

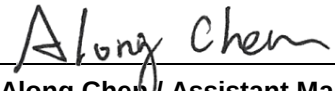
FCC C2PC Test Report

FCC ID : P27IP3442M
Equipment : AC2600 Wi-Fi Mesh Router
Model No. : IP3442MXXXXXXXXXX
(refer to item 1.1.1 for more details)
Brand Name : Sercomm
Applicant : Sercomm Corporation
Address : 8F, No. 3-1, YuanQu St., NanKang, Taipei 115,
Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.407
Received Date : May 14, 2020
Tested Date : Jun. 02 ~ Jun. 17, 2020

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.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

Reviewed by:


Along Chen / Assistant Manager

Approved by:

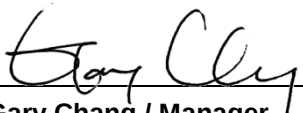

Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR051403-01AN	Rev. 01	Initial issue	Jul. 06, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.168MHz 49.65 (Margin -15.43dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5470.00MHz 67.96 (Margin -0.24dB) - PK	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: Non-beamforming mode 5250~5350MHz: 23.51 5470~5725MHz: 23.52 Beamforming mode 5250~5350MHz: 20.93 5470~5725MHz: 21.02	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

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

1 General Description

1.1 Information

This is a Class II Permissive Change report (C2PC).

This report is issued as a supplementary report to original ICC report no. FR051403AN. The modification is only concerned with adding 5250~5350MHz and 5470~5725 MHz band by software setting.

1.1.1 Product Details

The following models are provided to this EUT.

Model Name	Description
IP3442MXXXXXXXXXX	the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, "blank", "- " or "/" , for marketing purpose
✦ The above models, model IP3442M 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					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5250-5350 5470-5725	a	5260-5320 5500-5700	52-64 [4] 100-140 [11]	4	6-54 Mbps
5250-5350 5470-5725	n (HT20)	5260-5320 5500-5700	52-64 [4] 100-140 [11]	4	MCS 0-31
5250-5350 5470-5725	n (HT40)	5270-5310 5510-5670	54-62 [2] 102-134 [5]	4	MCS 0-31
5250-5350 5470-5725	ac (VHT20)	5260-5320 5500-5700	52-64 [4] 100-140 [11]	4	MCS 0-9
5250-5350 5470-5725	ac (VHT40)	5270-5310 5510-5670	54-62 [2] 102-134 [5]	4	MCS 0-9
5250-5350 5470-5725	ac (VHT80)	5290 5530-5610	58 [1] 106-122 [2]	4	MCS 0-9
Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation. Note 3: 802.11n/ac supports beamforming mode.					

1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)	
				5250~5350	5470~5725
1	Ant 1	PIFA	NA	2.8	2.2
2	Ant 2	PIFA	NA	2.4	2.5
3	Ant 3	Dipole	UFL	2.3	2.7
4	Ant 4	Dipole	UFL	2.9	2.9

1.1.4 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from AC adapter
--------------------------	-----------------------

1.1.5 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter	Brand: LEI Model: MU24B1120200-A1 I/P: 100-240Vac, 50/60Hz, 0.7A O/P: 12Vdc, 2A Power Line: 1.5m non-shielded without core
2	AC adapter	Brand: MOSO Model: MSS-V2000WR120-024E0-US I/P: 100-240Vac, 50/60Hz, 0.7A max O/P: 12Vdc, 2A Power Line: 1.5m non-shielded without core

1.1.6 Channel List

802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
52	5260	54	5270
56	5280	62	5310
60	5300	102	5510
64	5320	110	5550
100	5500	118	5590
104	5520	126	5630
108	5540	134	5670
112	5560	VHT80	
116	5580	58	5290
120	5600	106	5530
124	5620	122	5610
128	5640	---	---
132	5660	---	---
136	5680	---	---
140	5700	---	---

1.1.7 Test Tool and Duty Cycle

Test Tool	Non-beamforming: MT7615 QA, Version: 0.0.1.88 Beamforming: PuTTY, Version: 0.60				
Duty Cycle and Duty Factor	Mode	Non-beamforming		Beamforming	
		Duty cycle (%)	Duty factor (dB)	Duty cycle (%)	Duty factor (dB)
	11a	98.98%	0.04	---	---
	VHT20	98.90%	0.05	98.72%	0.06
	VHT40	96.70%	0.15	95.29%	0.21
	VHT80	93.45%	0.29	98.77%	0.05

1.1.8 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index	
		Non-Beamforming	Beamforming
11a	5260	16	---
11a	5300	16	---
11a	5320	16	---
11a	5500	15	---
11a	5580	17	---
11a	5700	12	---
VHT20	5260	16	24
VHT20	5300	16	24
VHT20	5320	16	22
VHT20	5500	15	21
VHT20	5580	17	25
VHT20	5700	12	18
VHT40	5270	1E	27
VHT40	5310	18	23
VHT40	5510	14	20
VHT40	5550	1F	28
VHT40	5670	14	22
VHT80	5290	10	16
VHT80	5530	12	17
VHT80	5610	19	25

1.2 Local Support Equipment List

Non-beamforming mode

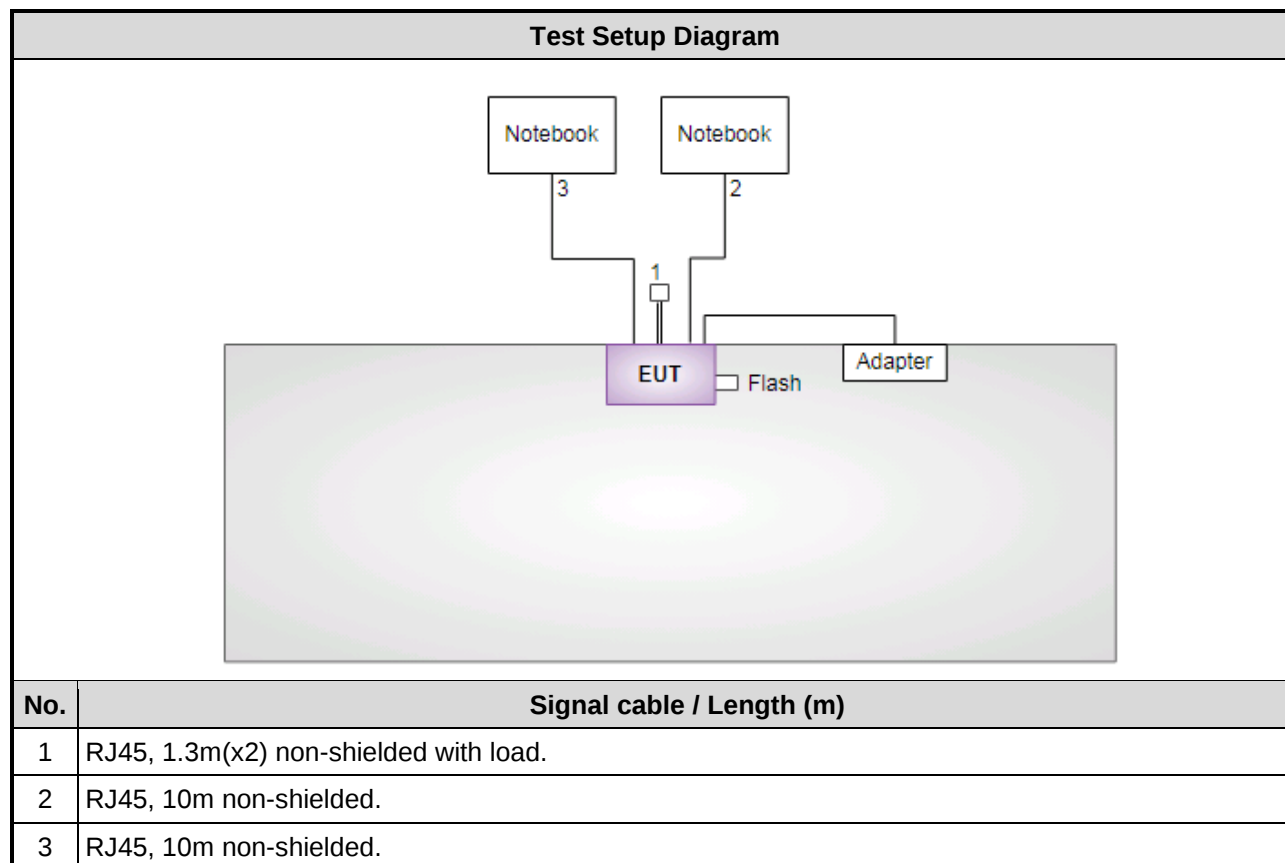
Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	RJ45	ICC	RJ45-1.3m	---	---
2	RJ45	ICC	RJ45-1.3m	---	---
3	RJ45	ICC	RJ45-10m	---	---
4	Notebook	DELL	Latitude E5470	DoC	---
5	Notebook	DELL	Latitude E5470	DoC	---
6	USB 3.0 Flash	Transcend	JetFlash 700	---	---

Beamforming mode

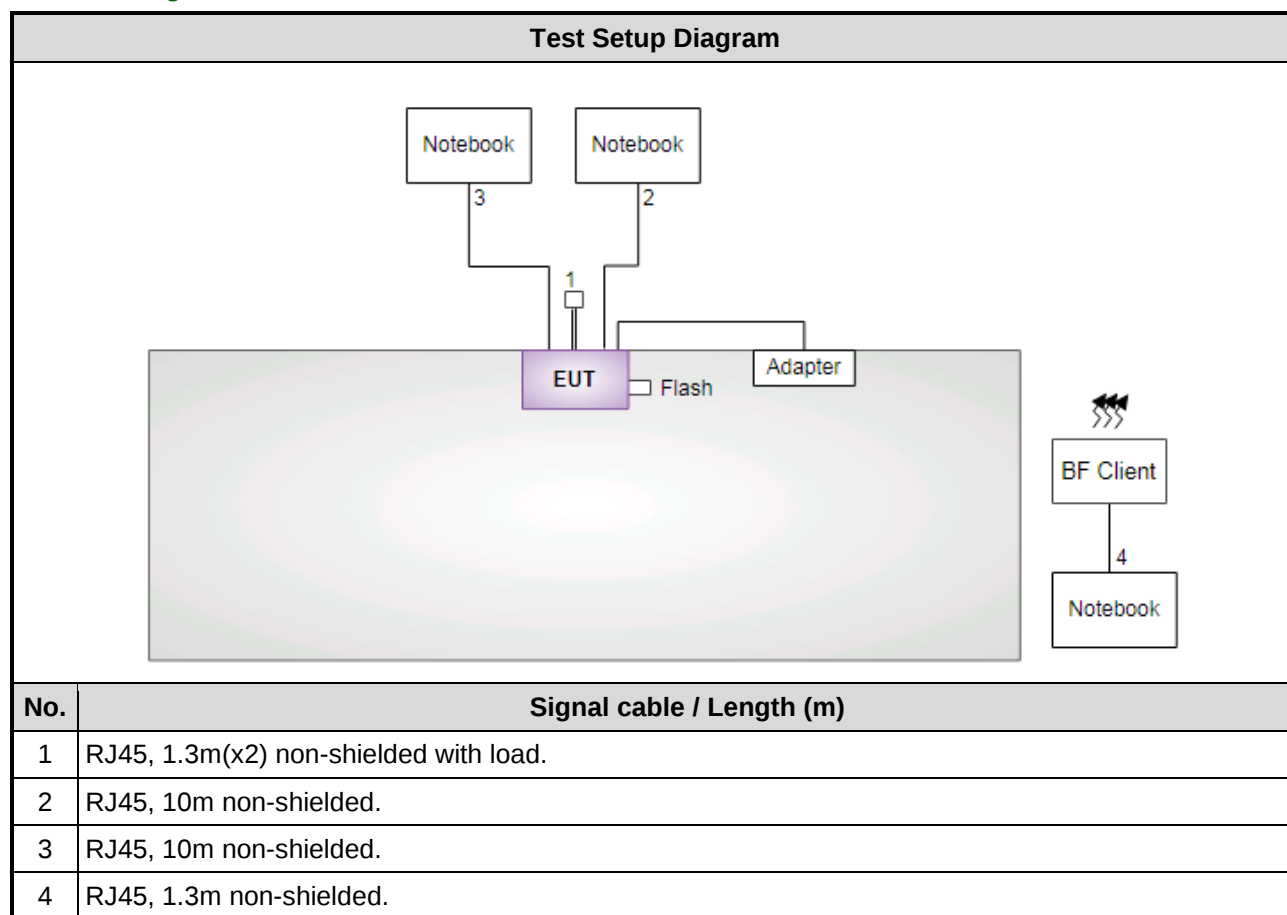
Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	RJ45	ICC	RJ45-1.3m	---	
2	RJ45	ICC	RJ45-1.3m	---	
3	RJ45	ICC	RJ45-1.3m	---	
4	RJ45	ICC	RJ45-10m	---	
5	Notebook	DELL	Latitude E5470	DoC	
6	Notebook	DELL	Latitude E5470	DoC	
7	Notebook	DELL	Latitude E6430	DoC	
8	USB 3.0 Flash	Transcend	JetFlash 700	---	
9	BF client	Sercomm	IP3442MXXXX XXXXXX	---	Provided by applicant.

1.3 Test Setup Chart

Non-beamforming mode



Beamforming mode



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101658	Dec. 12, 2019	Dec. 11, 2020
LISN	R&S	ENV216	101579	Mar. 12, 2020	Mar. 11, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber 3 / (03CH03-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Jan. 09, 2020	Jan. 08, 2021
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 29, 2020	Apr. 28, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Dec. 27, 2019	Dec. 26, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980187	Aug. 14, 2019	Aug. 13, 2020
Preamplifier	Agilent	83017A	MY53270014	Aug. 07, 2019	Aug. 06, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Sep. 27, 2019	Sep. 26, 2020
RF cable-8M	EMC	EMC104-SM-SM-8000	181107	Sep. 27, 2019	Sep. 26, 2020
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Sep. 27, 2019	Sep. 26, 2020
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Sep. 27, 2019	Sep. 26, 2020
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Sep. 27, 2019	Sep. 26, 2020
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Sep. 27, 2019	Sep. 26, 2020
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)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Apr. 30, 2020	Apr. 29, 2021
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 12, 2019	Dec. 11, 2020
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Test Standards

47 CFR FCC Part 15.407

ANSI C63.10-2013

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.6 Reference Guidance

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.7 Deviation from Test Standard and Measurement Procedure

None

1.8 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	±34.130 Hz
Conducted power	±0.808 dB
Frequency error	±1x10 ⁻⁹
Power density	±0.583 dB
Conducted emission	±2.715 dB
AC conducted emission	±2.92 dB
Radiated emission ≤ 1GHz	±3.96 dB
Radiated emission > 1GHz	±4.51 dB
Time	±0.1%
Temperature	±0.4 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	18°C / 61%	Alex Tsai
Radiated Emissions	03CH03-WS	25-26°C / 64-66%	Brad Wu Roger Lu
RF Conducted	TH01-WS	23°C / 63%	Brad Wu

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISSED#: 10807A
- CAB identifier: TW2732

2.2 Testing Facility

Test Laboratory	International Certification Corp.
Test Site	CO01-WS, TH01-WS
Address of Test Site	No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

Test Site	03CH03-WS
Address of Test Site	No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan District, Tao Yuan City 333, Taiwan, R.O.C.

2.3 The Worst Test Modes and Channel Details

Non-beamforming mode

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	VHT40	5590	MCS 0	---
Radiated Emissions $\leq 1\text{GHz}$	VHT40	5590	MCS 0	---
RF Output Power	11a	5260 / 5300 / 5320 5500 / 5580 / 5700	6 Mbps	---
Radiated Emissions $>1\text{GHz}$	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700	MCS 0	
Emission Bandwidth	VHT40	5270 / 5310 5510 / 5590 / 5670	MCS 0	
Peak Power Spectral Density	VHT80	5290 / 5530 / 5610	MCS 0	
Frequency Stability	Un-modulation	5500	---	---

NOTE: Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is **Adapter 2 (Brand: MOSO)**, and only its data was record in this test report.

Beamforming mode

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	VHT40	5590	MCS 0	---
Radiated Emissions $\leq 1\text{GHz}$	VHT40	5590	MCS 0	---
RF Output Power	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700	MCS 0	---
Radiated Emissions $>1\text{GHz}$	VHT40	5270 / 5310 5510 / 5590 / 5670	MCS 0	
Peak Power Spectral Density	VHT80	5290 / 5530 / 5610	MCS 0	

NOTE: Adapter 1 (Brand: LEI) and Adapter 2 (Brand: MOSO) had been covered during the pretest. The worst adapter is **Adapter 2 (Brand: MOSO)**, and only its data was record in this test report.

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

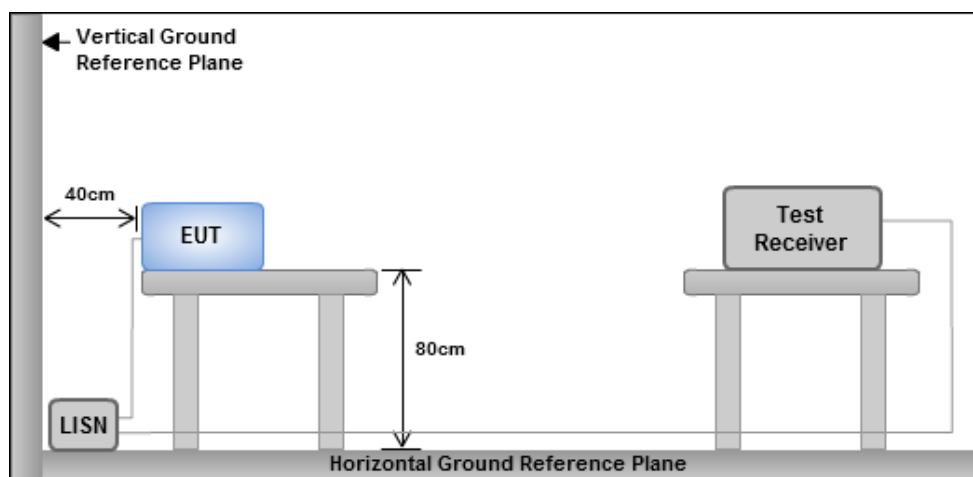
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.1.2 Test Procedures

1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50 Ω LISN port.
3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
4. This measurement was performed with AC 120V/60Hz

3.1.3 Test Setup

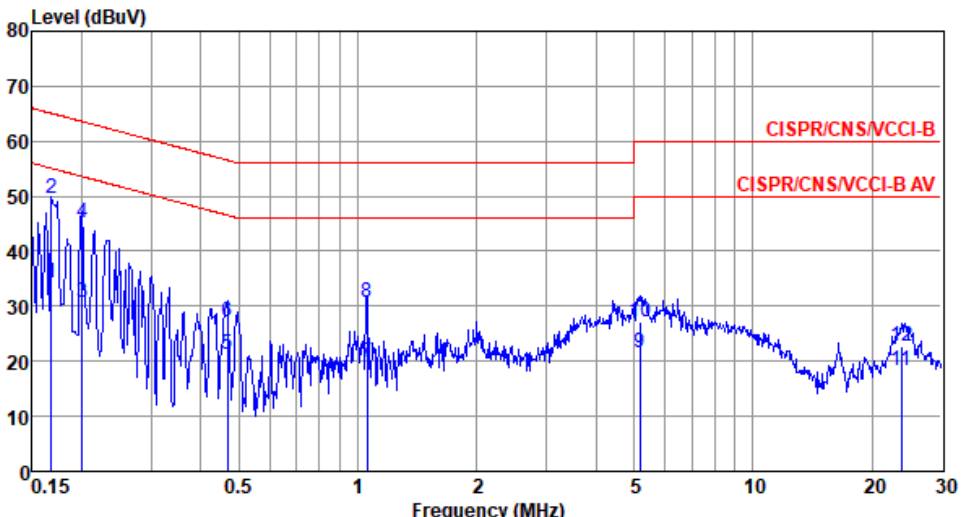


- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

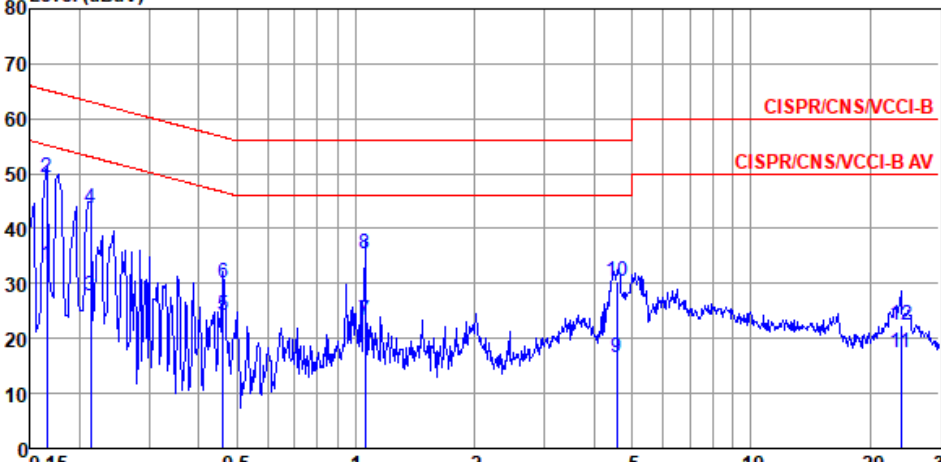
Non- beamforming mode

Modulation	VHT40	Test Freq. (MHz)	5590
Power Phase	Line		



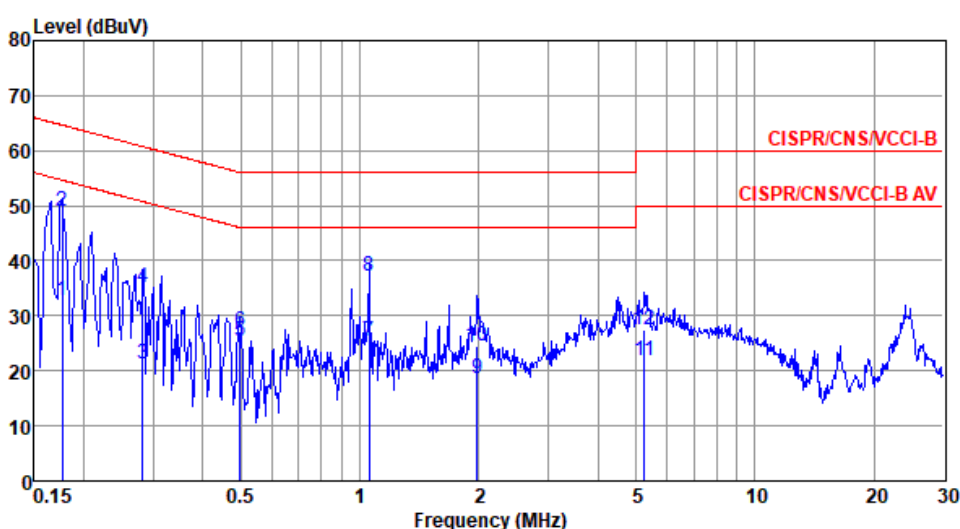
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.168	34.38	55.08	-20.70	24.52	9.64	0.05	Average
2*	0.168	49.65	65.08	-15.43	39.79	9.64	0.05	QP
3	0.201	30.65	53.58	-22.93	20.77	9.63	0.06	Average
4	0.201	45.30	63.58	-18.28	35.42	9.63	0.06	QP
5	0.469	21.32	46.54	-25.22	11.34	9.63	0.09	Average
6	0.469	27.21	56.54	-29.33	17.23	9.63	0.09	QP
7	1.054	19.75	46.00	-26.25	9.68	9.63	0.12	Average
8	1.054	30.79	56.00	-25.21	20.72	9.63	0.12	QP
9	5.166	21.57	50.00	-28.43	11.21	9.66	0.32	Average
10	5.166	27.19	60.00	-32.81	16.83	9.66	0.32	QP
11	23.762	18.29	50.00	-31.71	7.23	9.68	0.70	Average
12	23.762	22.70	60.00	-37.30	11.64	9.68	0.70	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).
 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

Modulation	VHT40	Test Freq. (MHz)	5590																																																																																																																					
Power Phase	Neutral																																																																																																																							
Level (dBuV)  Frequency (MHz) <table><thead><tr><th></th><th>Freq MHz</th><th>Level dBuV</th><th>Limit Line dBuV</th><th>Over Limit dB</th><th>Read Level dBuV</th><th>LISN factor dB</th><th>cable loss dB</th><th>Remark</th></tr></thead><tbody><tr><td>1</td><td>0.165</td><td>33.27</td><td>55.21</td><td>-21.94</td><td>23.43</td><td>9.66</td><td>0.05</td><td>Average</td></tr><tr><td>2*</td><td>0.165</td><td>49.19</td><td>65.21</td><td>-16.02</td><td>39.35</td><td>9.66</td><td>0.05</td><td>QP</td></tr><tr><td>3</td><td>0.213</td><td>27.82</td><td>53.10</td><td>-25.28</td><td>17.96</td><td>9.65</td><td>0.06</td><td>Average</td></tr><tr><td>4</td><td>0.213</td><td>43.77</td><td>63.10</td><td>-19.33</td><td>33.91</td><td>9.65</td><td>0.06</td><td>QP</td></tr><tr><td>5</td><td>0.461</td><td>24.30</td><td>46.67</td><td>-22.37</td><td>14.39</td><td>9.65</td><td>0.09</td><td>Average</td></tr><tr><td>6</td><td>0.461</td><td>30.11</td><td>56.67</td><td>-26.56</td><td>20.20</td><td>9.65</td><td>0.09</td><td>QP</td></tr><tr><td>7</td><td>1.054</td><td>23.35</td><td>46.00</td><td>-22.65</td><td>13.38</td><td>9.65</td><td>0.12</td><td>Average</td></tr><tr><td>8</td><td>1.054</td><td>35.37</td><td>56.00</td><td>-20.63</td><td>25.40</td><td>9.65</td><td>0.12</td><td>QP</td></tr><tr><td>9</td><td>4.584</td><td>16.50</td><td>46.00</td><td>-29.50</td><td>6.25</td><td>9.68</td><td>0.30</td><td>Average</td></tr><tr><td>10</td><td>4.584</td><td>30.35</td><td>56.00</td><td>-25.65</td><td>20.10</td><td>9.68</td><td>0.30</td><td>QP</td></tr><tr><td>11</td><td>24.015</td><td>17.41</td><td>50.00</td><td>-32.59</td><td>6.25</td><td>9.81</td><td>0.70</td><td>Average</td></tr><tr><td>12</td><td>24.015</td><td>22.52</td><td>60.00</td><td>-37.48</td><td>11.36</td><td>9.81</td><td>0.70</td><td>QP</td></tr></tbody></table> Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB). 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).					Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark	1	0.165	33.27	55.21	-21.94	23.43	9.66	0.05	Average	2*	0.165	49.19	65.21	-16.02	39.35	9.66	0.05	QP	3	0.213	27.82	53.10	-25.28	17.96	9.65	0.06	Average	4	0.213	43.77	63.10	-19.33	33.91	9.65	0.06	QP	5	0.461	24.30	46.67	-22.37	14.39	9.65	0.09	Average	6	0.461	30.11	56.67	-26.56	20.20	9.65	0.09	QP	7	1.054	23.35	46.00	-22.65	13.38	9.65	0.12	Average	8	1.054	35.37	56.00	-20.63	25.40	9.65	0.12	QP	9	4.584	16.50	46.00	-29.50	6.25	9.68	0.30	Average	10	4.584	30.35	56.00	-25.65	20.10	9.68	0.30	QP	11	24.015	17.41	50.00	-32.59	6.25	9.81	0.70	Average	12	24.015	22.52	60.00	-37.48	11.36	9.81	0.70	QP
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark																																																																																																																
1	0.165	33.27	55.21	-21.94	23.43	9.66	0.05	Average																																																																																																																
2*	0.165	49.19	65.21	-16.02	39.35	9.66	0.05	QP																																																																																																																
3	0.213	27.82	53.10	-25.28	17.96	9.65	0.06	Average																																																																																																																
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Beamforming mode

Modulation	VHT40	Test Freq. (MHz)	5590
Power Phase	Line		

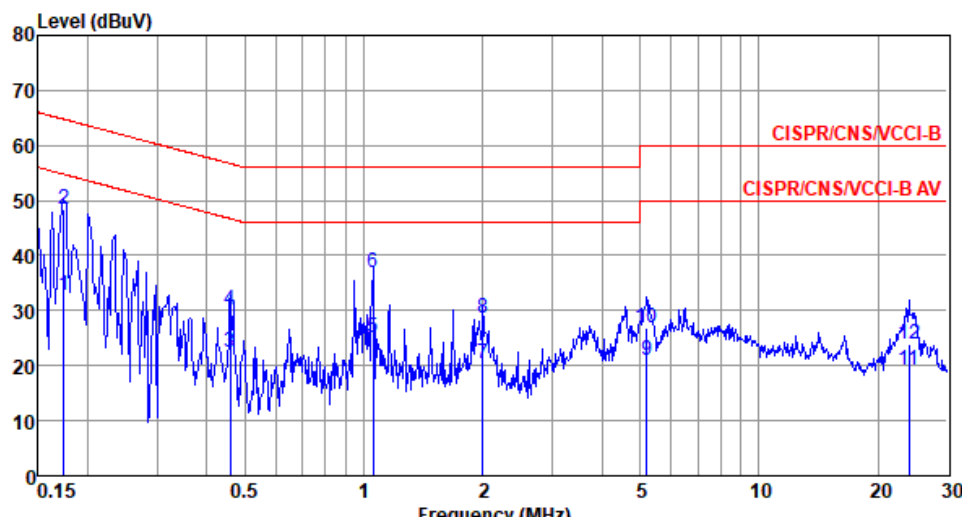


	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.177	32.86	54.64	-21.78	22.99	9.63	0.06	Average
2*	0.177	49.04	64.64	-15.60	39.17	9.63	0.06	QP
3	0.282	21.40	50.76	-29.36	11.48	9.63	0.07	Average
4	0.282	35.28	60.76	-25.48	25.36	9.63	0.07	QP
5	0.497	25.28	46.05	-20.77	15.29	9.63	0.09	Average
6	0.497	27.24	56.05	-28.81	17.25	9.63	0.09	QP
7	1.054	25.31	46.00	-20.69	15.24	9.63	0.12	Average
8	1.054	37.09	56.00	-18.91	27.02	9.63	0.12	QP
9	1.980	18.71	46.00	-27.29	8.55	9.64	0.18	Average
10	1.980	24.44	56.00	-31.56	14.28	9.64	0.18	QP
11	5.249	21.89	50.00	-28.11	11.53	9.66	0.32	Average
12	5.249	27.46	60.00	-32.54	17.10	9.66	0.32	QP

Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB).

