

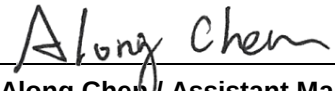
FCC Test Report

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 : May 19 ~ Jun. 12, 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:

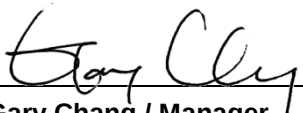

Gary Chang / Manager



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	9
1.3	Test Setup Chart	10
1.4	The Equipment List	12
1.5	Test Standards	13
1.6	Reference Guidance	13
1.7	Deviation from Test Standard and Measurement Procedure.....	13
1.8	Measurement Uncertainty	13
2	TEST CONFIGURATION	14
2.1	Testing Condition	14
2.2	Testing Facility.....	14
2.3	The Worst Test Modes and Channel Details	15
3	TRANSMITTER TEST RESULTS.....	17
3.1	Conducted Emissions.....	17
3.2	Emission Bandwidth	26
3.3	RF Output Power	41
3.4	Peak Power Spectral Density	46
3.5	Transmitter Radiated and Band Edge Emissions	61
3.6	Frequency Stability.....	132
4	TEST LABORATORY INFORMATION	134

Release Record

Report No.	Version	Description	Issued Date
FR051403AN	Rev. 01	Initial issue	Jun. 23, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.168MHz 51.63 (Margin -13.45dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 53.76 (Margin -0.24dB) - AV	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 5150-5250MHz: 26.15 5725-5850MHz: 26.67 Beamforming mode 5150-5250MHz: 24.82 5725-5850MHz: 26.41	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

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
5150-5250 5725-5850	a	5180-5240 5745-5825	36-48 [4] 149-165 [5]	4	6-54 Mbps
5150-5250 5725-5850	n (HT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	4	MCS 0-31
5150-5250 5725-5850	n (HT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	4	MCS 0-31
5150-5250 5725-5850	ac (VHT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	4	MCS 0-9
5150-5250 5725-5850	ac (VHT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	4	MCS 0-9
5150-5250 5725-5850	ac (VHT80)	5210 5775	42 [1] 155 [1]	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: 802.11ac supports beamforming function.					

1.1.3 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
				2400~2483.5	5150~5250	5725~5850
1	Ant 1	PIFA	NA	2.8	3.1	2.4
2	Ant 2	PIFA	NA	3.1	2.4	2.2
3	Ant 3	Dipole	UFL	3.0	2.2	2.4
4	Ant 4	Dipole	UFL	2.6	3.1	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

For Frequency band 5150-5250 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	VHT80	
48	5240	42	5210

For Frequency band 5725~5850 MHz			
802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
149	5745	151	5755
153	5765	159	5795
157	5785	VHT80	
161	5805	155	5775
165	5825	---	---

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	5180	19	---
11a	5200	23	---
11a	5240	1F	---
11a	5745	26	---
11a	5785	26	---
11a	5825	26	---
VHT20	5180	17	24
VHT20	5200	22	35
VHT20	5240	1F	31
VHT20	5745	26	40
VHT20	5785	26	40
VHT20	5825	26	40
VHT40	5190	16	21
VHT40	5230	1F	32
VHT40	5755	23	35
VHT40	5795	26	39
VHT80	5210	10	17
VHT80	5775	19	27

1.2 Local Support Equipment List

Non-beamforming mode

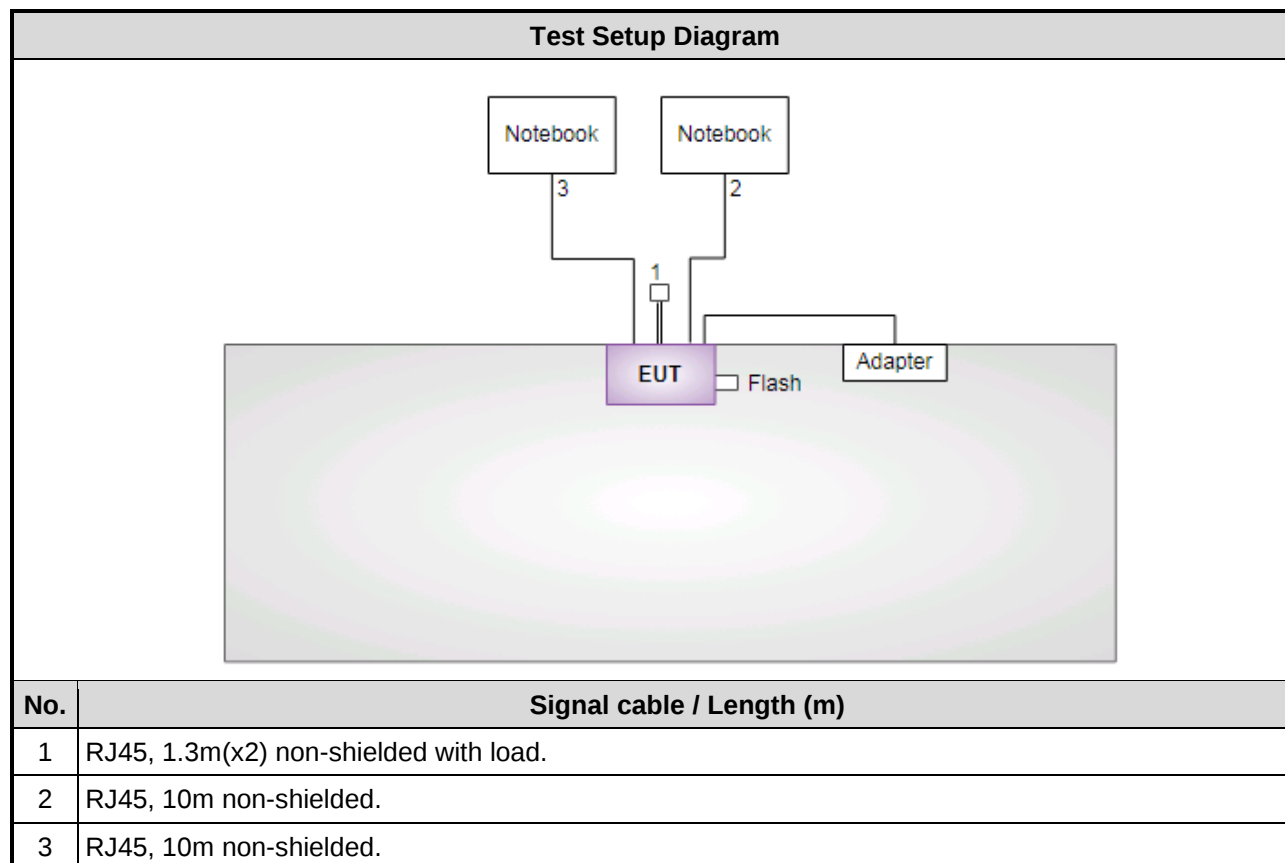
Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	RJ45	ICC	RJ45-1.3m	---	---
2	RJ45	ICC	RJ45-1.3m	---	---
3	RJ45	ICC	RJ45-10m	---	---
4	Notebook	DELL	Latitude E5470	DoC	---
5	Notebook	DELL	Latitude E5470	DoC	---
6	USB 3.0 Flash	Transcend	JetFlash 700	---	---

Beamforming mode

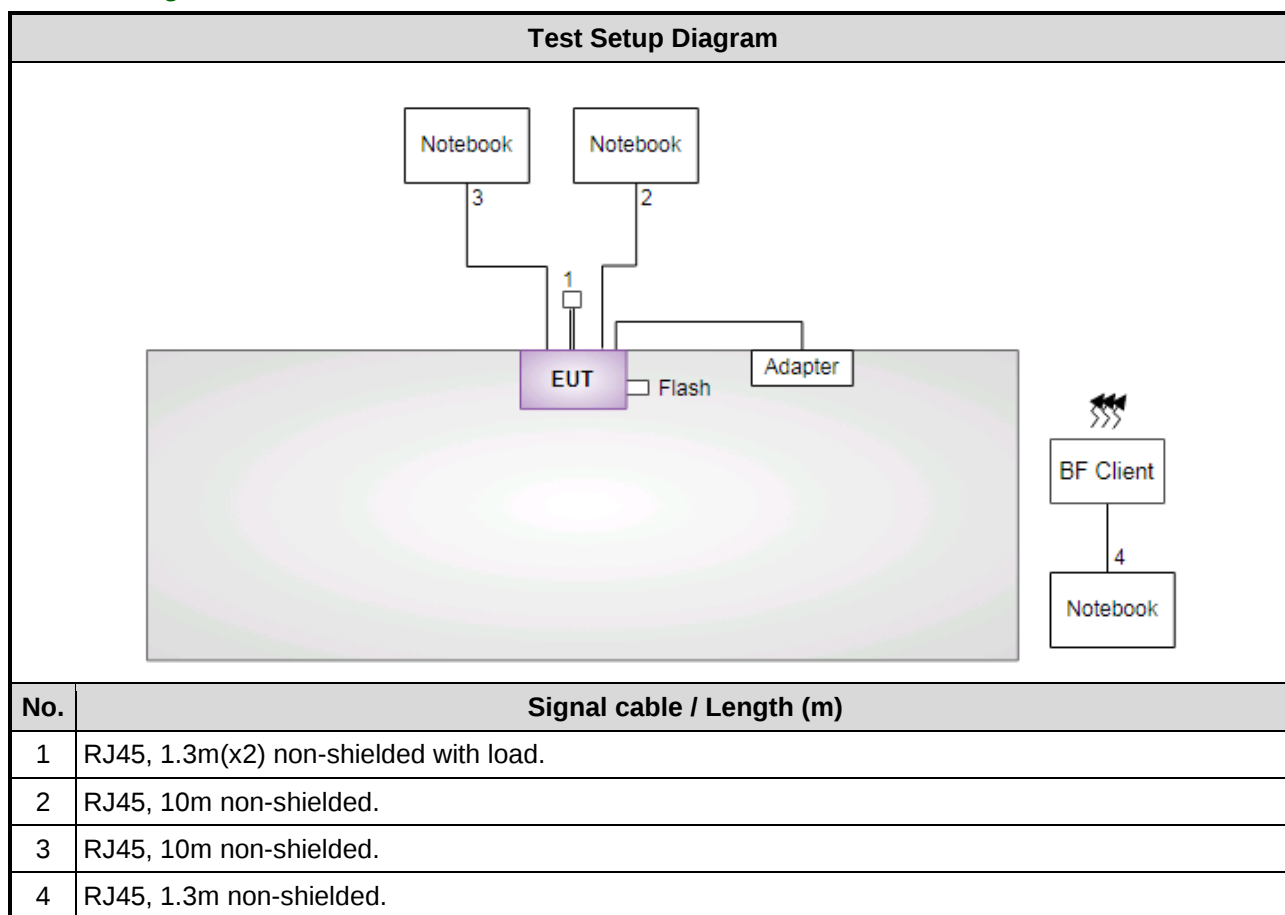
Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	RJ45	ICC	RJ45-1.3m	---	
2	RJ45	ICC	RJ45-1.3m	---	
3	RJ45	ICC	RJ45-1.3m	---	
4	RJ45	ICC	RJ45-10m	---	
5	Notebook	DELL	Latitude E5470	DoC	
6	Notebook	DELL	Latitude E5470	DoC	
7	Notebook	DELL	Latitude E6430	DoC	
8	USB 3.0 Flash	Transcend	JetFlash 700	---	
9	BF client	Sercomm	IP3442MXXXXX 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
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	24-25°C / 64-68%	Roger Lu
RF Conducted	TH01-WS	23°C / 63%	Brad Wu

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- ISED#: 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 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5200	6 Mbps	---
Radiated Emissions ≤ 1 GHz	11a	5200	6 Mbps	---
RF Output Power	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	---
Radiated Emissions > 1 GHz Emission Bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	---
Frequency Stability	Un-modulation	5200	---	---
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.				

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5745	6 Mbps	---
Radiated Emissions ≤ 1 GHz	11a	5745	6 Mbps	---
RF Output Power	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	---
Radiated Emissions > 1 GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	---
Frequency Stability	Un-modulation	5785	---	---
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 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT20	5200	MCS 0	---
Radiated Emissions ≤ 1 GHz	VHT20	5200	MCS 0	---
RF Output Power	VHT20 VHT40 VHT80	5180 / 5200 / 5240 5190 / 5230 5210	MCS 0 MCS 0 MCS 0	---
Radiated Emissions > 1 GHz Emission Bandwidth Peak Power Spectral Density	VHT20 VHT40 VHT80	5180 / 5200 / 5240 5190 / 5230 5210	MCS 0 MCS 0 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.				

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT20	5785	MCS 0	---
Radiated Emissions ≤ 1 GHz	VHT20	5785	MCS 0	---
RF Output Power	VHT20 VHT40 VHT80	5745 / 5785 / 5825 5755 / 5795 5775	MCS 0 MCS 0 MCS 0	---
Radiated Emissions > 1 GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	VHT20 VHT40 VHT80	5745 / 5785 / 5825 5755 / 5795 5775	MCS 0 MCS 0 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

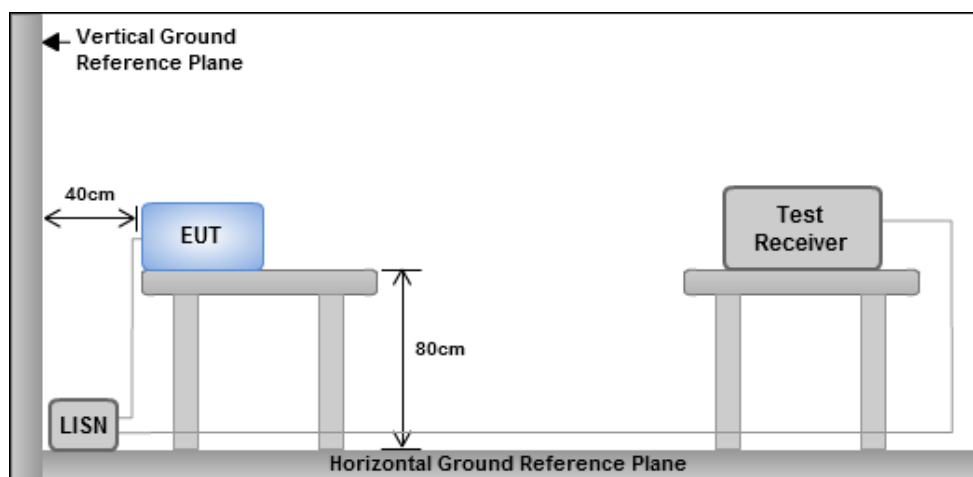
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

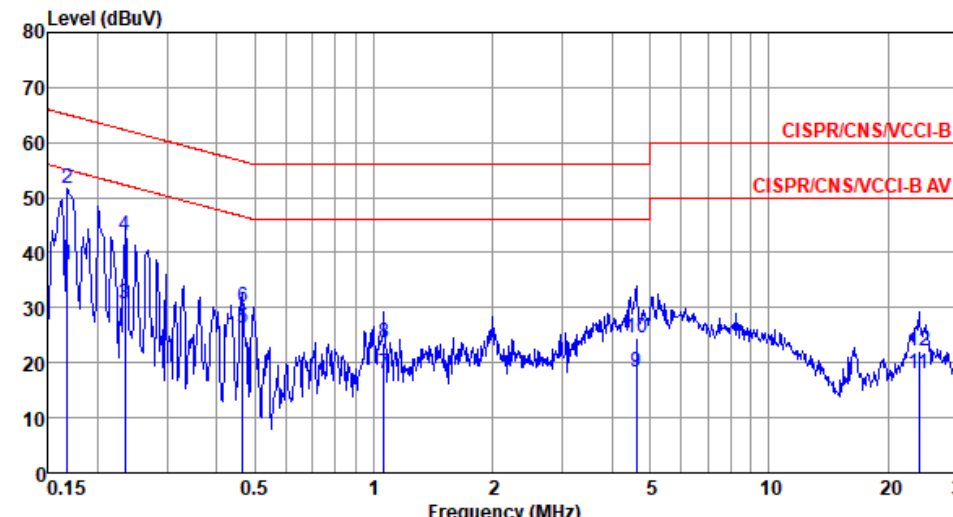


- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

Non-beamforming mode

Modulation	11a	Test Freq. (MHz)	5200
Power Phase	Line		

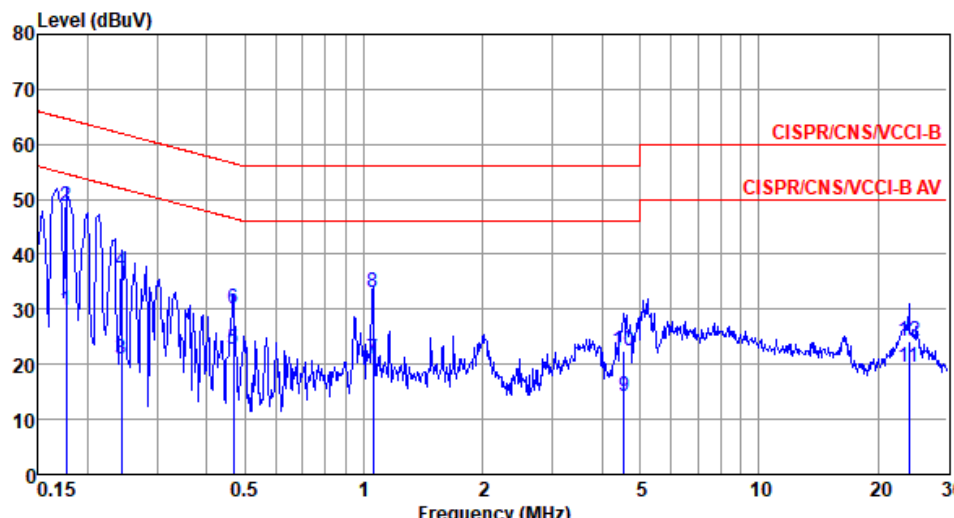


	Freq MHz	Level dBuV	Limit dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.168	37.83	55.08	-17.25	27.97	9.64	0.05	Average
2*	0.168	51.63	65.08	-13.45	41.77	9.64	0.05	QP
3	0.234	30.56	52.30	-21.74	20.67	9.63	0.06	Average
4	0.234	43.08	62.30	-19.22	33.19	9.63	0.06	QP
5	0.466	26.24	46.58	-20.34	16.26	9.63	0.09	Average
6	0.466	30.03	56.58	-26.55	20.05	9.63	0.09	QP
7	1.060	17.89	46.00	-28.11	7.82	9.63	0.12	Average
8	1.060	23.59	56.00	-32.41	13.52	9.63	0.12	QP
9	4.622	18.34	46.00	-27.66	8.00	9.66	0.31	Average
10	4.622	24.37	56.00	-31.63	14.03	9.66	0.31	QP
11	24.015	18.08	50.00	-31.92	7.03	9.67	0.70	Average
12	24.015	22.24	60.00	-37.76	11.19	9.67	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	11a	Test Freq. (MHz)	5200
Power Phase	Neutral		

