CE Test Report

Equipment	:	**802.11 ac/a/b/g/n + Bluetooth 4.2 module** **(please refer to section 1.1.1 for more details.)**
Model No.	:	**ST60-2230C** **(please refer to section 1.1.1 for more details.)**
Brand Name	:	**Laird Technologies**
Applicant	:	**Laird Technologies**
Address	:	**W66N220 Commerce Court, Cedarburg, Wisconsin 53012, USA**
Standard	:	**EN 301 893 V2.1.1 (2017-05)**
Received Date	:	**Apr. 07, 2017**
Tested Date	:	**Apr. 25 ~ Jun. 09, 2017**

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:**

James Fan / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

Table of Contents

1 GENERAL DESCRIPTION 5

1.1 Information 5
1.2 Local Support Equipment List 9
1.3 Test Setup Chart 9
1.4 Test Equipment and Calibration Data 11
1.5 Testing Applied Standards 13
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 32
3.3 RF Output Power, Transmit Power Control (TPC) and Power density 34
3.4 Transmitter Unwanted Emissions outside the 5 GHz RLAN Bands 72
3.5 Transmitter Unwanted Emissions within the 5 GHz RLAN Band 138

4 RECEIVER TEST RESULTS 143

4.1 Receiver Spurious Emissions 143

5 ADAPTIVITY TEST RESULTS 209

5.1 Adaptivity 209

6 RECEIVER BLOCKING TEST RESULTS 213

6.1 Receiver Blocking 213

7 PHOTOGRAPHS OF THE TEST CONFIGURATION 216

8 TEST LABORATORY INFORMATION 220

Release Record

Report No.	Version	Description	Issued Date
ER740701AN	Rev. 01	Initial issue	Jul. 13, 2017
ER740701AN	Rev. 02	Revised model name	Jul. 24, 2017

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: 22.87 dBm 5.25-5.35GHz: 22.76 dBm 5.47-5.725GHz: 22.89 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[Note2]
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:
1. The DFS measurement was recorded in Report No.: EY740701.
2. Channel Access Mechanism and maximum Channel Occupancy Time are declared compliance with requirement by manufacturer. Both items are not evaluated.

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 Technologies	ST60-SIPT	802.11 ac/a/b/g/n + Bluetooth 4.2 module	SIPT only	For marketing purpose
	SU60-SIPT			
	ST60-2230C	802.11 ac/a/b/g/n M.2 2230 + Bluetooth 4.2 module	with carrier board	
	SU60-2230C			
✦ The above models, model ST60-2230C was selected as a representative one for the final test and only its data was recorded in this report.				

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 5500-5700	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 5500-5700	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 5500-5700	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 5500-5700	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 5500-5700	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 5500-5700	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

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	LSR/001-0009	Dipole	IPEX U.FL	2	2	2	2	2
2	Laird NanoBlade-IP04	PCB Dipole	IPEX U.FL	2	3.9	3.9	4	4
3	Laird MAF95310 Mini NanoBlade Flex	PCB Dipole	IPEX U.FL	2.79	3.38	3.38	3.38	3.38
4	LSR/FlexPIFA 001-0016	PIFA	IPEX U.FL	2.5	3	3	3	3
5	Ethertronics WLAN_1000146	Isolated Magnetic Dipole	IPEX U.FL	2.5	3.5	3.5	3.5	3.5

1.1.4 EUT Operational Condition

Power Supply Type	DC 3.3V from host		
SW Version	SD-UAPSTA-8997-U14-MMC-16.68.1.p95-C3X16219_V4-MGPL-src		
Operational Voltage	☒ Vnom (3.30 V)	☒ Vmax (3.63 V)	☒ Vmin (2.97 V)
Operational Climatic	☒ Tnom (20°C)	☒ Tmax (85°C)	☒ Tmin (-30°C)

1.1.5 Accessories

N/A

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)		5500~5700	
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	Command
Duty Cycle Of Test Signal (%)	100% - IEEE 802.11a 100% - IEEE 802.11ac VHT20 100% - IEEE 802.11ac VHT40 100% - IEEE 802.11ac (VHT80)
Duty Factor	0.00 - IEEE 802.11a 0.00 - IEEE 802.11ac VHT20 0.00 - IEEE 802.11ac VHT40 0.00 - IEEE 802.11ac (VHT80)

1.1.9 Power Setting

Configuration 1 : Dipole Antenna

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	16	16	17	17	--	--	--	--	--	--	--	--
ac (VHT20)	16	16	17	17	--	--	--	--	--	--	--	--
ac (VHT40)	--	--	--	--	17	17	17	18	--	--	--	--
ac (VHT80)	--	--	--	--	--	--	--	--	17	17	17	18

Configuration 2 : PCB Dipole Antenna

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	14	14	15	15	--	--	--	--	--	--	--	--
ac (VHT20)	14	14	15	15	--	--	--	--	--	--	--	--
ac (VHT40)	--	--	--	--	15	15	15	16	--	--	--	--
ac (VHT80)	--	--	--	--	--	--	--	--	15	15	15	15

Configuration 3 : PIFA Antenna

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	15	15	16	16	--	--	--	--	--	--	--	--
ac (VHT20)	15	15	16	16	--	--	--	--	--	--	--	--
ac (VHT40)	--	--	--	--	16	16	16	17	--	--	--	--
ac (VHT80)	--	--	--	--	--	--	--	--	16	16	16	17

Configuration 4: Isolated Magnetic Dipole Antenna

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	14	14	15	15	--	--	--	--	--	--	--	--
ac (VHT20)	14	14	15	15	--	--	--	--	--	--	--	--
ac (VHT40)	--	--	--	--	15	16	16	17	--	--	--	--
ac (VHT80)	--	--	--	--	--	--	--	--	15	15	16	15

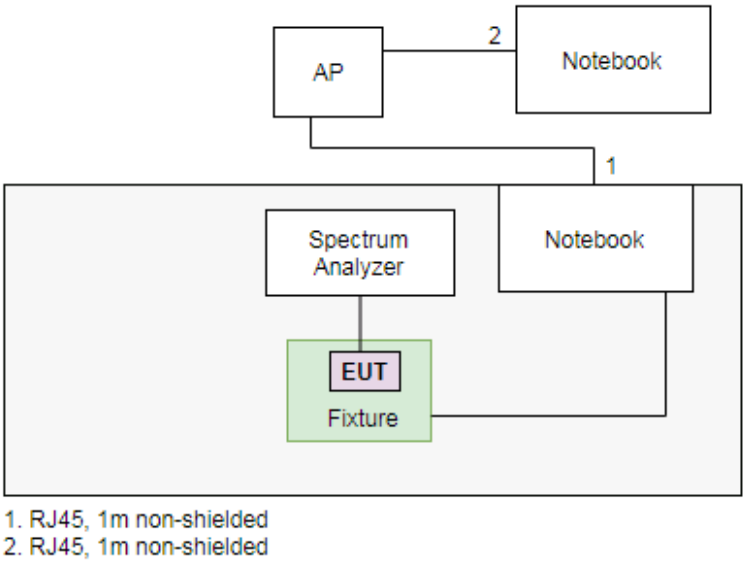
1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	Latitude E5420	DoC	RJ45, 1m non-shielded
2	Notebook	Lenovo	T430	DoC	RJ45, 1m non-shielded
3	50Ω terminator	---	---	---	---
4	Fixture	---	---	---	---
5	Wireless connectivity tester	LITE POINT	IQ2010	---	---

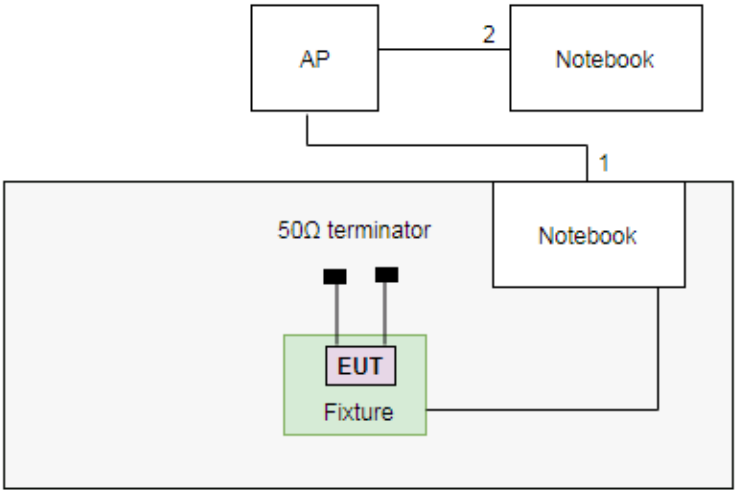
Note: No.2, 4 and 5 were provided by applicant.

1.3 Test Setup Chart

Test Setup Diagram (Conducted)



Test Setup Diagram (Radiated)



1. RJ45, 1m non-shielded
2. RJ45, 1m non-shielded

1.4 Test Equipment and Calibration Data

Test Item	Radiated Emissions				
Test Site	Fully-anechoic chamber 2 / (05CH02-WS)				
Tested Date	Apr. 25, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	Agilent	N9010A	MY52221474	Oct. 14, 2016	Oct. 13, 2017
Bilog Antenna 30-1000MHz	SCHWARZBECK	VULB9168	9168-563	Jan. 05, 2017	Jan. 04, 2018
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	9120D-1205	Jan. 05, 2017	Jan. 04, 2018
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170508	Dec. 29, 2016	Dec. 28, 2017
Preamplifier	Agilent	83017A	MY53270013	Jan. 10, 2017	Jan. 09, 2018
Preamplifier 30-1000MHz	EMC	EMC02325	980188	Dec. 13, 2016	Dec. 12, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22622/4	Dec. 13, 2016	Dec. 12, 2017
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22623/4	Dec. 14, 2016	Dec. 13, 2017
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22621/4	Dec. 14, 2016	Dec. 13, 2017
RF cable-4M	HUBER+SUHNER	SUCOFLEX104	MY22579/4	Dec. 14, 2016	Dec. 13, 2017
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-002	Dec. 14, 2016	Dec. 13, 2017
LF cable-3M	EMC	EMC8D-NM-NM-3000	131102	Dec. 14, 2016	Dec. 13, 2017
LF cable-10M	EMC	EMC8D-NM-NM-10000	131101	Dec. 14, 2016	Dec. 13, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	May 06, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Mar. 15, 2017	Mar. 14, 2018
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 09, 2016	Sep. 08, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 21, 2016	Nov. 20, 2017
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
Signal Generator	R&S	SMB100A	175727	Oct. 19, 2016	Oct. 18, 2017
Radio Communication Analyzer	Anritsu	MT8820C	6201465544	Aug. 19, 2016	Aug. 18, 2017
MXG-B RF Vector Signal Generator	Agilent	N5182B	MY53050081	Apr. 15, 2017	Apr. 14, 2018
DC POWER SOURCE	GW INSTEK	GPC-6030D	EM892433	Oct. 20, 2016	Oct. 19, 2017
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 28, 2016	Oct. 27, 2017
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Adaptivity				
Test Site	(TH01-WS)				
Tested Date	Jun. 01, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum	Keysight	N9010A	MY54200247	Aug. 30, 2016	Aug. 29, 2017
RF cable-4M	HUBER+SUHNER	SUCOFLEX_104	MY15686/4	Dec. 16, 2016	Dec. 15, 2017
RF cable-0.5M	HUBER+SUHNER	SUCOFLEX_104	296081/4	Dec. 16, 2016	Dec. 15, 2017
RF cable-0.2M	HUBER+SUHNER	SUCOFLEX_104	329023/4	Dec. 16, 2016	Dec. 15, 2017
RF cable-0.2M	HUBER+SUHNER	SUCOFLEX_104	329021/4	Dec. 16, 2016	Dec. 15, 2017
MXG-B RF Vector Signal Generator	Agilent	N5182B	MY53051912	Nov. 21, 2016	Nov. 20, 2017
Preamplifier	Burgeon	BPA-530	100219	Nov. 02, 2016	Nov. 01, 2017
Oscilloscope	National Instruments	USB-5133	F651FF	Jun. 22, 2016	Jun. 21, 2017
Measurement Software	Sporton	Sporton_3	2.2.0.0	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Receiver Blocking				
Test Site	(05CH01-WS)				
Tested Date	Jun. 09, 2017				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Signal Generator	R&S	SMB100A	175727	Oct. 19, 2016	Oct. 18, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX_104	500202/4	Dec. 16, 2016	Dec. 15, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX_104	296088/4	Dec. 16, 2016	Dec. 15, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX_104	329023/4	Dec. 16, 2016	Dec. 15, 2017
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	$\pm 1.4 \times 10^{-9}$	$\pm 1 \times 10^{-5}$
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 °C	±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	23°C / 62%	Jack Li
Radiated Emission	05CH02-WS	24°C / 65%	Penguin Jiang
Adaptivity	TH01-WS	23°C / 67%	Jack Li
Receiver Blocking	05CH01-WS	22.5°C / 64%	Tom Shu

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 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	1
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	1
Receiver Spurious Emissions	11a VHT20 VHT40 VHT80	5180 / 5700 5180 / 5700 5190 / 5670 5210 / 5610	6 Mbps MCS 0 MCS 0 MCS 0	1
Adaptivity	VHT20 VHT40	5180 / 5500 5190 / 5510	MCS 0 MCS 0	1
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 **Y-plane** results were found as the worst case and were shown in this report.
2. The device can be operated under adapter mode and charging mode. Each mode was selected for related test items as below configuration.

   Configuration 1 : Dipole Antenna

   Configuration 2 : PCB Dipole Antenna

   Configuration 3 : PIFA Antenna

   Configuration 4: Isolated Magnetic Dipole Antenna
3. Conducted emission is only measured for configuration 1 which has maximum conducted power.
4. Two 50Ω terminators are connected to antenna port of EUT for radiated emission measurement.

3 Transmitter Test Results

3.1 Carrier Frequencies

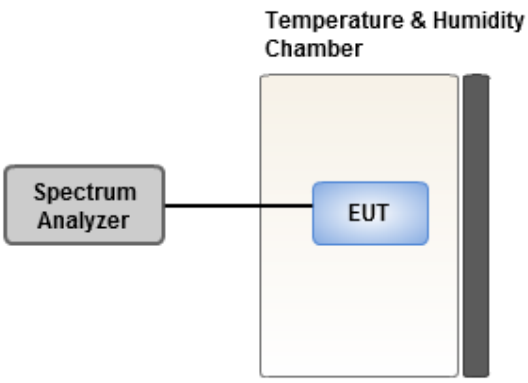
3.1.1 Limit of Carrier Frequencies

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

Configuration 1 : Dipole Antenna

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11a	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11a	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11a	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11a	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11a	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11a	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11a	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11a	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11a	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11a	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11a	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11a	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11a	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11a	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11a	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11a	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11a	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11a	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11a	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11a	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT20	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11ac VHT20	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11ac VHT20	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11ac VHT20	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11ac VHT20	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11ac VHT20	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT40	5190	5189.99477	-1.01	20
$T_{min}V_{max}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{min}V_{min}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{max}V_{max}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{max}V_{min}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{nom}V_{nom}$	802.11ac VHT40	5310	5309.99540	-0.87	20
$T_{min}V_{max}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{min}V_{min}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{max}V_{max}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{max}V_{min}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{nom}V_{nom}$	802.11ac VHT40	5510	5509.99689	-0.56	20
$T_{min}V_{max}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{min}V_{min}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{max}V_{max}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{max}V_{min}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{nom}V_{nom}$	802.11ac VHT40	5670	5669.99488	-0.90	20
$T_{min}V_{max}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{min}V_{min}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{max}V_{max}$	802.11ac VHT40	5670	5670.07100	12.52	20
$T_{max}V_{min}$	802.11ac VHT40	5670	5670.07100	12.52	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT80	5210	5209.99482	-0.99	20
$T_{min}V_{max}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{min}V_{min}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{max}V_{max}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{max}V_{min}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{nom}V_{nom}$	802.11ac VHT80	5290	5289.99607	-0.74	20
$T_{min}V_{max}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{min}V_{min}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{max}V_{max}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{max}V_{min}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{nom}V_{nom}$	802.11ac VHT80	5530	5529.99655	-0.62	20
$T_{min}V_{max}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{min}V_{min}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{max}V_{max}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{max}V_{min}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{nom}V_{nom}$	802.11ac VHT80	5610	5609.99718	-0.50	20
$T_{min}V_{max}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{min}V_{min}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{max}V_{max}$	802.11ac VHT80	5610	5610.07320	13.05	20
$T_{max}V_{min}$	802.11ac VHT80	5610	5610.07320	13.05	20

Configuration 2 : PCB Dipole Antenna

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11a	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11a	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11a	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11a	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11a	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11a	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11a	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11a	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11a	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11a	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11a	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11a	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11a	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11a	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11a	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11a	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11a	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11a	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11a	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11a	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT20	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11ac VHT20	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11ac VHT20	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11ac VHT20	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11ac VHT20	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11ac VHT20	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT40	5190	5189.99477	-1.01	20
$T_{min}V_{max}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{min}V_{min}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{max}V_{max}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{max}V_{min}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{nom}V_{nom}$	802.11ac VHT40	5310	5309.99540	-0.87	20
$T_{min}V_{max}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{min}V_{min}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{max}V_{max}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{max}V_{min}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{nom}V_{nom}$	802.11ac VHT40	5510	5509.99689	-0.56	20
$T_{min}V_{max}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{min}V_{min}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{max}V_{max}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{max}V_{min}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{nom}V_{nom}$	802.11ac VHT40	5670	5669.99488	-0.90	20
$T_{min}V_{max}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{min}V_{min}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{max}V_{max}$	802.11ac VHT40	5670	5670.07100	12.52	20
$T_{max}V_{min}$	802.11ac VHT40	5670	5670.07100	12.52	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT80	5210	5209.99482	-0.99	20
$T_{min}V_{max}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{min}V_{min}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{max}V_{max}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{max}V_{min}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{nom}V_{nom}$	802.11ac VHT80	5290	5289.99607	-0.74	20
$T_{min}V_{max}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{min}V_{min}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{max}V_{max}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{max}V_{min}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{nom}V_{nom}$	802.11ac VHT80	5530	5529.99655	-0.62	20
$T_{min}V_{max}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{min}V_{min}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{max}V_{max}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{max}V_{min}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{nom}V_{nom}$	802.11ac VHT80	5610	5609.99718	-0.50	20
$T_{min}V_{max}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{min}V_{min}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{max}V_{max}$	802.11ac VHT80	5610	5610.07320	13.05	20
$T_{max}V_{min}$	802.11ac VHT80	5610	5610.07320	13.05	20

Configuration 3 : PIFA Antenna

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11a	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11a	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11a	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11a	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11a	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11a	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11a	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11a	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11a	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11a	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11a	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11a	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11a	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11a	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11a	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11a	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11a	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11a	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11a	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11a	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT20	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11ac VHT20	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11ac VHT20	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11ac VHT20	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11ac VHT20	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11ac VHT20	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT40	5190	5189.99477	-1.01	20
$T_{min}V_{max}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{min}V_{min}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{max}V_{max}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{max}V_{min}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{nom}V_{nom}$	802.11ac VHT40	5310	5309.99540	-0.87	20
$T_{min}V_{max}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{min}V_{min}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{max}V_{max}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{max}V_{min}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{nom}V_{nom}$	802.11ac VHT40	5510	5509.99689	-0.56	20
$T_{min}V_{max}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{min}V_{min}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{max}V_{max}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{max}V_{min}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{nom}V_{nom}$	802.11ac VHT40	5670	5669.99488	-0.90	20
$T_{min}V_{max}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{min}V_{min}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{max}V_{max}$	802.11ac VHT40	5670	5670.07100	12.52	20
$T_{max}V_{min}$	802.11ac VHT40	5670	5670.07100	12.52	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT80	5210	5209.99482	-0.99	20
$T_{min}V_{max}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{min}V_{min}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{max}V_{max}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{max}V_{min}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{nom}V_{nom}$	802.11ac VHT80	5290	5289.99607	-0.74	20
$T_{min}V_{max}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{min}V_{min}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{max}V_{max}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{max}V_{min}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{nom}V_{nom}$	802.11ac VHT80	5530	5529.99655	-0.62	20
$T_{min}V_{max}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{min}V_{min}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{max}V_{max}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{max}V_{min}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{nom}V_{nom}$	802.11ac VHT80	5610	5609.99718	-0.50	20
$T_{min}V_{max}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{min}V_{min}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{max}V_{max}$	802.11ac VHT80	5610	5610.07320	13.05	20
$T_{max}V_{min}$	802.11ac VHT80	5610	5610.07320	13.05	20

Configuration 4: Isolated Magnetic Dipole Antenna

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11a	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11a	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11a	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11a	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11a	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11a	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11a	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11a	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11a	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11a	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11a	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11a	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11a	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11a	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11a	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11a	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11a	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11a	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11a	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11a	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT20	5180	5179.99626	-0.72	20
$T_{min}V_{max}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{min}V_{min}$	802.11ac VHT20	5180	5180.01635	3.16	20
$T_{max}V_{max}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{max}V_{min}$	802.11ac VHT20	5180	5180.06900	13.32	20
$T_{nom}V_{nom}$	802.11ac VHT20	5320	5319.99653	-0.65	20
$T_{min}V_{max}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{min}V_{min}$	802.11ac VHT20	5320	5320.02146	4.03	20
$T_{max}V_{max}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{max}V_{min}$	802.11ac VHT20	5320	5320.05650	10.62	20
$T_{nom}V_{nom}$	802.11ac VHT20	5500	5499.99230	-1.40	20
$T_{min}V_{max}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{min}V_{min}$	802.11ac VHT20	5500	5500.02633	4.79	20
$T_{max}V_{max}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{max}V_{min}$	802.11ac VHT20	5500	5500.08420	15.31	20
$T_{nom}V_{nom}$	802.11ac VHT20	5700	5699.99240	-1.33	20
$T_{min}V_{max}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{min}V_{min}$	802.11ac VHT20	5700	5700.03353	5.88	20
$T_{max}V_{max}$	802.11ac VHT20	5700	5700.06950	12.19	20
$T_{max}V_{min}$	802.11ac VHT20	5700	5700.06950	12.19	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT40	5190	5189.99477	-1.01	20
$T_{min}V_{max}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{min}V_{min}$	802.11ac VHT40	5190	5190.03043	5.86	20
$T_{max}V_{max}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{max}V_{min}$	802.11ac VHT40	5190	5190.06000	11.56	20
$T_{nom}V_{nom}$	802.11ac VHT40	5310	5309.99540	-0.87	20
$T_{min}V_{max}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{min}V_{min}$	802.11ac VHT40	5310	5310.03264	6.15	20
$T_{max}V_{max}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{max}V_{min}$	802.11ac VHT40	5310	5310.06400	12.05	20
$T_{nom}V_{nom}$	802.11ac VHT40	5510	5509.99689	-0.56	20
$T_{min}V_{max}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{min}V_{min}$	802.11ac VHT40	5510	5510.03348	6.08	20
$T_{max}V_{max}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{max}V_{min}$	802.11ac VHT40	5510	5510.06800	12.34	20
$T_{nom}V_{nom}$	802.11ac VHT40	5670	5669.99488	-0.90	20
$T_{min}V_{max}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{min}V_{min}$	802.11ac VHT40	5670	5670.03732	6.58	20
$T_{max}V_{max}$	802.11ac VHT40	5670	5670.07100	12.52	20
$T_{max}V_{min}$	802.11ac VHT40	5670	5670.07100	12.52	20

Condition	Modulation Mode	Freq. (MHz)	Carrier Centre Frequencies (ppm)		Limit (ppm)
			Freqeuncy (MHz)	Carrier Stability	
$T_{nom}V_{nom}$	802.11ac VHT80	5210	5209.99482	-0.99	20
$T_{min}V_{max}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{min}V_{min}$	802.11ac VHT80	5210	5210.03308	6.35	20
$T_{max}V_{max}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{max}V_{min}$	802.11ac VHT80	5210	5210.06200	11.90	20
$T_{nom}V_{nom}$	802.11ac VHT80	5290	5289.99607	-0.74	20
$T_{min}V_{max}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{min}V_{min}$	802.11ac VHT80	5290	5290.03186	6.02	20
$T_{max}V_{max}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{max}V_{min}$	802.11ac VHT80	5290	5290.06800	12.85	20
$T_{nom}V_{nom}$	802.11ac VHT80	5530	5529.99655	-0.62	20
$T_{min}V_{max}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{min}V_{min}$	802.11ac VHT80	5530	5530.03708	6.71	20
$T_{max}V_{max}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{max}V_{min}$	802.11ac VHT80	5530	5530.06200	11.21	20
$T_{nom}V_{nom}$	802.11ac VHT80	5610	5609.99718	-0.50	20
$T_{min}V_{max}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{min}V_{min}$	802.11ac VHT80	5610	5610.03904	6.96	20
$T_{max}V_{max}$	802.11ac VHT80	5610	5610.07320	13.05	20
$T_{max}V_{min}$	802.11ac VHT80	5610	5610.07320	13.05	20

3.2 Occupied Channel Bandwidth

3.2.1 Limit of Occupied Channel Bandwidth

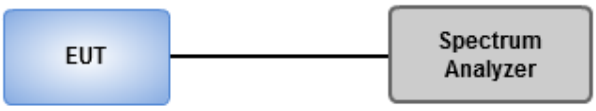
The Nominal Channel Bandwidth for a single Operating Channel shall be 20 MHz

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

Modulation Mode	Frequency (MHz)	Occupied Channel Bandwidth (MHz)	Occupied Channel Bandwidth Limit (MHz)
802.11a	5180	16.38	16-20
802.11a	5320	16.38	16-20
802.11a	5500	16.43	16-20
802.11a	5700	16.38	16-20
802.11ac VHT20	5180	17.07	16-20
802.11ac VHT20	5320	17.01	16-20
802.11ac VHT20	5500	17.30	16-20
802.11ac VHT20	5700	16.96	16-20
802.11ac VHT40	5190	36.00	32-40
802.11ac VHT40	5310	36.12	32-40
802.11ac VHT40	5510	36.00	32-40
802.11ac VHT40	5670	35.77	32-40
802.11ac VHT80	5210	75.94	64-80
802.11ac VHT80	5290	75.94	64-80
802.11ac VHT80	5530	75.02	64-80
802.11ac VHT80	5610	75.94	64-80

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)

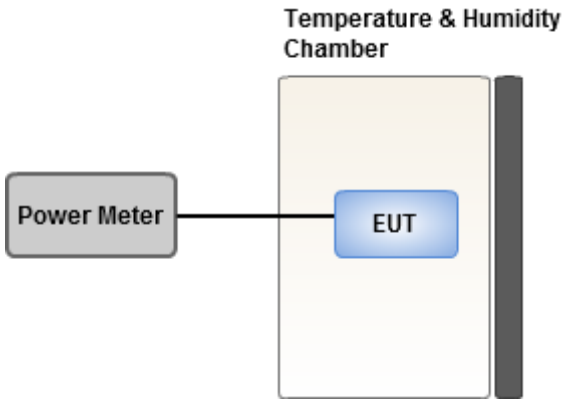
Note: Slave devices without a *Radar Interference Detection* function shall comply with the limits for the band 5 250 MHz to 5 350 MHz.

3.3.2 Test Procedures

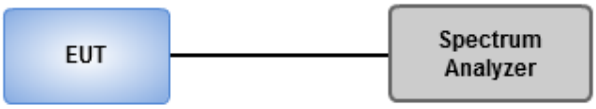
Reference to clause 5.4.4.2 of ETSI EN 301 893 V2.1.1 (2017-05).

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

Configuration 1 : Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	21.06	23
$T_{min}V_{max}$	5180	21.82	23
$T_{min}V_{min}$	5180	21.84	23
$T_{max}V_{max}$	5180	20.66	23
$T_{max}V_{min}$	5180	20.63	23
$T_{nom}V_{nom}$	5320	21.01	23
$T_{min}V_{max}$	5320	21.72	23
$T_{min}V_{min}$	5320	21.74	23
$T_{max}V_{max}$	5320	20.58	23
$T_{max}V_{min}$	5320	20.56	23
$T_{nom}V_{nom}$	5500	21.41	23
$T_{min}V_{max}$	5500	22.19	23
$T_{min}V_{min}$	5500	22.21	23
$T_{max}V_{max}$	5500	20.75	23
$T_{max}V_{min}$	5500	20.72	23
$T_{nom}V_{nom}$	5700	21.17	23
$T_{min}V_{max}$	5700	21.98	23
$T_{min}V_{min}$	5700	22.01	23
$T_{max}V_{max}$	5700	20.66	23
$T_{max}V_{min}$	5700	20.64	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	21.01	23
$T_{min}V_{max}$	5180	21.78	23
$T_{min}V_{min}$	5180	21.81	23
$T_{max}V_{max}$	5180	20.60	23
$T_{max}V_{min}$	5180	20.58	23
$T_{nom}V_{nom}$	5320	21.00	23
$T_{min}V_{max}$	5320	21.84	23
$T_{min}V_{min}$	5320	21.86	23
$T_{max}V_{max}$	5320	20.51	23
$T_{max}V_{min}$	5320	20.49	23
$T_{nom}V_{nom}$	5500	21.55	23
$T_{min}V_{max}$	5500	22.35	23
$T_{min}V_{min}$	5500	22.38	23
$T_{max}V_{max}$	5500	20.92	23
$T_{max}V_{min}$	5500	20.90	23
$T_{nom}V_{nom}$	5700	21.22	23
$T_{min}V_{max}$	5700	21.98	23
$T_{min}V_{min}$	5700	22.00	23
$T_{max}V_{max}$	5700	20.64	23
$T_{max}V_{min}$	5700	20.62	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	22.05	23
$T_{min}V_{max}$	5190	22.80	23
$T_{min}V_{min}$	5190	22.82	23
$T_{max}V_{max}$	5190	21.39	23
$T_{max}V_{min}$	5190	21.37	23
$T_{nom}V_{nom}$	5310	21.58	23
$T_{min}V_{max}$	5310	22.24	23
$T_{min}V_{min}$	5310	22.26	23
$T_{max}V_{max}$	5310	21.16	23
$T_{max}V_{min}$	5310	21.14	23
$T_{nom}V_{nom}$	5510	21.61	23
$T_{min}V_{max}$	5510	22.41	23
$T_{min}V_{min}$	5510	22.43	23
$T_{max}V_{max}$	5510	20.97	23
$T_{max}V_{min}$	5510	20.95	23
$T_{nom}V_{nom}$	5670	21.70	23
$T_{min}V_{max}$	5670	22.43	23
$T_{min}V_{min}$	5670	22.45	23
$T_{max}V_{max}$	5670	21.16	23
$T_{max}V_{min}$	5670	21.14	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	22.00	23
$T_{min}V_{max}$	5210	22.84	23
$T_{min}V_{min}$	5210	**22.87**	23
$T_{max}V_{max}$	5210	21.39	23
$T_{max}V_{min}$	5210	21.37	23
$T_{nom}V_{nom}$	5290	21.99	23
$T_{min}V_{max}$	5290	22.72	23
$T_{min}V_{min}$	5290	**22.76**	23
$T_{max}V_{max}$	5290	21.48	23
$T_{max}V_{min}$	5290	21.45	23
$T_{nom}V_{nom}$	5530	21.65	23
$T_{min}V_{max}$	5530	22.46	23
$T_{min}V_{min}$	5530	22.49	23
$T_{max}V_{max}$	5530	21.01	23
$T_{max}V_{min}$	5530	20.99	23
$T_{nom}V_{nom}$	5610	21.85	23
$T_{min}V_{max}$	5610	22.66	23
$T_{min}V_{min}$	5610	**22.68**	23
$T_{max}V_{max}$	5610	21.43	23
$T_{max}V_{min}$	5610	21.41	23

Configuration 2 : PCB Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.96	23
$T_{min}V_{max}$	5180	21.72	23
$T_{min}V_{min}$	5180	21.74	23
$T_{max}V_{max}$	5180	20.56	23
$T_{max}V_{min}$	5180	20.53	23
$T_{nom}V_{nom}$	5320	20.79	23
$T_{min}V_{max}$	5320	21.50	23
$T_{min}V_{min}$	5320	21.52	23
$T_{max}V_{max}$	5320	20.36	23
$T_{max}V_{min}$	5320	20.34	23
$T_{nom}V_{nom}$	5500	21.51	23
$T_{min}V_{max}$	5500	22.29	23
$T_{min}V_{min}$	5500	22.31	23
$T_{max}V_{max}$	5500	20.85	23
$T_{max}V_{min}$	5500	20.82	23
$T_{nom}V_{nom}$	5700	21.05	23
$T_{min}V_{max}$	5700	21.86	23
$T_{min}V_{min}$	5700	21.89	23
$T_{max}V_{max}$	5700	20.54	23
$T_{max}V_{min}$	5700	20.52	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.95	23
$T_{min}V_{max}$	5180	21.72	23
$T_{min}V_{min}$	5180	21.75	23
$T_{max}V_{max}$	5180	20.54	23
$T_{max}V_{min}$	5180	20.52	23
$T_{nom}V_{nom}$	5320	20.93	23
$T_{min}V_{max}$	5320	21.77	23
$T_{min}V_{min}$	5320	21.79	23
$T_{max}V_{max}$	5320	20.44	23
$T_{max}V_{min}$	5320	20.42	23
$T_{nom}V_{nom}$	5500	21.53	23
$T_{min}V_{max}$	5500	22.33	23
$T_{min}V_{min}$	5500	22.36	23
$T_{max}V_{max}$	5500	20.90	23
$T_{max}V_{min}$	5500	20.88	23
$T_{nom}V_{nom}$	5700	21.27	23
$T_{min}V_{max}$	5700	22.03	23
$T_{min}V_{min}$	5700	22.05	23
$T_{max}V_{max}$	5700	20.69	23
$T_{max}V_{min}$	5700	20.67	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	21.90	23
$T_{min}V_{max}$	5190	22.65	23
$T_{min}V_{min}$	5190	22.67	23
$T_{max}V_{max}$	5190	21.24	23
$T_{max}V_{min}$	5190	21.22	23
$T_{nom}V_{nom}$	5310	21.44	23
$T_{min}V_{max}$	5310	22.10	23
$T_{min}V_{min}$	5310	22.12	23
$T_{max}V_{max}$	5310	21.02	23
$T_{max}V_{min}$	5310	21.00	23
$T_{nom}V_{nom}$	5510	21.56	23
$T_{min}V_{max}$	5510	22.36	23
$T_{min}V_{min}$	5510	22.38	23
$T_{max}V_{max}$	5510	20.92	23
$T_{max}V_{min}$	5510	20.90	23
$T_{nom}V_{nom}$	5670	21.61	23
$T_{min}V_{max}$	5670	22.34	23
$T_{min}V_{min}$	5670	22.36	23
$T_{max}V_{max}$	5670	21.07	23
$T_{max}V_{min}$	5670	21.05	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	21.80	23
$T_{min}V_{max}$	5210	22.64	23
$T_{min}V_{min}$	5210	**22.67**	23
$T_{max}V_{max}$	5210	21.19	23
$T_{max}V_{min}$	5210	21.17	23
$T_{nom}V_{nom}$	5290	21.88	23
$T_{min}V_{max}$	5290	22.61	23
$T_{min}V_{min}$	5290	**22.65**	23
$T_{max}V_{max}$	5290	21.37	23
$T_{max}V_{min}$	5290	21.34	23
$T_{nom}V_{nom}$	5530	21.74	23
$T_{min}V_{max}$	5530	22.55	23
$T_{min}V_{min}$	5530	22.58	23
$T_{max}V_{max}$	5530	21.10	23
$T_{max}V_{min}$	5530	21.08	23
$T_{nom}V_{nom}$	5610	21.78	23
$T_{min}V_{max}$	5610	22.59	23
$T_{min}V_{min}$	5610	**22.61**	23
$T_{max}V_{max}$	5610	21.36	23
$T_{max}V_{min}$	5610	21.34	23

Configuration 3 : PIFA Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	21.07	23
$T_{min}V_{max}$	5180	21.83	23
$T_{min}V_{min}$	5180	21.85	23
$T_{max}V_{max}$	5180	20.67	23
$T_{max}V_{min}$	5180	20.64	23
$T_{nom}V_{nom}$	5320	20.91	23
$T_{min}V_{max}$	5320	21.62	23
$T_{min}V_{min}$	5320	21.64	23
$T_{max}V_{max}$	5320	20.48	23
$T_{max}V_{min}$	5320	20.46	23
$T_{nom}V_{nom}$	5500	21.47	23
$T_{min}V_{max}$	5500	22.25	23
$T_{min}V_{min}$	5500	22.27	23
$T_{max}V_{max}$	5500	20.81	23
$T_{max}V_{min}$	5500	20.78	23
$T_{nom}V_{nom}$	5700	21.13	23
$T_{min}V_{max}$	5700	21.94	23
$T_{min}V_{min}$	5700	21.97	23
$T_{max}V_{max}$	5700	20.62	23
$T_{max}V_{min}$	5700	20.60	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	21.08	23
$T_{min}V_{max}$	5180	21.85	23
$T_{min}V_{min}$	5180	21.88	23
$T_{max}V_{max}$	5180	20.67	23
$T_{max}V_{min}$	5180	20.65	23
$T_{nom}V_{nom}$	5320	21.03	23
$T_{min}V_{max}$	5320	21.87	23
$T_{min}V_{min}$	5320	21.89	23
$T_{max}V_{max}$	5320	20.54	23
$T_{max}V_{min}$	5320	20.52	23
$T_{nom}V_{nom}$	5500	21.51	23
$T_{min}V_{max}$	5500	22.31	23
$T_{min}V_{min}$	5500	22.34	23
$T_{max}V_{max}$	5500	20.88	23
$T_{max}V_{min}$	5500	20.86	23
$T_{nom}V_{nom}$	5700	21.23	23
$T_{min}V_{max}$	5700	21.99	23
$T_{min}V_{min}$	5700	22.01	23
$T_{max}V_{max}$	5700	20.65	23
$T_{max}V_{min}$	5700	20.63	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	21.96	23
$T_{min}V_{max}$	5190	22.71	23
$T_{min}V_{min}$	5190	22.73	23
$T_{max}V_{max}$	5190	21.30	23
$T_{max}V_{min}$	5190	21.28	23
$T_{nom}V_{nom}$	5310	21.50	23
$T_{min}V_{max}$	5310	22.16	23
$T_{min}V_{min}$	5310	22.18	23
$T_{max}V_{max}$	5310	21.08	23
$T_{max}V_{min}$	5310	21.06	23
$T_{nom}V_{nom}$	5510	21.53	23
$T_{min}V_{max}$	5510	22.33	23
$T_{min}V_{min}$	5510	22.35	23
$T_{max}V_{max}$	5510	20.89	23
$T_{max}V_{min}$	5510	20.87	23
$T_{nom}V_{nom}$	5670	21.56	23
$T_{min}V_{max}$	5670	22.29	23
$T_{min}V_{min}$	5670	22.31	23
$T_{max}V_{max}$	5670	21.02	23
$T_{max}V_{min}$	5670	21.00	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	21.91	23
$T_{min}V_{max}$	5210	22.75	23
$T_{min}V_{min}$	5210	**22.78**	23
$T_{max}V_{max}$	5210	21.30	23
$T_{max}V_{min}$	5210	21.28	23
$T_{nom}V_{nom}$	5290	21.90	23
$T_{min}V_{max}$	5290	22.63	23
$T_{min}V_{min}$	5290	**22.67**	23
$T_{max}V_{max}$	5290	21.39	23
$T_{max}V_{min}$	5290	21.36	23
$T_{nom}V_{nom}$	5530	21.55	23
$T_{min}V_{max}$	5530	22.36	23
$T_{min}V_{min}$	5530	22.39	23
$T_{max}V_{max}$	5530	20.91	23
$T_{max}V_{min}$	5530	20.89	23
$T_{nom}V_{nom}$	5610	21.76	23
$T_{min}V_{max}$	5610	22.57	23
$T_{min}V_{min}$	5610	**22.59**	23
$T_{max}V_{max}$	5610	21.34	23
$T_{max}V_{min}$	5610	21.32	23

Configuration 4: Isolated Magnetic Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.56	23
$T_{min}V_{max}$	5180	21.32	23
$T_{min}V_{min}$	5180	21.34	23
$T_{max}V_{max}$	5180	20.16	23
$T_{max}V_{min}$	5180	20.13	23
$T_{nom}V_{nom}$	5320	20.39	23
$T_{min}V_{max}$	5320	21.10	23
$T_{min}V_{min}$	5320	21.12	23
$T_{max}V_{max}$	5320	19.96	23
$T_{max}V_{min}$	5320	19.94	23
$T_{nom}V_{nom}$	5500	21.01	23
$T_{min}V_{max}$	5500	21.79	23
$T_{min}V_{min}$	5500	21.81	23
$T_{max}V_{max}$	5500	20.35	23
$T_{max}V_{min}$	5500	20.32	23
$T_{nom}V_{nom}$	5700	20.55	23
$T_{min}V_{max}$	5700	21.36	23
$T_{min}V_{min}$	5700	21.39	23
$T_{max}V_{max}$	5700	20.04	23
$T_{max}V_{min}$	5700	20.02	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5180	20.55	23
$T_{min}V_{max}$	5180	21.32	23
$T_{min}V_{min}$	5180	21.35	23
$T_{max}V_{max}$	5180	20.14	23
$T_{max}V_{min}$	5180	20.12	23
$T_{nom}V_{nom}$	5320	20.53	23
$T_{min}V_{max}$	5320	21.37	23
$T_{min}V_{min}$	5320	21.39	23
$T_{max}V_{max}$	5320	20.04	23
$T_{max}V_{min}$	5320	20.02	23
$T_{nom}V_{nom}$	5500	21.03	23
$T_{min}V_{max}$	5500	21.83	23
$T_{min}V_{min}$	5500	21.86	23
$T_{max}V_{max}$	5500	20.40	23
$T_{max}V_{min}$	5500	20.38	23
$T_{nom}V_{nom}$	5700	20.77	23
$T_{min}V_{max}$	5700	21.53	23
$T_{min}V_{min}$	5700	21.55	23
$T_{max}V_{max}$	5700	20.19	23
$T_{max}V_{min}$	5700	20.17	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5190	21.50	23
$T_{min}V_{max}$	5190	22.25	23
$T_{min}V_{min}$	5190	22.27	23
$T_{max}V_{max}$	5190	20.84	23
$T_{max}V_{min}$	5190	20.82	23
$T_{nom}V_{nom}$	5310	22.00	23
$T_{min}V_{max}$	5310	22.66	23
$T_{min}V_{min}$	5310	**22.68**	23
$T_{max}V_{max}$	5310	21.58	23
$T_{max}V_{min}$	5310	21.56	23
$T_{nom}V_{nom}$	5510	22.03	23
$T_{min}V_{max}$	5510	22.83	23
$T_{min}V_{min}$	5510	22.85	23
$T_{max}V_{max}$	5510	21.39	23
$T_{max}V_{min}$	5510	21.37	23
$T_{nom}V_{nom}$	5670	22.06	23
$T_{min}V_{max}$	5670	22.79	23
$T_{min}V_{min}$	5670	22.81	23
$T_{max}V_{max}$	5670	21.52	23
$T_{max}V_{min}$	5670	21.50	23

