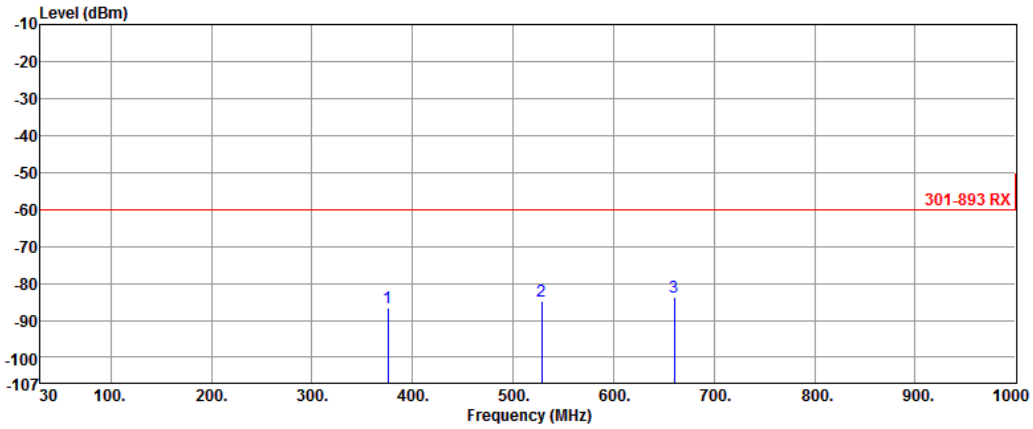
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-86.03	-60.01	-26.02	0.00	-86.03
2	515.97	-86.19	-60.01	-26.18	0.00	-86.19
3	660.50	-83.90	-60.01	-23.89	0.00	-83.90

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

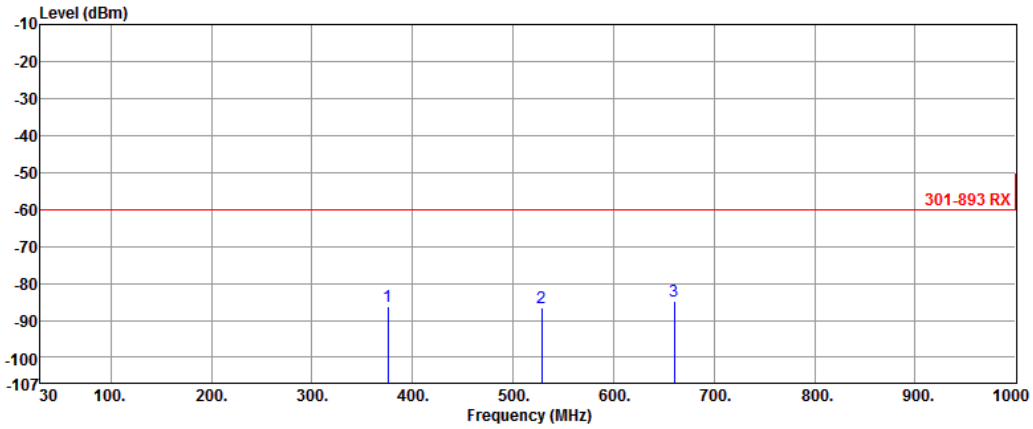
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-86.60	-60.01	-26.59	0.00	-86.60
2	528.58	-84.82	-60.01	-24.81	0.00	-84.82
3	660.50	-83.79	-60.01	-23.78	0.00	-83.79

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

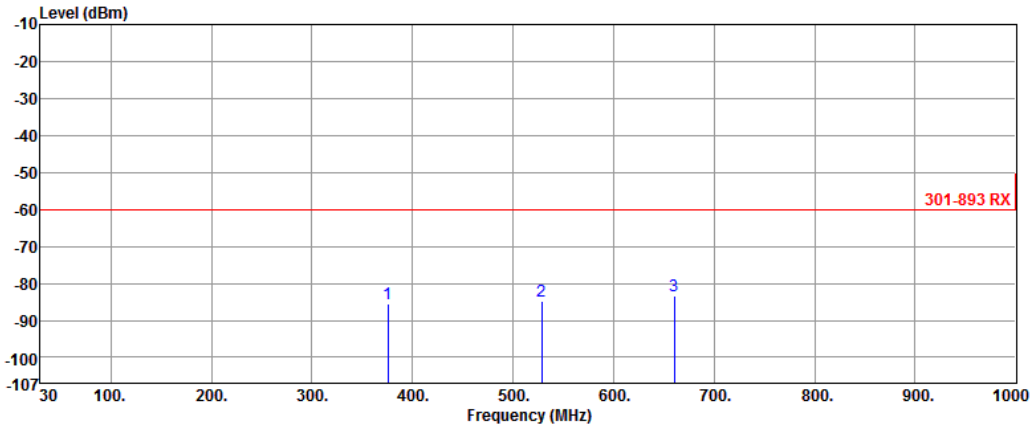
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-86.40	-60.01	-26.39	0.00	-86.40
2	528.58	-86.76	-60.01	-26.75	0.00	-86.76
3	660.50	-84.71	-60.01	-24.70	0.00	-84.71

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

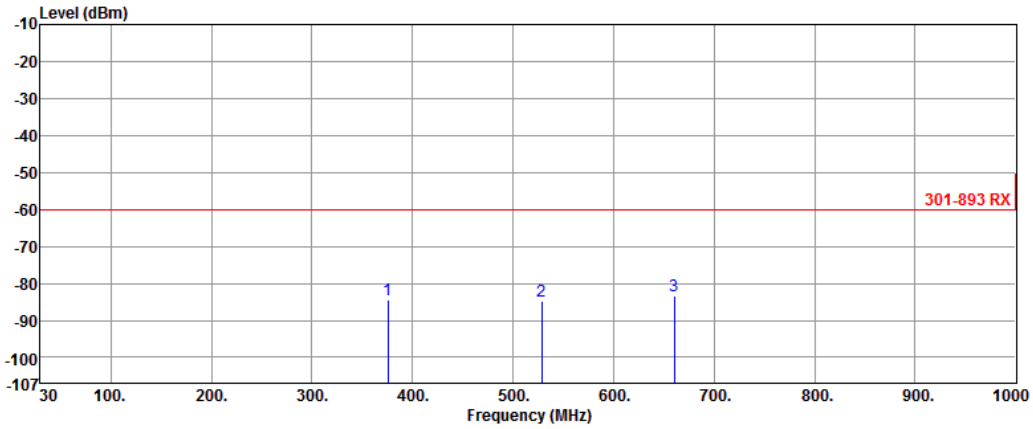
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-85.51	-60.01	-25.50	0.00	-85.51
2	528.58	-84.90	-60.01	-24.89	0.00	-84.90
3	660.50	-83.42	-60.01	-23.41	0.00	-83.42

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

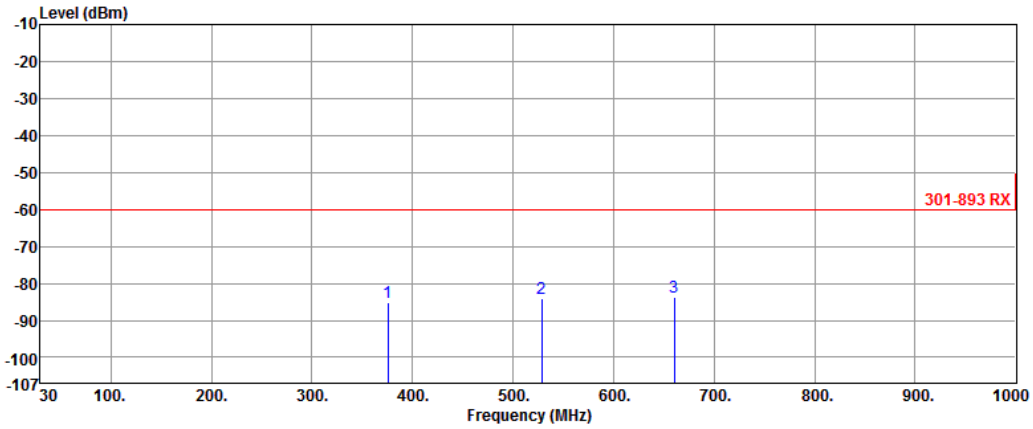
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-84.49	-60.01	-24.48	0.00	-84.49
2	528.58	-84.81	-60.01	-24.80	0.00	-84.81
3	660.50	-83.33	-60.01	-23.32	0.00	-83.33

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

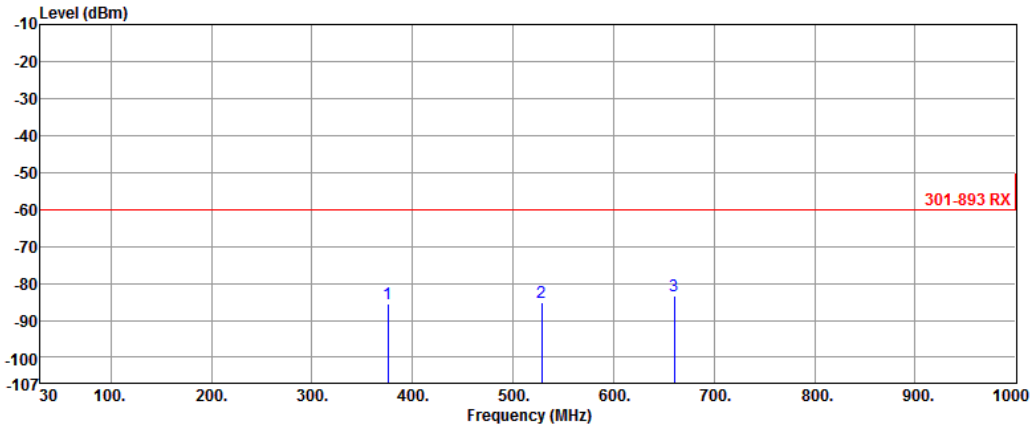
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-85.01	-60.01	-25.00	0.00	-85.01
2	528.58	-84.21	-60.01	-24.20	0.00	-84.21
3	660.50	-83.81	-60.01	-23.80	0.00	-83.81

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

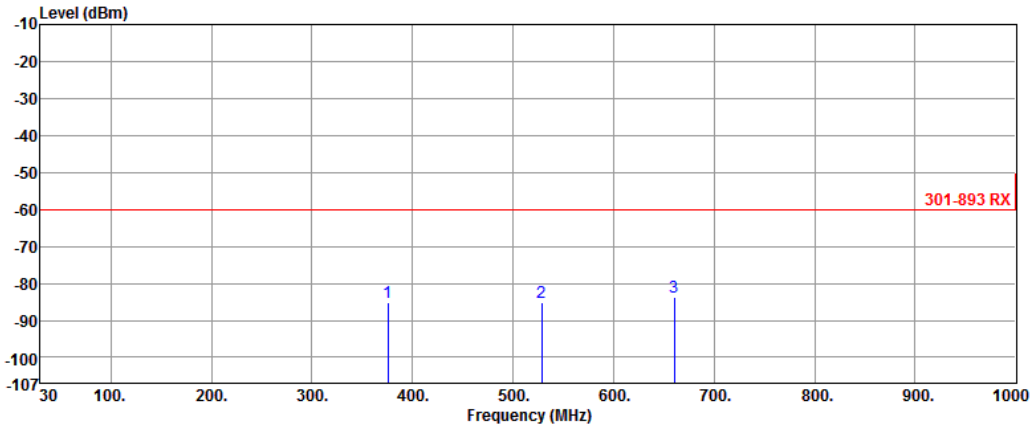
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-85.58	-60.01	-25.57	0.00	-85.58
2	528.58	-85.19	-60.01	-25.18	0.00	-85.19
3	660.50	-83.40	-60.01	-23.39	0.00	-83.40

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

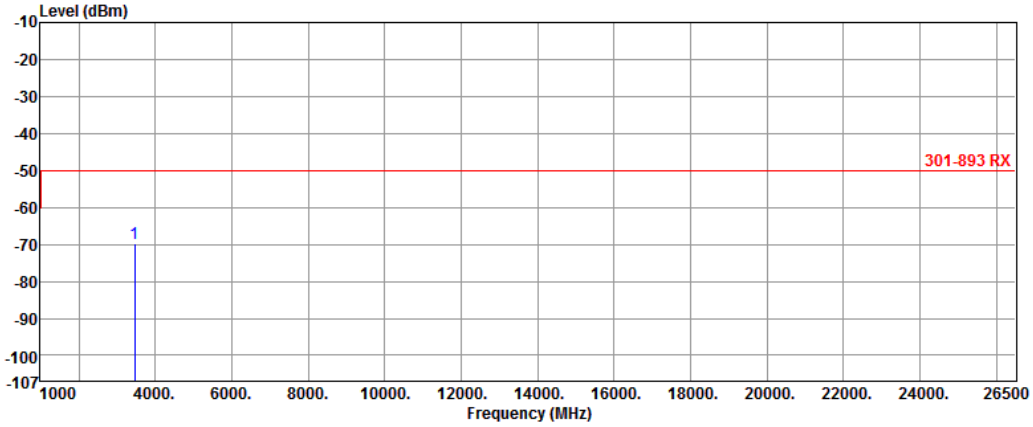


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-85.02	-60.01	-25.01	0.00	-85.02
2	528.58	-84.99	-60.01	-24.98	0.00	-84.99
3	660.50	-83.61	-60.01	-23.60	0.00	-83.61

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.7 Receiver Conducted Spurious Emissions (Above 1GHz)

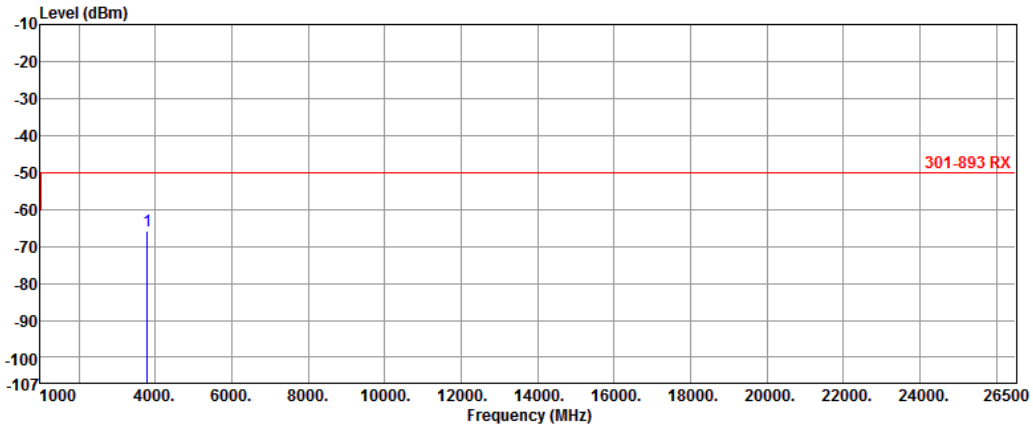
Modulation	11a	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.63	-69.88	-50.01	-19.87	0.00	-69.88

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

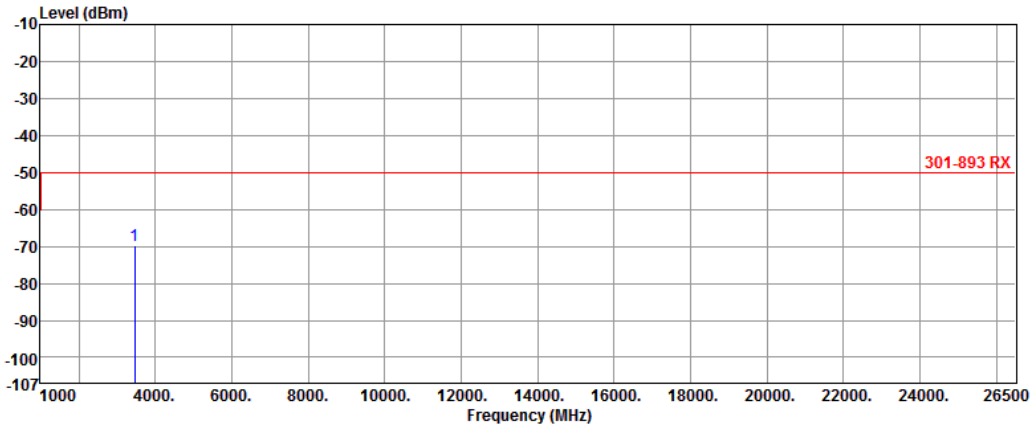
Modulation	11a	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.78	-65.69	-50.01	-15.68	0.00	-65.69

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

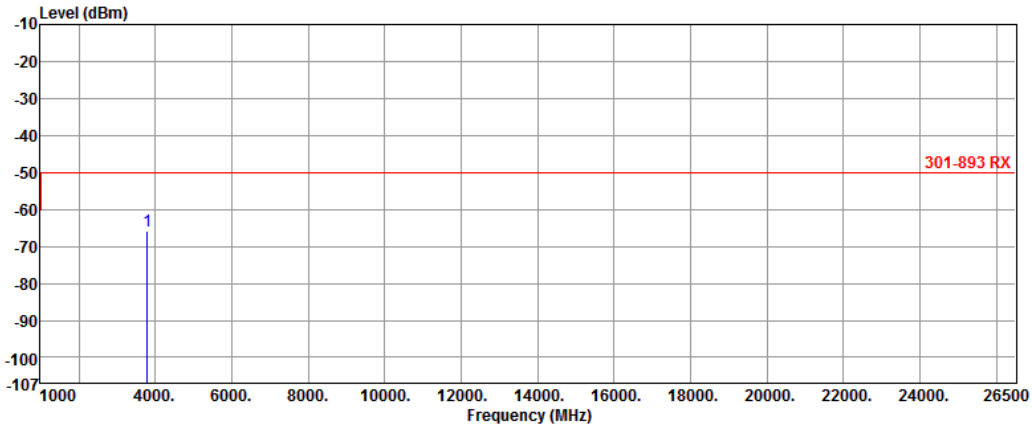
Modulation	VHT20	Test Freq. (MHz)	5180



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.45	-69.79	-50.01	-19.78	0.00	-69.79