Level (dBuV)

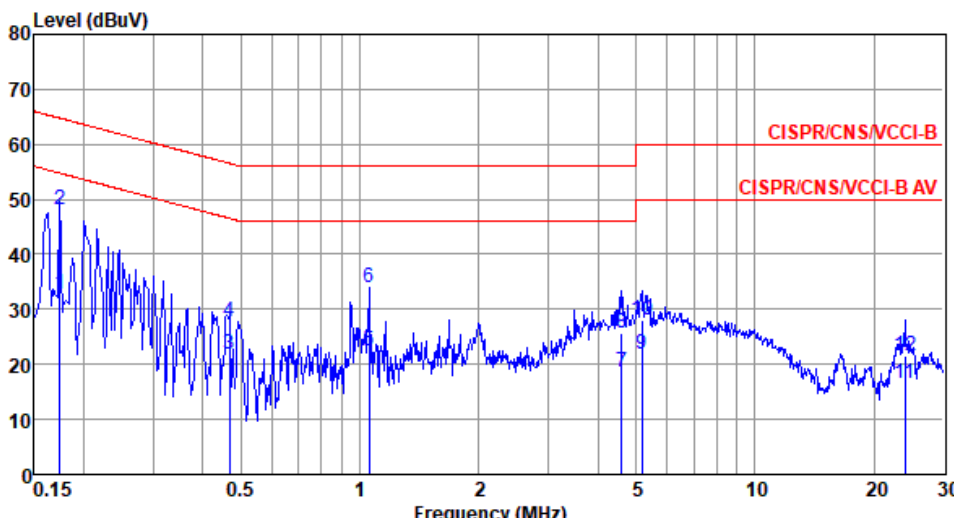


Frequency (MHz)

	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.177	29.76	54.64	-24.88	19.91	9.65	0.06	Average
2*	0.177	48.69	64.64	-15.95	38.84	9.65	0.06	QP
3	0.243	20.83	52.00	-31.17	10.95	9.65	0.07	Average
4	0.243	36.78	62.00	-25.22	26.90	9.65	0.07	QP
5	0.469	22.78	46.54	-23.76	12.86	9.65	0.09	Average
6	0.469	30.01	56.54	-26.53	20.09	9.65	0.09	QP
7	1.054	21.04	46.00	-24.96	11.07	9.65	0.12	Average
8	1.054	32.93	56.00	-23.07	22.96	9.65	0.12	QP
9	4.549	14.28	46.00	-31.72	4.03	9.68	0.30	Average
10	4.549	22.32	56.00	-33.68	12.07	9.68	0.30	QP
11	24.015	19.36	50.00	-30.64	8.20	9.81	0.70	Average
12	24.015	24.20	60.00	-35.80	13.04	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).

Modulation	11a	Test Freq. (MHz)	5745
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.174	32.74	54.77	-22.03	22.87	9.63	0.06	Average
2*	0.174	48.05	64.77	-16.72	38.18	9.63	0.06	QP
3	0.469	21.95	46.54	-24.59	11.97	9.63	0.09	Average
4	0.469	27.75	56.54	-28.79	17.77	9.63	0.09	QP
5	1.054	22.37	46.00	-23.63	12.30	9.63	0.12	Average
6	1.054	34.00	56.00	-22.00	23.93	9.63	0.12	QP
7	4.598	18.53	46.00	-27.47	8.19	9.66	0.31	Average
8	4.598	25.54	56.00	-30.46	15.20	9.66	0.31	QP
9	5.166	21.97	50.00	-28.03	11.61	9.66	0.32	Average
10	5.166	27.92	60.00	-32.08	17.56	9.66	0.32	QP
11	24.015	16.65	50.00	-33.35	5.60	9.67	0.70	Average
12	24.015	21.46	60.00	-38.54	10.41	9.67	0.70	QP

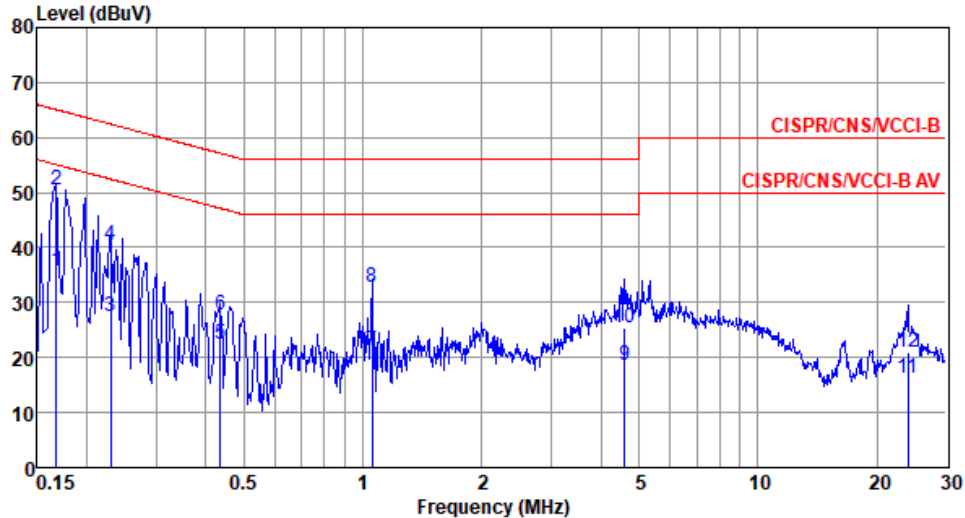
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).

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

Modulation	11a	Test Freq. (MHz)	5745																																																																																																																																							
Power Phase	Neutral																																																																																																																																									
Level (dBUV) <table><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>LISN</th><th>cable</th><th></th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>Line</th><th>Limit</th><th>Level</th><th>factor</th><th>loss</th><th>Remark</th></tr><tr><th></th><th></th><th></th><th>dBuV</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB</th><th></th></tr><tr><td>1</td><td>0.168</td><td>35.01</td><td>55.08</td><td>-20.07</td><td>25.17</td><td>9.66</td><td>0.05</td><td>Average</td></tr><tr><td>2*</td><td>0.168</td><td>50.14</td><td>65.08</td><td>-14.94</td><td>40.30</td><td>9.66</td><td>0.05</td><td>QP</td></tr><tr><td>3</td><td>0.230</td><td>26.32</td><td>52.44</td><td>-26.12</td><td>16.46</td><td>9.65</td><td>0.06</td><td>Average</td></tr><tr><td>4</td><td>0.230</td><td>40.28</td><td>62.44</td><td>-22.16</td><td>30.42</td><td>9.65</td><td>0.06</td><td>QP</td></tr><tr><td>5</td><td>0.461</td><td>24.14</td><td>46.67</td><td>-22.53</td><td>14.23</td><td>9.65</td><td>0.09</td><td>Average</td></tr><tr><td>6</td><td>0.461</td><td>30.31</td><td>56.67</td><td>-26.36</td><td>20.40</td><td>9.65</td><td>0.09</td><td>QP</td></tr><tr><td>7</td><td>1.049</td><td>18.23</td><td>46.00</td><td>-27.77</td><td>8.26</td><td>9.65</td><td>0.12</td><td>Average</td></tr><tr><td>8</td><td>1.049</td><td>28.68</td><td>56.00</td><td>-27.32</td><td>18.71</td><td>9.65</td><td>0.12</td><td>QP</td></tr><tr><td>9</td><td>4.647</td><td>18.47</td><td>46.00</td><td>-27.53</td><td>8.21</td><td>9.68</td><td>0.31</td><td>Average</td></tr><tr><td>10</td><td>4.647</td><td>27.31</td><td>56.00</td><td>-28.69</td><td>17.05</td><td>9.68</td><td>0.31</td><td>QP</td></tr><tr><td>11</td><td>24.015</td><td>16.75</td><td>50.00</td><td>-33.25</td><td>5.59</td><td>9.81</td><td>0.70</td><td>Average</td></tr><tr><td>12</td><td>24.015</td><td>20.99</td><td>60.00</td><td>-39.01</td><td>9.83</td><td>9.81</td><td>0.70</td><td>QP</td></tr></table>					Freq	Level	Limit	Over	Read	LISN	cable			MHz	dBuV	Line	Limit	Level	factor	loss	Remark				dBuV	dB	dBuV	dB	dB		1	0.168	35.01	55.08	-20.07	25.17	9.66	0.05	Average	2*	0.168	50.14	65.08	-14.94	40.30	9.66	0.05	QP	3	0.230	26.32	52.44	-26.12	16.46	9.65	0.06	Average	4	0.230	40.28	62.44	-22.16	30.42	9.65	0.06	QP	5	0.461	24.14	46.67	-22.53	14.23	9.65	0.09	Average	6	0.461	30.31	56.67	-26.36	20.40	9.65	0.09	QP	7	1.049	18.23	46.00	-27.77	8.26	9.65	0.12	Average	8	1.049	28.68	56.00	-27.32	18.71	9.65	0.12	QP	9	4.647	18.47	46.00	-27.53	8.21	9.68	0.31	Average	10	4.647	27.31	56.00	-28.69	17.05	9.68	0.31	QP	11	24.015	16.75	50.00	-33.25	5.59	9.81	0.70	Average	12	24.015	20.99	60.00	-39.01	9.83	9.81	0.70	QP
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Note 1: Level (dBUV) = Read Level (dBUV) + LISN Factor (dB) + Cable Loss (dB). Note 2: Over Limit (dB) = Level (dBUV) – Limit Line (dBUV).																																																																																																																																										

Beamforming mode

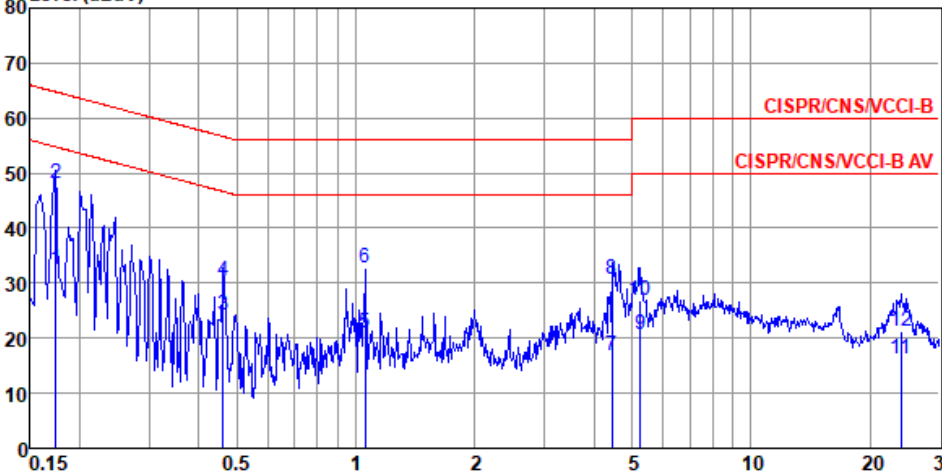
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Line		



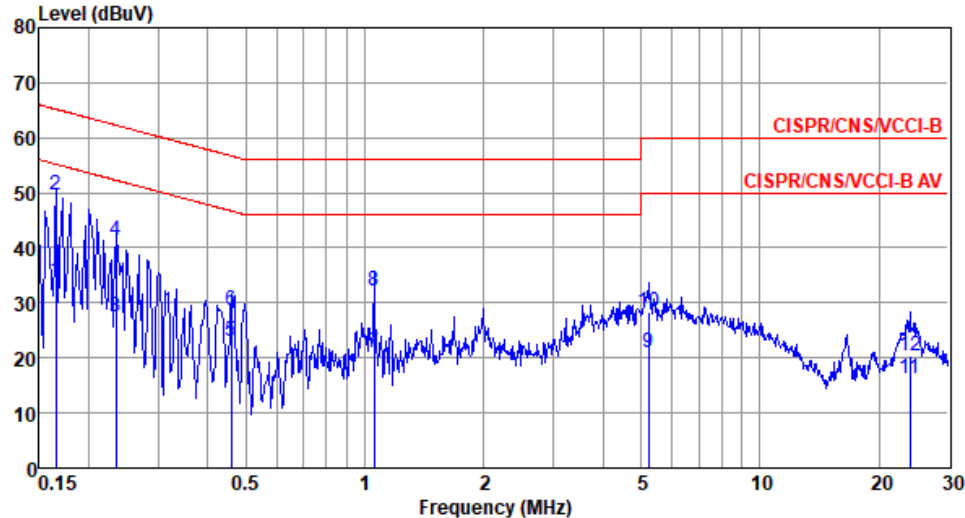
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.168	35.85	55.08	-19.23	25.99	9.64	0.05	Average
2*	0.168	50.47	65.08	-14.61	40.61	9.64	0.05	QP
3	0.230	27.53	52.44	-24.91	17.64	9.63	0.06	Average
4	0.230	40.43	62.44	-22.01	30.54	9.63	0.06	QP
5	0.435	22.29	47.15	-24.86	12.32	9.63	0.08	Average
6	0.435	27.75	57.15	-29.40	17.78	9.63	0.08	QP
7	1.054	21.18	46.00	-24.82	11.11	9.63	0.12	Average
8	1.054	32.67	56.00	-23.33	22.60	9.63	0.12	QP
9	4.598	18.52	46.00	-27.48	8.18	9.66	0.31	Average
10	4.598	25.51	56.00	-30.49	15.17	9.66	0.31	QP
11	24.015	16.22	50.00	-33.78	5.17	9.67	0.70	Average
12	24.015	20.95	60.00	-39.05	9.90	9.67	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	VHT20	Test Freq. (MHz)	5200																																																																																																																														
Power Phase	Neutral																																																																																																																																
Level (dBuV)  Frequency (MHz) <table><thead><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>LISN</th><th>cable</th><th>Remark</th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>dBuV</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB</th><th></th></tr></thead><tbody><tr><td>1</td><td>0.174</td><td>32.42</td><td>54.77</td><td>-22.35</td><td>22.57</td><td>9.65</td><td>0.06</td><td>Average</td></tr><tr><td>2*</td><td>0.174</td><td>48.11</td><td>64.77</td><td>-16.66</td><td>38.26</td><td>9.65</td><td>0.06</td><td>QP</td></tr><tr><td>3</td><td>0.461</td><td>24.09</td><td>46.67</td><td>-22.58</td><td>14.18</td><td>9.65</td><td>0.09</td><td>Average</td></tr><tr><td>4</td><td>0.461</td><td>30.40</td><td>56.67</td><td>-26.27</td><td>20.49</td><td>9.65</td><td>0.09</td><td>QP</td></tr><tr><td>5</td><td>1.054</td><td>20.90</td><td>46.00</td><td>-25.10</td><td>10.93</td><td>9.65</td><td>0.12</td><td>Average</td></tr><tr><td>6</td><td>1.054</td><td>32.65</td><td>56.00</td><td>-23.35</td><td>22.68</td><td>9.65</td><td>0.12</td><td>QP</td></tr><tr><td>7</td><td>4.454</td><td>16.76</td><td>46.00</td><td>-29.24</td><td>6.51</td><td>9.68</td><td>0.30</td><td>Average</td></tr><tr><td>8</td><td>4.454</td><td>30.69</td><td>56.00</td><td>-25.31</td><td>20.44</td><td>9.68</td><td>0.30</td><td>QP</td></tr><tr><td>9</td><td>5.249</td><td>20.61</td><td>50.00</td><td>-29.39</td><td>10.32</td><td>9.69</td><td>0.32</td><td>Average</td></tr><tr><td>10</td><td>5.249</td><td>26.90</td><td>60.00</td><td>-33.10</td><td>16.61</td><td>9.69</td><td>0.32</td><td>QP</td></tr><tr><td>11</td><td>24.015</td><td>16.25</td><td>50.00</td><td>-33.75</td><td>5.09</td><td>9.81</td><td>0.70</td><td>Average</td></tr><tr><td>12</td><td>24.015</td><td>21.28</td><td>60.00</td><td>-38.72</td><td>10.12</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). Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).					Freq	Level	Limit	Over	Read	LISN	cable	Remark		MHz	dBuV	dBuV	dB	dBuV	dB	dB		1	0.174	32.42	54.77	-22.35	22.57	9.65	0.06	Average	2*	0.174	48.11	64.77	-16.66	38.26	9.65	0.06	QP	3	0.461	24.09	46.67	-22.58	14.18	9.65	0.09	Average	4	0.461	30.40	56.67	-26.27	20.49	9.65	0.09	QP	5	1.054	20.90	46.00	-25.10	10.93	9.65	0.12	Average	6	1.054	32.65	56.00	-23.35	22.68	9.65	0.12	QP	7	4.454	16.76	46.00	-29.24	6.51	9.68	0.30	Average	8	4.454	30.69	56.00	-25.31	20.44	9.68	0.30	QP	9	5.249	20.61	50.00	-29.39	10.32	9.69	0.32	Average	10	5.249	26.90	60.00	-33.10	16.61	9.69	0.32	QP	11	24.015	16.25	50.00	-33.75	5.09	9.81	0.70	Average	12	24.015	21.28	60.00	-38.72	10.12	9.81	0.70	QP
	Freq	Level	Limit	Over	Read	LISN	cable	Remark																																																																																																																									
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8	4.454	30.69	56.00	-25.31	20.44	9.68	0.30	QP																																																																																																																									
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Modulation	VHT20	Test Freq. (MHz)	5785
Power Phase	Line		