2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).

Modulation	VHT40	Test Freq. (MHz)	5590
Power Phase	Neutral		



The graph displays the measured radio frequency interference level in dBuV against frequency in MHz. The y-axis ranges from 0 to 80 dBuV, and the x-axis ranges from 0.15 to 30 MHz. Two red limit lines are shown: CISPR/CNS/VCCI-B (upper) and CISPR/CNS/VCCI-B AV (lower). A blue line represents the measured signal, with several peaks labeled with numbers 1 through 12. The measured signal generally stays below the CISPR/CNS/VCCI-B AV limit, with a notable peak at 0.174 MHz (labeled 2*) that exceeds the CISPR/CNS/VCCI-B limit.

	Freq	Level	Limit	Over	Read	LISN	cable	
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark
			dBuV	dB	dBuV	dB	dB	
1	0.174	32.84	54.77	-21.93	22.99	9.65	0.06	Average
2*	0.174	48.27	64.77	-16.50	38.42	9.65	0.06	QP
3	0.459	22.52	46.71	-24.19	12.61	9.65	0.09	Average
4	0.459	30.00	56.71	-26.71	20.09	9.65	0.09	QP
5	1.054	24.96	46.00	-21.04	14.99	9.65	0.12	Average
6	1.054	37.03	56.00	-18.97	27.06	9.65	0.12	QP
7	2.001	20.30	46.00	-25.70	10.20	9.66	0.18	Average
8	2.001	28.69	56.00	-27.31	18.59	9.66	0.18	QP
9	5.194	21.01	50.00	-28.99	10.72	9.69	0.32	Average
10	5.194	26.77	60.00	-33.23	16.48	9.69	0.32	QP
11	24.015	19.17	50.00	-30.83	8.01	9.81	0.70	Average
12	24.015	23.88	60.00	-36.12	12.72	9.81	0.70	QP

Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).

2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

3.2 Emission Bandwidth

3.2.1 Test Procedures

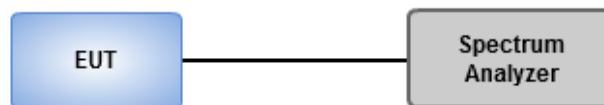
26dB Bandwidth

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW, Detector = Peak.
3. Trace mode = max hold.
4. Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

1. Set RBW = 1 % to 5 % of the OBW
2. Set VBW $\geq$ 3 RBW
3. Sample detection and single sweep mode shall be used
4. Use the 99 % power bandwidth function of the instrument

3.2.2 Test Setup



3.2.3 Test Result of Emission Bandwidth

Non-beamforming mode

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	24.348M	16.715M	16M7D1D	19.42M	16.353M
802.11ac VHT20_Nss1,(MCS0)_4TX	20.435M	17.583M	17M6D1D	19.783M	17.438M
802.11ac VHT40_Nss1,(MCS0)_4TX	49.42M	36.324M	36M3D1D	39.71M	36.035M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.449M	75.253M	75M3D1D	79.42M	74.964M
5.47-5.725GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	20.072M	16.498M	16M5D1D	19.638M	16.353M
802.11ac VHT20_Nss1,(MCS0)_4TX	20.507M	17.583M	17M6D1D	19.783M	17.511M
802.11ac VHT40_Nss1,(MCS0)_4TX	72.319M	36.324M	36M3D1D	39.855M	36.035M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.159M	75.543M	75M5D1D	79.13M	74.964M

Max-N dB = Maximum 26dB down bandwidth

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Maximum 26dB down bandwidth

Min-OBW = Minimum 99% occupied bandwidth;

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	19.71M	16.643M	19.71M	16.498M	19.783M	16.57M	24.348M	16.715M
5300MHz	Pass	Inf	19.71M	16.498M	19.71M	16.425M	19.928M	16.425M	19.565M	16.425M
5320MHz	Pass	Inf	19.42M	16.353M	19.638M	16.425M	19.783M	16.425M	19.493M	16.425M
5500MHz	Pass	Inf	19.783M	16.353M	19.855M	16.425M	20.072M	16.425M	19.928M	16.425M
5580MHz	Pass	Inf	19.638M	16.498M	19.638M	16.425M	20M	16.498M	19.783M	16.425M
5700MHz	Pass	Inf	19.783M	16.425M	19.855M	16.498M	19.71M	16.498M	19.928M	16.498M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	20.435M	17.511M	19.783M	17.511M	19.783M	17.438M	20M	17.583M
5300MHz	Pass	Inf	20.435M	17.511M	19.855M	17.583M	19.855M	17.583M	19.928M	17.583M
5320MHz	Pass	Inf	20.29M	17.583M	19.855M	17.511M	19.855M	17.583M	19.928M	17.583M
5500MHz	Pass	Inf	20M	17.583M	19.855M	17.583M	20M	17.511M	19.928M	17.511M
5580MHz	Pass	Inf	20.507M	17.583M	19.855M	17.583M	20M	17.511M	20M	17.583M
5700MHz	Pass	Inf	20M	17.583M	19.783M	17.583M	19.855M	17.583M	20M	17.583M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	40.725M	36.035M	39.855M	36.179M	40.29M	36.035M	49.42M	36.324M
5310MHz	Pass	Inf	40M	36.035M	39.71M	36.179M	40.145M	36.035M	40.145M	36.035M
5510MHz	Pass	Inf	40.435M	36.035M	39.855M	36.035M	40.435M	36.035M	40.145M	36.179M
5590MHz	Pass	Inf	40.725M	36.179M	47.681M	36.324M	45.507M	36.035M	72.319M	36.324M
5670MHz	Pass	Inf	40M	36.035M	40.145M	36.179M	40.435M	36.035M	40M	36.179M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.449M	75.253M	79.42M	74.964M	79.71M	75.253M	79.42M	74.964M
5530MHz	Pass	Inf	81.159M	75.543M	79.71M	74.964M	79.71M	75.253M	80M	74.964M
5610MHz	Pass	Inf	80.87M	75.253M	79.13M	74.964M	80.29M	74.964M	80.29M	75.253M

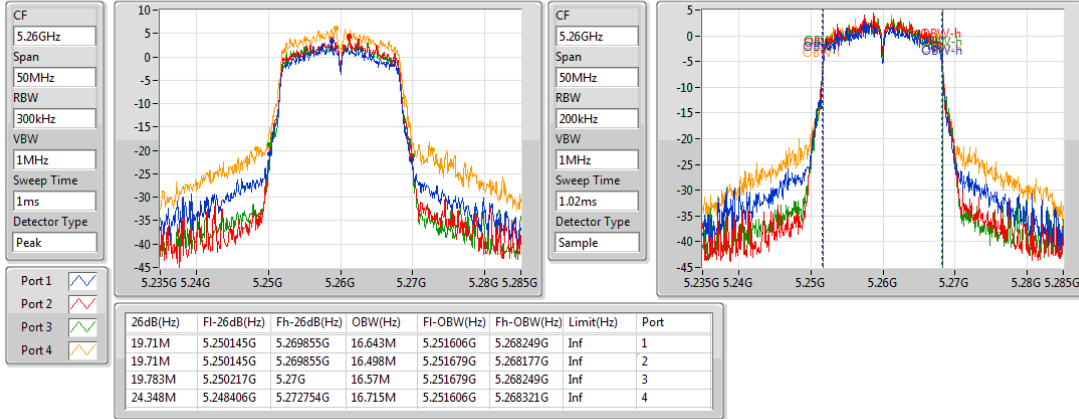
Port X-N dB = Port X 26dB down bandwidth

Port X-OBW = Port X 99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX

EBW

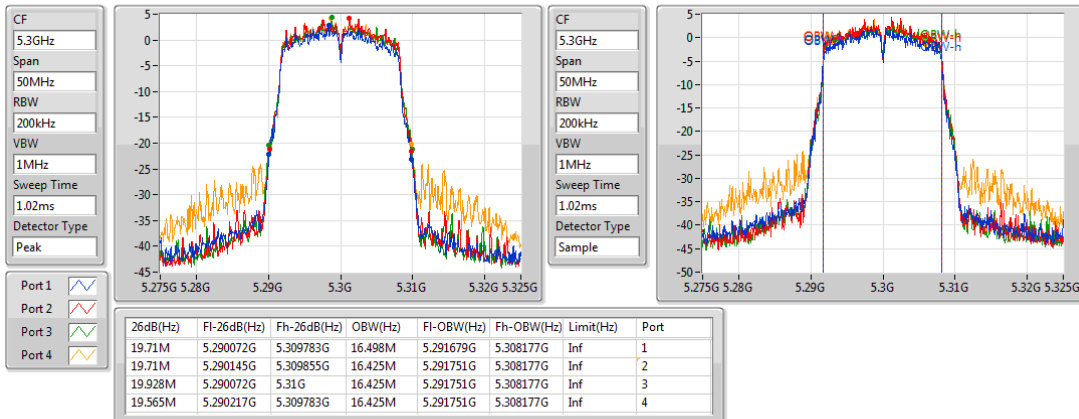
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802.11a_Nss1,(6Mbps)_4TX

EBW

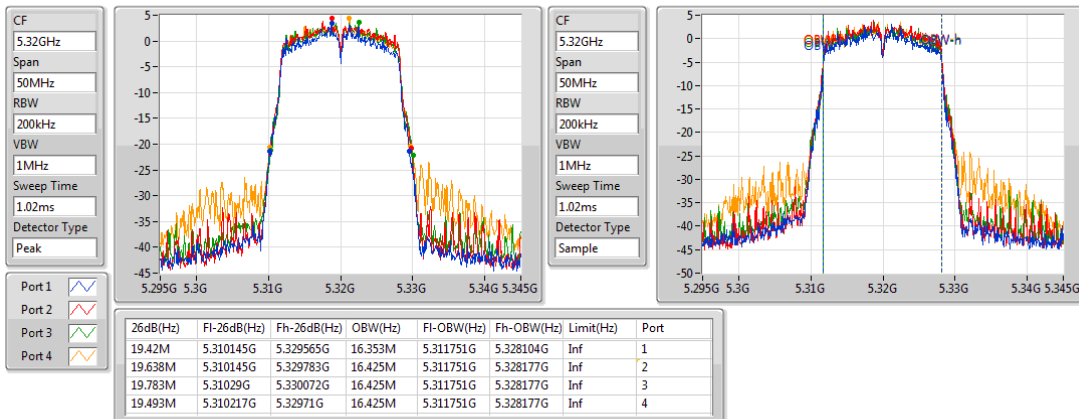
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802.11a_Nss1,(6Mbps)_4TX

EBW

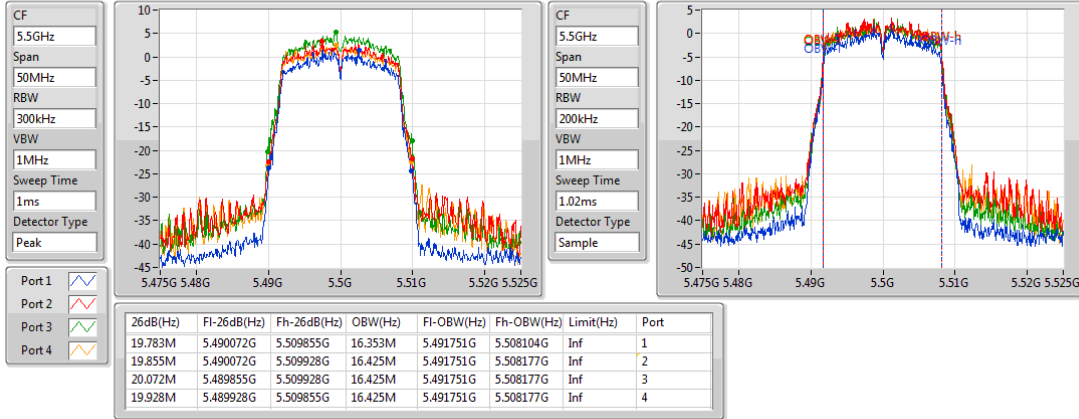
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802.11a_Nss1,(6Mbps)_4TX

EBW

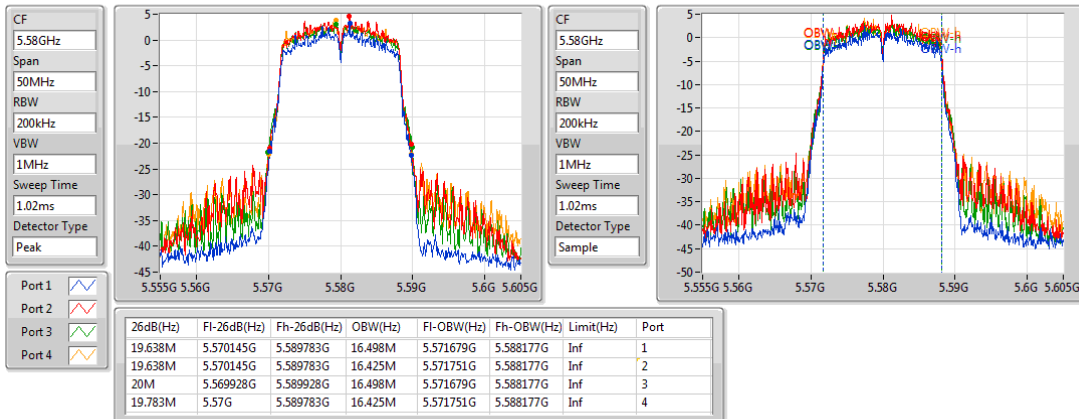
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802.11a_Nss1,(6Mbps)_4TX

EBW

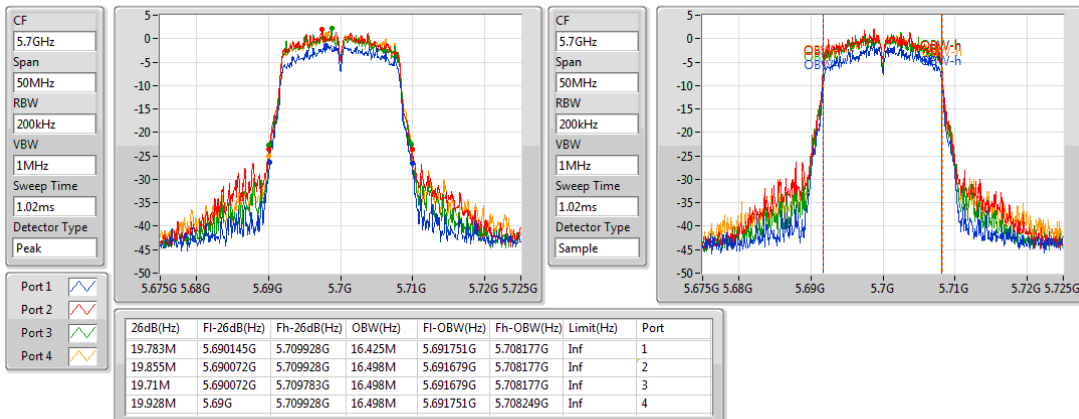
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802.11a_Nss1,(6Mbps)_4TX

EBW

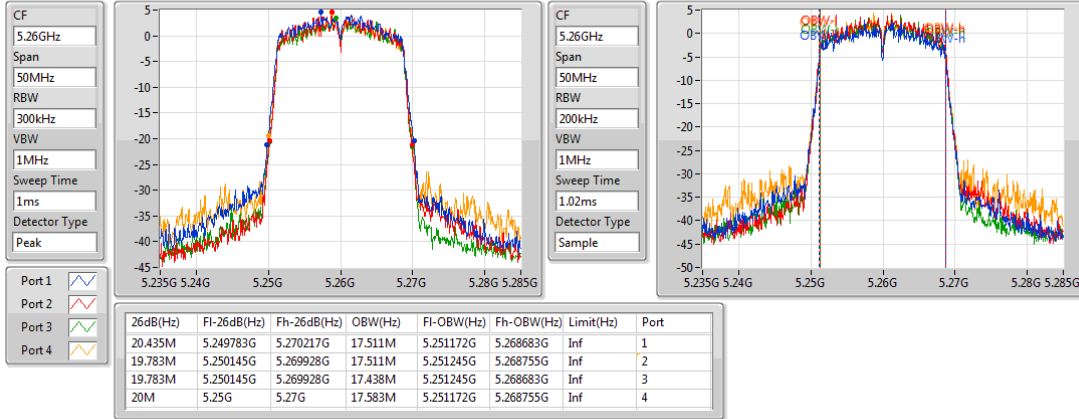
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802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

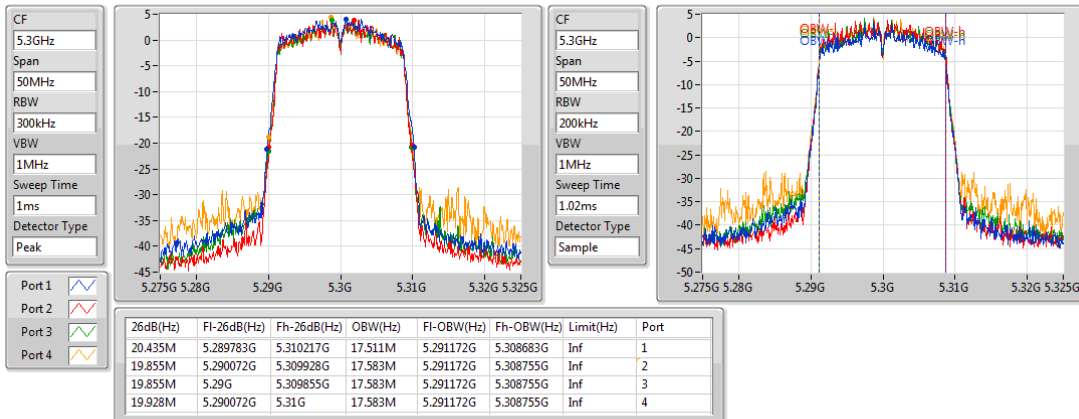
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802.11ac VHT20_Nss1,(MCS0)_4TX

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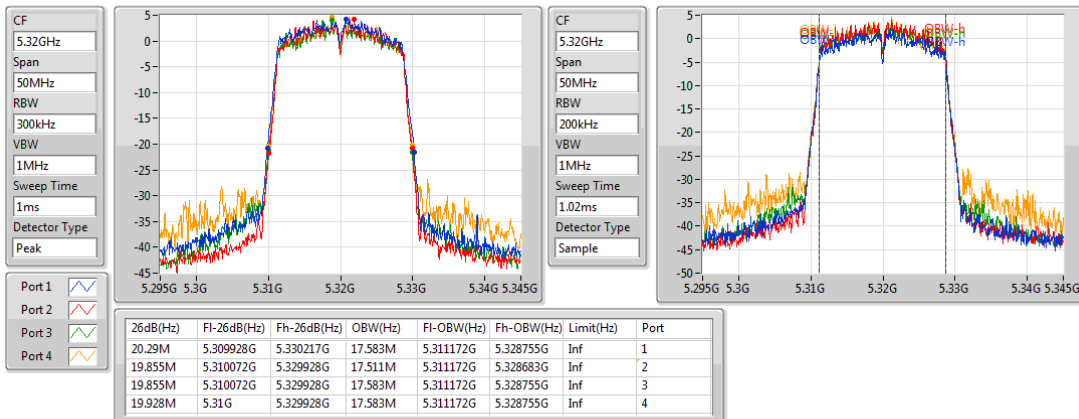
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802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

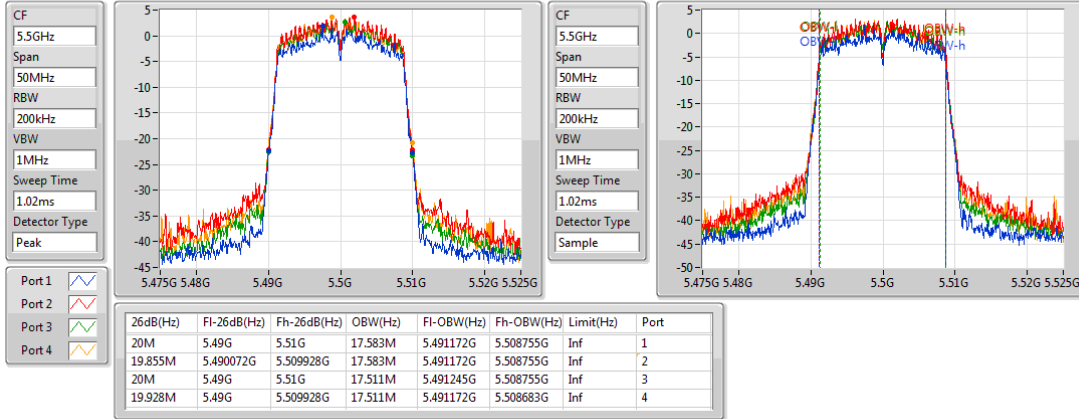
5320MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

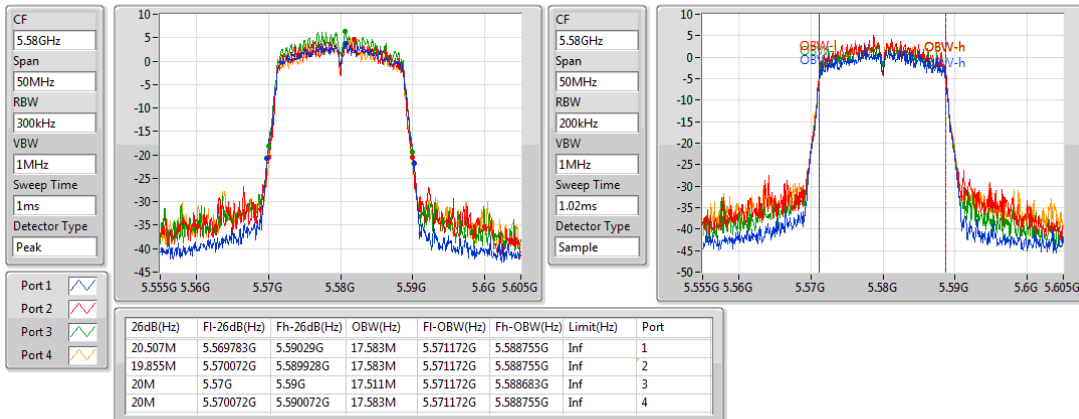
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802.11ac VHT20_Nss1,(MCS0)_4TX

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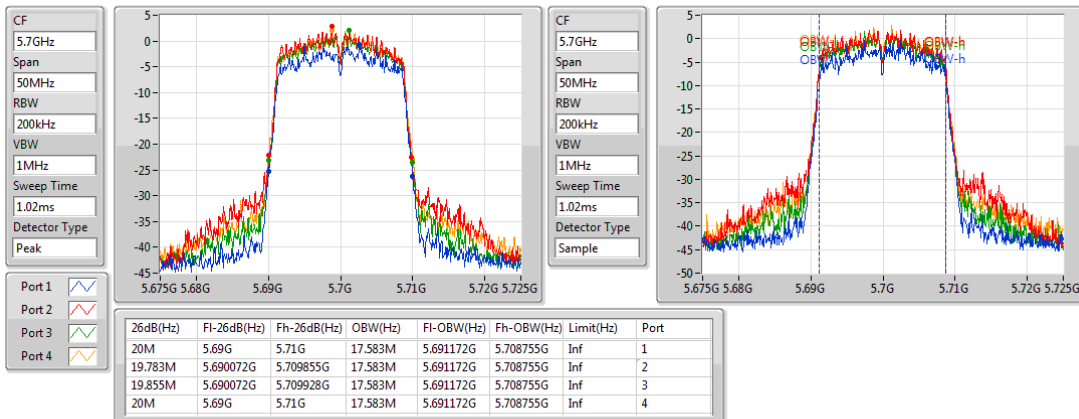
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802.11ac VHT20_Nss1,(MCS0)_4TX