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5210	21.40	23
$T_{min}V_{max}$	5210	22.24	23
$T_{min}V_{min}$	5210	**22.27**	23
$T_{max}V_{max}$	5210	20.79	23
$T_{max}V_{min}$	5210	20.77	23
$T_{nom}V_{nom}$	5290	21.48	23
$T_{min}V_{max}$	5290	22.21	23
$T_{min}V_{min}$	5290	22.25	23
$T_{max}V_{max}$	5290	20.97	23
$T_{max}V_{min}$	5290	20.94	23
$T_{nom}V_{nom}$	5530	22.05	23
$T_{min}V_{max}$	5530	22.86	23
$T_{min}V_{min}$	5530	**22.89**	23
$T_{max}V_{max}$	5530	21.41	23
$T_{max}V_{min}$	5530	21.39	23
$T_{nom}V_{nom}$	5610	21.28	23
$T_{min}V_{max}$	5610	22.09	23
$T_{min}V_{min}$	5610	22.11	23
$T_{max}V_{max}$	5610	20.86	23
$T_{max}V_{min}$	5610	20.84	23

3.3.5 Test Result of RF Output Power at the Lowest Power

Configuration 1 : Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	15.01	17
$T_{min}V_{max}$	5320	15.72	17
$T_{min}V_{min}$	5320	15.74	17
$T_{max}V_{max}$	5320	14.58	17
$T_{max}V_{min}$	5320	14.56	17
$T_{nom}V_{nom}$	5500	15.41	17
$T_{min}V_{max}$	5500	16.19	17
$T_{min}V_{min}$	5500	16.21	17
$T_{max}V_{max}$	5500	14.75	17
$T_{max}V_{min}$	5500	14.72	17
$T_{nom}V_{nom}$	5700	15.17	17
$T_{min}V_{max}$	5700	15.98	17
$T_{min}V_{min}$	5700	16.01	17
$T_{max}V_{max}$	5700	14.66	17
$T_{max}V_{min}$	5700	14.64	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	15.00	17
$T_{min}V_{max}$	5320	15.84	17
$T_{min}V_{min}$	5320	15.86	17
$T_{max}V_{max}$	5320	14.51	17
$T_{max}V_{min}$	5320	14.49	17
$T_{nom}V_{nom}$	5500	15.55	17
$T_{min}V_{max}$	5500	16.35	17
$T_{min}V_{min}$	5500	16.38	17
$T_{max}V_{max}$	5500	14.92	17
$T_{max}V_{min}$	5500	14.90	17
$T_{nom}V_{nom}$	5700	15.22	17
$T_{min}V_{max}$	5700	15.98	17
$T_{min}V_{min}$	5700	16.00	17
$T_{max}V_{max}$	5700	14.64	17
$T_{max}V_{min}$	5700	14.62	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	15.58	17
$T_{min}V_{max}$	5310	16.24	17
$T_{min}V_{min}$	5310	16.26	17
$T_{max}V_{max}$	5310	15.16	17
$T_{max}V_{min}$	5310	15.14	17
$T_{nom}V_{nom}$	5510	15.61	17
$T_{min}V_{max}$	5510	16.41	17
$T_{min}V_{min}$	5510	16.43	17
$T_{max}V_{max}$	5510	14.97	17
$T_{max}V_{min}$	5510	14.95	17
$T_{nom}V_{nom}$	5670	15.70	17
$T_{min}V_{max}$	5670	16.43	17
$T_{min}V_{min}$	5670	16.45	17
$T_{max}V_{max}$	5670	15.16	17
$T_{max}V_{min}$	5670	15.14	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	15.99	17
$T_{min}V_{max}$	5290	16.72	17
$T_{min}V_{min}$	5290	16.76	17
$T_{max}V_{max}$	5290	15.48	17
$T_{max}V_{min}$	5290	15.45	17
$T_{nom}V_{nom}$	5530	15.65	17
$T_{min}V_{max}$	5530	16.46	17
$T_{min}V_{min}$	5530	16.49	17
$T_{max}V_{max}$	5530	15.01	17
$T_{max}V_{min}$	5530	14.99	17
$T_{nom}V_{nom}$	5610	15.85	17
$T_{min}V_{max}$	5610	16.66	17
$T_{min}V_{min}$	5610	16.68	17
$T_{max}V_{max}$	5610	15.43	17
$T_{max}V_{min}$	5610	15.41	17

Configuration 2 : PCB Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.79	17
$T_{min}V_{max}$	5320	15.50	17
$T_{min}V_{min}$	5320	15.52	17
$T_{max}V_{max}$	5320	14.36	17
$T_{max}V_{min}$	5320	14.34	17
$T_{nom}V_{nom}$	5500	15.51	17
$T_{min}V_{max}$	5500	16.29	17
$T_{min}V_{min}$	5500	16.31	17
$T_{max}V_{max}$	5500	14.85	17
$T_{max}V_{min}$	5500	14.82	17
$T_{nom}V_{nom}$	5700	15.05	17
$T_{min}V_{max}$	5700	15.86	17
$T_{min}V_{min}$	5700	15.89	17
$T_{max}V_{max}$	5700	14.54	17
$T_{max}V_{min}$	5700	14.52	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.93	17
$T_{min}V_{max}$	5320	15.77	17
$T_{min}V_{min}$	5320	15.79	17
$T_{max}V_{max}$	5320	14.44	17
$T_{max}V_{min}$	5320	14.42	17
$T_{nom}V_{nom}$	5500	15.53	17
$T_{min}V_{max}$	5500	16.33	17
$T_{min}V_{min}$	5500	16.36	17
$T_{max}V_{max}$	5500	14.90	17
$T_{max}V_{min}$	5500	14.88	17
$T_{nom}V_{nom}$	5700	15.27	17
$T_{min}V_{max}$	5700	16.03	17
$T_{min}V_{min}$	5700	16.05	17
$T_{max}V_{max}$	5700	14.69	17
$T_{max}V_{min}$	5700	14.67	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	15.44	17
$T_{min}V_{max}$	5310	16.10	17
$T_{min}V_{min}$	5310	16.12	17
$T_{max}V_{max}$	5310	15.02	17
$T_{max}V_{min}$	5310	15.00	17
$T_{nom}V_{nom}$	5510	15.56	17
$T_{min}V_{max}$	5510	16.36	17
$T_{min}V_{min}$	5510	16.38	17
$T_{max}V_{max}$	5510	14.92	17
$T_{max}V_{min}$	5510	14.90	17
$T_{nom}V_{nom}$	5670	15.61	17
$T_{min}V_{max}$	5670	16.34	17
$T_{min}V_{min}$	5670	16.36	17
$T_{max}V_{max}$	5670	15.07	17
$T_{max}V_{min}$	5670	15.05	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	15.88	17
$T_{min}V_{max}$	5290	16.61	17
$T_{min}V_{min}$	5290	16.65	17
$T_{max}V_{max}$	5290	15.37	17
$T_{max}V_{min}$	5290	15.34	17
$T_{nom}V_{nom}$	5530	15.74	17
$T_{min}V_{max}$	5530	16.55	17
$T_{min}V_{min}$	5530	16.58	17
$T_{max}V_{max}$	5530	15.10	17
$T_{max}V_{min}$	5530	15.08	17
$T_{nom}V_{nom}$	5610	15.78	17
$T_{min}V_{max}$	5610	16.59	17
$T_{min}V_{min}$	5610	16.61	17
$T_{max}V_{max}$	5610	15.36	17
$T_{max}V_{min}$	5610	15.34	17

Configuration 3 : PIFA Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.91	17
$T_{min}V_{max}$	5320	15.62	17
$T_{min}V_{min}$	5320	15.64	17
$T_{max}V_{max}$	5320	14.48	17
$T_{max}V_{min}$	5320	14.46	17
$T_{nom}V_{nom}$	5500	15.47	17
$T_{min}V_{max}$	5500	16.25	17
$T_{min}V_{min}$	5500	16.27	17
$T_{max}V_{max}$	5500	14.81	17
$T_{max}V_{min}$	5500	14.78	17
$T_{nom}V_{nom}$	5700	15.13	17
$T_{min}V_{max}$	5700	15.94	17
$T_{min}V_{min}$	5700	15.97	17
$T_{max}V_{max}$	5700	14.62	17
$T_{max}V_{min}$	5700	14.60	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	15.03	17
$T_{min}V_{max}$	5320	15.87	17
$T_{min}V_{min}$	5320	15.89	17
$T_{max}V_{max}$	5320	14.54	17
$T_{max}V_{min}$	5320	14.52	17
$T_{nom}V_{nom}$	5500	15.51	17
$T_{min}V_{max}$	5500	16.31	17
$T_{min}V_{min}$	5500	16.34	17
$T_{max}V_{max}$	5500	14.88	17
$T_{max}V_{min}$	5500	14.86	17
$T_{nom}V_{nom}$	5700	15.23	17
$T_{min}V_{max}$	5700	15.99	17
$T_{min}V_{min}$	5700	16.01	17
$T_{max}V_{max}$	5700	14.65	17
$T_{max}V_{min}$	5700	14.63	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	15.50	17
$T_{min}V_{max}$	5310	16.16	17
$T_{min}V_{min}$	5310	16.18	17
$T_{max}V_{max}$	5310	15.08	17
$T_{max}V_{min}$	5310	15.06	17
$T_{nom}V_{nom}$	5510	15.53	17
$T_{min}V_{max}$	5510	16.33	17
$T_{min}V_{min}$	5510	16.35	17
$T_{max}V_{max}$	5510	14.89	17
$T_{max}V_{min}$	5510	14.87	17
$T_{nom}V_{nom}$	5670	15.56	17
$T_{min}V_{max}$	5670	16.29	17
$T_{min}V_{min}$	5670	16.31	17
$T_{max}V_{max}$	5670	15.02	17
$T_{max}V_{min}$	5670	15.00	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	15.90	17
$T_{min}V_{max}$	5290	16.63	17
$T_{min}V_{min}$	5290	16.67	17
$T_{max}V_{max}$	5290	15.39	17
$T_{max}V_{min}$	5290	15.36	17
$T_{nom}V_{nom}$	5530	15.55	17
$T_{min}V_{max}$	5530	16.36	17
$T_{min}V_{min}$	5530	16.39	17
$T_{max}V_{max}$	5530	14.91	17
$T_{max}V_{min}$	5530	14.89	17
$T_{nom}V_{nom}$	5610	15.76	17
$T_{min}V_{max}$	5610	16.57	17
$T_{min}V_{min}$	5610	16.59	17
$T_{max}V_{max}$	5610	15.34	17
$T_{max}V_{min}$	5610	15.32	17

Configuration 4: Isolated Magnetic Dipole Antenna

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11a**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.39	17
$T_{min}V_{max}$	5320	15.10	17
$T_{min}V_{min}$	5320	15.12	17
$T_{max}V_{max}$	5320	13.96	17
$T_{max}V_{min}$	5320	13.94	17
$T_{nom}V_{nom}$	5500	15.01	17
$T_{min}V_{max}$	5500	15.79	17
$T_{min}V_{min}$	5500	15.81	17
$T_{max}V_{max}$	5500	14.35	17
$T_{max}V_{min}$	5500	14.32	17
$T_{nom}V_{nom}$	5700	14.55	17
$T_{min}V_{max}$	5700	15.36	17
$T_{min}V_{min}$	5700	15.39	17
$T_{max}V_{max}$	5700	14.04	17
$T_{max}V_{min}$	5700	14.02	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT20**	**Limit (dBm)**
$T_{nom}V_{nom}$	5320	14.53	17
$T_{min}V_{max}$	5320	15.37	17
$T_{min}V_{min}$	5320	15.39	17
$T_{max}V_{max}$	5320	14.04	17
$T_{max}V_{min}$	5320	14.02	17
$T_{nom}V_{nom}$	5500	15.03	17
$T_{min}V_{max}$	5500	15.83	17
$T_{min}V_{min}$	5500	15.86	17
$T_{max}V_{max}$	5500	14.40	17
$T_{max}V_{min}$	5500	14.38	17
$T_{nom}V_{nom}$	5700	14.77	17
$T_{min}V_{max}$	5700	15.53	17
$T_{min}V_{min}$	5700	15.55	17
$T_{max}V_{max}$	5700	14.19	17
$T_{max}V_{min}$	5700	14.17	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT40**	**Limit (dBm)**
$T_{nom}V_{nom}$	5310	16.00	17
$T_{min}V_{max}$	5310	16.66	17
$T_{min}V_{min}$	5310	16.68	17
$T_{max}V_{max}$	5310	15.58	17
$T_{max}V_{min}$	5310	15.56	17
$T_{nom}V_{nom}$	5510	16.03	17
$T_{min}V_{max}$	5510	16.83	17
$T_{min}V_{min}$	5510	16.85	17
$T_{max}V_{max}$	5510	15.39	17
$T_{max}V_{min}$	5510	15.37	17
$T_{nom}V_{nom}$	5670	16.06	17
$T_{min}V_{max}$	5670	16.79	17
$T_{min}V_{min}$	5670	16.81	17
$T_{max}V_{max}$	5670	15.52	17
$T_{max}V_{min}$	5670	15.50	17

Maximum Transmit Power (dBm)			
Condition	**Freq. (MHz)**	**802.11ac VHT80**	**Limit (dBm)**
$T_{nom}V_{nom}$	5290	15.48	17
$T_{min}V_{max}$	5290	16.21	17
$T_{min}V_{min}$	5290	16.25	17
$T_{max}V_{max}$	5290	14.97	17
$T_{max}V_{min}$	5290	14.94	17
$T_{nom}V_{nom}$	5530	16.05	17
$T_{min}V_{max}$	5530	16.86	17
$T_{min}V_{min}$	5530	16.89	17
$T_{max}V_{max}$	5530	15.41	17
$T_{max}V_{min}$	5530	15.39	17
$T_{nom}V_{nom}$	5610	15.28	17
$T_{min}V_{max}$	5610	16.09	17
$T_{min}V_{min}$	5610	16.11	17
$T_{max}V_{max}$	5610	14.86	17
$T_{max}V_{min}$	5610	14.84	17

3.3.6 Test Result of Power Density

Configuration 1 : Dipole Antenna

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	9.61	10	Pass
11a	5320	9.60	10	Pass
11a	5500	9.99	10	Pass
11a	5700	9.71	10	Pass
802.11ac VHT20	5180	9.59	10	Pass
802.11ac VHT20	5320	9.54	10	Pass
802.11ac VHT20	5500	9.94	10	Pass
802.11ac VHT20	5700	9.76	10	Pass
802.11ac VHT40	5190	7.52	10	Pass
802.11ac VHT40	5310	7.12	10	Pass
802.11ac VHT40	5510	7.25	10	Pass
802.11ac VHT40	5670	7.45	10	Pass
802.11ac VHT80	5210	3.69	10	Pass
802.11ac VHT80	5290	3.71	10	Pass
802.11ac VHT80	5530	3.22	10	Pass
802.11ac VHT80	5610	3.56	10	Pass

Configuration 2 : PCB Dipole Antenna

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	9.56	10	Pass
11a	5320	9.38	10	Pass
11a	5500	9.97	10	Pass
11a	5700	9.56	10	Pass
802.11ac VHT20	5180	9.59	10	Pass
802.11ac VHT20	5320	9.65	10	Pass
802.11ac VHT20	5500	9.93	10	Pass
802.11ac VHT20	5700	9.72	10	Pass
802.11ac VHT40	5190	7.48	10	Pass
802.11ac VHT40	5310	7.10	10	Pass
802.11ac VHT40	5510	7.23	10	Pass
802.11ac VHT40	5670	7.35	10	Pass
802.11ac VHT80	5210	3.45	10	Pass
802.11ac VHT80	5290	3.51	10	Pass
802.11ac VHT80	5530	3.42	10	Pass
802.11ac VHT80	5610	3.46	10	Pass

Configuration 3 : PIFA Antenna

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	9.61	10	Pass
11a	5320	9.57	10	Pass
11a	5500	9.96	10	Pass
11a	5700	9.72	10	Pass
802.11ac VHT20	5180	9.68	10	Pass
802.11ac VHT20	5320	9.65	10	Pass
802.11ac VHT20	5500	9.97	10	Pass
802.11ac VHT20	5700	9.78	10	Pass
802.11ac VHT40	5190	7.47	10	Pass
802.11ac VHT40	5310	7.12	10	Pass
802.11ac VHT40	5510	7.20	10	Pass
802.11ac VHT40	5670	7.26	10	Pass
802.11ac VHT80	5210	3.64	10	Pass
802.11ac VHT80	5290	3.66	10	Pass
802.11ac VHT80	5530	3.23	10	Pass
802.11ac VHT80	5610	3.46	10	Pass

Configuration 4: Isolated Magnetic Dipole Antenna

Modulation Mode	Freq. (MHz)	Power Density (dBm/1MHz) e.i.r.p.	Limit (dBm/1MHz) e.i.r.p.	Results
11a	5180	9.13	10	Pass
11a	5320	8.98	10	Pass
11a	5500	9.56	10	Pass
11a	5700	9.11	10	Pass
802.11ac VHT20	5180	9.24	10	Pass
802.11ac VHT20	5320	9.22	10	Pass
802.11ac VHT20	5500	9.51	10	Pass
802.11ac VHT20	5700	9.47	10	Pass
802.11ac VHT40	5190	7.21	10	Pass
802.11ac VHT40	5310	7.55	10	Pass
802.11ac VHT40	5510	7.51	10	Pass
802.11ac VHT40	5670	7.54	10	Pass
802.11ac VHT80	5210	3.15	10	Pass
802.11ac VHT80	5290	3.18	10	Pass
802.11ac VHT80	5530	3.70	10	Pass
802.11ac VHT80	5610	3.09	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

Conducted Emission		
Frequency Range	**Maximum Power (dBm)**	**Bandwidth (kHz)**
30 MHz to 47 MHz	-39.01	100
47 MHz to 74 MHz	-57.01	100
74 MHz to 87,5 MHz	-39.01	100
87,5 MHz to 118 MHz	-57.01	100
118 MHz to 174 MHz	-39.01	100
174 MHz to 230 MHz	-57.01	100
230 MHz to 470 MHz	-39.01	100
470 MHz to 862 MHz	-57.01	100
862 MHz to 1 GHz	-39.01	100
1 GHz to 5,15 GHz	-33.01	1000
5,35 GHz to 5,47 GHz	-33.01	1000
5,725 GHz to 26 GHz	-33.01	1000

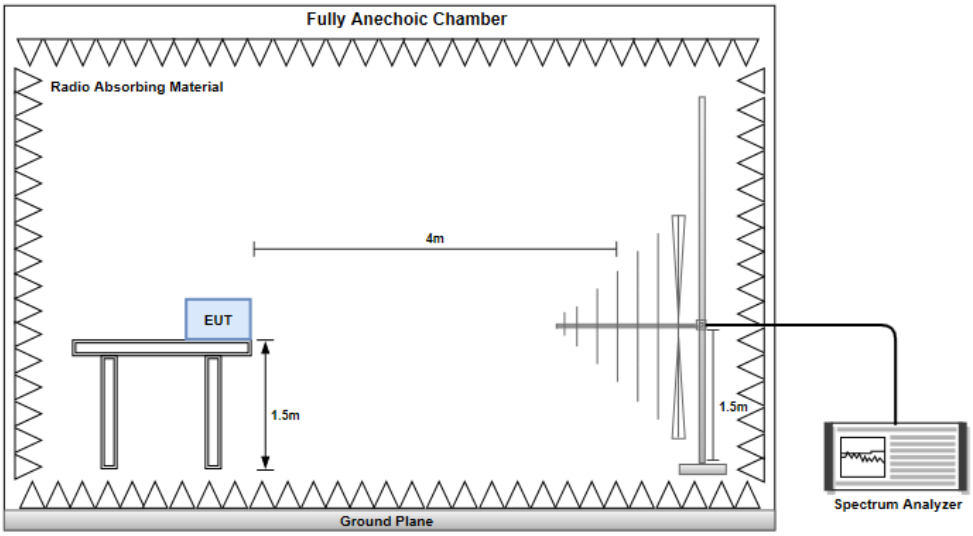
Radiated Emission		
Frequency Range	**Maximum Power**	**Bandwidth**
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	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

3.4.2 Test Procedures

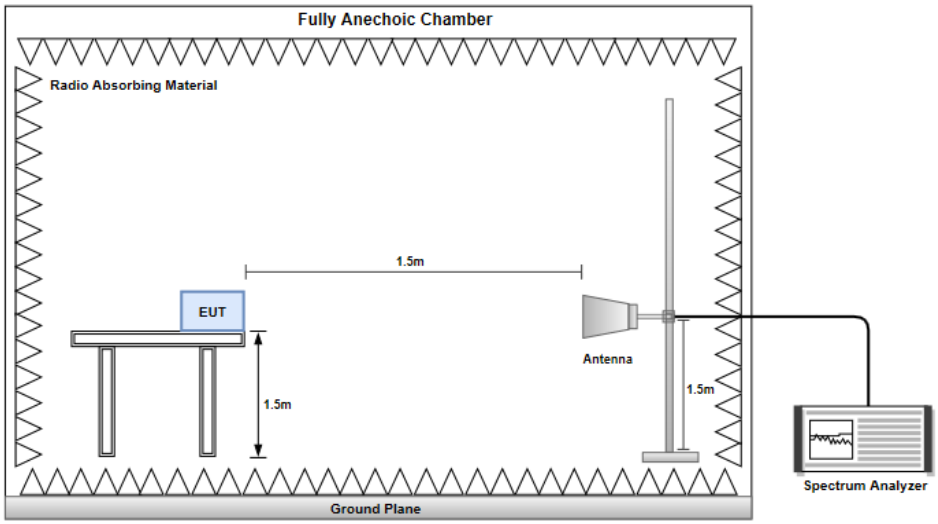
Reference to clause 5.4.5.2 of ETSI EN 301 893 V2.1.1 (2017-05).

3.4.3 Test Setup

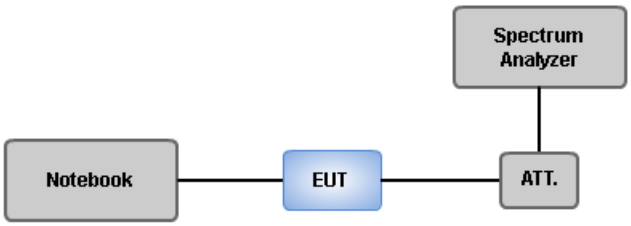
Below 1GHz



Above 1 GHz

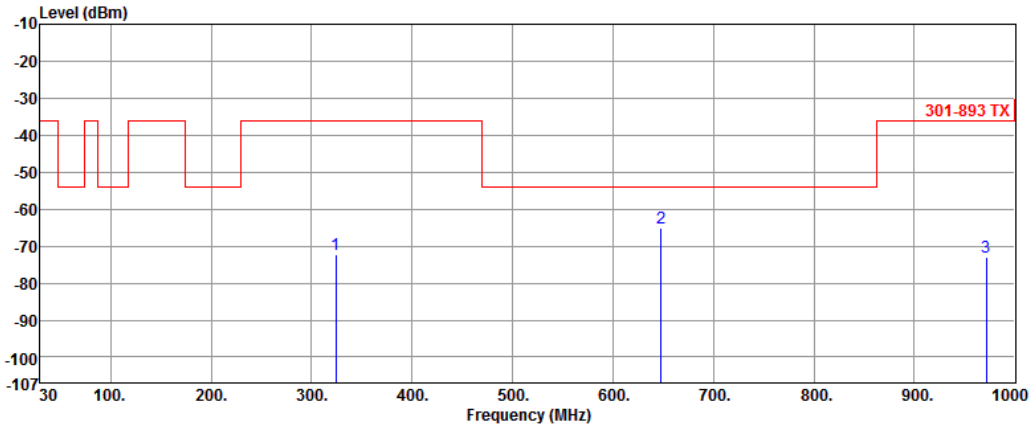


Conducted Emission



3.4.4 Transmitter Conducted Unwanted Emissions (Below 1GHz)

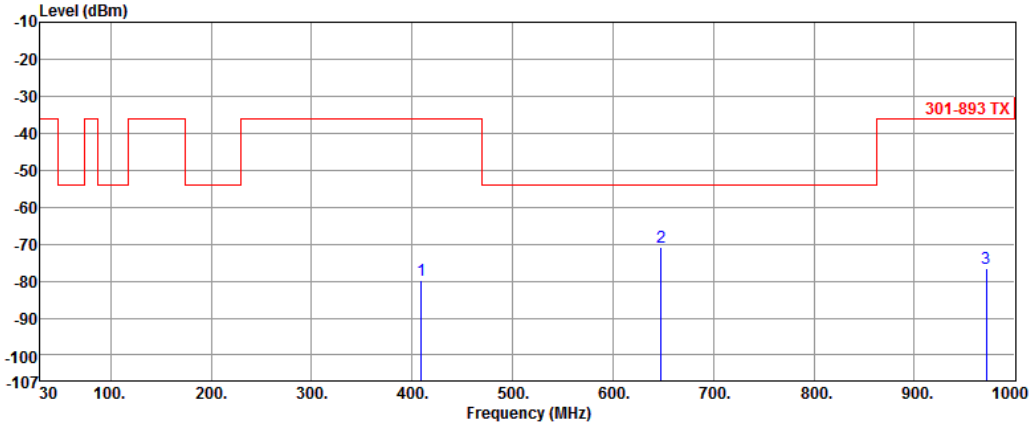
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	323.91	-72.14	-39.01	-33.13	0.00	-72.14
2	647.89	-65.07	-57.01	-8.06	0.00	-65.07
3	971.87	-73.12	-39.01	-34.11	0.00	-73.12

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

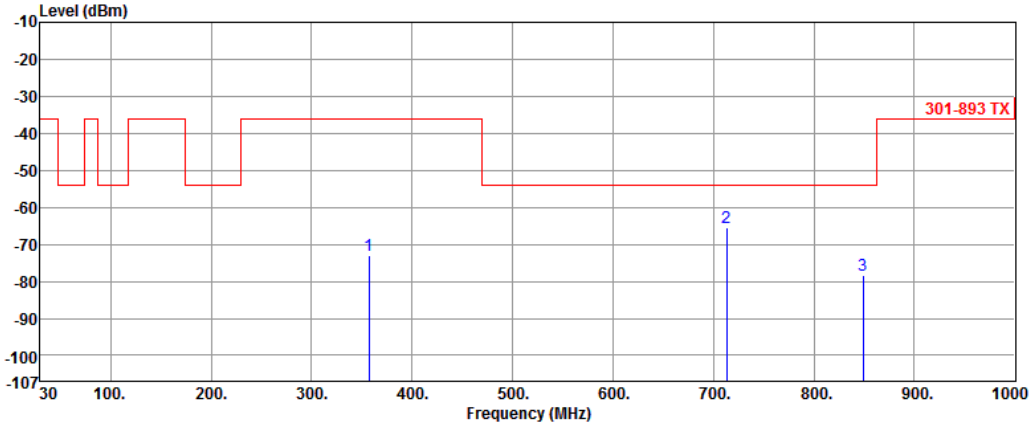
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	409.27	-79.74	-39.01	-40.73	0.00	-79.74
2	647.89	-70.70	-57.01	-13.69	0.00	-70.70
3	971.87	-76.47	-39.01	-37.46	0.00	-76.47

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

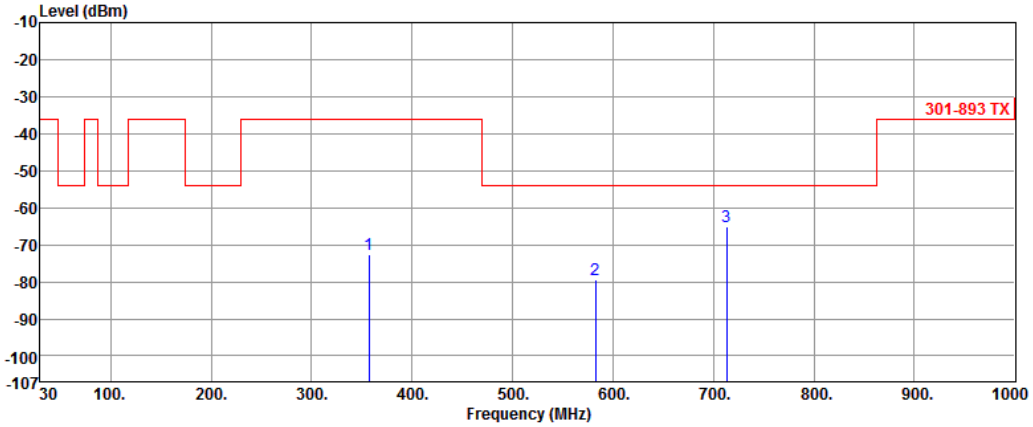
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	356.89	-72.96	-39.01	-33.95	0.00	-72.96
2	712.88	-65.40	-57.01	-8.39	0.00	-65.40
3	848.68	-78.28	-57.01	-21.27	0.00	-78.28

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

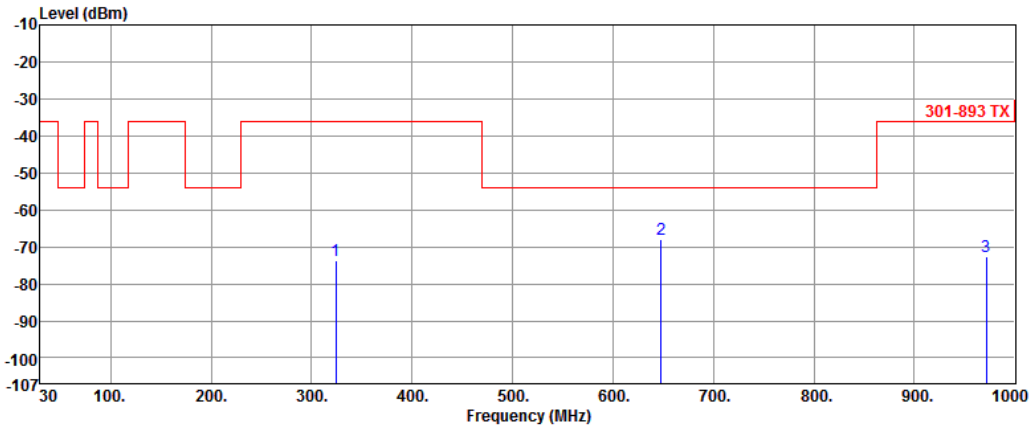
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	356.89	-72.60	-39.01	-33.59	0.00	-72.60
2	582.90	-79.44	-57.01	-22.43	0.00	-79.44
3	712.88	-65.25	-57.01	-8.24	0.00	-65.25

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

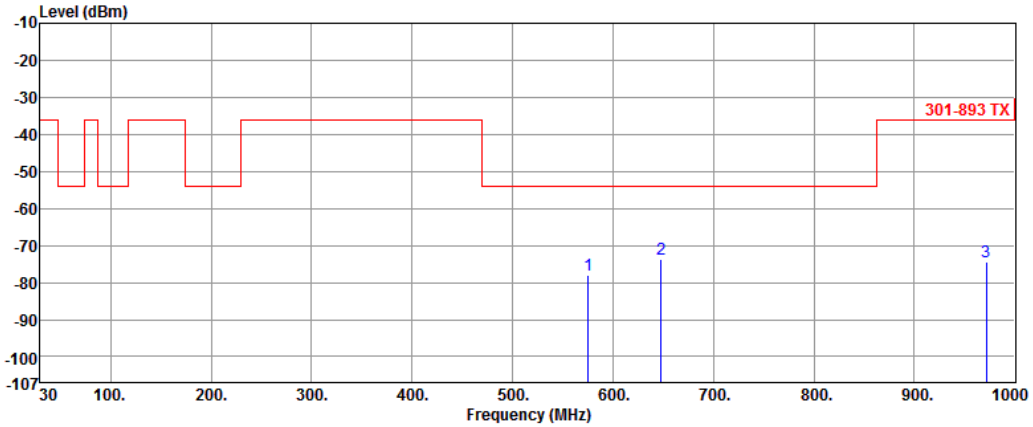
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	323.91	-73.59	-39.01	-34.58	0.00	-73.59
2	647.89	-68.16	-57.01	-11.15	0.00	-68.16
3	971.87	-72.78	-39.01	-33.77	0.00	-72.78

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

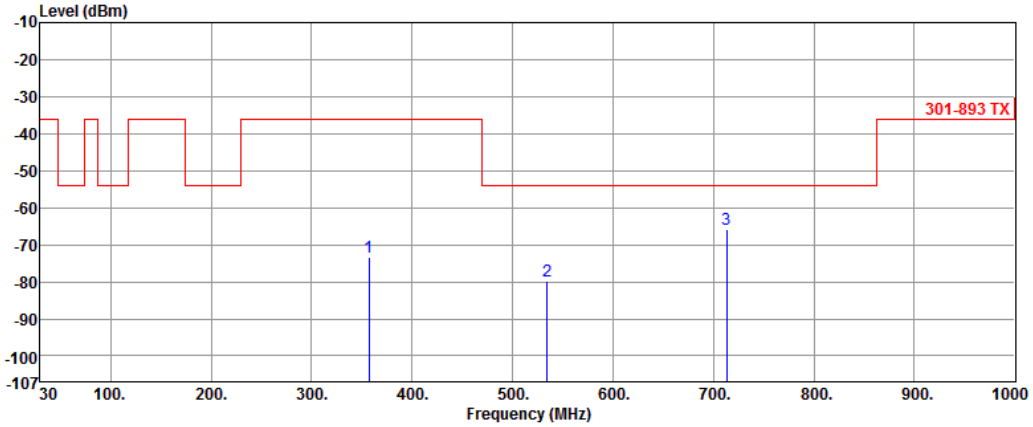
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	575.14	-78.13	-57.01	-21.12	0.00	-78.13
2	647.89	-73.77	-57.01	-16.76	0.00	-73.77
3	971.87	-74.57	-39.01	-35.56	0.00	-74.57

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

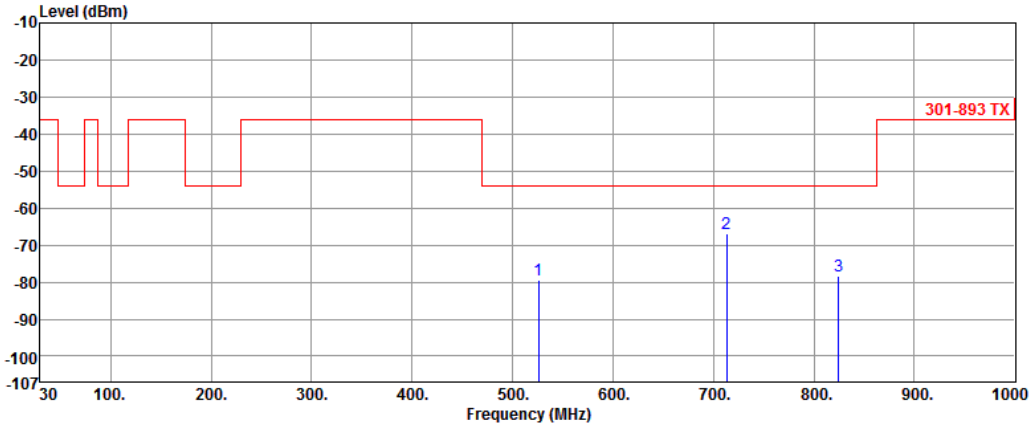
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	356.89	-73.36	-39.01	-34.35	0.00	-73.36
2	534.40	-79.74	-57.01	-22.73	0.00	-79.74
3	712.88	-65.66	-57.01	-8.65	0.00	-65.66

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

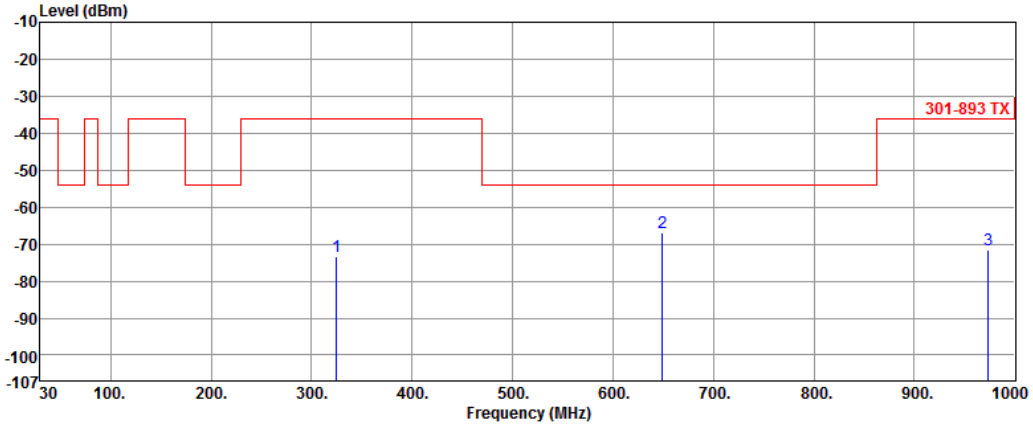
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	525.67	-79.49	-57.01	-22.48	0.00	-79.49
2	712.88	-66.99	-57.01	-9.98	0.00	-66.99
3	824.43	-78.39	-57.01	-21.38	0.00	-78.39

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

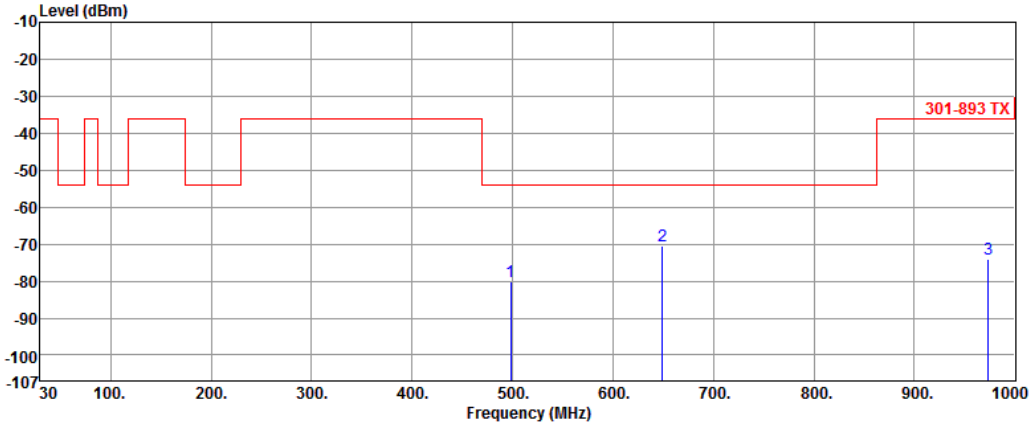
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	324.88	-73.47	-39.01	-34.46	0.00	-73.47
2	648.86	-66.77	-57.01	-9.76	0.00	-66.77
3	973.81	-71.66	-39.01	-32.65	0.00	-71.66

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

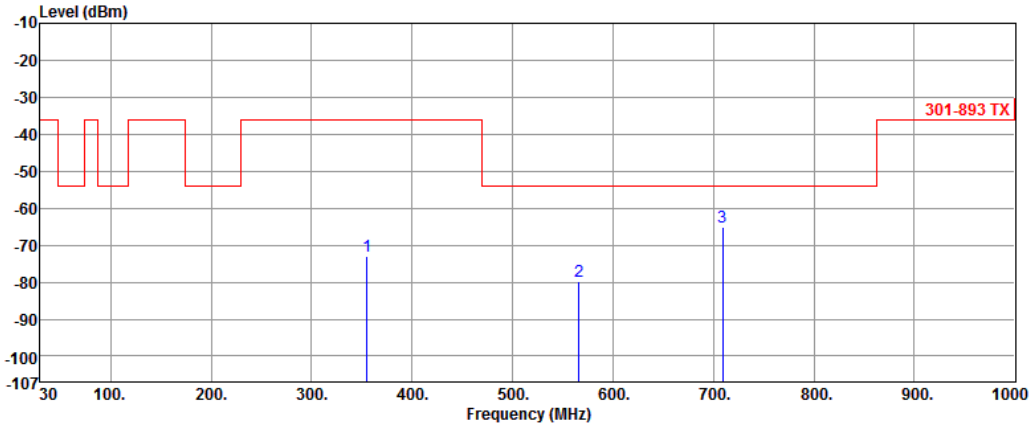
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	498.51	-80.18	-57.01	-23.17	0.00	-80.18
2	648.86	-70.50	-57.01	-13.49	0.00	-70.50
3	973.81	-74.02	-39.01	-35.01	0.00	-74.02