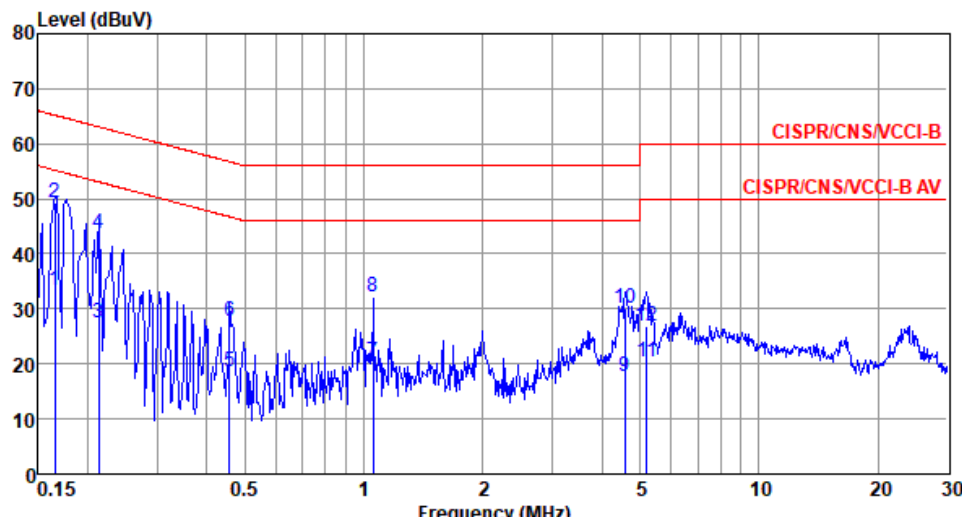


Freq	Level	Limit	Over	Read	LISN	cable	Remark	
MHz	dBuV	dBuV	dB	dBuV	dB	dB		
1	0.165	34.07	55.21	-21.14	24.21	9.64	0.05	Average
2*	0.165	49.50	65.21	-15.71	39.64	9.64	0.05	QP
3	0.234	27.58	52.30	-24.72	17.69	9.63	0.06	Average
4	0.234	41.31	62.30	-20.99	31.42	9.63	0.06	QP
5	0.459	23.13	46.71	-23.58	13.15	9.63	0.09	Average
6	0.459	28.63	56.71	-28.08	18.65	9.63	0.09	QP
7	1.054	20.92	46.00	-25.08	10.85	9.63	0.12	Average
8	1.054	32.05	56.00	-23.95	21.98	9.63	0.12	QP
9	5.221	20.88	50.00	-29.12	10.52	9.66	0.32	Average
10	5.221	28.47	60.00	-31.53	18.11	9.66	0.32	QP
11	24.015	16.13	50.00	-33.87	5.08	9.67	0.70	Average
12	24.015	20.38	60.00	-39.62	9.33	9.67	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	VHT20	Test Freq. (MHz)	5785
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.165	33.49	55.21	-21.72	23.65	9.66	0.05	Average
2*	0.165	49.38	65.21	-15.83	39.54	9.66	0.05	QP
3	0.213	27.37	53.10	-25.73	17.51	9.65	0.06	Average
4	0.213	43.83	63.10	-19.27	33.97	9.65	0.06	QP
5	0.456	18.54	46.76	-28.22	8.63	9.65	0.09	Average
6	0.456	27.73	56.76	-29.03	17.82	9.65	0.09	QP
7	1.054	20.42	46.00	-25.58	10.45	9.65	0.12	Average
8	1.054	32.15	56.00	-23.85	22.18	9.65	0.12	QP
9	4.574	17.70	46.00	-28.30	7.45	9.68	0.30	Average
10	4.574	30.19	56.00	-25.81	19.94	9.68	0.30	QP
11	5.194	20.45	50.00	-29.55	10.16	9.69	0.32	Average
12	5.194	26.94	60.00	-33.06	16.65	9.69	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).

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

3.2.2 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.

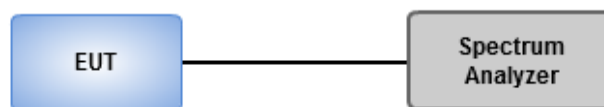
Occupied Bandwidth

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.

6dB Bandwidth

1. Set RBW = 100kHz, VBW = 300kHz.
2. Detector = Peak, Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.2.3 Test Setup



3.2.4 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)
5.15-5.25GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	40.29M	26.122M	26M1D1D	19.783M	16.57M
802.11ac VHT20_Nss1,(MCS0)_4TX	41.449M	24.096M	24M1D1D	19.855M	17.511M
802.11ac VHT40_Nss1,(MCS0)_4TX	73.333M	36.758M	36M8D1D	39.565M	36.035M
802.11ac VHT80_Nss1,(MCS0)_4TX	81.449M	75.253M	75M3D1D	79.42M	74.964M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	16.014M	27.135M	27M1D1D	13.478M	16.498M
802.11ac VHT20_Nss1,(MCS0)_4TX	17.536M	28.509M	28M5D1D	13.478M	17.656M
802.11ac VHT40_Nss1,(MCS0)_4TX	35.072M	53.69M	53M7D1D	31.304M	36.758M
802.11ac VHT80_Nss1,(MCS0)_4TX	75.362M	75.253M	75M3D1D	71.304M	74.964M

Max-N dB = Maximum6dB downbandwidth for 5.725-5.85GHz band / Maximum26dB downbandwidth for other band;

Max-OBW = Maximum99% occupied bandwidth;

Min-N dB = Minimum6dB downbandwidth for 5.725-5.85GHz band / Maximum26dB downbandwidth for other band;

Min-OBW = Minimum99% 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	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	19.783M	16.57M	29.42M	16.787M	26.957M	16.787M	19.855M	16.57M
5200MHz	Pass	Inf	36.232M	18.669M	33.841M	17.728M	32.536M	17.366M	40.29M	26.122M
5240MHz	Pass	Inf	30.29M	17.004M	28.986M	16.715M	28.043M	16.715M	35.87M	19.32M
5745MHz	Pass	500k	14.638M	23.589M	14.42M	26.556M	15.072M	23.227M	14.42M	27.135M
5785MHz	Pass	500k	15.072M	23.806M	15.072M	25.76M	15.072M	24.023M	15.29M	26.99M
5825MHz	Pass	500k	14.493M	16.715M	15.072M	18.017M	13.478M	16.57M	16.014M	16.498M
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	20.435M	17.511M	19.855M	17.583M	19.855M	17.511M	20.362M	17.583M
5200MHz	Pass	Inf	34.493M	18.09M	34.783M	18.09M	35.507M	17.945M	41.449M	24.096M
5240MHz	Pass	Inf	32.464M	17.873M	26.522M	17.656M	27.174M	17.656M	37.899M	19.247M
5745MHz	Pass	500k	15.072M	24.313M	15.29M	28.292M	13.841M	26.483M	13.551M	28.365M
5785MHz	Pass	500k	13.913M	26.7M	16.159M	26.483M	15.942M	25.687M	16.304M	28.509M
5825MHz	Pass	500k	13.478M	17.8M	14.42M	19.971M	16.304M	17.656M	17.536M	17.728M
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.29M	36.035M	39.565M	36.035M	40M	36.035M	40.29M	36.035M
5230MHz	Pass	Inf	60M	36.324M	40.145M	36.179M	40.58M	36.179M	73.333M	36.758M
5755MHz	Pass	500k	31.304M	37.048M	31.884M	53.69M	32.609M	36.758M	33.768M	37.337M
5795MHz	Pass	500k	35.072M	50.072M	33.768M	49.928M	33.913M	49.059M	31.304M	53.546M
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	81.449M	75.253M	79.42M	75.253M	80.29M	75.253M	80M	74.964M
5775MHz	Pass	500k	73.913M	75.253M	75.362M	74.964M	72.754M	74.964M	71.304M	74.964M

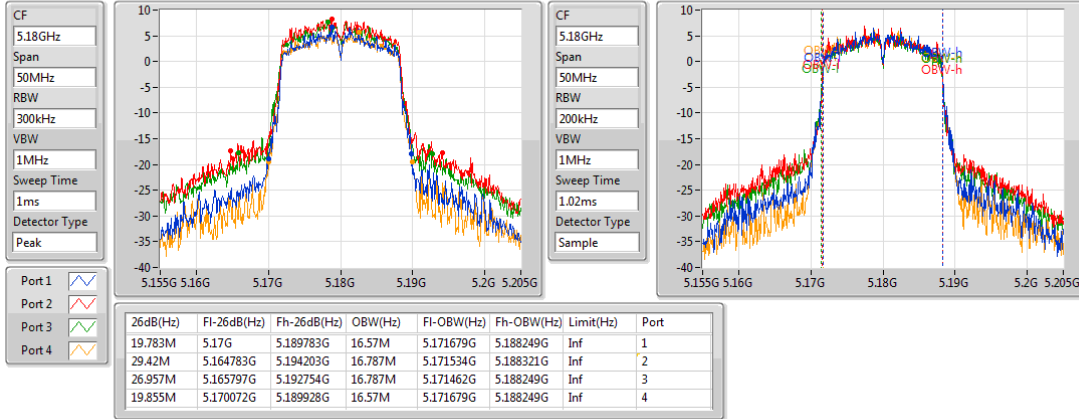
Port X-N dB = Port X6dB downbandwidth for 5.725-5.85GHz band / 26dB downbandwidth for other band

Port X-OBW = Port X99% occupied bandwidth;

802.11a_Nss1,(6Mbps)_4TX

EBW

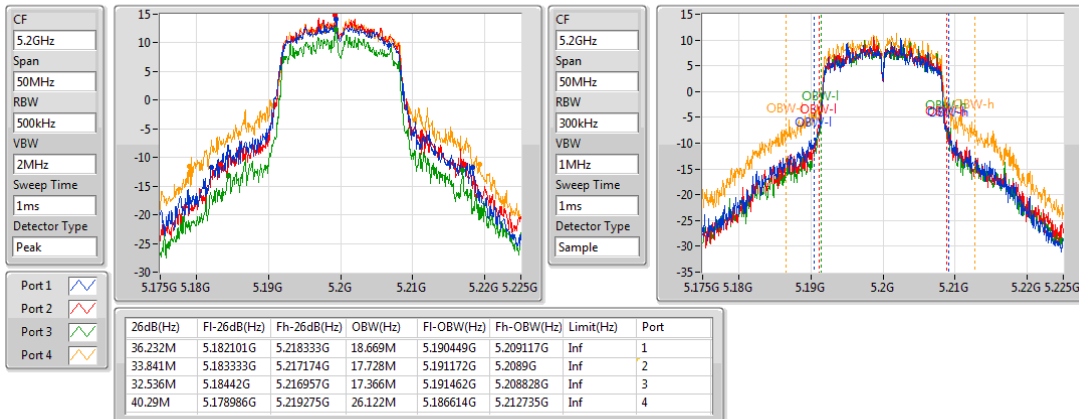
5180MHz



802.11a_Nss1,(6Mbps)_4TX

EBW

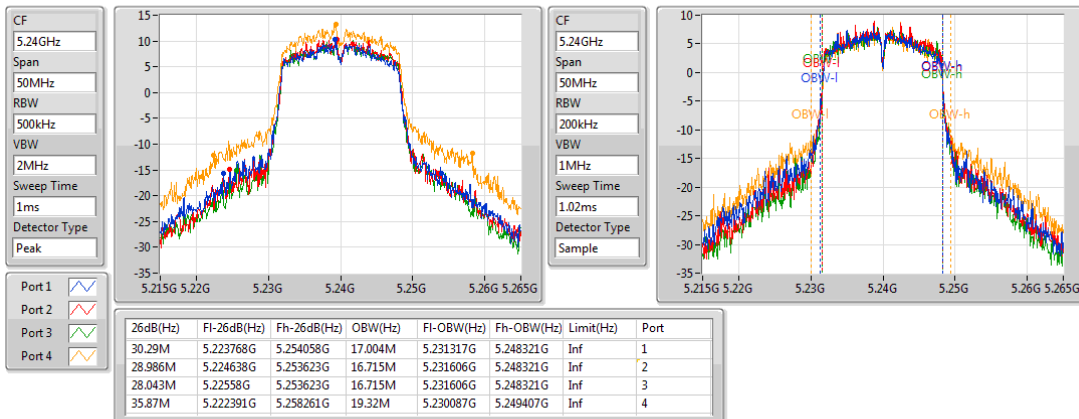
5200MHz



802.11a_Nss1,(6Mbps)_4TX

EBW

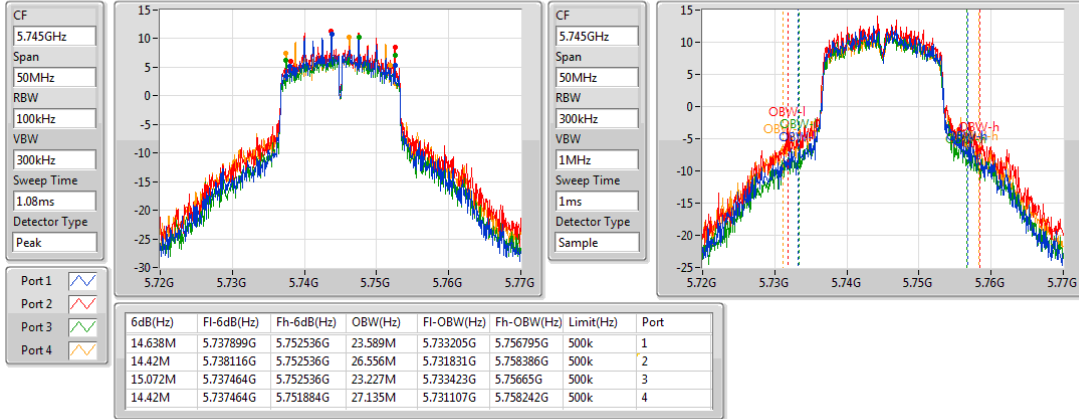
5240MHz



802.11a_Nss1,(6Mbps)_4TX

EBW

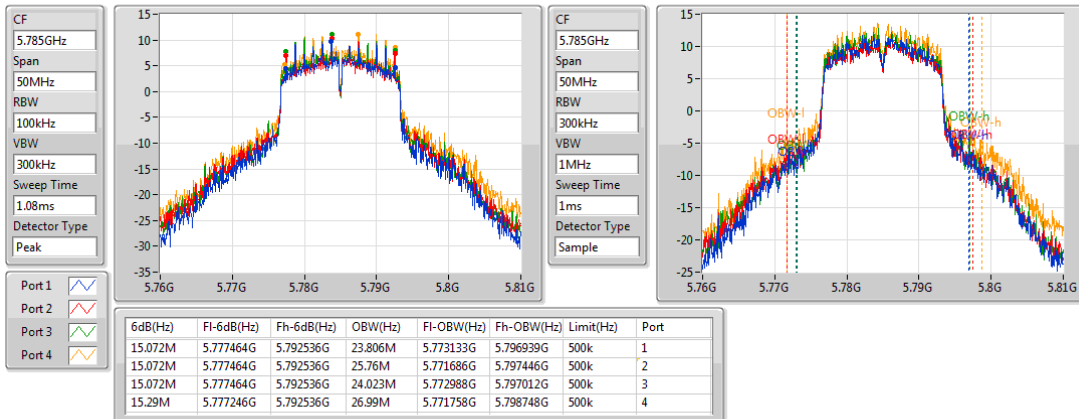
5745MHz



802.11a_Nss1,(6Mbps)_4TX

EBW

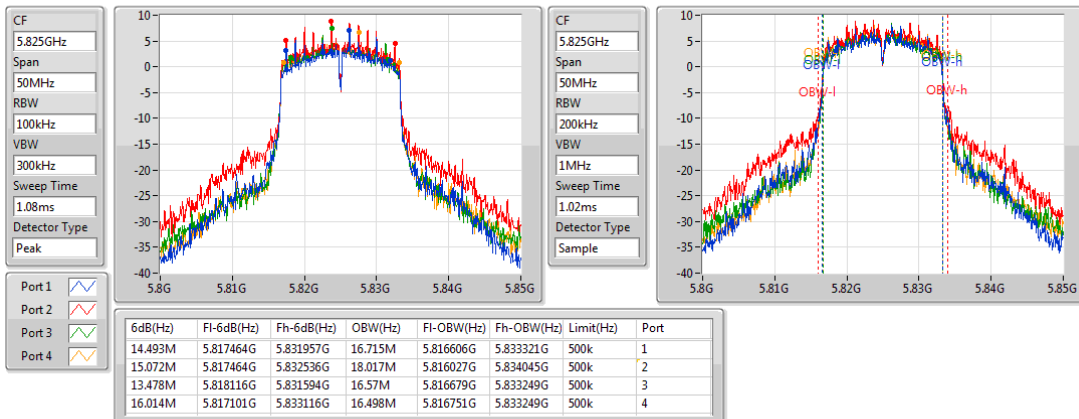
5785MHz



802.11a_Nss1,(6Mbps)_4TX

EBW

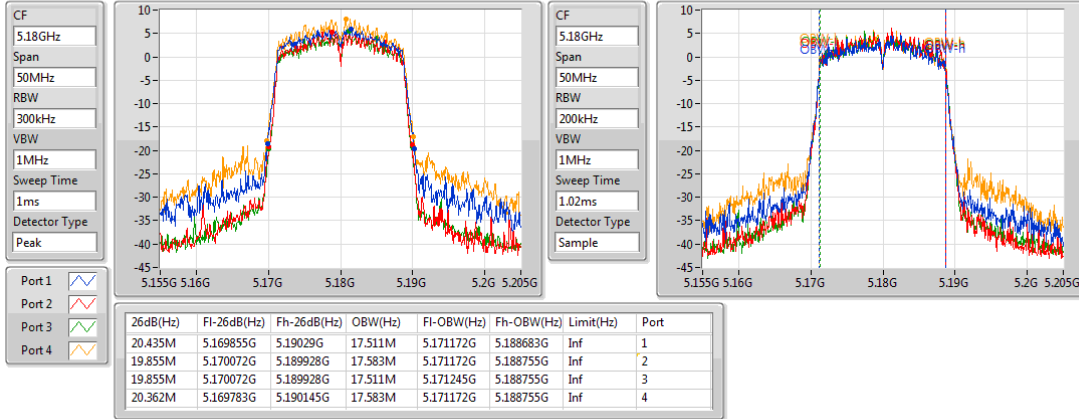
5825MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