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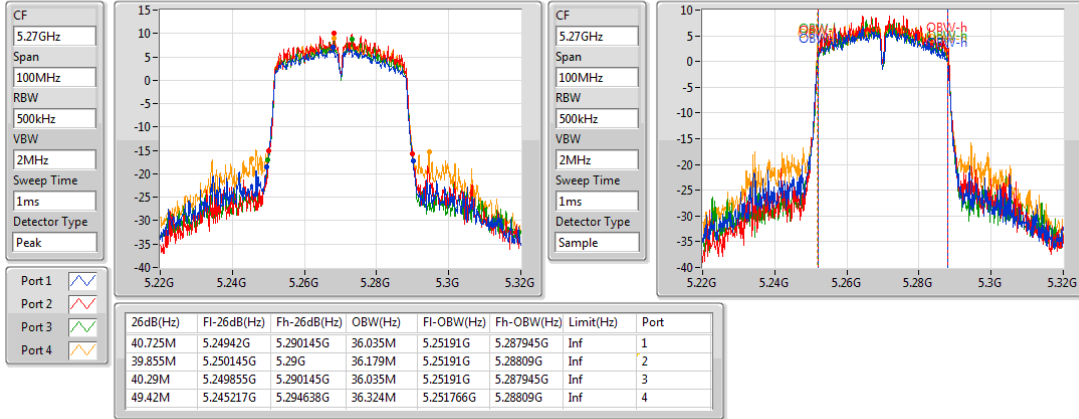
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802.11ac VHT40_Nss1,(MCS0)_4TX

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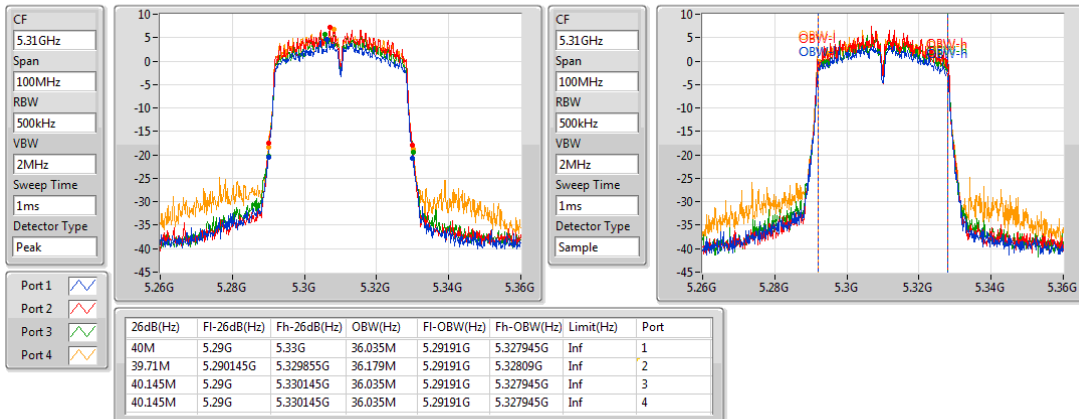
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802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

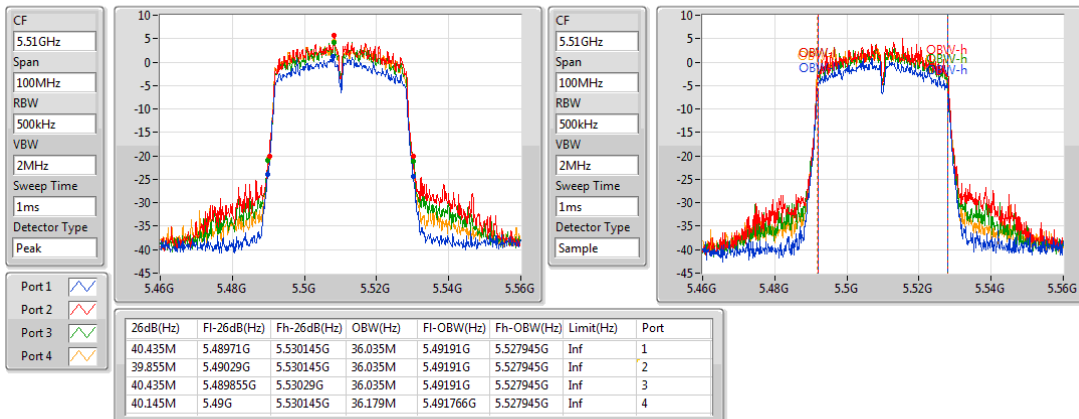
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802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

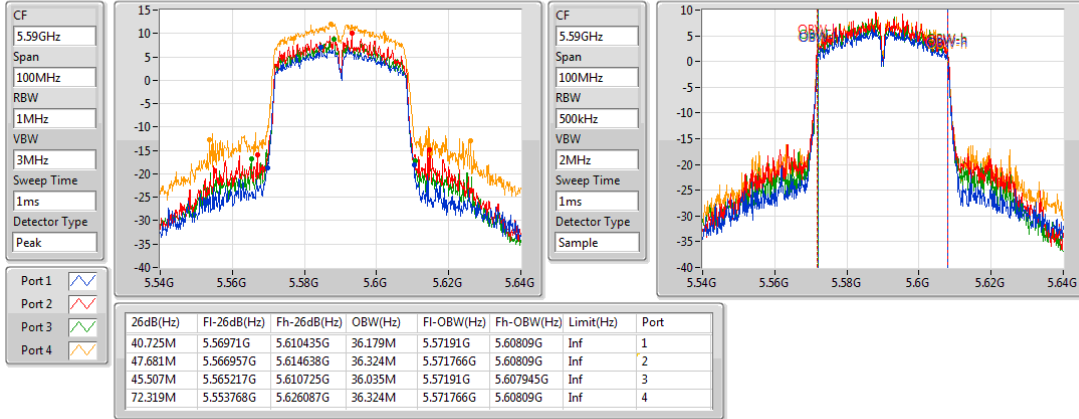
5510MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

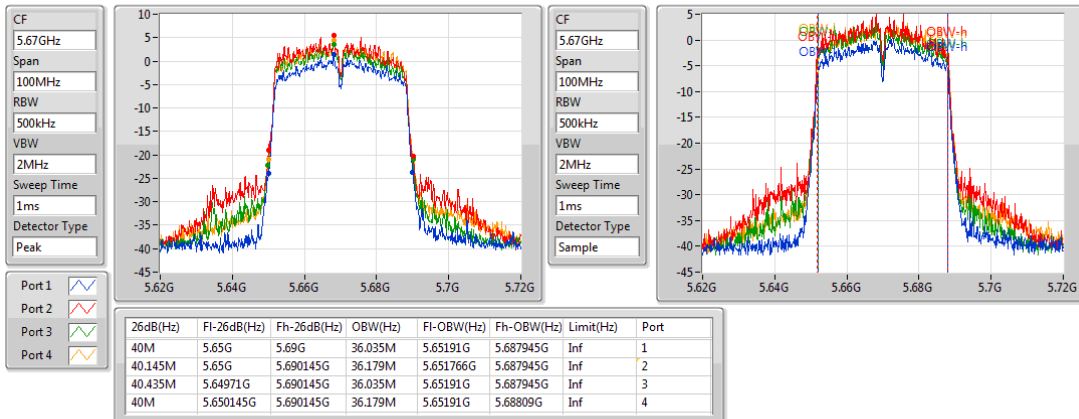
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802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

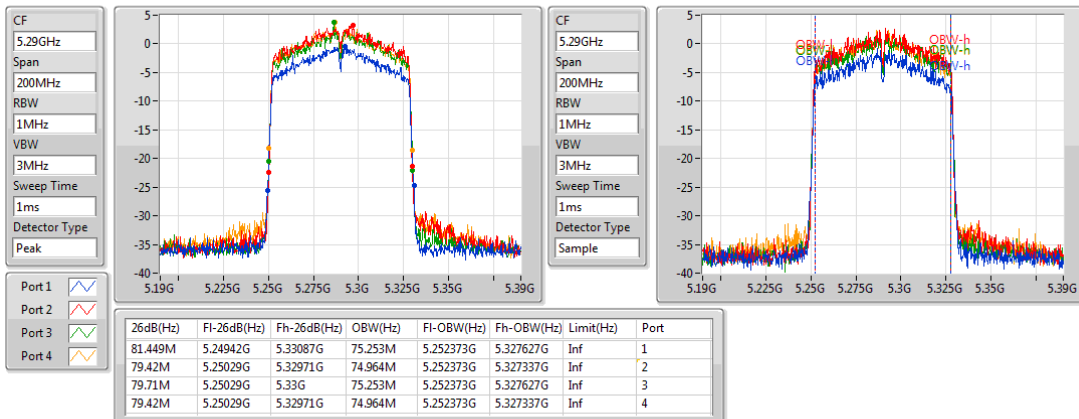
5670MHz



802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

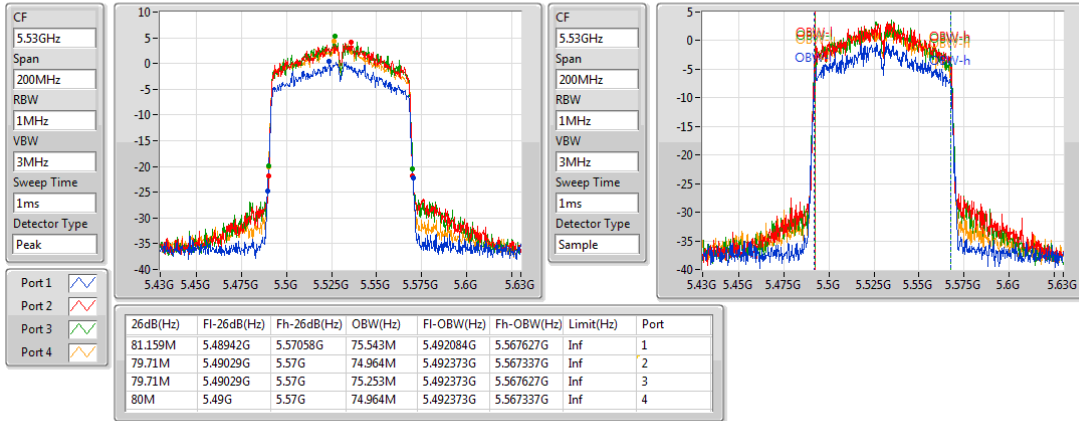
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802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

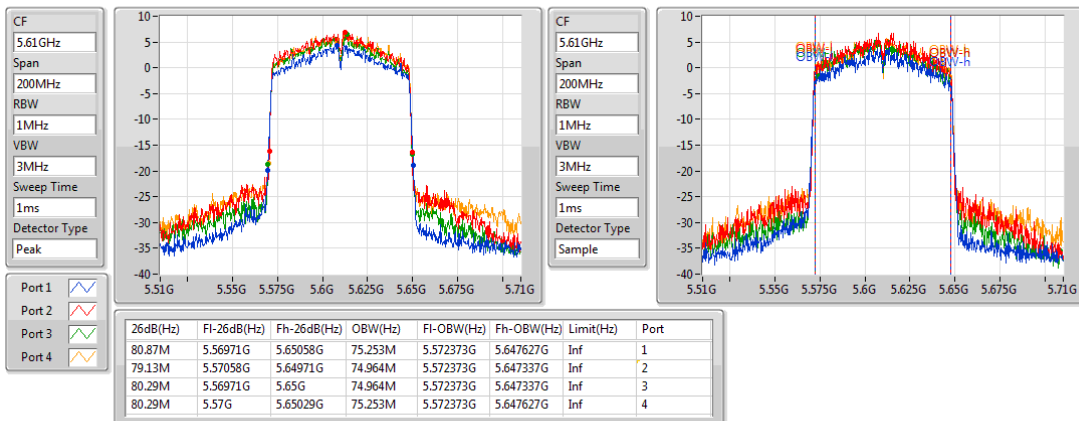
5530MHz



802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

5610MHz



Beamforming mode

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.25-5.35GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	23.623M	17.8M	17M8D1D	20M	17.656M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	68.116M	36.614M	36M6D1D	40.58M	36.179M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	81.739M	75.832M	75M8D1D	81.159M	75.543M
5.47-5.725GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.87M	17.8M	17M8D1D	20.362M	17.728M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	67.101M	36.469M	36M5D1D	40.58M	36.179M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	87.536M	75.832M	75M8D1D	80.87M	75.543M

Max-N dB = Maximum 26dB down bandwidth

Max-OBW = Maximum 99% occupied bandwidth

Min-N dB = Maximum 26dB down bandwidth

Min-OBW = Minimum 99% occupied bandwidth

Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)	Port 3-N dB (Hz)	Port 3-OBW (Hz)	Port 4-N dB (Hz)	Port 4-OBW (Hz)
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	Inf	20.507M	17.728M	20.507M	17.728M	20.362M	17.656M	23.623M	17.8M
5300MHz	Pass	Inf	20.362M	17.728M	20.58M	17.656M	20M	17.728M	20.507M	17.656M
5320MHz	Pass	Inf	20.58M	17.728M	20.507M	17.728M	20.435M	17.728M	20.435M	17.728M
5500MHz	Pass	Inf	20.507M	17.8M	20.58M	17.728M	20.58M	17.728M	20.362M	17.728M
5580MHz	Pass	Inf	20.58M	17.8M	20.507M	17.728M	20.507M	17.728M	20.725M	17.728M
5700MHz	Pass	Inf	20.435M	17.728M	20.87M	17.728M	20.652M	17.728M	20.652M	17.728M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	Inf	41.304M	36.324M	40.87M	36.179M	41.159M	36.324M	68.116M	36.324M
5310MHz	Pass	Inf	40.58M	36.614M	40.87M	36.179M	40.87M	36.324M	41.014M	36.324M
5510MHz	Pass	Inf	40.725M	36.179M	41.159M	36.469M	41.014M	36.324M	40.87M	36.324M
5590MHz	Pass	Inf	41.159M	36.469M	40.58M	36.469M	45.362M	36.324M	67.101M	36.469M
5670MHz	Pass	Inf	40.87M	36.179M	40.87M	36.179M	41.014M	36.324M	41.159M	36.179M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	Inf	81.739M	75.832M	81.449M	75.543M	81.449M	75.543M	81.159M	75.832M
5530MHz	Pass	Inf	82.029M	75.543M	81.739M	75.543M	80.87M	75.832M	82.029M	75.832M
5610MHz	Pass	Inf	81.739M	75.832M	81.159M	75.543M	81.739M	75.543M	87.536M	75.832M

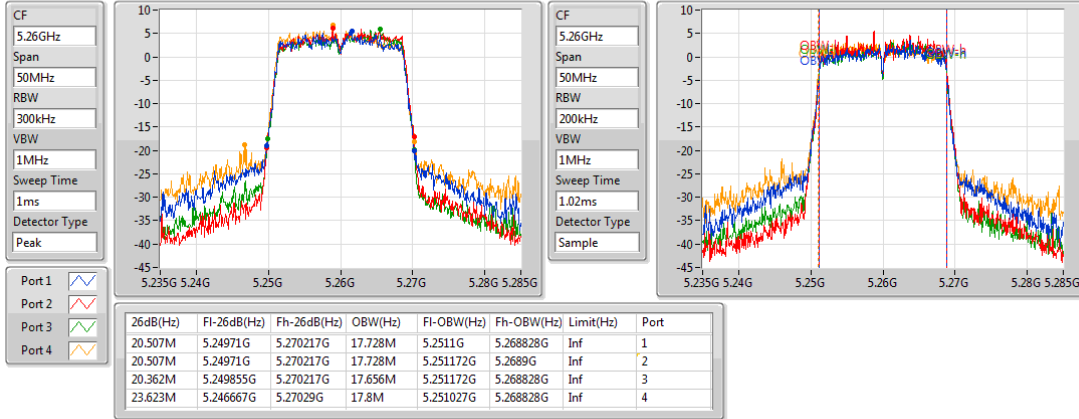
Port X-N dB = Port X 26dB down bandwidth

Port X-OBW = Port X 99% occupied bandwidth

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

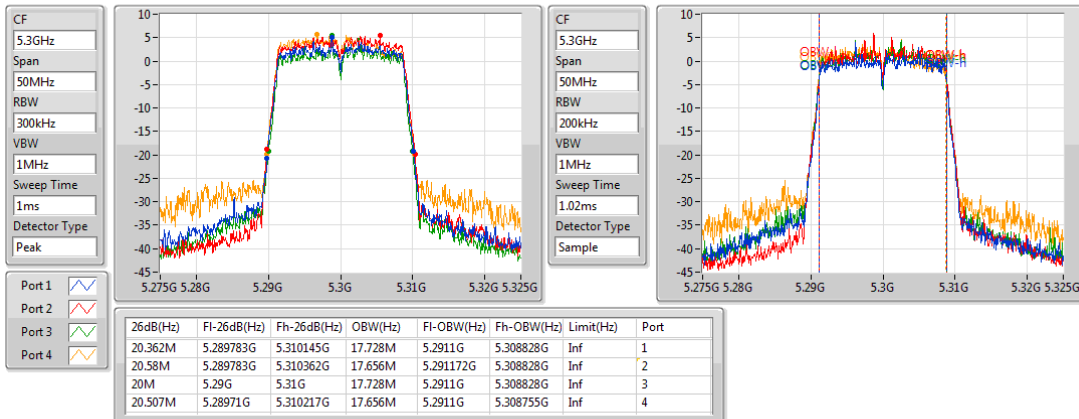
5260MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

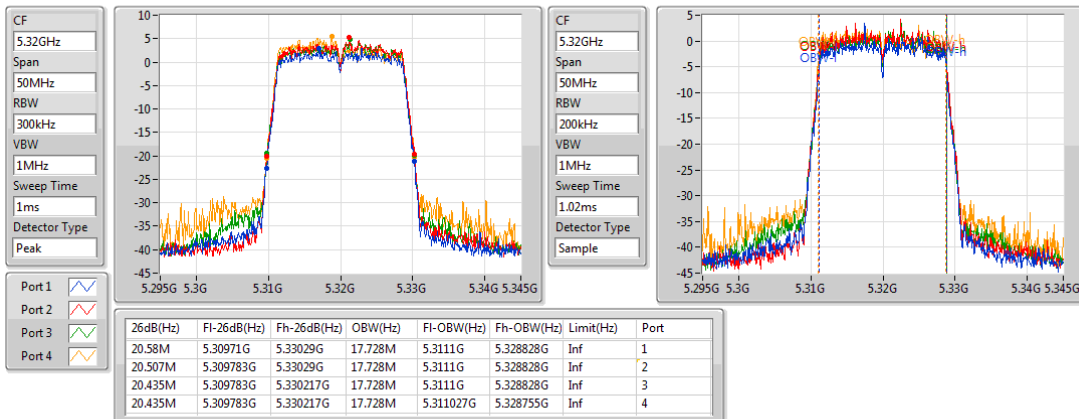
5300MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

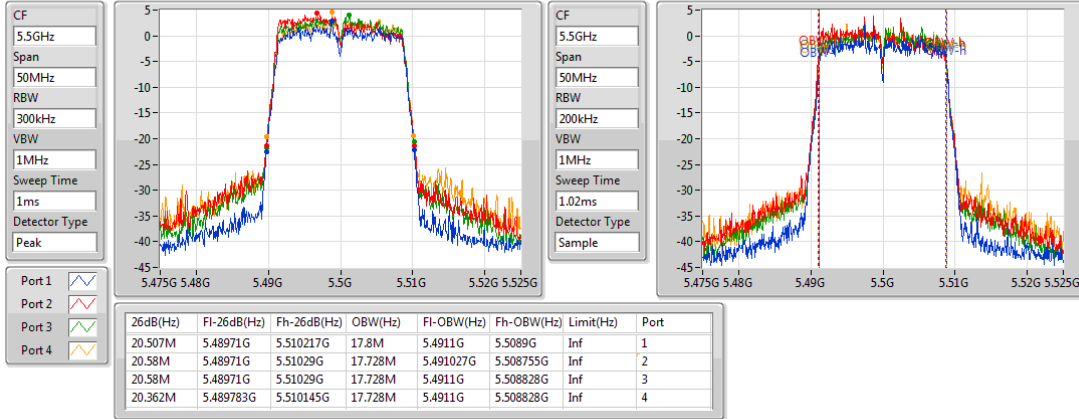
5320MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

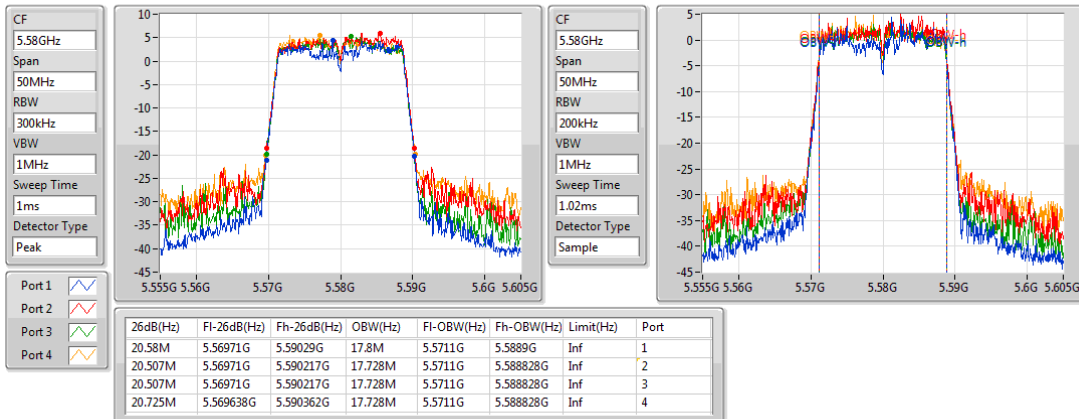
5500MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

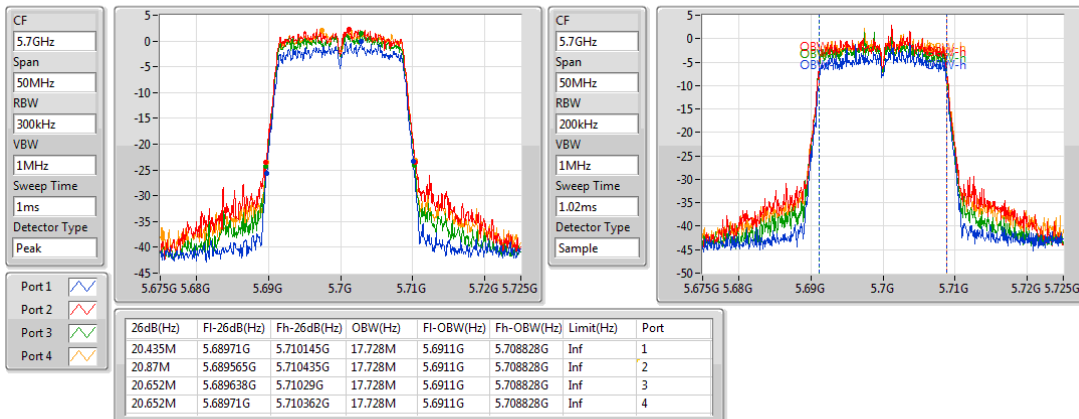
5580MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

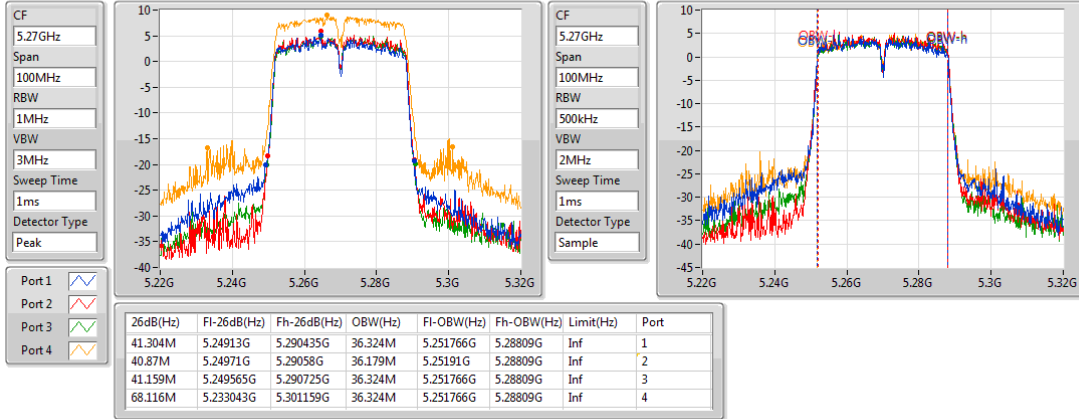
5700MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

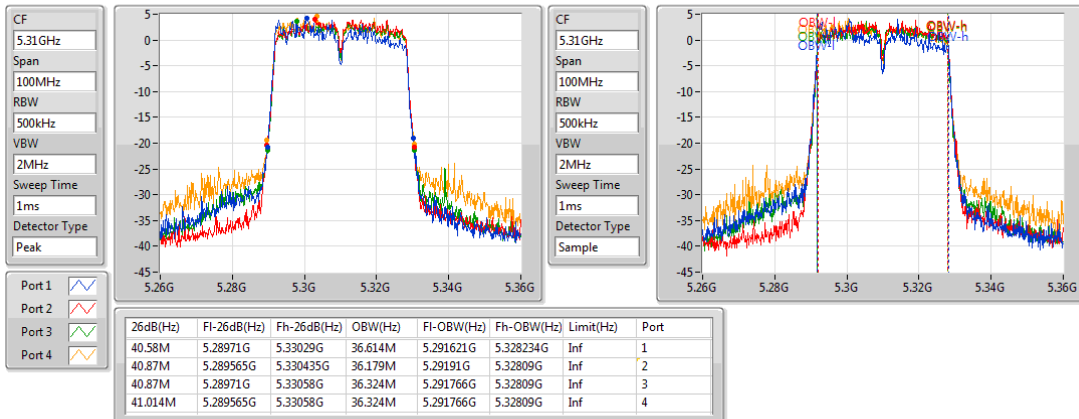
5270MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

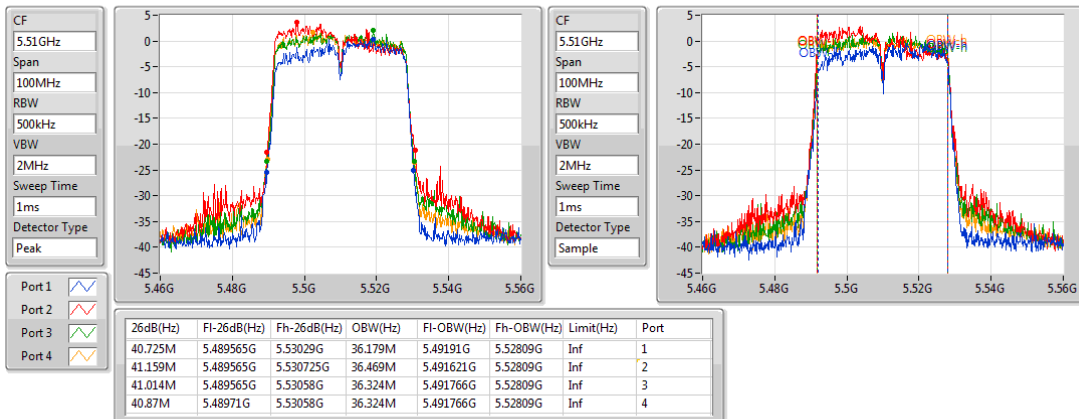
5310MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

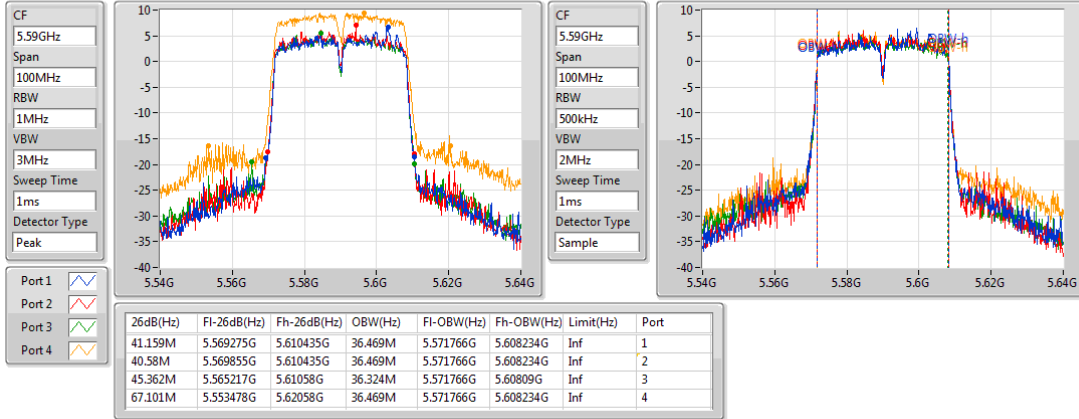
5510MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