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

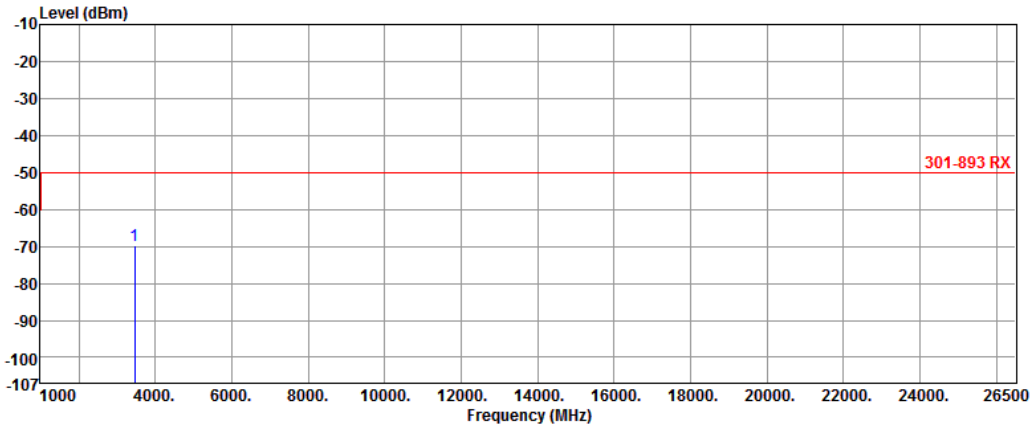
Modulation	VHT20	Test Freq. (MHz)	5700



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.98	-65.79	-50.01	-15.78	0.00	-65.79

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

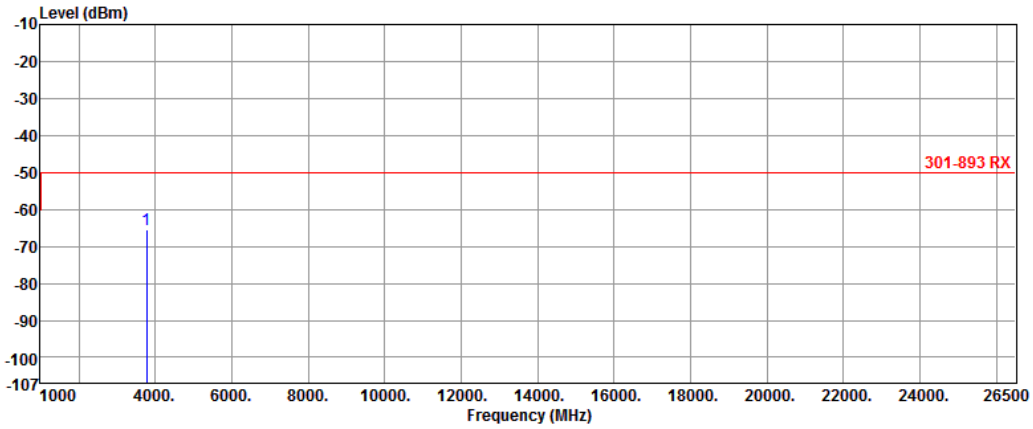
Modulation	VHT40	Test Freq. (MHz)	5190



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.95	-69.90	-50.01	-19.89	0.00	-69.90

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

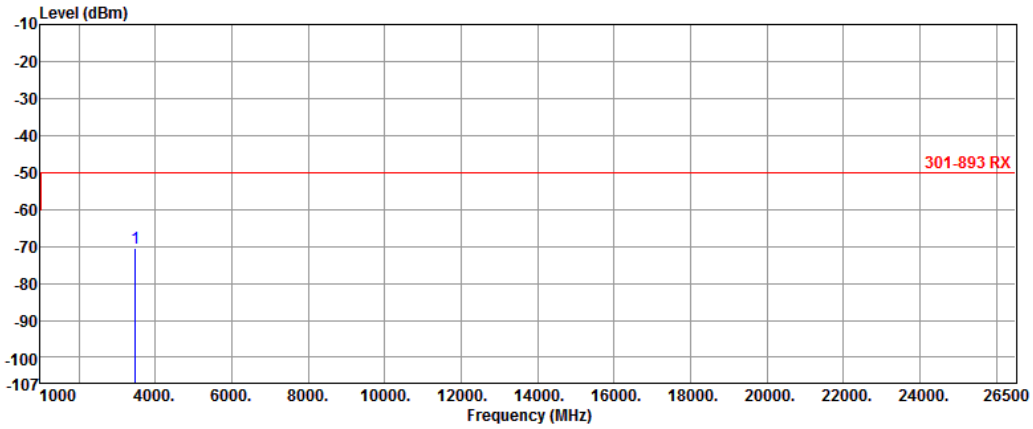
Modulation	VHT40	Test Freq. (MHz)	5670



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3779.90	-65.43	-50.01	-15.42	0.00	-65.43

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

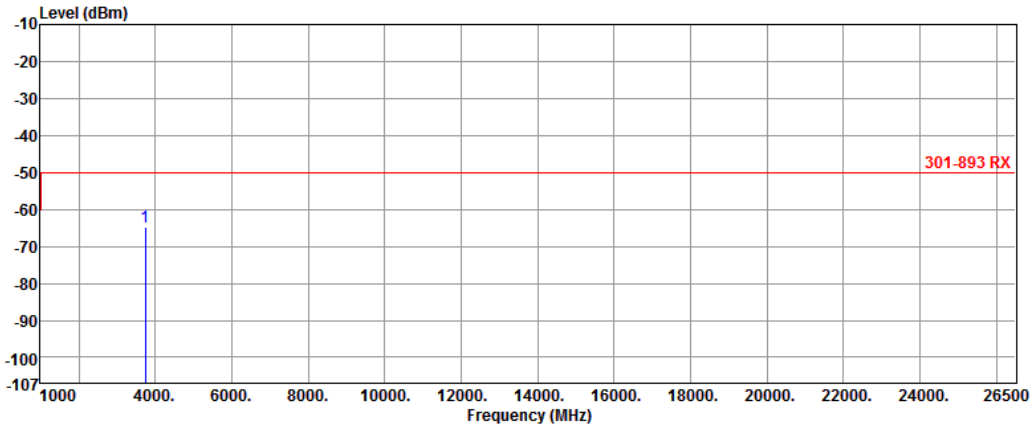
Modulation	VHT80	Test Freq. (MHz)	5210



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.17	-70.42	-50.01	-20.41	0.00	-70.42

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610

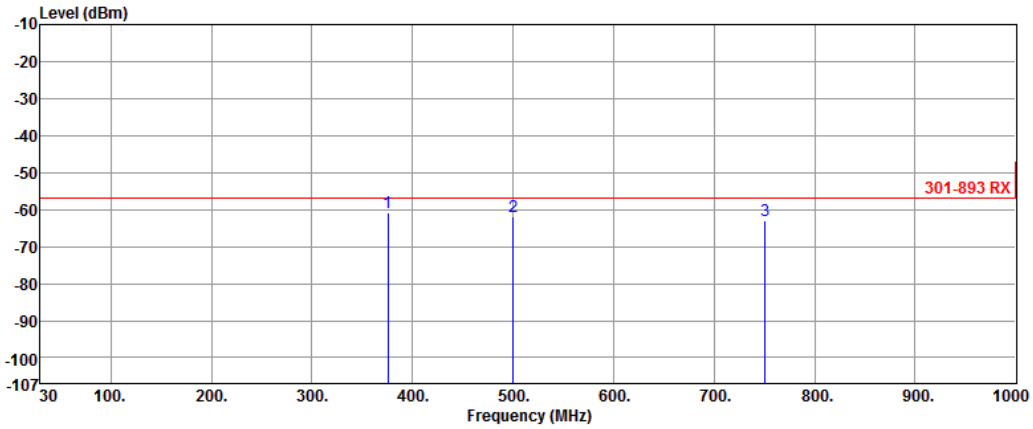


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.15	-64.66	-50.01	-14.65	0.00	-64.66

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.8 Receiver Radiated Unwanted Emissions (Below 1GHz)

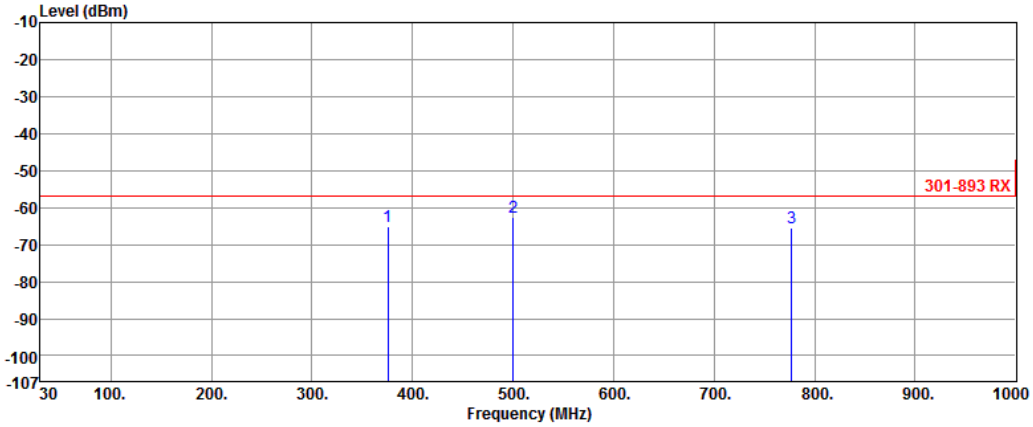
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-60.75	-57.00	-3.75	0.06	-60.81
2	500.45	-61.85	-57.00	-4.85	3.46	-65.31
3	750.71	-63.13	-57.00	-6.13	7.95	-71.08

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

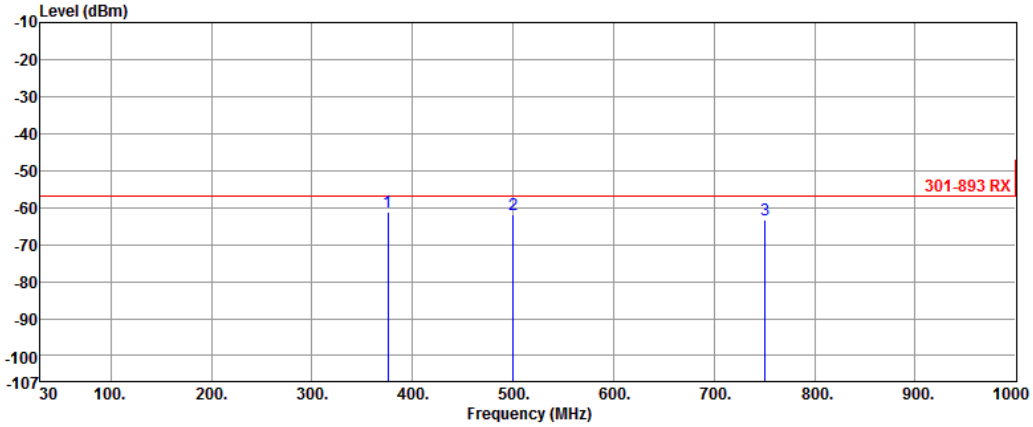
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.03	-57.00	-8.03	0.73	-65.76
2	500.45	-62.76	-57.00	-5.76	3.37	-66.13
3	776.90	-65.61	-57.00	-8.61	8.33	-73.94

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

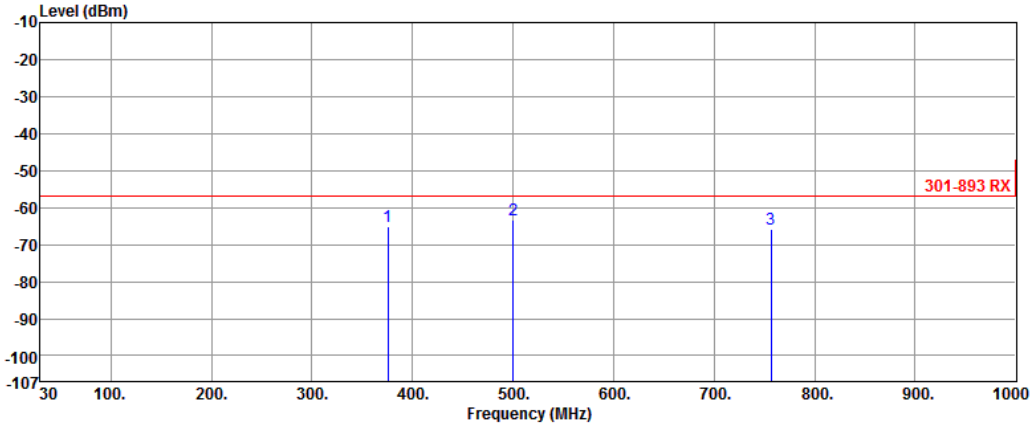
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-61.07	-57.00	-4.07	0.06	-61.13
2	500.45	-61.78	-57.00	-4.78	3.46	-65.24
3	750.71	-63.19	-57.00	-6.19	7.95	-71.14

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

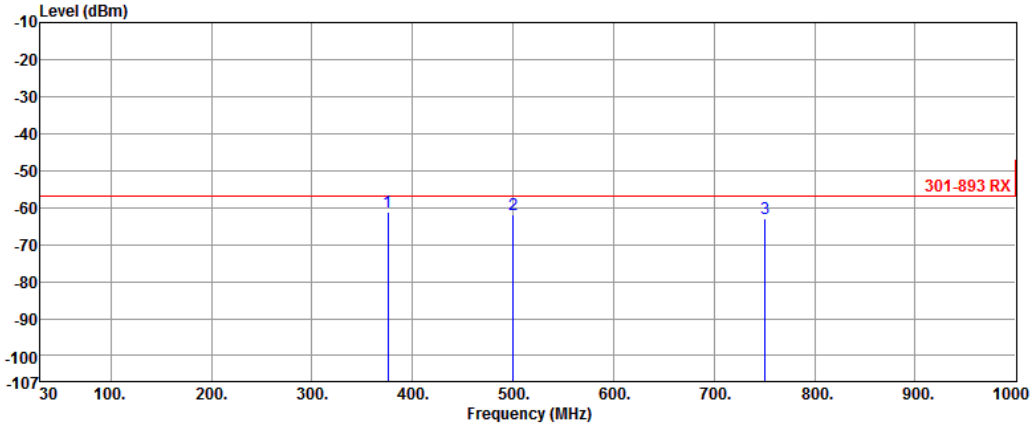
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.25	-57.00	-8.25	0.73	-65.98
2	500.45	-63.50	-57.00	-6.50	3.37	-66.87
3	756.53	-65.68	-57.00	-8.68	8.08	-73.76

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

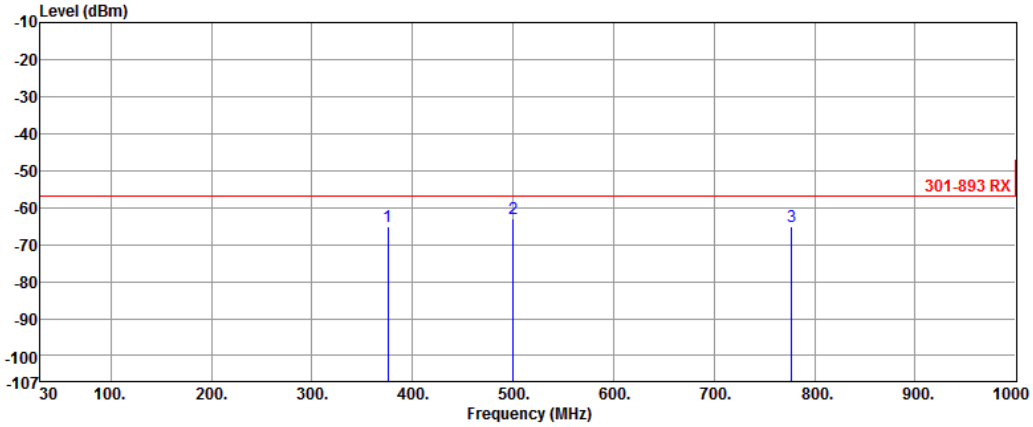
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-61.09	-57.00	-4.09	0.06	-61.15
2	500.45	-61.92	-57.00	-4.92	3.46	-65.38
3	750.71	-63.11	-57.00	-6.11	7.95	-71.06

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

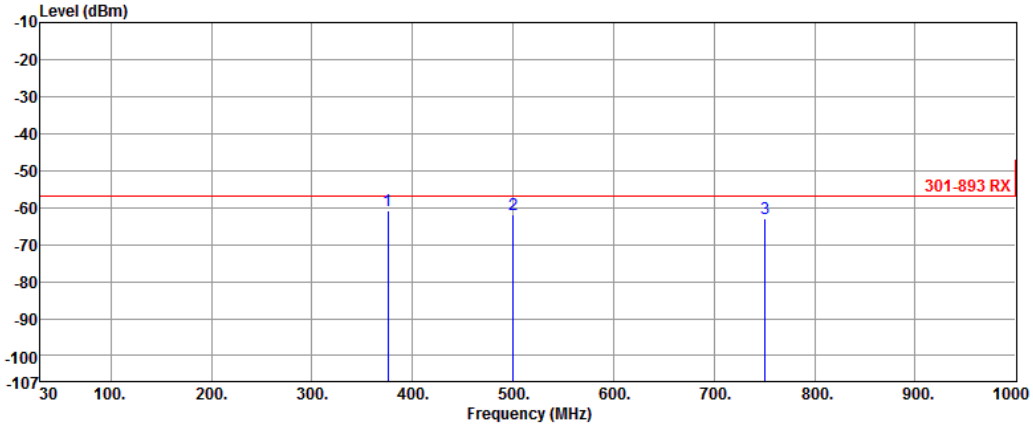
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.18	-57.00	-8.18	0.73	-65.91
2	500.45	-62.86	-57.00	-5.86	3.37	-66.23
3	776.90	-65.08	-57.00	-8.08	8.33	-73.41