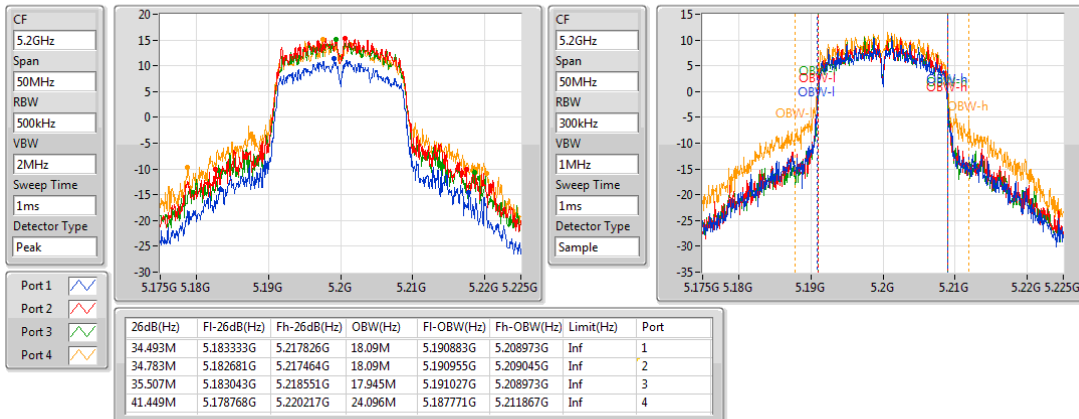
5180MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

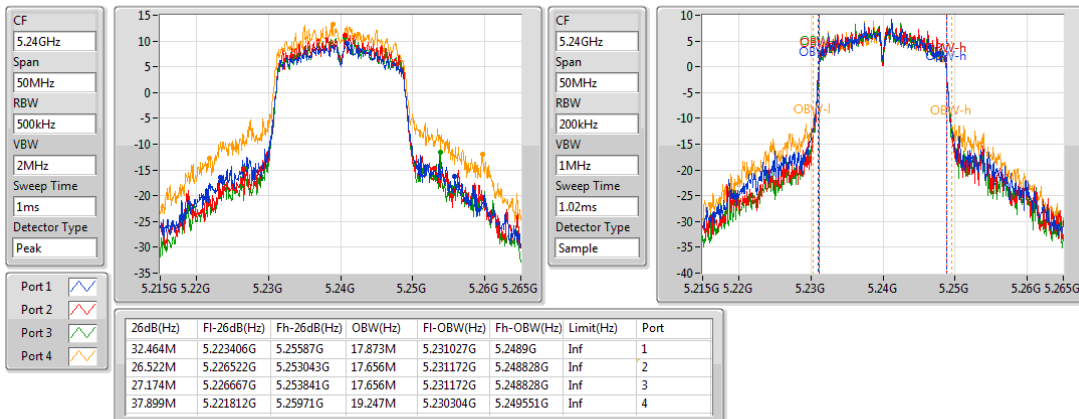
5200MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

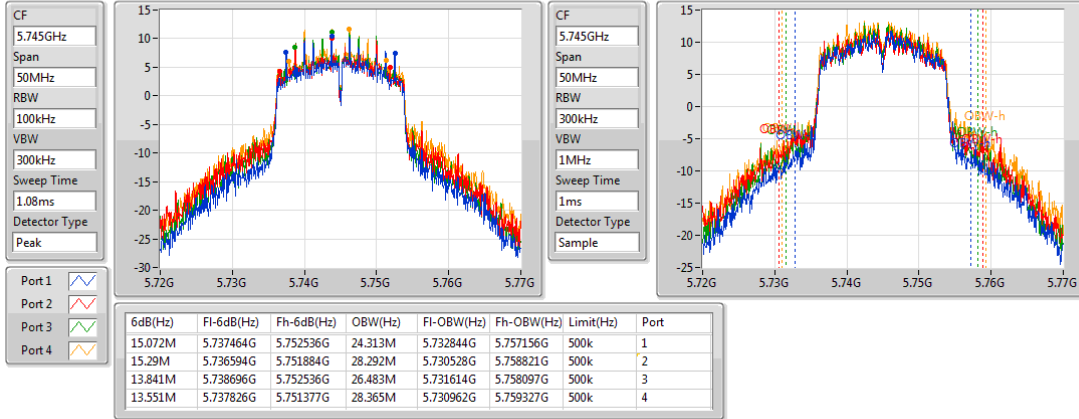
5240MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

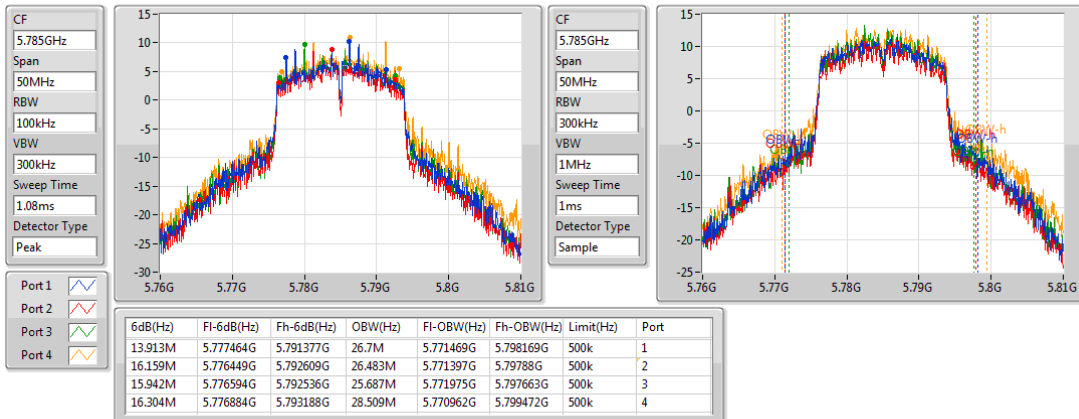
5745MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

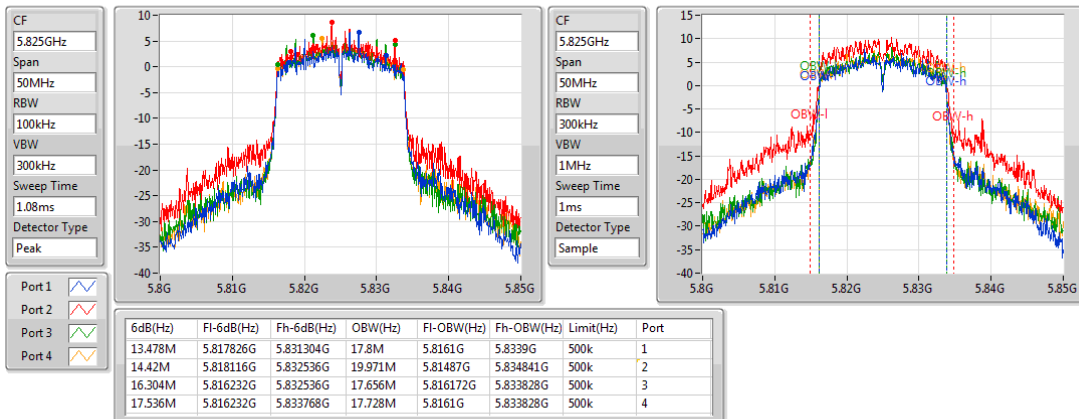
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802.11ac VHT20_Nss1,(MCS0)_4TX

EBW

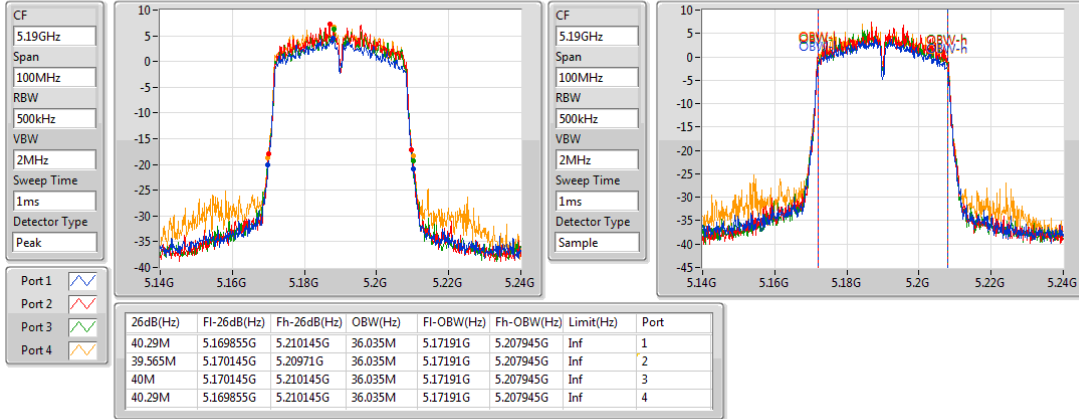
5825MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

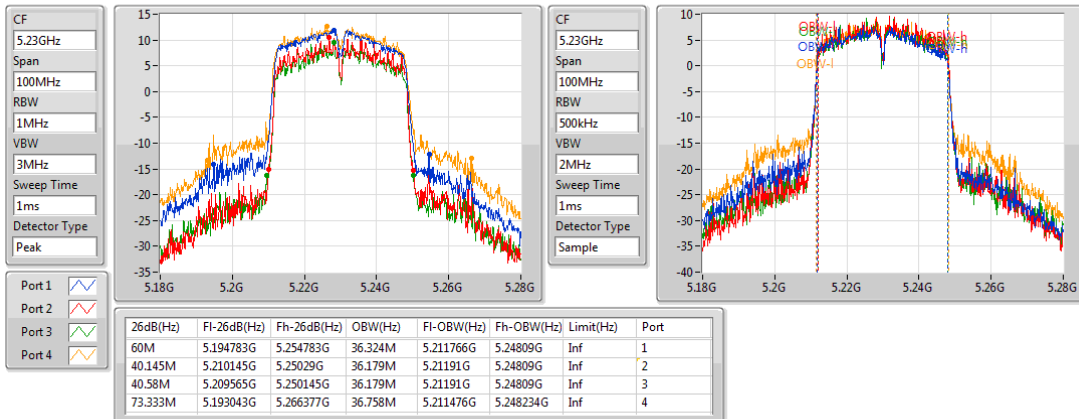
5190MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

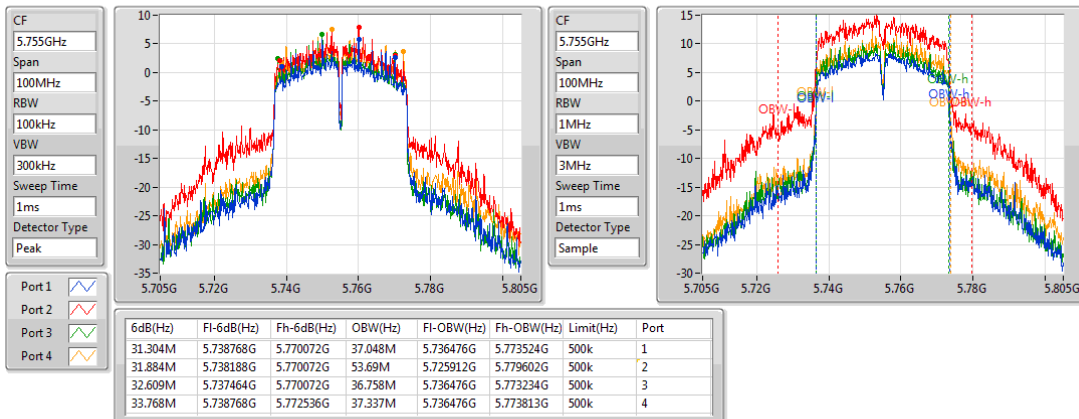
5230MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

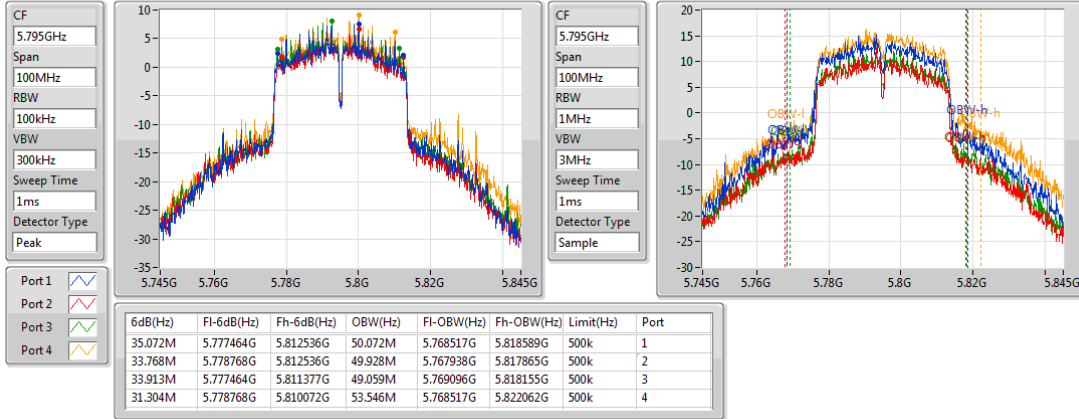
5755MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

EBW

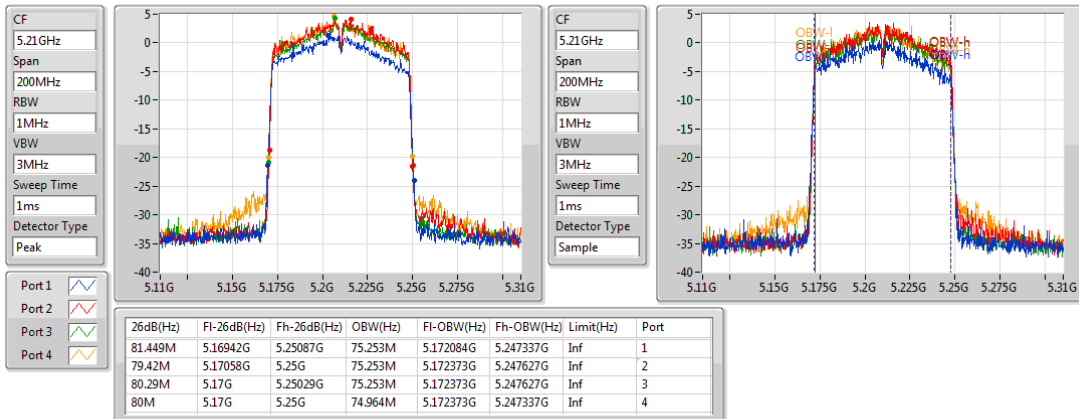
5795MHz



802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

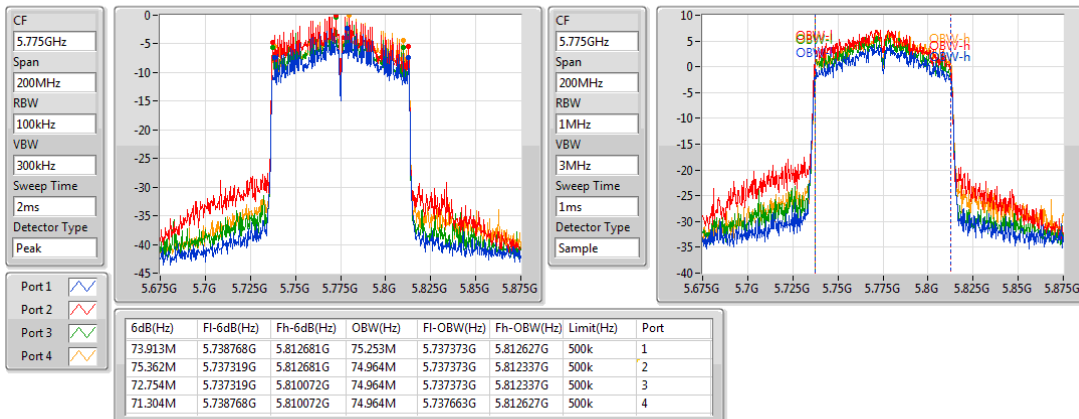
5210MHz



802.11ac VHT80_Nss1,(MCS0)_4TX

EBW

5775MHz



Beamforming mode

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	46.304M	26.483M	26M5D1D	20.87M	17.8M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	77.826M	41.1M	41M1D1D	40.87M	36.179M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	84.638M	76.122M	76M1D1D	81.159M	75.832M
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	17.681M	32.851M	32M9D1D	14.71M	26.628M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	35.507M	59.768M	59M8D1D	30.29M	36.758M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	73.913M	76.122M	76M1D1D	55.072M	75.253M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