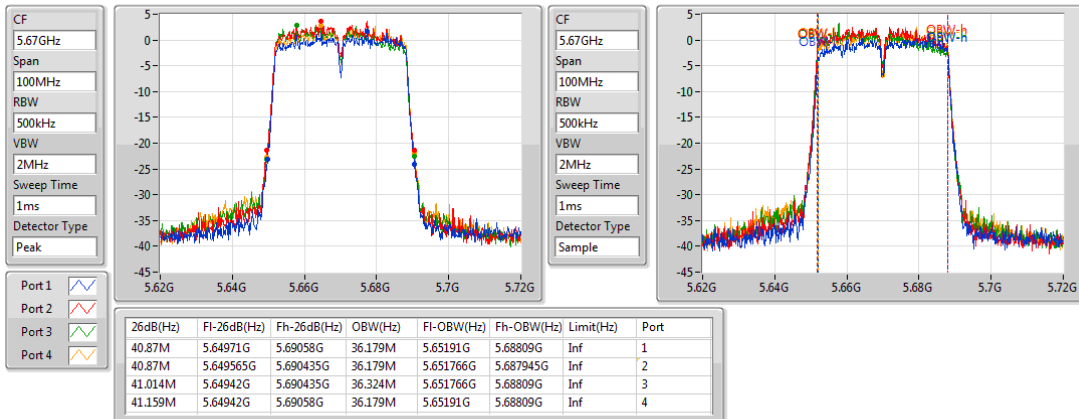
5590MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

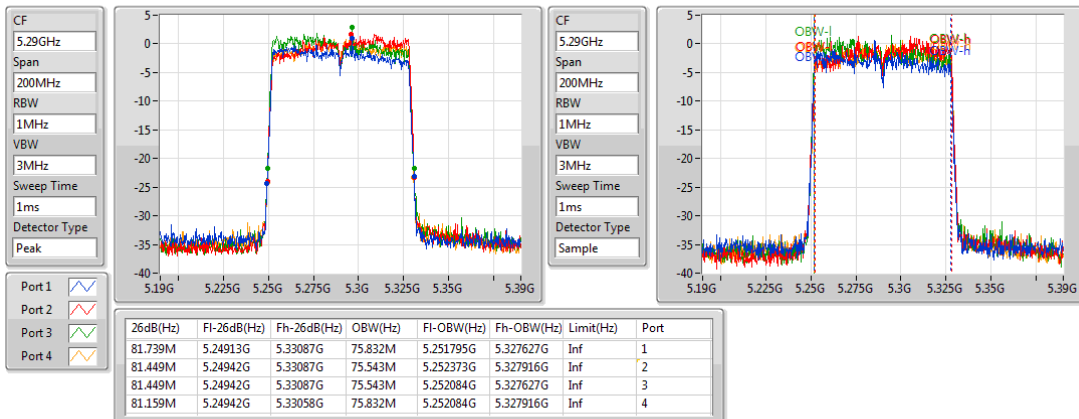
5670MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

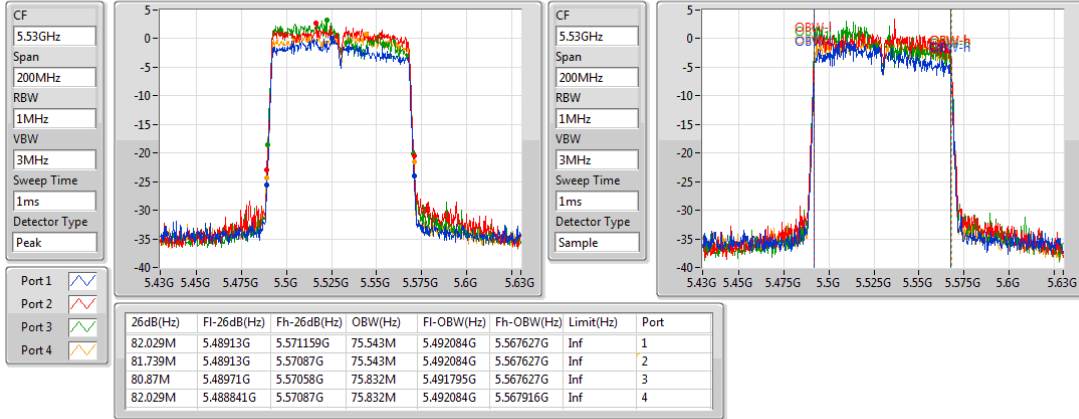
5290MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

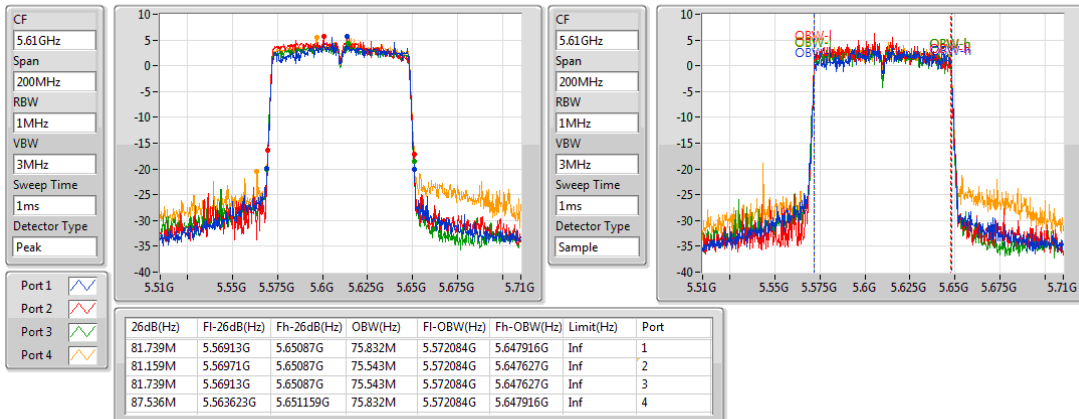
5530MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5610MHz



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Frequency Band (MHz)		Limit
☒	5250 ~ 5350	Conducted Power: 250mW or 11dBm+10 log B
☒	5470 ~ 5725	Conducted Power: 250mW or 11dBm+10 log B
Note: "B" is the 26dB emission bandwidth in MHz.		

3.3.2 Test Procedures

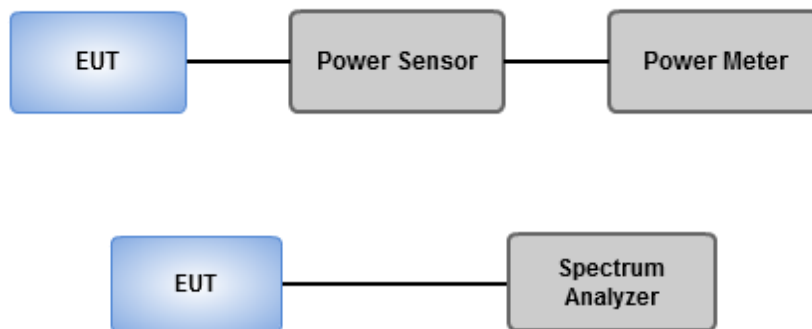
Method PM-G (Measurement using a gated RF average power meter)

Measurements is performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Spectrum analyzer (For channel that extends across the 5.725 GHz boundary)

1. Set RBW = 1MHz, VBW = 3MHz, Sweep time = Auto, Detector = RMS.
2. Trace average at least 100 traces in power averaging mode.
3. Compute power by integrating the spectrum across the 26 dB EBW.
4. Add $10 \log(1/X, X:\text{duty cycle})$ if duty cycle is <98%).

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

Non-beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.25-5.35GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	20.56	0.11376	23.46	0.22182
802.11ac VHT20_Nss1,(MCS0)_4TX	20.43	0.11041	23.33	0.21528
802.11ac VHT40_Nss1,(MCS0)_4TX	23.51	0.22439	26.41	0.43752
802.11ac VHT80_Nss1,(MCS0)_4TX	16.53	0.04498	19.43	0.08770
5.47-5.725GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	20.67	0.11668	23.57	0.22751
802.11ac VHT20_Nss1,(MCS0)_4TX	20.58	0.11429	23.48	0.22284
802.11ac VHT40_Nss1,(MCS0)_4TX	23.52	0.22491	26.42	0.43853
802.11ac VHT80_Nss1,(MCS0)_4TX	20.31	0.10740	23.21	0.20941

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	2.90	13.79	14.83	14.65	14.76	20.55	23.95	23.45	29.95
5300MHz	Pass	2.90	13.69	14.89	14.52	14.76	20.51	23.91	23.41	29.91
5320MHz	Pass	2.90	13.74	14.95	14.53	14.85	20.56	23.88	23.46	29.88
5500MHz	Pass	2.90	12.37	14.19	13.84	13.81	19.63	23.96	22.53	29.96
5580MHz	Pass	2.90	13.48	15.23	14.77	14.92	20.67	23.93	23.57	29.93
5700MHz	Pass	2.90	10.31	12.77	12.01	12.73	18.08	23.95	20.98	29.95
802.11ac VHT20_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	2.90	13.34	14.77	14.45	14.67	20.36	23.96	23.26	29.96
5300MHz	Pass	2.90	13.45	14.86	14.41	14.61	20.38	23.98	23.28	29.98
5320MHz	Pass	2.90	13.57	14.82	14.52	14.64	20.43	23.98	23.33	29.98
5500MHz	Pass	2.90	12.18	14.16	13.76	13.85	19.57	23.98	22.47	29.98
5580MHz	Pass	2.90	13.31	15.18	14.73	14.81	20.58	23.98	23.48	29.98
5700MHz	Pass	2.90	10.22	12.66	12.06	12.56	18.00	23.96	20.90	29.96
802.11ac VHT40_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	2.90	17.26	17.89	17.22	17.56	23.51	24.00	26.41	30.00
5310MHz	Pass	2.90	14.07	15.12	14.57	15.17	20.78	24.00	23.68	30.00
5510MHz	Pass	2.90	10.92	13.05	12.65	12.67	18.42	24.00	21.32	30.00
5590MHz	Pass	2.90	16.72	17.99	17.3	17.88	23.52	24.00	26.42	30.00
5670MHz	Pass	2.90	10.64	13.12	12.16	12.67	18.26	24.00	21.16	30.00
802.11ac VHT80_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	2.90	8.63	11.07	10.84	11.05	16.53	24.00	19.43	30.00
5530MHz	Pass	2.90	8.97	11.46	11.29	11.44	16.93	24.00	19.83	30.00
5610MHz	Pass	2.90	13.12	14.97	14.22	14.64	20.31	24.00	23.21	30.00

DG = Directional Gain; Port X = Port X output power

Beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.25-5.35GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.13	0.10304	28.75	0.74989
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	20.93	0.12388	29.55	0.90157
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	15.39	0.03459	24.01	0.25177
5.47-5.725GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	20.23	0.10544	28.83	0.76384
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	21.02	0.12647	29.62	0.91622
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	19.30	0.08511	27.90	0.61660

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	8.62	13.37	14.56	14.02	14.39	20.13	21.38	28.75	30.00
5300MHz	Pass	8.62	13.43	14.46	14.03	14.36	20.11	21.38	28.73	30.00
5320MHz	Pass	8.62	12.79	13.46	13.21	13.68	19.32	21.38	27.94	30.00
5500MHz	Pass	8.60	11.26	12.43	12.53	12.75	18.30	21.40	26.90	30.00
5580MHz	Pass	8.60	13.24	14.47	14.32	14.67	20.23	21.40	28.83	30.00
5700MHz	Pass	8.60	9.05	11.48	10.82	11.35	16.80	21.40	25.40	30.00
802.11ac VHT40-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	8.62	14.73	15.03	14.73	15.14	20.93	21.38	29.55	30.00
5310MHz	Pass	8.62	13.13	13.18	12.79	13.67	19.22	21.38	27.84	30.00
5510MHz	Pass	8.60	10.46	11.26	11.42	12.01	17.34	21.40	25.94	30.00
5590MHz	Pass	8.60	14.37	14.96	14.81	15.73	21.02	21.40	29.62	30.00
5670MHz	Pass	8.60	10.61	12.46	12.15	12.82	18.11	21.40	26.71	30.00
802.11ac VHT80-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	8.62	8.19	9.77	9.74	9.58	15.39	21.38	24.01	30.00
5530MHz	Pass	8.60	8.02	10.03	10.05	10.12	15.66	21.40	24.26	30.00
5610MHz	Pass	8.60	12.31	13.53	13.24	13.89	19.30	21.40	27.90	30.00

DG = Directional Gain; Port X = Port X output power

Note:

Port X = Port X output power

For 5250 ~ 5350 MHz

DG = Directional Gain = $10 \times \log((10^{2.8/20} + 10^{2.4/20} + 10^{2.3/20} + 10^{2.9/20})^4 / 4)$ = 8.62 dBi > 6 dBi

Limit shall be reduced to 24 dBm – (8.62 dBi – 6 dBi) = 21.38 dBm

For 5470 ~ 5725MHz

DG = Directional Gain = $10 \times \log((10^{2.2/20} + 10^{2.5/20} + 10^{2.7/20} + 10^{2.9/20})^4 / 4)$ = 8.60 dBi > 6 dBi

Limit shall be reduced to 24 dBm – (8.60dBi – 6 dBi) = 21.40 dBm

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

Frequency Band (MHz)		Limit
☒	5250 ~ 5350	11 dBm / MHz
☒	5470 ~ 5725	11 dBm / MHz

3.4.2 Test Procedures

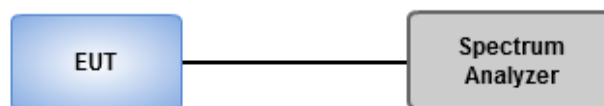
Duty cycle $\geq 98\%$

1. Set RBW = 1 MHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

Duty cycle $< 98\%$

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time $\geq 10 * (\text{number of points in sweep}) * (\text{total on/off period of the transmitted signal})$.
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add $10 \log(1/x)$, where x is the duty cycle.

3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

Non-beamforming mode

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.25-5.35GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	8.22	16.84
802.11ac VHT20_Nss1,(MCS0)_4TX	8.20	16.82
802.11ac VHT40_Nss1,(MCS0)_4TX	8.00	16.62
802.11ac VHT80_Nss1,(MCS0)_4TX	-1.87	6.75
5.47-5.725GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	8.27	16.87
802.11ac VHT20_Nss1,(MCS0)_4TX	8.23	16.83
802.11ac VHT40_Nss1,(MCS0)_4TX	8.10	16.70
802.11ac VHT80_Nss1,(MCS0)_4TX	2.06	10.66

RBW = 1MHz

Result

Mode	Result	DG (dBi)	Port 1 (dBm/ RBW)	Port 2 (dBm/ RBW)	Port 3 (dBm/ RBW)	Port 4 (dBm/ RBW)	PD (dBm/ RBW)	PD Limit (dBm/ RBW)	EIRP PD (dBm/ RBW)	EIRP PD Limit (dBm/ RBW)
802.11a_Nss1,(6Mbps) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	8.62	1.64	2.55	2.43	2.39	8.05	8.38	16.67	17.00
5300MHz	Pass	8.62	1.55	2.56	2.30	2.89	8.10	8.38	16.72	17.00
5320MHz	Pass	8.62	1.72	2.77	2.38	2.65	8.22	8.38	16.84	17.00
5500MHz	Pass	8.60	0.13	1.54	1.65	1.49	7.09	8.40	15.69	17.00
5580MHz	Pass	8.60	1.52	3.00	2.45	2.85	8.27	8.40	16.87	17.00
5700MHz	Pass	8.60	-2.03	0.47	-0.20	0.13	5.61	8.40	14.21	17.00
802.11ac VHT20_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	8.62	1.16	2.80	2.26	2.47	7.98	8.38	16.60	17.00
5300MHz	Pass	8.62	1.29	3.11	2.33	2.63	8.11	8.38	16.73	17.00
5320MHz	Pass	8.62	1.32	2.97	2.55	3.00	8.20	8.38	16.82	17.00
5500MHz	Pass	8.60	-0.31	1.86	1.52	1.83	7.10	8.40	15.70	17.00
5580MHz	Pass	8.60	0.83	3.49	2.55	2.56	8.23	8.40	16.83	17.00
5700MHz	Pass	8.60	-2.74	0.61	-0.24	0.64	5.51	8.40	14.11	17.00
802.11ac VHT40_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	8.62	1.80	2.54	1.84	2.01	8.00	8.38	16.62	17.00
5310MHz	Pass	8.62	-1.70	-0.62	-1.00	-0.61	4.96	8.38	13.58	17.00
5510MHz	Pass	8.60	-4.61	-2.66	-2.82	-2.92	2.75	8.40	11.35	17.00
5590MHz	Pass	8.60	1.67	2.51	2.08	2.34	8.10	8.40	16.70	17.00
5670MHz	Pass	8.60	-4.84	-2.40	-3.11	-2.85	2.66	8.40	11.26	17.00
802.11ac VHT80_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	8.62	-9.90	-7.05	-7.45	-7.31	-1.87	8.38	6.75	17.00
5530MHz	Pass	8.60	-9.26	-6.32	-6.10	-6.65	-0.96	8.40	7.64	17.00
5610MHz	Pass	8.60	-5.05	-3.39	-3.60	-3.42	2.06	8.40	10.66	17.00

DG = Directional Gain; **RBW** = 1MHz

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

Note:

DG = Directional Gain = $10 \times \log((10^{2.8/20} + 10^{2.4/20} + 10^{2.3/20} + 10^{2.9/20})^4 / 4) = 8.62 \text{ dBi} > 6 \text{ dBi}$

Limit shall be reduced to 11 dBm – (8.62 dBi – 6 dBi) = 8.38 dBm

For 5470 ~ 5725MHz

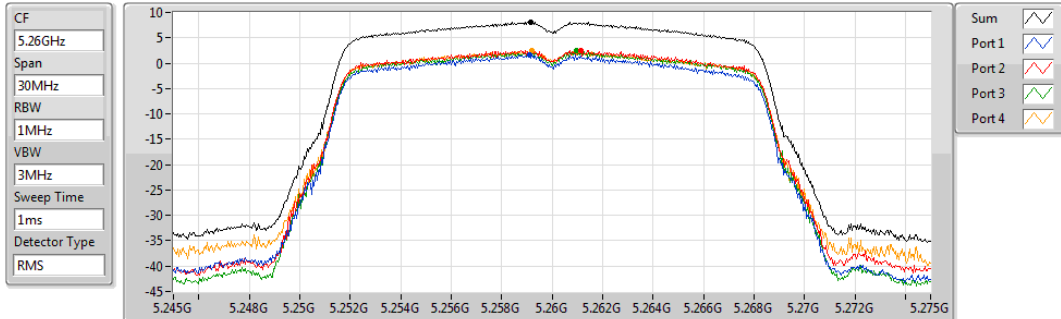
DG = Directional Gain = $10 \times \log((10^{2.2/20} + 10^{2.5/20} + 10^{2.7/20} + 10^{2.9/20})^4 / 4) = 8.60 \text{ dBi} > 6 \text{ dBi}$

Limit shall be reduced to 11 dBm – (8.60 dBi – 6 dBi) = 8.40 dBm

802.11a_Nss1,(6Mbps)_4TX

PSD

5260MHz

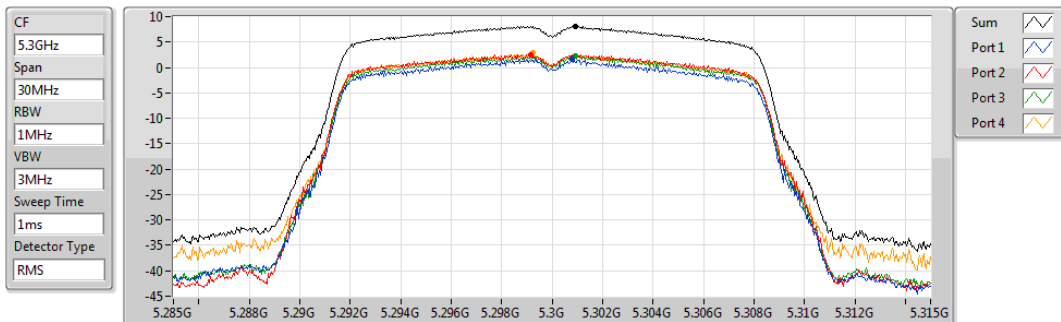


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.05	8.05	1.64	2.55	2.43	2.39

802.11a_Nss1,(6Mbps)_4TX

PSD

5300MHz

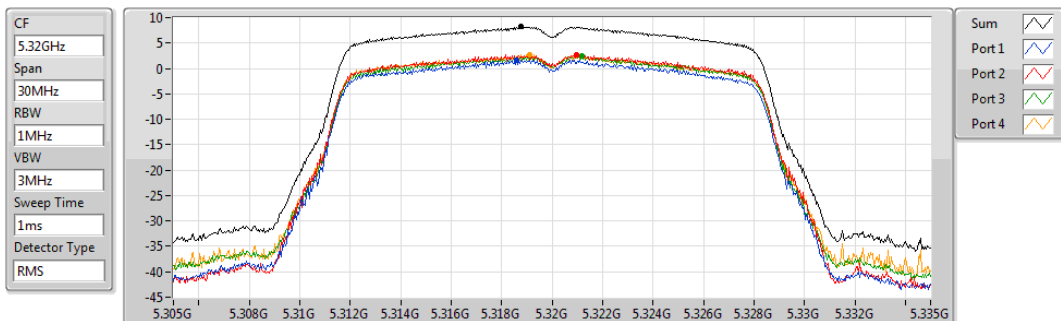


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.10	8.10	1.55	2.56	2.30	2.89

802.11a_Nss1,(6Mbps)_4TX

PSD

5320MHz

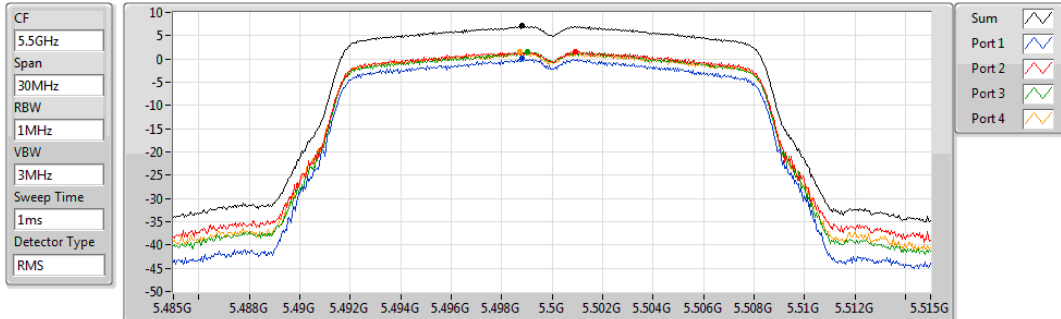


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.22	8.22	1.72	2.77	2.38	2.65

802.11a_Nss1,(6Mbps)_4TX

PSD

5500MHz

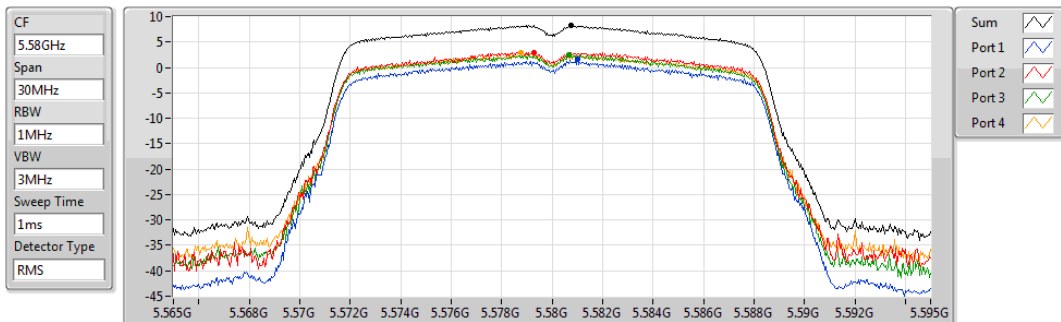


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.09	7.09	0.13	1.54	1.65	1.49

802.11a_Nss1,(6Mbps)_4TX

PSD

5580MHz

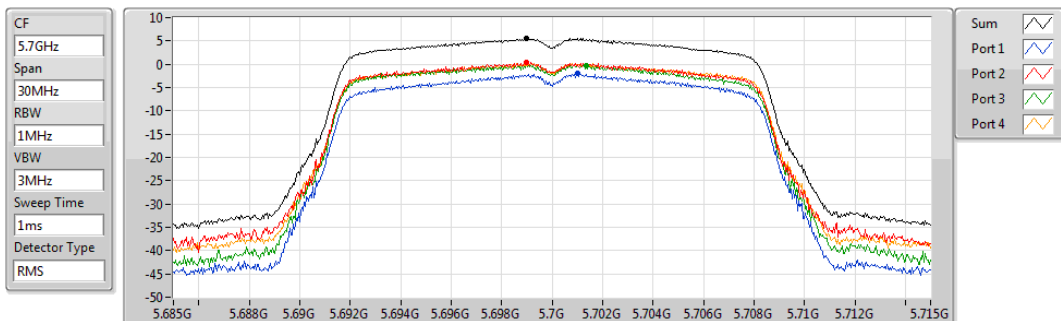


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
8.27	8.27	1.52	3.00	2.45	2.85

802.11a_Nss1,(6Mbps)_4TX

PSD

5700MHz

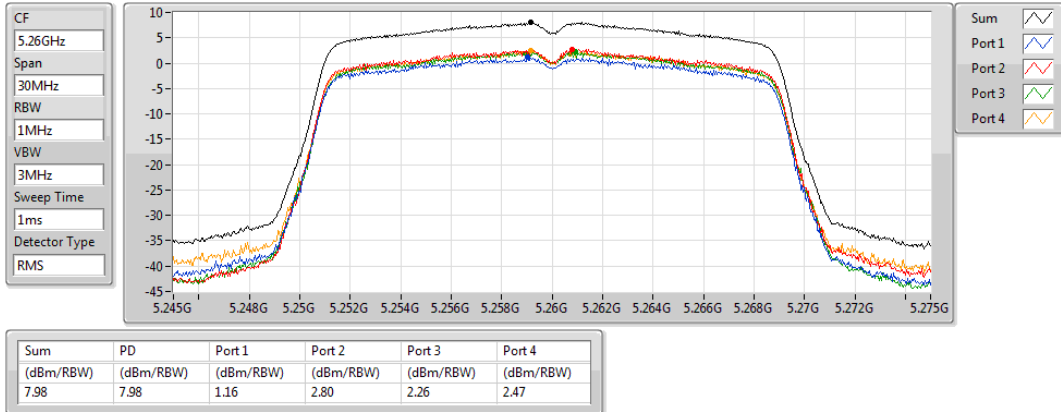


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
5.61	5.61	-2.03	0.47	-0.20	0.13