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

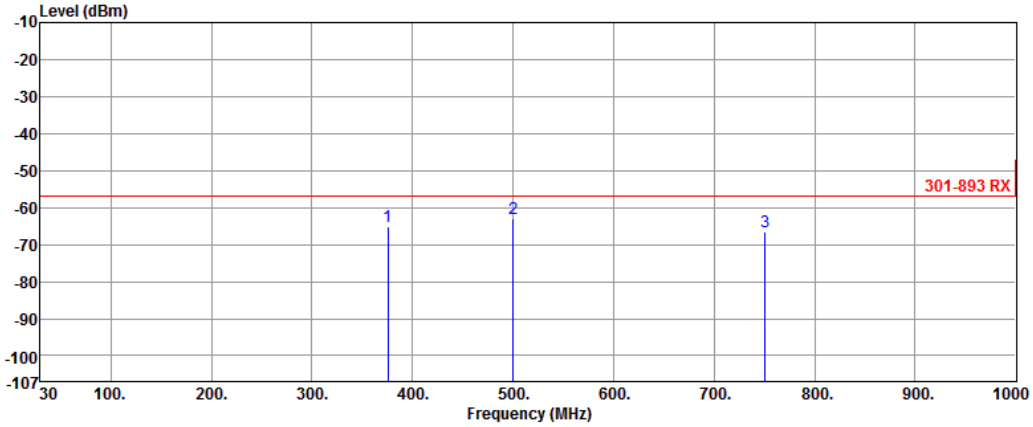
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-60.87	-57.00	-3.87	0.06	-60.93
2	500.45	-61.86	-57.00	-4.86	3.46	-65.32
3	750.71	-62.97	-57.00	-5.97	7.95	-70.92

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

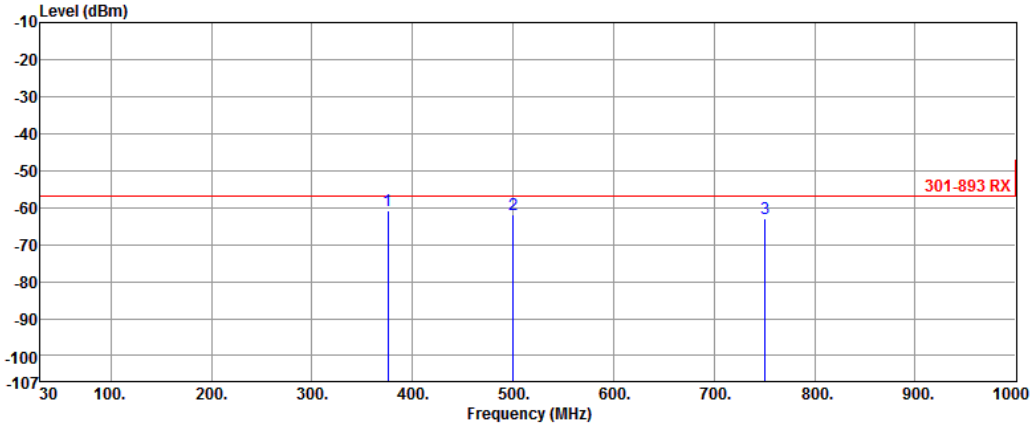
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-64.96	-57.00	-7.96	0.73	-65.69
2	500.45	-63.11	-57.00	-6.11	3.37	-66.48
3	750.71	-66.60	-57.00	-9.60	7.94	-74.54

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

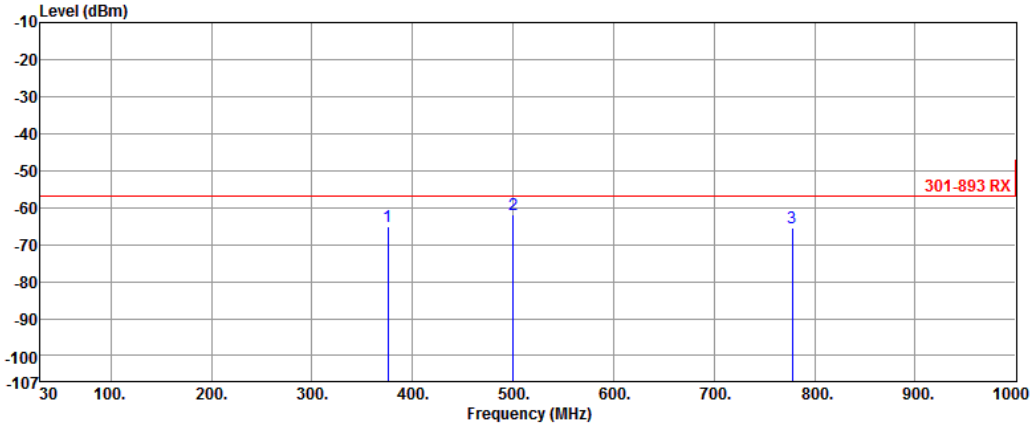
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-60.70	-57.00	-3.70	0.06	-60.76
2	500.45	-61.94	-57.00	-4.94	3.46	-65.40
3	750.71	-62.81	-57.00	-5.81	7.95	-70.76

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

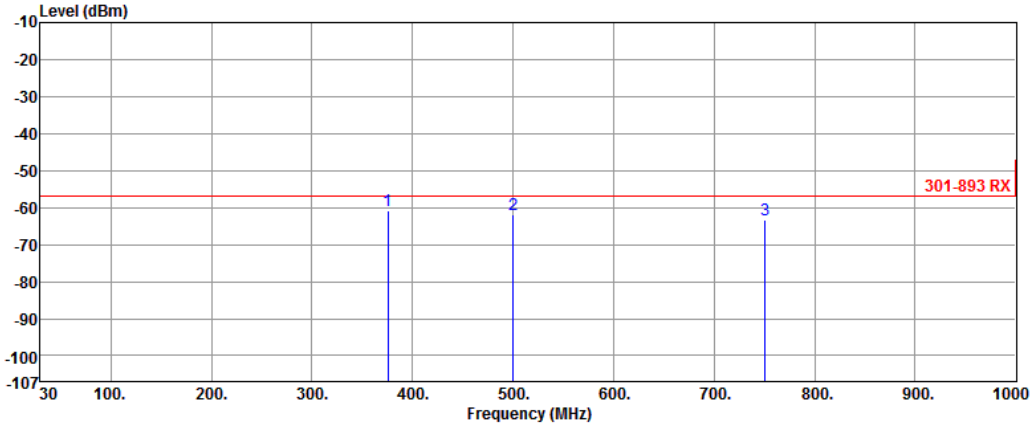
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.00	-57.00	-8.00	0.73	-65.73
2	500.45	-62.07	-57.00	-5.07	3.37	-65.44
3	777.87	-65.47	-57.00	-8.47	8.34	-73.81

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

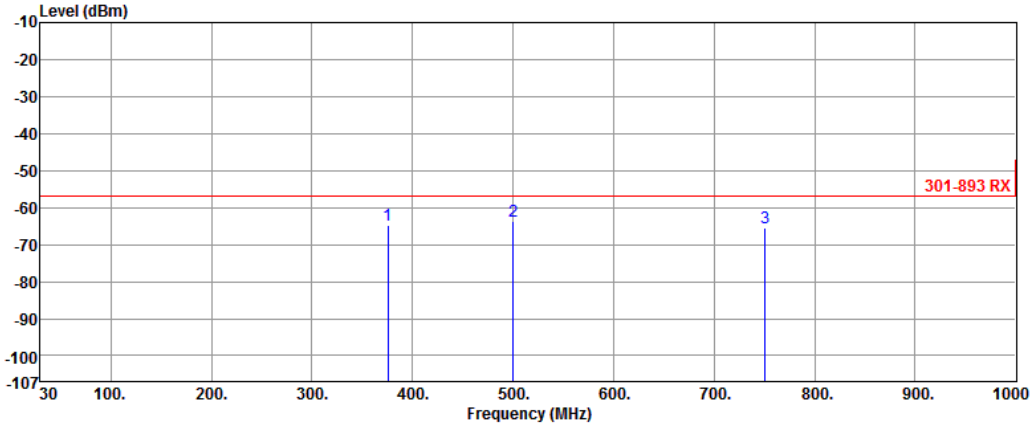
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-60.91	-57.00	-3.91	0.06	-60.97
2	500.45	-61.85	-57.00	-4.85	3.46	-65.31
3	750.71	-63.19	-57.00	-6.19	7.95	-71.14

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

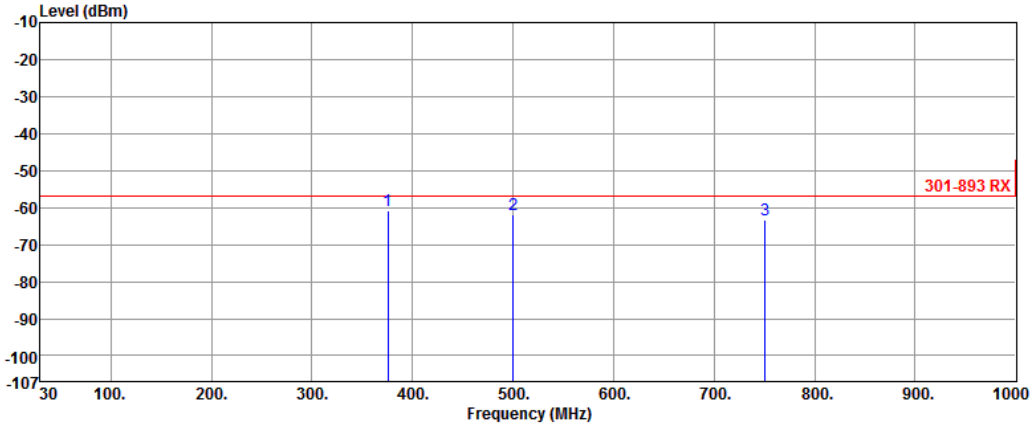
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-64.62	-57.00	-7.62	0.73	-65.35
2	500.45	-63.56	-57.00	-6.56	3.37	-66.93
3	750.71	-65.59	-57.00	-8.59	7.94	-73.53

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

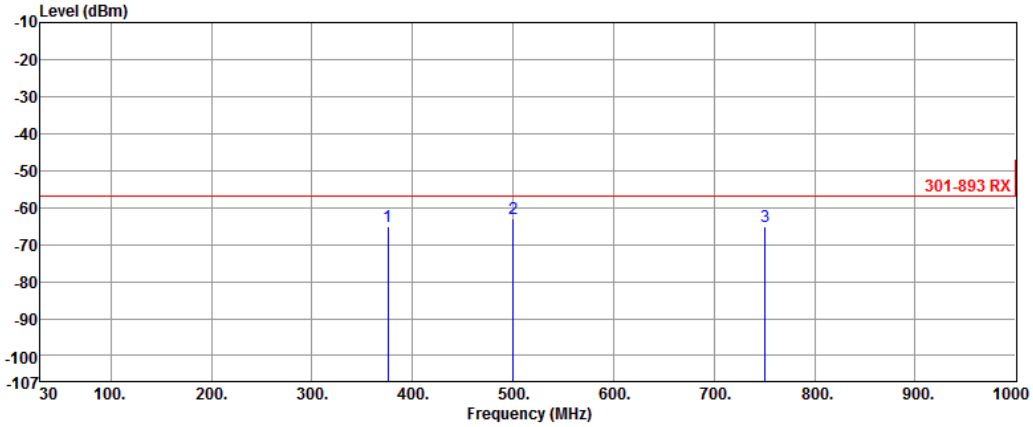
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-60.98	-57.00	-3.98	0.06	-61.04
2	500.45	-61.78	-57.00	-4.78	3.46	-65.24
3	750.71	-63.39	-57.00	-6.39	7.95	-71.34

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

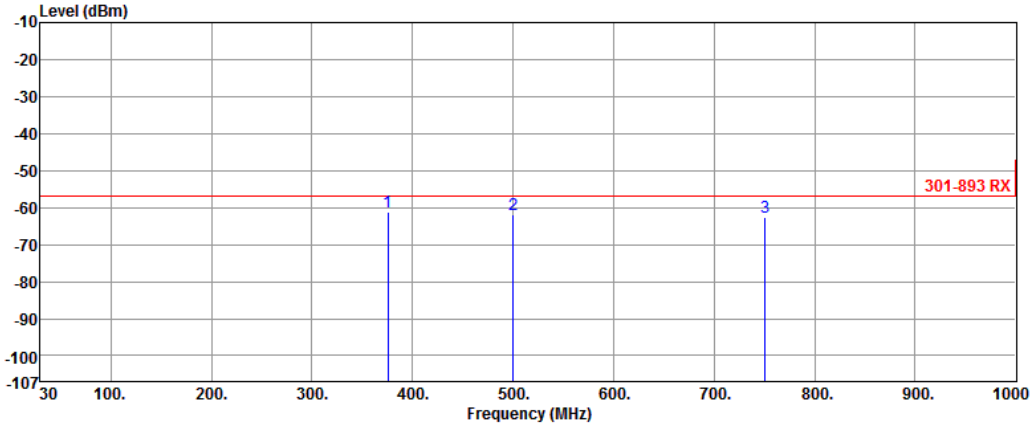
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.14	-57.00	-8.14	0.73	-65.87
2	500.45	-63.06	-57.00	-6.06	3.37	-66.43
3	750.71	-65.28	-57.00	-8.28	7.94	-73.22

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

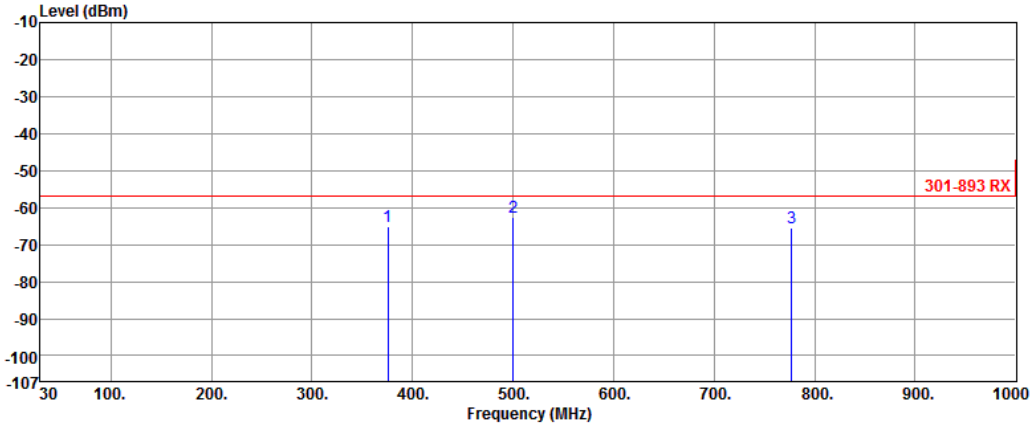
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-61.08	-57.00	-4.08	0.06	-61.14
2	500.45	-61.77	-57.00	-4.77	3.46	-65.23
3	750.71	-62.57	-57.00	-5.57	7.95	-70.52

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		

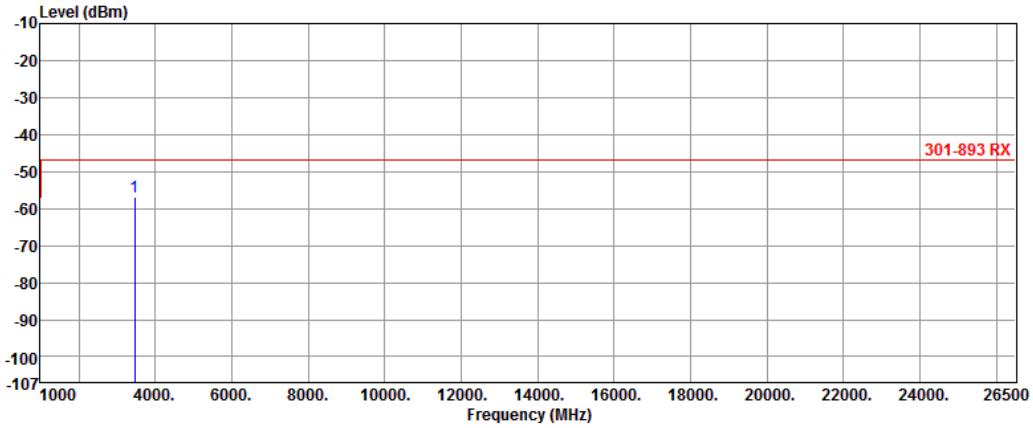


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	375.32	-65.08	-57.00	-8.08	0.73	-65.81
2	500.45	-62.72	-57.00	-5.72	3.37	-66.09
3	776.90	-65.53	-57.00	-8.53	8.33	-73.86

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

4.1.9 Receiver Radiated Unwanted Emissions (Above 1GHz)

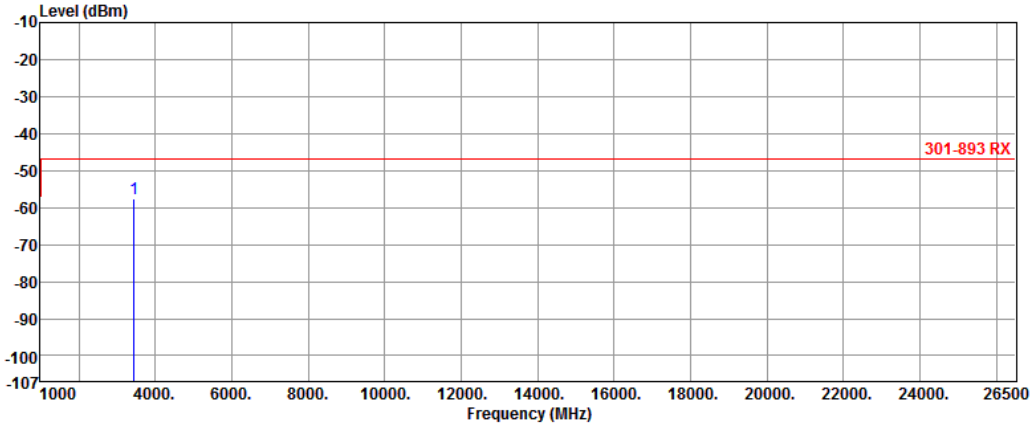
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.79	-56.79	-47.00	-9.79	7.80	-64.59

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

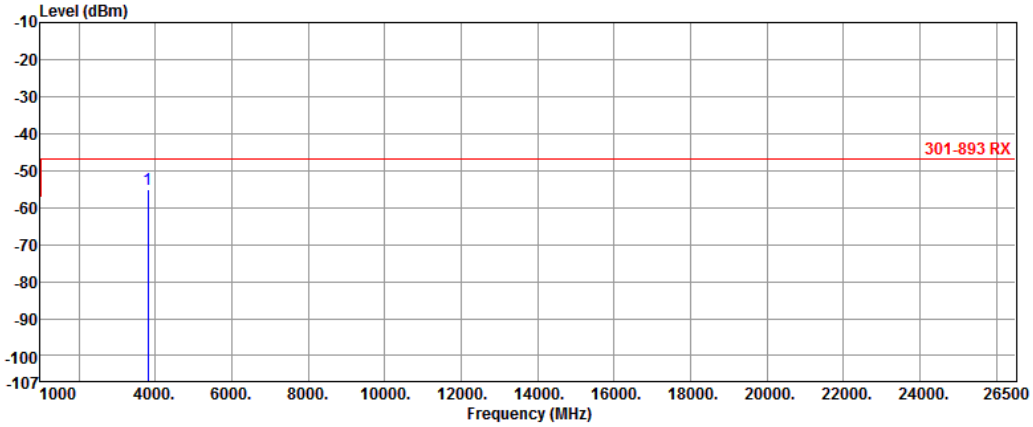
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.13	-57.74	-47.00	-10.74	7.30	-65.04