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	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	28.768M	18.017M	20.87M	17.8M	23.768M	17.873M	22.536M	17.8M
5200MHz	Pass	Inf	41.957M	18.234M	41.594M	17.945M	38.913M	17.945M	46.304M	26.483M
5240MHz	Pass	Inf	32.391M	18.162M	25.58M	17.873M	30.362M	17.8M	42.391M	19.03M
5745MHz	Pass	500k	14.71M	26.628M	17.174M	29.378M	17.681M	29.45M	17.536M	31.476M
5785MHz	Pass	500k	17.536M	27.569M	17.536M	29.595M	15.797M	28.799M	17.609M	32.851M
5825MHz	Pass	500k	15.725M	29.45M	16.667M	29.74M	16.304M	28.292M	17.101M	29.305M
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	41.159M	36.324M	40.87M	36.324M	41.159M	36.179M	41.159M	36.469M
5230MHz	Pass	Inf	72.609M	36.903M	62.319M	36.324M	65.072M	36.469M	77.826M	41.1M
5755MHz	Pass	500k	35.072M	36.758M	33.188M	56.44M	32.609M	37.048M	35.072M	37.916M
5795MHz	Pass	500k	34.493M	52.098M	33.768M	55.716M	35.507M	57.164M	30.29M	59.768M
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	82.029M	75.832M	81.159M	75.832M	81.739M	75.832M	84.638M	76.122M
5775MHz	Pass	500k	73.913M	75.832M	55.072M	76.122M	73.913M	75.253M	65.507M	76.122M

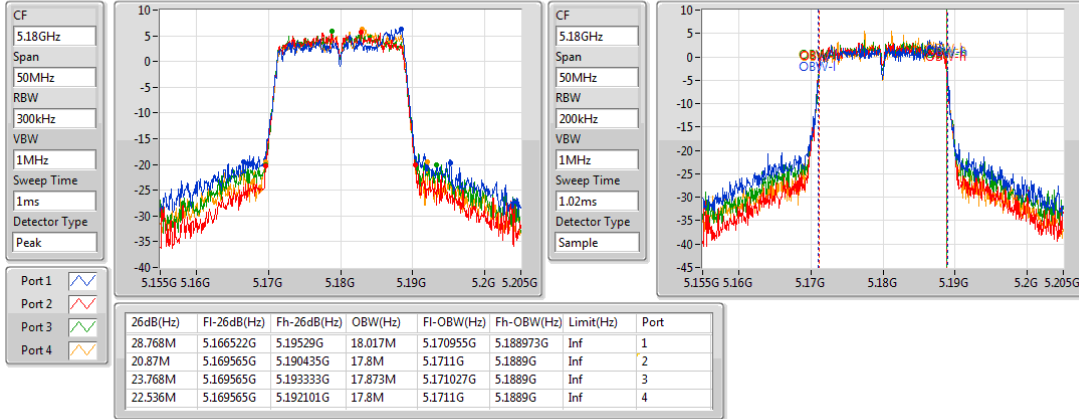
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

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

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

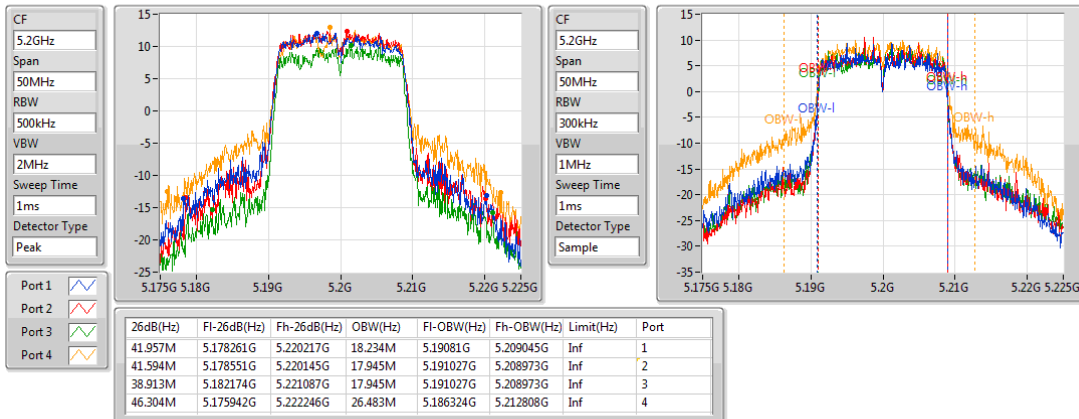
5180MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

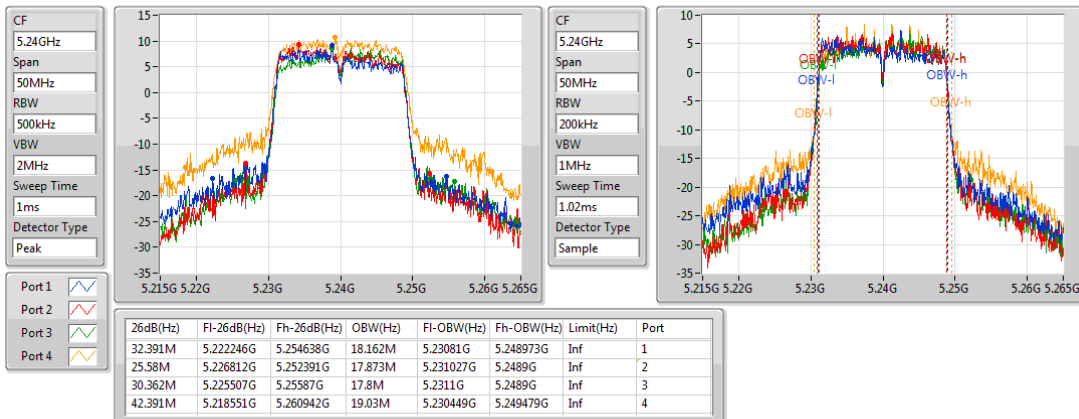
5200MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

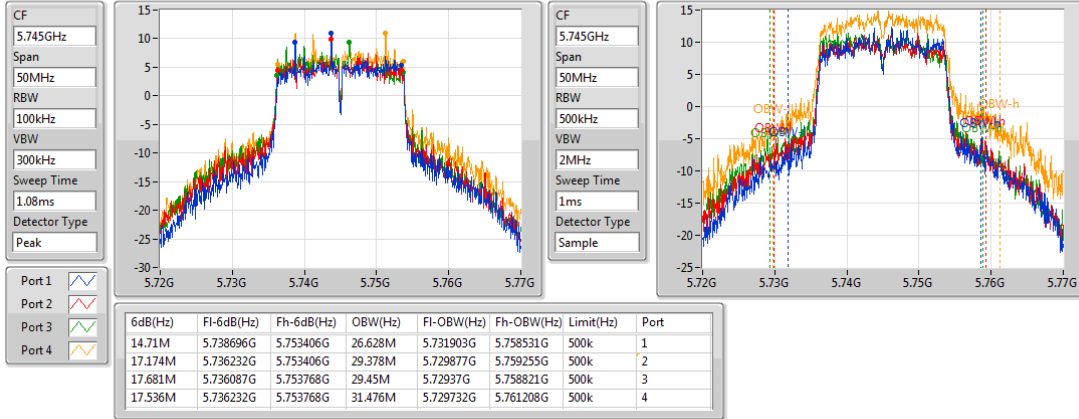
5240MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

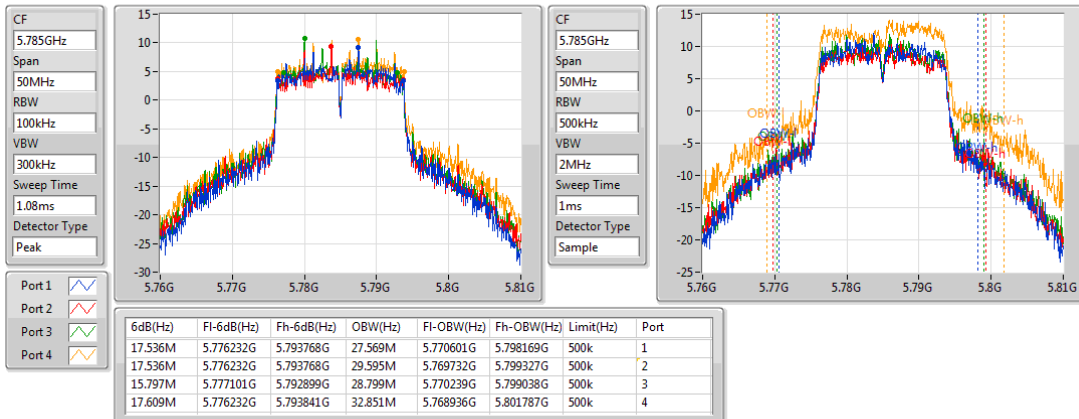
5745MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

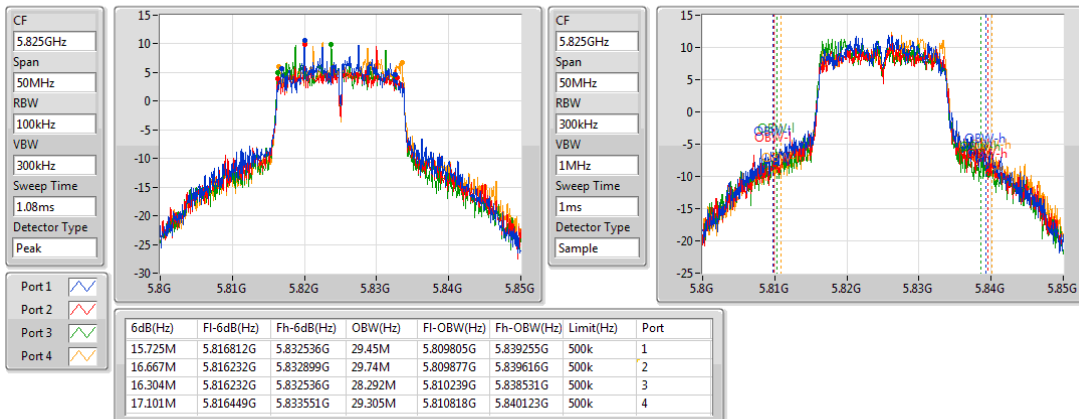
5785MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

EBW

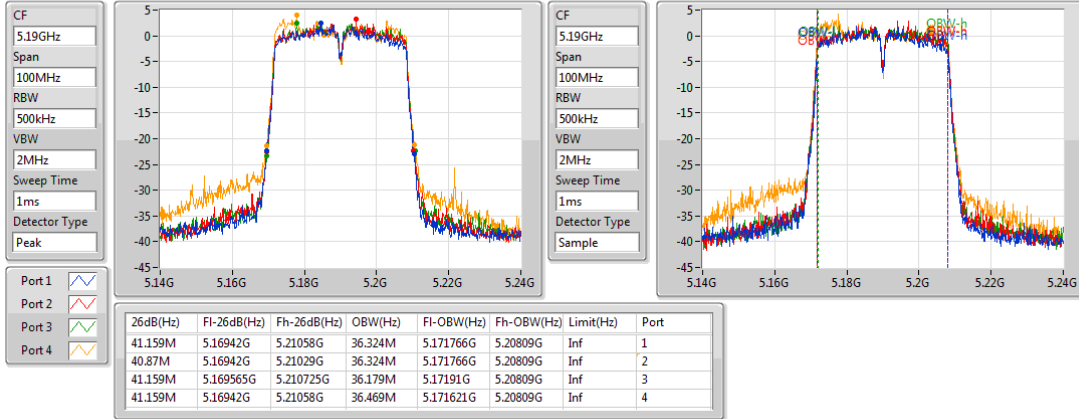
5825MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

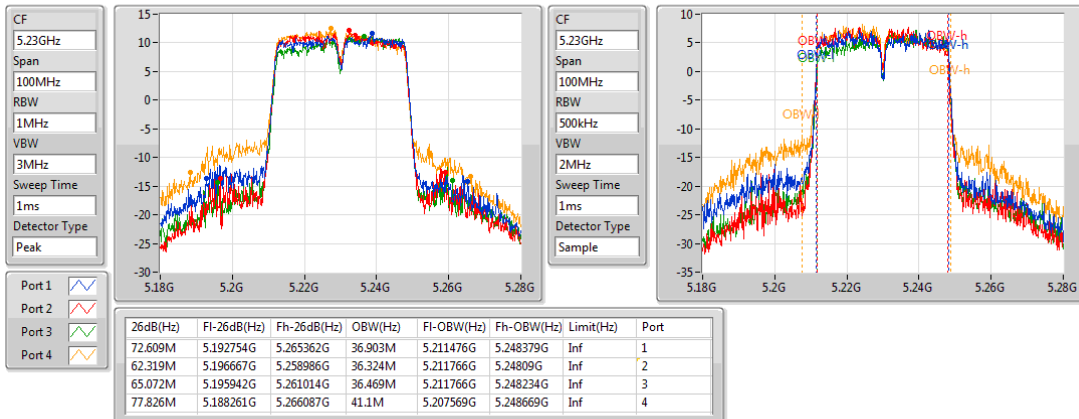
5190MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

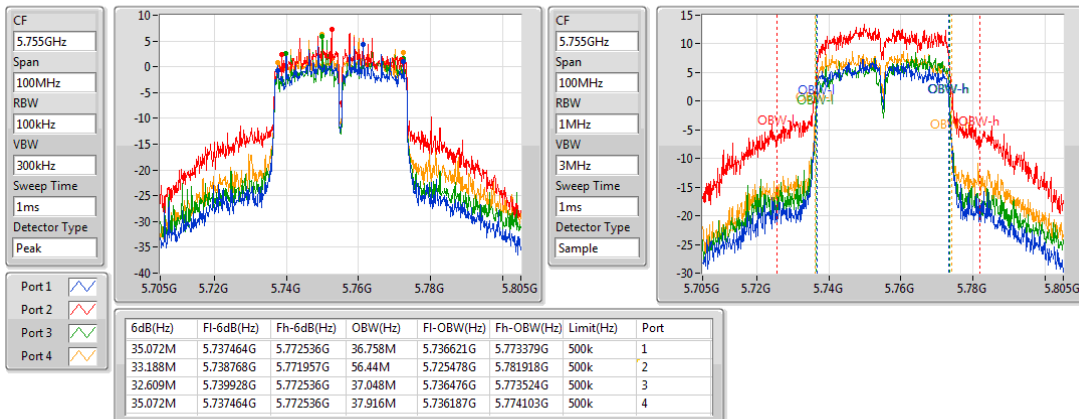
5230MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

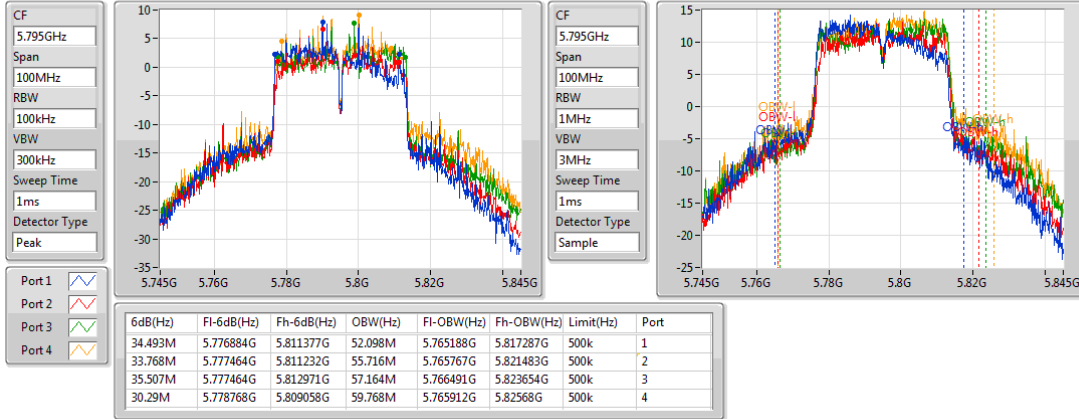
5755MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

EBW

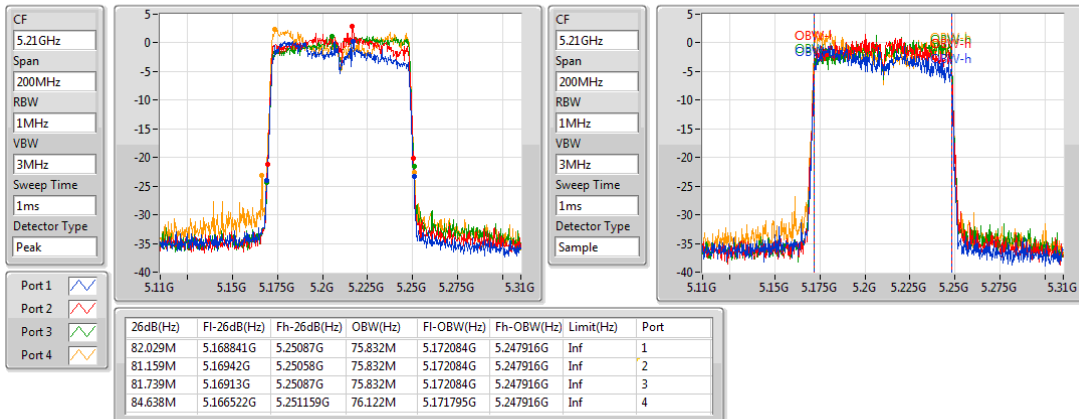
5795MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

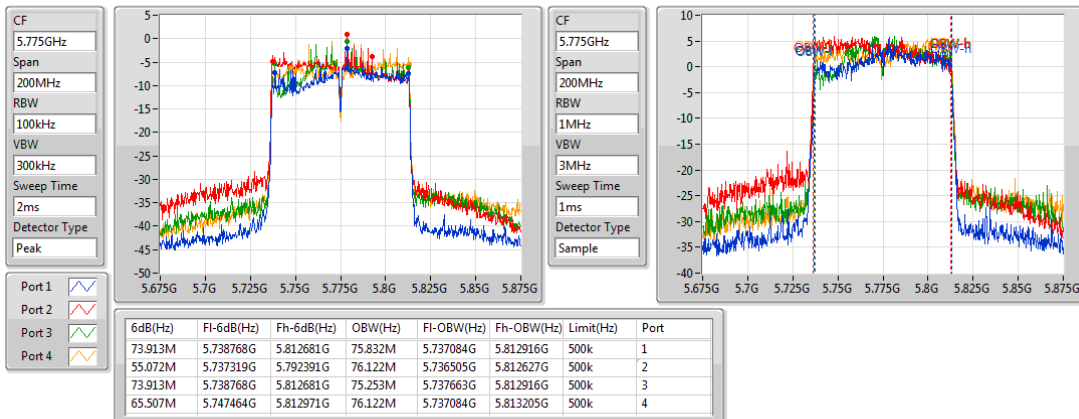
5210MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

EBW

5775MHz



3.3 RF Output Power

3.3.1 Limit of RF Output Power

Frequency band 5150-5250 MHz		
Operating Mode		Limit
☐	Outdoor access point	Conducted Power: 1 W The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)
☒	Indoor access point	Conducted Power: 1 W
☐	Fixed point-to-point access points	Conducted Power: 1 W
☐	Client devices	Conducted Power: 250 mW

Frequency Band (MHz)	Limit
☒ 5725 ~ 5850	Conducted Power: 1 W

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.