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

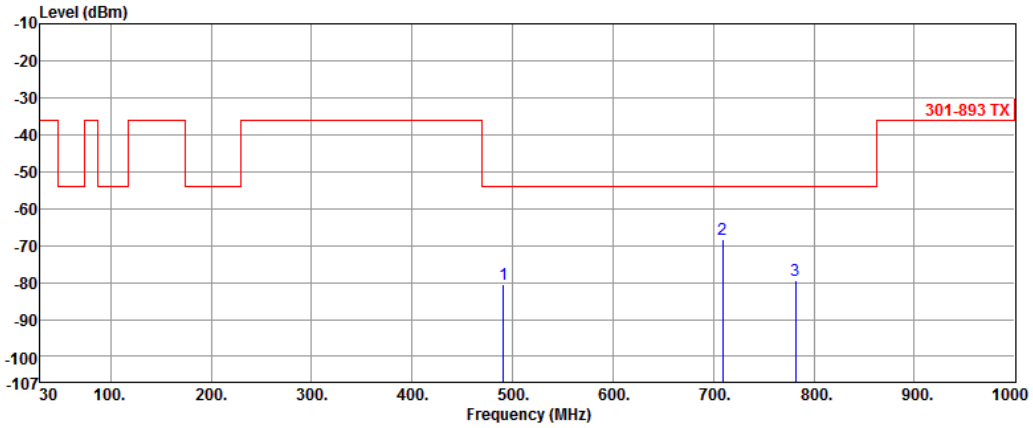
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	354.95	-73.10	-39.01	-34.09	0.00	-73.10
2	566.41	-79.65	-57.01	-22.64	0.00	-79.65
3	709.00	-65.22	-57.01	-8.21	0.00	-65.22

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

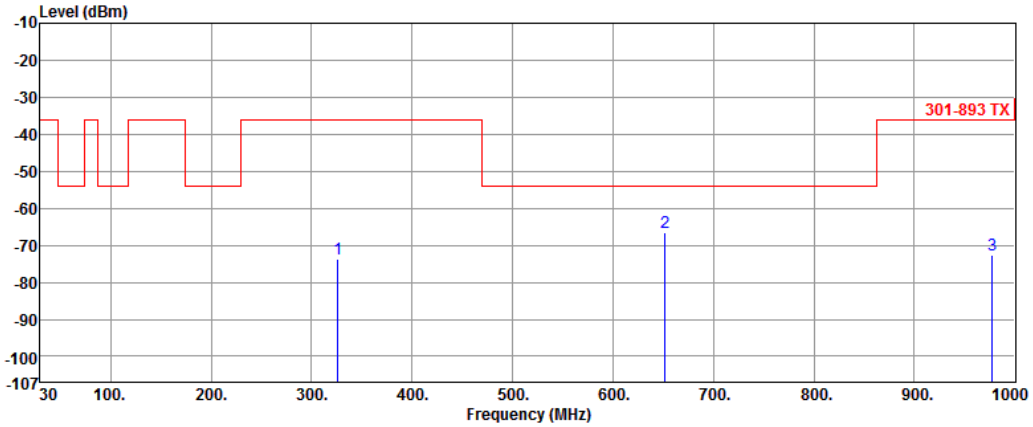
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	490.75	-80.65	-57.01	-23.64	0.00	-80.65
2	709.00	-68.28	-57.01	-11.27	0.00	-68.28
3	781.75	-79.32	-57.01	-22.31	0.00	-79.32

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

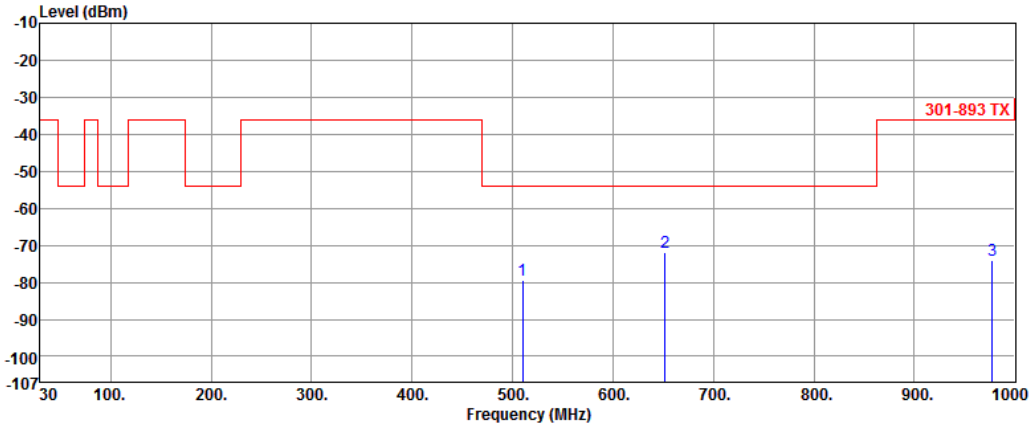
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	325.85	-73.66	-39.01	-34.65	0.00	-73.66
2	651.77	-66.48	-57.01	-9.47	0.00	-66.48
3	977.69	-72.81	-39.01	-33.80	0.00	-72.81

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

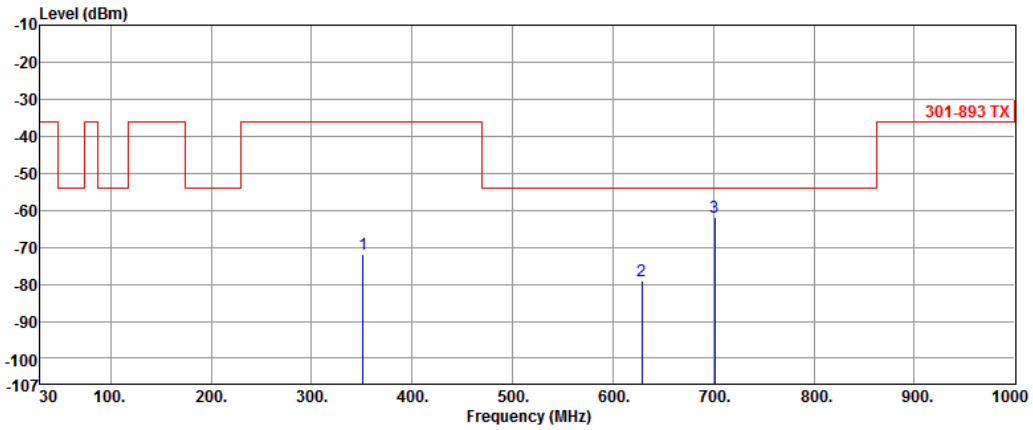
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	510.15	-79.57	-57.01	-22.56	0.00	-79.57
2	651.77	-71.81	-57.01	-14.80	0.00	-71.81
3	977.69	-74.21	-39.01	-35.20	0.00	-74.21

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

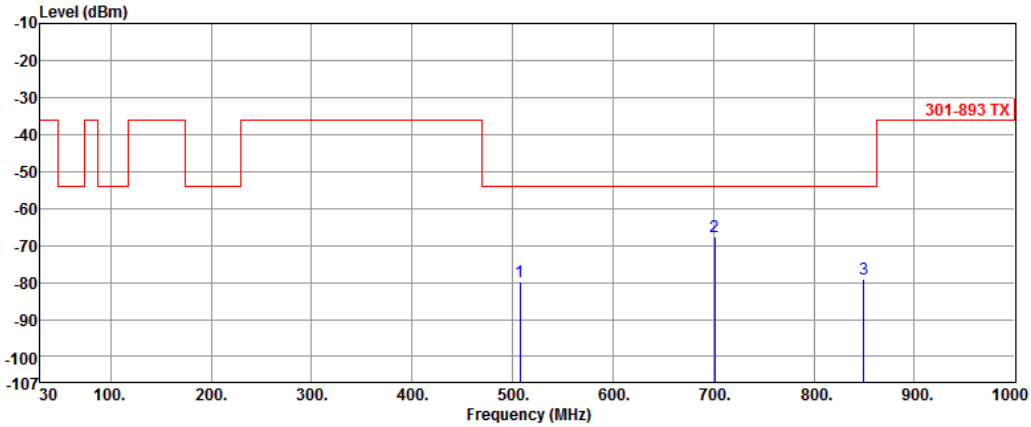
Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	351.07	-72.10	-39.01	-33.09	0.00	-72.10
2	628.49	-79.10	-57.01	-22.09	0.00	-79.10
3	701.24	-61.85	-57.01	-4.84	0.00	-61.85

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

Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	1		

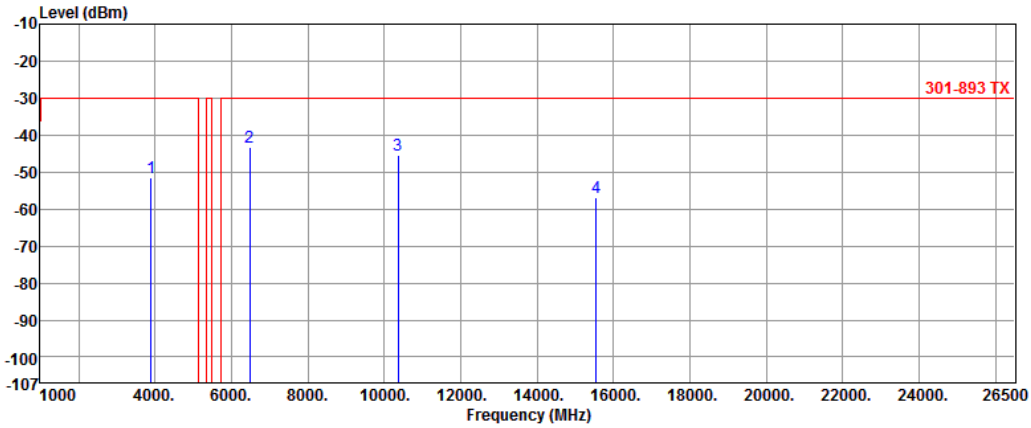


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	507.24	-79.79	-57.01	-22.78	0.00	-79.79
2	701.24	-67.70	-57.01	-10.69	0.00	-67.70
3	849.65	-79.25	-57.01	-22.24	0.00	-79.25

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)

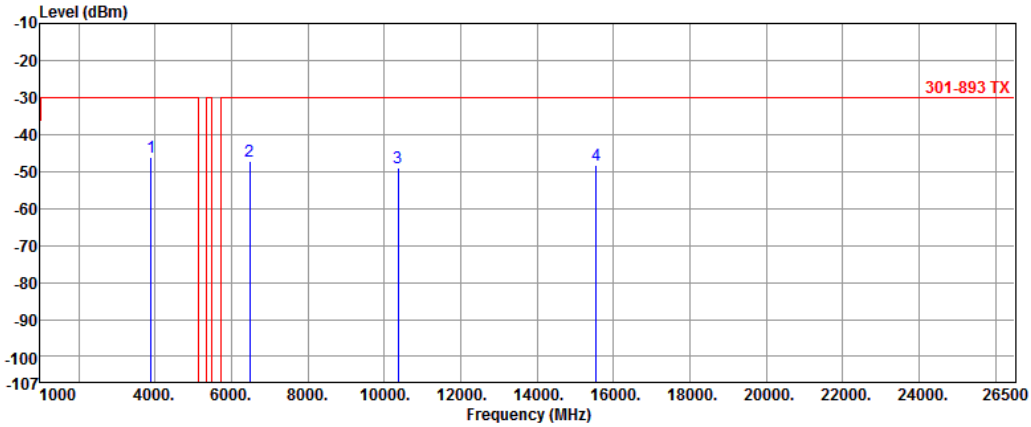
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3892.00	-51.36	-33.01	-18.35	0.00	-51.36
2	6475.00	-43.35	-33.01	-10.34	0.00	-43.35
3	10367.50	-45.49	-33.01	-12.48	0.00	-45.49
4	15542.50	-56.78	-33.01	-23.77	0.00	-56.78

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

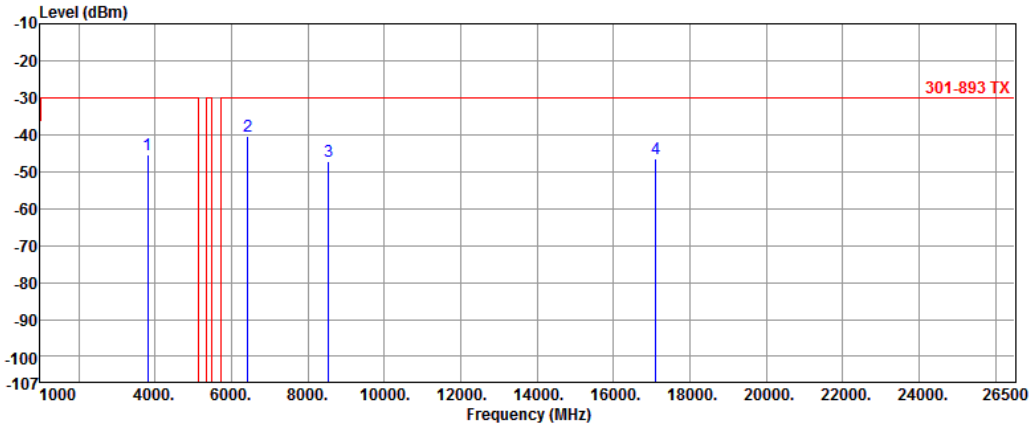
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3892.00	-46.17	-33.01	-13.16	0.00	-46.17
2	6475.00	-47.05	-33.01	-14.04	0.00	-47.05
3	10367.50	-49.00	-33.01	-15.99	0.00	-49.00
4	15542.50	-48.47	-33.01	-15.46	0.00	-48.47

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

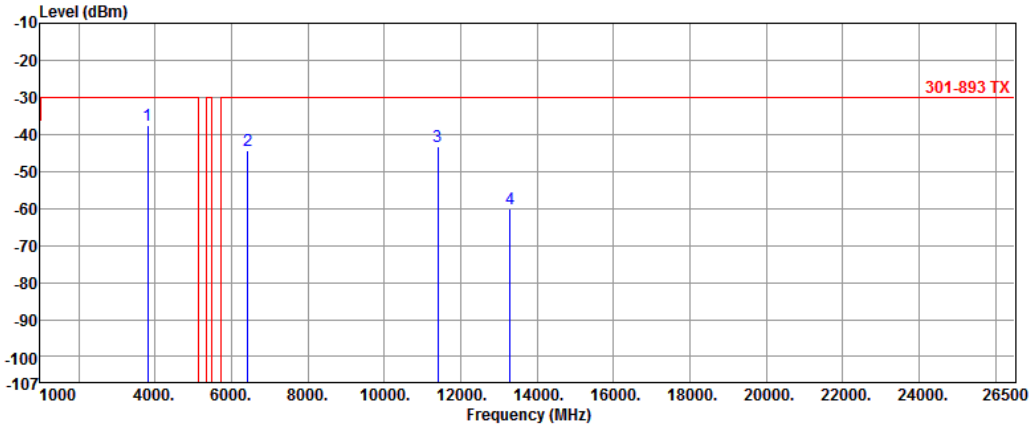
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.25	-45.43	-33.01	-12.42	0.00	-45.43
2	6419.00	-40.52	-33.01	-7.51	0.00	-40.52
3	8547.50	-47.40	-33.01	-14.39	0.00	-47.40
4	17104.50	-46.34	-33.01	-13.33	0.00	-46.34

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

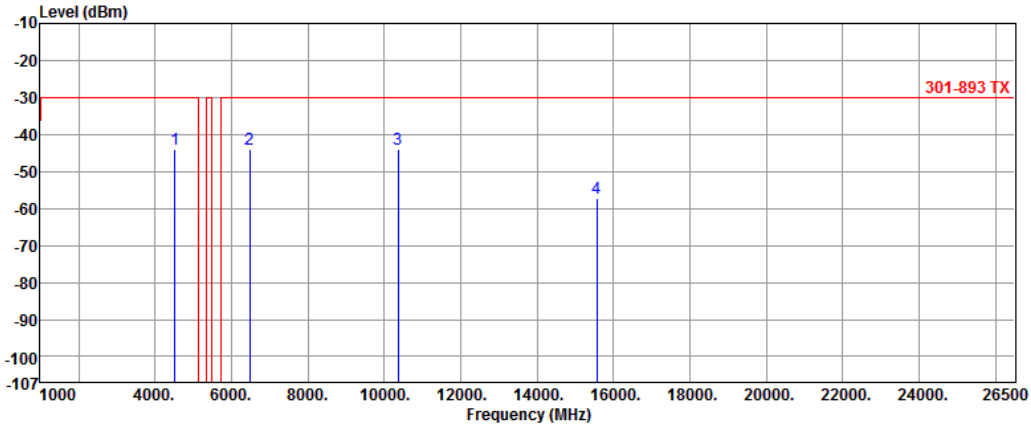
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.25	-37.50	-33.01	-4.49	0.00	-37.50
2	6419.00	-44.50	-33.01	-11.49	0.00	-44.50
3	11407.00	-43.31	-33.01	-10.30	0.00	-43.31
4	13299.00	-60.06	-33.01	-27.05	0.00	-60.06

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

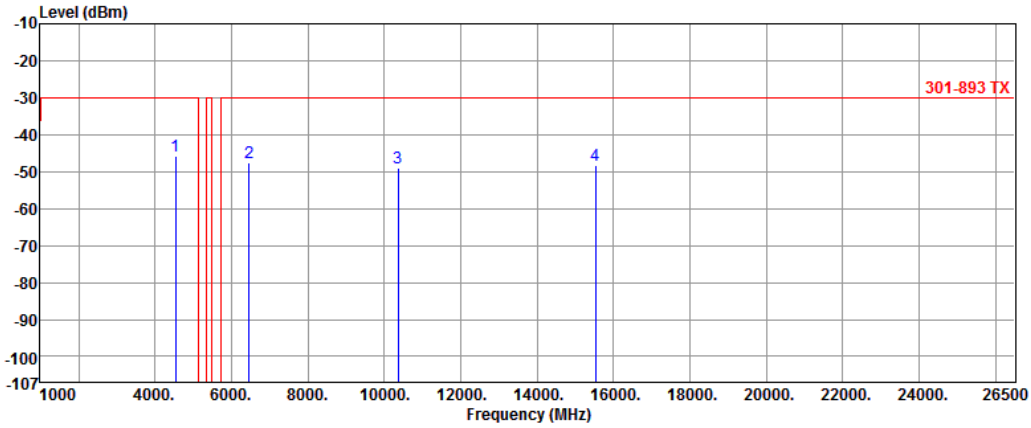
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4528.00	-43.85	-33.01	-10.84	0.00	-43.85
2	6483.50	-43.85	-33.01	-10.84	0.00	-43.85
3	10353.50	-44.17	-33.01	-11.16	0.00	-44.17
4	15556.50	-57.20	-33.01	-24.19	0.00	-57.20

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

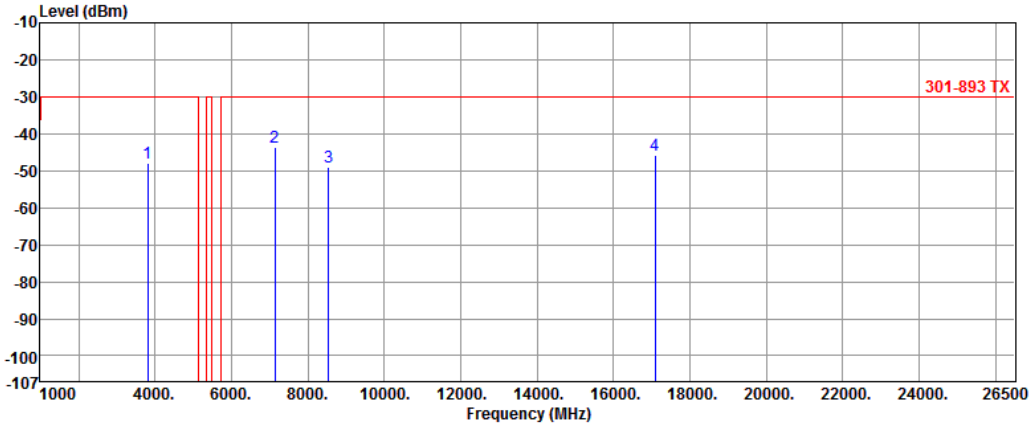
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4532.00	-45.78	-33.01	-12.77	0.00	-45.78
2	6462.00	-47.46	-33.01	-14.45	0.00	-47.46
3	10353.50	-48.98	-33.01	-15.97	0.00	-48.98
4	15535.00	-48.20	-33.01	-15.19	0.00	-48.20

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

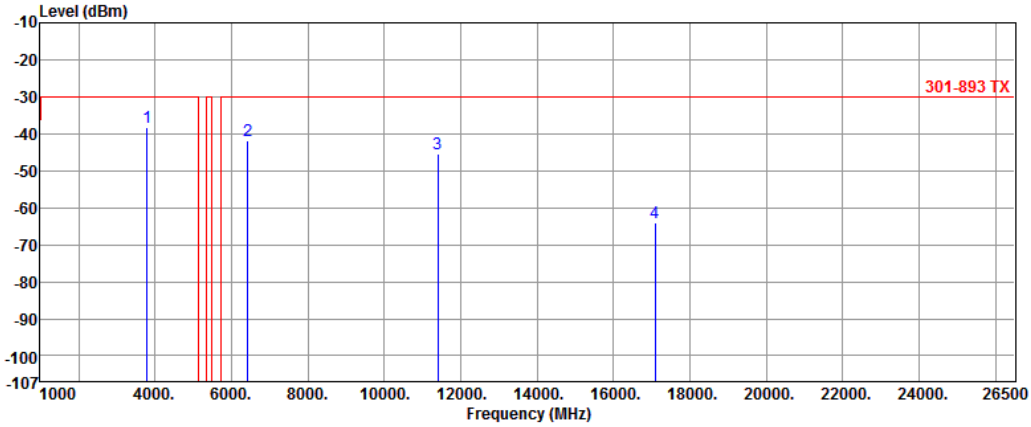
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3801.00	-48.05	-33.01	-15.04	0.00	-48.05
2	7128.50	-43.54	-33.01	-10.53	0.00	-43.54
3	8547.50	-49.19	-33.01	-16.18	0.00	-49.19
4	17083.00	-45.73	-33.01	-12.72	0.00	-45.73

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

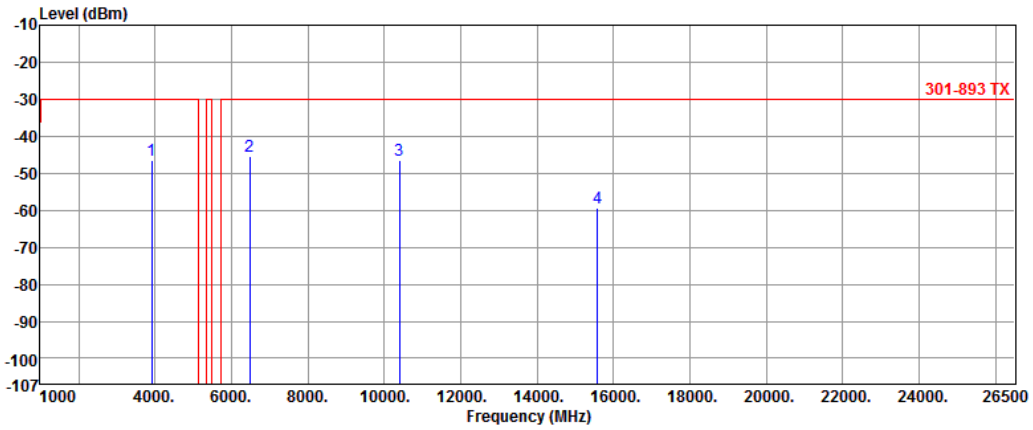
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3800.00	-38.23	-33.01	-5.22	0.00	-38.23
2	6419.00	-41.97	-33.01	-8.96	0.00	-41.97
3	11407.00	-45.32	-33.01	-12.31	0.00	-45.32
4	17095.40	-63.93	-33.01	-30.92	0.00	-63.93

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

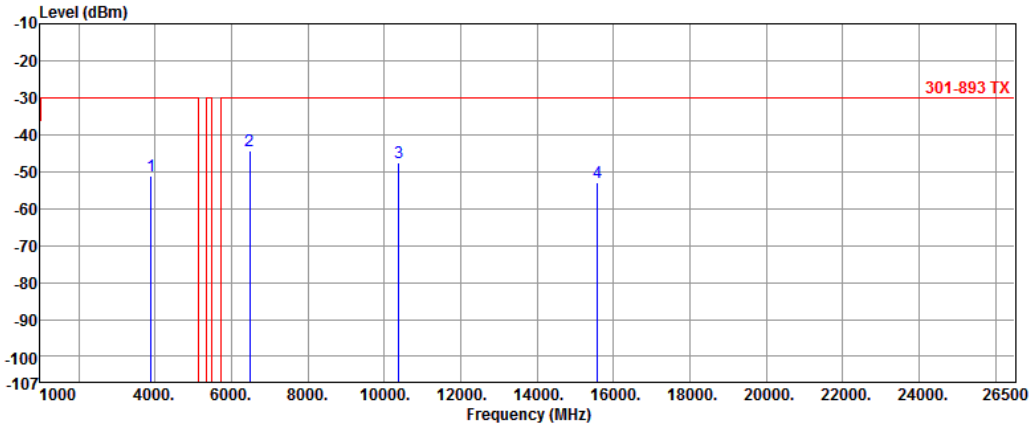
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3906.46	-46.61	-33.01	-13.60	0.00	-46.61
2	6483.50	-45.60	-33.01	-12.59	0.00	-45.60
3	10396.50	-46.66	-33.01	-13.65	0.00	-46.66
4	15578.00	-59.33	-33.01	-26.32	0.00	-59.33

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

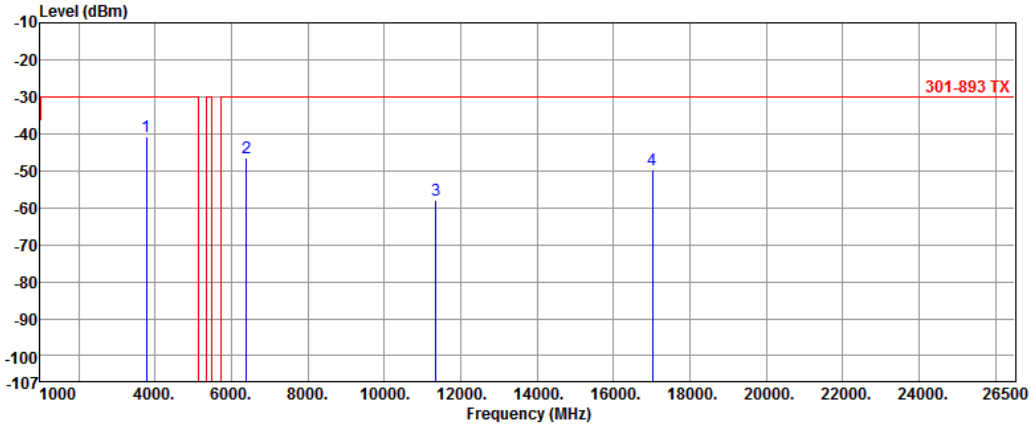
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3902.44	-51.15	-33.01	-18.14	0.00	-51.15
2	6483.50	-44.22	-33.01	-11.21	0.00	-44.22
3	10375.00	-47.50	-33.01	-14.49	0.00	-47.50
4	15578.00	-53.00	-33.01	-19.99	0.00	-53.00

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

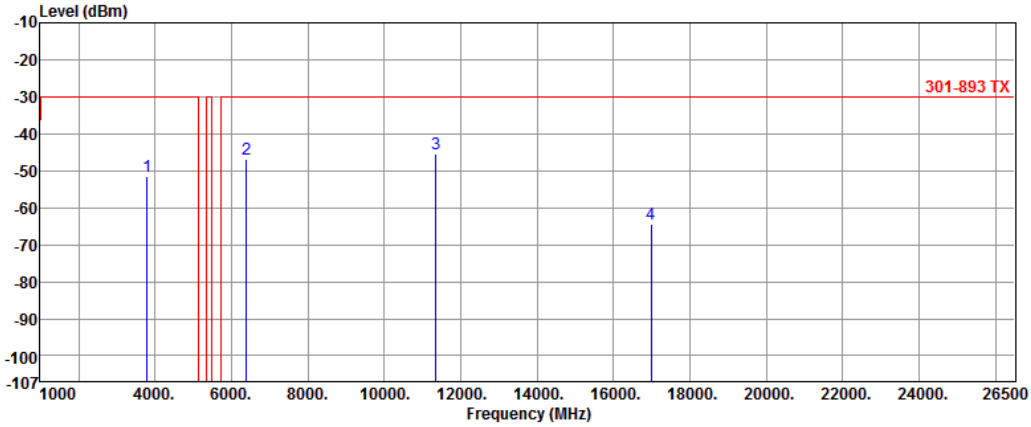
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.24	-40.68	-33.01	-7.67	0.00	-40.68
2	6397.50	-46.38	-33.01	-13.37	0.00	-46.38
3	11342.50	-58.01	-33.01	-25.00	0.00	-58.01
4	17018.50	-49.77	-33.01	-16.76	0.00	-49.77

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

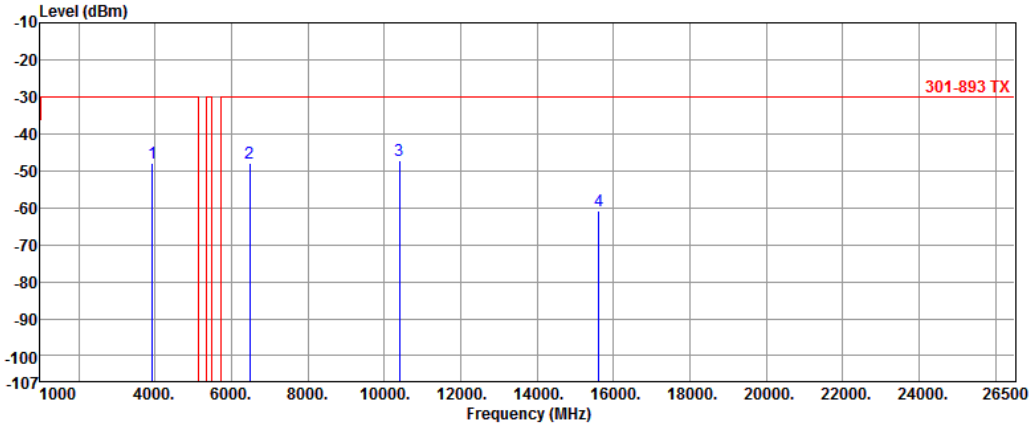
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3790.84	-51.40	-33.01	-18.39	0.00	-51.40
2	6397.50	-47.01	-33.01	-14.00	0.00	-47.01
3	11342.50	-45.55	-33.01	-12.54	0.00	-45.55
4	16981.60	-64.42	-33.01	-31.41	0.00	-64.42

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

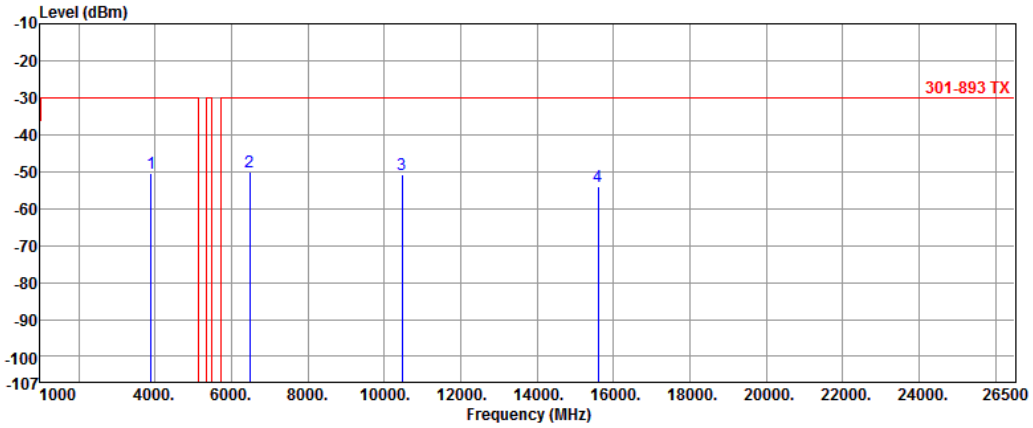
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3924.10	-48.11	-33.01	-15.10	0.00	-48.11
2	6483.50	-48.04	-33.01	-15.03	0.00	-48.04
3	10396.50	-47.23	-33.01	-14.22	0.00	-47.23
4	15621.00	-60.73	-33.01	-27.72	0.00	-60.73

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

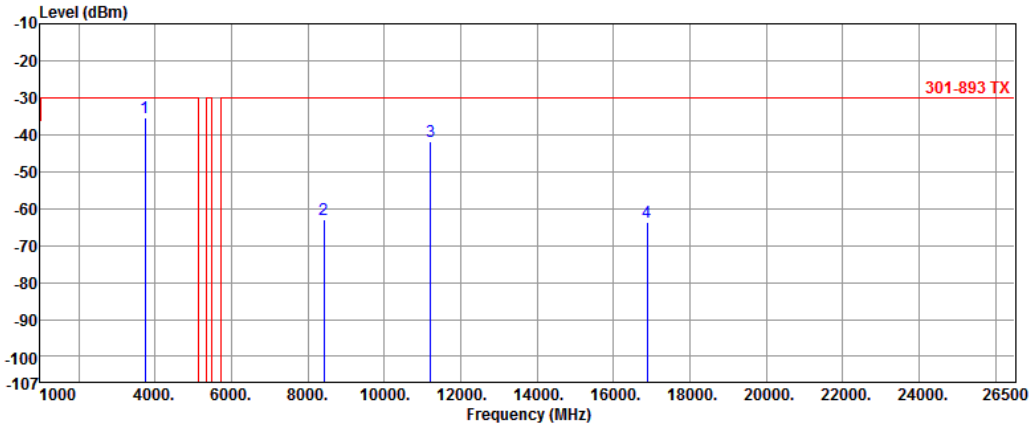
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3889.80	-50.51	-33.01	-17.50	0.00	-50.51
2	6483.50	-50.18	-33.01	-17.17	0.00	-50.18
3	10461.00	-50.94	-33.01	-17.93	0.00	-50.94
4	15599.50	-54.15	-33.01	-21.14	0.00	-54.15

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

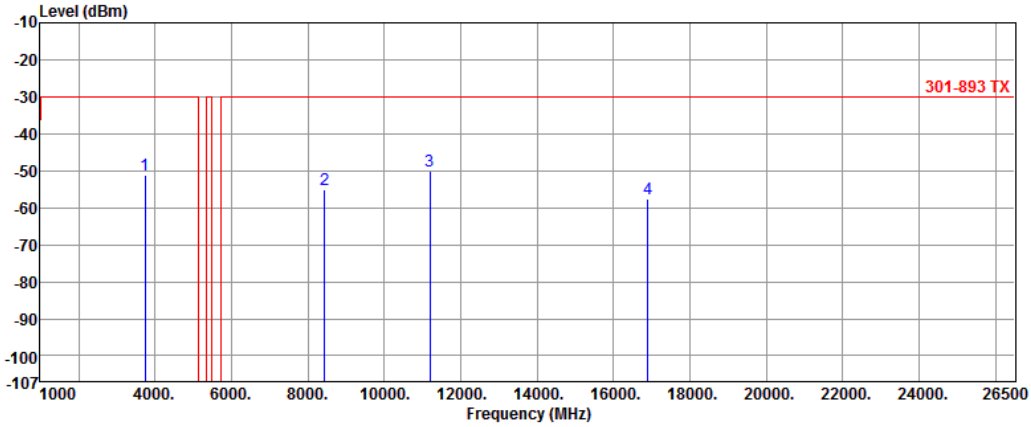
Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3740.60	-35.36	-33.01	-2.35	0.00	-35.36
2	8426.75	-63.09	-33.01	-30.08	0.00	-63.09
3	11202.00	-42.01	-33.01	-9.00	0.00	-42.01
4	16875.85	-63.81	-33.01	-30.80	0.00	-63.81

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

Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	1		

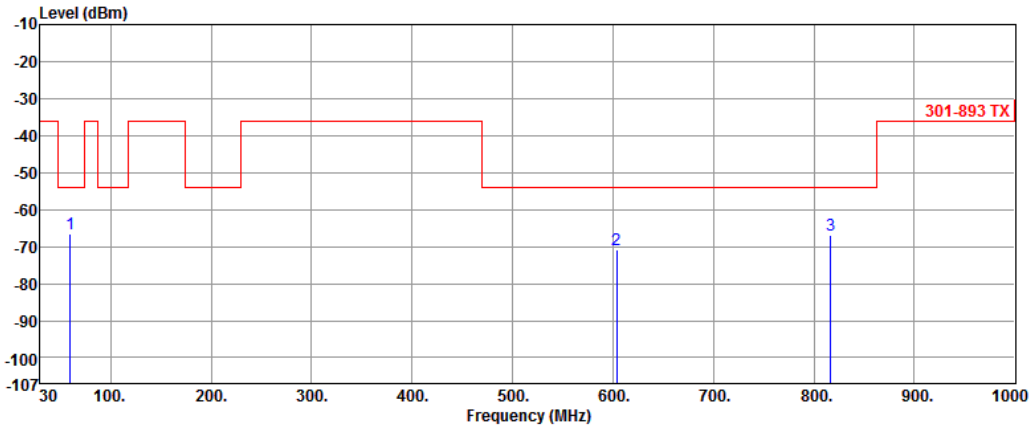


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3742.60	-51.01	-33.01	-18.00	0.00	-51.01
2	8440.00	-55.14	-33.01	-22.13	0.00	-55.14
3	11192.00	-50.20	-33.01	-17.19	0.00	-50.20
4	16889.50	-57.60	-33.01	-24.59	0.00	-57.60

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

3.4.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)

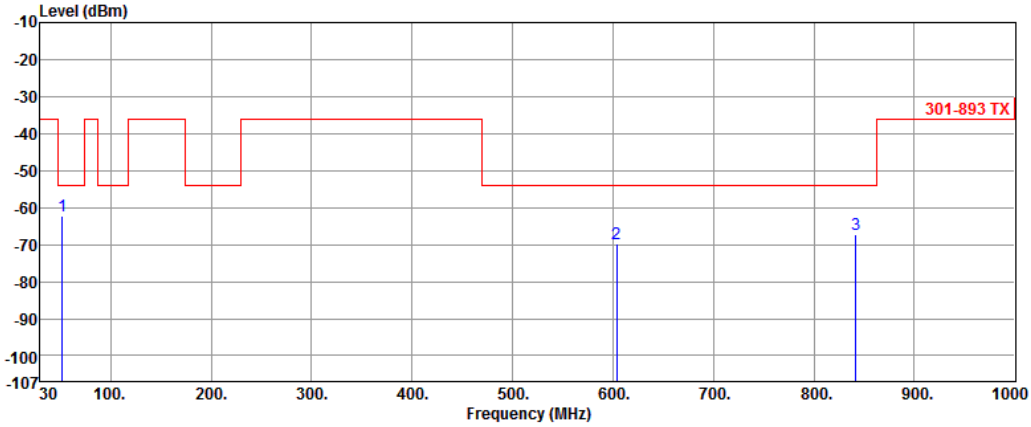
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.48	-66.51	-54.00	-12.51	-1.61	-64.90
2	603.57	-70.94	-54.00	-16.94	6.92	-77.86
3	816.51	-66.94	-54.00	-12.94	9.87	-76.81

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

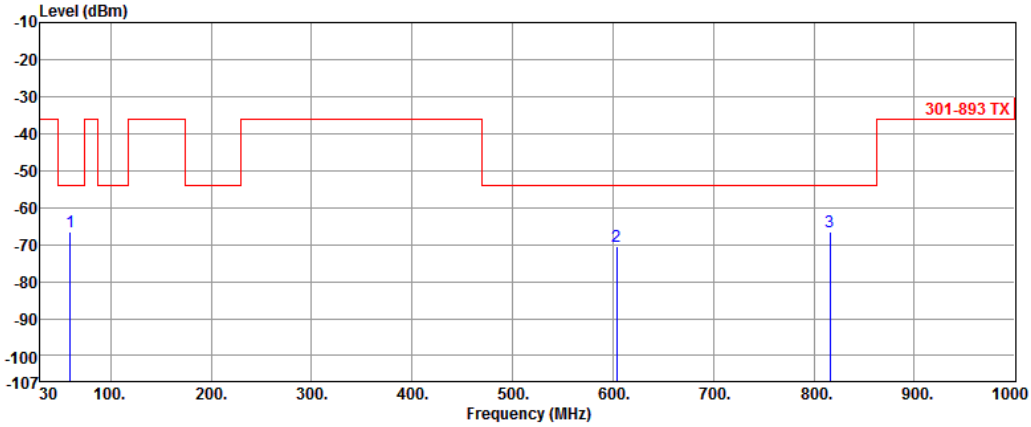
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.84	-62.38	-54.00	-8.38	-0.44	-61.94
2	603.62	-69.94	-54.00	-15.94	7.42	-77.36
3	841.67	-67.27	-54.00	-13.27	10.04	-77.31

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

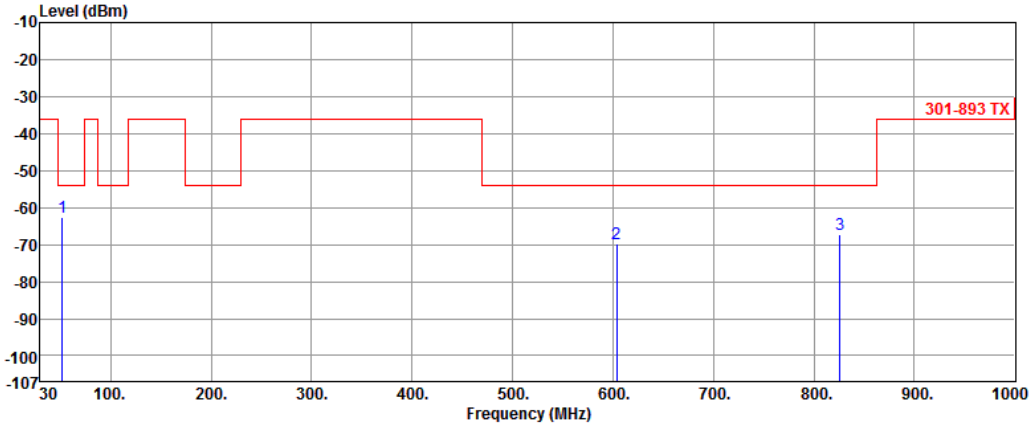
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.73	-66.61	-54.00	-12.61	-1.67	-64.94
2	603.70	-70.35	-54.00	-16.35	6.93	-77.28
3	816.18	-66.40	-54.00	-12.40	9.86	-76.26