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

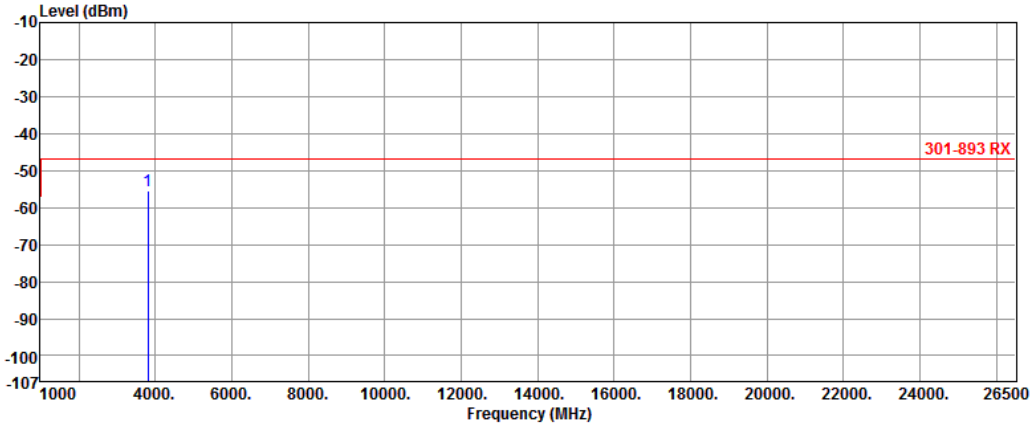
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.45	-55.27	-47.00	-8.27	9.84	-65.11

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

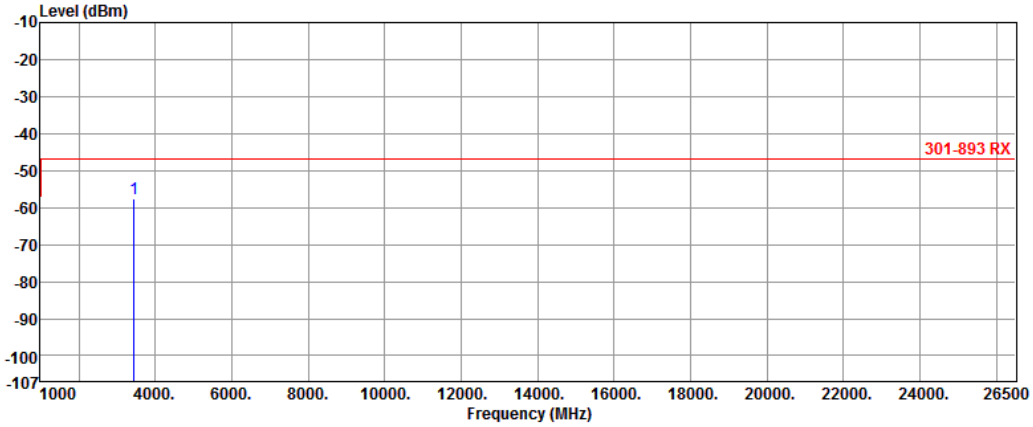
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.21	-55.33	-47.00	-8.33	9.46	-64.79

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

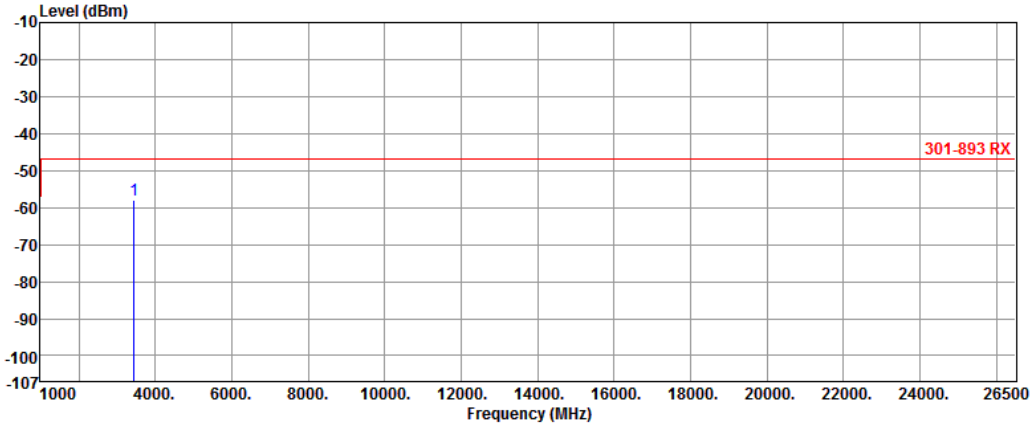
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.32	-57.47	-47.00	-10.47	7.79	-65.26

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

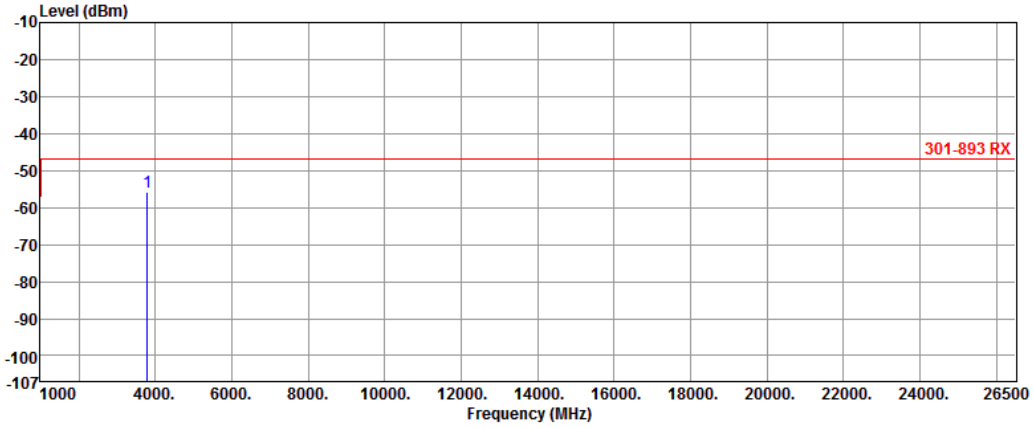
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.21	-58.05	-47.00	-11.05	7.30	-65.35

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

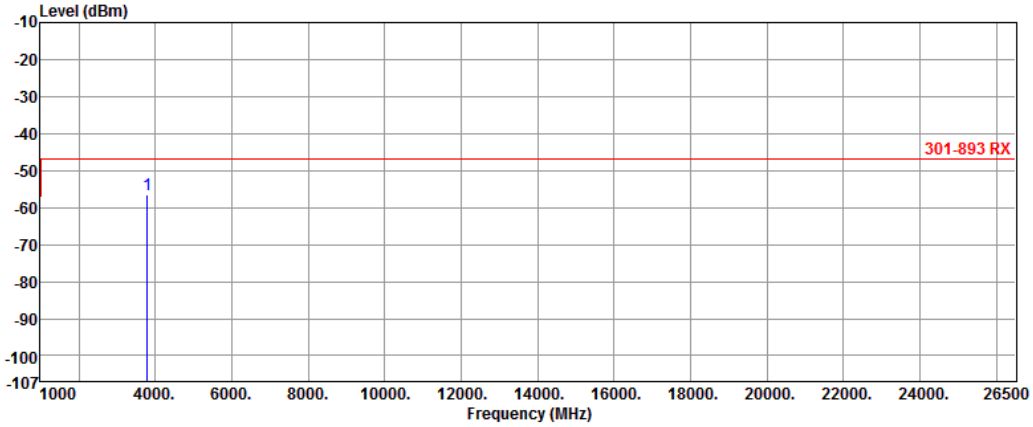
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.99	-55.97	-47.00	-8.97	9.84	-65.81

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

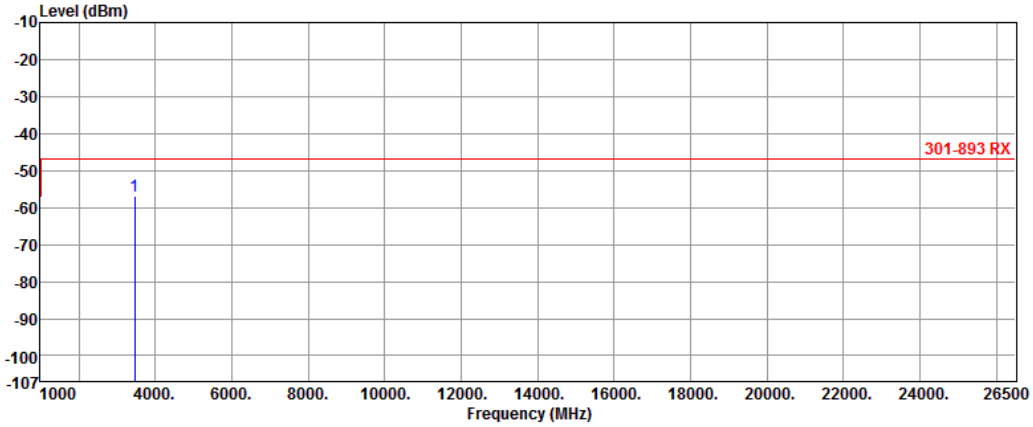
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.00	-56.38	-47.00	-9.38	9.46	-65.84

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

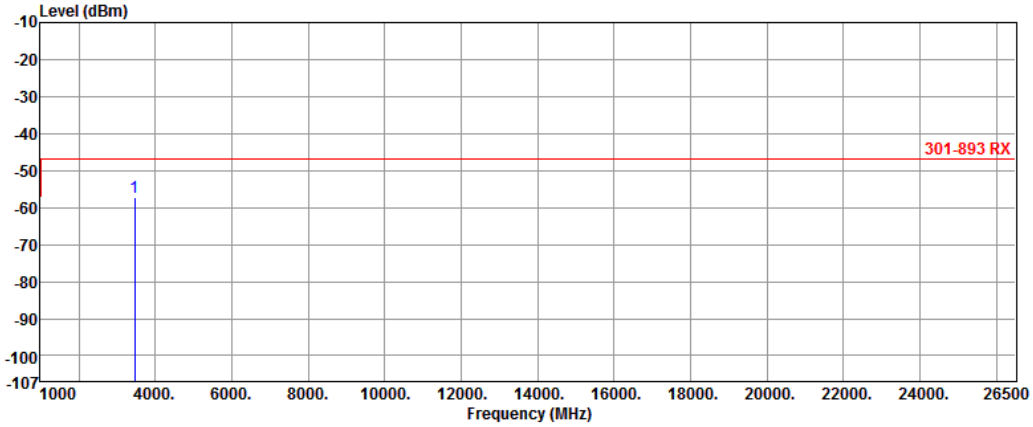
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.43	-57.05	-47.00	-10.05	7.88	-64.93

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

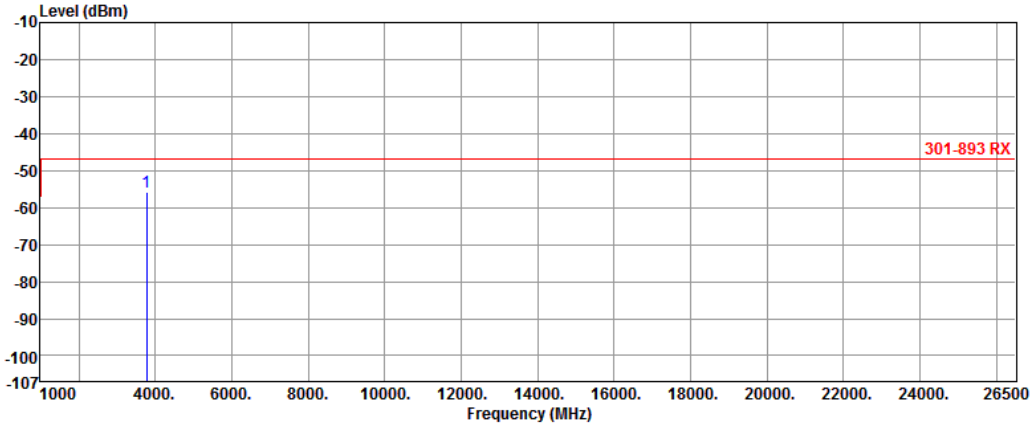
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3460.93	-57.42	-47.00	-10.42	7.40	-64.82

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

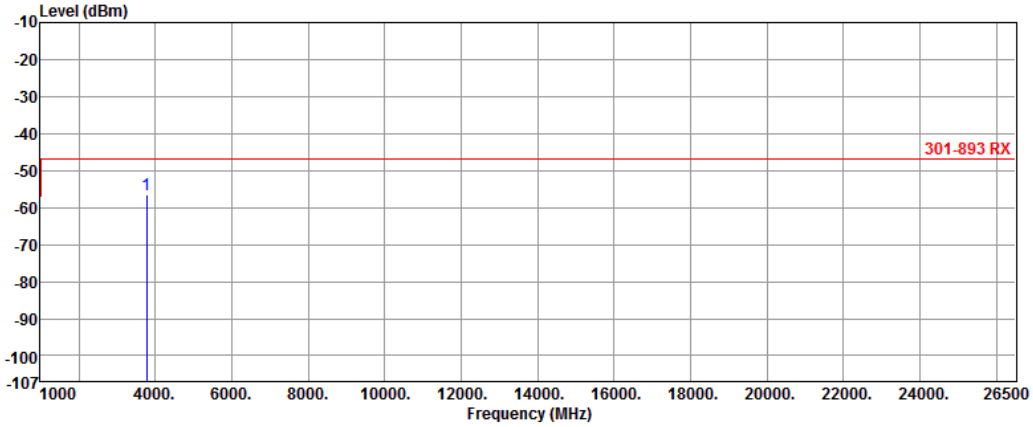
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.76	-55.66	-47.00	-8.66	9.72	-65.38

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

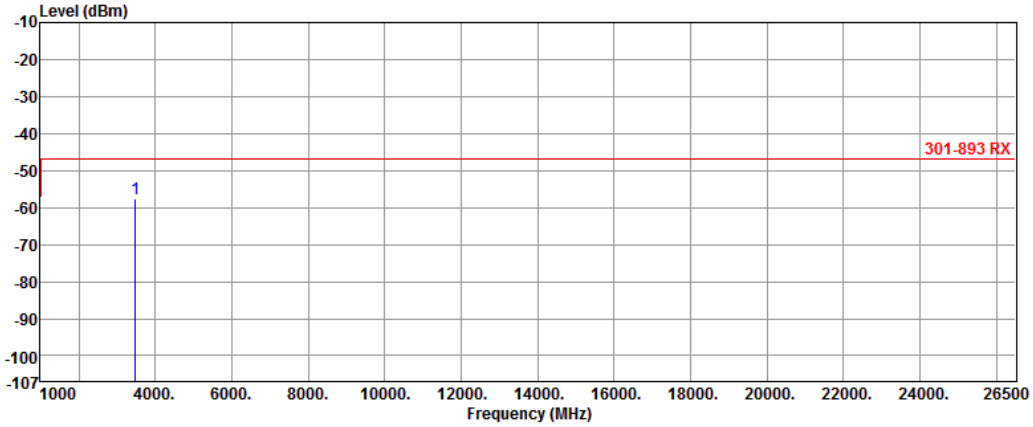
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.59	-56.63	-47.00	-9.63	9.42	-66.05

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

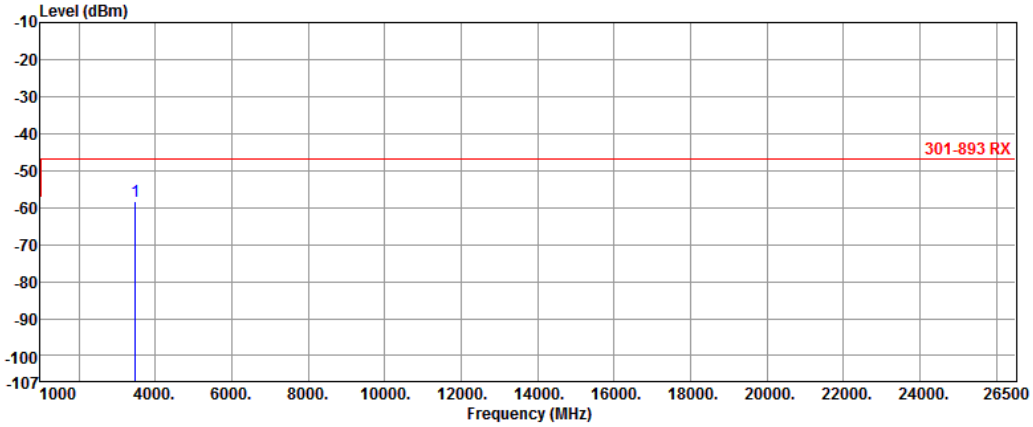
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.77	-57.76	-47.00	-10.76	8.06	-65.82

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

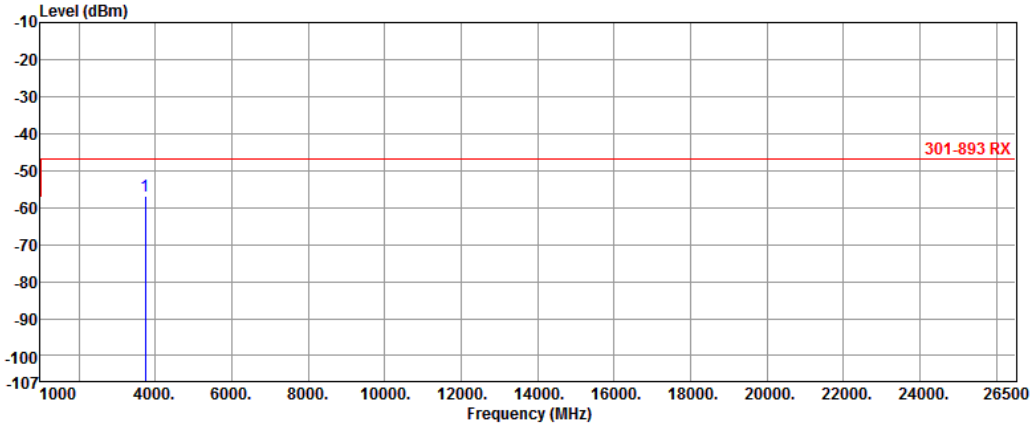
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3473.94	-58.48	-47.00	-11.48	7.57	-66.05