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)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	26.15	0.41210	29.25	0.84140
802.11ac VHT20_Nss1,(MCS0)_4TX	25.79	0.37931	28.89	0.77446
802.11ac VHT40_Nss1,(MCS0)_4TX	23.98	0.25003	27.08	0.51050
802.11ac VHT80_Nss1,(MCS0)_4TX	16.60	0.04571	19.70	0.09333
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_4TX	26.67	0.46452	29.57	0.90573
802.11ac VHT20_Nss1,(MCS0)_4TX	26.56	0.45290	29.46	0.88308
802.11ac VHT40_Nss1,(MCS0)_4TX	26.37	0.43351	29.27	0.84528
802.11ac VHT80_Nss1,(MCS0)_4TX	20.30	0.10715	23.20	0.20893

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	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	3.10	15.49	16.06	16.02	16.02	21.92	30.00	25.02	36.00
5200MHz	Pass	3.10	19.98	20.38	20.15	19.99	26.15	30.00	29.25	36.00
5240MHz	Pass	3.10	18.75	19.02	18.81	18.59	24.82	30.00	27.92	36.00
5745MHz	Pass	2.90	20.22	20.34	20.64	21.32	26.67	30.00	29.57	36.00
5785MHz	Pass	2.90	20.24	20.09	20.38	21.42	26.59	30.00	29.49	36.00
5825MHz	Pass	2.90	20.67	20.11	20.24	20.79	26.48	30.00	29.38	36.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	3.10	14.36	15.18	15.25	15.17	21.03	30.00	24.13	36.00
5200MHz	Pass	3.10	19.43	20.16	19.94	19.49	25.79	30.00	28.89	36.00
5240MHz	Pass	3.10	18.51	18.94	18.71	18.58	24.71	30.00	27.81	36.00
5745MHz	Pass	2.90	20.01	20.53	20.43	21.12	26.56	30.00	29.46	36.00
5785MHz	Pass	2.90	20.03	20.12	20.41	21.28	26.51	30.00	29.41	36.00
5825MHz	Pass	2.90	20.58	20.32	20.11	20.54	26.41	30.00	29.31	36.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	3.10	13.25	13.91	13.95	14.02	19.81	30.00	22.91	36.00
5230MHz	Pass	3.10	17.73	18.02	17.86	18.22	23.98	30.00	27.08	36.00
5755MHz	Pass	2.90	18.42	20.37	18.72	19.61	25.37	30.00	28.27	36.00
5795MHz	Pass	2.90	19.73	20.16	20.17	21.21	26.37	30.00	29.27	36.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	3.10	8.91	11.13	10.89	11.02	16.60	30.00	19.70	36.00
5775MHz	Pass	2.90	12.72	15.13	13.93	14.94	20.30	30.00	23.20	36.00

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

Beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	24.82	0.30339	33.55	2.26464
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	23.25	0.21135	31.98	1.57761
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	15.90	0.03890	24.63	0.29040
5.725-5.85GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	26.41	0.43752	34.91	3.09742
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	25.88	0.38726	34.38	2.74157
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	20.21	0.10495	28.71	0.74302

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)_4T X	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	8.73	14.01	14.52	14.46	14.49	20.40	27.27	29.13	36.00
5200MHz	Pass	8.73	18.65	18.75	18.52	19.24	24.82	27.27	33.55	36.00
5240MHz	Pass	8.73	17.08	17.81	17.43	17.53	23.49	27.27	32.22	36.00
5745MHz	Pass	8.50	20.12	19.74	20.45	21.05	26.39	27.50	34.89	36.00
5785MHz	Pass	8.50	20.05	19.71	20.29	21.34	26.41	27.50	34.91	36.00
5825MHz	Pass	8.50	20.33	19.26	19.82	21.09	26.20	27.50	34.70	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_4T X	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	8.73	11.68	12.32	12.14	12.48	18.19	27.27	26.92	36.00
5230MHz	Pass	8.73	17.23	17.12	16.69	17.81	23.25	27.27	31.98	36.00
5755MHz	Pass	8.50	17.14	19.22	17.68	18.85	24.32	27.50	32.82	36.00
5795MHz	Pass	8.50	19.51	19.61	19.99	20.27	25.88	27.50	34.38	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_4T X	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	8.73	9.01	10.06	10.13	10.21	15.90	27.27	24.63	36.00
5775MHz	Pass	8.50	12.88	14.83	14.03	14.76	20.21	27.50	28.71	36.00

Port X = Port X output power

DG = Directional Gain

For 5.15 ~ 5.25 GHz

Directional gain = $10 * \log((10^{3.1/20} + 10^{2.4/20} + 10^{2.2/20} + 10^{3.1/20})^2 / 4) = 8.73 \text{ dBi} > 6 \text{ dBi}$, Limit shall be reduced to 30 dBm – (8.73 dBi – 6 dBi) = 27.27 dBm

For 5.725 ~ 5.85 GHz

Directional gain = $10 * \log((10^{2.4/20} + 10^{2.2/20} + 10^{2.4/20} + 10^{2.9/20})^2 / 4) = 8.5 \text{ dBi} > 6 \text{ dBi}$, Limit shall be reduced to 30 dBm – (8.5 dBi – 6 dBi) = 27.5 dBm

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

Frequency band 5150-5250 MHz		
Operating Mode		Limit
☐	Outdoor access point	17 dBm / MHz
☒	Indoor access point	17 dBm / MHz
☐	Fixed point-to-point access points	17 dBm / MHz
☐	Client devices	11 dBm / MHz

Frequency Band (MHz)		Limit
☒	5725 ~ 5850	30 dBm /500 kHz

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

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 $\geq 10 \times (\text{number of points in sweep}) \times (\text{total on/off period of the transmitted signal})$.
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.

For 5725 ~ 5850 MHz

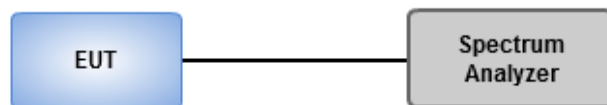
Duty cycle $\geq 98\%$

1. Set RBW = 500 kHz, 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 = 500 kHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time $\geq 10 \times (\text{number of points in sweep}) \times (\text{total on/off period of the transmitted signal})$.
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)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	13.93	22.66
802.11ac VHT20_Nss1,(MCS0)_4TX	13.41	22.14
802.11ac VHT40_Nss1,(MCS0)_4TX	8.52	17.25
802.11ac VHT80_Nss1,(MCS0)_4TX	-0.69	8.04
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	13.41	21.91
802.11ac VHT20_Nss1,(MCS0)_4TX	13.21	21.71
802.11ac VHT40_Nss1,(MCS0)_4TX	9.87	18.37
802.11ac VHT80_Nss1,(MCS0)_4TX	1.62	10.12

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

Result

Mode	Result	DG (dBi)	Port 1 (dBm/R BW)	Port 2 (dBm/R BW)	Port 3 (dBm/R BW)	Port 4 (dBm/R BW)	PD (dBm/R BW)	PD Limit (dBm/R BW)	EIRP PD (dBm/R BW)	EIRP PD Limit (dBm/R BW)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	8.73	5.04	4.67	4.56	4.48	10.40	14.27	19.13	23.00
5200MHz	Pass	8.73	7.91	8.27	8.23	7.99	13.82	14.27	22.55	23.00
5240MHz	Pass	8.73	7.98	8.38	8.00	8.35	13.93	14.27	22.66	23.00
5745MHz	Pass	8.50	7.71	8.34	7.38	7.36	13.41	27.50	21.91	36.00
5785MHz	Pass	8.50	7.49	6.71	7.97	8.70	13.41	27.50	21.91	36.00
5825MHz	Pass	8.50	4.45	5.43	4.59	4.67	10.60	27.50	19.10	36.00
802.11ac VHT20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	8.73	2.81	3.79	3.57	4.02	9.31	14.27	18.04	23.00
5200MHz	Pass	8.73	7.21	8.35	7.83	7.41	13.41	14.27	22.14	23.00
5240MHz	Pass	8.73	6.88	7.53	7.24	6.89	12.92	14.27	21.65	23.00
5745MHz	Pass	8.50	7.25	6.91	7.66	8.42	13.21	27.50	21.71	36.00
5785MHz	Pass	8.50	7.14	6.19	7.29	7.99	13.11	27.50	21.61	36.00
5825MHz	Pass	8.50	4.33	5.41	4.82	4.84	10.51	27.50	19.01	36.00
802.11ac VHT40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	8.73	-1.35	-0.74	-0.79	-0.40	5.11	14.27	13.84	23.00
5230MHz	Pass	8.73	2.37	2.60	2.46	2.68	8.52	14.27	17.25	23.00
5755MHz	Pass	8.50	2.29	3.71	2.75	3.37	9.01	27.50	17.51	36.00
5795MHz	Pass	8.50	3.75	2.89	3.98	4.80	9.87	27.50	18.37	36.00
802.11ac VHT80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	8.73	-8.31	-6.13	-6.41	-6.03	-0.69	14.27	8.04	23.00
5775MHz	Pass	8.50	-5.72	-3.60	-4.54	-3.73	1.62	27.50	10.12	36.00

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

For 5.15 ~ 5.25 GHz

Directional gain = $10 * \log((10^{3.1/20} + 10^{2.4/20} + 10^{2.2/20} + 10^{3.1/20})^2 / 4) = 8.73 \text{ dBi} > 6 \text{ dBi}$, Limit shall be reduced to 17 dBm – (8.73 dBi – 6 dBi) = 14.27 dBm

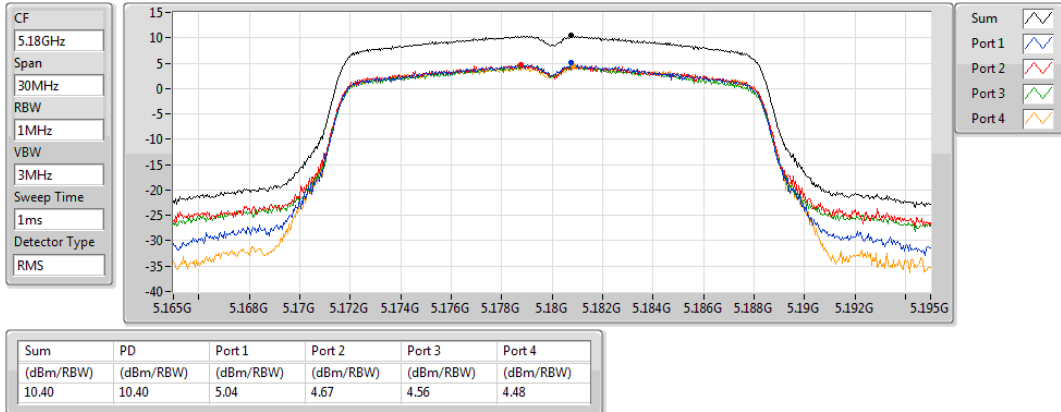
For 5.725 ~ 5.85 GHz

Directional gain = $10 * \log((10^{2.4/20} + 10^{2.2/20} + 10^{2.4/20} + 10^{2.9/20})^2 / 4) = 8.5 \text{ dBi} > 6 \text{ dBi}$, Limit shall be reduced to 30 dBm – (8.5 dBi – 6 dBi) = 27.5 dBm