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

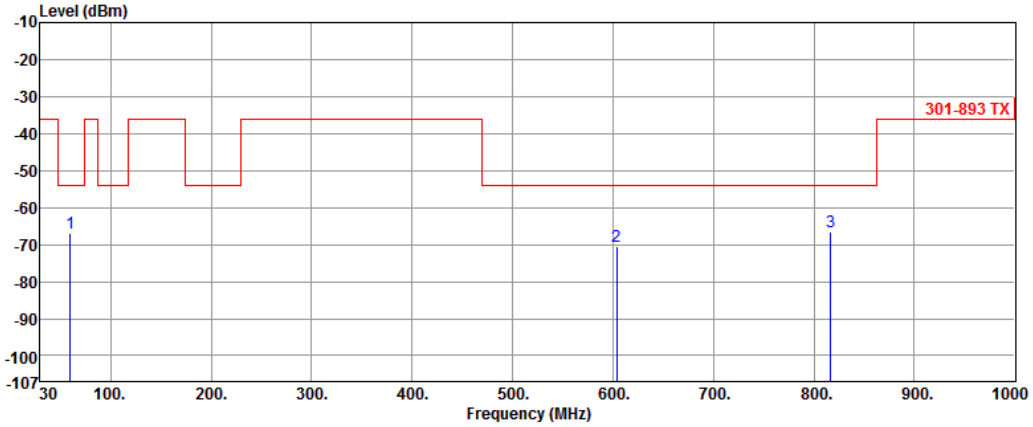
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.73	-62.54	-54.00	-8.54	-0.36	-62.18
2	603.57	-69.81	-54.00	-15.81	7.42	-77.23
3	825.71	-67.27	-54.00	-13.27	10.00	-77.27

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

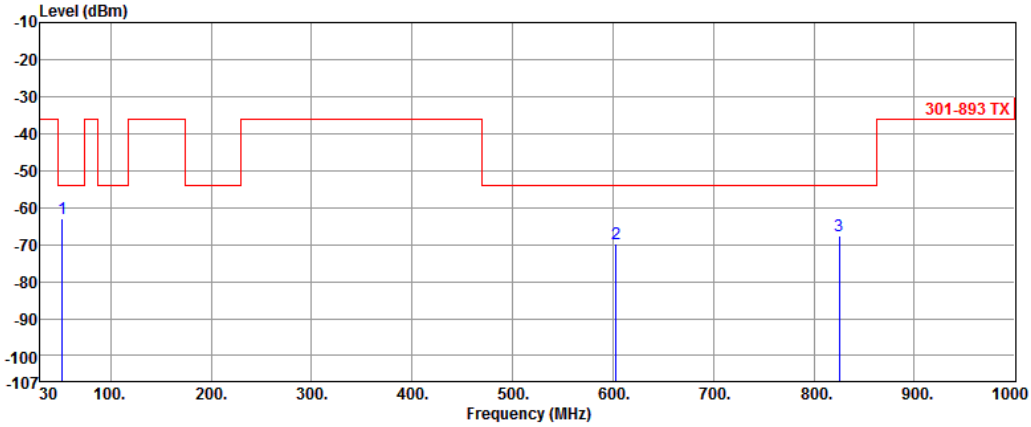
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.61	-66.94	-54.00	-12.94	-1.64	-65.30
2	603.75	-70.51	-54.00	-16.51	6.93	-77.44
3	816.38	-66.52	-54.00	-12.52	9.86	-76.38

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

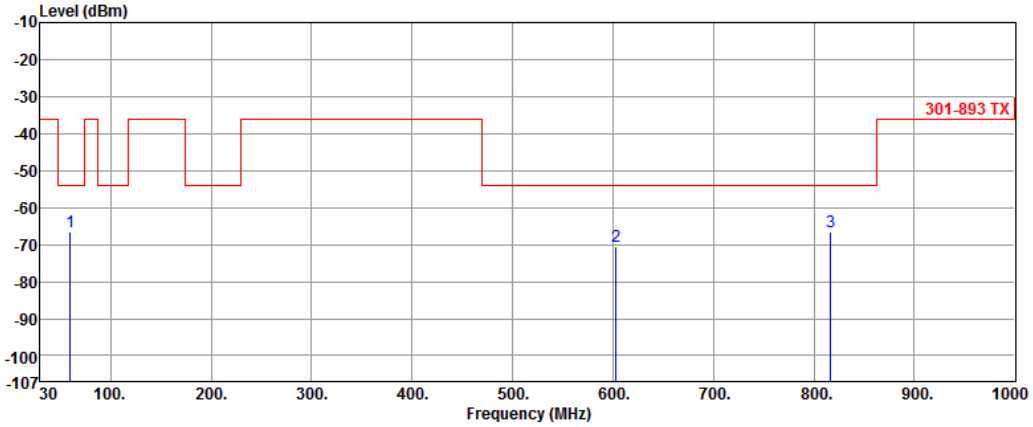
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.83	-62.92	-54.00	-8.92	-0.43	-62.49
2	603.35	-69.94	-54.00	-15.94	7.40	-77.34
3	825.27	-67.48	-54.00	-13.48	10.00	-77.48

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

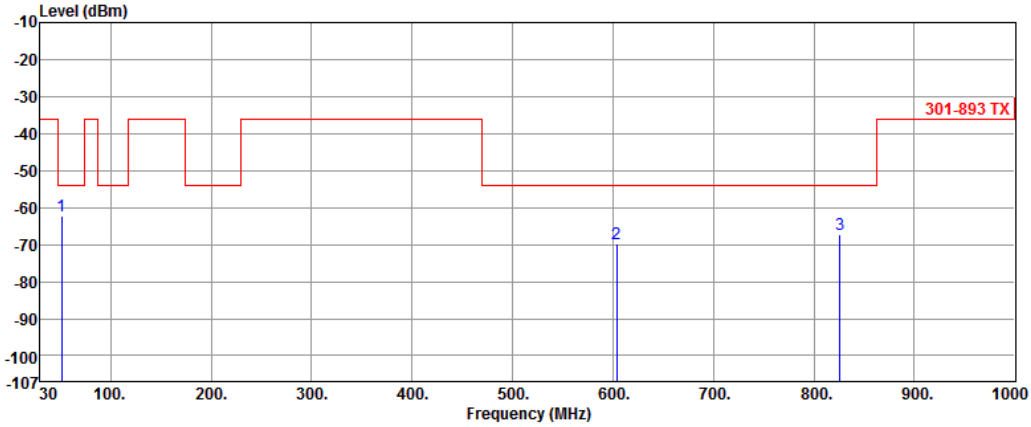
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.79	-66.63	-54.00	-12.63	-1.69	-64.94
2	603.29	-70.61	-54.00	-16.61	6.91	-77.52
3	816.81	-66.41	-54.00	-12.41	9.87	-76.28

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

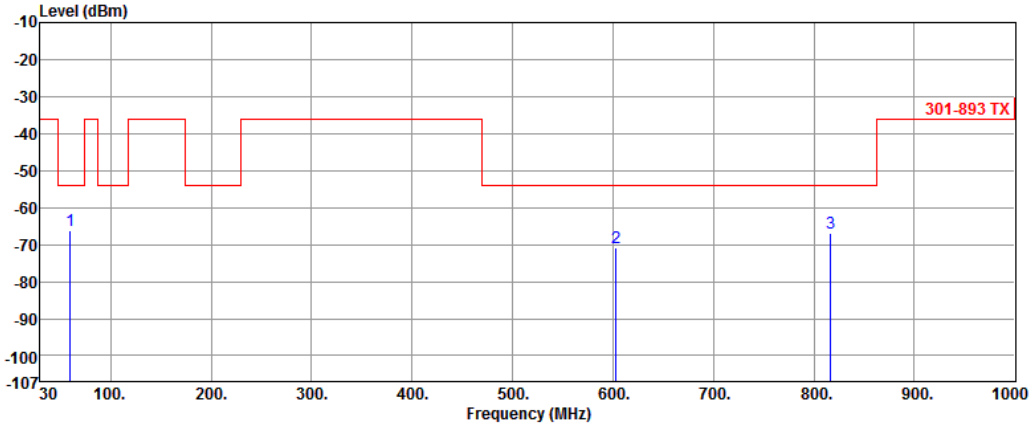
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.44	-62.29	-54.00	-8.29	-0.13	-62.16
2	603.51	-69.84	-54.00	-15.84	7.41	-77.25
3	825.94	-67.24	-54.00	-13.24	9.99	-77.23

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

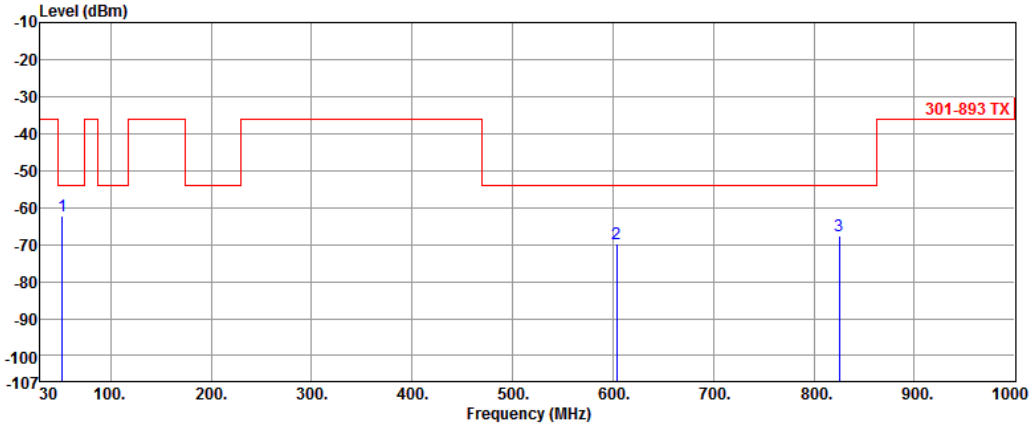
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.63	-66.35	-54.00	-12.35	-1.65	-64.70
2	603.24	-70.94	-54.00	-16.94	6.91	-77.85
3	816.61	-66.98	-54.00	-12.98	9.87	-76.85

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

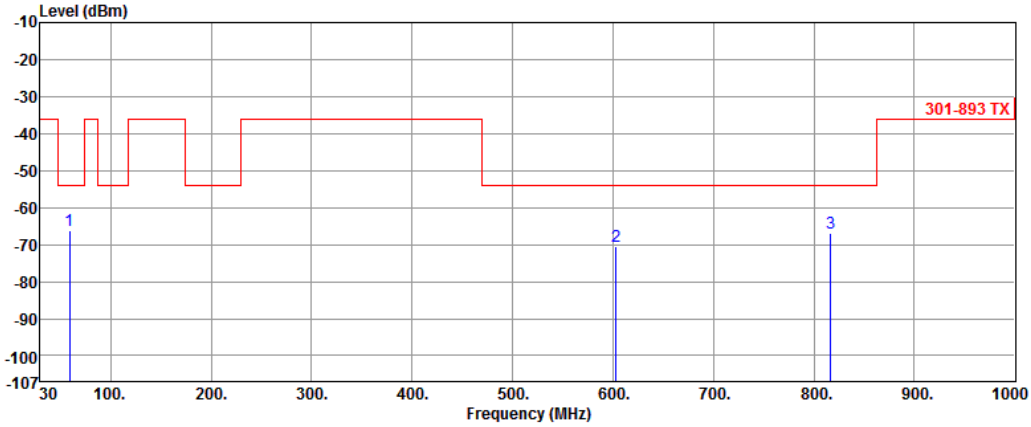
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.74	-62.22	-54.00	-8.22	-0.36	-61.86
2	603.59	-69.67	-54.00	-15.67	7.42	-77.09
3	825.48	-67.51	-54.00	-13.51	10.00	-77.51

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

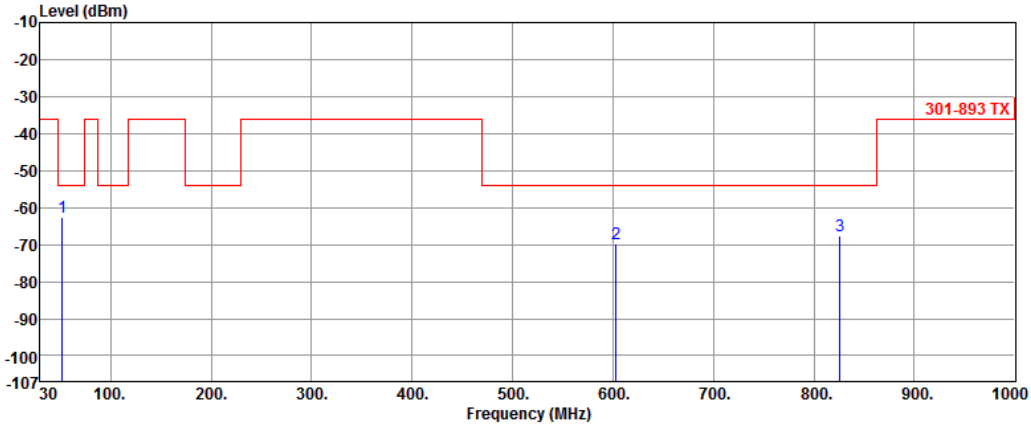
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.15	-66.35	-54.00	-12.35	-1.51	-64.84
2	603.19	-70.66	-54.00	-16.66	6.91	-77.57
3	816.65	-66.94	-54.00	-12.94	9.87	-76.81

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

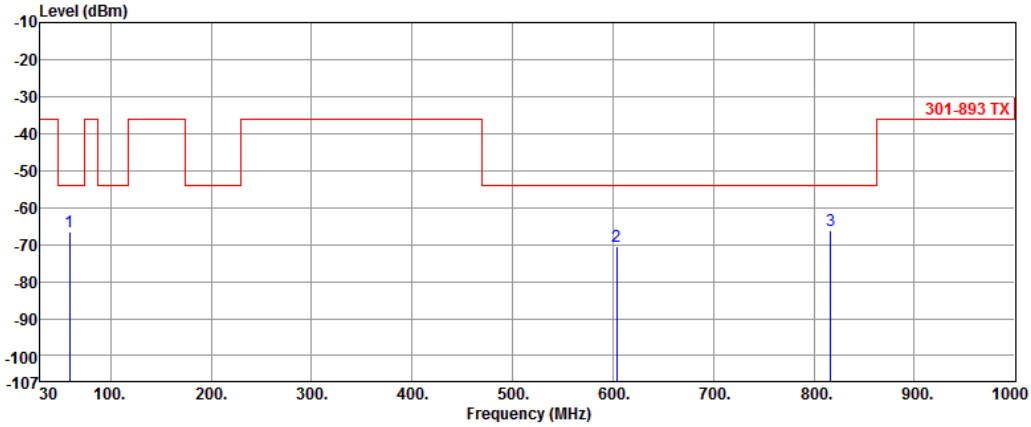
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.78	-62.53	-54.00	-8.53	-0.39	-62.14
2	603.32	-69.93	-54.00	-15.93	7.40	-77.33
3	825.67	-67.51	-54.00	-13.51	10.00	-77.51

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

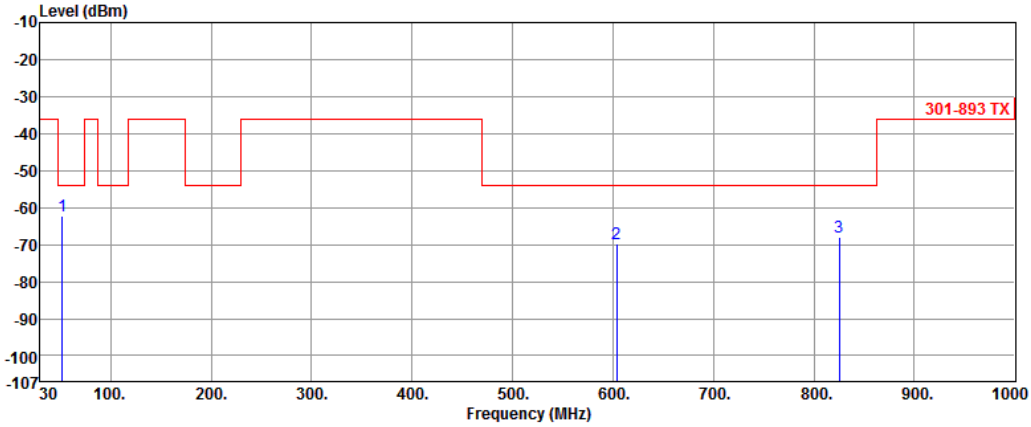
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.27	-66.69	-54.00	-12.69	-1.55	-65.14
2	603.73	-70.58	-54.00	-16.58	6.93	-77.51
3	816.56	-66.28	-54.00	-12.28	9.87	-76.15

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

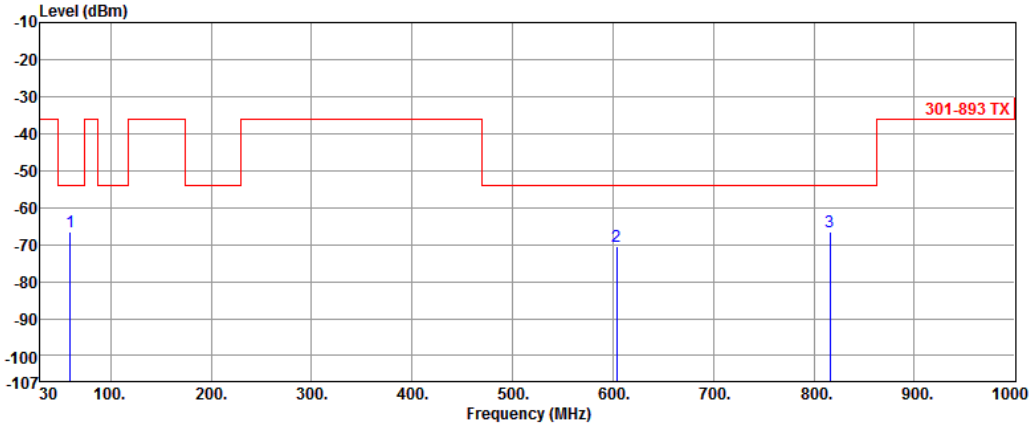
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.76	-62.24	-54.00	-8.24	-0.38	-61.86
2	603.49	-69.81	-54.00	-15.81	7.41	-77.22
3	825.37	-67.95	-54.00	-13.95	10.00	-77.95

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

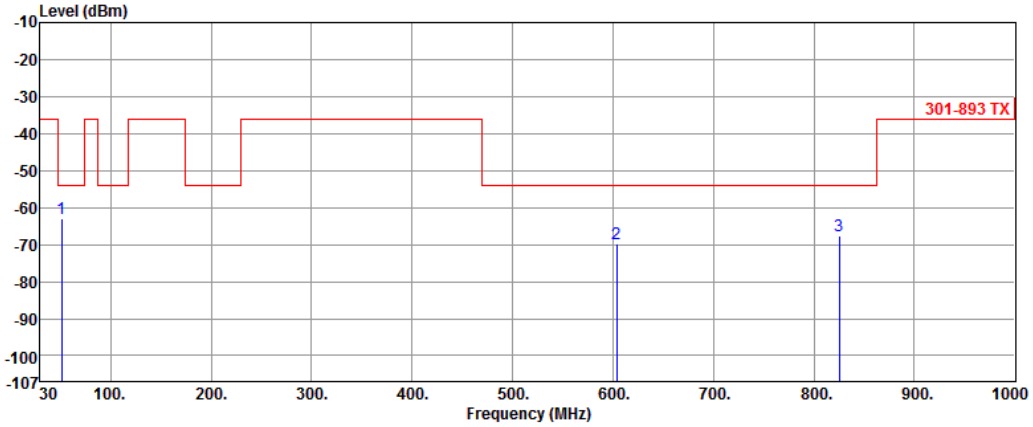
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.75	-66.61	-54.00	-12.61	-1.68	-64.93
2	603.94	-70.54	-54.00	-16.54	6.93	-77.47
3	816.16	-66.48	-54.00	-12.48	9.86	-76.34

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		

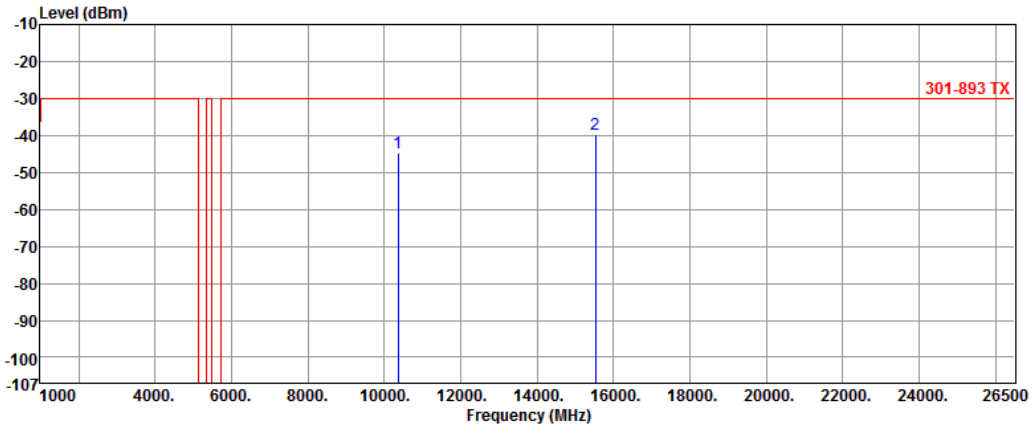


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.27	-62.84	-54.00	-8.84	0.00	-62.84
2	603.73	-69.70	-54.00	-15.70	7.43	-77.13
3	825.38	-67.59	-54.00	-13.59	10.00	-77.59

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

3.4.7 Transmitter Radiated Unwanted Emissions (Above 1GHz)

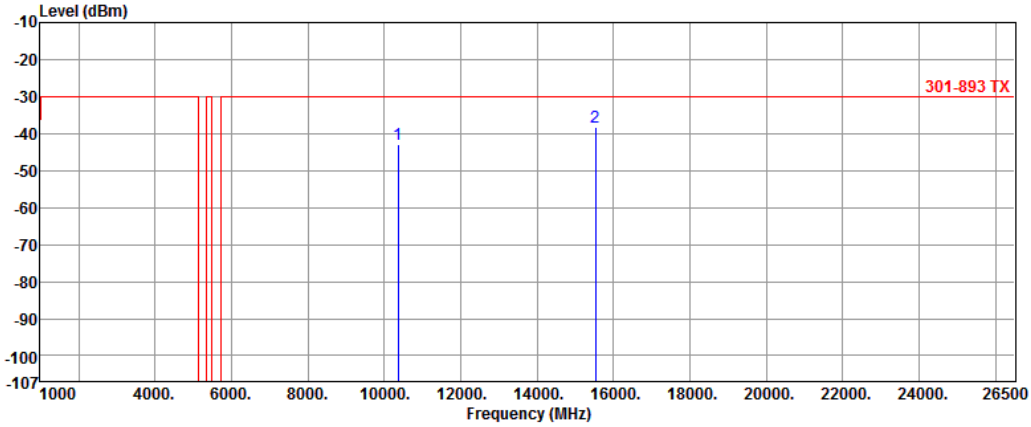
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10352.99	-44.72	-30.00	-14.72	21.77	-66.49
2	15532.99	-39.71	-30.00	-9.71	22.28	-61.99

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

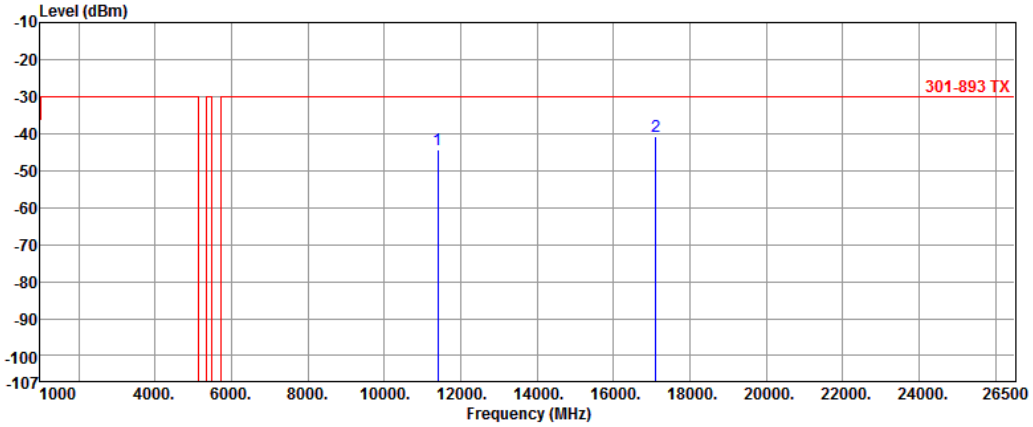
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10352.99	-42.91	-30.00	-12.91	22.32	-65.23
2	15532.99	-38.18	-30.00	-8.18	22.61	-60.79

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

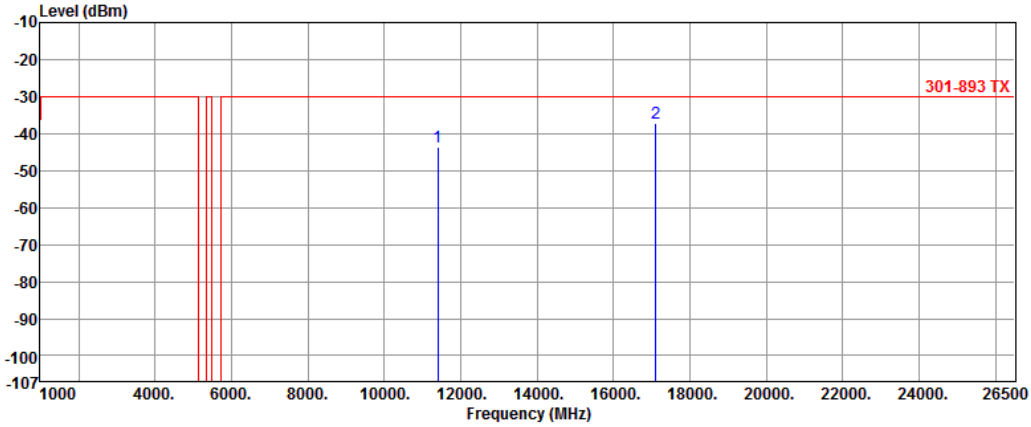
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11400.58	-44.27	-30.00	-14.27	20.98	-65.25
2	17107.78	-40.89	-30.00	-10.89	23.61	-64.50

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

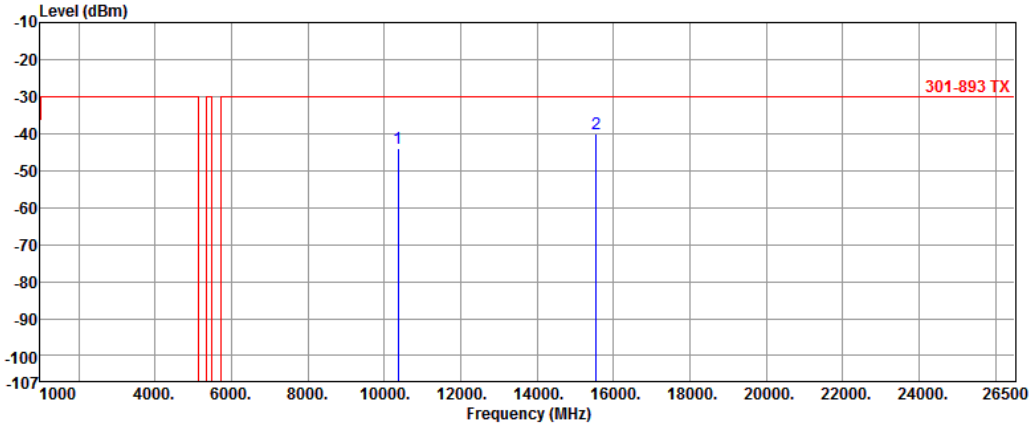
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11402.40	-43.65	-30.00	-13.65	21.08	-64.73
2	17102.14	-37.19	-30.00	-7.19	23.66	-60.85

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

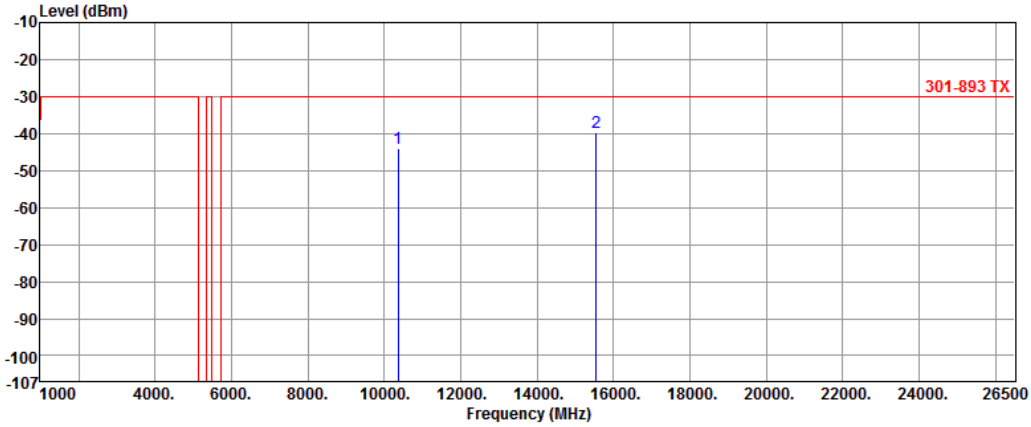
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10362.58	-44.13	-30.00	-14.13	21.82	-65.95
2	15544.00	-40.10	-30.00	-10.10	22.26	-62.36

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

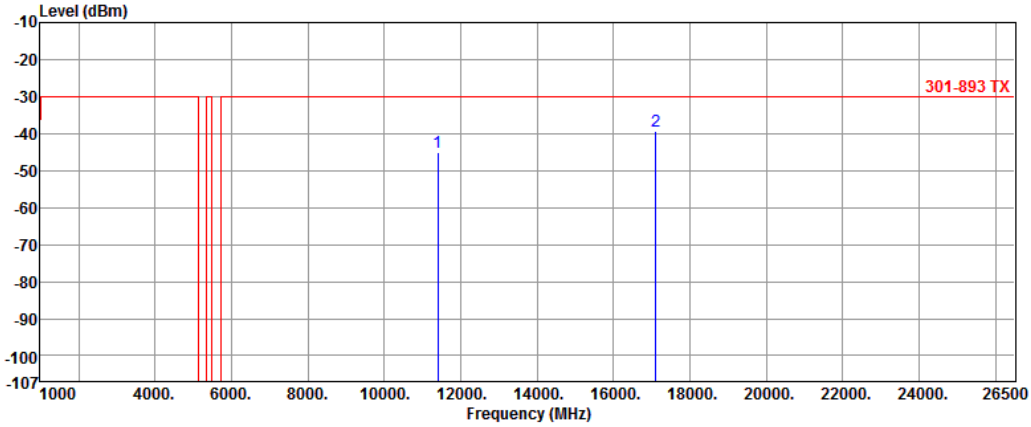
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10353.44	-43.89	-30.00	-13.89	22.32	-66.21
2	15540.62	-39.63	-30.00	-9.63	22.58	-62.21

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

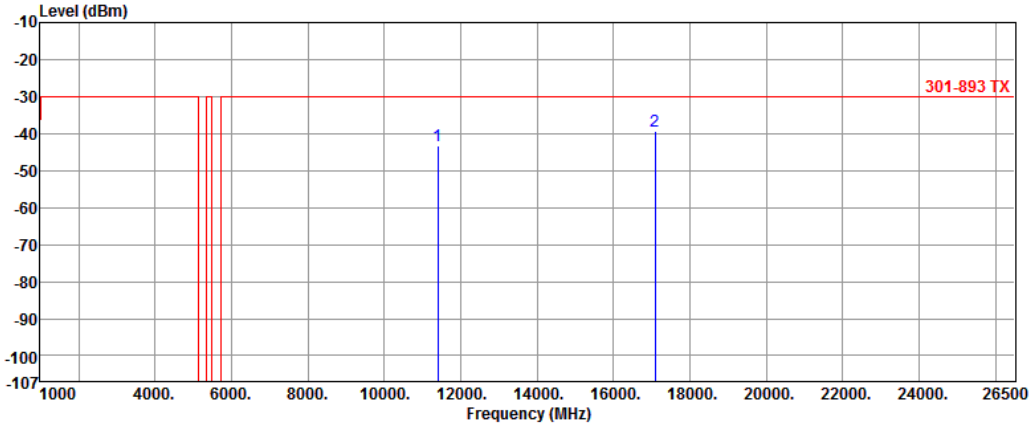
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11402.34	-44.99	-30.00	-14.99	20.98	-65.97
2	17099.44	-39.20	-30.00	-9.20	23.54	-62.74

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

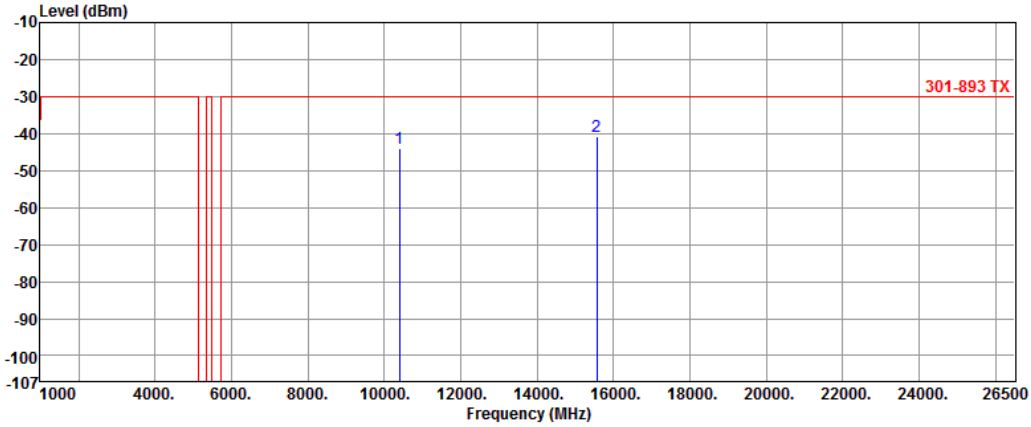
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11401.00	-43.22	-30.00	-13.22	21.08	-64.30
2	17094.82	-39.18	-30.00	-9.18	23.69	-62.87

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

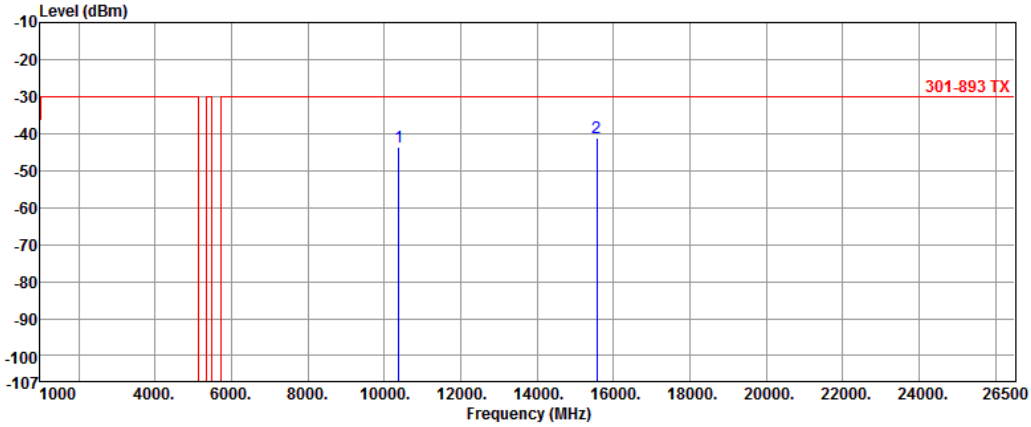
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10396.60	-44.16	-30.00	-14.16	21.96	-66.12
2	15570.08	-40.71	-30.00	-10.71	22.20	-62.91

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

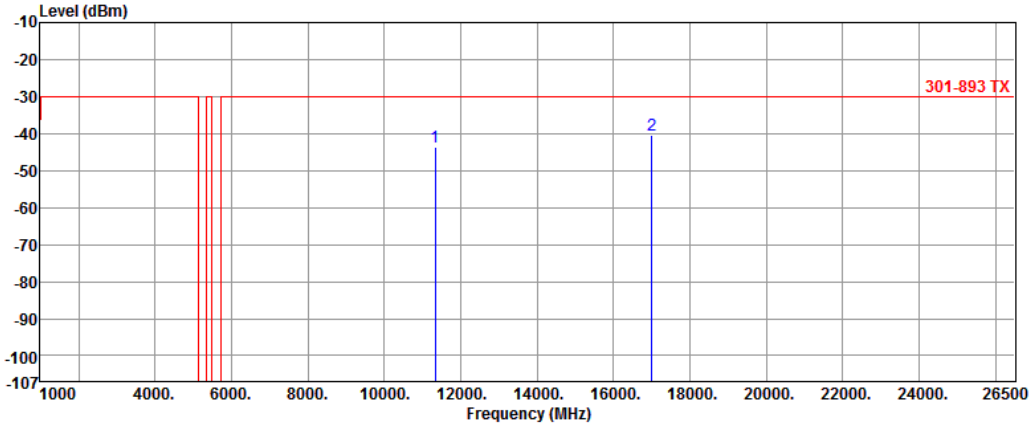
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10374.36	-43.73	-30.00	-13.73	22.31	-66.04
2	15564.36	-41.17	-30.00	-11.17	22.46	-63.63

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

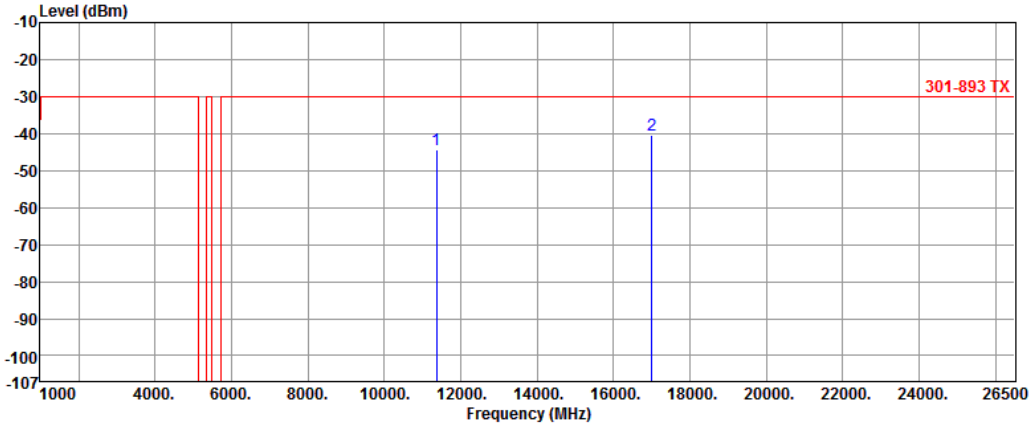
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11340.50	-43.66	-30.00	-13.66	21.36	-65.02
2	17004.85	-40.38	-30.00	-10.38	23.84	-64.22

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

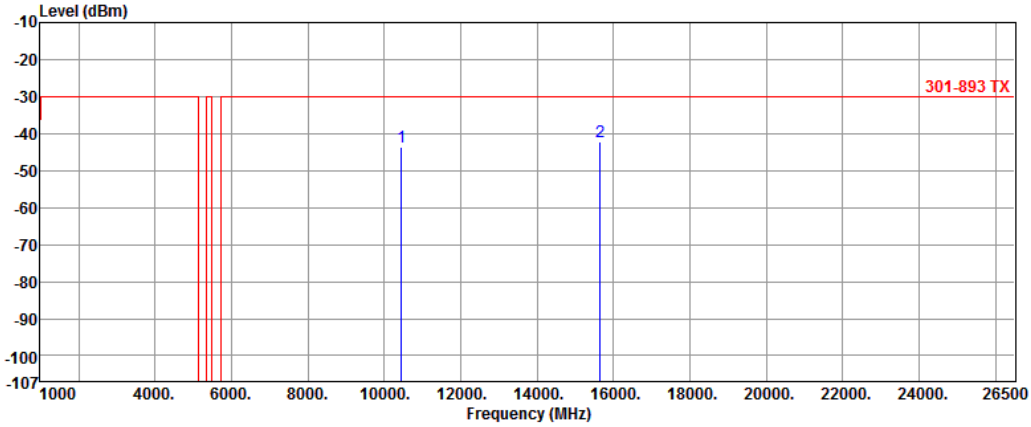
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11361.10	-44.40	-30.00	-14.40	20.93	-65.33
2	16995.80	-40.47	-30.00	-10.47	24.04	-64.51

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

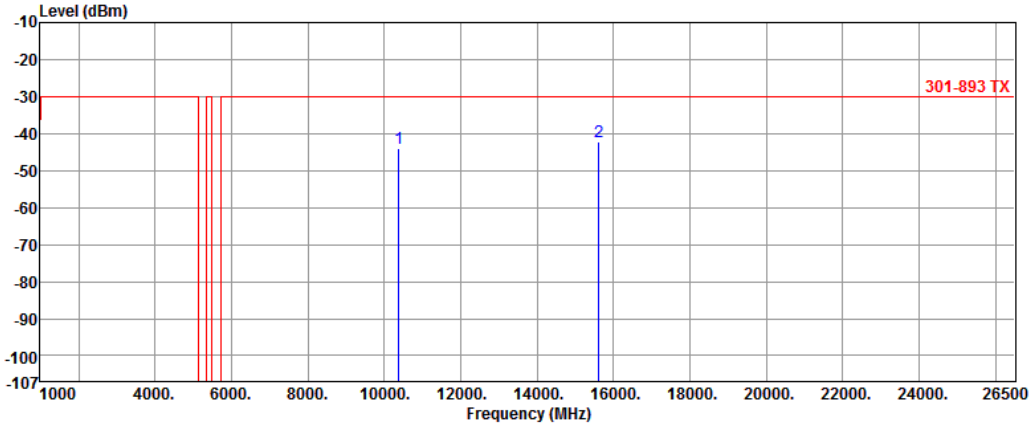
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10444.40	-43.53	-30.00	-13.53	22.12	-65.65
2	15650.90	-42.15	-30.00	-12.15	22.21	-64.36