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

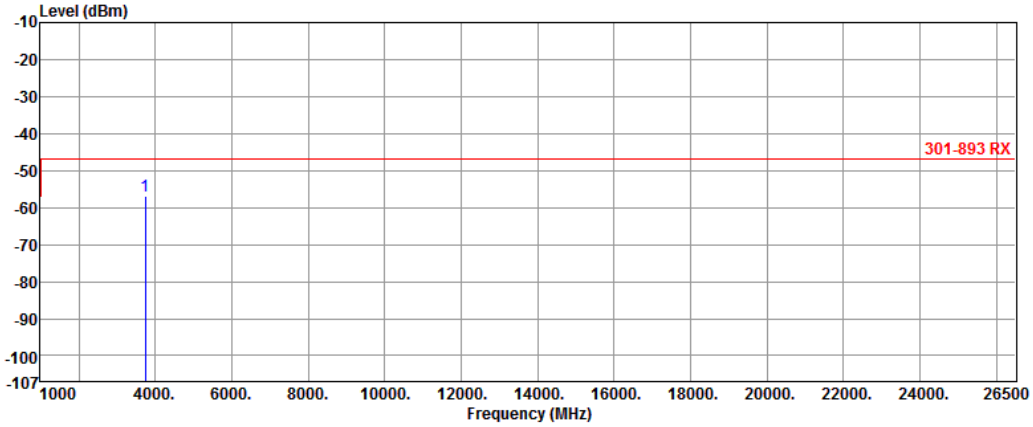
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.42	-57.02	-47.00	-10.02	9.45	-66.47

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.31	-56.91	-47.00	-9.91	9.32	-66.23

Note 1: Measured Value (dBm) = Reading (dBm) + Factor (dB)
Note 2: Margin (dB) = Measured Value (dBm) – Limit (dBm)

5 Adaptivity Test Results

5.1 Adaptivity

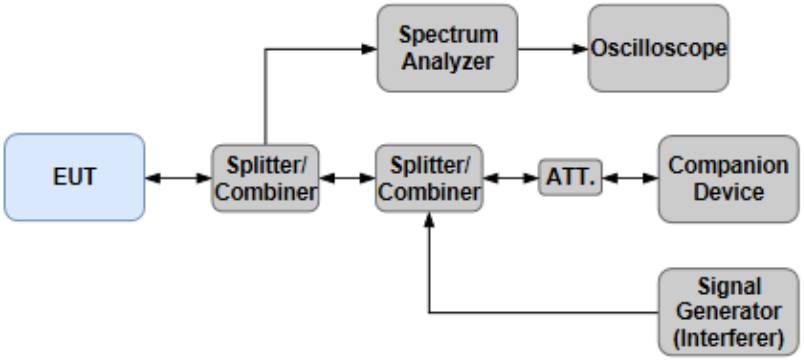
5.1.1 Adaptivity Limit

Adaptivity Limit
☐ Frame Based Equipment The ED Threshold Level (TL), at the input of the receiver, shall be proportional to the maximum transmit power (PH) according to the formula which assumes a 0 dBi receive antenna and PH to be specified in dBm e.i.r.p. For P_H ≤ 13 dBm: TL = -75 dBm/MHz For 13 dBm < P_H < 23 dBm: TL = -85 dBm/MHz + (23 dBm - P_H) For P_H ≥ 23 dBm: TL = -85 dBm/MHz
☒ Load Based Equipment ☒ **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
☐ **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 *ED Threshold Level (TL)* shall be proportional to the equipment's maximum transmit power (P_H). Assuming a 0 dBi receive antenna the *ED Threshold Level (TL)* shall be: For P_H ≤ 13 dBm: TL = -75 dBm/MHz For 13 dBm < P_H < 23 dBm: TL = -85 dBm/MHz + (23 dBm - P_H) For P_H ≥ 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; and ● the total duration of the equipment's *Short Control Signalling Transmissions* shall be less than 2 500 µs within said observation period.
☒ Channel Access Mechanism / Maximum Channel Occupancy Time(s) : For Supervising Devices refer to clause 4.2.7.3.2.4 Table 7. For Supervised Devices refer to clause 4.2.7.3.2.4 Table 8. ☒Option A: Measurement for Channel Access Mechanism and Maximum Channel Occupancy Time(s) ☐Option B: Compliance by declaration for the Channel Access Mechanism and Maximum Channel Occupancy Time(s)

5.1.2 Test Procedures

Reference to clause 5.4.9.3 of ETSI EN 301 893 V2.1.1 (2017-05).

5.1.3 Test Setup



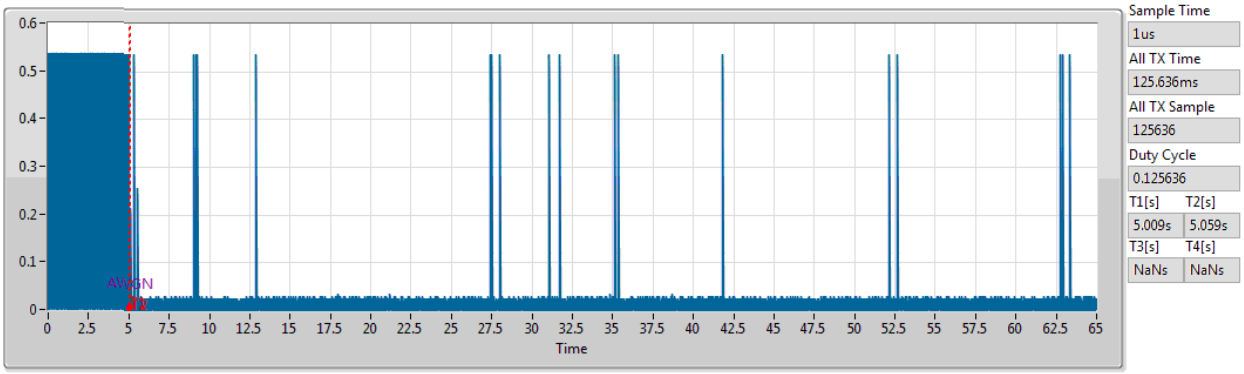
5.1.4 Test Result of Adaptivity and Short Control Signalling Transmissions

Adaptivity Result						
Equipment / Device type		Load Based Equipment / Supervised Device				
EUT firmware / software version		6.0.0.x				
Energy Detect Threshold Level (dBm)		-73				
Modulation Mode	**Freq. (MHz)**	**Interference Signal Frequency (MHz)**	**Interference Signal Type**	**Short Control Signalling Transmissions (ms)/period Numbers**	**Channel Occupancy Time (ms)**	**Adaptivity**
802.11ac (VHT20)	5180	5180	AWGN	1.257 / 1	3.206	PASS
802.11ac (VHT20)	5180	5180	OFDM	0.046 / 1		
802.11ac (VHT20)	5180	5180	LTE	1.661 / 1		
802.11ac (VHT20)	5500	5500	AWGN	0.115 / 2	3.272	PASS
802.11ac (VHT20)	5500	5500	OFDM	0 / 0		
802.11ac (VHT20)	5500	5500	LTE	1.646 / 1		
802.11ac (VHT40)	5190	5200	AWGN	1.565 / 1	2.336	PASS
802.11ac (VHT40)	5500	5520	AWGN	0 / 0	2.337	PASS
Limit				< 2.5 ms / 50	6 ms	N/A

Adaptivity Result Plots

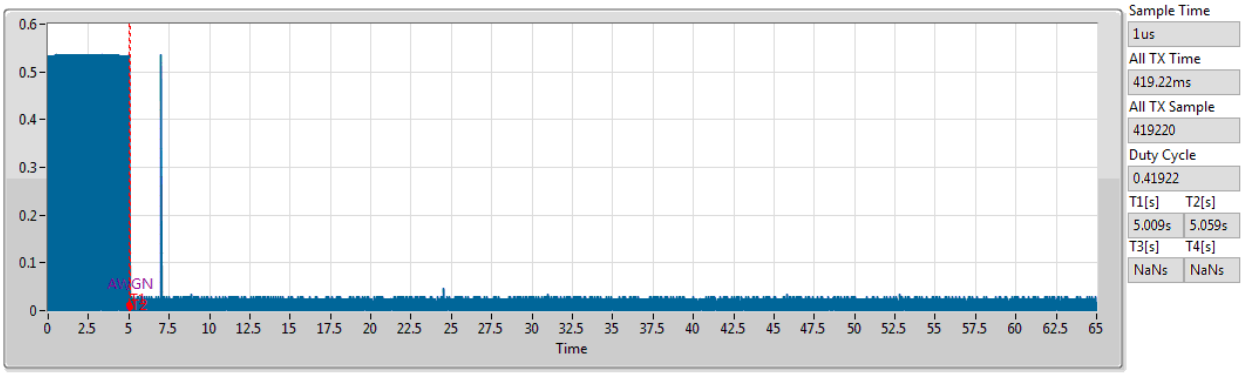
802.11ac (VHT20) - 5180MHz (AWGN)

Time Analysis



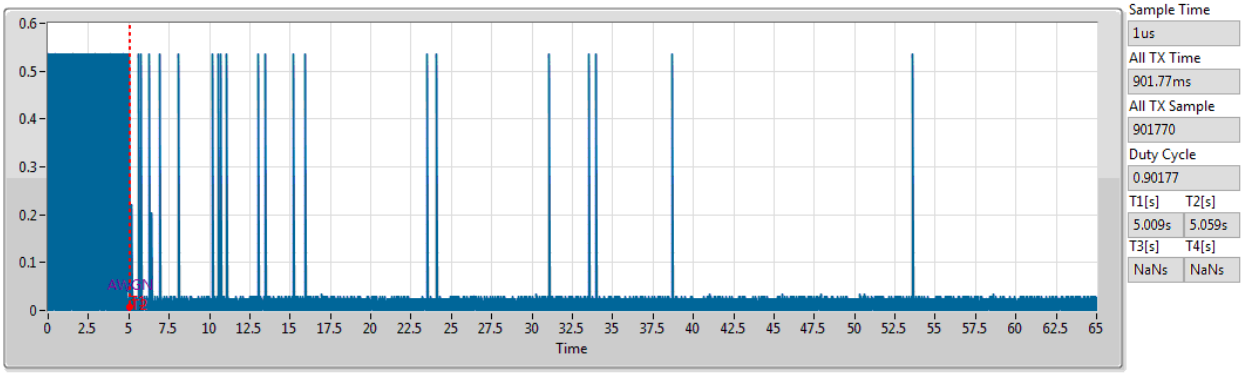
802.11ac (VHT20) - 5180MHz (OFDM)

Time Analysis



802.11ac (VHT20) - 5180MHz (LTE)

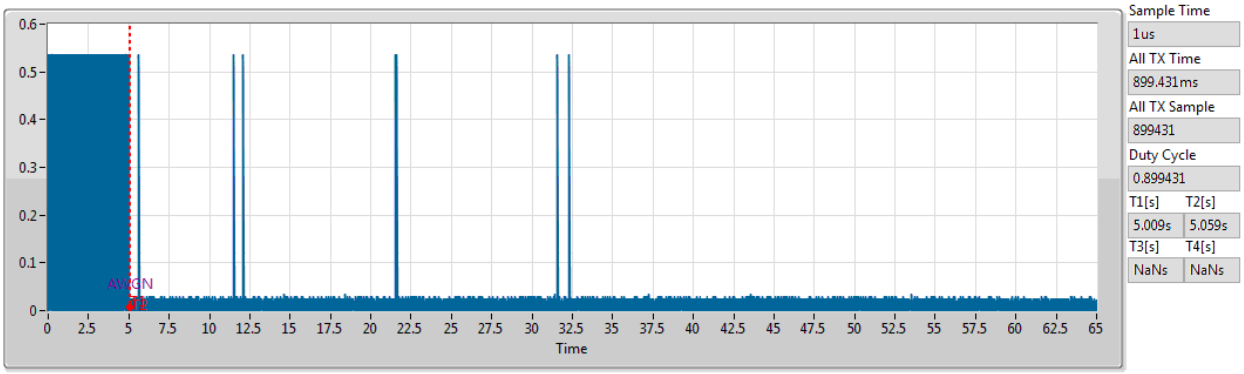
Time Analysis



Adaptivity Result Plots

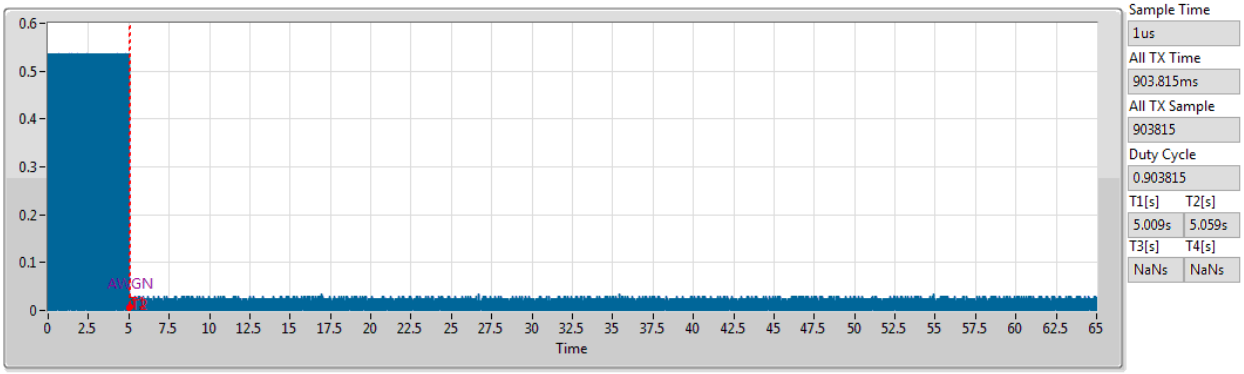
802.11ac (VHT20) - 5500MHz (AWGN)

Time Analysis



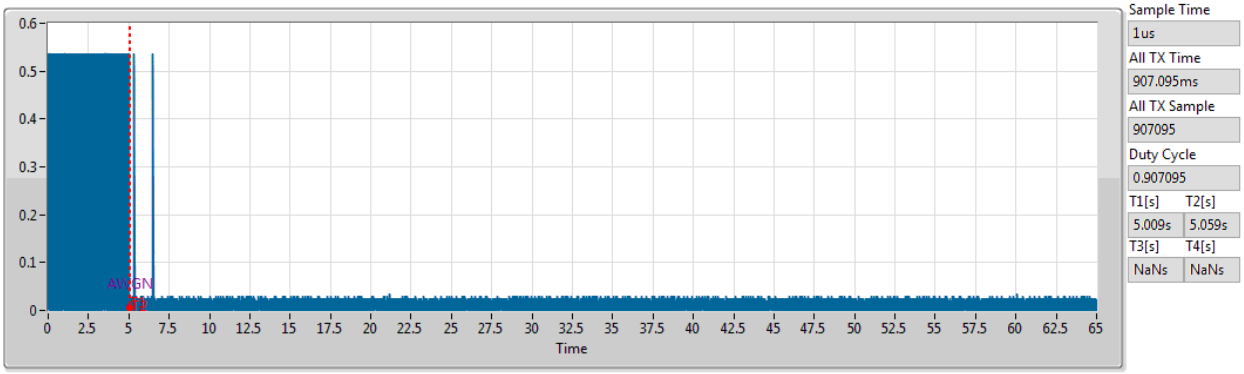
802.11ac (VHT20) - 5500MHz (OFDM)

Time Analysis



802.11ac (VHT20) - 5500MHz (LTE)

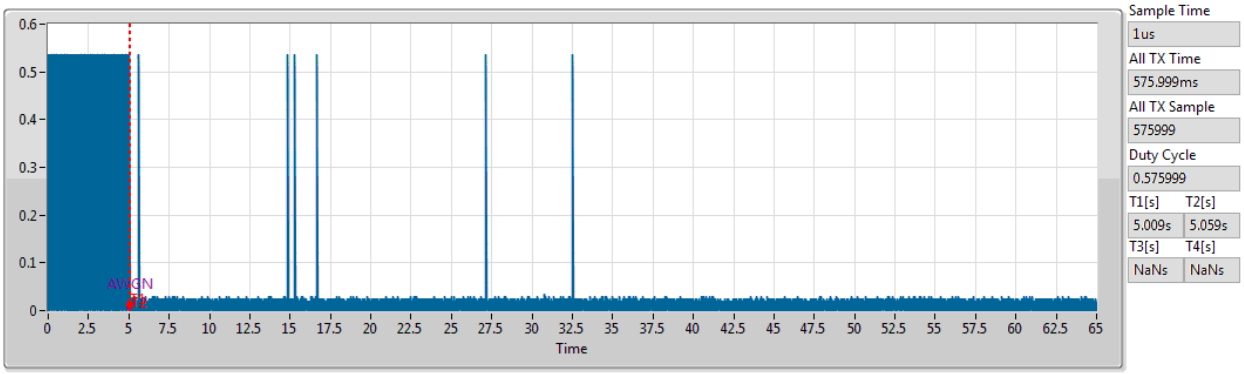
Time Analysis



Adaptivity Result Plots

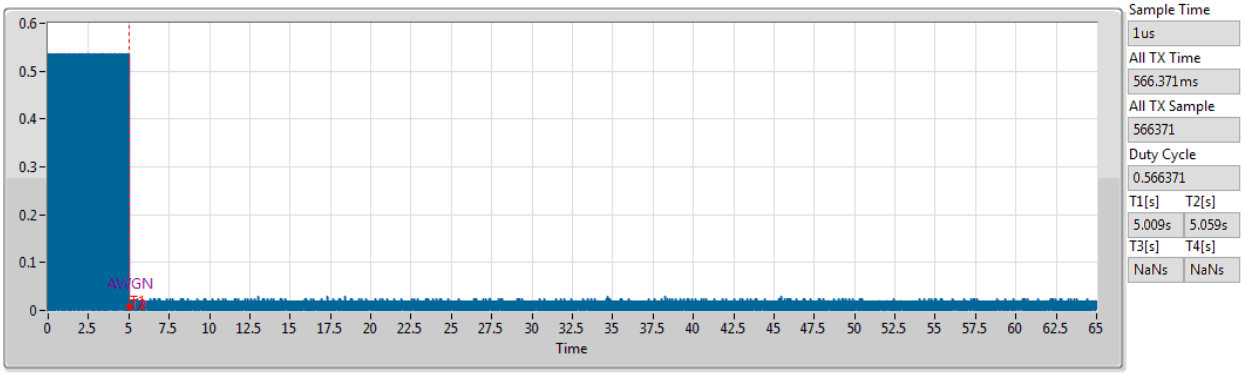
802.11ac (VHT40) - 5190MHz (AWGN)