802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

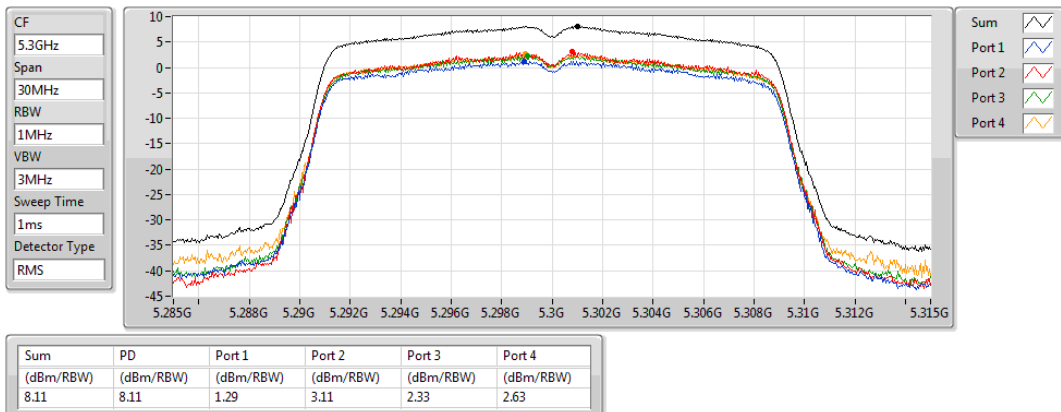
5260MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

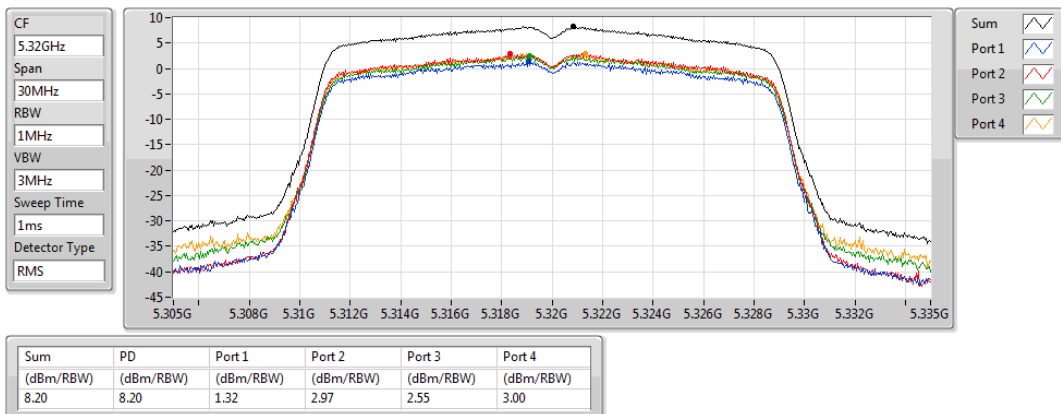
5300MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

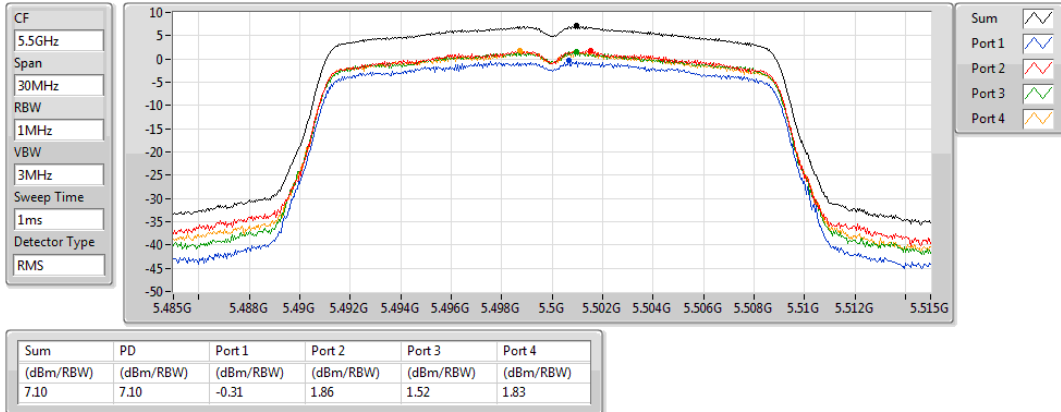
5320MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

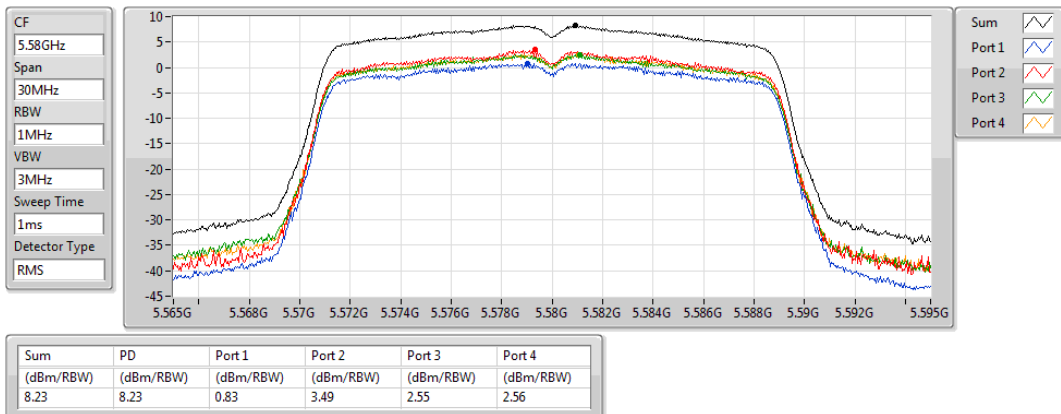
5500MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

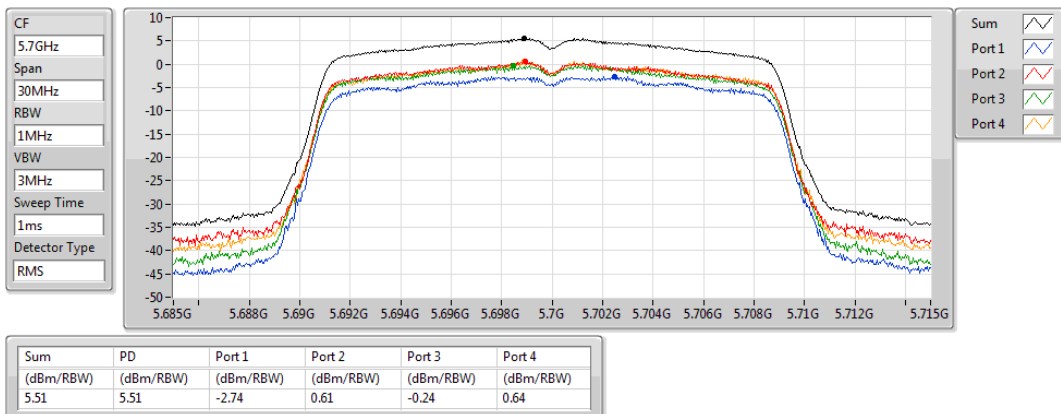
5580MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

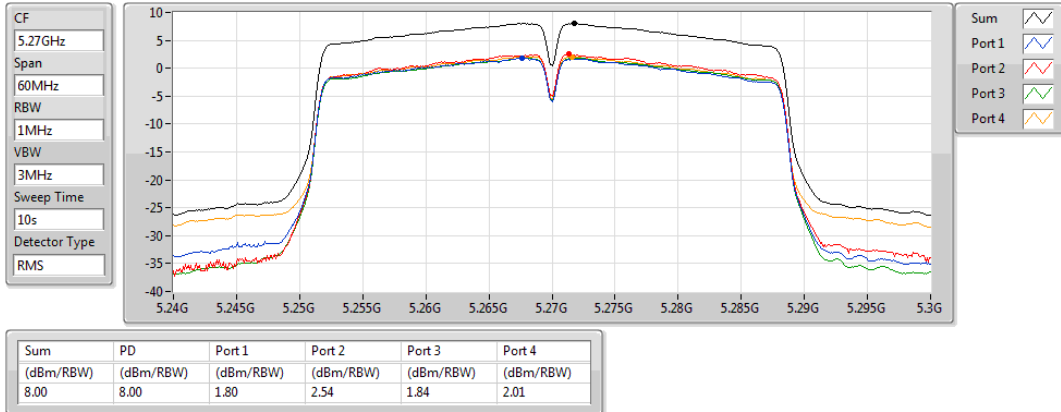
5700MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

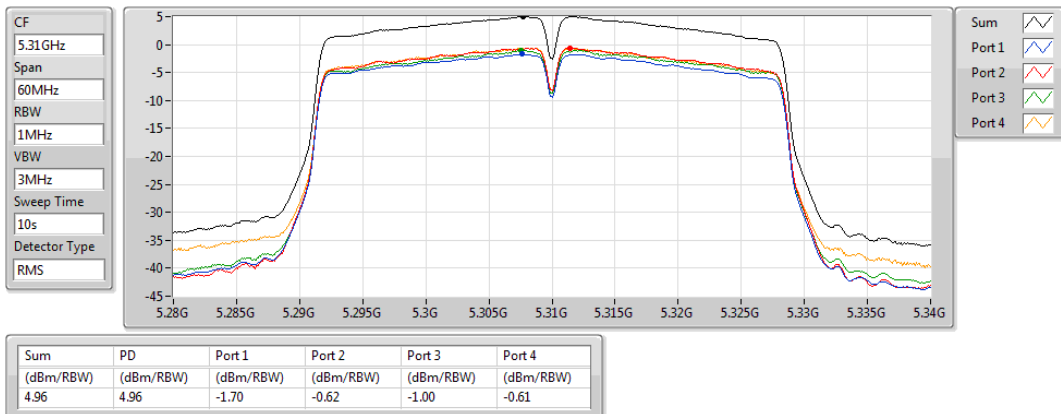
5270MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

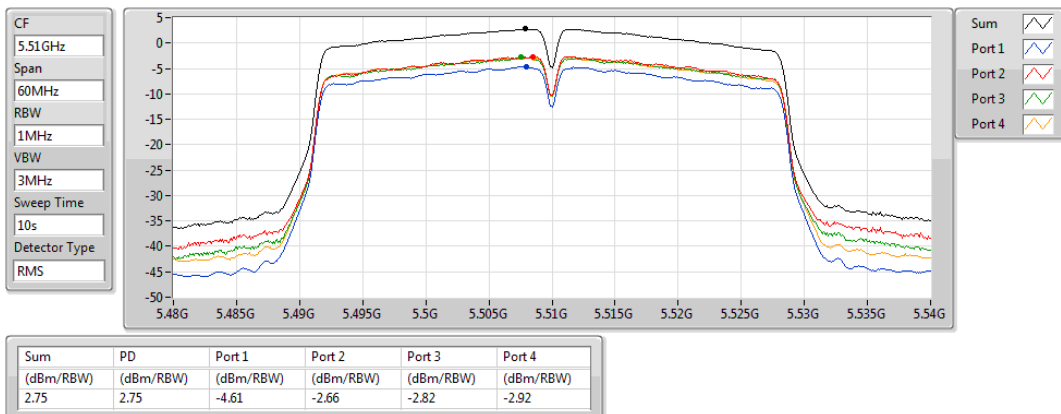
5310MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

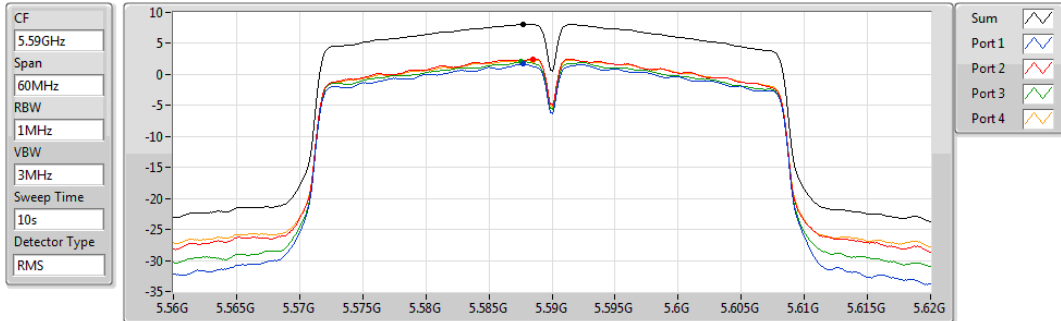
5510MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

5590MHz

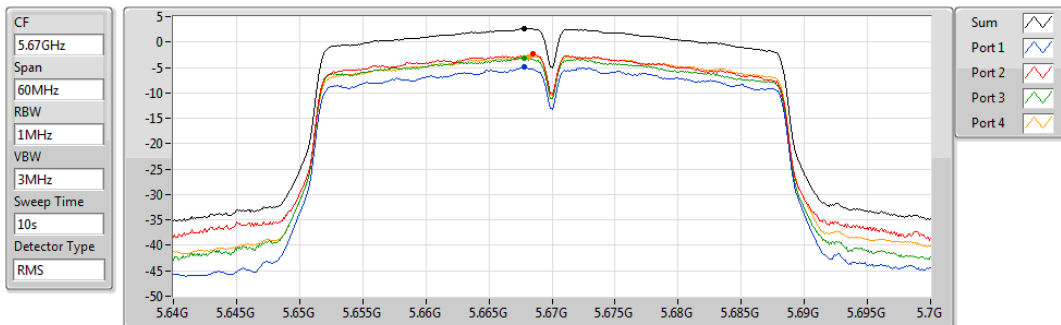


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
8.10	8.10	1.67	2.51	2.08	2.34

802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

5670MHz

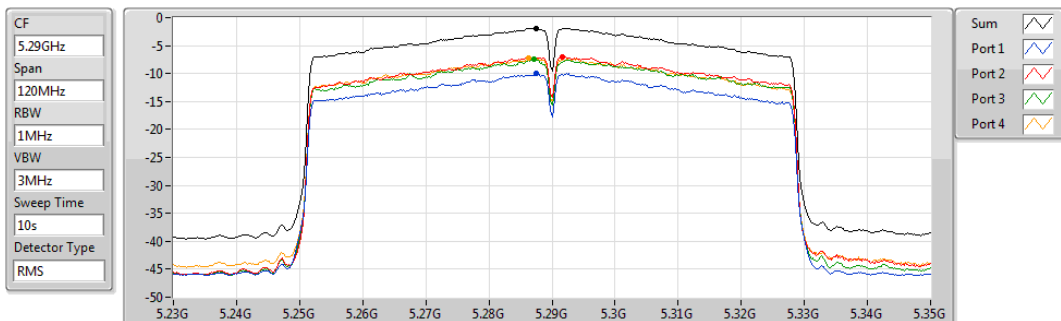


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
2.66	2.66	-4.84	-2.40	-3.11	-2.85

802.11ac VHT80_Nss1,(MCS0)_4TX

PSD

5290MHz

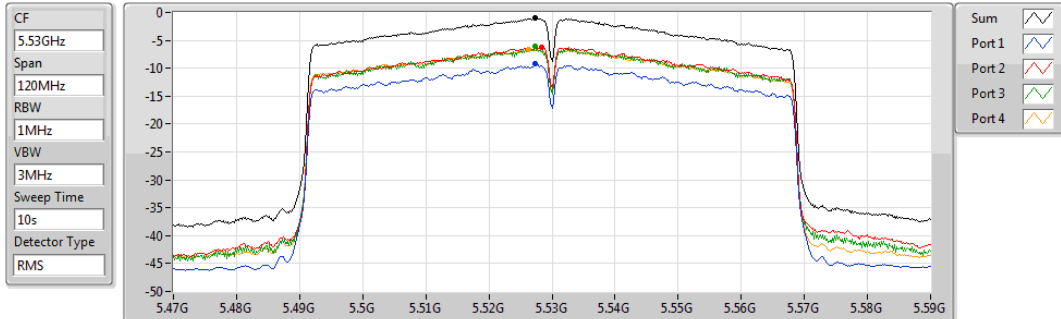


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
-1.87	-1.87	-9.90	-7.05	-7.45	-7.31

802.11ac VHT80_Nss1,(MCS0)_4TX

PSD

5530MHz

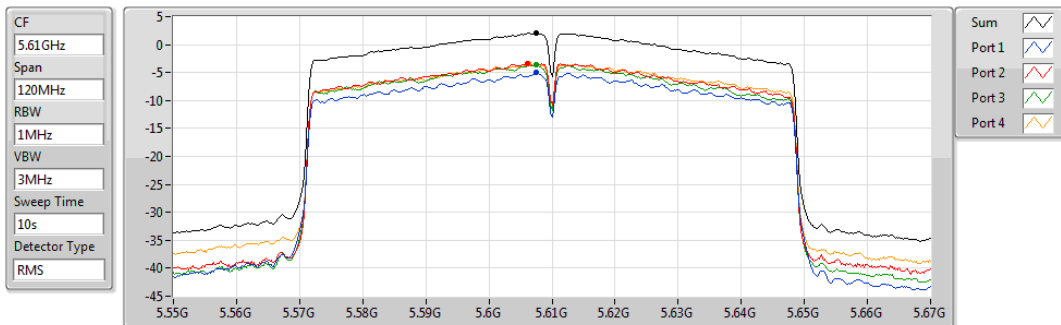


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.96	-0.96	-9.26	-6.32	-6.10	-6.65

802.11ac VHT80_Nss1,(MCS0)_4TX

PSD

5610MHz



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.06	2.06	-5.05	-3.39	-3.60	-3.42

Beamforming mode

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.25-5.35GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	7.77	16.39
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	5.09	13.71
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-3.47	5.15
5.47-5.725GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	7.99	16.59
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	5.49	14.09
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	0.46	9.06

RBW =1MHz

Result

Mode	Result	DG (dBi)	Port 1 (dBm/ RBW)	Port 2 (dBm/ RBW)	Port 3 (dBm/ RBW)	Port 4 (dBm/ RBW)	PD (dBm/ RBW)	PD Limit (dBm/ RBW)	EIRP PD (dBm/ RBW)	EIRP PD Limit (dBm/ RBW)
802.11ac VHT20-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5260MHz	Pass	8.62	1.53	2.24	2.18	2.24	7.77	8.38	16.39	17.00
5300MHz	Pass	8.62	1.42	2.77	1.52	2.04	7.69	8.38	16.31	17.00
5320MHz	Pass	8.62	-0.71	1.30	0.72	1.88	6.74	8.38	15.36	17.00
5500MHz	Pass	8.60	-1.29	0.73	0.12	0.07	5.77	8.40	14.37	17.00
5580MHz	Pass	8.60	2.07	2.57	2.44	2.54	7.99	8.40	16.59	17.00
5700MHz	Pass	8.60	-3.07	-0.25	-1.01	-0.25	4.41	8.40	13.01	17.00
802.11ac VHT40-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5270MHz	Pass	8.62	-1.33	-0.59	-1.03	-0.23	5.09	8.38	13.71	17.00
5310MHz	Pass	8.62	-3.39	-2.34	-2.76	-1.54	3.13	8.38	11.75	17.00
5510MHz	Pass	8.60	-5.71	-3.94	-3.78	-4.23	1.58	8.40	10.18	17.00
5590MHz	Pass	8.60	0.48	-0.29	-0.83	-0.65	5.49	8.40	14.09	17.00
5670MHz	Pass	8.60	-3.91	-2.83	-3.42	-3.10	2.40	8.40	11.00	17.00
802.11ac VHT80-BF_Nss1,(MCS0) _4TX	-	-	-	-	-	-	-	-	-	-
5290MHz	Pass	8.62	-9.54	-8.16	-8.90	-8.94	-3.47	8.38	5.15	17.00
5530MHz	Pass	8.60	-10.35	-8.37	-8.80	-8.31	-3.40	8.40	5.20	17.00
5610MHz	Pass	8.60	-5.84	-4.84	-5.12	-4.90	0.46	8.40	9.06	17.00

DG = Directional Gain; **RBW** = 1MHz

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

Note:

DG = Directional Gain = $10 \times \log((10^{2.8/20} + 10^{2.4/20} + 10^{2.3/20} + 10^{2.9/20})^4 / 4) = 8.62 \text{ dBi} > 6 \text{ dBi}$

Limit shall be reduced to 11 dBm – (8.62 dBi – 6 dBi) = 8.38 dBm

For 5470 ~ 5725MHz

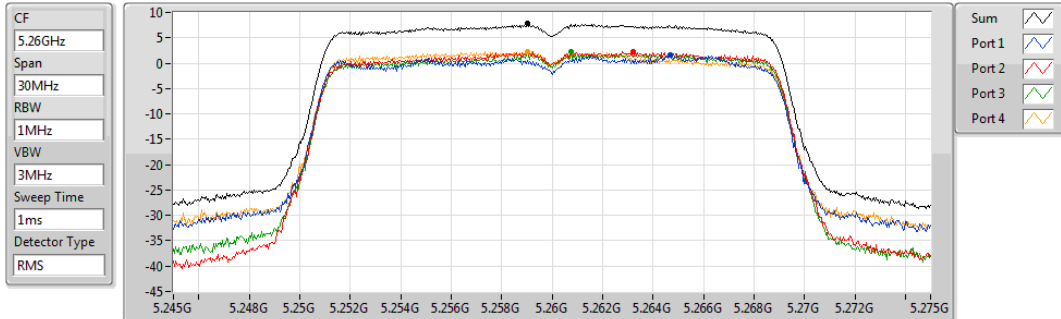
DG = Directional Gain = $10 \times \log((10^{2.2/20} + 10^{2.5/20} + 10^{2.7/20} + 10^{2.9/20})^4 / 4) = 8.60 \text{ dBi} > 6 \text{ dBi}$

Limit shall be reduced to 11 dBm – (8.60 dBi – 6 dBi) = 8.40 dBm

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5260MHz

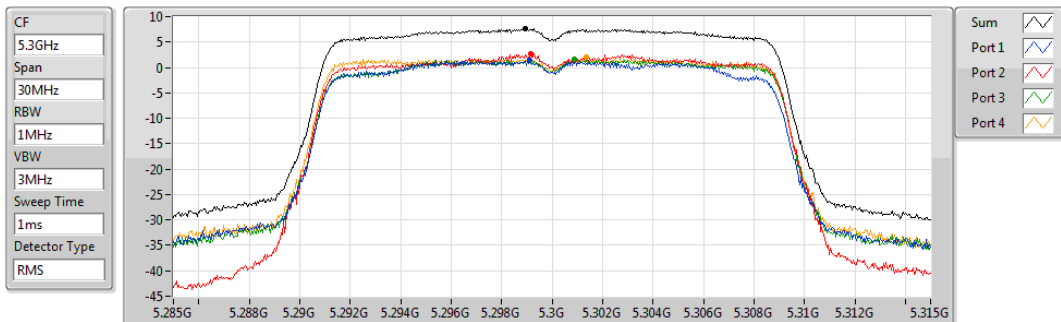


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.77	7.77	1.53	2.24	2.18	2.24

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5300MHz

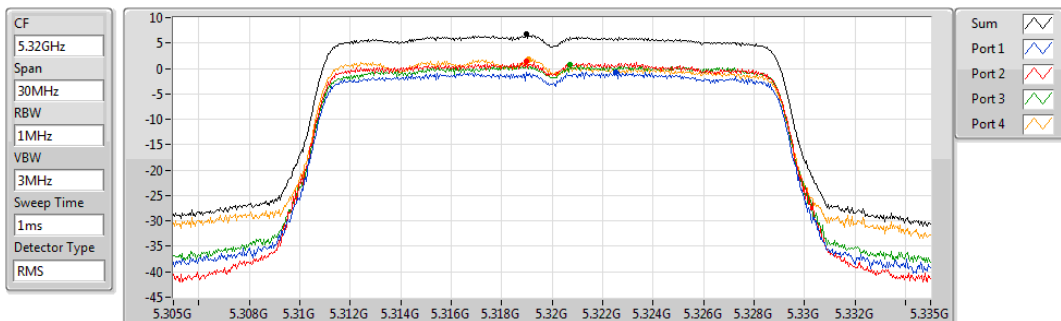


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.69	7.69	1.42	2.77	1.52	2.04

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5320MHz

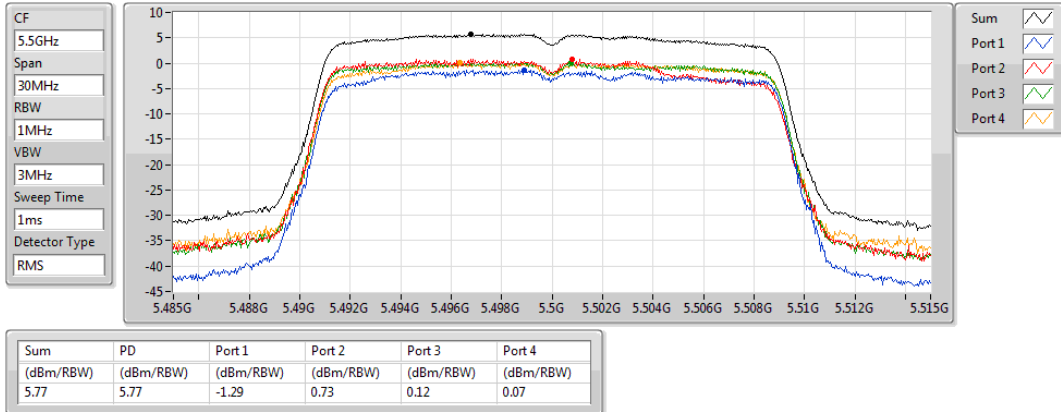


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.74	6.74	-0.71	1.30	0.72	1.88

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

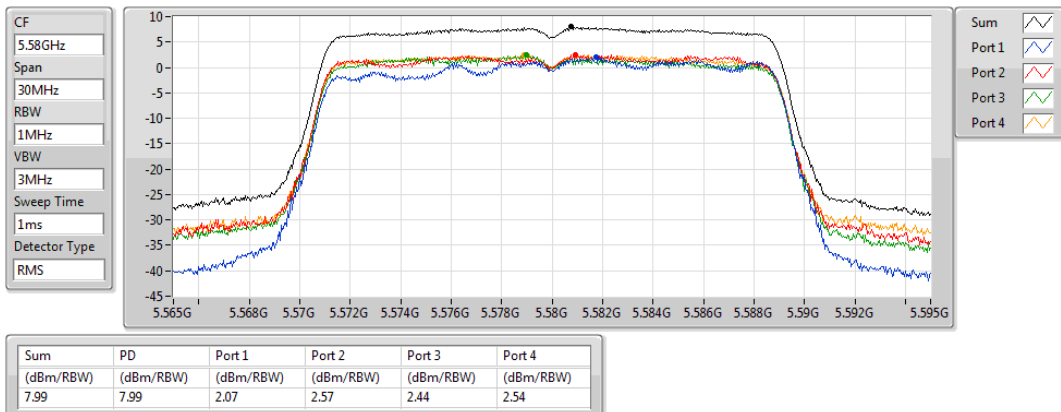
5500MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

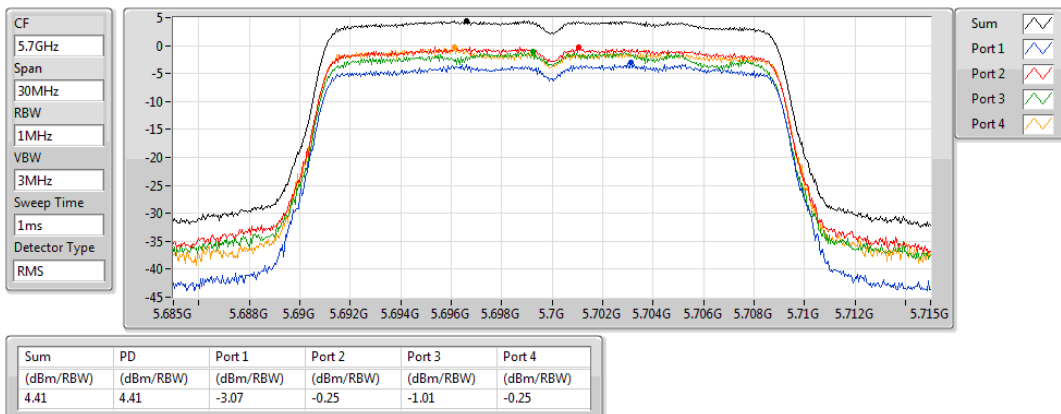
5580MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