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

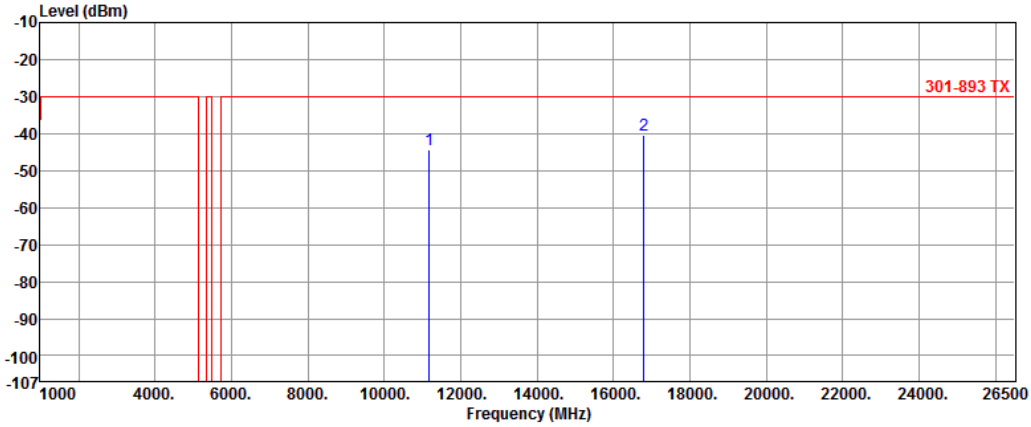
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	10376.10	-43.92	-30.00	-13.92	22.31	-66.23
2	15609.30	-42.38	-30.00	-12.38	22.29	-64.67

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

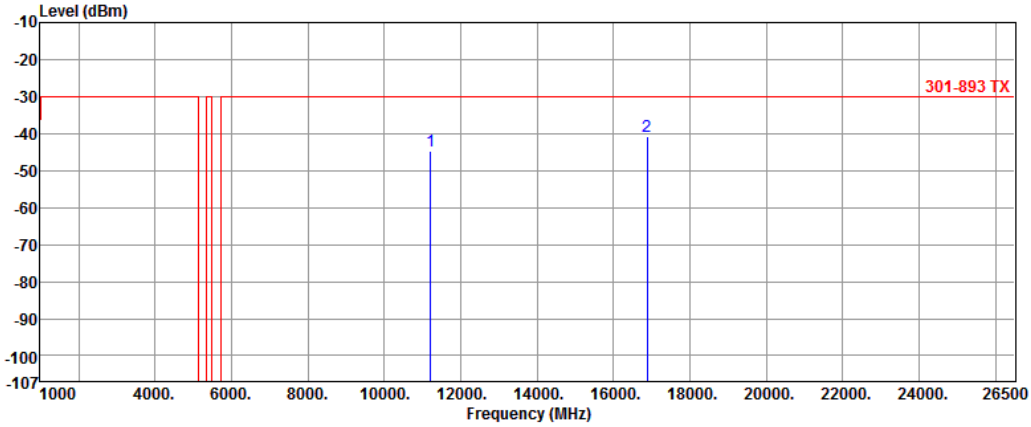
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11180.80	-44.51	-30.00	-14.51	20.58	-65.09
2	16800.20	-40.44	-30.00	-10.44	24.99	-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)	5610
Polarization	Vertical		

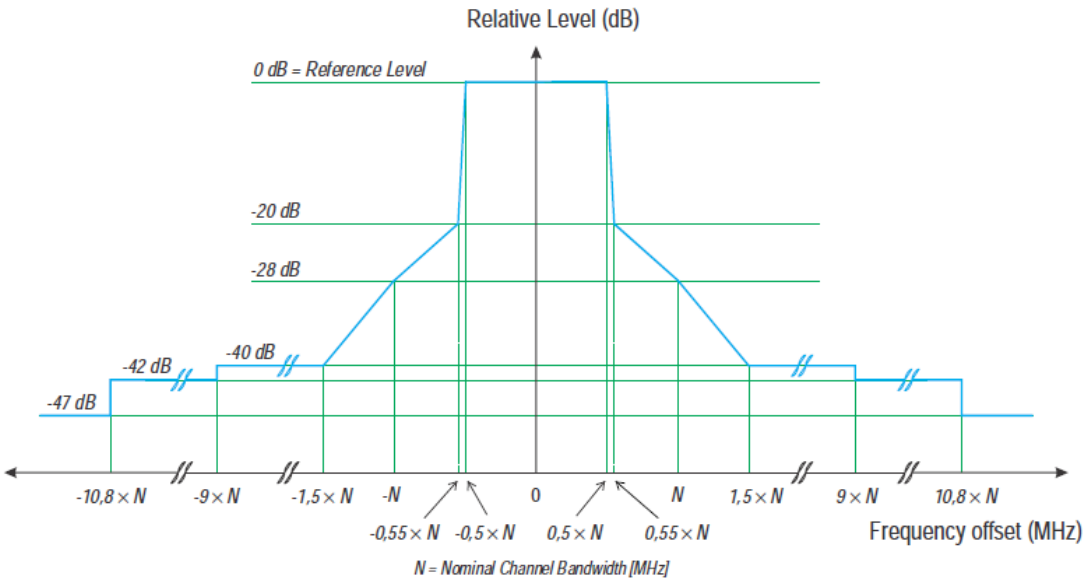


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	11217.20	-44.85	-30.00	-14.85	20.42	-65.27
2	16871.80	-40.62	-30.00	-10.62	24.38	-65.00

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

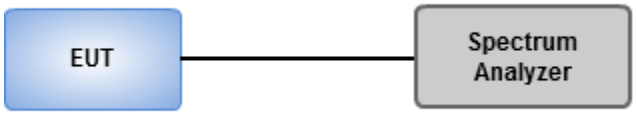
3.5.1 Limit of Transmitter Unwanted Emissions within the 5 GHz RLAN Band



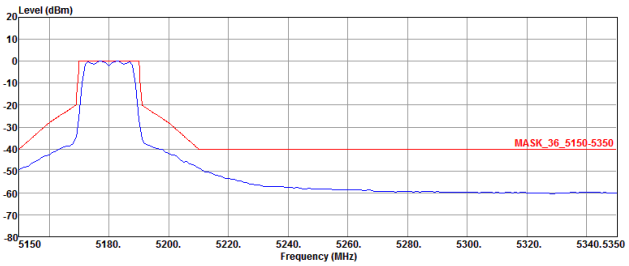
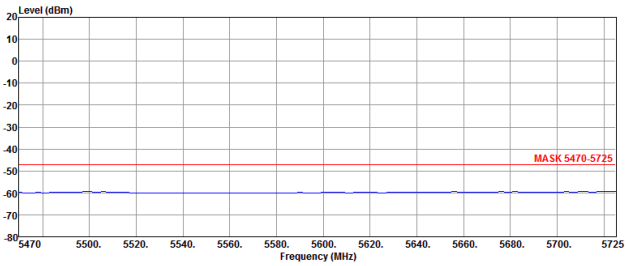
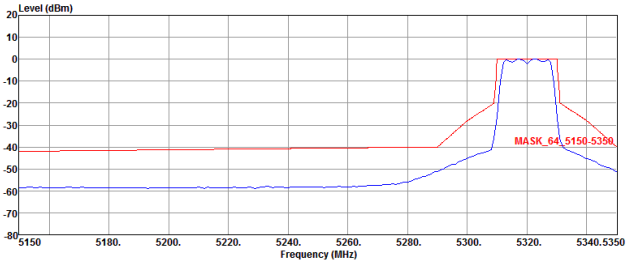
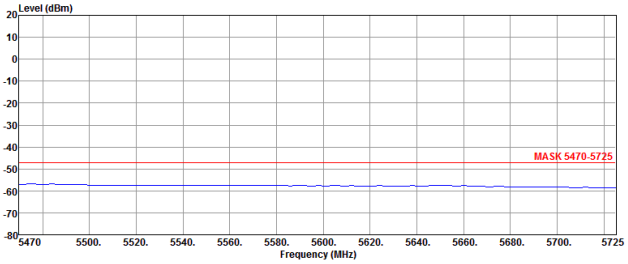
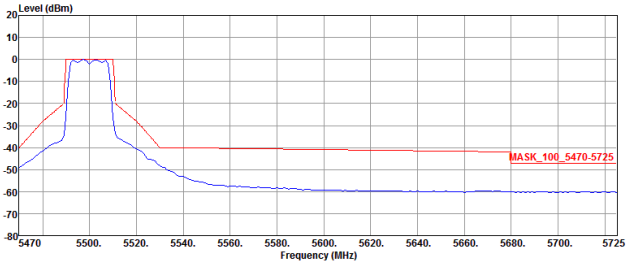
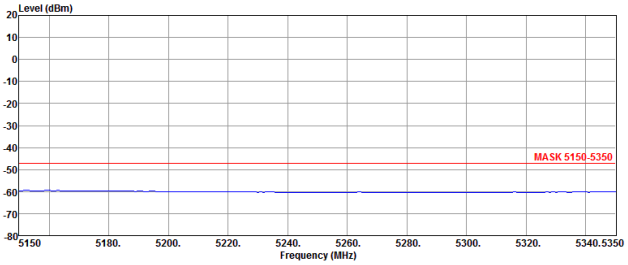
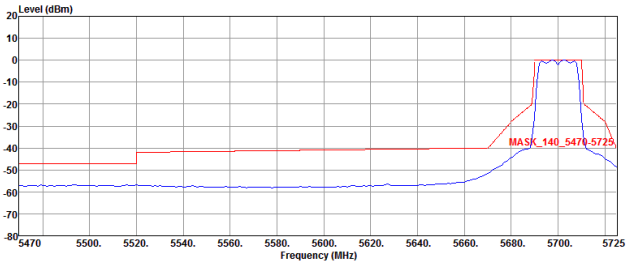
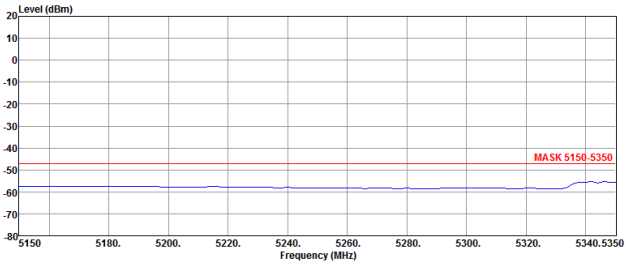
3.5.2 Test Procedures

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

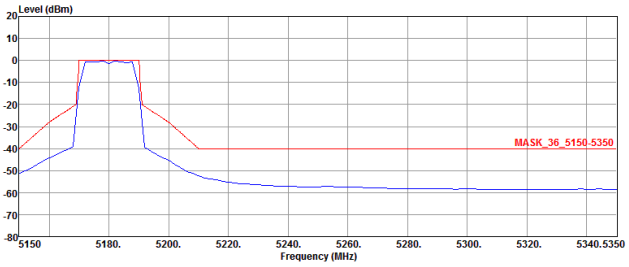
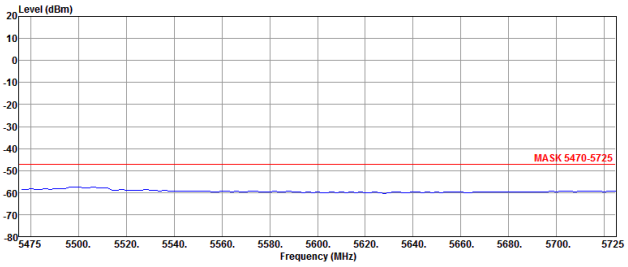
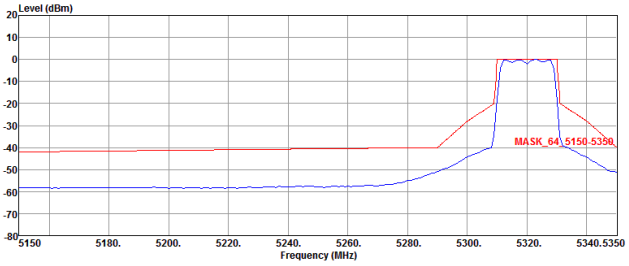
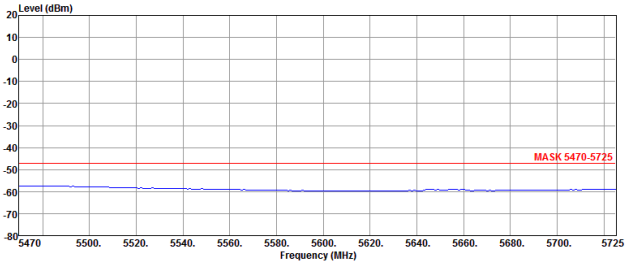
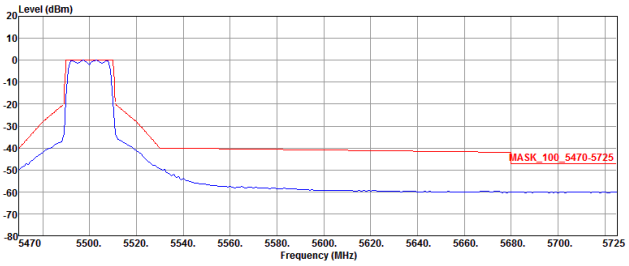
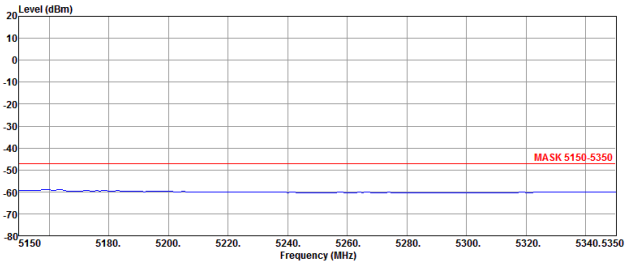
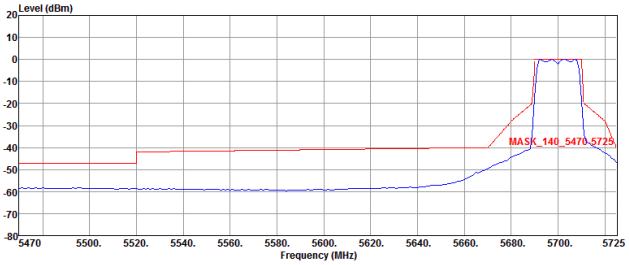
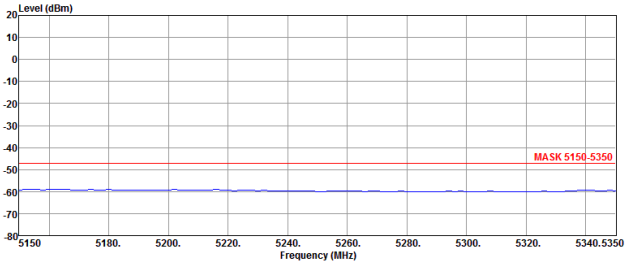
3.5.3 Test Setup



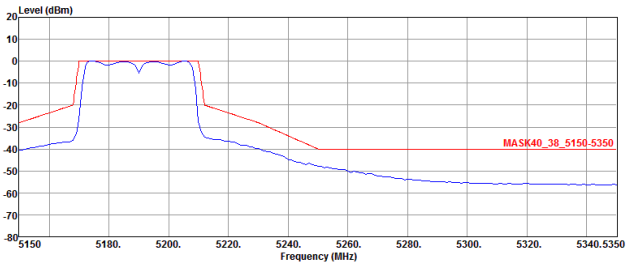
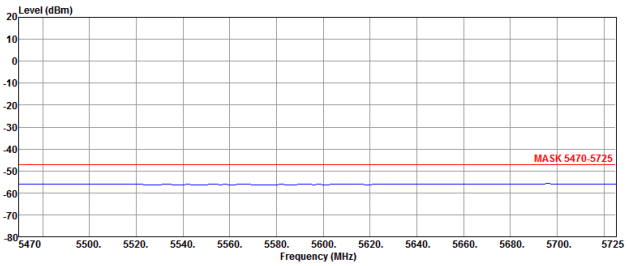
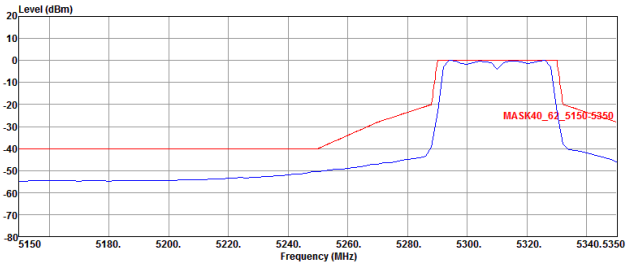
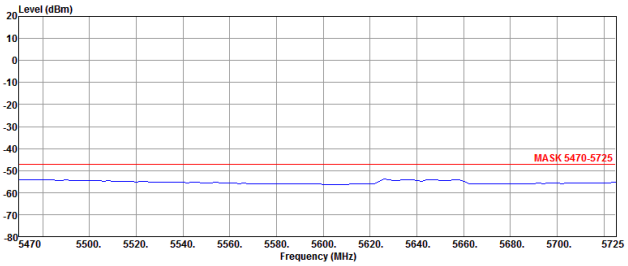
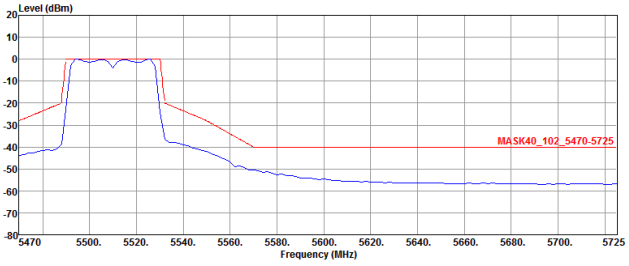
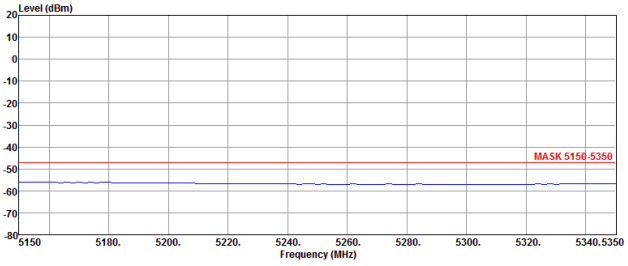
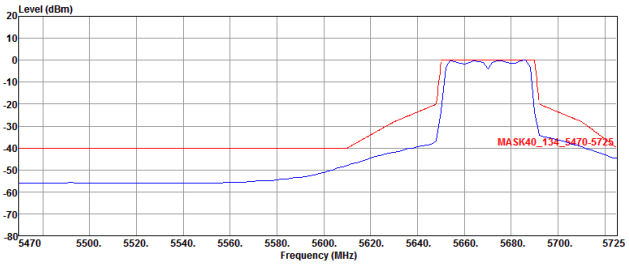
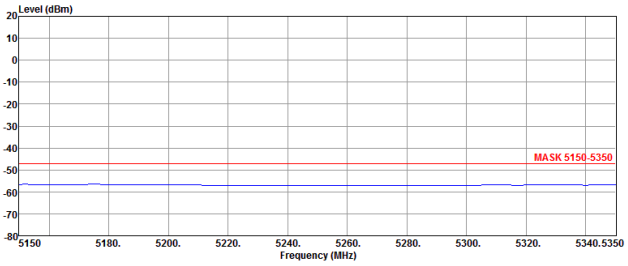
3.5.4 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11a

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

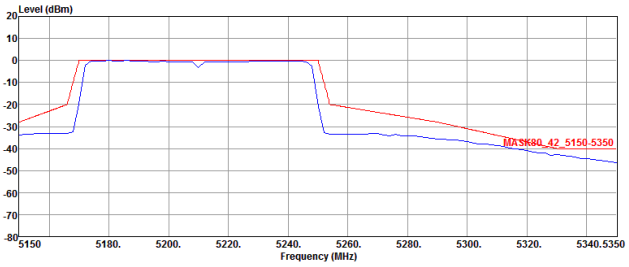
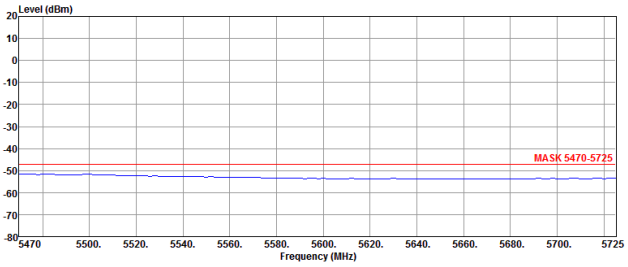
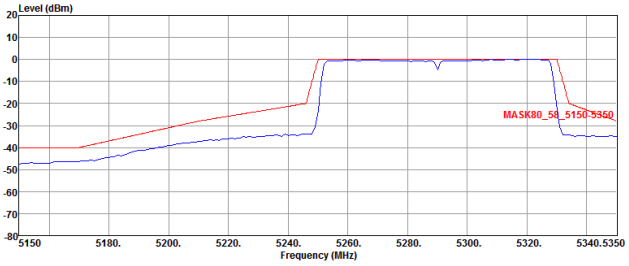
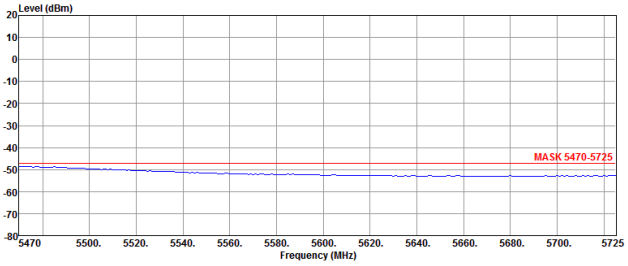
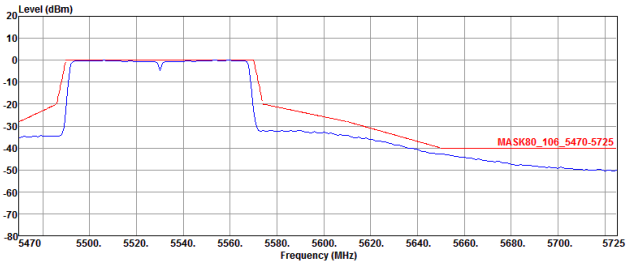
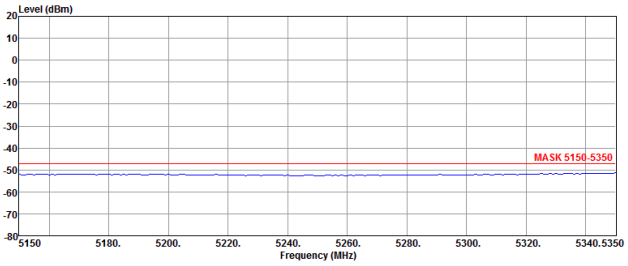
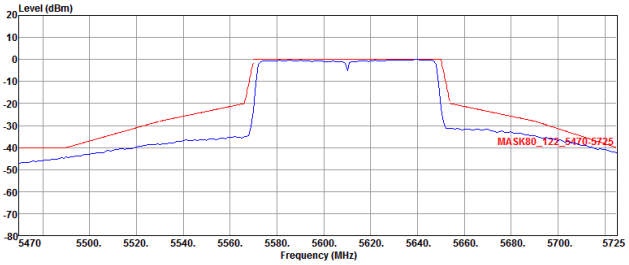
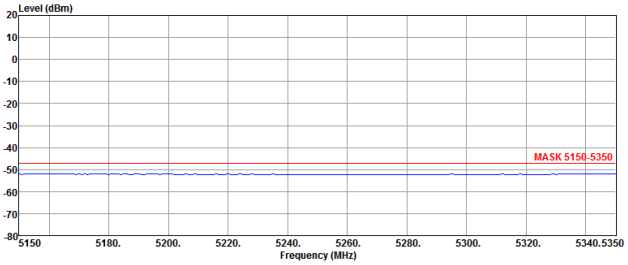
3.5.5 Test Result of Transmitter Unwanted Emissions within the 5 GHz RLAN Band for 802.11ac VHT20

5180MHz	5180MHz
	
5320MHz	**5320MHz**
	
5500MHz	**5500MHz**
	
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**
	
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**
	
5610MHz	**5610MHz**
	

4 Receiver Test Results

4.1 Receiver Spurious Emissions

4.1.1 Limit of Receiver Spurious Emissions

Conducted Emission		
Frequency Range	**Maximum power (dBm)**	**Measurement bandwidth (kHz)**
30 MHz to 1 GHz	-60.01	100
1 GHz to 26 GHz	-50.01	1000

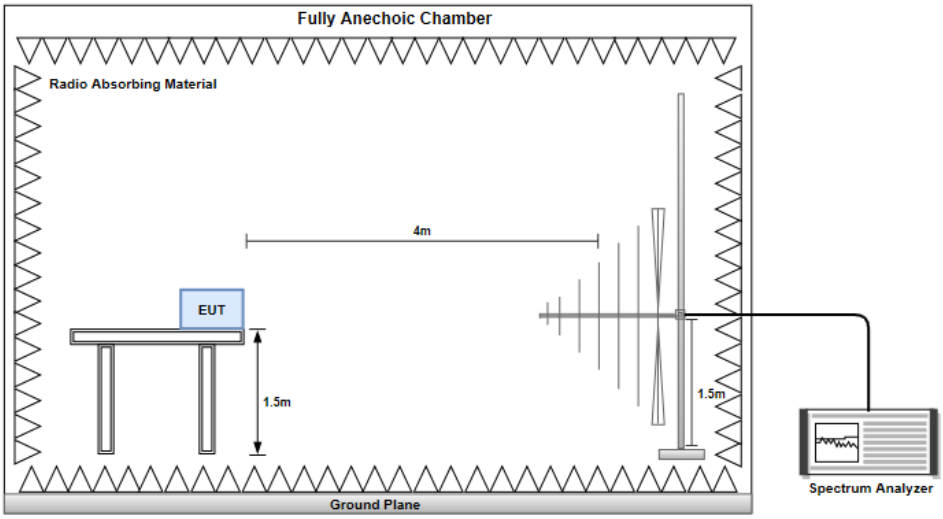
Radiated Emission		
Frequency Range	**Maximum Power**	**Measurement Bandwidth**
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 26 GHz	-47 dBm	1 MHz

4.1.2 Test Procedures

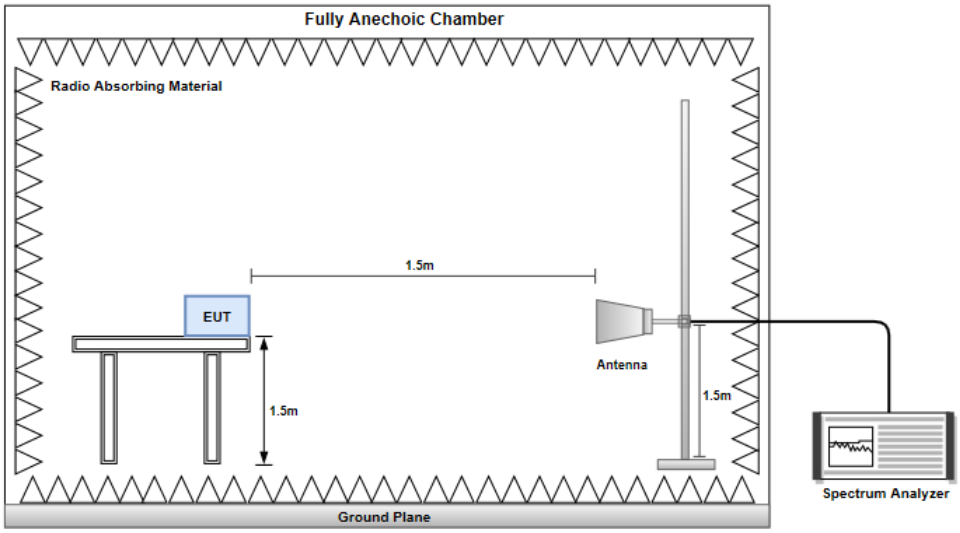
Reference to clause 5.4.7.2 of ETSI EN 301 893 V2.1.1 (2017-05).

4.1.3 Test Setup

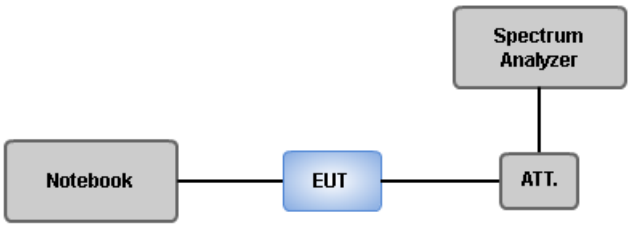
Below 1GHz



Above 1 GHz

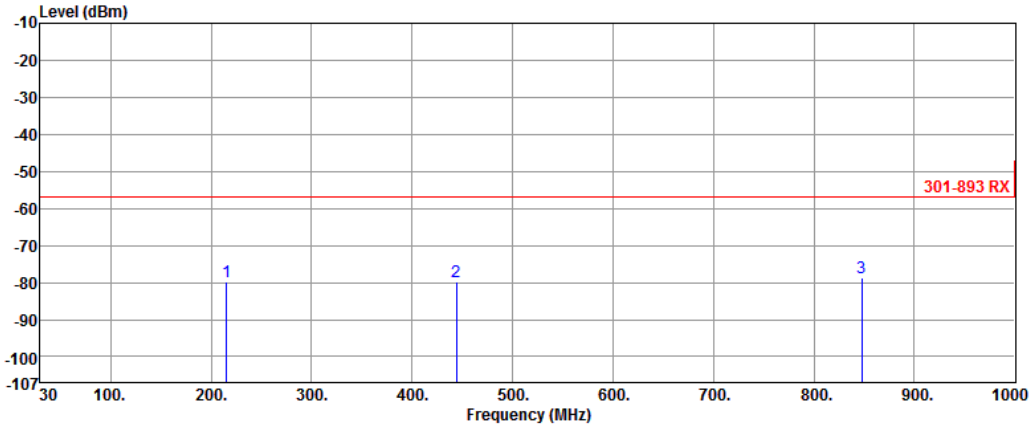


Conducted Emission



4.1.4 Receiver Conducted Unwanted Emissions (Below 1GHz)

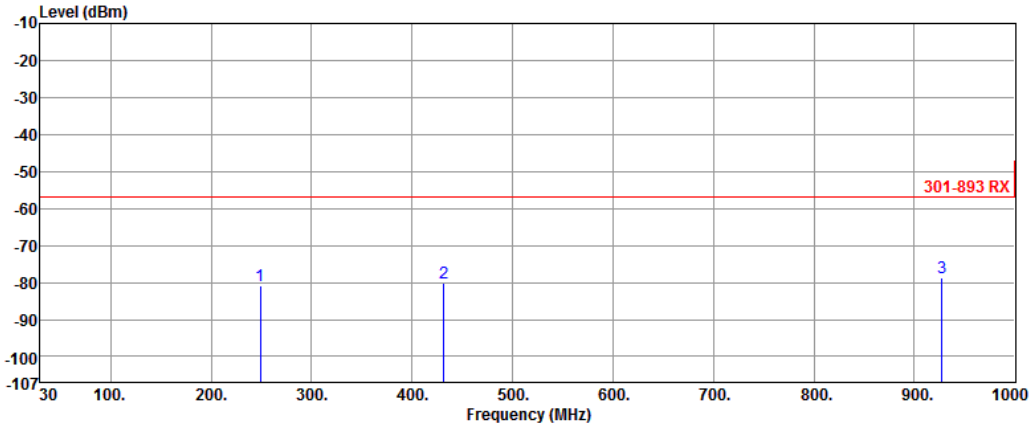
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	215.27	-79.89	-60.01	-19.88	0.00	-79.89
2	444.19	-79.80	-60.01	-19.79	0.00	-79.80
3	847.71	-78.78	-60.01	-18.77	0.00	-78.78

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

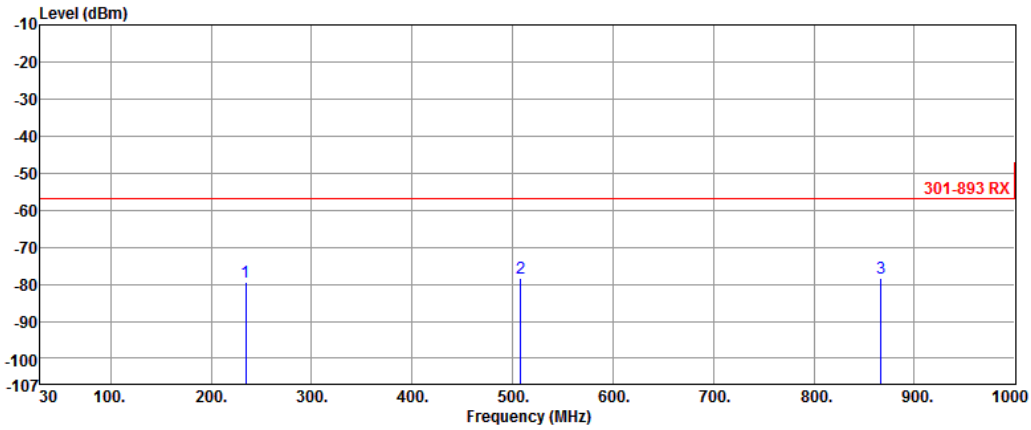
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	249.22	-80.72	-60.01	-20.71	0.00	-80.72
2	431.58	-80.16	-60.01	-20.15	0.00	-80.16
3	927.25	-78.77	-60.01	-18.76	0.00	-78.77

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

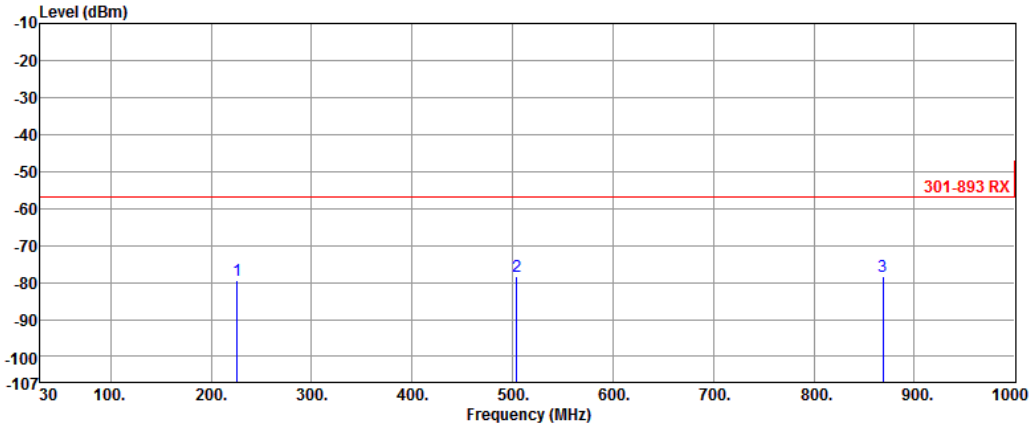
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	234.67	-79.35	-60.01	-19.34	0.00	-79.35
2	508.21	-78.39	-60.01	-18.38	0.00	-78.39
3	867.11	-78.32	-60.01	-18.31	0.00	-78.32

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

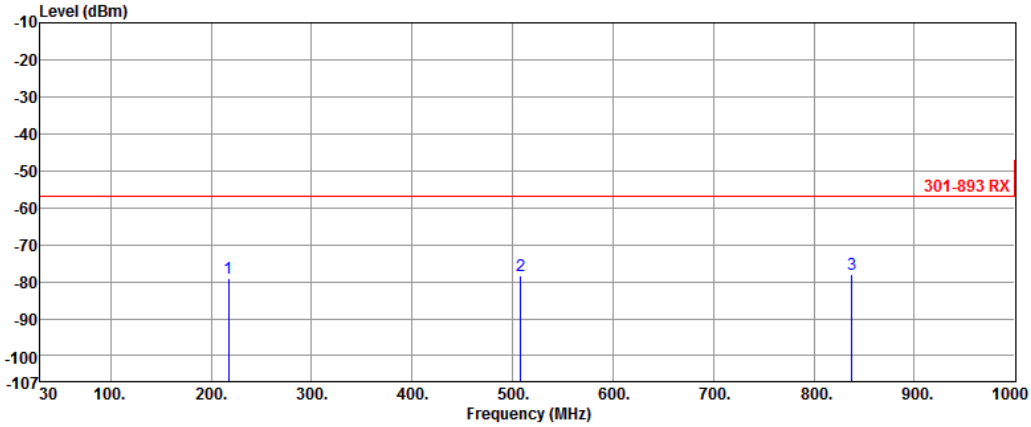
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	225.94	-79.51	-60.01	-19.50	0.00	-79.51
2	504.33	-78.29	-60.01	-18.28	0.00	-78.29
3	869.05	-78.21	-60.01	-18.20	0.00	-78.21

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

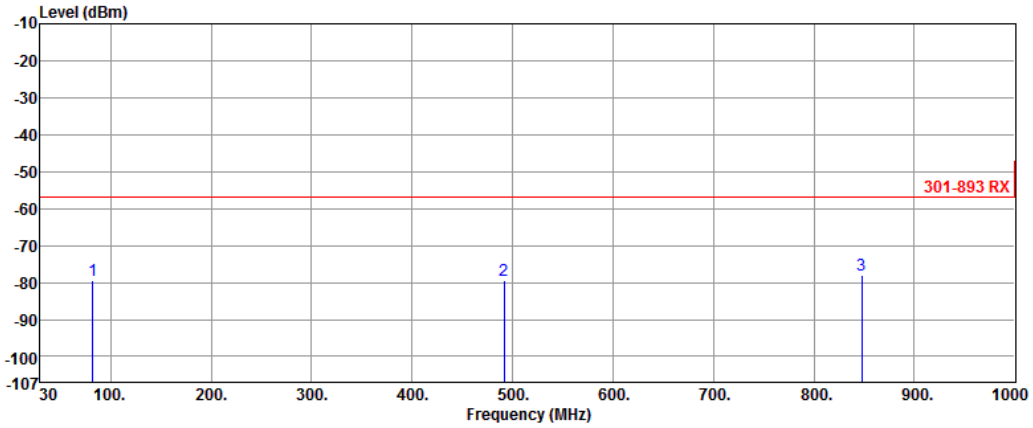
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	217.21	-79.19	-60.01	-19.18	0.00	-79.19
2	508.21	-78.39	-60.01	-18.38	0.00	-78.39
3	838.01	-77.83	-60.01	-17.82	0.00	-77.83

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

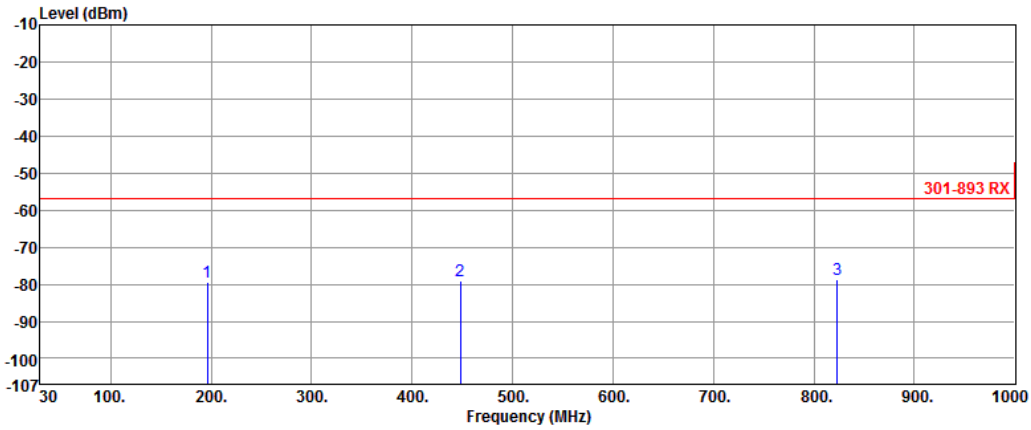
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	82.38	-79.60	-60.01	-19.59	0.00	-79.60
2	491.72	-79.36	-60.01	-19.35	0.00	-79.36
3	847.71	-78.09	-60.01	-18.08	0.00	-78.09

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

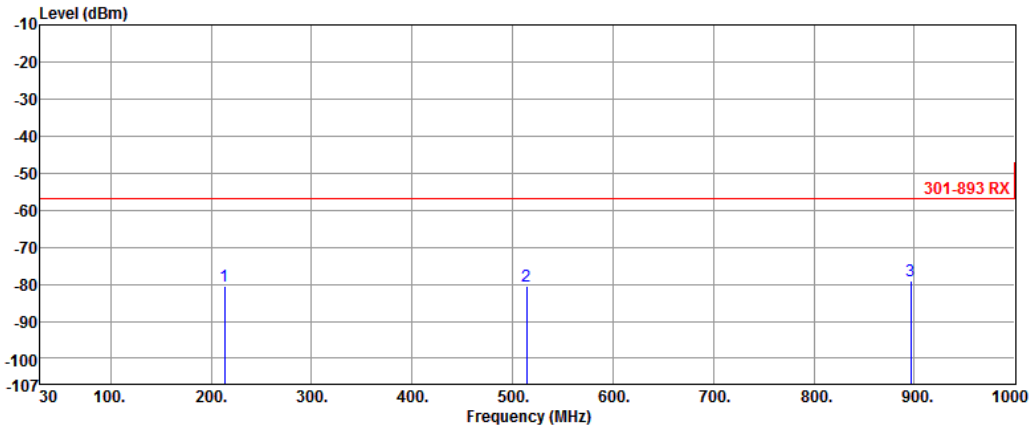
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	195.87	-79.60	-60.01	-19.59	0.00	-79.60
2	448.07	-78.98	-60.01	-18.97	0.00	-78.98
3	823.46	-78.69	-60.01	-18.68	0.00	-78.69