Time Analysis

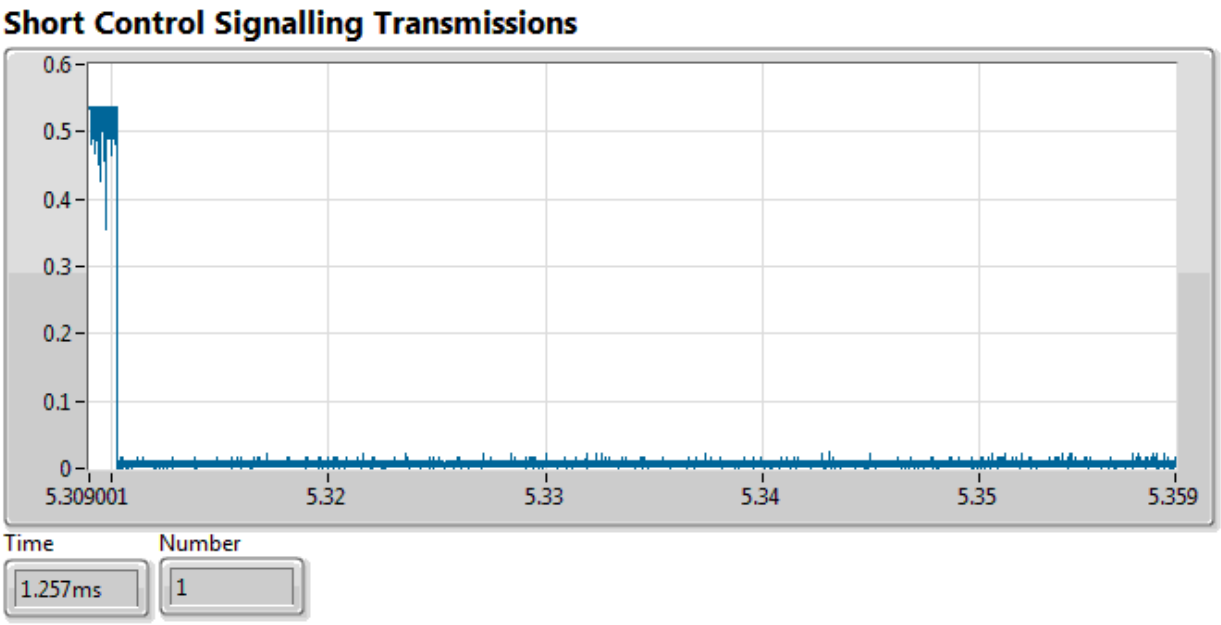


802.11ac (VHT40) - 5510MHz (AWGN)

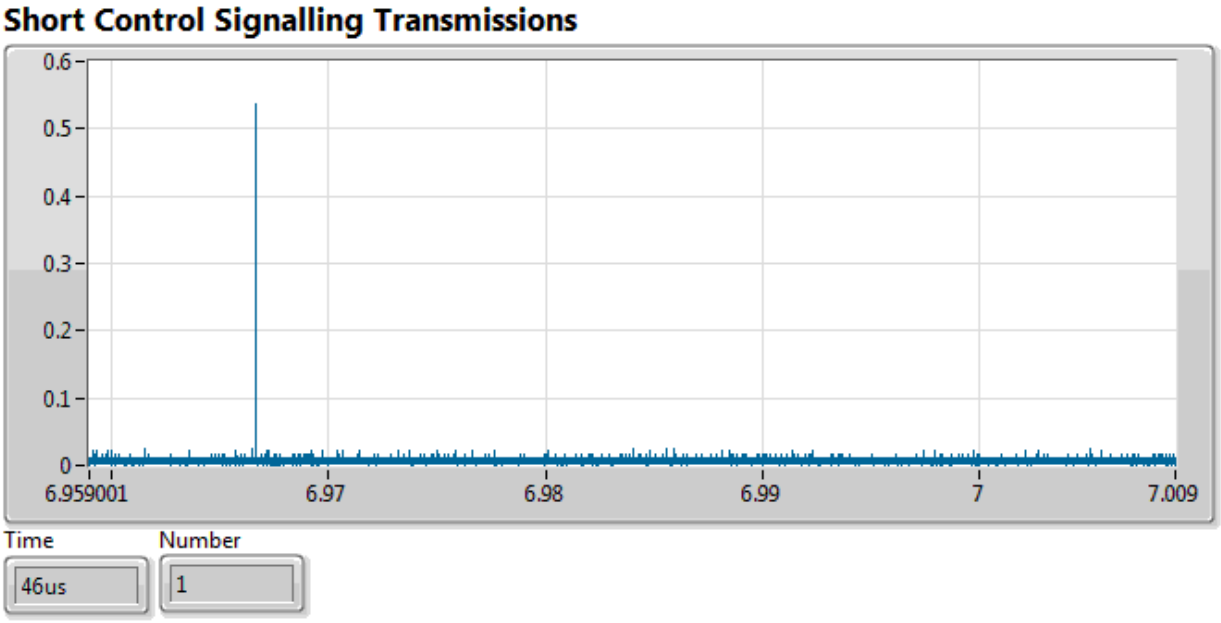
Time Analysis



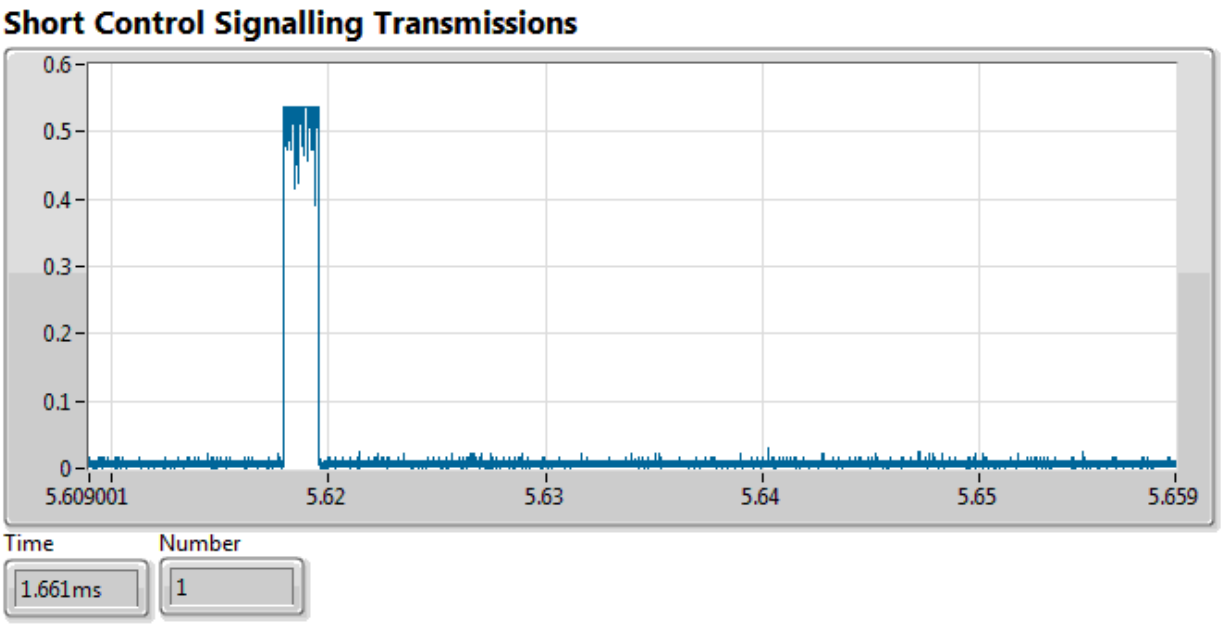
Short Control Signalling Transmissions Plots
802.11ac (VHT20) - 5180MHz (AWGN)



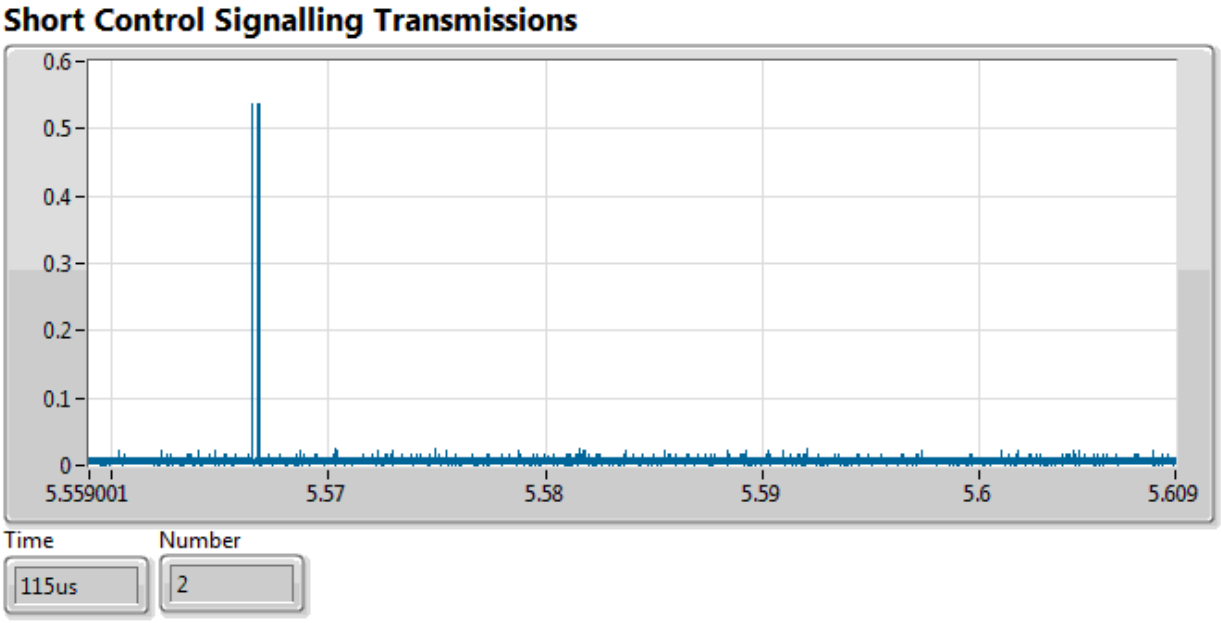
802.11ac (VHT20) - 5180MHz (OFDM)



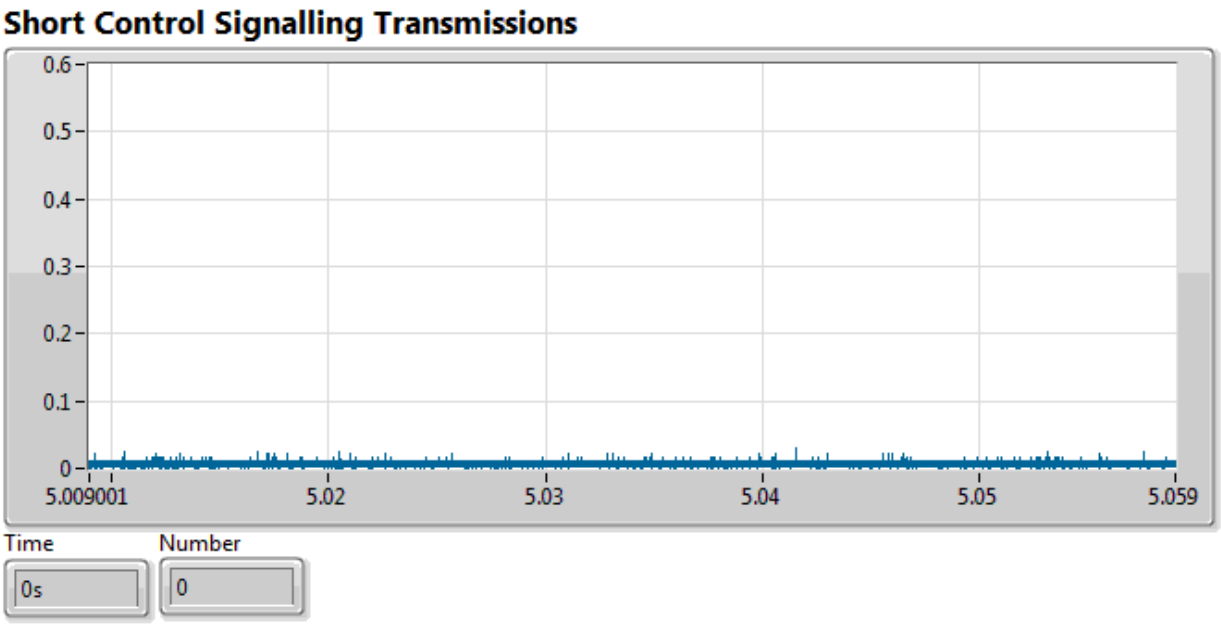
Short Control Signalling Transmissions Plots
802.11ac (VHT20) - 5180MHz (LTE)



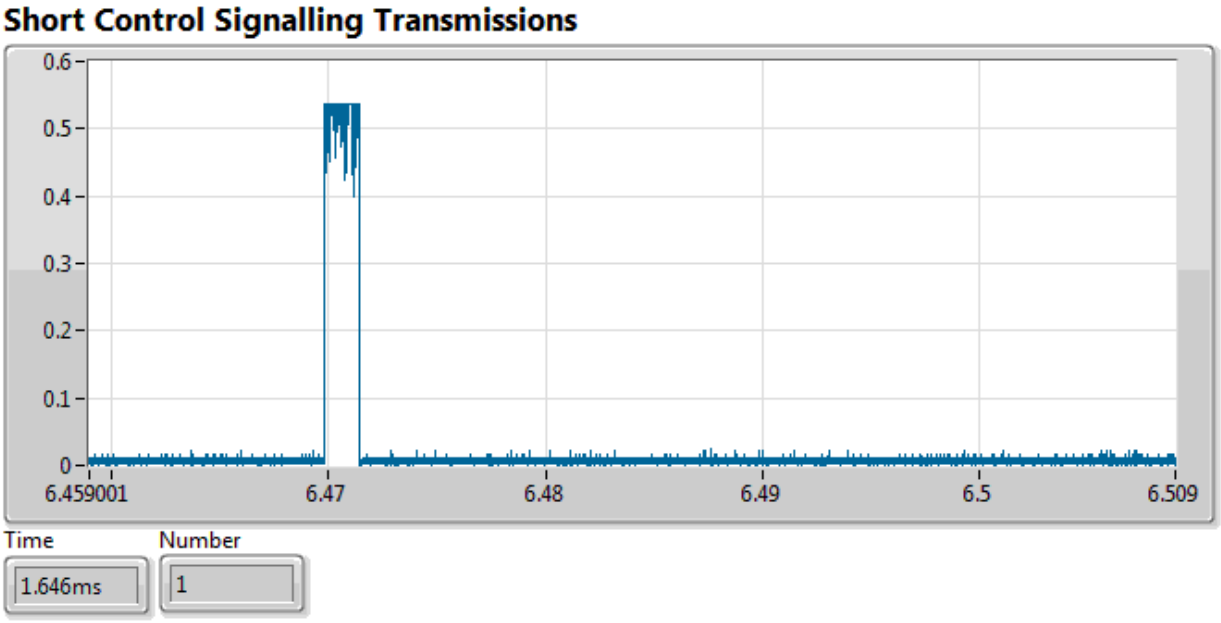
802.11ac (VHT20) - 5500MHz (AWGN)



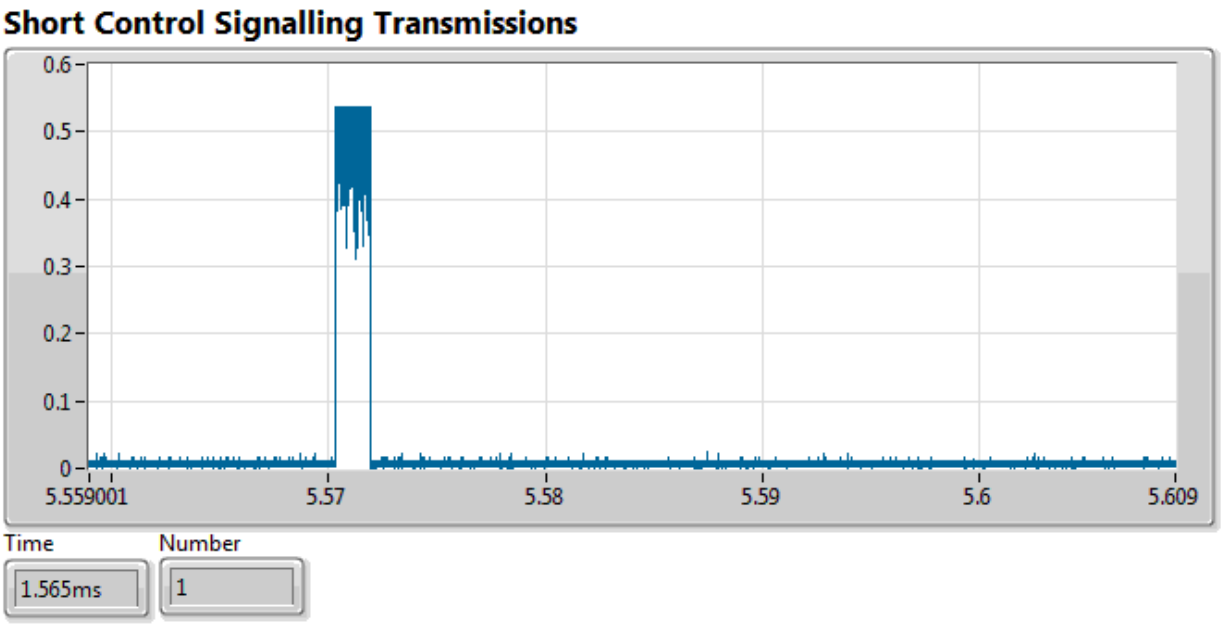
Short Control Signalling Transmissions Plots
802.11ac (VHT20) - 5500MHz (OFDM)