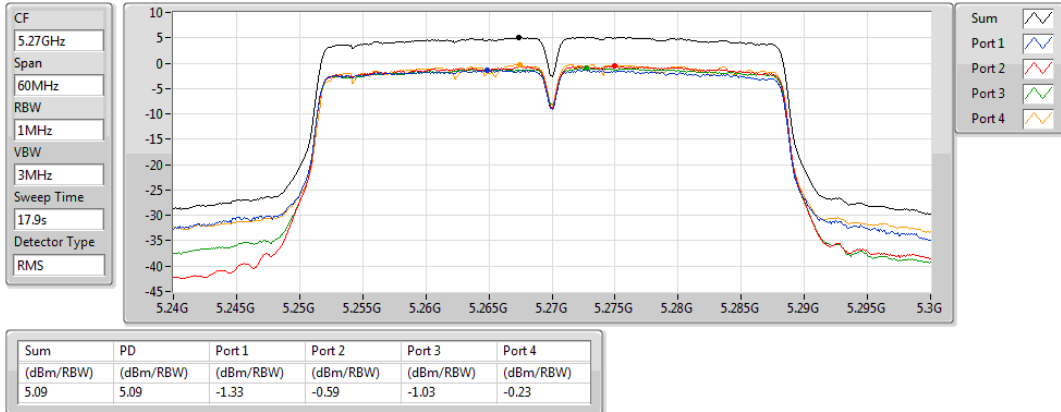
5700MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

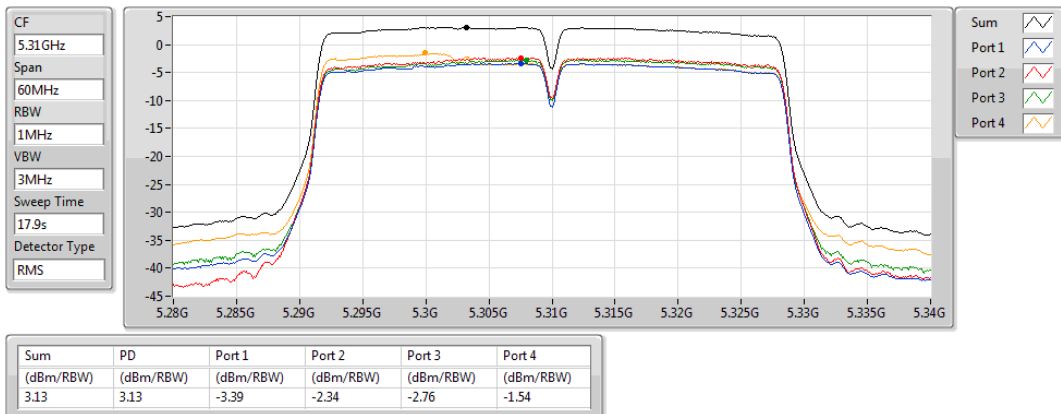
5270MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

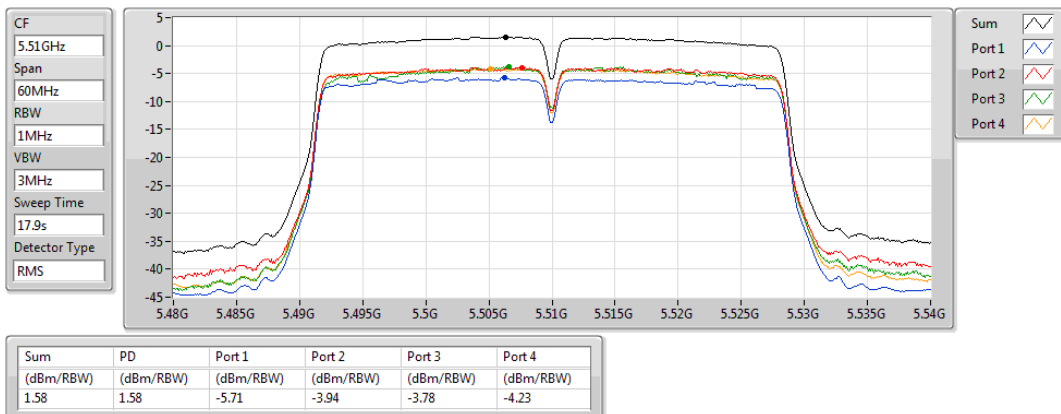
5310MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

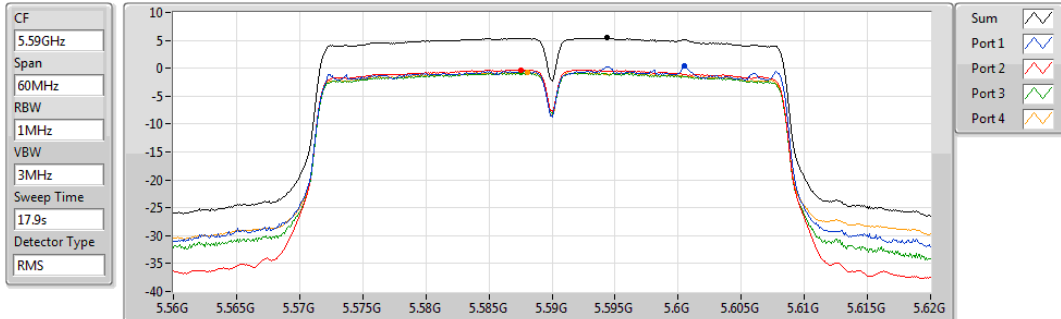
5510MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5590MHz

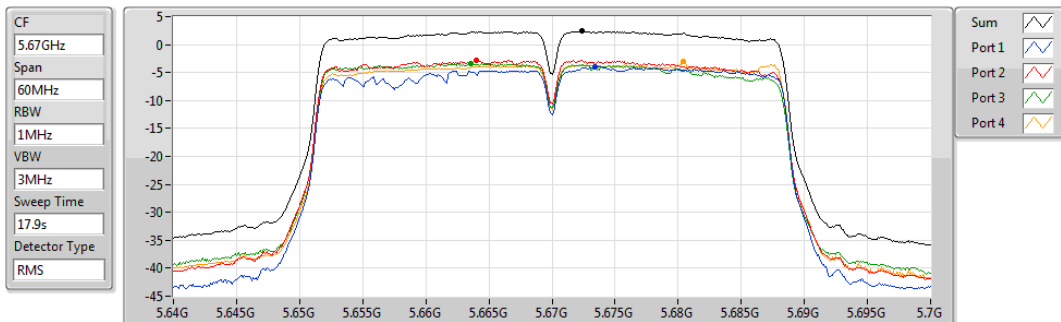


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
5.49	5.49	0.48	-0.29	-0.83	-0.65

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5670MHz

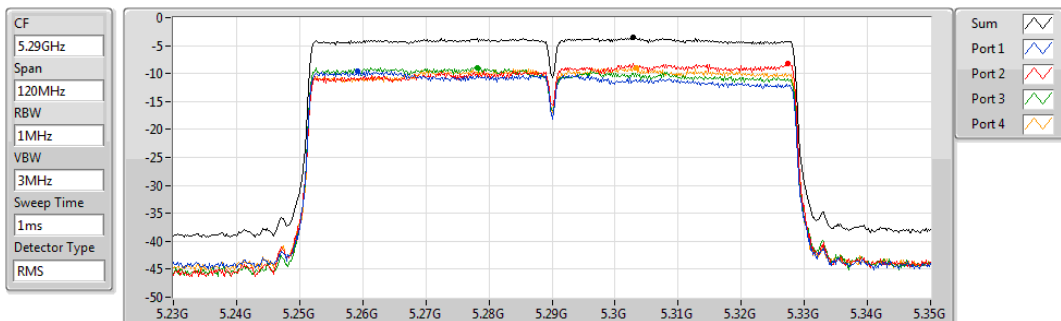


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
2.40	2.40	-3.91	-2.83	-3.42	-3.10

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

5290MHz

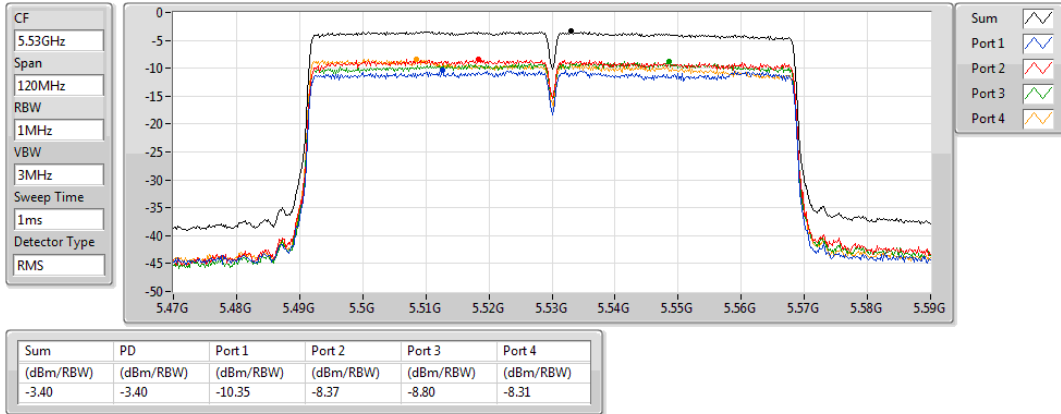


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
-3.47	-3.47	-9.54	-8.16	-8.90	-8.94

802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

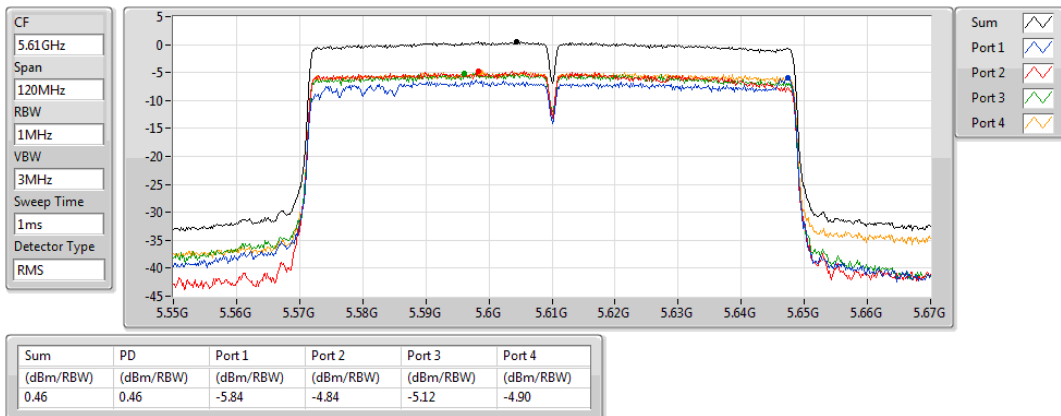
5530MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

5610MHz



3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

Restricted Band Emissions Limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9~90 kHz, 110~490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.5.2 Test Procedures

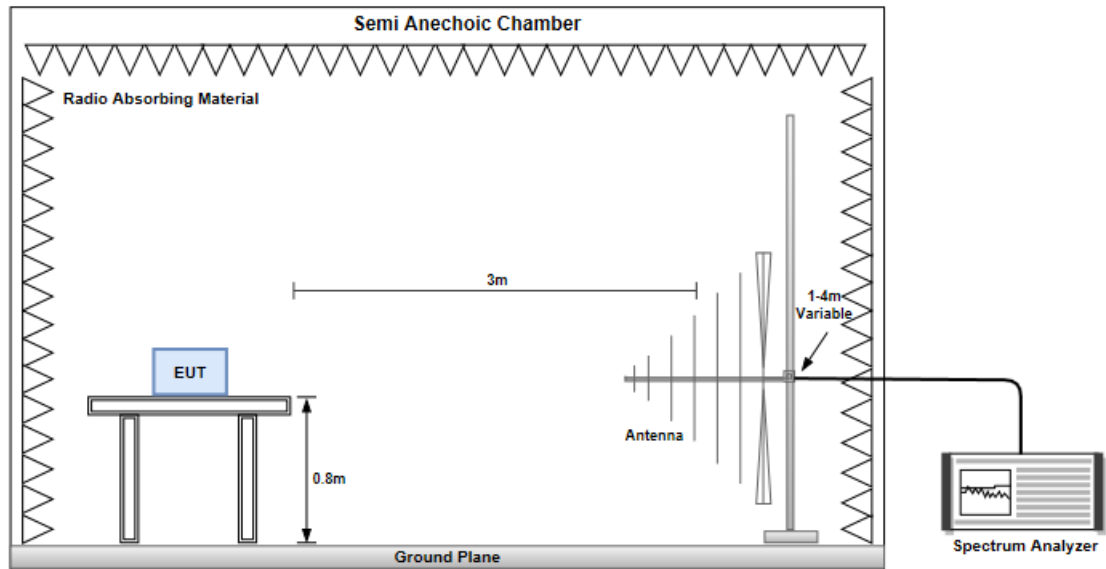
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360° . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360° , the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

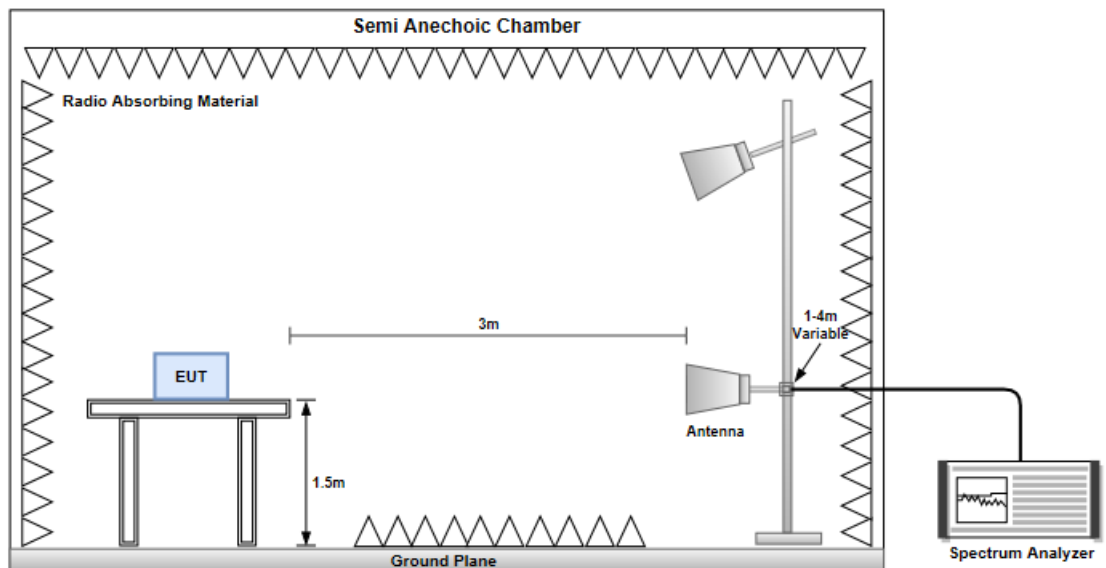
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

3.5.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz

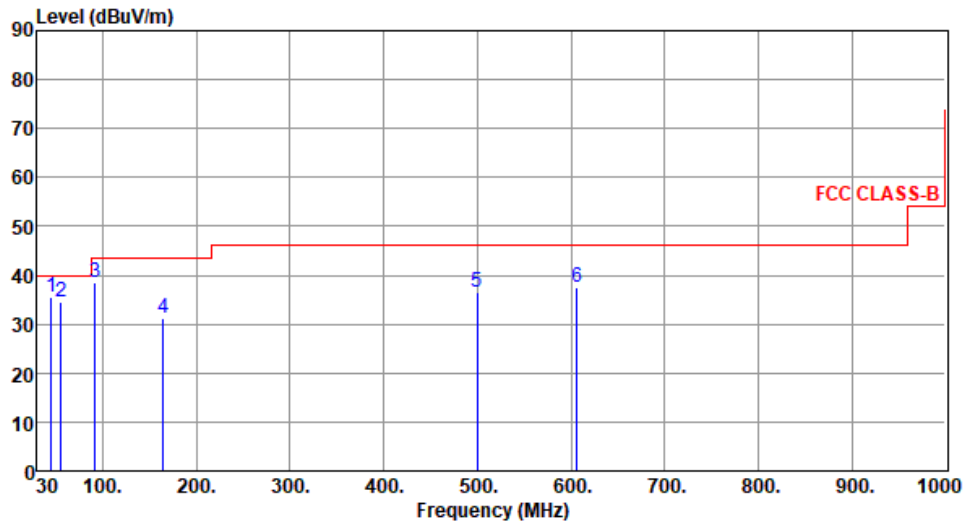


Non- beamforming mode

3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	45.36	35.45	40.00	-4.55	44.24	-8.79	Peak	---	---
2	55.26	34.53	40.00	-5.47	43.63	-9.10	Peak	---	---
3	92.12	38.42	43.50	-5.08	53.35	-14.93	Peak	---	---
4	164.76	31.35	43.50	-12.15	40.44	-9.09	Peak	---	---
5	499.53	36.68	46.00	-9.32	39.83	-3.15	Peak	---	---
6	606.27	37.58	46.00	-8.42	37.85	-0.27	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

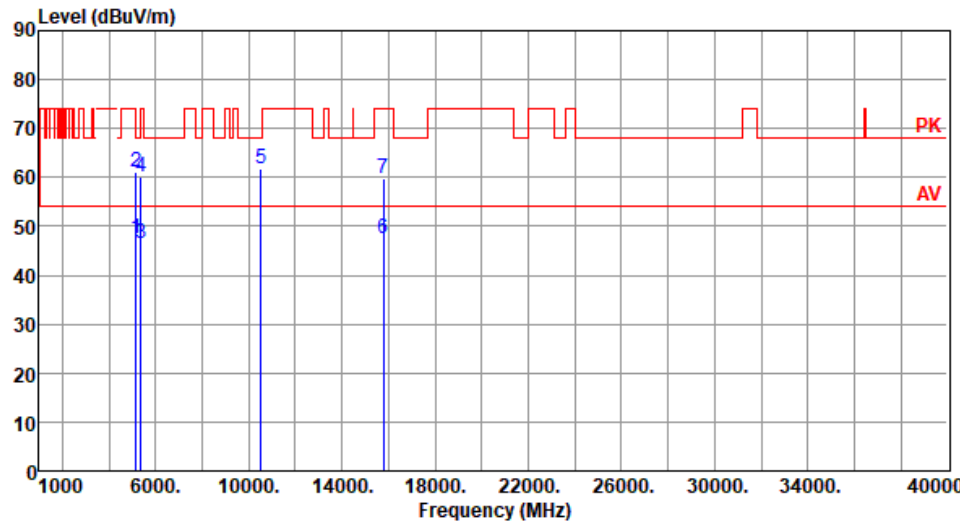
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5260																																																																																																				
Polarization	Vertical																																																																																																						
 <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5150.00</td><td>47.34</td><td>54.00</td><td>-6.66</td><td>40.02</td><td>7.32</td><td>Average</td><td>130</td><td>5</td></tr><tr><td>2</td><td>5150.00</td><td>60.97</td><td>74.00</td><td>-13.03</td><td>53.65</td><td>7.32</td><td>Peak</td><td>130</td><td>5</td></tr><tr><td>3</td><td>5350.00</td><td>46.50</td><td>54.00</td><td>-7.50</td><td>39.65</td><td>6.85</td><td>Average</td><td>130</td><td>5</td></tr><tr><td>4</td><td>5350.00</td><td>60.02</td><td>74.00</td><td>-13.98</td><td>53.17</td><td>6.85</td><td>Peak</td><td>130</td><td>5</td></tr><tr><td>5</td><td>10520.00</td><td>61.78</td><td>68.20</td><td>-6.42</td><td>45.36</td><td>16.42</td><td>Peak</td><td>133</td><td>185</td></tr><tr><td>6</td><td>15780.00</td><td>47.61</td><td>54.00</td><td>-6.39</td><td>31.05</td><td>16.56</td><td>Average</td><td>100</td><td>20</td></tr><tr><td>7</td><td>15780.00</td><td>59.89</td><td>74.00</td><td>-14.11</td><td>43.33</td><td>16.56</td><td>Peak</td><td>100</td><td>20</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	5150.00	47.34	54.00	-6.66	40.02	7.32	Average	130	5	2	5150.00	60.97	74.00	-13.03	53.65	7.32	Peak	130	5	3	5350.00	46.50	54.00	-7.50	39.65	6.85	Average	130	5	4	5350.00	60.02	74.00	-13.98	53.17	6.85	Peak	130	5	5	10520.00	61.78	68.20	-6.42	45.36	16.42	Peak	133	185	6	15780.00	47.61	54.00	-6.39	31.05	16.56	Average	100	20	7	15780.00	59.89	74.00	-14.11	43.33	16.56	Peak	100	20
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																														
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																																														
								cm	deg																																																																																														
1	5150.00	47.34	54.00	-6.66	40.02	7.32	Average	130	5																																																																																														
2	5150.00	60.97	74.00	-13.03	53.65	7.32	Peak	130	5																																																																																														
3	5350.00	46.50	54.00	-7.50	39.65	6.85	Average	130	5																																																																																														
4	5350.00	60.02	74.00	-13.98	53.17	6.85	Peak	130	5																																																																																														
5	10520.00	61.78	68.20	-6.42	45.36	16.42	Peak	133	185																																																																																														
6	15780.00	47.61	54.00	-6.39	31.05	16.56	Average	100	20																																																																																														
7	15780.00	59.89	74.00	-14.11	43.33	16.56	Peak	100	20																																																																																														
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).																																																																																																							

Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		
 			

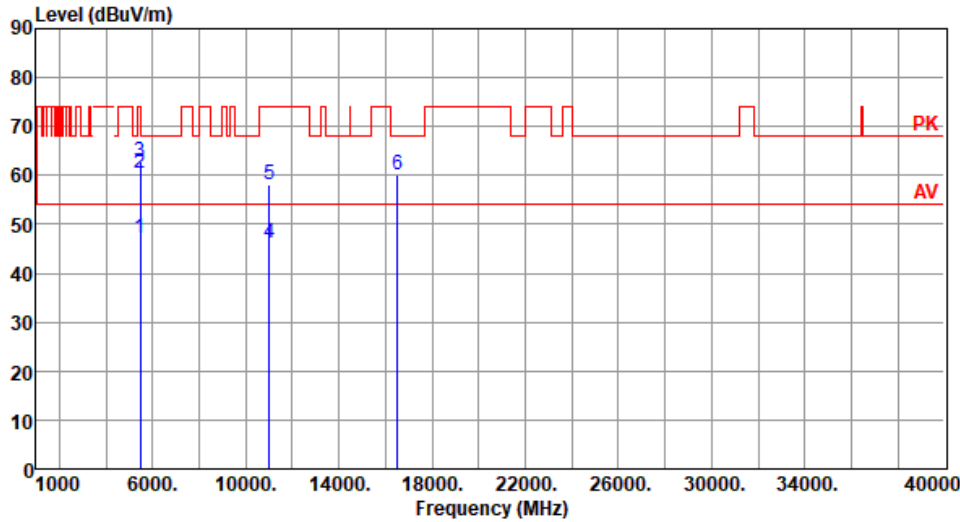
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Vertical		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (dBUV/m) </			

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Vertical		
 			

Modulation	11a	Test Freq. (MHz)	5500
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.10	54.00	-6.90	39.85	7.25	Average	222	190
2	5460.00	60.40	74.00	-13.60	53.15	7.25	Peak	222	190
3	5470.00	62.65	68.20	-5.55	55.37	7.28	Peak	222	190
4	11000.00	46.25	54.00	-7.75	29.41	16.84	Average	100	43
5	11000.00	58.12	74.00	-15.88	41.28	16.84	Peak	100	43
6	16500.00	60.18	68.20	-8.02	42.54	17.64	Peak	100	25

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	11a	Test Freq. (MHz)	5580
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		
Level (dBUV/m)			

3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Vertical		
 			

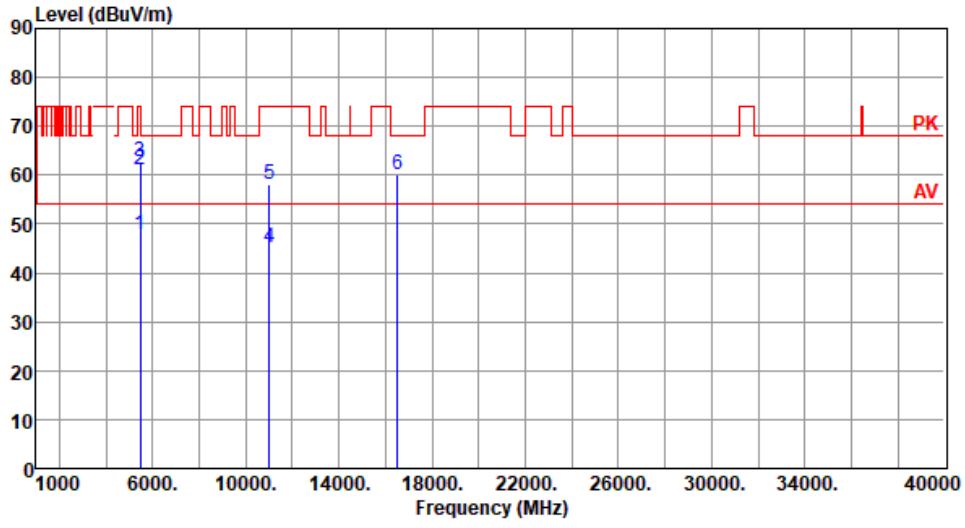
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		
Level (dBUV/m)			

Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Vertical		
Level (dBUV/m)			

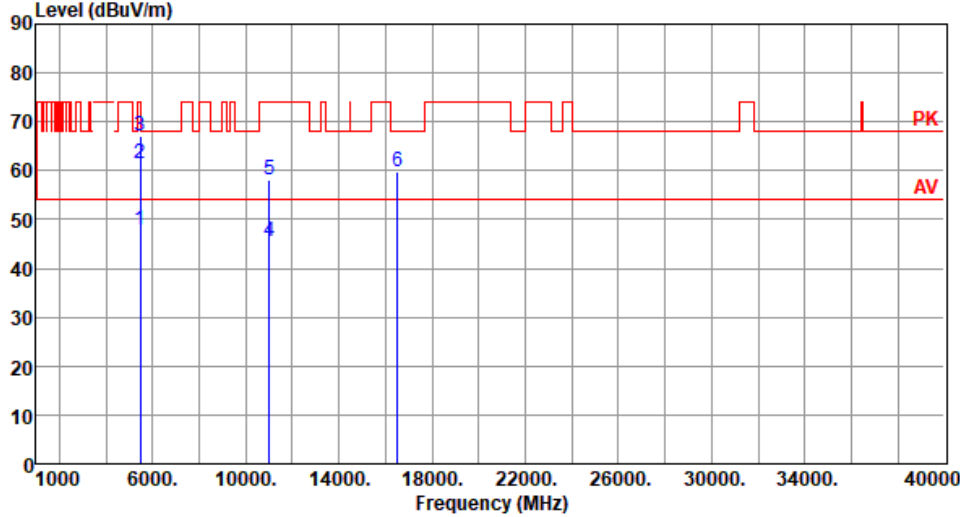
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.76	54.00	-6.24	40.51	7.25	Average	222	195
2	5460.00	61.10	74.00	-12.90	53.85	7.25	Peak	222	195
3	5470.00	62.71	68.20	-5.49	55.43	7.28	Peak	222	195
4	11000.00	45.25	54.00	-8.75	28.41	16.84	Average	100	36
5	11000.00	58.27	74.00	-15.73	41.43	16.84	Peak	100	36
6	16500.00	60.12	68.20	-8.08	42.48	17.64	Peak	100	216