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

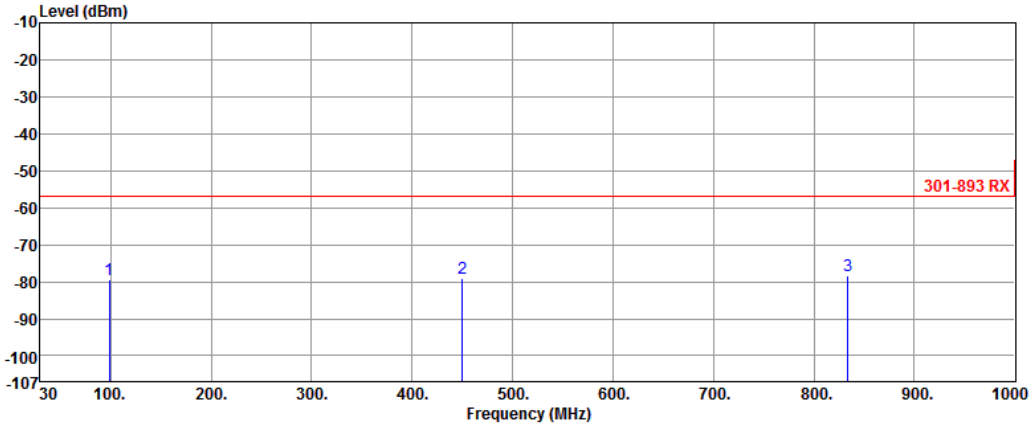
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	213.33	-80.63	-60.01	-20.62	0.00	-80.63
2	514.03	-80.43	-60.01	-20.42	0.00	-80.43
3	896.21	-79.24	-60.01	-19.23	0.00	-79.24

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

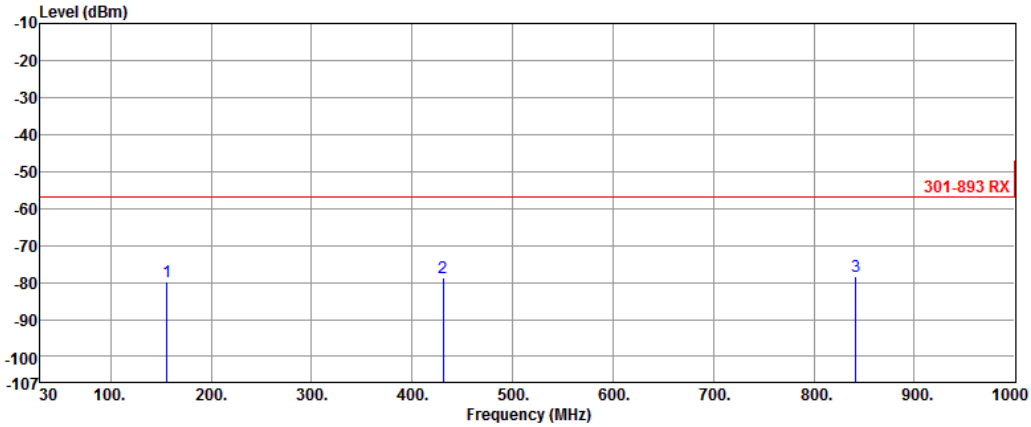
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	98.87	-79.62	-60.01	-19.61	0.00	-79.62
2	450.01	-79.26	-60.01	-19.25	0.00	-79.26
3	834.13	-78.46	-60.01	-18.45	0.00	-78.46

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

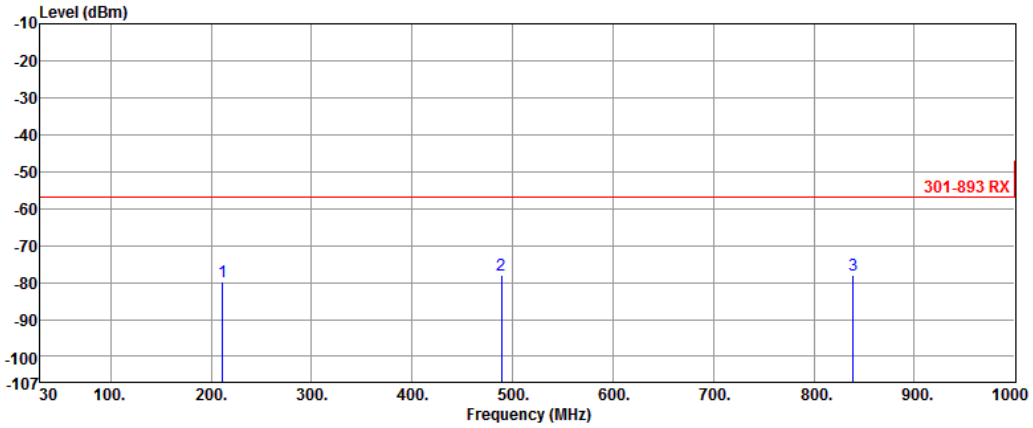
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	156.10	-79.80	-60.01	-19.79	0.00	-79.80
2	430.61	-78.87	-60.01	-18.86	0.00	-78.87
3	841.89	-78.26	-60.01	-18.25	0.00	-78.26

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

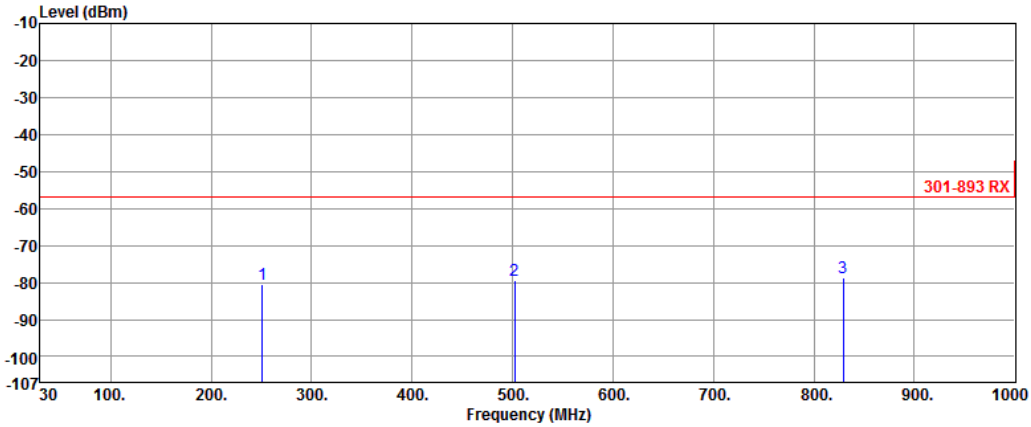
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	211.39	-79.85	-60.01	-19.84	0.00	-79.85
2	488.81	-78.17	-60.01	-18.16	0.00	-78.17
3	838.98	-78.16	-60.01	-18.15	0.00	-78.16

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

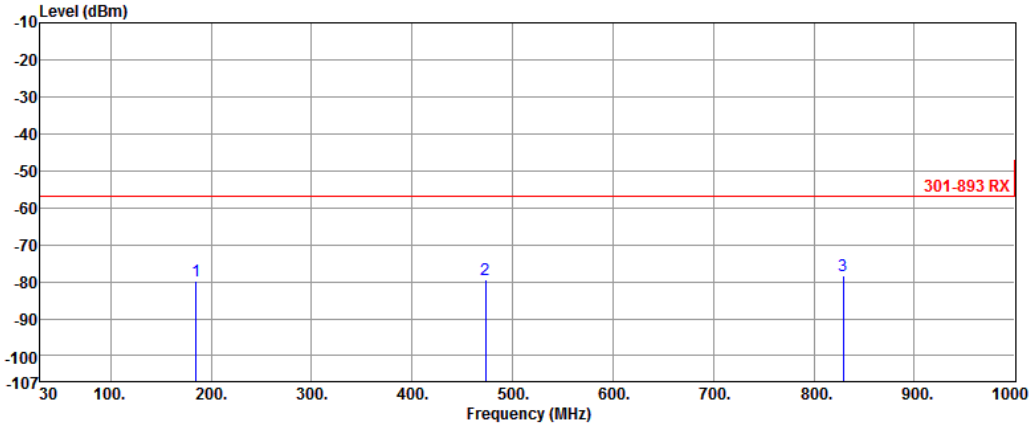
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	251.16	-80.39	-60.01	-20.38	0.00	-80.39
2	502.39	-79.38	-60.01	-19.37	0.00	-79.38
3	829.28	-78.58	-60.01	-18.57	0.00	-78.58

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

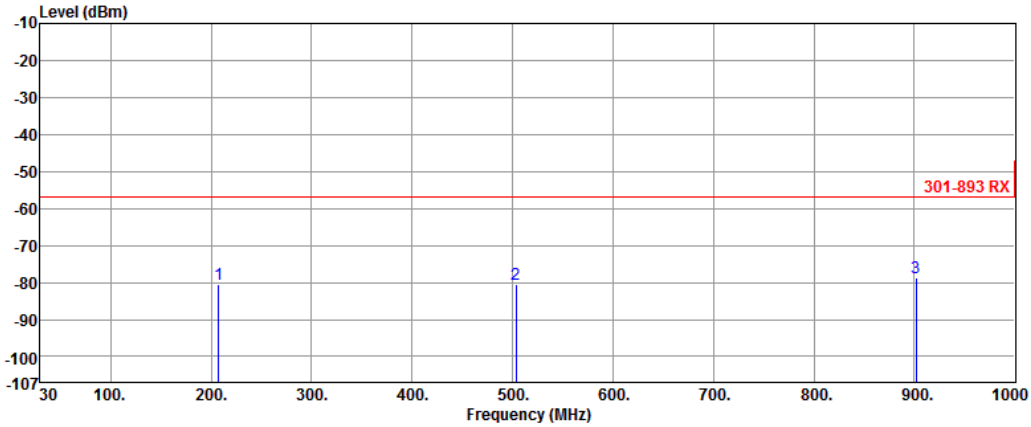
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	185.20	-79.80	-60.01	-19.79	0.00	-79.80
2	473.29	-79.33	-60.01	-19.32	0.00	-79.33
3	829.28	-78.33	-60.01	-18.32	0.00	-78.33

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

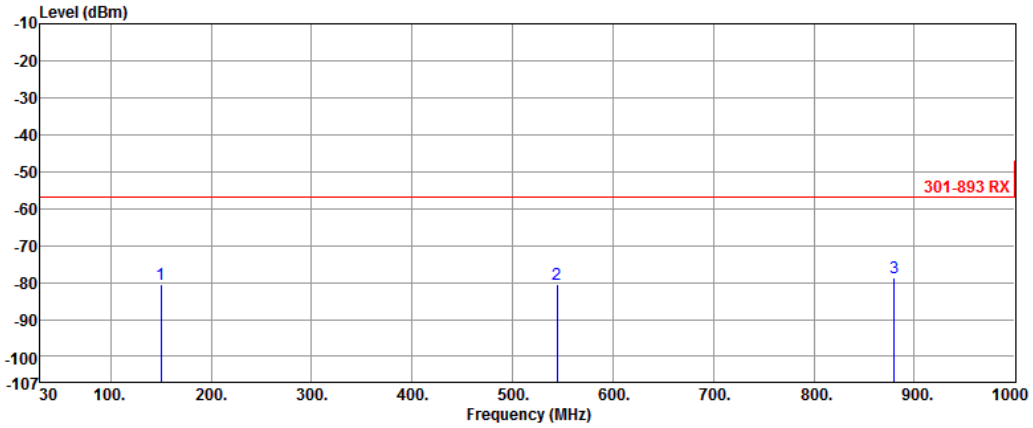
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	207.51	-80.51	-60.01	-20.50	0.00	-80.51
2	503.36	-80.68	-60.01	-20.67	0.00	-80.68
3	902.03	-78.66	-60.01	-18.65	0.00	-78.66

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

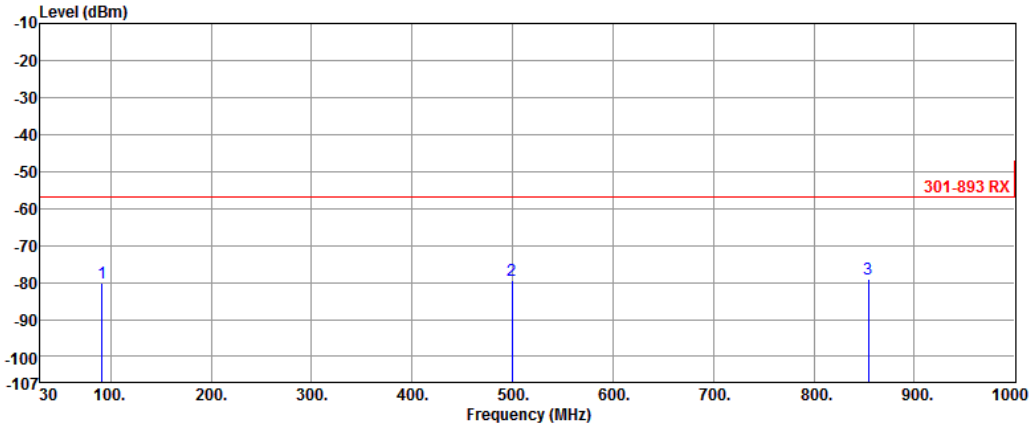
Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	150.28	-80.54	-60.01	-20.53	0.00	-80.54
2	544.10	-80.40	-60.01	-20.39	0.00	-80.40
3	879.72	-78.57	-60.01	-18.56	0.00	-78.57

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

Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	1		

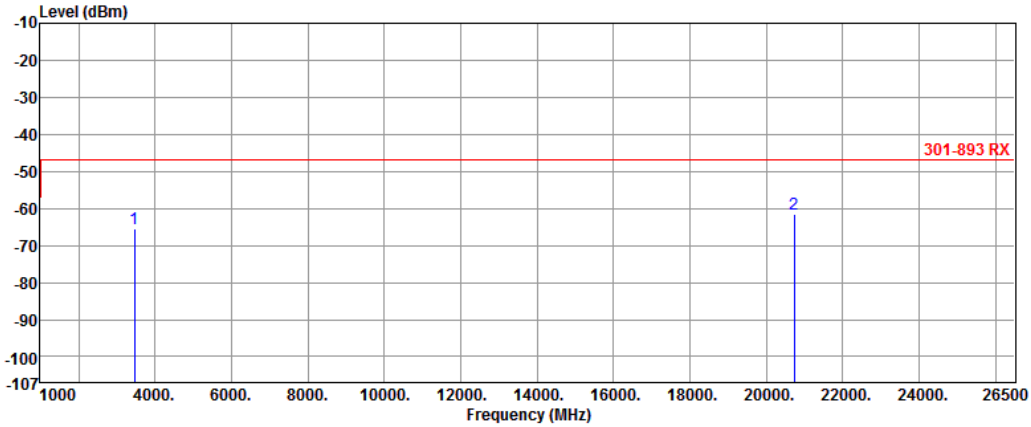


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	91.11	-80.07	-60.01	-20.06	0.00	-80.07
2	499.48	-79.53	-60.01	-19.52	0.00	-79.53
3	854.50	-78.99	-60.01	-18.98	0.00	-78.99

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

4.1.5 Receiver Conducted Unwanted Emissions (Above 1GHz)

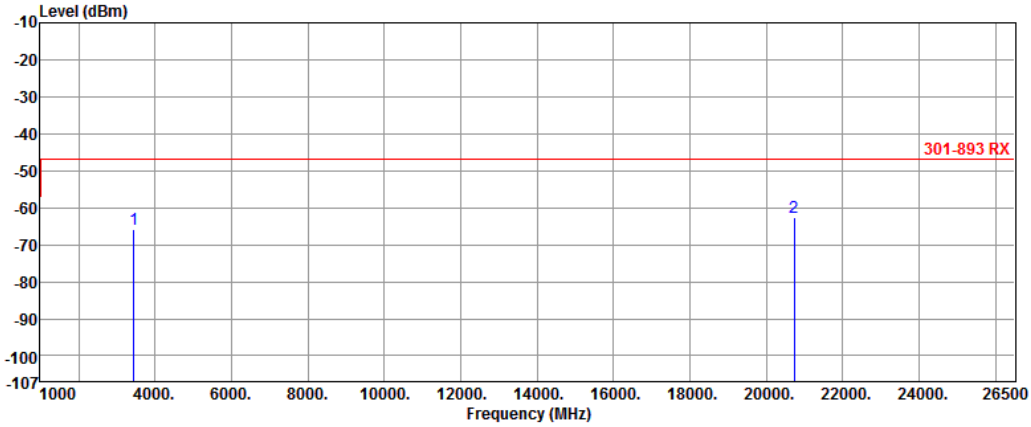
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.72	-65.35	-50.01	-15.34	0.00	-65.35
2	20720.48	-61.38	-50.01	-11.37	0.00	-61.38

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

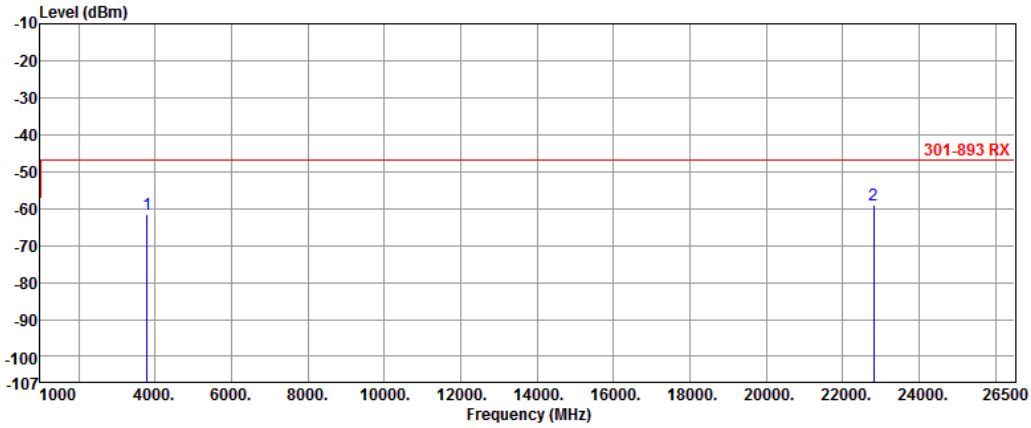
Modulation	11a	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.26	-65.93	-50.01	-15.92	0.00	-65.93
2	20719.84	-62.51	-50.01	-12.50	0.00	-62.51

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

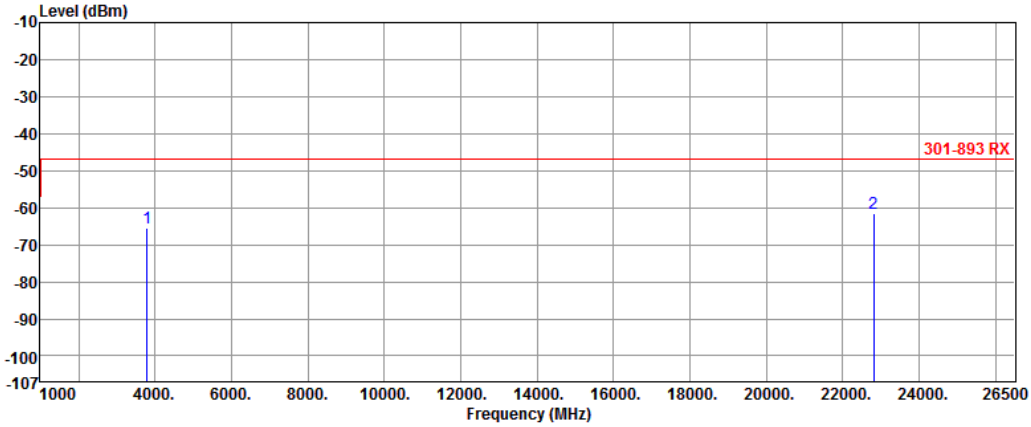
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.45	-61.69	-50.01	-11.68	0.00	-61.69
2	22799.38	-59.12	-50.01	-9.11	0.00	-59.12

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

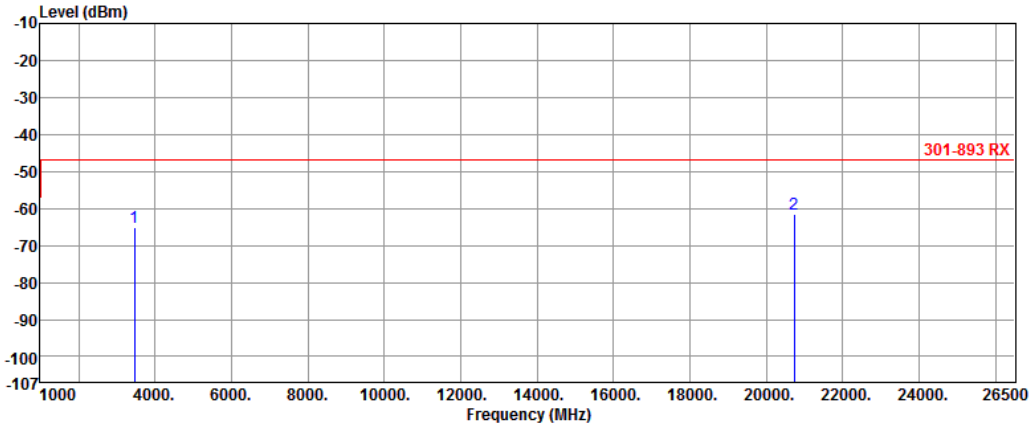
Modulation	11a	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.65	-65.35	-50.01	-15.34	0.00	-65.35
2	22799.82	-61.59	-50.01	-11.58	0.00	-61.59

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

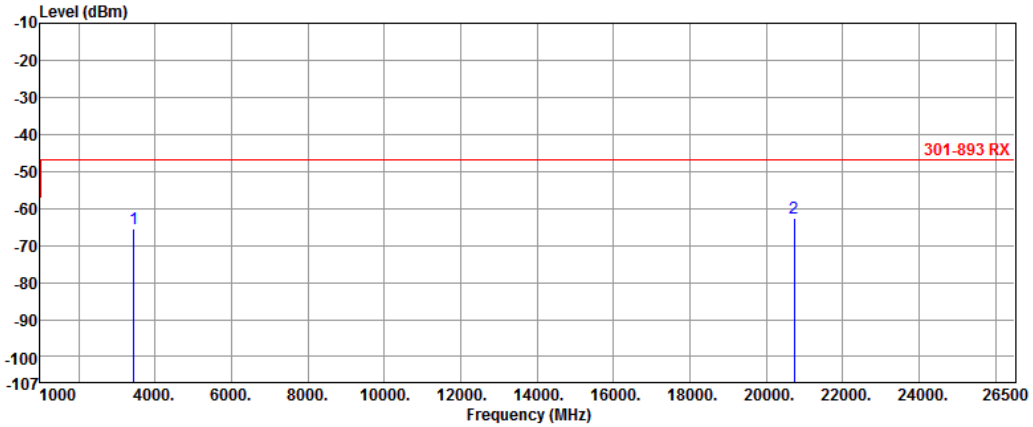
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.36	-65.13	-50.01	-15.12	0.00	-65.13
2	20720.04	-61.45	-50.01	-11.44	0.00	-61.45

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

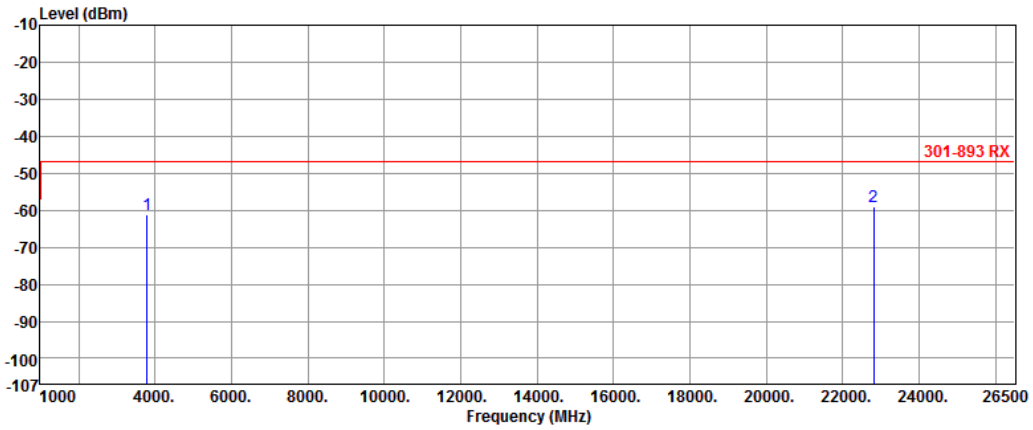
Modulation	VHT20	Test Freq. (MHz)	5180
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3453.13	-65.61	-50.01	-15.60	0.00	-65.61
2	20719.78	-62.79	-50.01	-12.78	0.00	-62.79

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

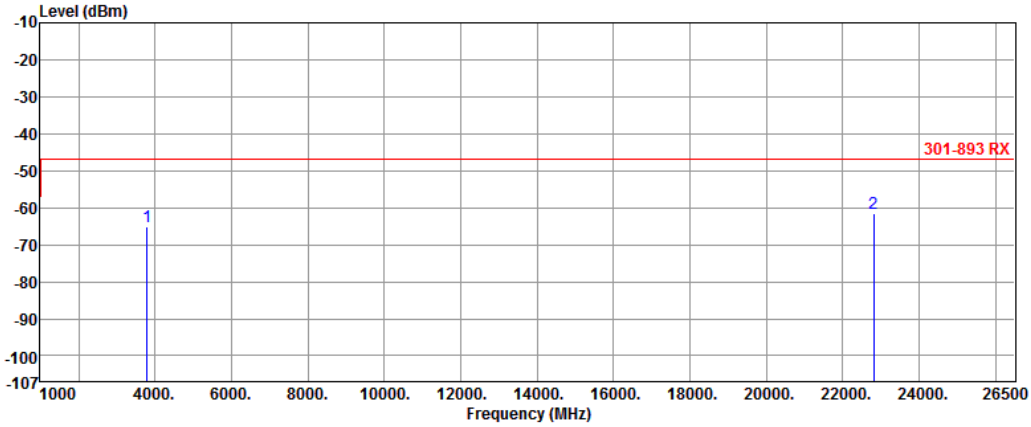
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.84	-61.21	-50.01	-11.20	0.00	-61.21
2	22799.98	-59.15	-50.01	-9.14	0.00	-59.15

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

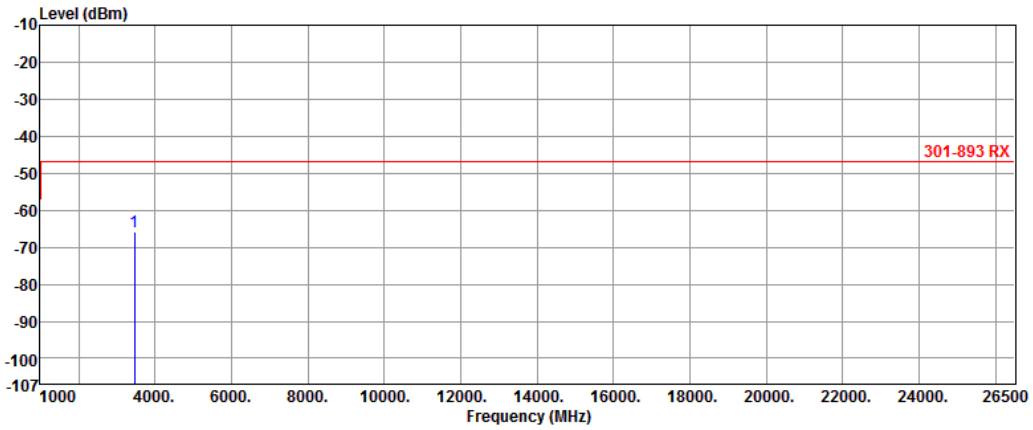
Modulation	VHT20	Test Freq. (MHz)	5700
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3799.84	-65.19	-50.01	-15.18	0.00	-65.19
2	22799.96	-61.44	-50.01	-11.43	0.00	-61.44

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

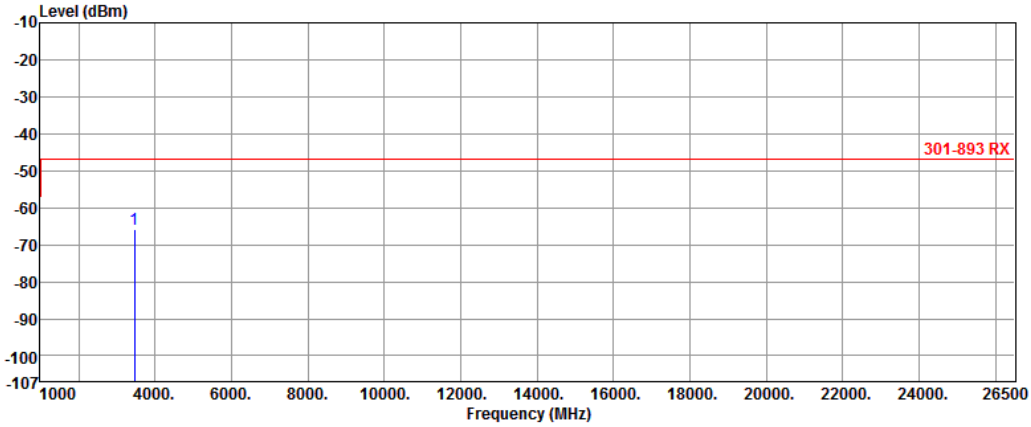
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.95	-66.01	-50.01	-16.00	0.00	-66.01

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

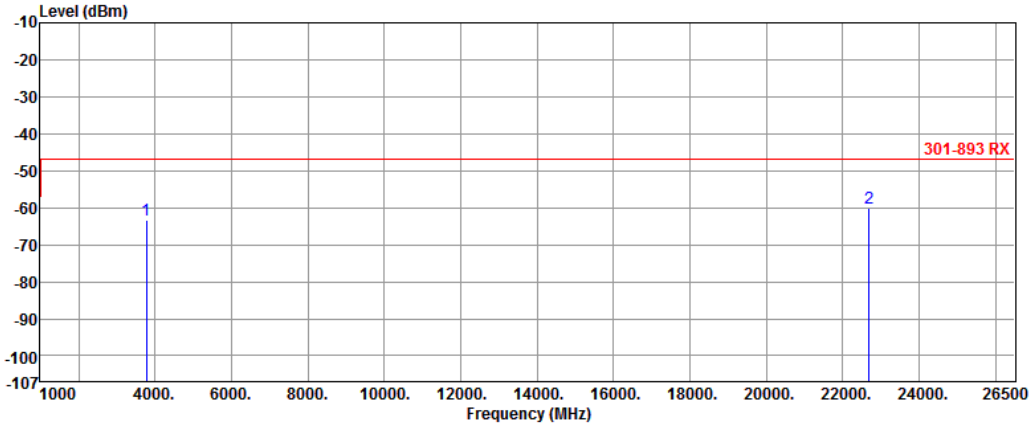
Modulation	VHT40	Test Freq. (MHz)	5190
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.95	-66.01	-50.01	-16.00	0.00	-66.01

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

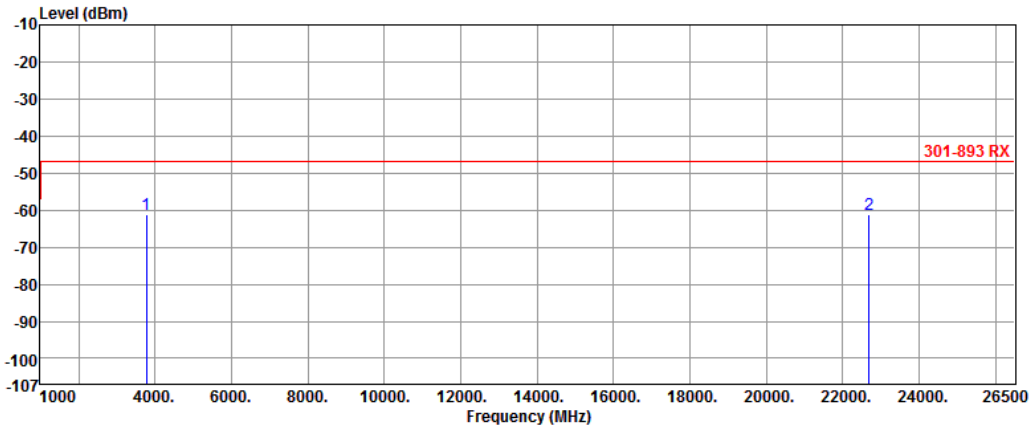
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3779.17	-63.25	-50.01	-13.24	0.00	-63.25
2	22679.62	-59.98	-50.01	-9.97	0.00	-59.98

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

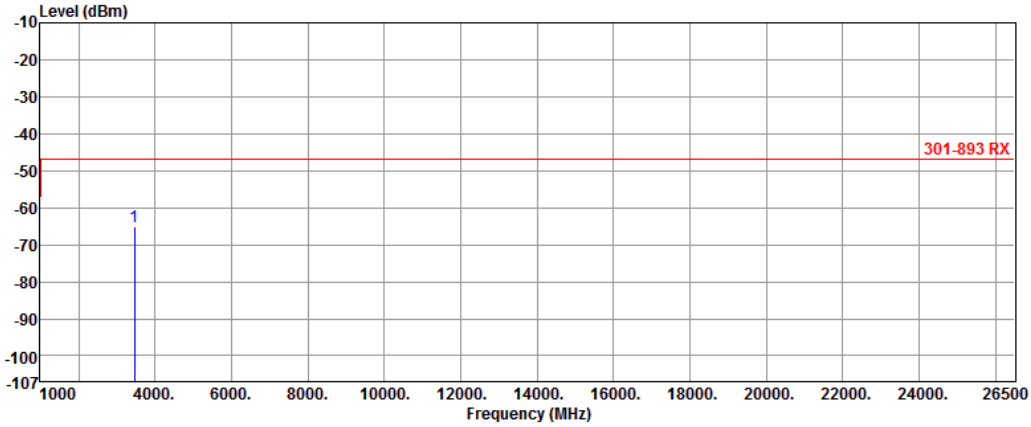
Modulation	VHT40	Test Freq. (MHz)	5670
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3780.08	-61.27	-50.01	-11.26	0.00	-61.27
2	22679.79	-61.04	-50.01	-11.03	0.00	-61.04

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

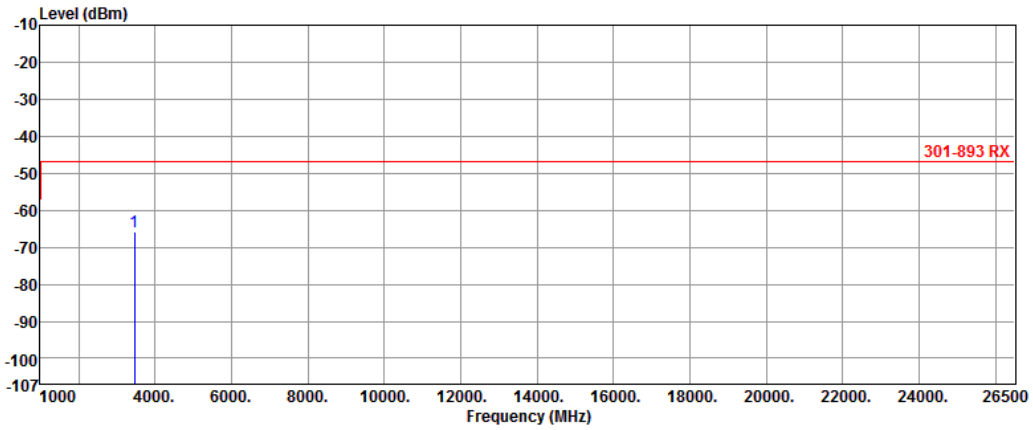
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3460.11	-65.18	-50.01	-15.17	0.00	-65.18

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

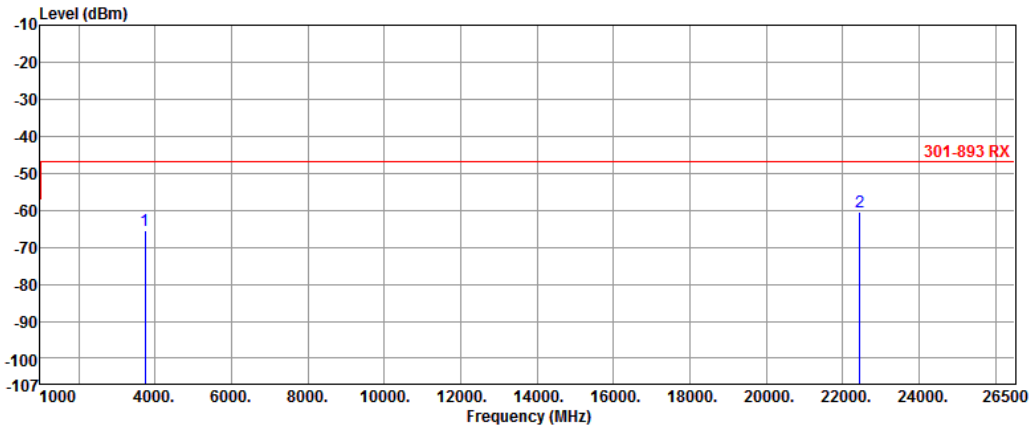
Modulation	VHT80	Test Freq. (MHz)	5210
Antenna Port	1		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3459.92	-65.68	-50.01	-15.67	0.00	-65.68

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

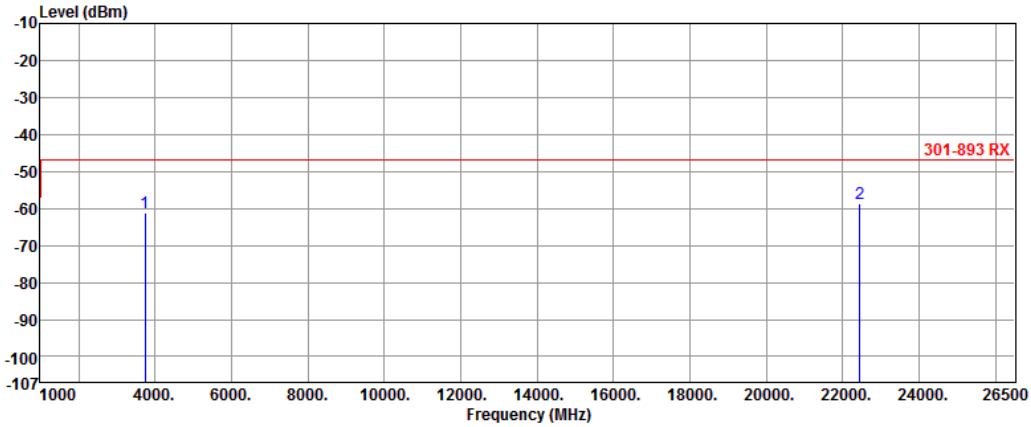
Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	0		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3739.97	-65.51	-50.01	-15.50	0.00	-65.51
2	22440.96	-60.43	-50.01	-10.42	0.00	-60.43

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

Modulation	VHT80	Test Freq. (MHz)	5610
Antenna Port	1		

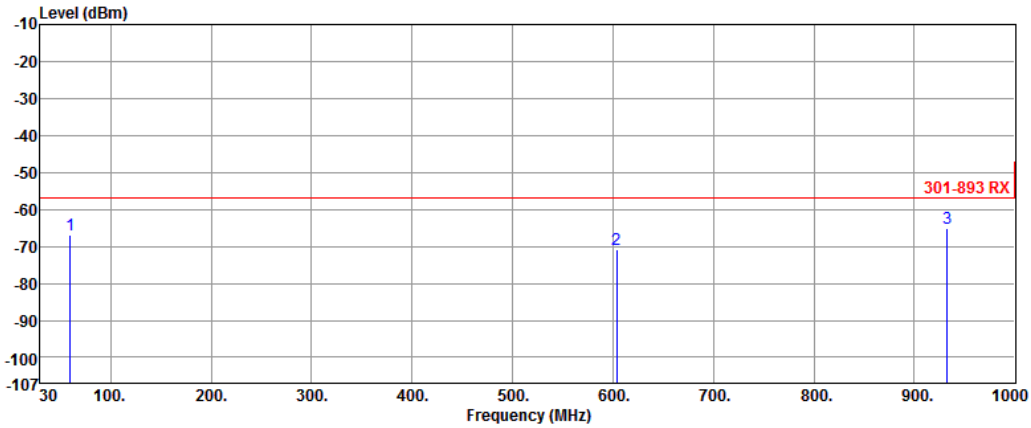


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3739.97	-61.17	-50.01	-11.16	0.00	-61.17
2	22439.63	-58.83	-50.01	-8.82	0.00	-58.83

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

4.1.6 Receiver Radiated Unwanted Emissions (Below 1GHz)

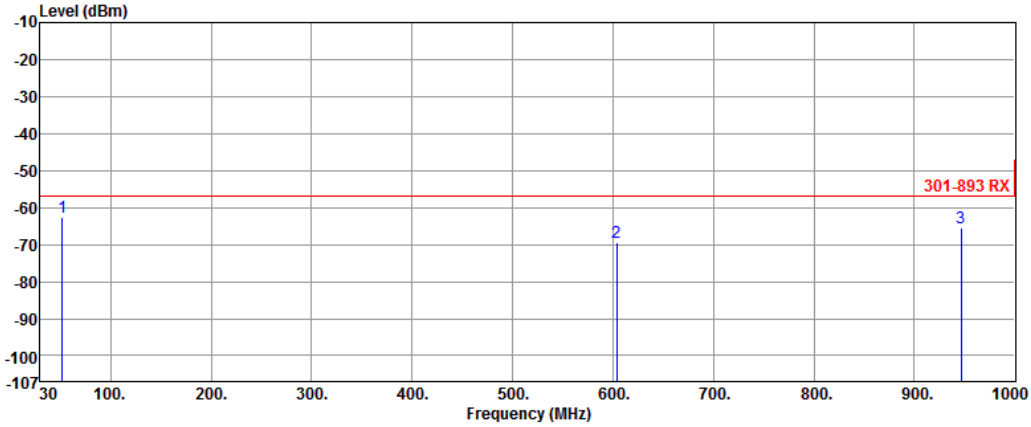
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.61	-66.82	-57.00	-9.82	-1.64	-65.18
2	603.41	-70.72	-57.00	-13.72	6.92	-77.64
3	932.57	-65.26	-57.00	-8.26	11.79	-77.05