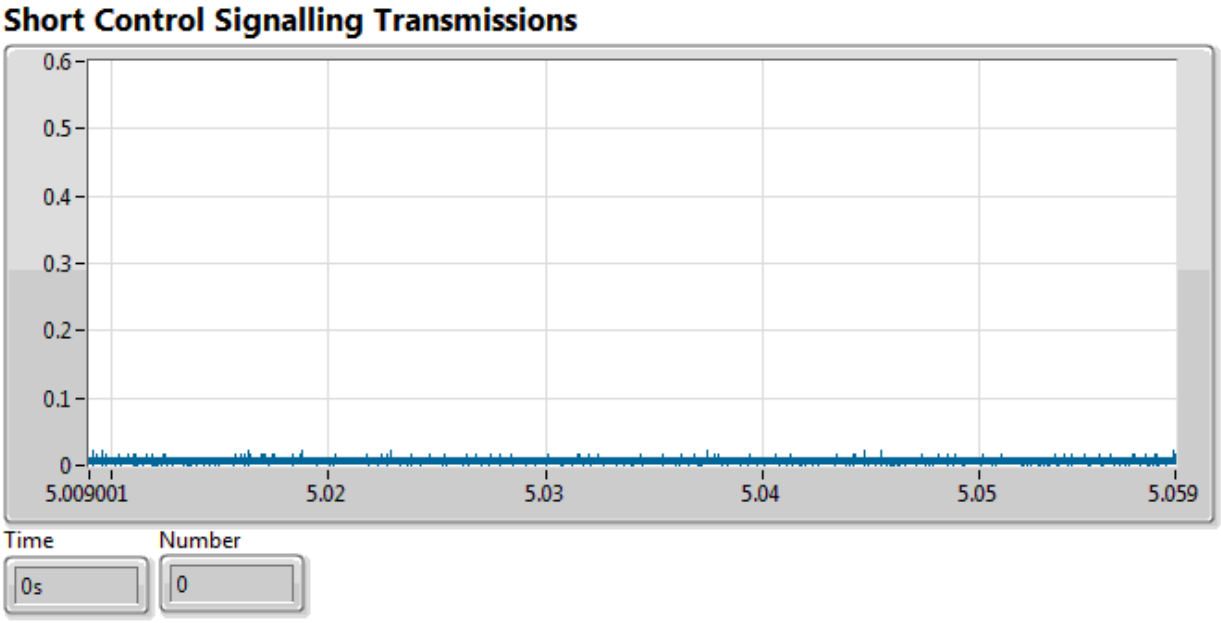
802.11ac (VHT20) - 5500MHz (LTE)



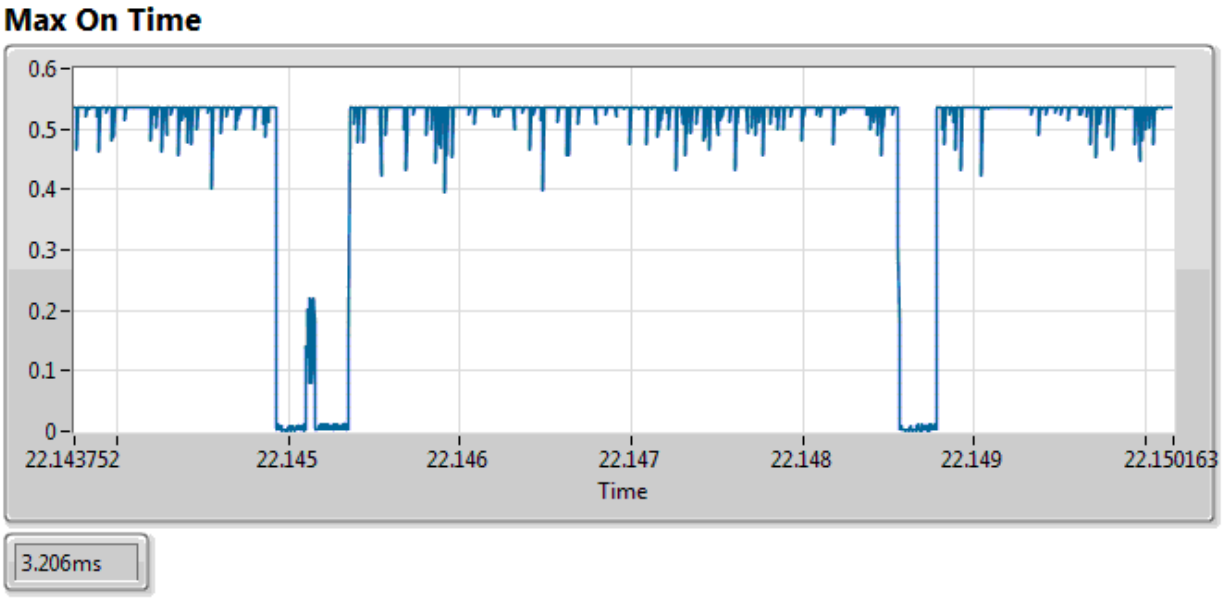
Short Control Signalling Transmissions Plots
802.11ac (VHT40) - 5190MHz (AWGN)



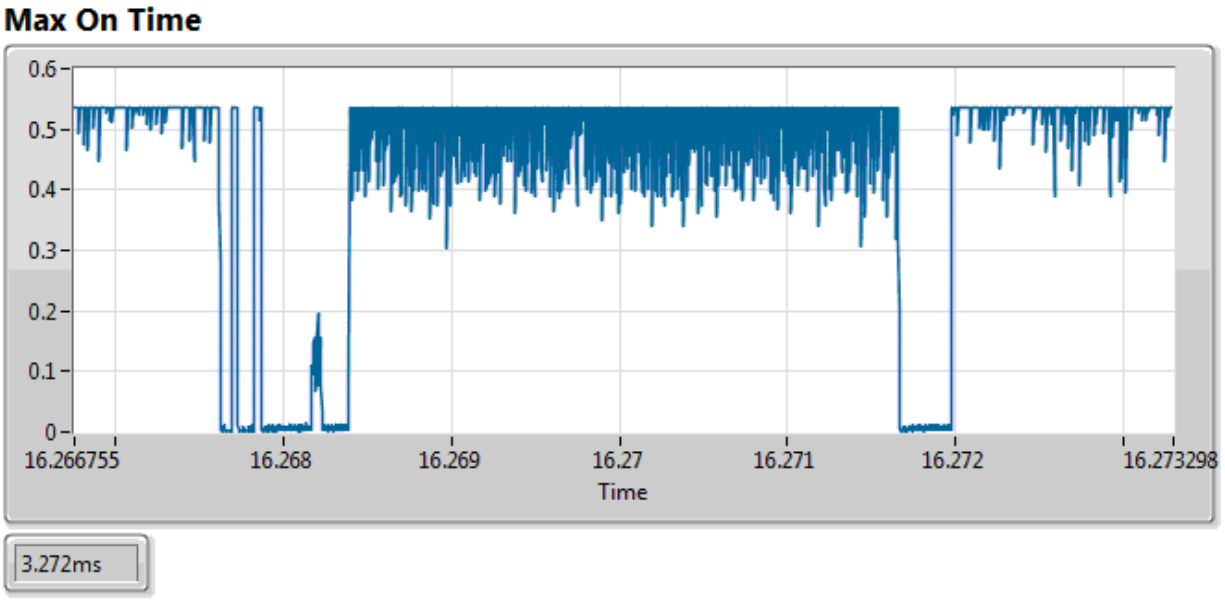
802.11ac (VHT40) - 5510MHz (AWGN)



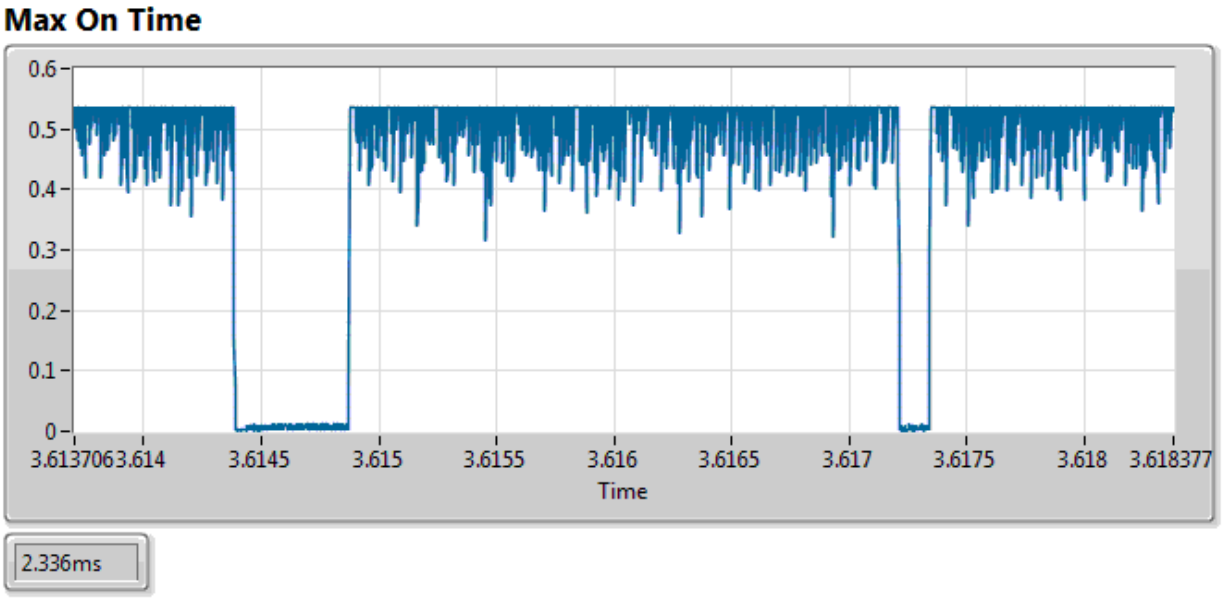
Channel Occupancy Time
802.11ac (VHT20) - 5180MHz



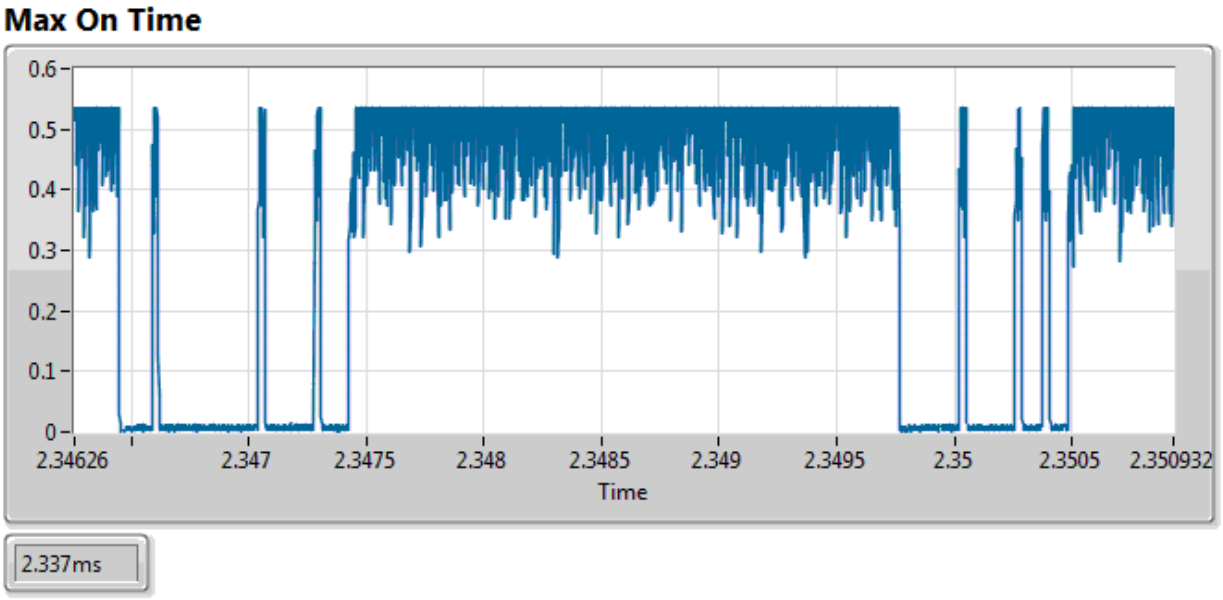
802.11ac (VHT20) - 5500MHz



Channel Occupancy Time
802.11ac (VHT40) - 5190MHz



802.11ac (VHT40) - 5510MHz



5.1.5 Idle Period probability evaluation

Priority Class	Class 2
Operating Type	Supervised Device
Test condition	802.11ac (VHT20) / 5180MHz

n	H(Bn)	Pn	Pn Limit	Result
0	1	0.00007	0.05000	Pass
1	3	0.00029	0.12000	Pass
2	5	0.00066	0.18250	Pass
3	264	0.01995	0.24500	Pass
4	51	0.02367	0.30750	Pass
5	54	0.02762	0.37000	Pass
6	47	0.03105	0.43250	Pass
7	537	0.07029	0.49500	Pass
8	735	0.12400	0.55750	Pass
9	748	0.17865	0.62000	Pass
10	738	0.23257	0.68250	Pass
11	728	0.28577	0.74500	Pass
12	707	0.33743	0.80750	Pass
13	761	0.39303	0.87000	Pass
14	697	0.44396	0.93250	Pass
15	738	0.49788	0.99500	Pass
16	6872	1.00000	1.00000	Pass

Priority Class	Class 2
Operating Type	Supervised Device
Test condition	802.11ac (VHT20) / 5500MHz

n	H(Bn)	Pn	Pn Limit	Result
0	0	0.00000	0.05000	Pass
1	3	0.00027	0.12000	Pass
2	1	0.00036	0.18250	Pass
3	5	0.00082	0.24500	Pass
4	2	0.00100	0.30750	Pass
5	2	0.00119	0.37000	Pass
6	11	0.00219	0.43250	Pass
7	14	0.00347	0.49500	Pass
8	110	0.01350	0.55750	Pass
9	767	0.08345	0.62000	Pass
10	699	0.14721	0.68250	Pass
11	749	0.21552	0.74500	Pass
12	579	0.26833	0.80750	Pass
13	727	0.33464	0.87000	Pass
14	715	0.39985	0.93250	Pass
15	697	0.46343	0.99500	Pass
16	5883	1.00000	1.00000	Pass

Priority Class	Class 2
Operating Type	Supervised Device
Test condition	802.11ac (VHT40) / 5190MHz

n	H(Bn)	Pn	Pn Limit	Result
0	0	0.00000	0.05000	Pass
1	0	0.00000	0.12000	Pass
2	0	0.00000	0.18250	Pass
3	8	0.00047	0.24500	Pass
4	1	0.00053	0.30750	Pass
5	56	0.00383	0.37000	Pass
6	0	0.00383	0.43250	Pass
7	2	0.00395	0.49500	Pass
8	2	0.00407	0.55750	Pass
9	240	0.01821	0.62000	Pass
10	295	0.03560	0.68250	Pass
11	298	0.05316	0.74500	Pass
12	239	0.06724	0.80750	Pass
13	454	0.09400	0.87000	Pass
14	510	0.12406	0.93250	Pass
15	569	0.15759	0.99500	Pass
16	14294	1.00000	1.00000	Pass

Priority Class	Class 2
Operating Type	Supervised Device
Test condition	802.11ac (VHT40) / 5510MHz

n	H(Bn)	Pn	Pn Limit	Result
0	0	0.00000	0.05000	Pass
1	0	0.00000	0.12000	Pass
2	0	0.00000	0.18250	Pass
3	85	0.00534	0.24500	Pass
4	8	0.00584	0.30750	Pass
5	41	0.00842	0.37000	Pass
6	2	0.00855	0.43250	Pass
7	18	0.00968	0.49500	Pass
8	76	0.01445	0.55750	Pass
9	215	0.02796	0.62000	Pass
10	280	0.04555	0.68250	Pass
11	291	0.06384	0.74500	Pass
12	372	0.08721	0.80750	Pass
13	439	0.11480	0.87000	Pass
14	458	0.14358	0.93250	Pass
15	554	0.17839	0.99500	Pass
16	13076	1.00000	1.00000	Pass

6 Receiver Blocking Test Results

6.1 Receiver Blocking

6.1.1 Limit of Receiver Blocking

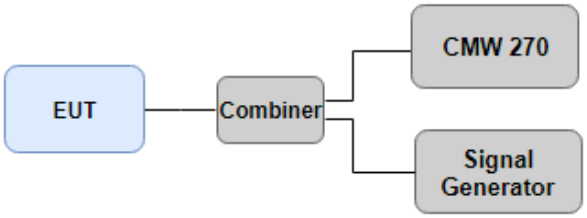
Receiver Blocking Parameters				
Wanted Signal Mean Power from Companion Device (dBm)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm) (see note 2)		Type of Blocking Signal
		Master or Slave with radar detection	Slave without radar detection	
P_{min} + 6 dB	5 100	-53	-59	Continuous Wave
P_{min} + 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 (The minimum performance criterion shall be a PER of less than or equal to 10 %) 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 Test Procedures

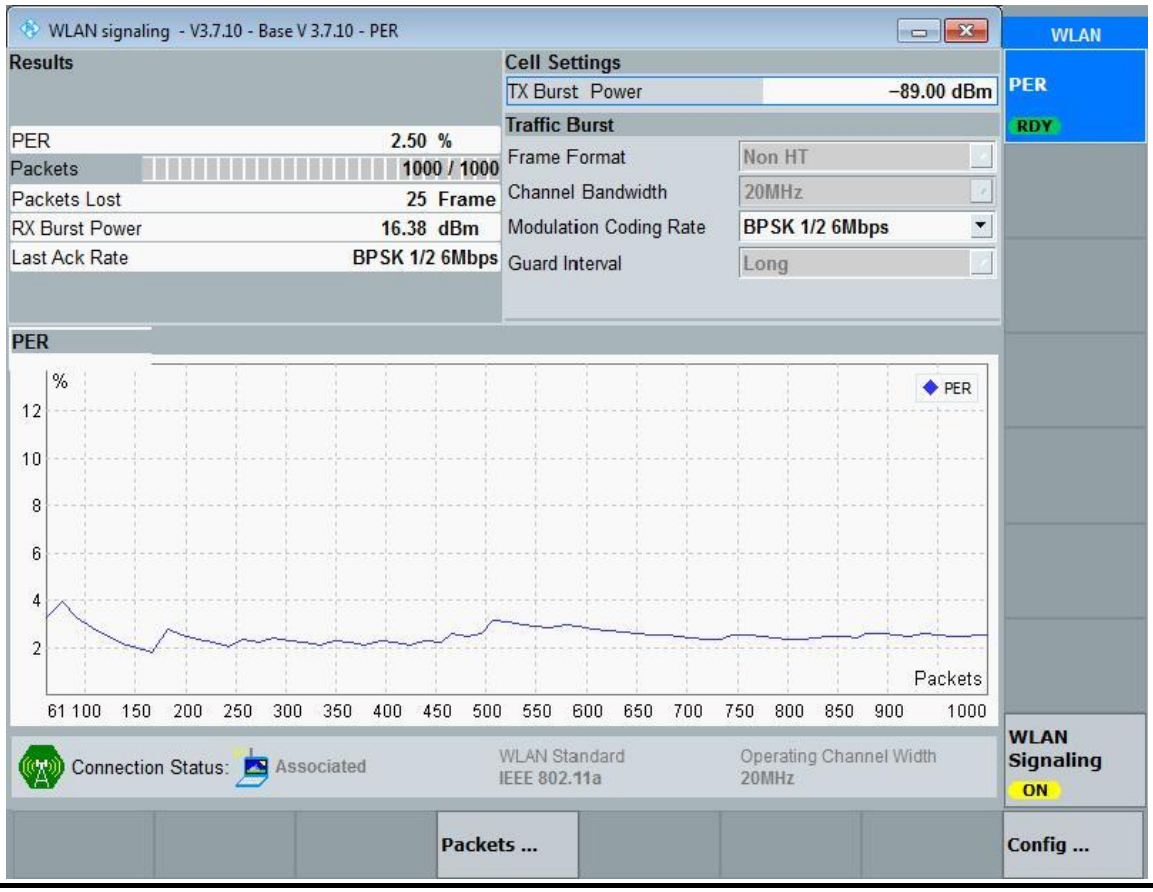
Reference to clause 5.4.10.2 of ETSI EN 301 893 V2.1.1 (2017-05).