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		

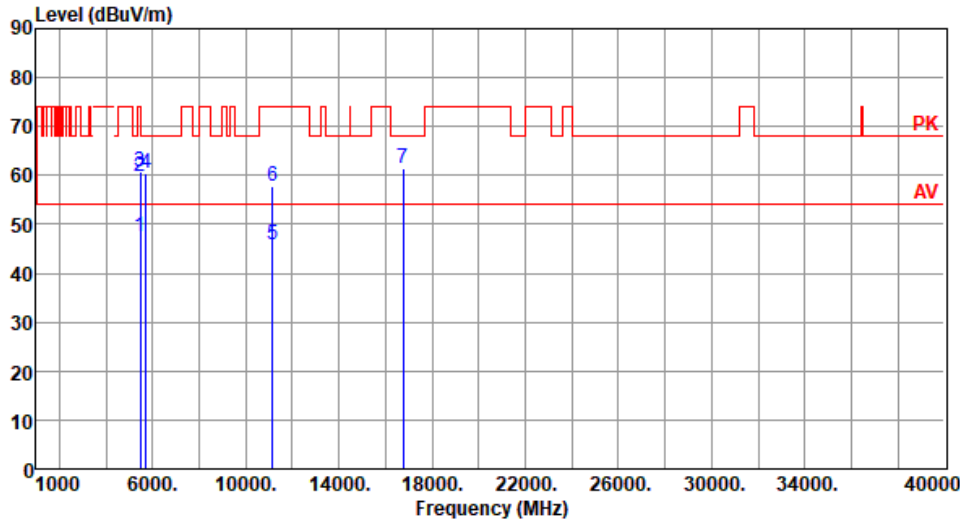


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.91	54.00	-6.09	40.66	7.25	Average	151	334
2	5460.00	61.37	74.00	-12.63	54.12	7.25	Peak	151	334
3	5470.00	67.14	68.20	-1.06	59.86	7.28	Peak	151	334
4	11000.00	45.38	54.00	-8.62	28.54	16.84	Average	100	145
5	11000.00	58.09	74.00	-15.91	41.25	16.84	Peak	100	145
6	16500.00	59.89	68.20	-8.31	42.25	17.64	Peak	100	138

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		
Level (dBUV/m)			

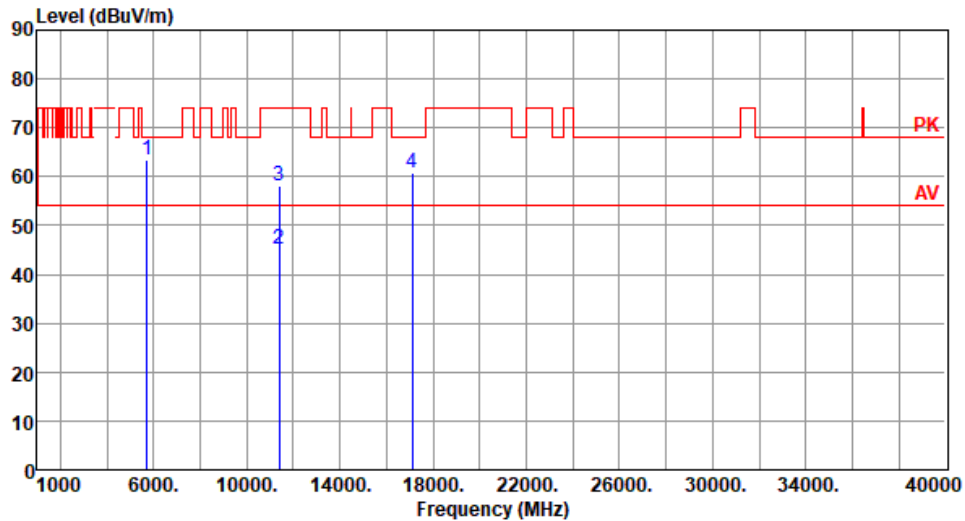
Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.37	54.00	-6.63	40.12	7.25	Average	230	8
2	5460.00	59.94	74.00	-14.06	52.69	7.25	Peak	230	8
3	5470.00	60.73	68.20	-7.47	53.45	7.28	Peak	230	8
4	5725.00	60.31	68.20	-7.89	52.65	7.66	Peak	230	8
5	11160.00	45.84	54.00	-8.16	29.25	16.59	Average	100	40
6	11160.00	57.85	74.00	-16.15	41.26	16.59	Peak	100	40
7	16740.00	61.53	68.20	-6.67	43.30	18.23	Peak	100	20

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	63.43	68.20	-4.77	55.77	7.66	Peak	231	198
2	11400.00	45.08	54.00	-8.92	28.35	16.73	Average	100	48
3	11400.00	58.24	74.00	-15.76	41.51	16.73	Peak	100	155
4	17100.00	60.62	68.20	-7.58	42.38	18.24	Peak	100	155

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

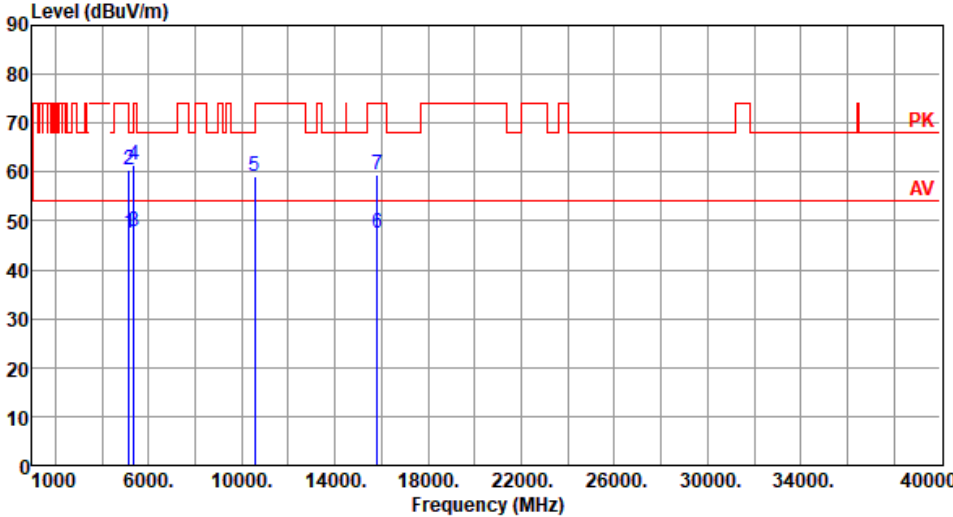
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		
Level (dBuV/m) </			

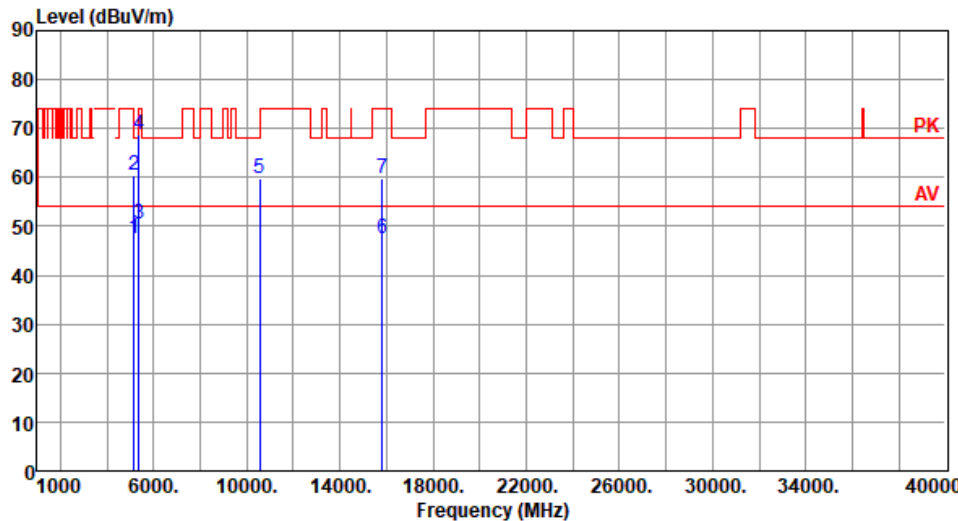
3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40

Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Horizontal		

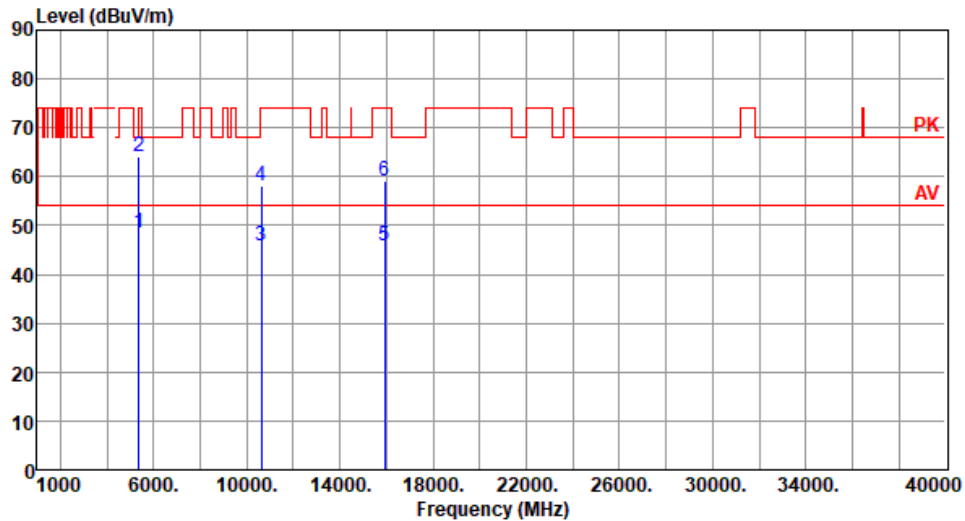


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.63	54.00	-6.37	40.31	7.32	Average	100	246
2	5150.00	60.53	74.00	-13.47	53.21	7.32	Peak	100	246
3	5350.00	47.81	54.00	-6.19	40.96	6.85	Average	100	246
4	5350.00	61.50	74.00	-12.50	54.65	6.85	Peak	100	246
5	10540.00	59.26	68.20	-8.94	42.85	16.41	Peak	100	66
6	15810.00	47.45	54.00	-6.55	30.89	16.56	Average	100	212
7	15810.00	59.44	74.00	-14.56	42.88	16.56	Peak	100	212

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT40	Test Freq. (MHz)	5270																																																																																																				
Polarization	Vertical																																																																																																						
 <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5150.00</td><td>47.59</td><td>54.00</td><td>-6.41</td><td>40.27</td><td>7.32</td><td>Average</td><td>115</td><td>330</td></tr><tr><td>2</td><td>5150.00</td><td>60.47</td><td>74.00</td><td>-13.53</td><td>53.15</td><td>7.32</td><td>Peak</td><td>115</td><td>330</td></tr><tr><td>3</td><td>5350.00</td><td>50.64</td><td>54.00</td><td>-3.36</td><td>43.79</td><td>6.85</td><td>Average</td><td>115</td><td>330</td></tr><tr><td>4</td><td>5350.00</td><td>68.58</td><td>74.00</td><td>-5.42</td><td>61.73</td><td>6.85</td><td>Peak</td><td>115</td><td>330</td></tr><tr><td>5</td><td>10540.00</td><td>59.86</td><td>68.20</td><td>-8.34</td><td>43.45</td><td>16.41</td><td>Peak</td><td>100</td><td>185</td></tr><tr><td>6</td><td>15810.00</td><td>47.58</td><td>54.00</td><td>-6.42</td><td>31.02</td><td>16.56</td><td>Average</td><td>100</td><td>40</td></tr><tr><td>7</td><td>15810.00</td><td>59.91</td><td>74.00</td><td>-14.09</td><td>43.35</td><td>16.56</td><td>Peak</td><td>100</td><td>40</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	5150.00	47.59	54.00	-6.41	40.27	7.32	Average	115	330	2	5150.00	60.47	74.00	-13.53	53.15	7.32	Peak	115	330	3	5350.00	50.64	54.00	-3.36	43.79	6.85	Average	115	330	4	5350.00	68.58	74.00	-5.42	61.73	6.85	Peak	115	330	5	10540.00	59.86	68.20	-8.34	43.45	16.41	Peak	100	185	6	15810.00	47.58	54.00	-6.42	31.02	16.56	Average	100	40	7	15810.00	59.91	74.00	-14.09	43.35	16.56	Peak	100	40
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																														
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																																														
								cm	deg																																																																																														
1	5150.00	47.59	54.00	-6.41	40.27	7.32	Average	115	330																																																																																														
2	5150.00	60.47	74.00	-13.53	53.15	7.32	Peak	115	330																																																																																														
3	5350.00	50.64	54.00	-3.36	43.79	6.85	Average	115	330																																																																																														
4	5350.00	68.58	74.00	-5.42	61.73	6.85	Peak	115	330																																																																																														
5	10540.00	59.86	68.20	-8.34	43.45	16.41	Peak	100	185																																																																																														
6	15810.00	47.58	54.00	-6.42	31.02	16.56	Average	100	40																																																																																														
7	15810.00	59.91	74.00	-14.09	43.35	16.56	Peak	100	40																																																																																														
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).																																																																																																							

Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		



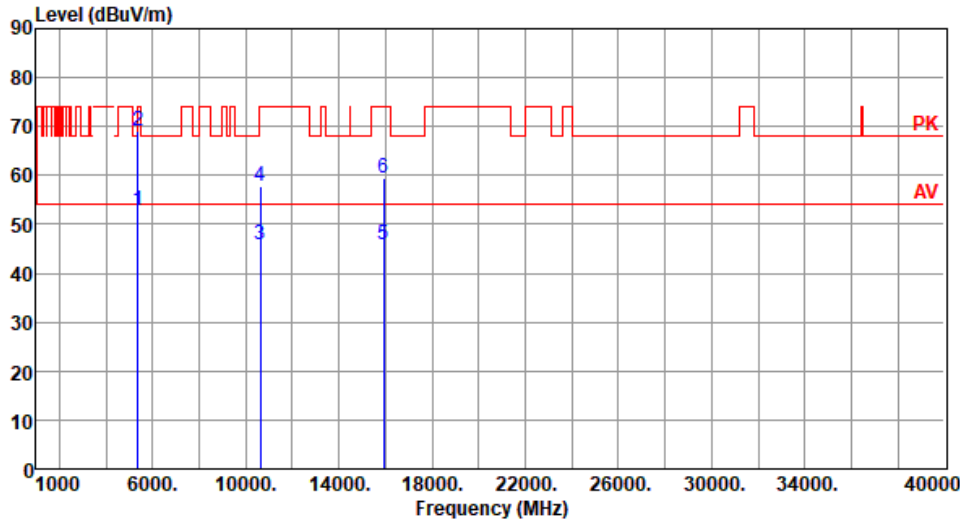
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	48.53	54.00	-5.47	41.68	6.85	Average	100	243
2	5350.00	64.16	74.00	-9.84	57.31	6.85	Peak	100	243
3	10620.00	45.67	54.00	-8.33	29.30	16.37	Average	100	62
4	10620.00	58.19	74.00	-15.81	41.82	16.37	Peak	100	62
5	15930.00	45.86	54.00	-8.14	29.25	16.61	Average	100	128
6	15930.00	59.15	74.00	-14.85	42.54	16.61	Peak	100	128

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.76	54.00	-1.24	45.91	6.85	Average	118	331
2	5350.00	69.00	74.00	-5.00	62.15	6.85	Peak	118	331
3	10620.00	45.90	54.00	-8.10	29.53	16.37	Average	100	53
4	10620.00	57.83	74.00	-16.17	41.46	16.37	Peak	100	53
5	15930.00	45.98	54.00	-8.02	29.37	16.61	Average	100	138
6	15930.00	59.60	74.00	-14.40	42.99	16.61	Peak	100	138

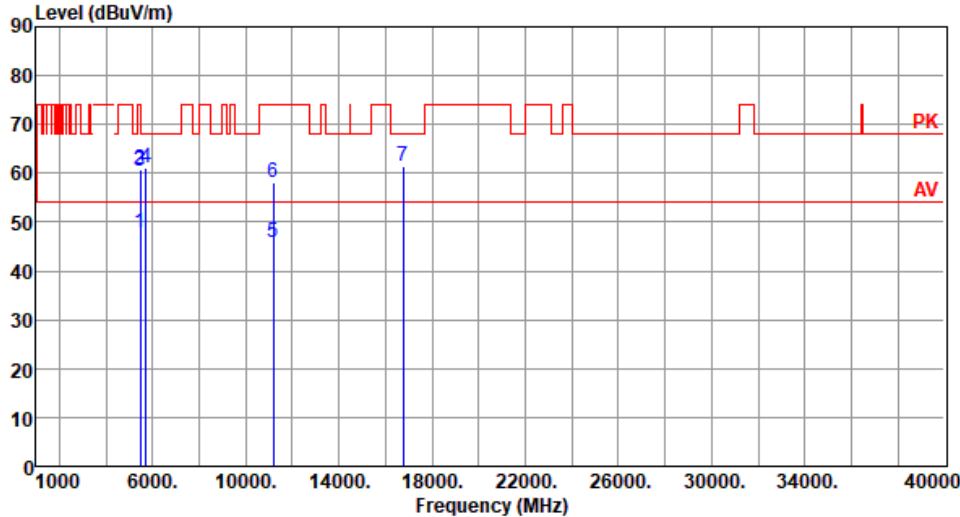
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		
Level (dBUV/m) </			

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.73	54.00	-6.27	40.48	7.25	Average	210	193
2	5460.00	60.63	74.00	-13.37	53.38	7.25	Peak	210	193
3	5470.00	60.43	68.20	-7.77	53.15	7.28	Peak	210	193
4	5725.00	60.96	68.20	-7.24	53.30	7.66	Peak	210	193
5	11180.00	45.97	54.00	-8.03	29.41	16.56	Average	100	72
6	11180.00	57.99	74.00	-16.01	41.43	16.56	Peak	100	72
7	16770.00	61.28	68.20	-6.92	43.05	18.23	Peak	100	36

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		
Level (dBuV/m)			

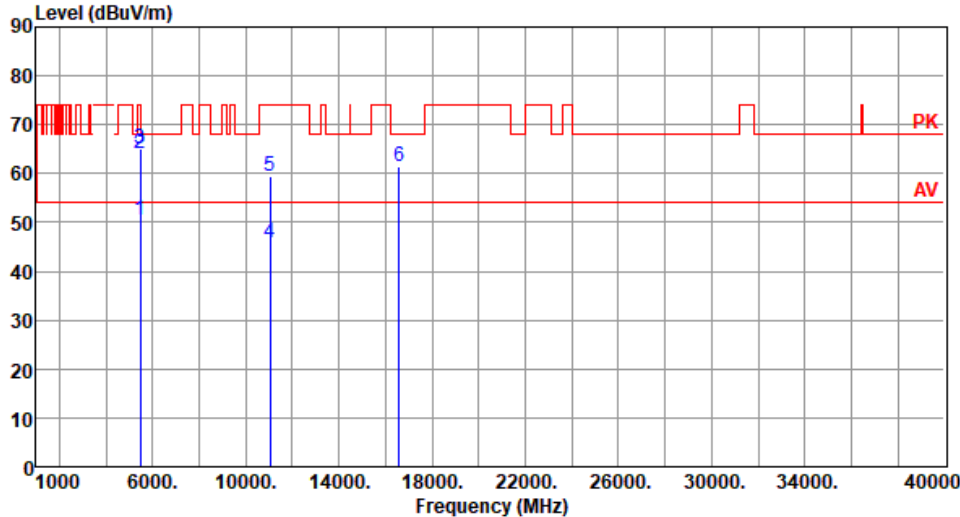
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		
Level (dBUV/m) </			

3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80

Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		
Level (dBUV/m)			

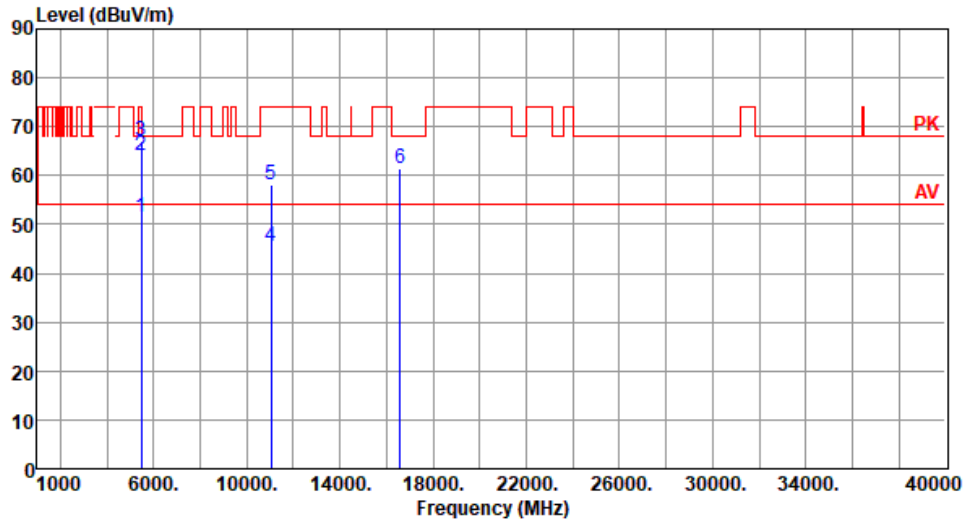
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.50	54.00	-3.50	43.25	7.25	Average	236	187
2	5460.00	64.00	74.00	-10.00	56.75	7.25	Peak	236	187
3	5470.00	65.16	68.20	-3.04	57.88	7.28	Peak	236	187
4	11060.00	45.91	54.00	-8.09	29.16	16.75	Average	100	50
5	11060.00	59.31	74.00	-14.69	42.56	16.75	Peak	100	50
6	16590.00	61.36	68.20	-6.84	43.15	18.21	Peak	100	20

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	51.58	54.00	-2.42	44.33	7.25	Average	247	353
2	5460.00	64.20	74.00	-9.80	56.95	7.25	Peak	247	353
3	5470.00	67.13	68.20	-1.07	59.85	7.28	Peak	247	353
4	11060.00	45.43	54.00	-8.57	28.68	16.75	Average	100	157
5	11060.00	58.18	74.00	-15.82	41.43	16.75	Peak	100	157
6	16590.00	61.56	68.20	-6.64	43.35	18.21	Peak	100	70

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

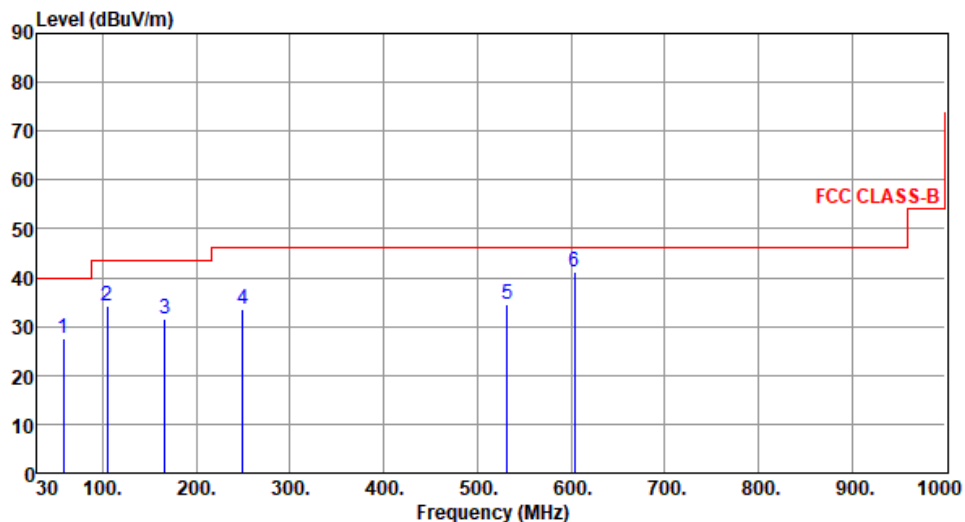
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		
Level (dBuV/m)			

Beamforming mode

3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	58.05	27.52	40.00	-12.48	36.74	-9.22	Peak	---	---
2	104.53	34.25	43.50	-9.25	47.19	-12.94	Peak	---	---
3	166.53	31.52	43.50	-11.98	40.70	-9.18	Peak	---	---
4	249.36	33.56	46.00	-12.44	43.74	-10.18	Peak	---	---
5	531.52	34.52	46.00	-11.48	37.03	-2.51	Peak	---	---
6	603.41	41.32	46.00	-4.68	41.80	-0.48	Peak	---	---

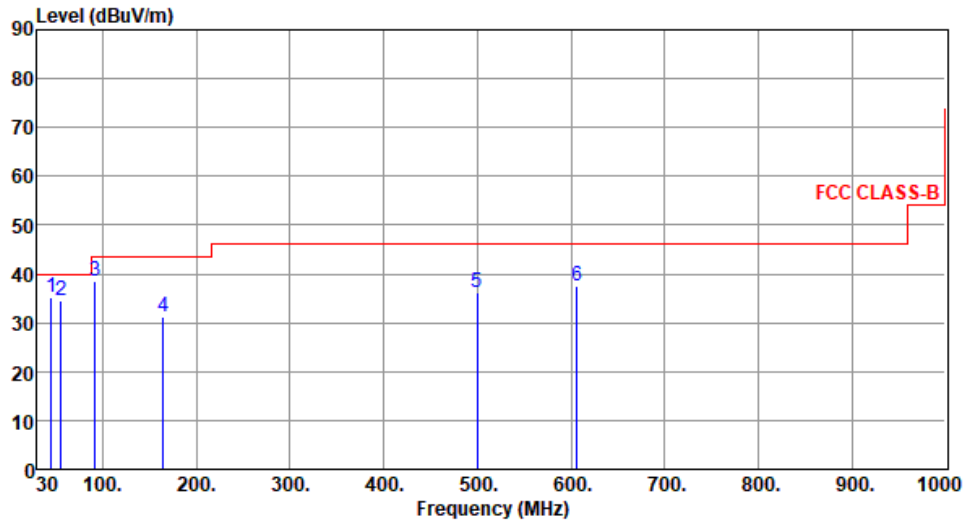
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	45.36	35.21	40.00	-4.79	44.00	-8.79	Peak	---	---
2	55.36	34.51	40.00	-5.49	43.60	-9.09	Peak	---	---
3	92.23	38.52	43.50	-4.98	53.42	-14.90	Peak	---	---
4	164.36	31.21	43.50	-12.29	40.30	-9.09	Peak	---	---
5	499.53	36.25	46.00	-9.75	39.40	-3.15	Peak	---	---
6	606.21	37.52	46.00	-8.48	37.81	-0.29	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