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

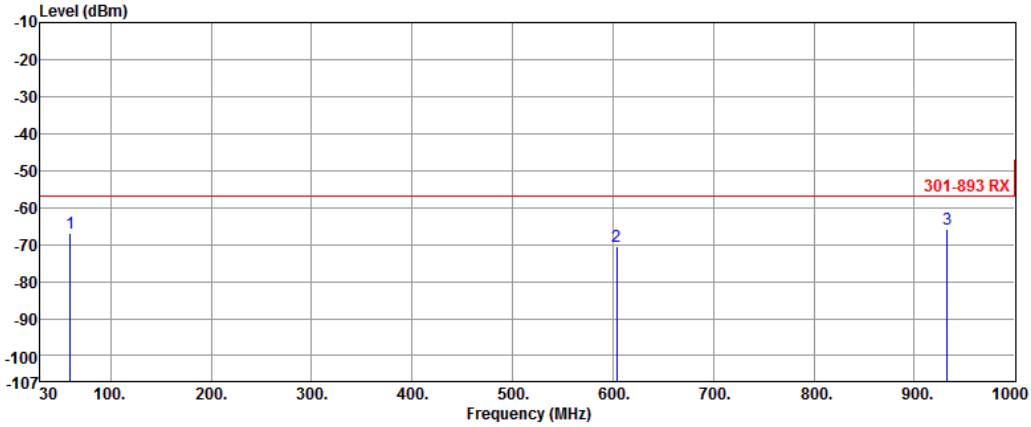
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.75	-62.69	-57.00	-5.69	-0.37	-62.32
2	603.75	-69.52	-57.00	-12.52	7.43	-76.95
3	946.80	-65.51	-57.00	-8.51	12.30	-77.81

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

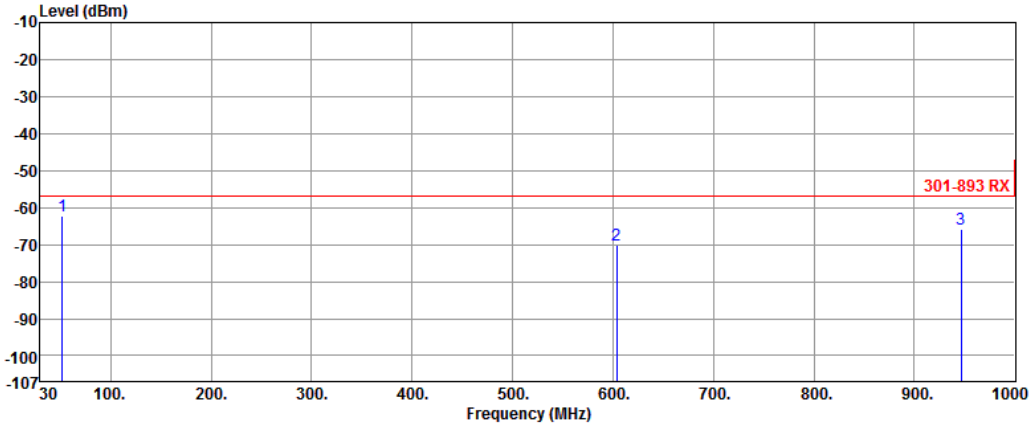
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.49	-66.81	-57.00	-9.81	-1.61	-65.20
2	603.36	-70.59	-57.00	-13.59	6.91	-77.50
3	932.75	-65.87	-57.00	-8.87	11.79	-77.66

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

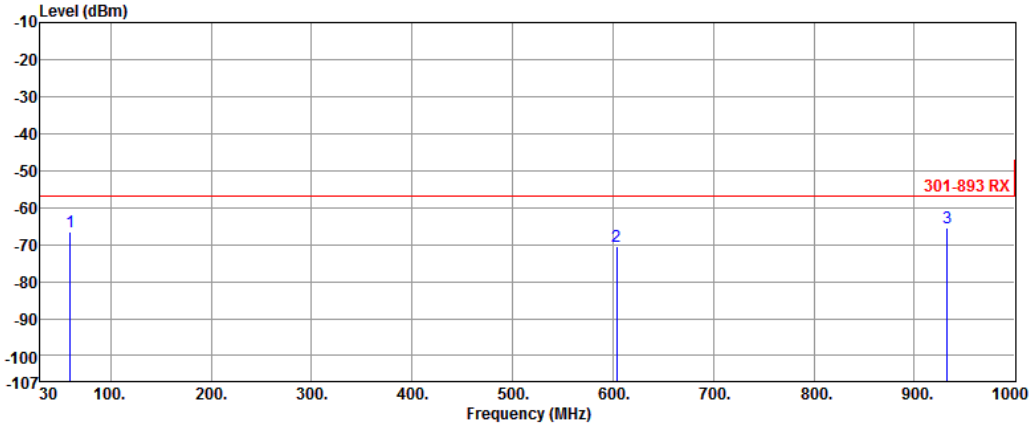
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.68	-62.17	-57.00	-5.17	-0.32	-61.85
2	603.73	-69.99	-57.00	-12.99	7.43	-77.42
3	946.47	-65.83	-57.00	-8.83	12.30	-78.13

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

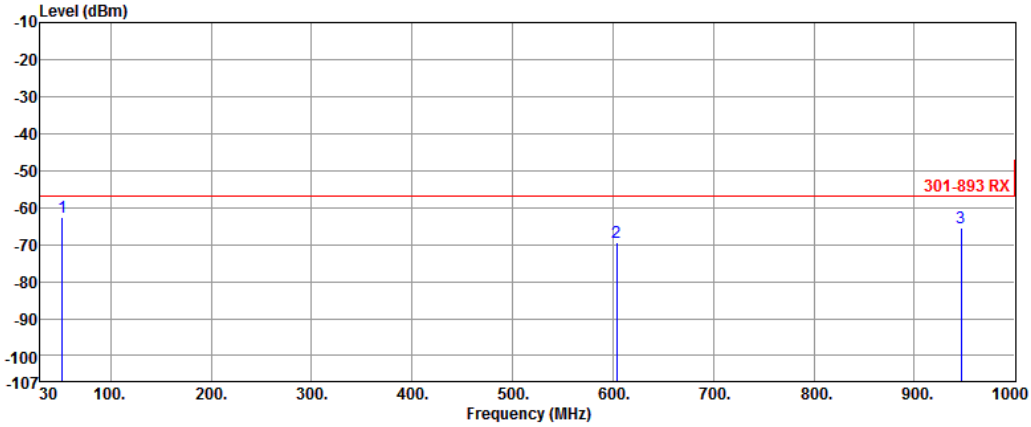
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.76	-66.53	-57.00	-9.53	-1.68	-64.85
2	603.87	-70.61	-57.00	-13.61	6.93	-77.54
3	932.50	-65.35	-57.00	-8.35	11.80	-77.15

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

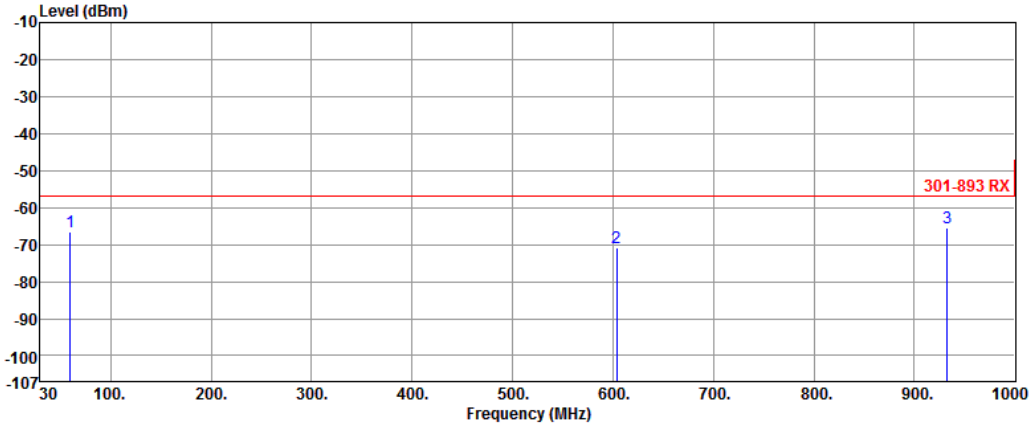
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.75	-62.51	-57.00	-5.51	-0.37	-62.14
2	603.48	-69.51	-57.00	-12.51	7.41	-76.92
3	946.84	-65.53	-57.00	-8.53	12.30	-77.83

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

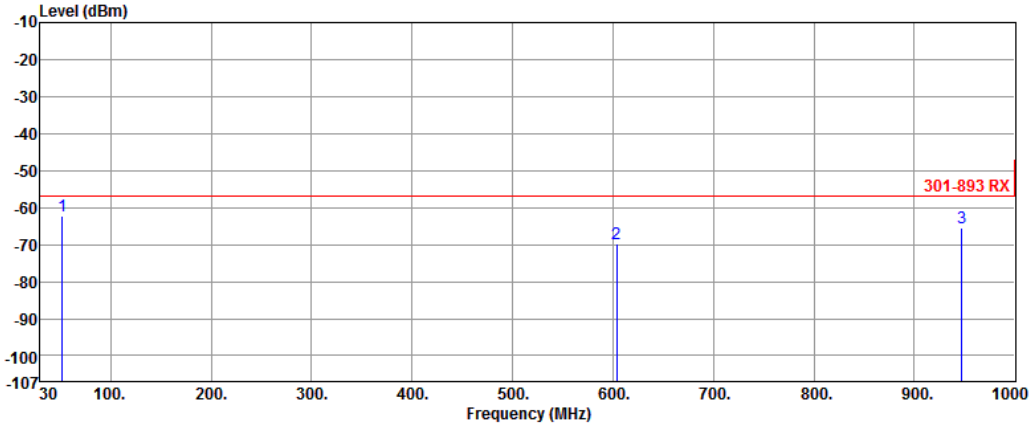
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.97	-66.41	-57.00	-9.41	-1.74	-64.67
2	603.61	-70.94	-57.00	-13.94	6.92	-77.86
3	932.85	-65.42	-57.00	-8.42	11.78	-77.20

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

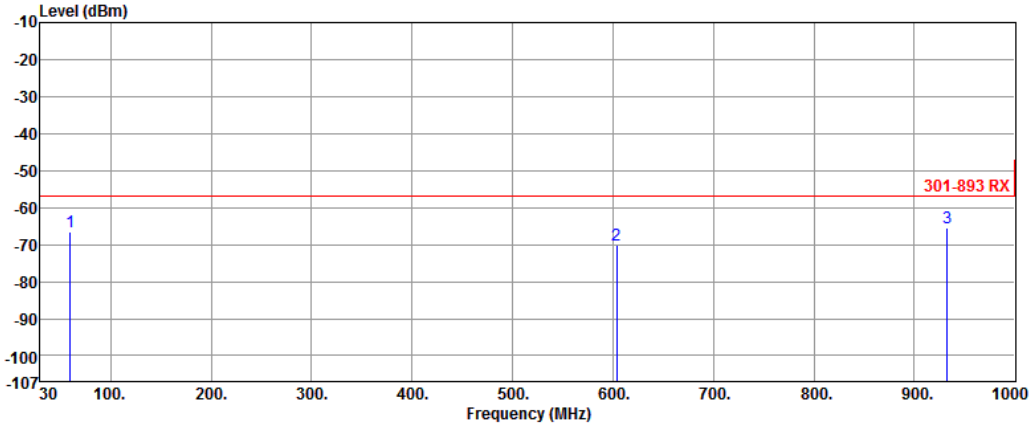
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.45	-62.39	-57.00	-5.39	-0.14	-62.25
2	603.58	-69.81	-57.00	-12.81	7.42	-77.23
3	946.96	-65.41	-57.00	-8.41	12.29	-77.70

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

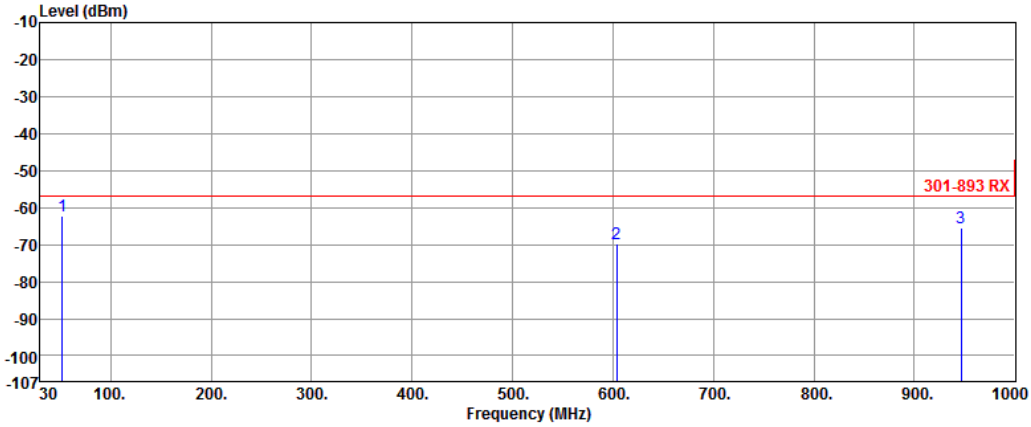
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.48	-66.52	-57.00	-9.52	-1.60	-64.92
2	603.94	-70.28	-57.00	-13.28	6.93	-77.21
3	932.42	-65.61	-57.00	-8.61	11.80	-77.41

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

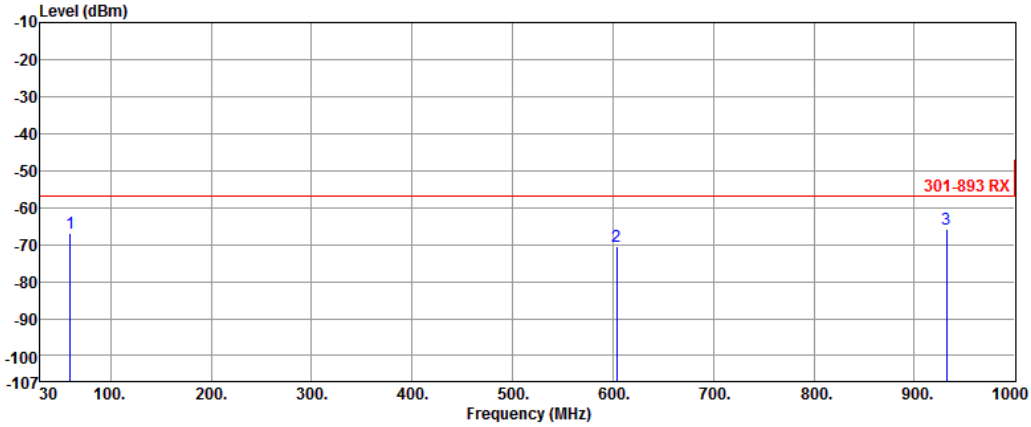
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.48	-62.35	-57.00	-5.35	-0.17	-62.18
2	603.48	-69.94	-57.00	-12.94	7.41	-77.35
3	946.43	-65.51	-57.00	-8.51	12.30	-77.81

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

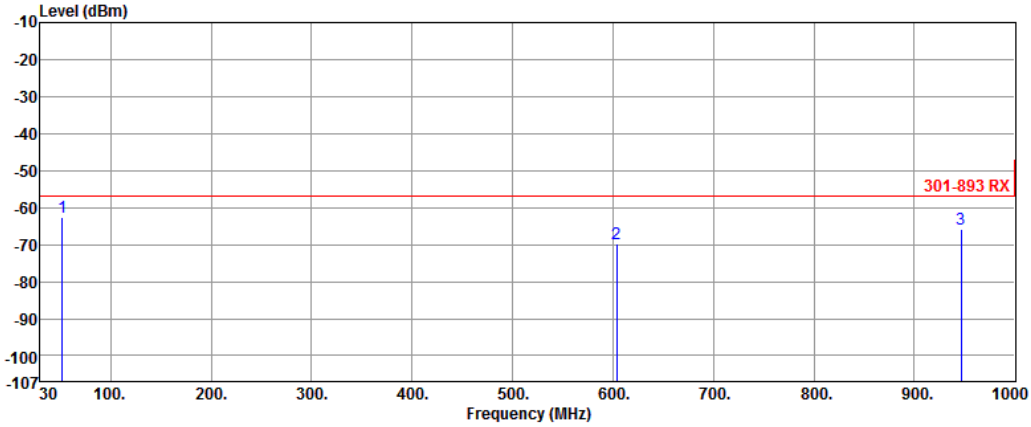
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.82	-66.94	-57.00	-9.94	-1.70	-65.24
2	603.52	-70.35	-57.00	-13.35	6.92	-77.27
3	932.29	-65.78	-57.00	-8.78	11.80	-77.58

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

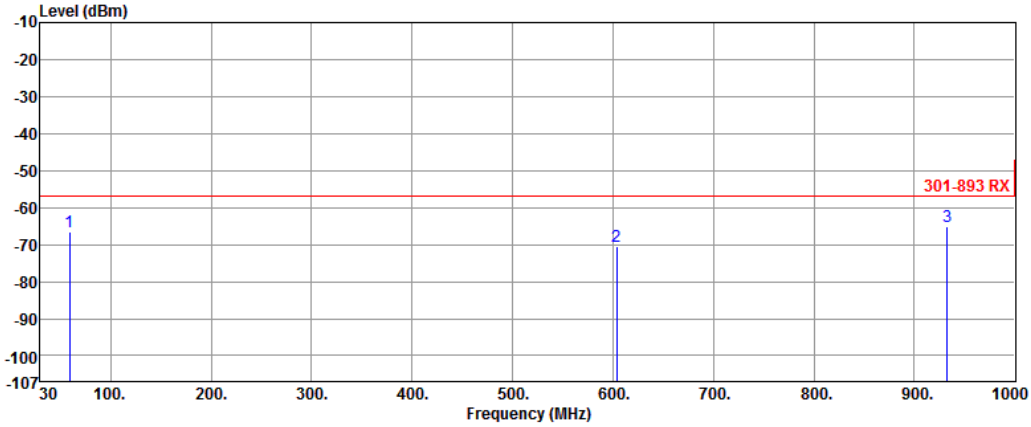
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.79	-62.61	-57.00	-5.61	-0.40	-62.21
2	603.75	-69.61	-57.00	-12.61	7.43	-77.04
3	946.25	-65.91	-57.00	-8.91	12.30	-78.21

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

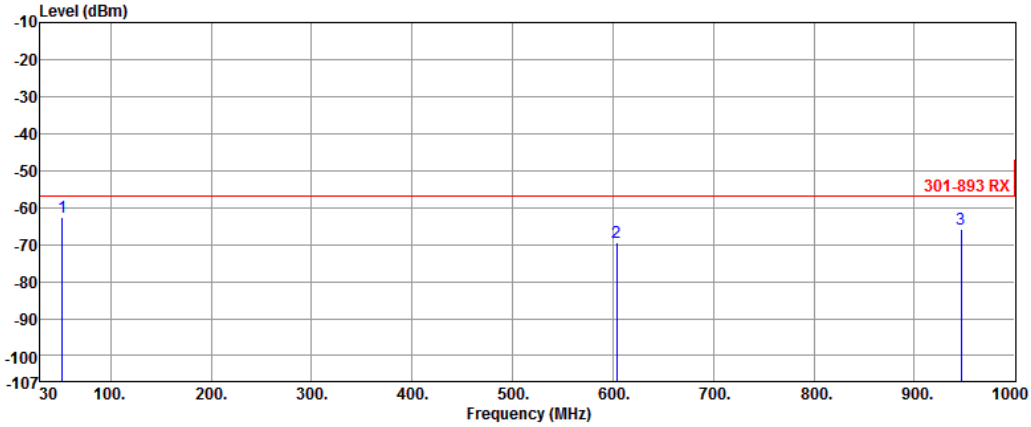
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.17	-66.54	-57.00	-9.54	-1.52	-65.02
2	603.90	-70.35	-57.00	-13.35	6.93	-77.28
3	932.48	-65.26	-57.00	-8.26	11.80	-77.06

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

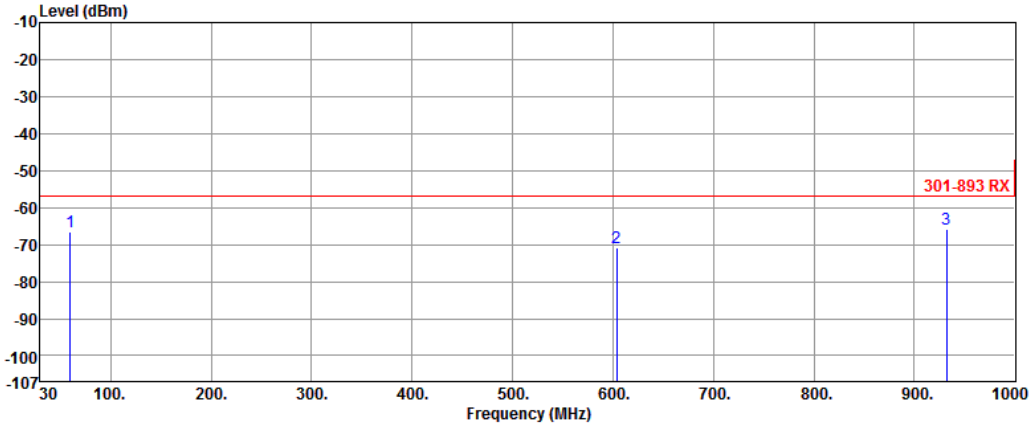
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.47	-62.62	-57.00	-5.62	-0.16	-62.46
2	603.92	-69.38	-57.00	-12.38	7.44	-76.82
3	946.37	-65.81	-57.00	-8.81	12.30	-78.11

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

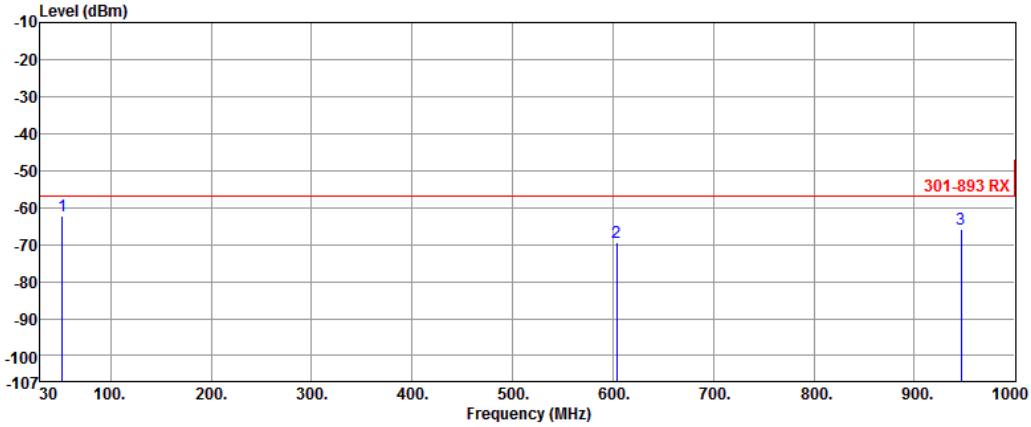
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	59.75	-66.51	-57.00	-9.51	-1.68	-64.83
2	603.69	-70.74	-57.00	-13.74	6.93	-77.67
3	932.27	-65.74	-57.00	-8.74	11.80	-77.54

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		

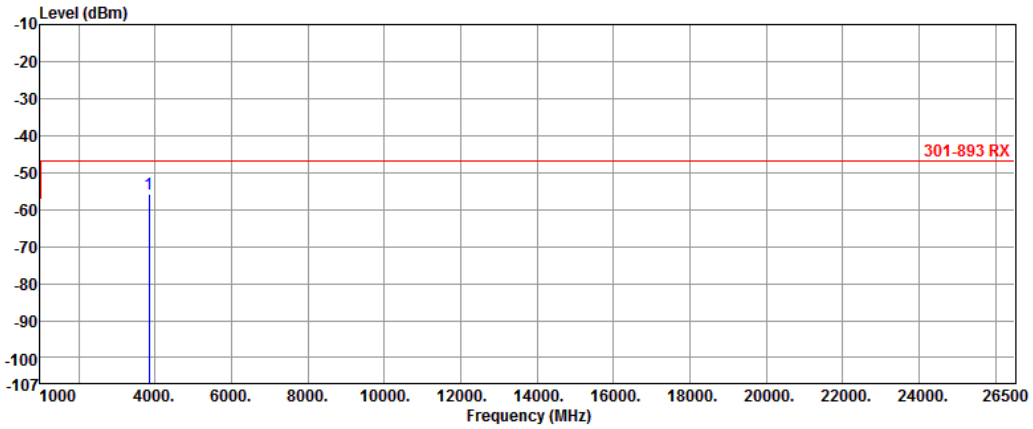


	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	51.49	-62.39	-57.00	-5.39	-0.18	-62.21
2	603.42	-69.56	-57.00	-12.56	7.40	-76.96
3	946.57	-65.91	-57.00	-8.91	12.30	-78.21

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

4.1.7 Receiver Radiated Unwanted Emissions (Above 1GHz)

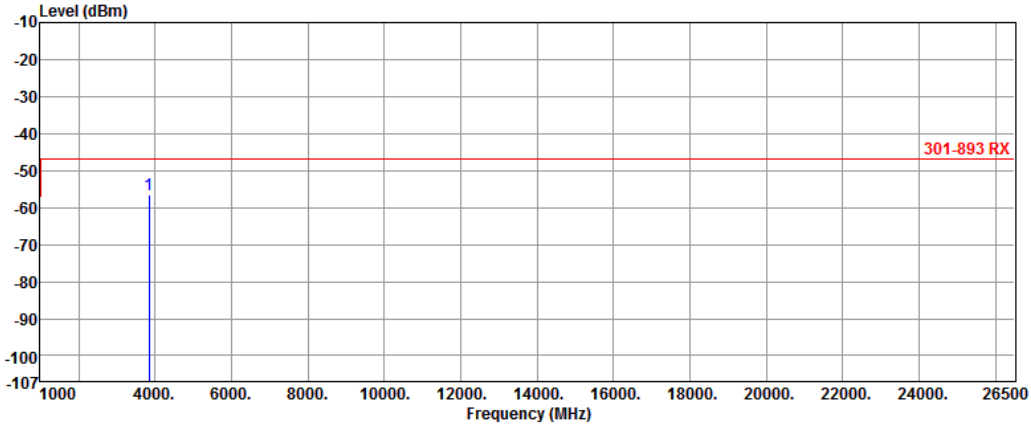
Modulation	11a	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3851.41	-55.77	-47.00	-8.77	8.91	-64.68

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

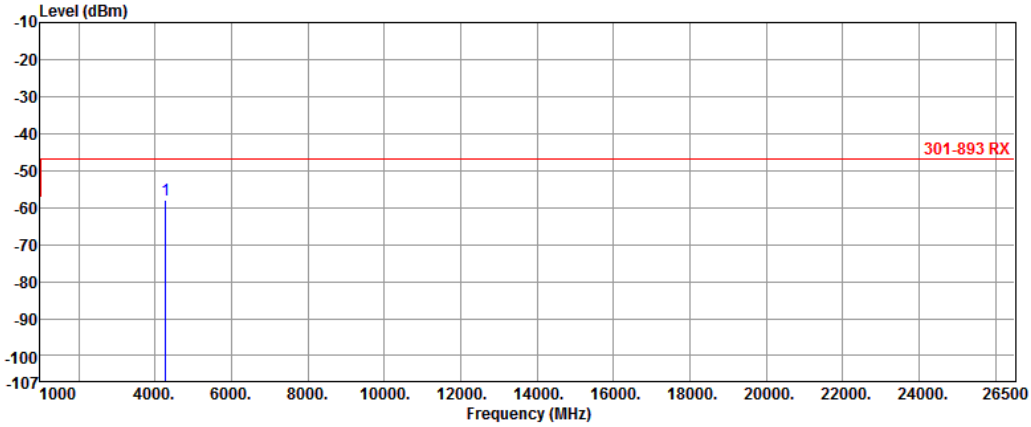
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3848.08	-56.53	-47.00	-9.53	8.93	-65.46

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

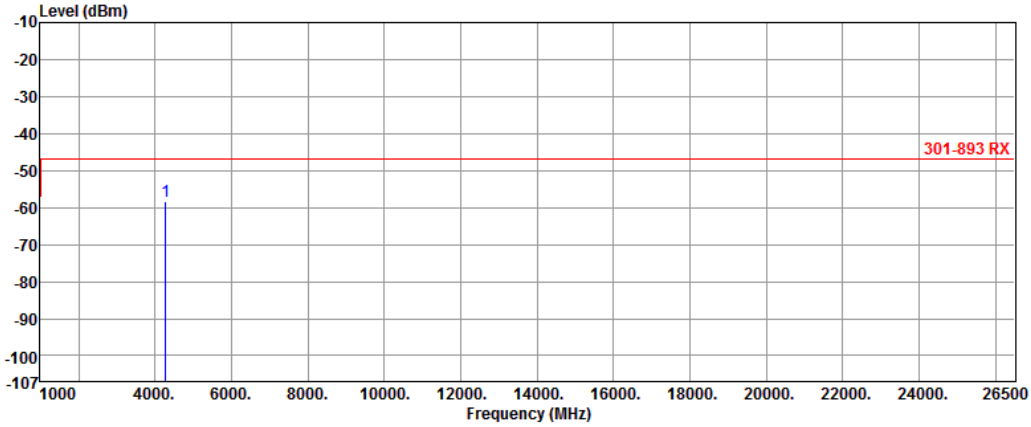
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4284.18	-58.05	-47.00	-11.05	9.97	-68.02

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

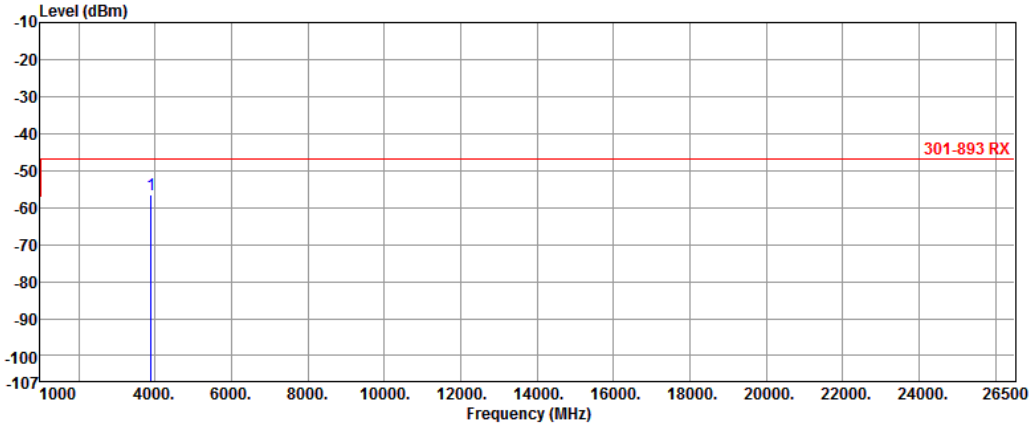
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4283.05	-58.24	-47.00	-11.24	9.66	-67.90

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

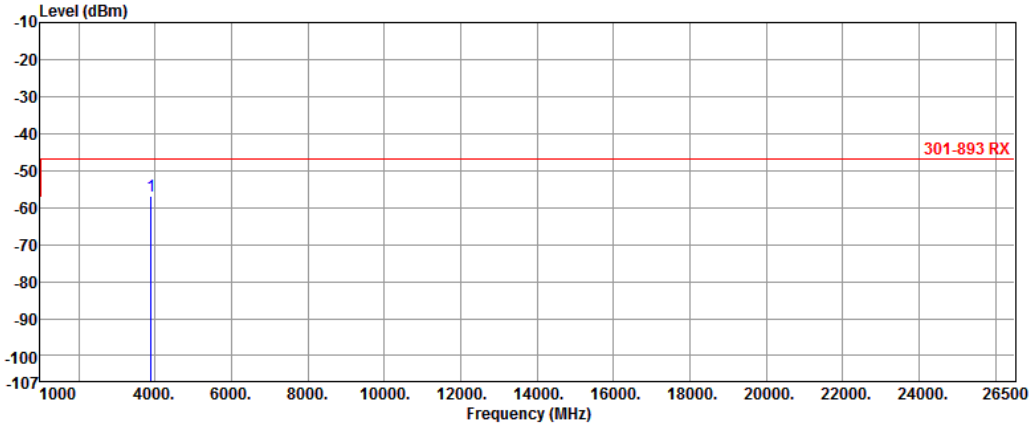
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3891.56	-56.37	-47.00	-9.37	8.97	-65.34

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

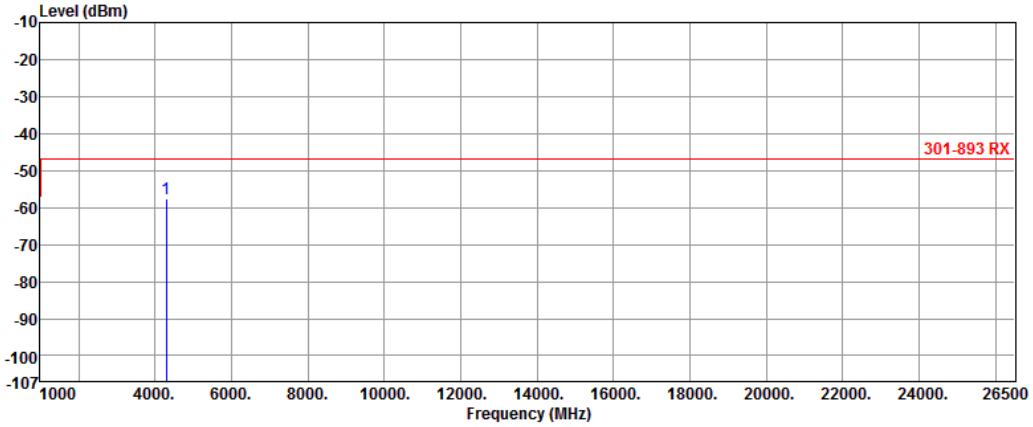
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3892.24	-56.88	-47.00	-9.88	8.93	-65.81

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

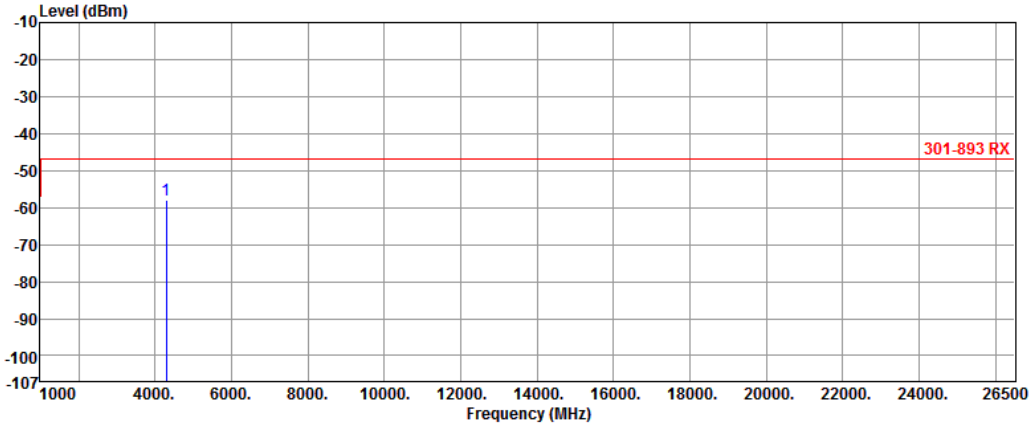
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4286.37	-57.44	-47.00	-10.44	9.98	-67.42

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

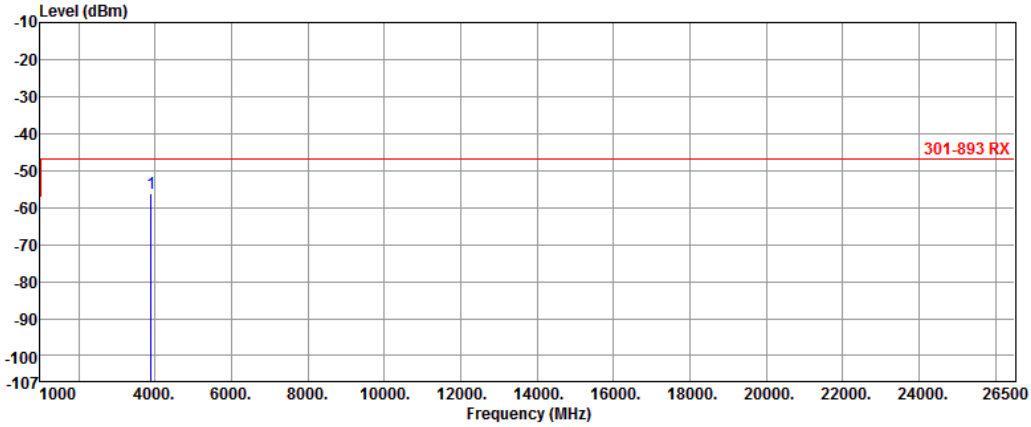
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4285.87	-57.81	-47.00	-10.81	9.67	-67.48

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

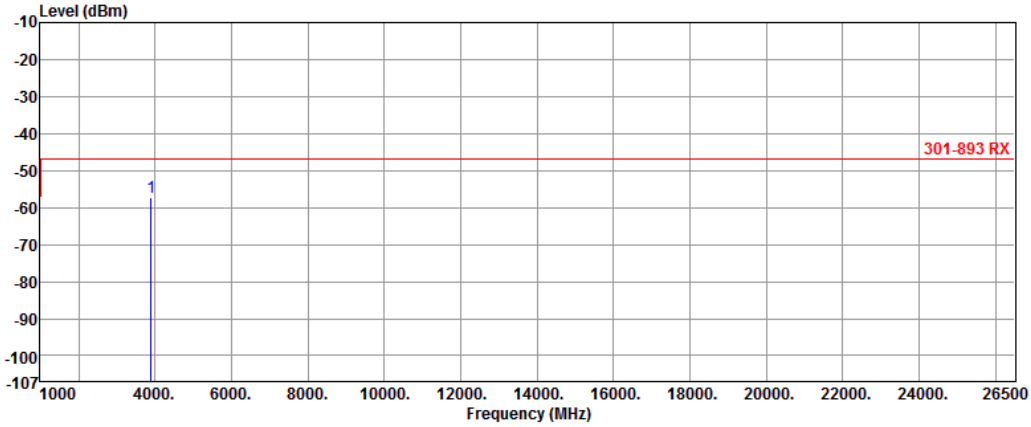
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3899.52	-56.02	-47.00	-9.02	8.99	-65.01

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

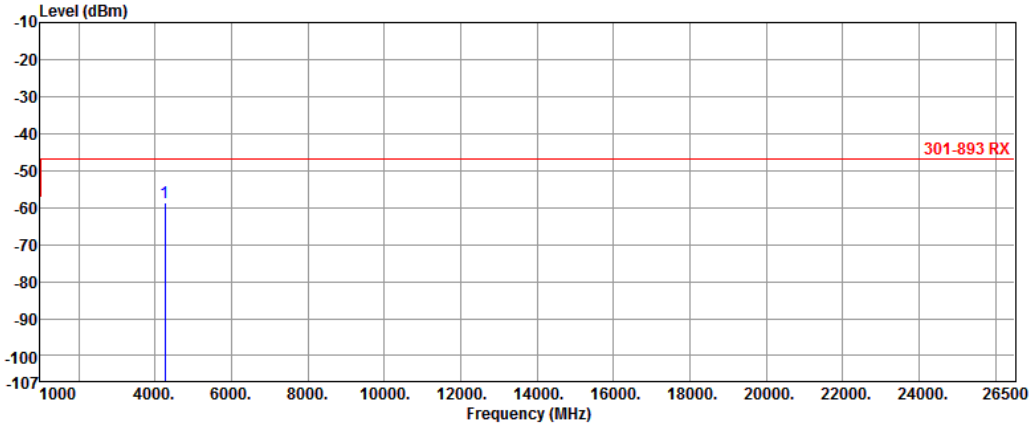
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3903.29	-57.33	-47.00	-10.33	8.93	-66.26

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

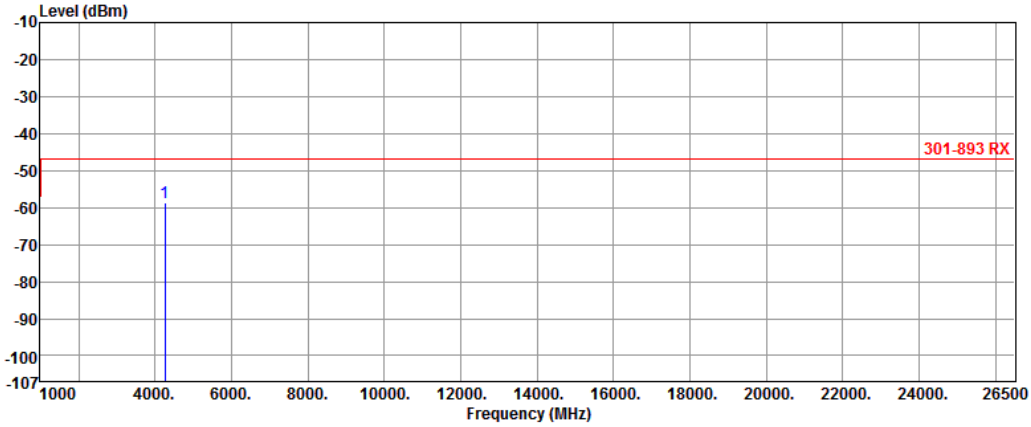
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4262.71	-58.61	-47.00	-11.61	9.85	-68.46