6.1.3 Test Setup



6.1.4 Test Result of Receiver Blocking

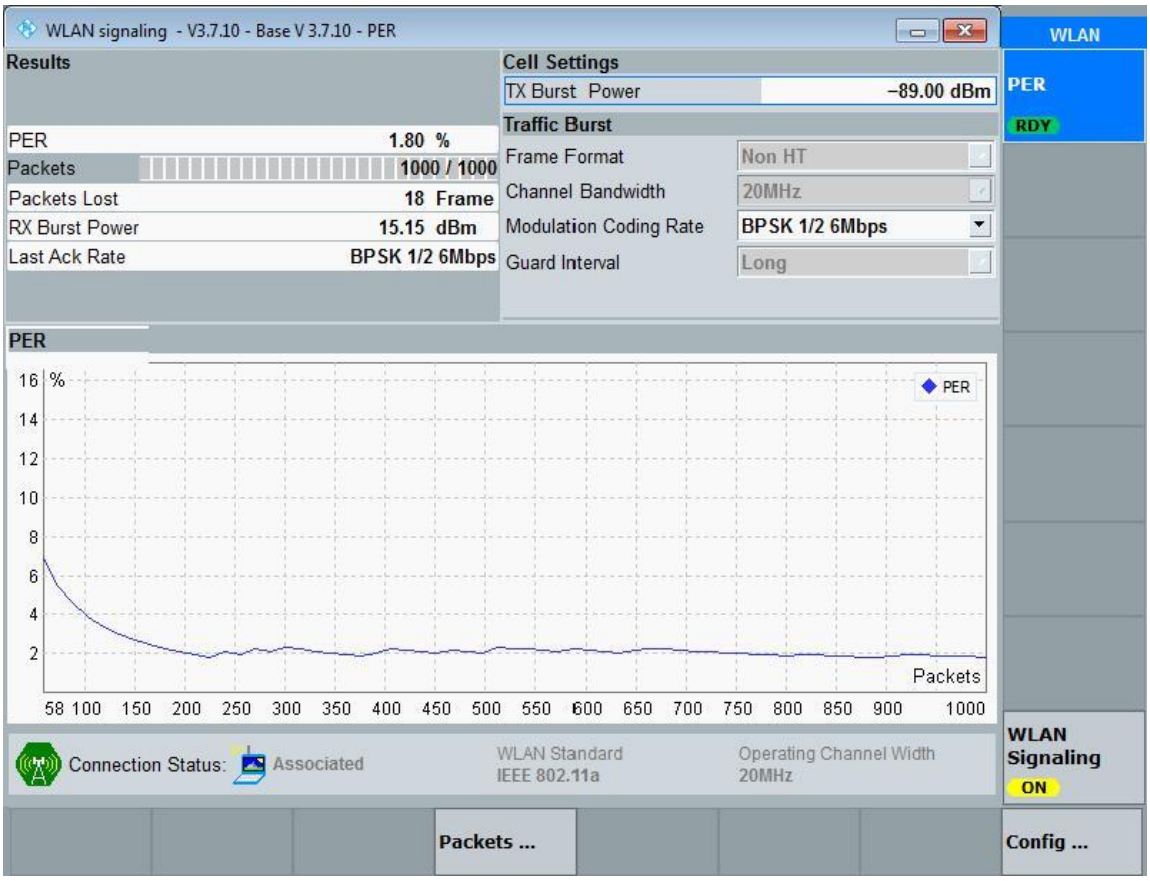
11a / 5180 MHz
Without Interference Signal Sensitivity Level



Sensitivity Level (dBm)	-89		
Wanted Signal Mean Power from Companion Device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm)**	**Test Result**
-83	5100	-59	Pass
-83	4900	-53	Pass
-83	5000		Pass
-83	5975		Pass

11a / 5700 MHz

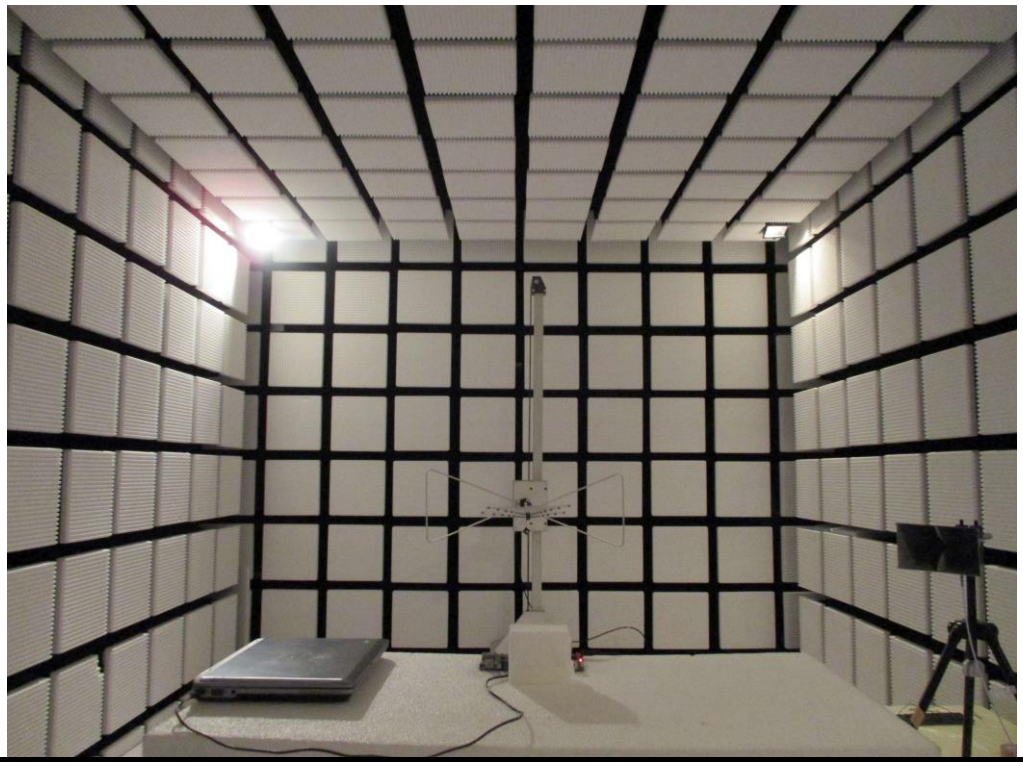
Without Interference Signal Sensitivity Level

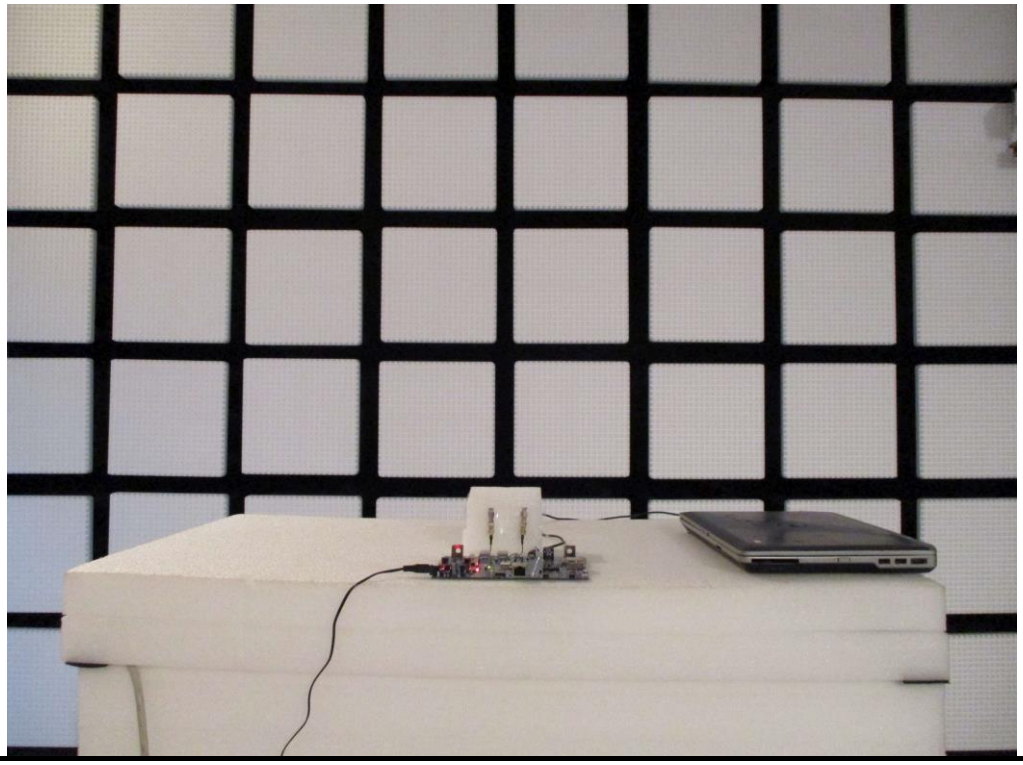


Sensitivity Level (dBm)	-84		
Wanted Signal Mean Power from Companion Device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm)**	**Test Result**
-78	5100	-59	Pass
-78	4900	-53	Pass
-78	5000		Pass
-78	5975		Pass

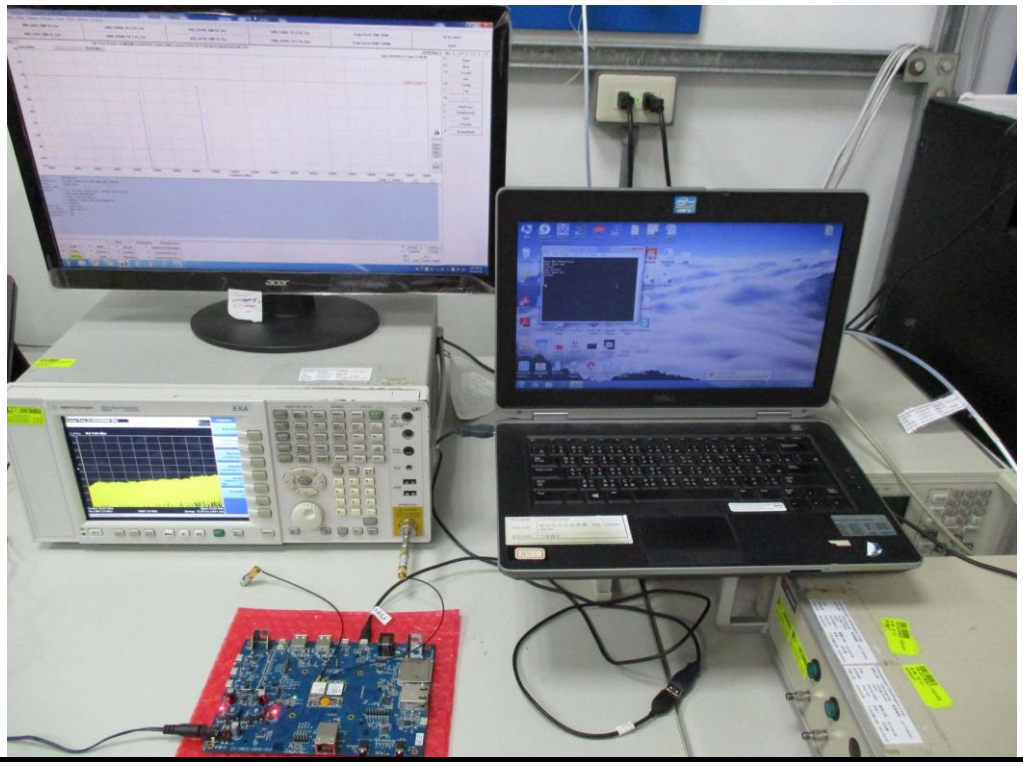
7 Photographs of the Test Configuration

Radiated Spurious Emission Test

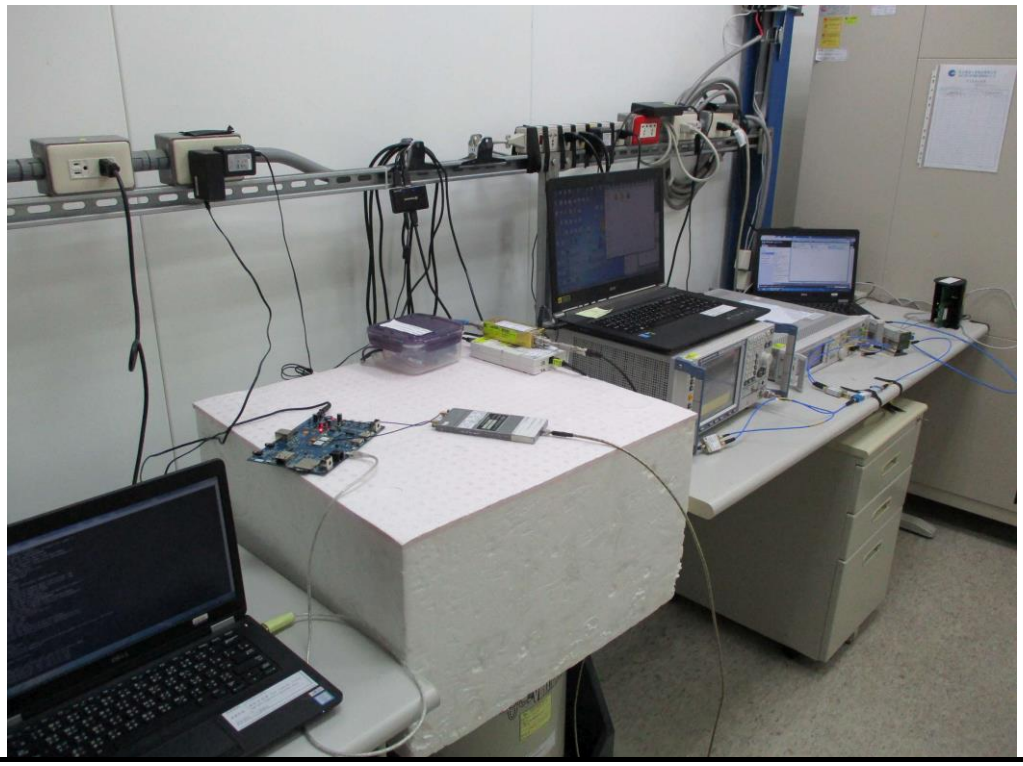




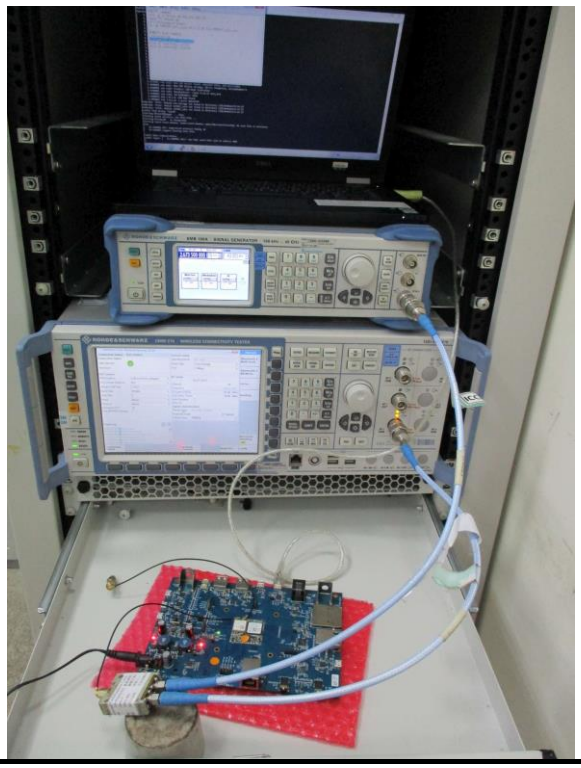
Conducted Spurious Emission Test



Adaptivity Test



Receiver Blocking Test



8 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website http://www.icertifi.com.tw.

Linkou	**Kwei Shan**	**Kwei Shan Site II**
Tel: 886-2-2601-1640	Tel: 886-3-271-8666	Tel: 886-3-271-8640
No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City, Taiwan, R.O.C.	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C..

If you have any suggestion, please feel free to contact us as below information

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Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

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