802.11a_Nss1,(6Mbps)_4TX

PSD

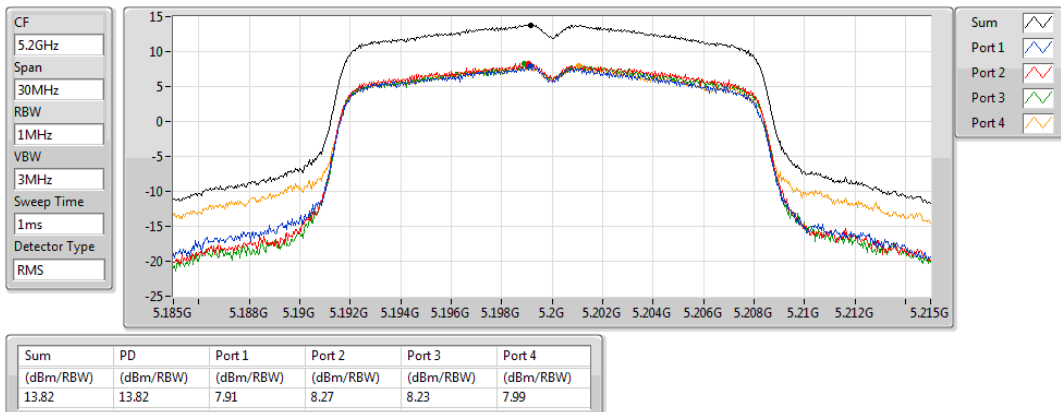
5180MHz



802.11a_Nss1,(6Mbps)_4TX

PSD

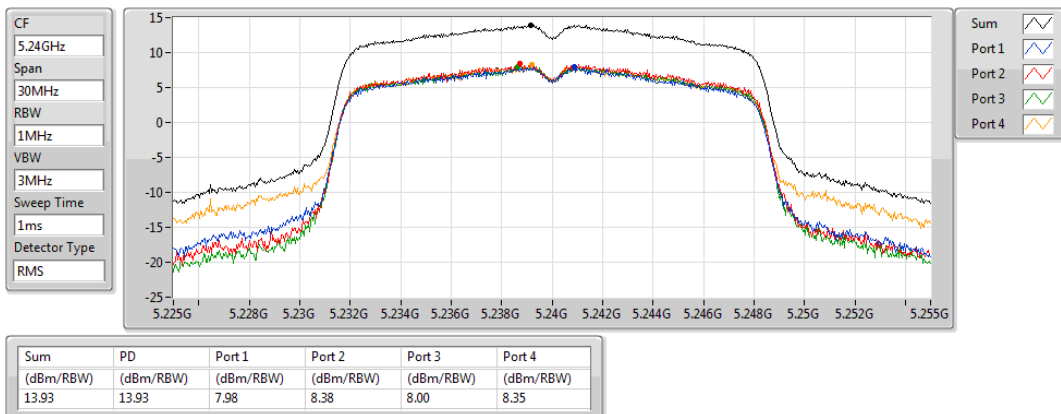
5200MHz



802.11a_Nss1,(6Mbps)_4TX

PSD

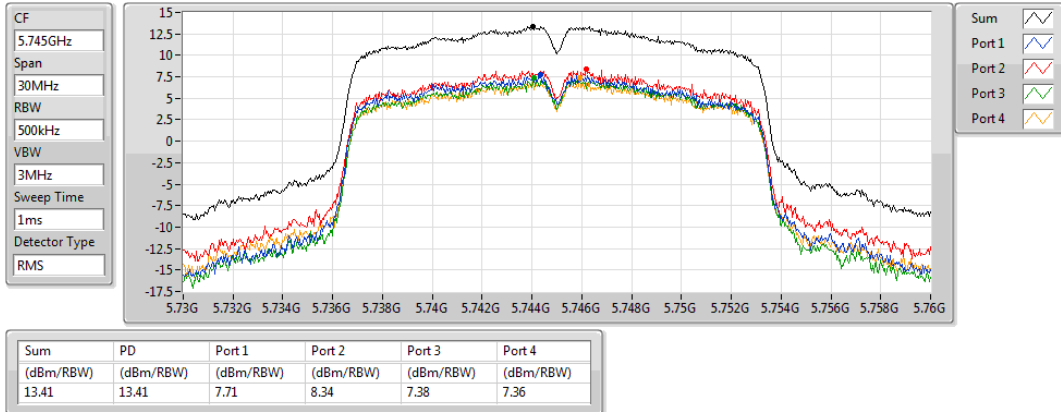
5240MHz



802.11a_Nss1,(6Mbps)_4TX

PSD

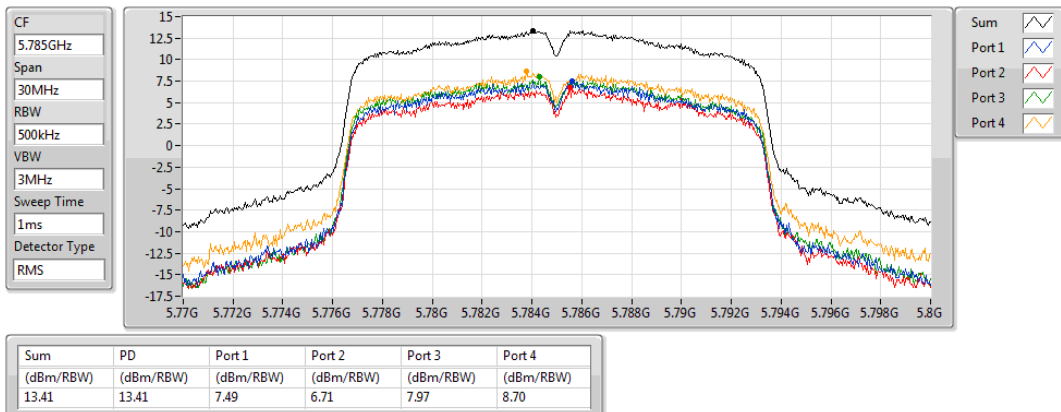
5745MHz



802.11a_Nss1,(6Mbps)_4TX

PSD

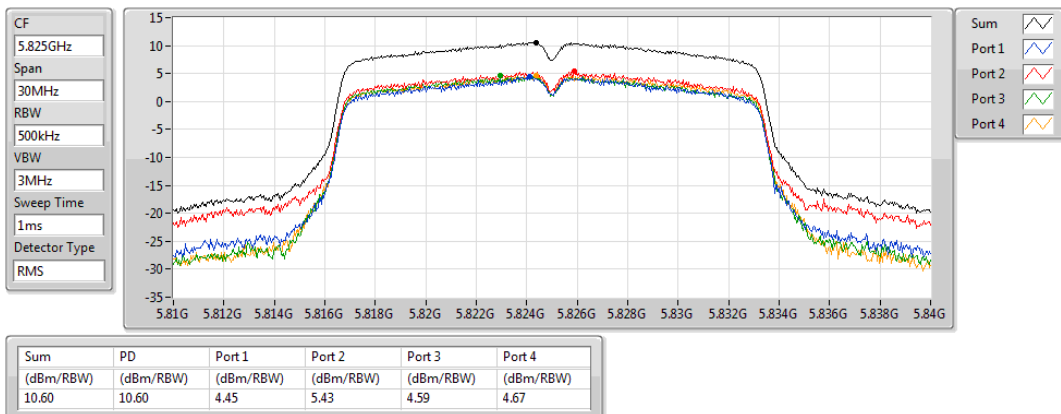
5785MHz



802.11a_Nss1,(6Mbps)_4TX

PSD

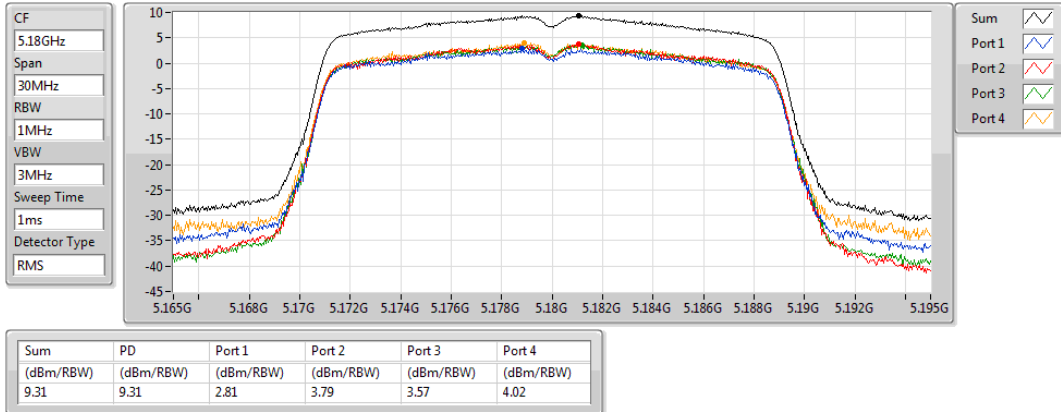
5825MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

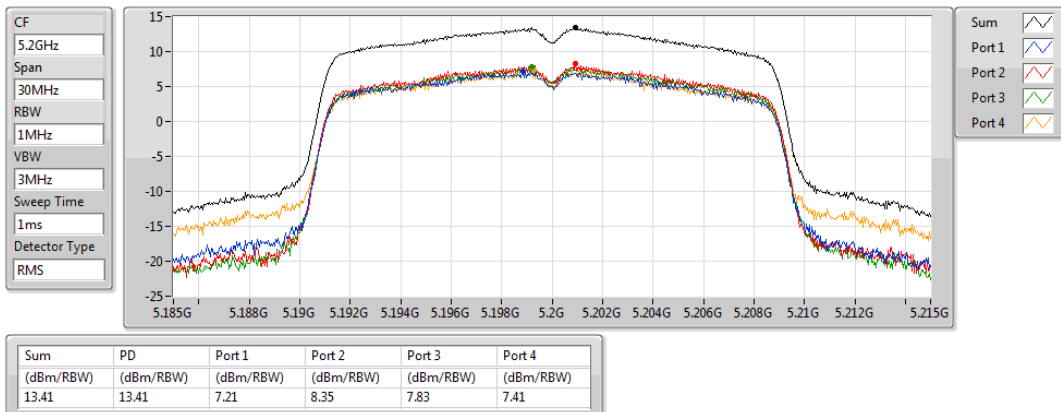
5180MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

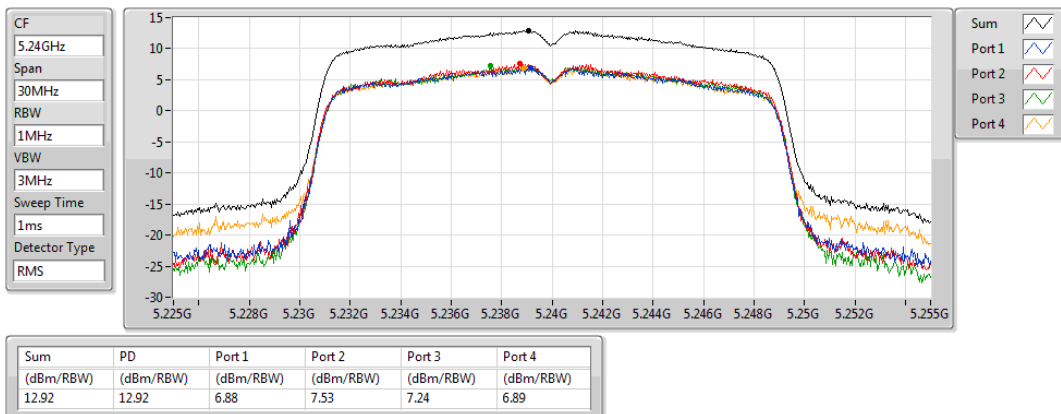
5200MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

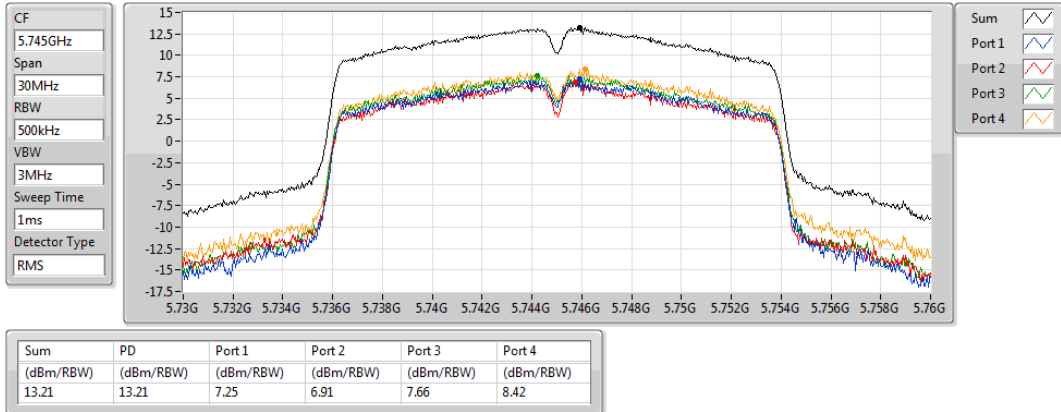
5240MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

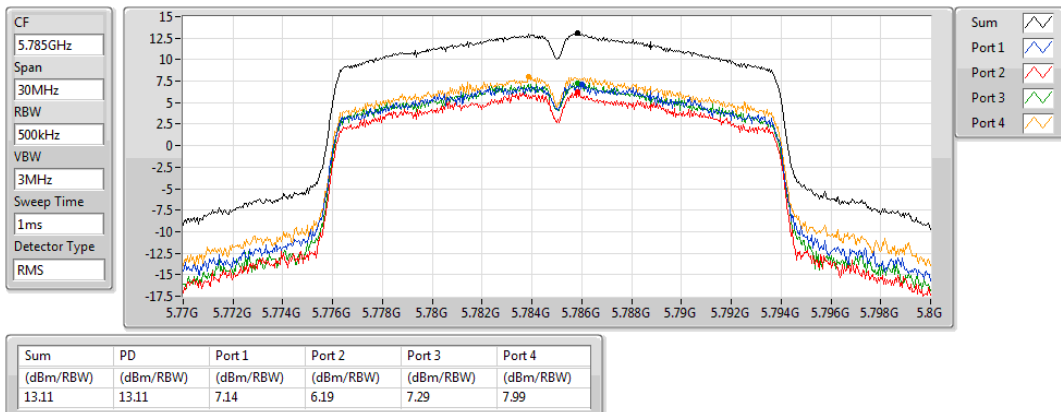
5745MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

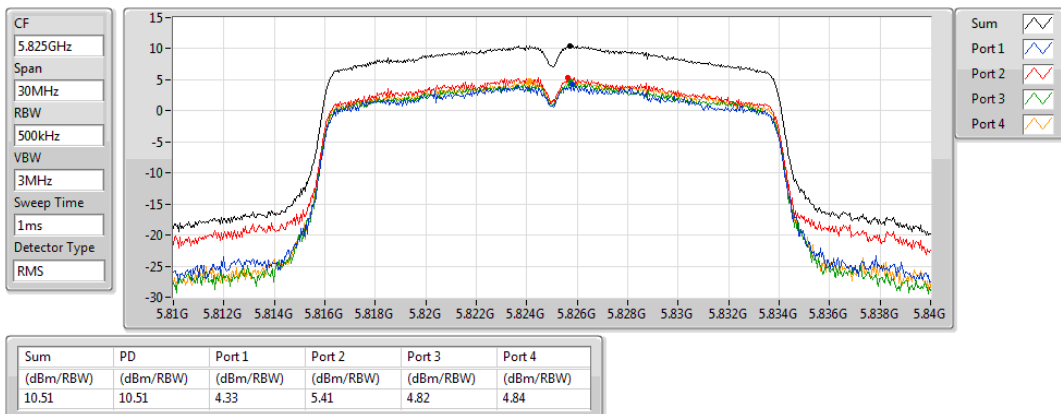
5785MHz



802.11ac VHT20_Nss1,(MCS0)_4TX

PSD

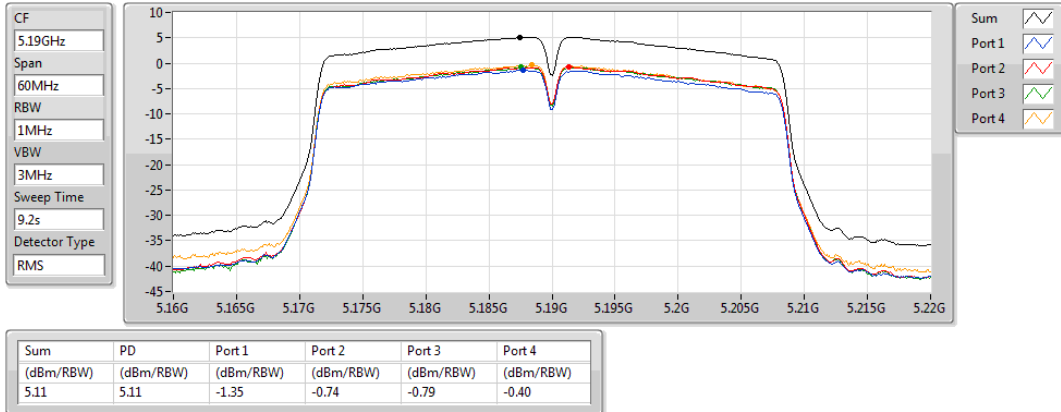
5825MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

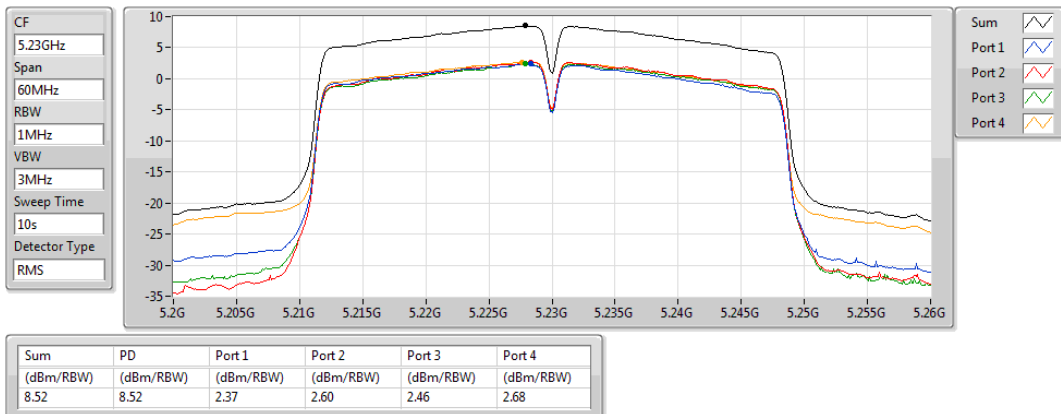
5190MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

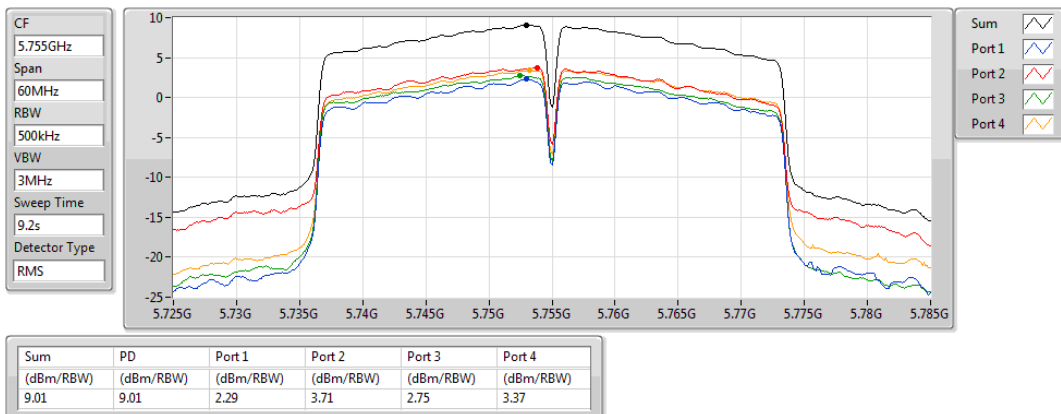
5230MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

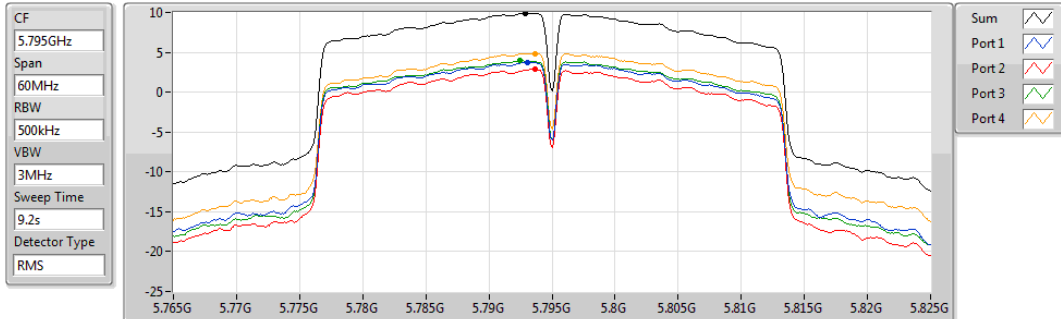
5755MHz



802.11ac VHT40_Nss1,(MCS0)_4TX

PSD

5795MHz

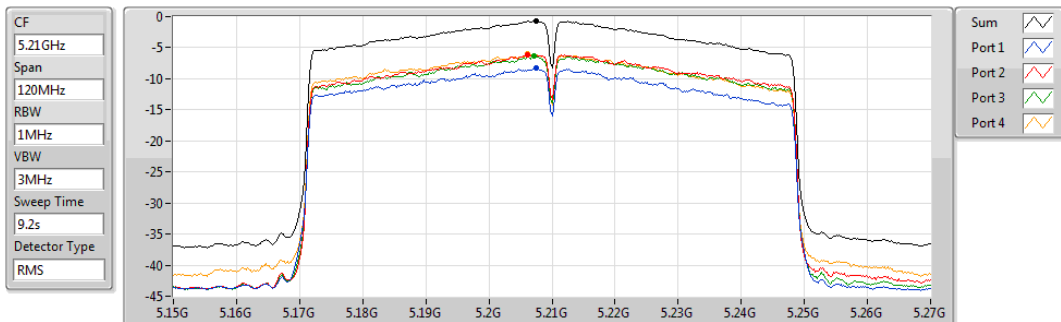


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.87	9.87	3.75	2.89	3.98	4.80