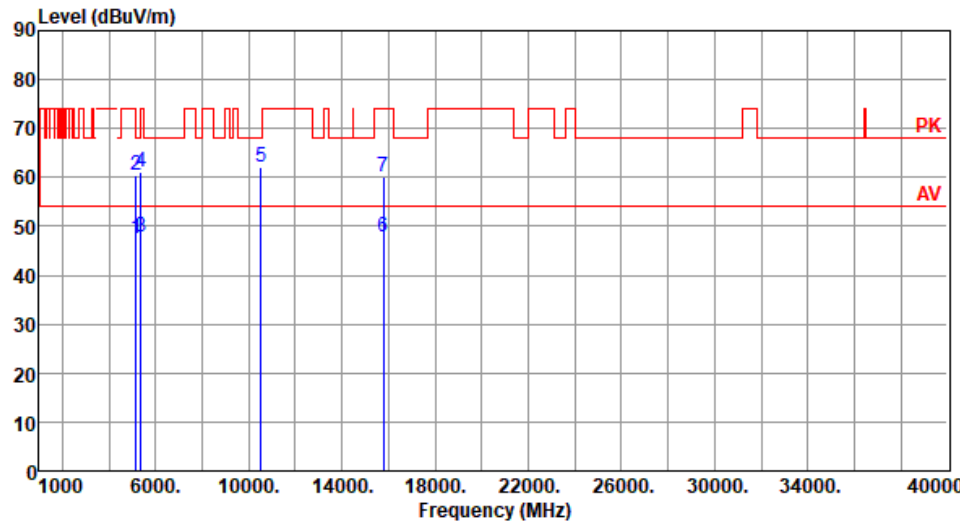
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

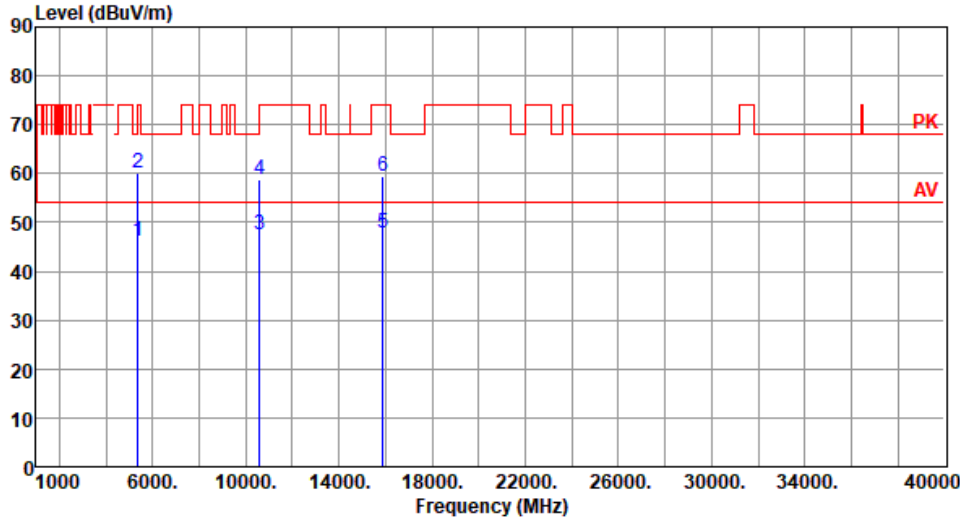
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

3.5.10 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5260																																																																																																				
Polarization	Vertical																																																																																																						
Level (dBUV/m)  Frequency (MHz) <table><thead><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr></thead><tbody><tr><td>1</td><td>5150.00</td><td>47.52</td><td>54.00</td><td>-6.48</td><td>40.20</td><td>7.32</td><td>Average</td><td>123</td><td>359</td></tr><tr><td>2</td><td>5150.00</td><td>60.45</td><td>74.00</td><td>-13.55</td><td>53.13</td><td>7.32</td><td>Peak</td><td>123</td><td>359</td></tr><tr><td>3</td><td>5350.00</td><td>47.69</td><td>54.00</td><td>-6.31</td><td>40.84</td><td>6.85</td><td>Average</td><td>123</td><td>359</td></tr><tr><td>4</td><td>5350.00</td><td>61.18</td><td>74.00</td><td>-12.82</td><td>54.33</td><td>6.85</td><td>Peak</td><td>123</td><td>359</td></tr><tr><td>5</td><td>10520.00</td><td>61.94</td><td>68.20</td><td>-6.26</td><td>45.52</td><td>16.42</td><td>Peak</td><td>121</td><td>159</td></tr><tr><td>6</td><td>15780.00</td><td>47.79</td><td>54.00</td><td>-6.21</td><td>31.23</td><td>16.56</td><td>Average</td><td>100</td><td>35</td></tr><tr><td>7</td><td>15780.00</td><td>59.98</td><td>74.00</td><td>-14.02</td><td>43.42</td><td>16.56</td><td>Peak</td><td>100</td><td>35</td></tr></tbody></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	5150.00	47.52	54.00	-6.48	40.20	7.32	Average	123	359	2	5150.00	60.45	74.00	-13.55	53.13	7.32	Peak	123	359	3	5350.00	47.69	54.00	-6.31	40.84	6.85	Average	123	359	4	5350.00	61.18	74.00	-12.82	54.33	6.85	Peak	123	359	5	10520.00	61.94	68.20	-6.26	45.52	16.42	Peak	121	159	6	15780.00	47.79	54.00	-6.21	31.23	16.56	Average	100	35	7	15780.00	59.98	74.00	-14.02	43.42	16.56	Peak	100	35
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																														
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																																														
								cm	deg																																																																																														
1	5150.00	47.52	54.00	-6.48	40.20	7.32	Average	123	359																																																																																														
2	5150.00	60.45	74.00	-13.55	53.13	7.32	Peak	123	359																																																																																														
3	5350.00	47.69	54.00	-6.31	40.84	6.85	Average	123	359																																																																																														
4	5350.00	61.18	74.00	-12.82	54.33	6.85	Peak	123	359																																																																																														
5	10520.00	61.94	68.20	-6.26	45.52	16.42	Peak	121	159																																																																																														
6	15780.00	47.79	54.00	-6.21	31.23	16.56	Average	100	35																																																																																														
7	15780.00	59.98	74.00	-14.02	43.42	16.56	Peak	100	35																																																																																														
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).																																																																																																							

Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.10	54.00	-7.90	39.25	6.85	Average	135	195
2	5350.00	59.97	74.00	-14.03	53.12	6.85	Peak	135	195
3	10600.00	47.42	54.00	-6.58	31.06	16.36	Average	100	28
4	10600.00	58.84	74.00	-15.16	42.48	16.36	Peak	100	28
5	15900.00	47.76	54.00	-6.24	31.07	16.69	Average	100	36
6	15900.00	59.58	74.00	-14.42	42.89	16.69	Peak	100	36

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		
Level (dBuV/m)			

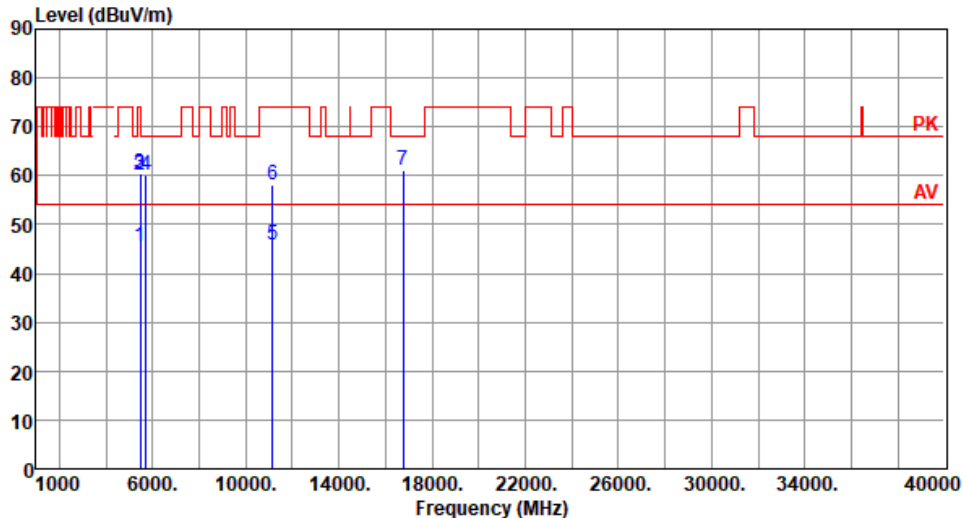
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (dBUV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Vertical		
Level (dBUV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		
 			

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



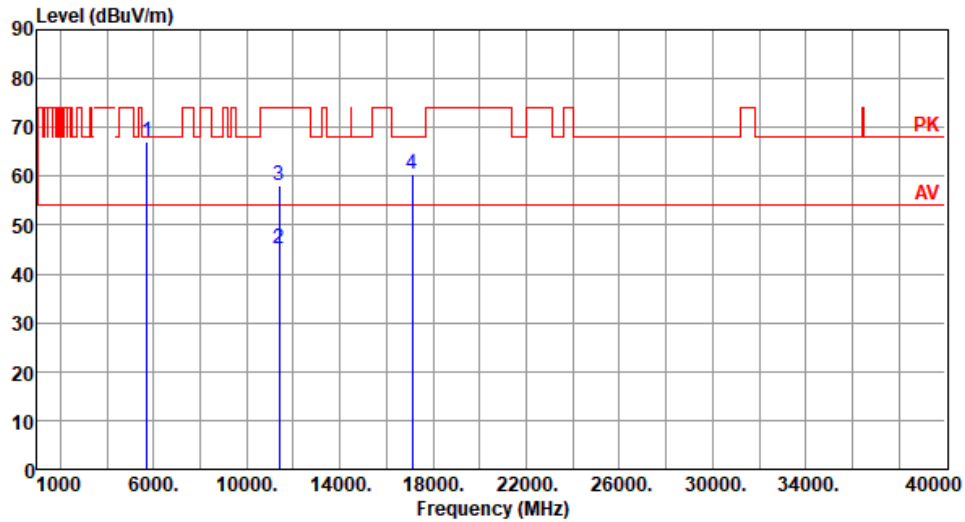
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.36	54.00	-8.64	38.11	7.25	Average	155	159
2	5460.00	60.27	74.00	-13.73	53.02	7.25	Peak	155	159
3	5470.00	60.46	68.20	-7.74	53.18	7.28	Peak	155	159
4	5725.00	60.04	68.20	-8.16	52.38	7.66	Peak	155	159
5	11160.00	45.69	54.00	-8.31	29.10	16.59	Average	100	58
6	11160.00	57.98	74.00	-16.02	41.39	16.59	Peak	100	58
7	16740.00	61.09	68.20	-7.11	42.86	18.23	Peak	100	42

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Vertical		

Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	67.12	68.20	-1.08	59.46	7.66	Peak	140	39
2	11400.00	45.16	54.00	-8.84	28.43	16.73	Average	100	161
3	11400.00	58.04	74.00	-15.96	41.31	16.73	Peak	100	161
4	17100.00	60.42	68.20	-7.78	42.18	18.24	Peak	100	195

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

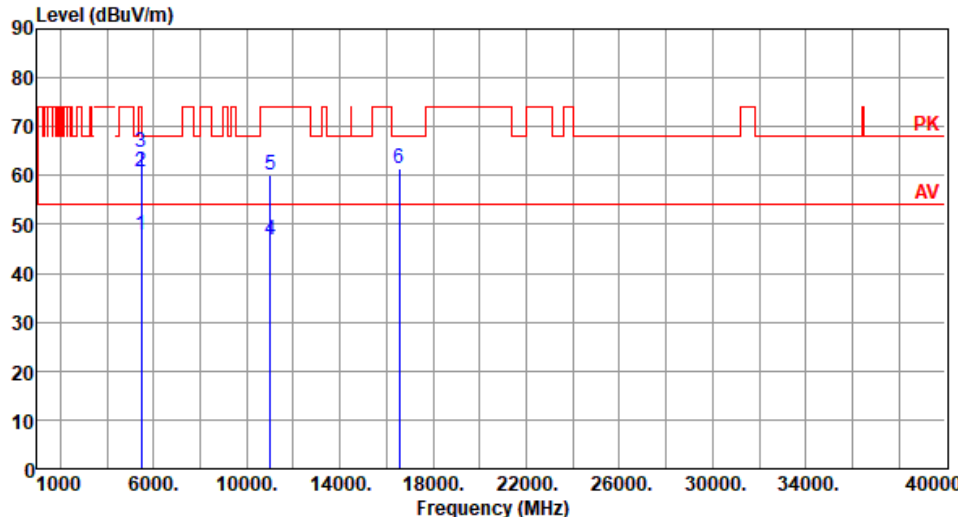
3.5.11 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40

Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Horizontal		
Level (dBuV/m)			

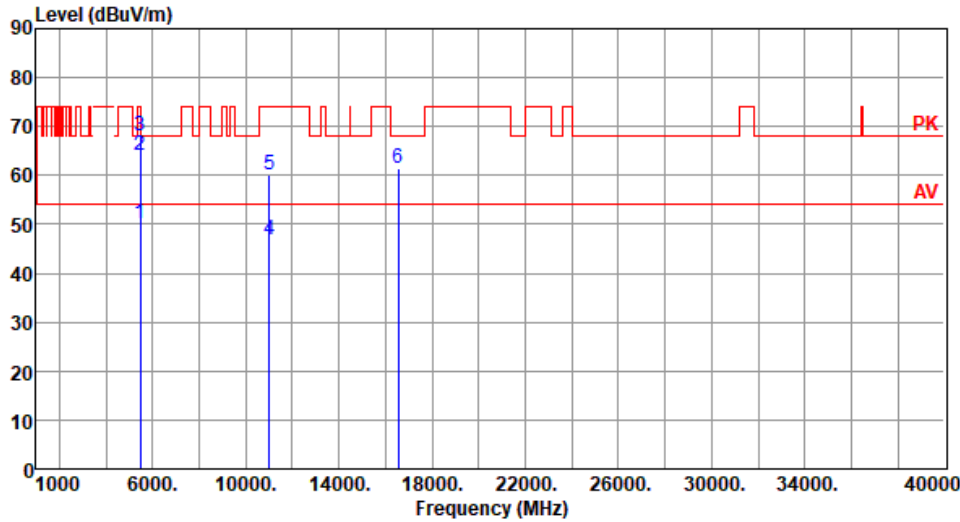
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Vertical		
Level (dBuV/m) <			

Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5510																																																																																										
Polarization	Horizontal																																																																																												
 <table><thead><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr></thead><tbody><tr><td>1</td><td>5460.00</td><td>47.81</td><td>54.00</td><td>-6.19</td><td>40.56</td><td>7.25</td><td>Average</td><td>154</td><td>163</td></tr><tr><td>2</td><td>5460.00</td><td>60.83</td><td>74.00</td><td>-13.17</td><td>53.58</td><td>7.25</td><td>Peak</td><td>154</td><td>163</td></tr><tr><td>3</td><td>5470.00</td><td>64.69</td><td>68.20</td><td>-3.51</td><td>57.41</td><td>7.28</td><td>Peak</td><td>154</td><td>163</td></tr><tr><td>4</td><td>11020.00</td><td>46.99</td><td>54.00</td><td>-7.01</td><td>30.18</td><td>16.81</td><td>Average</td><td>100</td><td>20</td></tr><tr><td>5</td><td>11020.00</td><td>60.10</td><td>74.00</td><td>-13.90</td><td>43.29</td><td>16.81</td><td>Peak</td><td>100</td><td>20</td></tr><tr><td>6</td><td>16530.00</td><td>61.28</td><td>68.20</td><td>-6.92</td><td>43.45</td><td>17.83</td><td>Peak</td><td>100</td><td>40</td></tr></tbody></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	5460.00	47.81	54.00	-6.19	40.56	7.25	Average	154	163	2	5460.00	60.83	74.00	-13.17	53.58	7.25	Peak	154	163	3	5470.00	64.69	68.20	-3.51	57.41	7.28	Peak	154	163	4	11020.00	46.99	54.00	-7.01	30.18	16.81	Average	100	20	5	11020.00	60.10	74.00	-13.90	43.29	16.81	Peak	100	20	6	16530.00	61.28	68.20	-6.92	43.45	17.83	Peak	100	40
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																				
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																																				
								cm	deg																																																																																				
1	5460.00	47.81	54.00	-6.19	40.56	7.25	Average	154	163																																																																																				
2	5460.00	60.83	74.00	-13.17	53.58	7.25	Peak	154	163																																																																																				
3	5470.00	64.69	68.20	-3.51	57.41	7.28	Peak	154	163																																																																																				
4	11020.00	46.99	54.00	-7.01	30.18	16.81	Average	100	20																																																																																				
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6	16530.00	61.28	68.20	-6.92	43.45	17.83	Peak	100	40																																																																																				
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).																																																																																													

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		

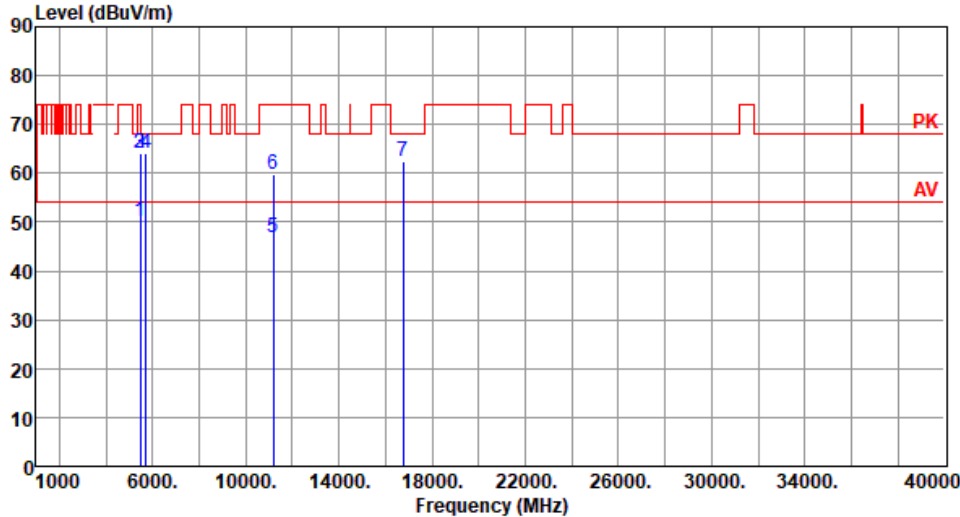


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.07	54.00	-3.93	42.82	7.25	Average	160	4
2	5460.00	64.10	74.00	-9.90	56.85	7.25	Peak	160	4
3	5470.00	67.96	68.20	-0.24	60.68	7.28	Peak	160	4
4	11020.00	46.86	54.00	-7.14	30.05	16.81	Average	100	90
5	11020.00	59.96	74.00	-14.04	43.15	16.81	Peak	100	90
6	16530.00	61.42	68.20	-6.78	43.59	17.83	Peak	100	70

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Horizontal		
Level (dBuV/m)			

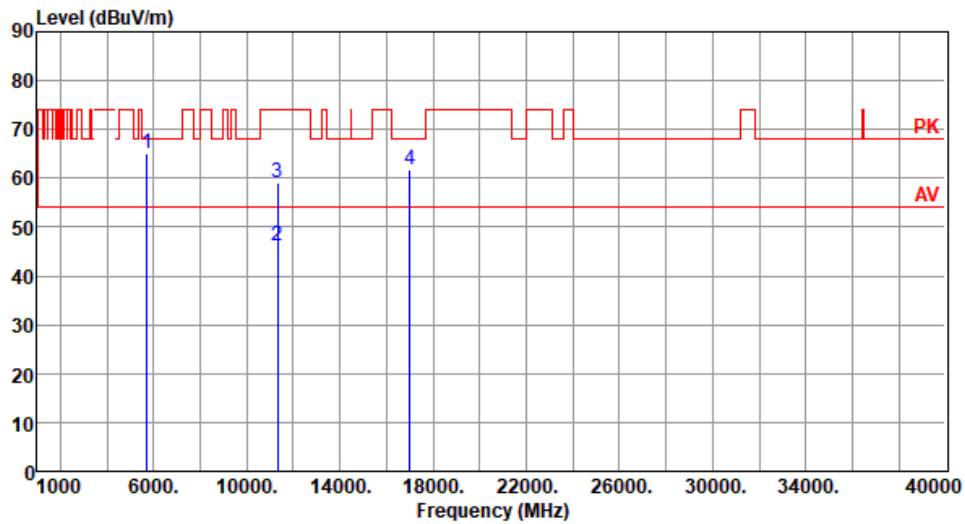
Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.01	54.00	-3.99	42.76	7.25	Average	100	10
2	5460.00	64.18	74.00	-9.82	56.93	7.25	Peak	100	10
3	5470.00	64.14	68.20	-4.06	56.86	7.28	Peak	100	10
4	5725.00	64.03	68.20	-4.17	56.37	7.66	Peak	100	10
5	11180.00	46.72	54.00	-7.28	30.16	16.56	Average	100	28
6	11180.00	59.78	74.00	-14.22	43.22	16.56	Peak	100	28
7	16770.00	62.49	68.20	-5.71	44.26	18.23	Peak	100	15

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	65.11	68.20	-3.09	57.45	7.66	Peak	146	157
2	11340.00	46.06	54.00	-7.94	29.48	16.58	Average	100	20
3	11340.00	59.14	74.00	-14.86	42.56	16.58	Peak	100	20
4	17010.00	61.92	68.20	-6.28	43.26	18.66	Peak	100	60

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

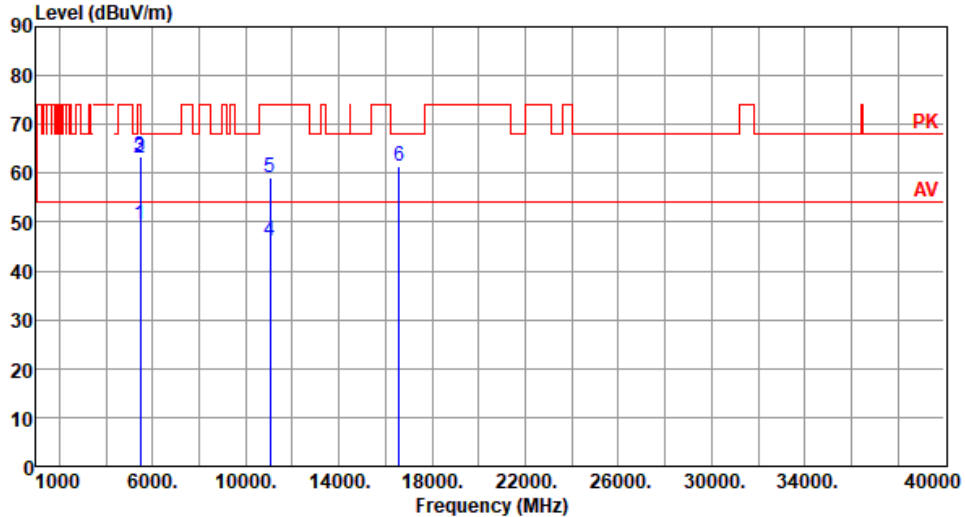
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		
Level (dBUV/m)			

3.5.12 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80

Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		
Level (dBuV/m)			

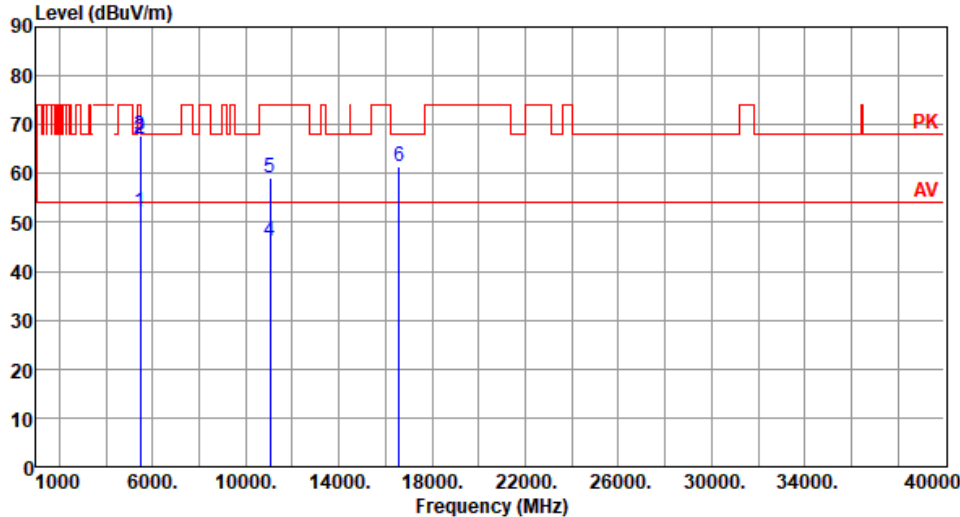
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	49.49	54.00	-4.51	42.24	7.25	Average	168	208
2	5460.00	63.07	74.00	-10.93	55.82	7.25	Peak	168	208
3	5470.00	63.50	68.20	-4.70	56.22	7.28	Peak	168	208
4	11060.00	46.23	54.00	-7.77	29.48	16.75	Average	100	70
5	11060.00	59.28	74.00	-14.72	42.53	16.75	Peak	100	70
6	16590.00	61.46	68.20	-6.74	43.25	18.21	Peak	100	20

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	52.21	54.00	-1.79	44.96	7.25	Average	100	20
2	5460.00	67.08	74.00	-6.92	59.83	7.25	Peak	100	20
3	5470.00	67.86	68.20	-0.34	60.58	7.28	Peak	100	20
4	11060.00	46.17	54.00	-7.83	29.42	16.75	Average	100	30
5	11060.00	59.10	74.00	-14.90	42.35	16.75	Peak	100	30
6	16590.00	61.40	68.20	-6.80	43.19	18.21	Peak	100	50

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		
Level (dBuV/m) </			

3.6 Frequency Stability

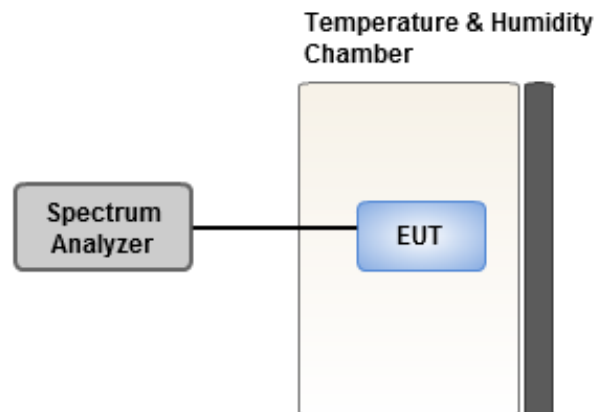
3.6.1 Limit of Frequency Stability

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

3.6.2 Test Procedures

1. The EUT is installed in an environment test chamber with external power source.
2. Set the chamber to operate at 20 centigrade and external power source to output at nominal voltage of EUT.
3. A sufficient stabilization period at each temperature is used prior to each frequency measurement.
4. When temperature is stabled, measure the frequency stability.
5. The test shall be performed under normal and extreme condition for temperature and voltage.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Frequency: 5500 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	5.05	5.32	5.38	4.78
T20°C Vmin	4.54	4.71	4.98	4.07
T50°C Vnom	4.63	4.38	4.56	4.50
T40°C Vnom	4.77	4.56	4.99	4.81
T30°C Vnom	3.65	3.63	3.72	3.71
T20°C Vnom	5.32	5.82	5.30	5.57
T10°C Vnom	5.02	5.15	4.91	4.69
T0°C Vnom	4.16	4.70	4.70	3.97
T-10°C Vnom	2.11	2.85	2.76	2.56
T-20°C Vnom	1.71	1.89	1.33	2.39
T-30°C Vnom	2.41	2.48	2.38	3.06
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 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>.

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

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