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

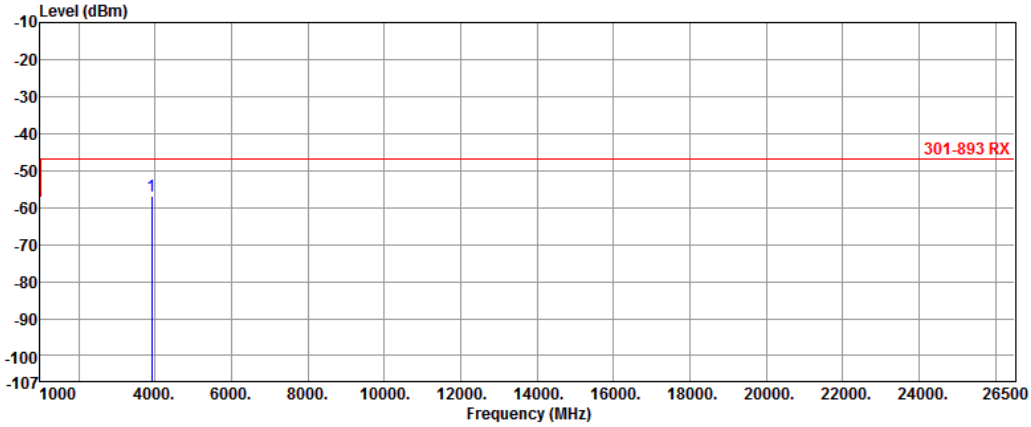
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4261.89	-58.68	-47.00	-11.68	9.60	-68.28

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

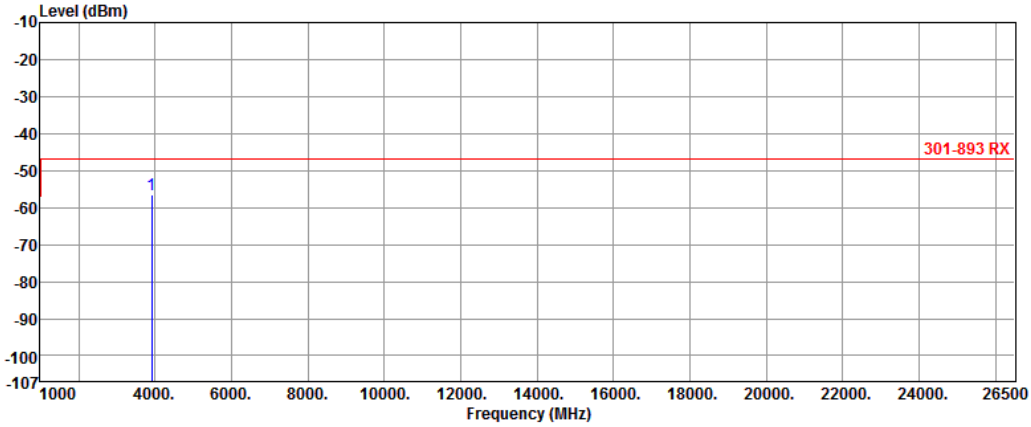
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3916.68	-57.06	-47.00	-10.06	9.00	-66.06

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

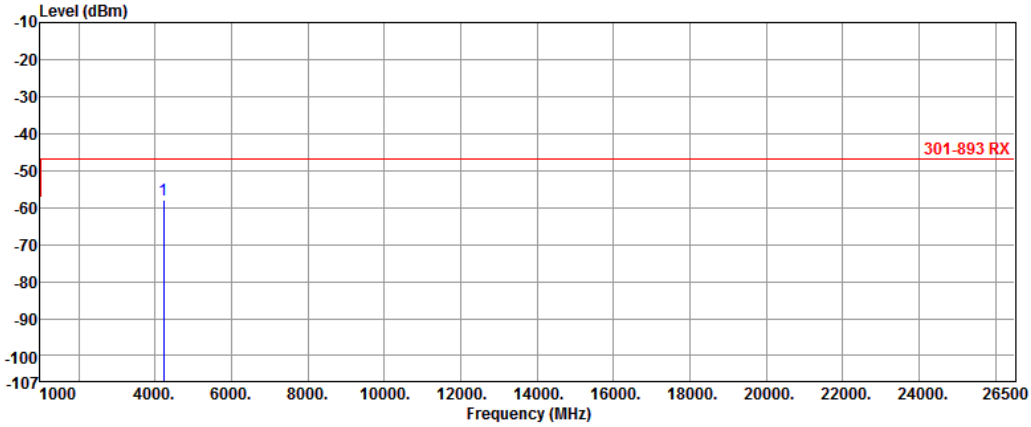
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	3915.65	-56.65	-47.00	-9.65	8.91	-65.56

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

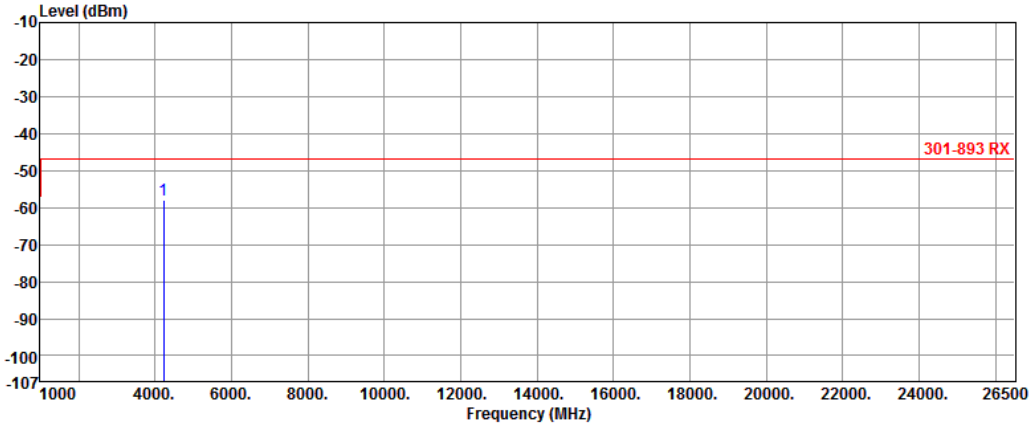
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4219.75	-57.82	-47.00	-10.82	9.62	-67.44

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

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		



	Freq.	Measured value	Limit	Margin	Factor	Reading
	MHz	dBm	dBm	dB	dB	dBm
1	4218.09	-57.97	-47.00	-10.97	9.47	-67.44

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

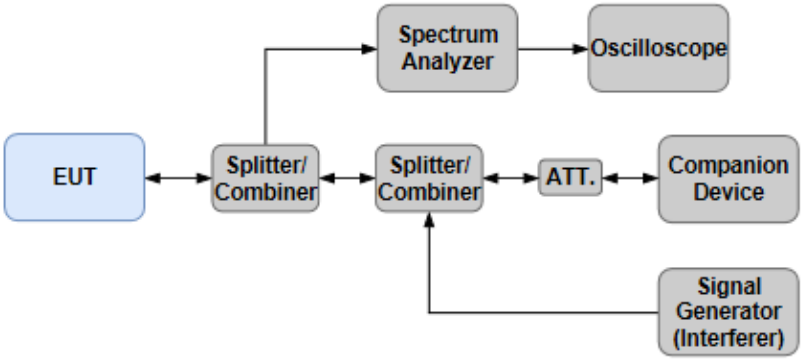
5.1.1 Adaptivity Limit

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).

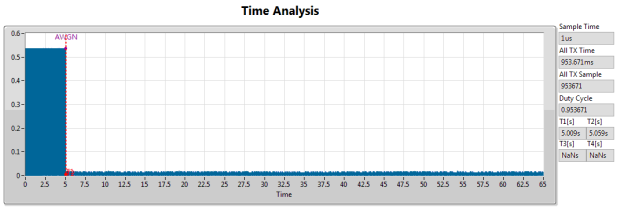
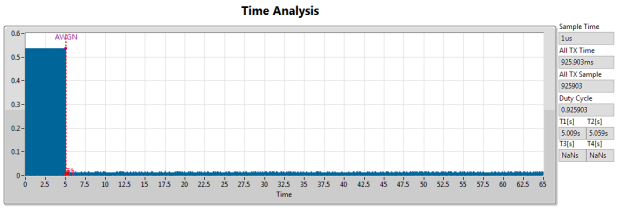
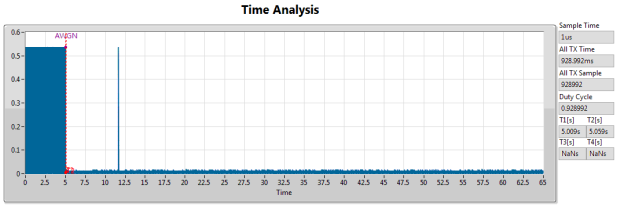
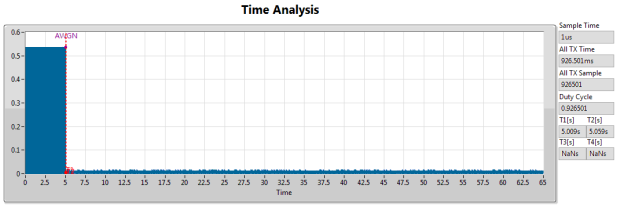
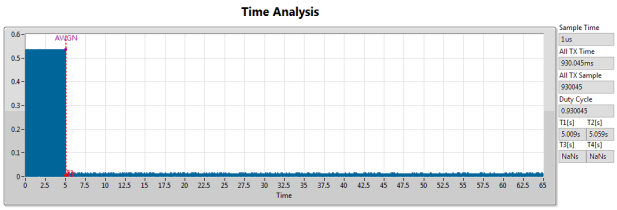
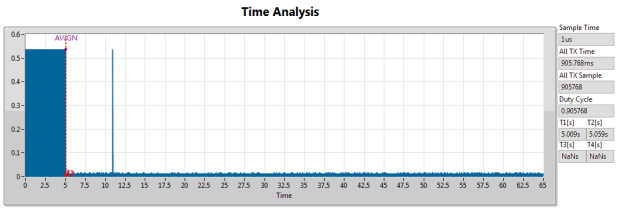
5.1.3 Test Setup



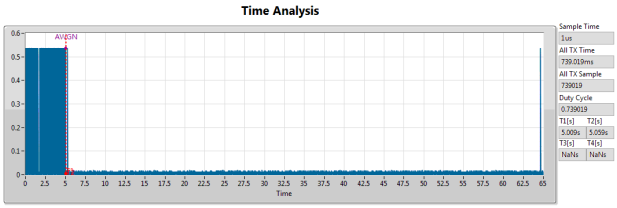
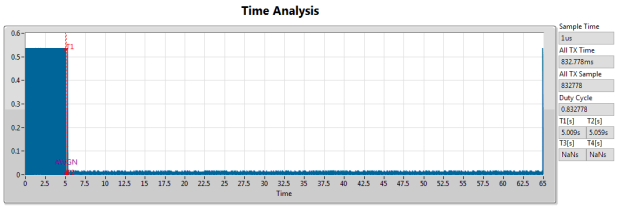
5.1.4 Test Result of Adaptivity and Short Control Signalling Transmissions

Adaptivity Result					
Equipment / Device type		Load Based Equipment / Supervised Device			
EUT firmware / software version		SD-UAPSTA-8997-U14-MMC-16.68.1.p95-C3X16219_V4-MGPL-src			
Energy Detect Threshold Level (dBm)		-75			
Modulation Mode	**Freq. (MHz)**	**Interference Signal Frequency (MHz)**	**Interference Signal Type**	**Short Control Signalling Transmissions (ms)/period Numbers**	**Adaptivity**
802.11an (HT20)	5180	5180	AWGN	0 / 0	PASS
802.11an (HT20)	5180	5180	OFDM	0 / 0	
802.11an (HT20)	5180	5180	LTE	0.508 / 2	
802.11an (HT20)	5500	5500	AWGN	0 / 0	PASS
802.11an (HT20)	5500	5500	OFDM	0 / 0	
802.11an (HT20)	5500	5500	LTE	0.058 / 1	
802.11an (HT40)	5190	5200	AWGN	0.85 / 16	PASS
802.11an (HT40)	5510	5520	AWGN	1.033 / 19	PASS
Limit				< 2.5 ms / 50	N/A

Adaptivity Result Plots

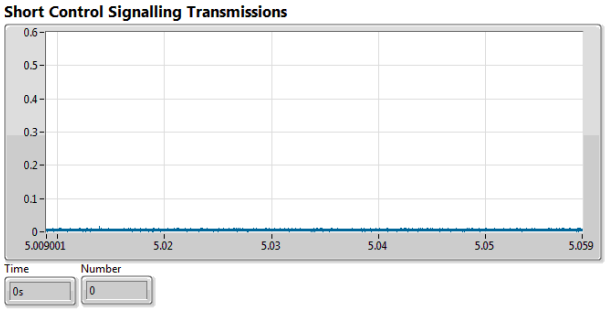
802.11a - 5180MHz (AWGN)	802.11a - 5180MHz (OFDM)
	
802.11a - 5180MHz (LTE)	**802.11a - 5500MHz (AWGN)**
	
802.11a - 5500MHz (OFDM)	**802.11a - 5500MHz (LTE)**
	

Adaptivity Result Plots

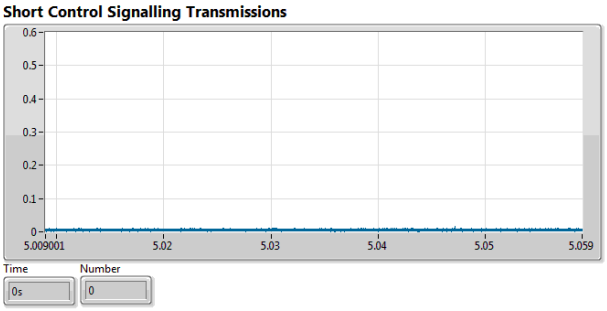
802.11an (HT40) - 5190MHz (AWGN)	802.11an (HT40) - 5510MHz (AWGN)
	

Short Control Signalling Transmissions Plots

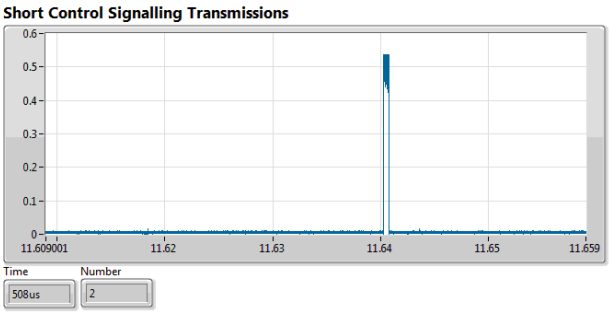
802.11a - 5180MHz (AWGN)



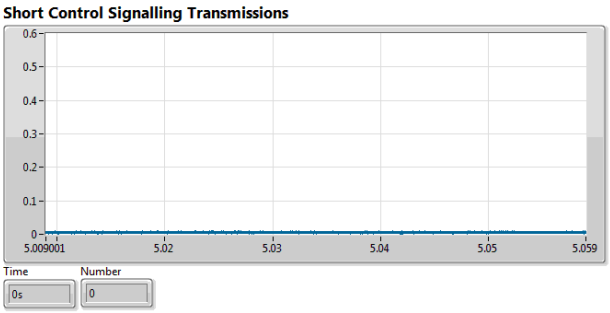
802.11a - 5180MHz (OFDM)



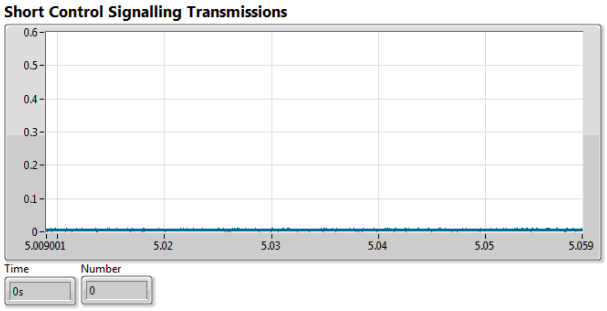
802.11a - 5180MHz (LTE)



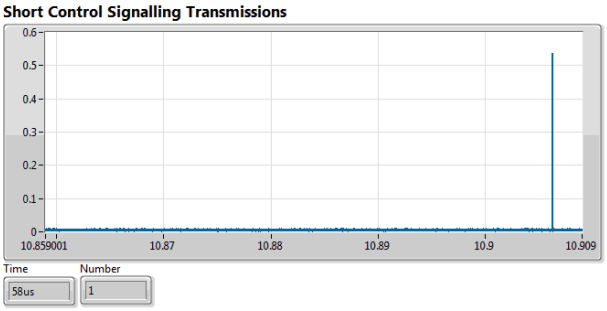
802.11a - 5500MHz (AWGN)



802.11a - 5500MHz (OFDM)

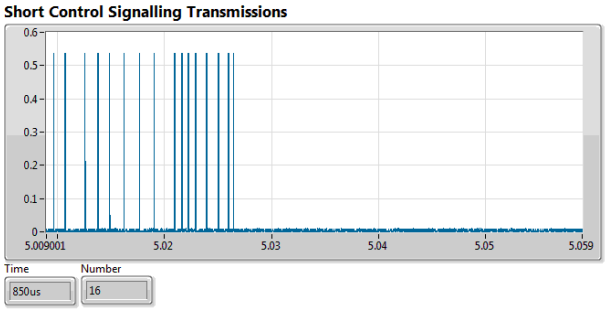


802.11a - 5500MHz (LTE)

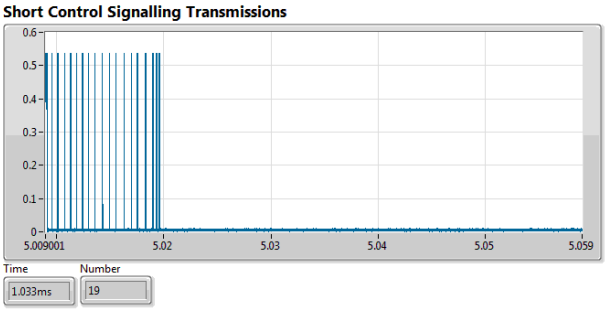


Short Control Signalling Transmissions Plots

802.11an (HT40) - 5190MHz (AWGN)



802.11an (HT40) - 5510MHz (AWGN)



6 Receiver Blocking Test Results

6.1 Receiver Blocking

6.1.1 Limit of Receiver Blocking

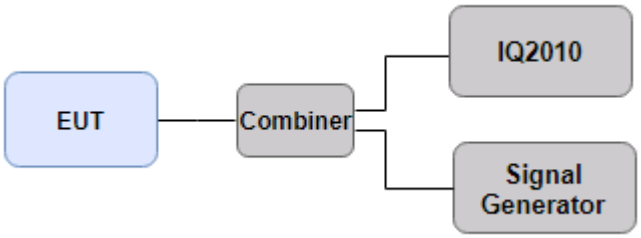
Receiver Blocking Parameters				
Wanted Signal Mean Power from Companion Device (dBm)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm) (see note 2)		Type of Blocking Signal
		Master or Slave with radar detection	Slave without radar detection	
P_{min} + 6 dB	5 100	-53	-59	Continuous Wave
P_{min} + 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

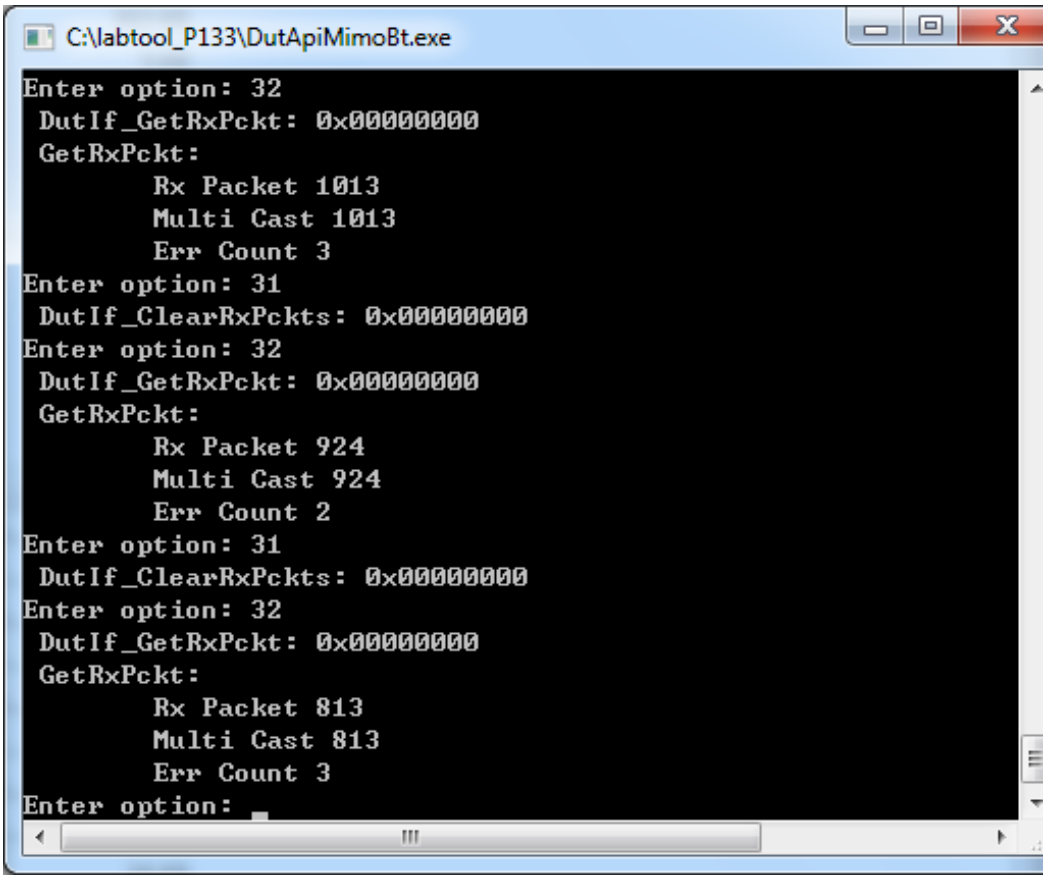
Reference to clause 5.4.10.2 of ETSI EN 301 893 V2.1.1 (2017-05).

6.1.3 Test Setup



6.1.4 Test Result of Receiver Blocking

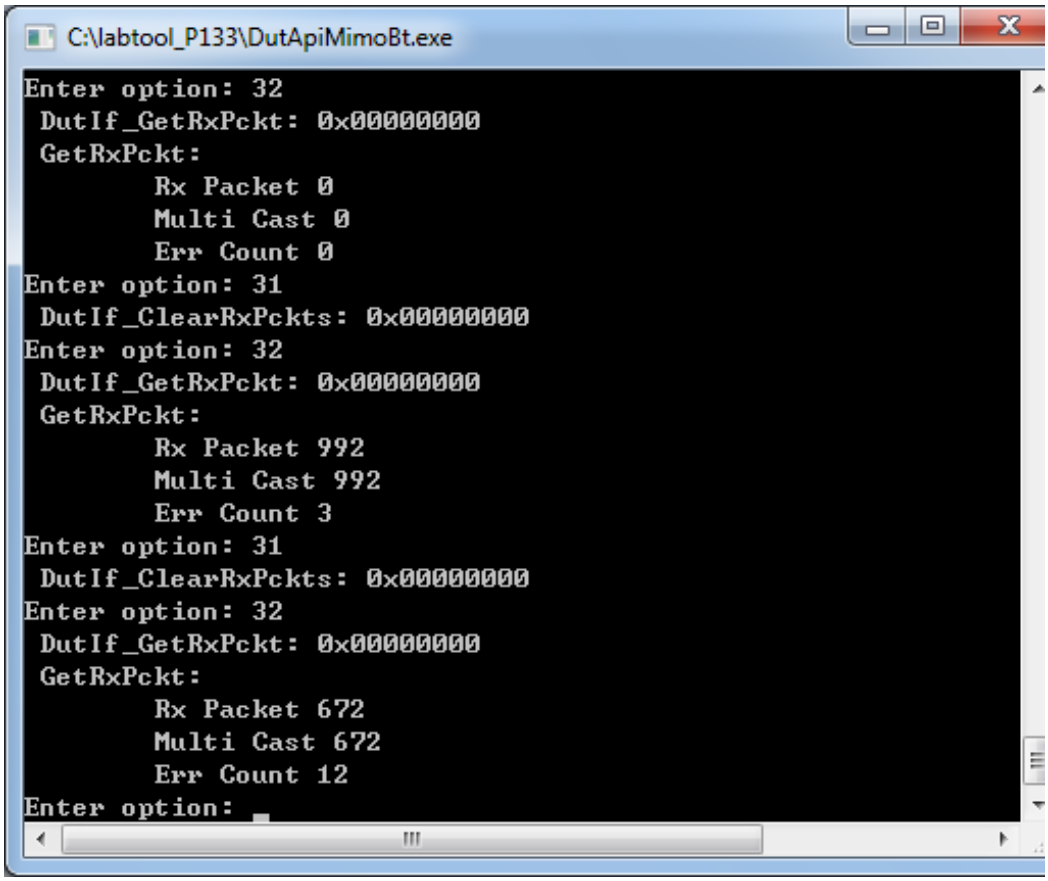
11a / 5180 MHz
Without Interference Signal Sensitivity Level



PER minimum performance criteria	10 %		
Sensitivity Level	-88		**dBm**
Want Signal Mean Power form Companion Device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm)**	**Test Result**
-82	5100	-55.1	Pass
-82	4900	-49.1	Pass
-82	5000		Pass
-82	5975		Pass

Note: The performance criteria declare by manufacturer.

11a / 5700 MHz
Without Interference Signal Sensitivity Level

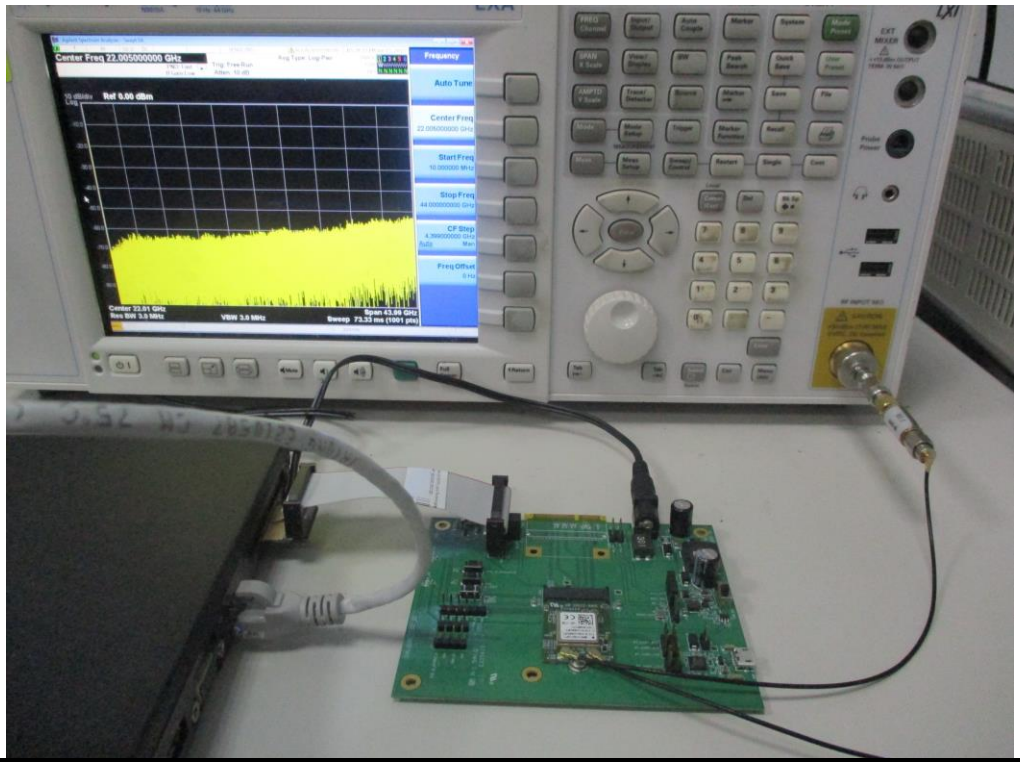


PER minimum performance criteria	10 %		
Sensitivity Level	-90		**dBm**
Want Signal Mean Power form Companion Device (dBm)	**Blocking Signal Frequency (MHz)**	**Blocking Signal Power (dBm)**	**Test Result**
-84	5100	-55	Pass
-84	4900	-49	Pass
-84	5000		Pass
-84	5975		Pass

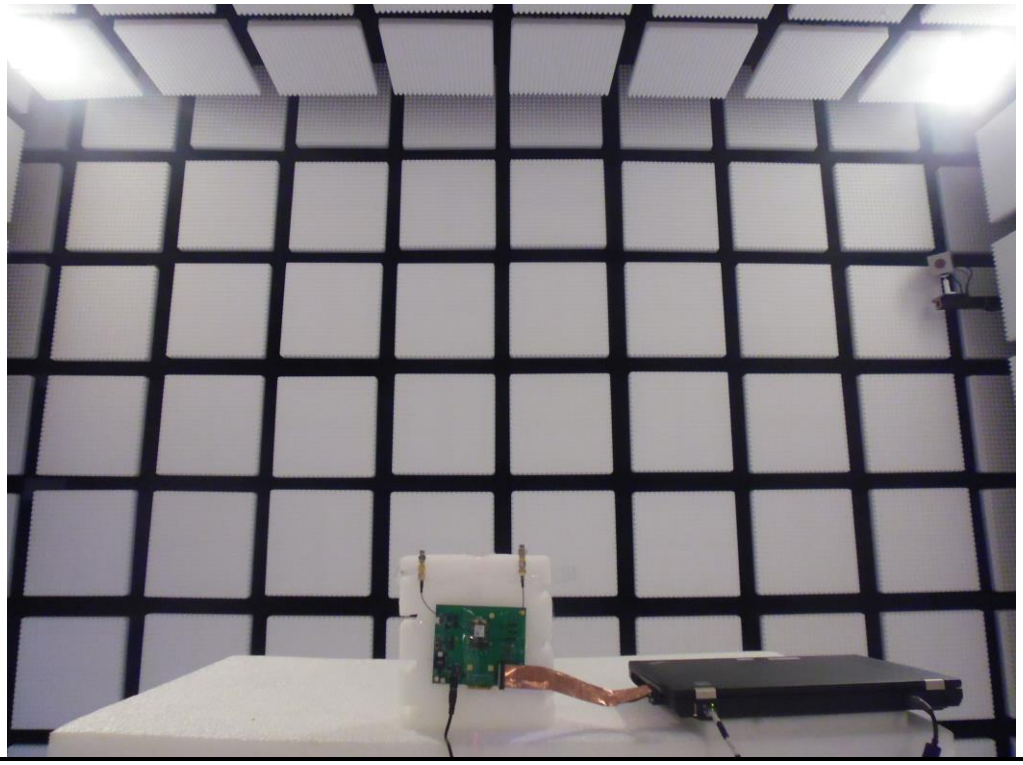
Note: The performance criteria declare by manufacturer.

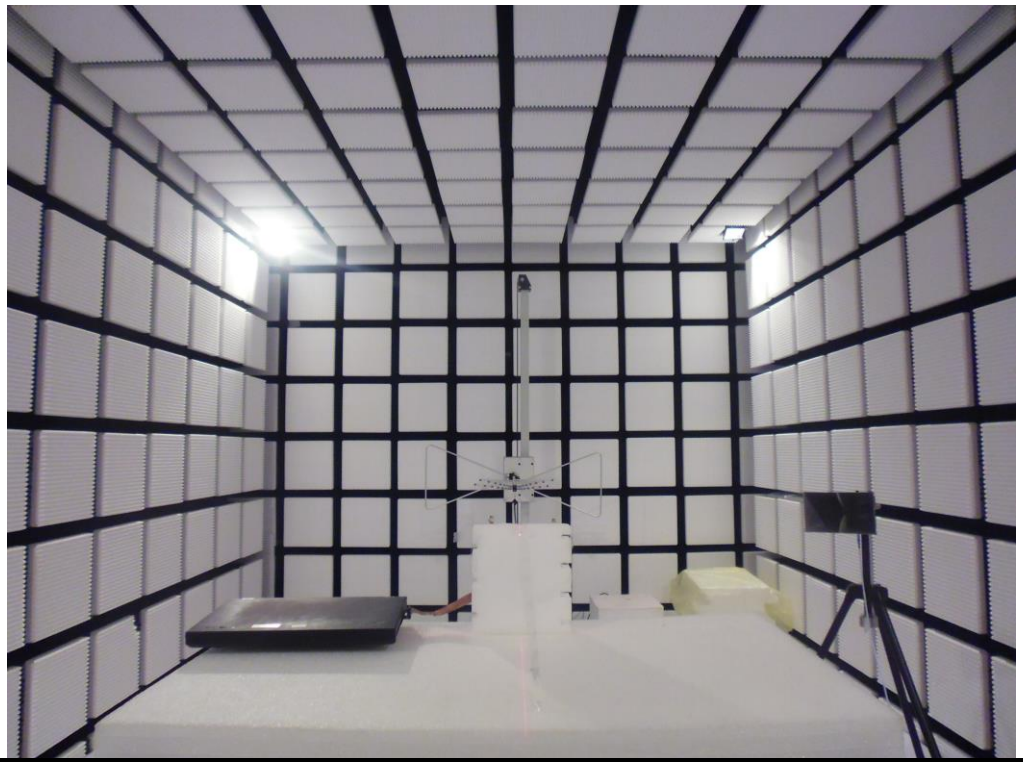
7 Photographs of the Test Configuration

Conducted Spurious Emission Test

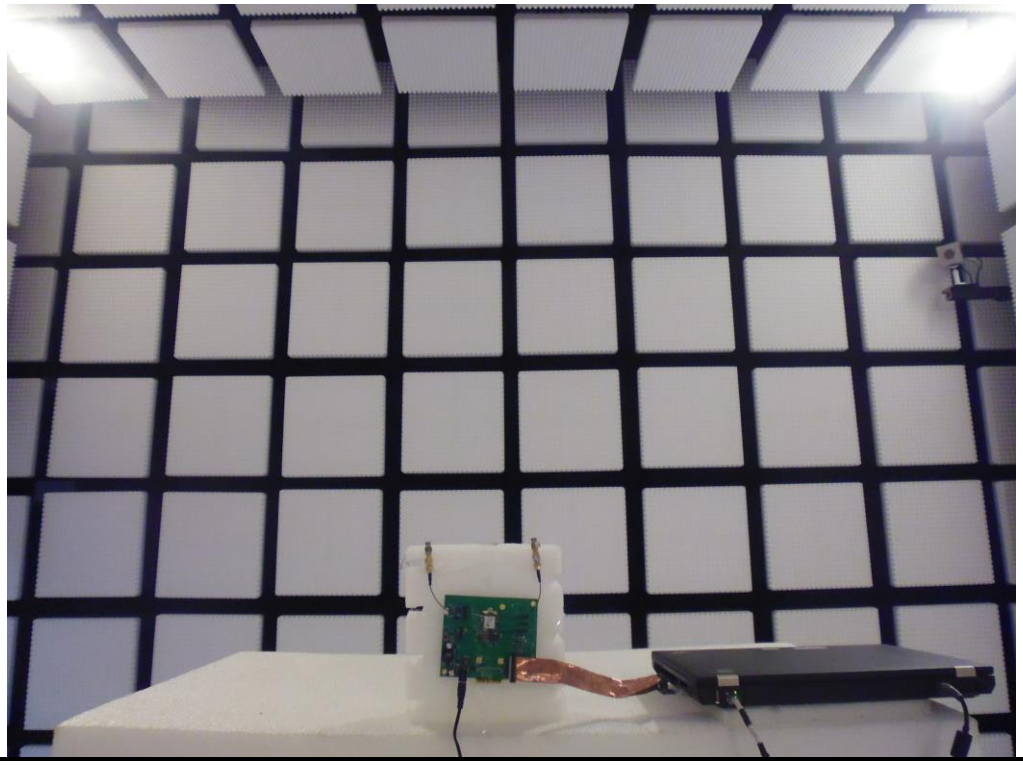


Radiated Spurious Emission Test

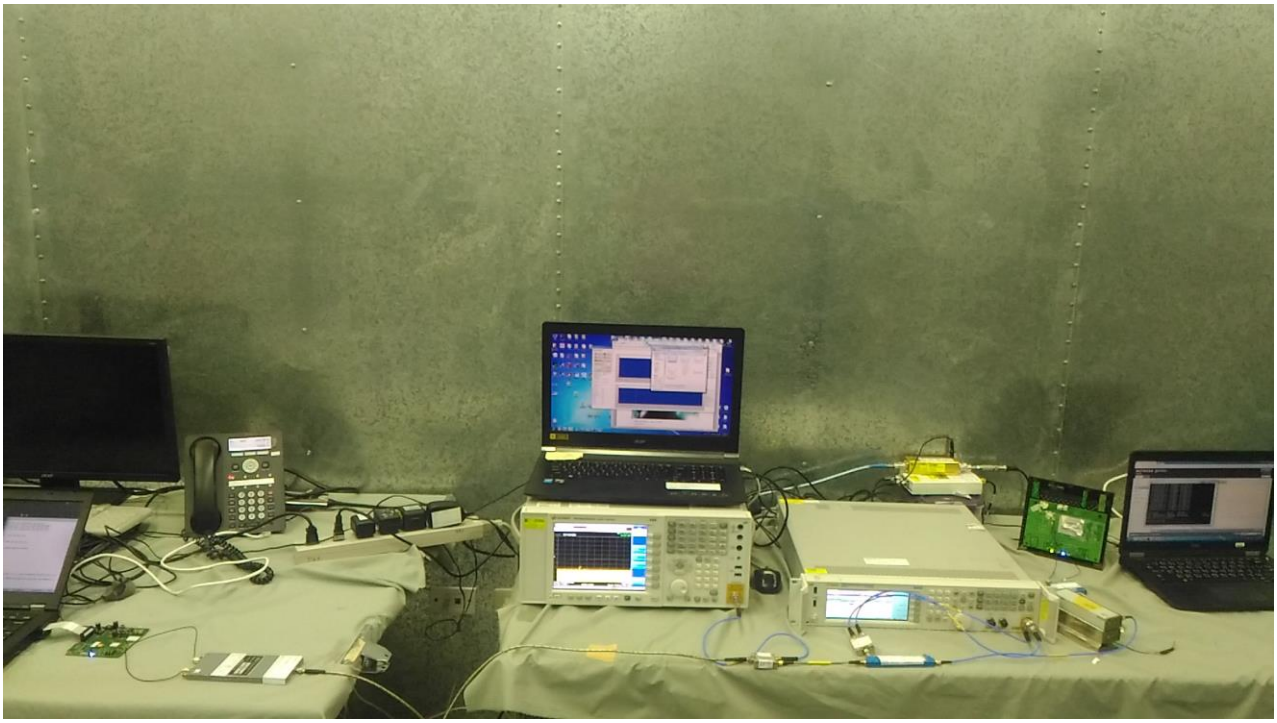




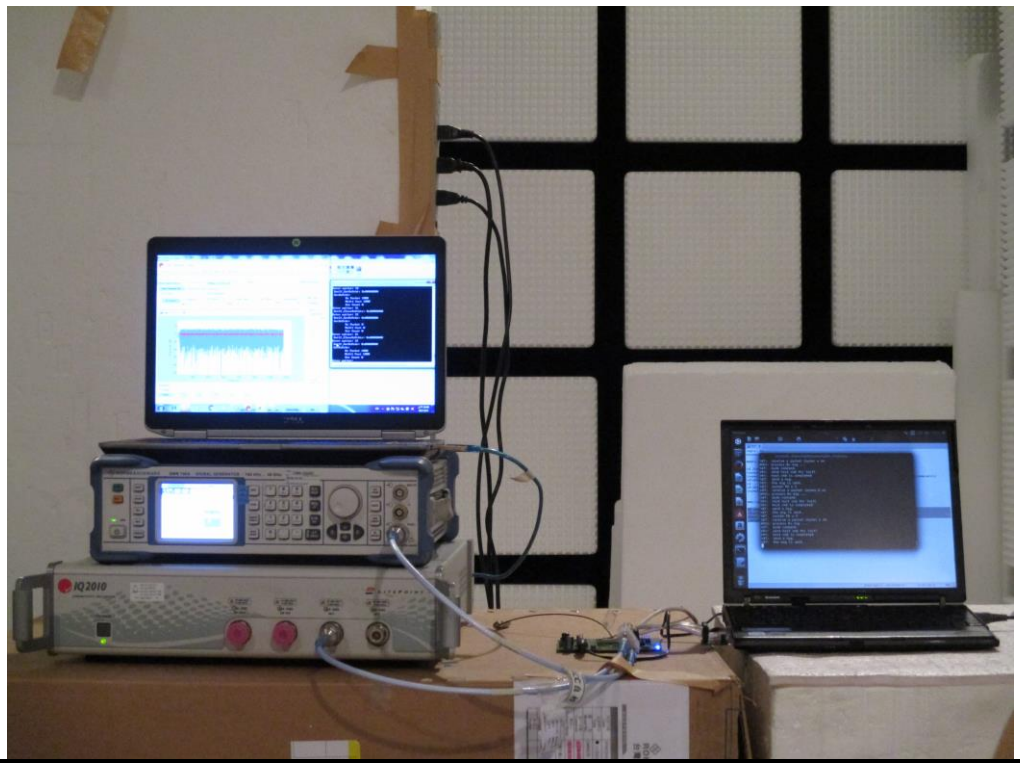
Radiated Spurious Emission Test



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

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

═END═