802.11ac VHT80_Nss1,(MCS0)_4TX

PSD

5210MHz

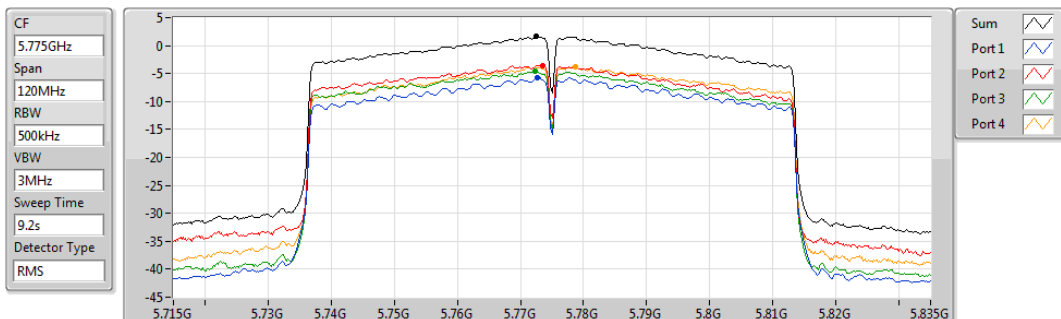


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.69	-0.69	-8.31	-6.13	-6.41	-6.03

802.11ac VHT80_Nss1,(MCS0)_4TX

PSD

5775MHz



Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.62	1.62	-5.72	-3.60	-4.54	-3.73

Beamforming mode

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	12.50	21.23
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	7.69	16.42
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-3.49	5.24
5.725-5.85GHz	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_4TX	12.14	20.64
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	8.25	16.75
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-0.23	8.27

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	8.73	2.17	2.07	2.35	1.97	7.81	14.27	16.54	23.00
5200MHz	Pass	8.73	6.39	7.00	7.12	6.68	12.50	14.27	21.23	23.00
5240MHz	Pass	8.73	5.83	5.59	6.03	4.96	11.02	14.27	19.75	23.00
5745MHz	Pass	8.50	6.64	6.00	6.57	6.82	11.94	27.50	20.44	36.00
5785MHz	Pass	8.50	6.90	5.29	7.02	7.54	12.14	27.50	20.64	36.00
5825MHz	Pass	8.50	6.18	5.69	6.34	7.03	11.70	27.50	20.20	36.00
802.11ac VHT40-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	8.73	-4.04	-3.76	-3.11	-3.23	2.42	14.27	11.15	23.00
5230MHz	Pass	8.73	1.68	1.50	1.85	3.36	7.69	14.27	16.42	23.00
5755MHz	Pass	8.50	0.88	2.68	1.38	1.69	7.14	27.50	15.64	36.00
5795MHz	Pass	8.50	3.21	1.88	2.49	3.30	8.25	27.50	16.75	36.00
802.11ac VHT80-BF_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	8.73	-8.88	-8.68	-8.45	-8.11	-3.49	14.27	5.24	23.00
5775MHz	Pass	8.50	-5.63	-4.58	-4.37	-5.09	-0.23	27.50	8.27	36.00

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

For 5.15 ~ 5.25 GHz

Directional gain = $10 * \log((10^{3.1/20} + 10^{2.4/20} + 10^{2.2/20} + 10^{3.1/20})^2 / 4)$ = 8.73 dBi > 6 dBi, Limit shall be reduced to 17 dBm – (8.73 dBi – 6 dBi) = 14.27 dBm

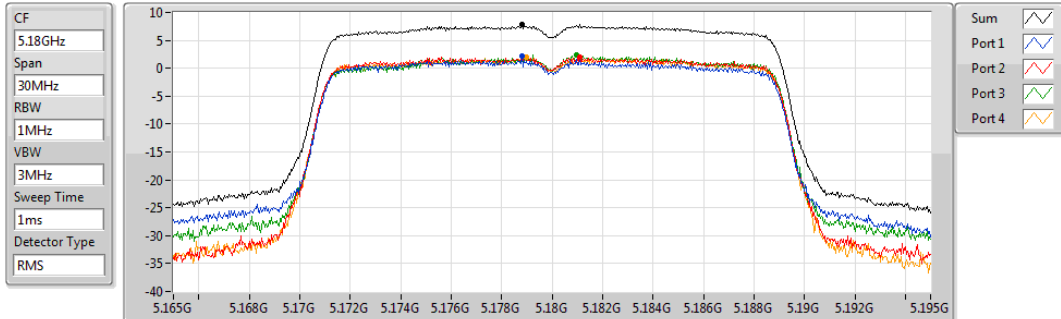
For 5.725 ~ 5.85 GHz

Directional gain = $10 * \log((10^{2.4/20} + 10^{2.2/20} + 10^{2.4/20} + 10^{2.9/20})^2 / 4)$ = 8.5 dBi > 6 dBi, Limit shall be reduced to 30 dBm – (8.5 dBi – 6 dBi) = 27.5 dBm

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5180MHz

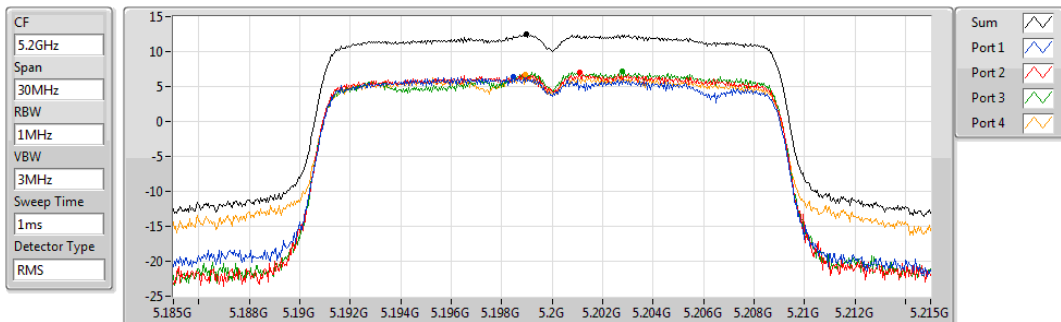


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
7.81	7.81	2.17	2.07	2.35	1.97

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5200MHz

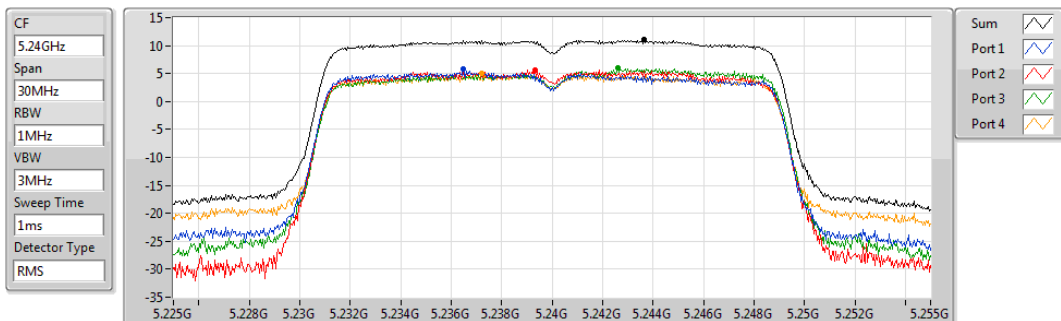


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
12.50	12.50	6.39	7.00	7.12	6.68

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

5240MHz

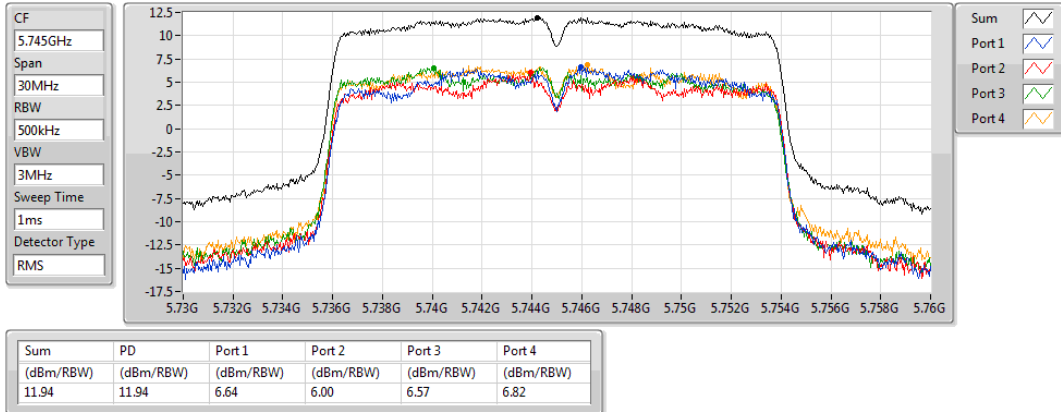


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)	(dBm/100kHz)
11.02	11.02	5.83	5.59	6.03	4.96

802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

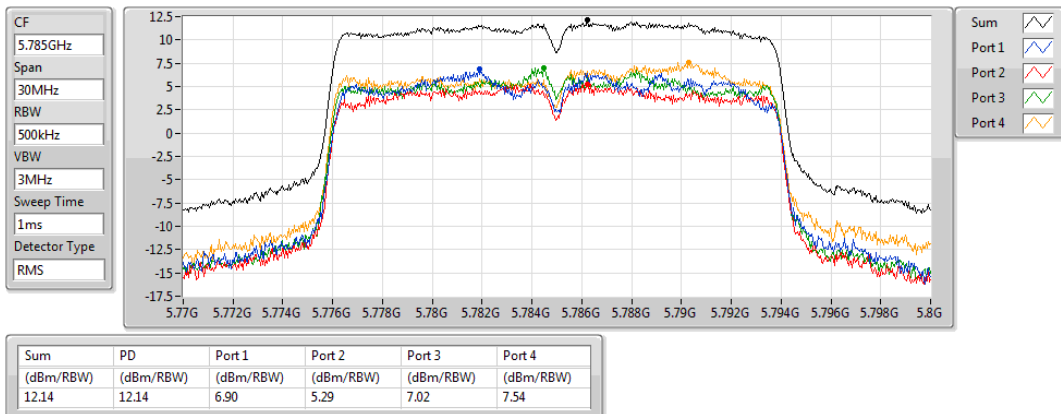
5745MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

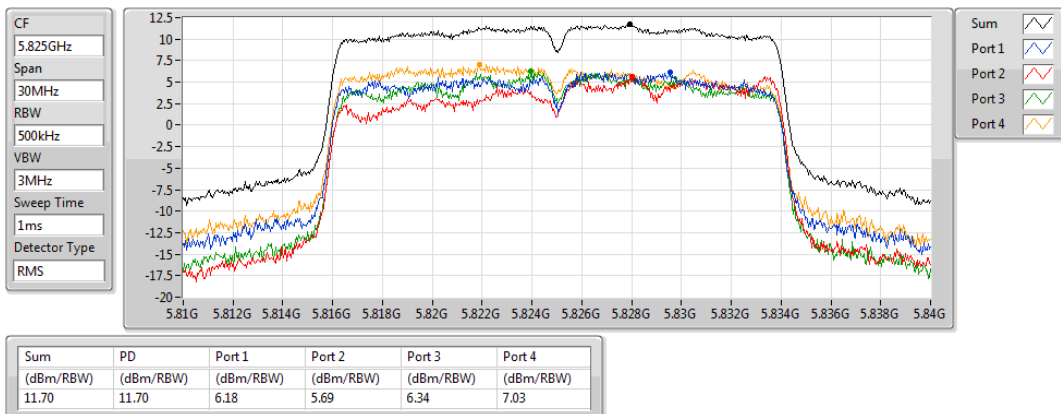
5785MHz



802.11ac VHT20-BF_Nss1,(MCS0)_4TX

PSD

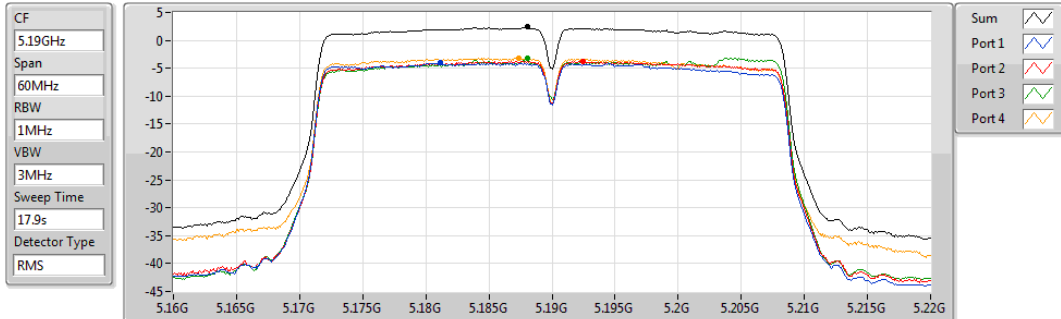
5825MHz



802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5190MHz

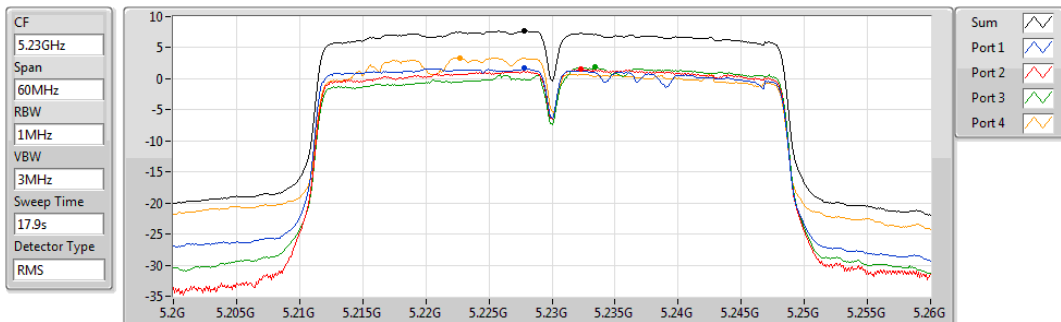


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.42	2.42	-4.04	-3.76	-3.11	-3.23

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5230MHz

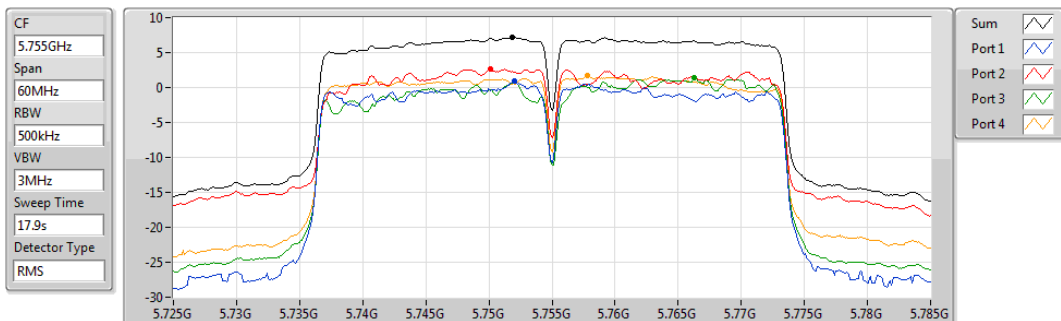


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.69	7.69	1.68	1.50	1.85	3.36

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

5755MHz

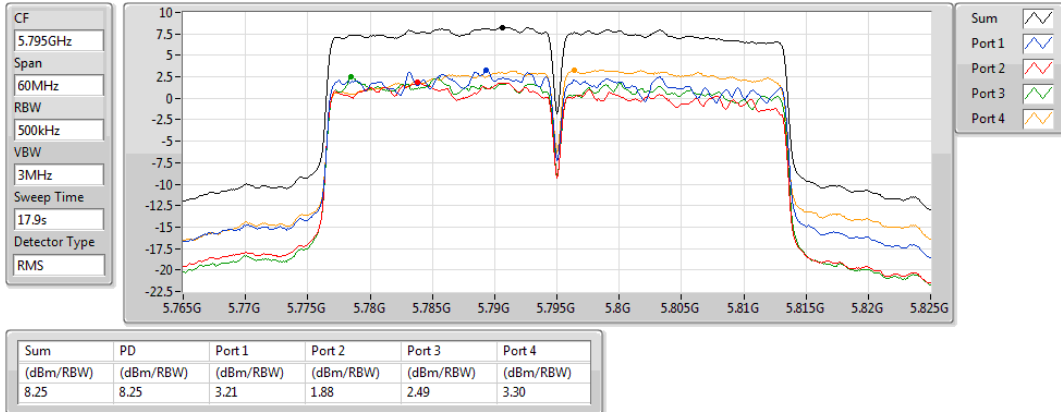


Sum	PD	Port 1	Port 2	Port 3	Port 4
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.14	7.14	0.88	2.68	1.38	1.69

802.11ac VHT40-BF_Nss1,(MCS0)_4TX

PSD

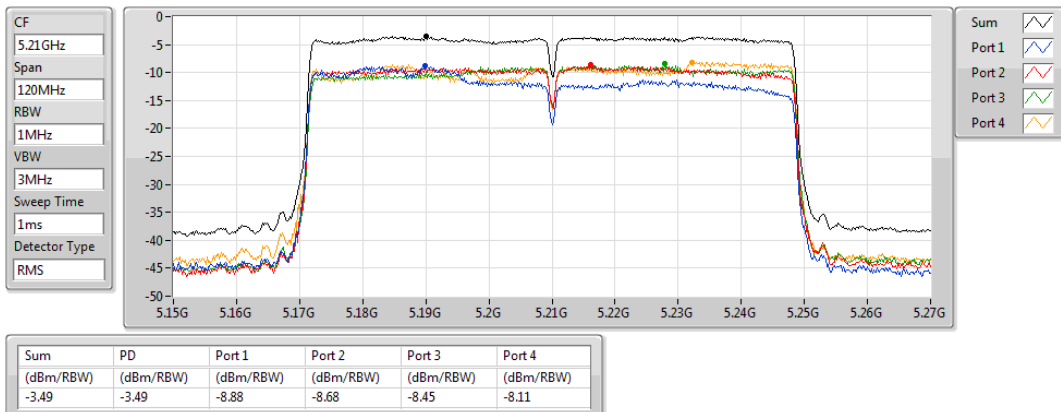
5795MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

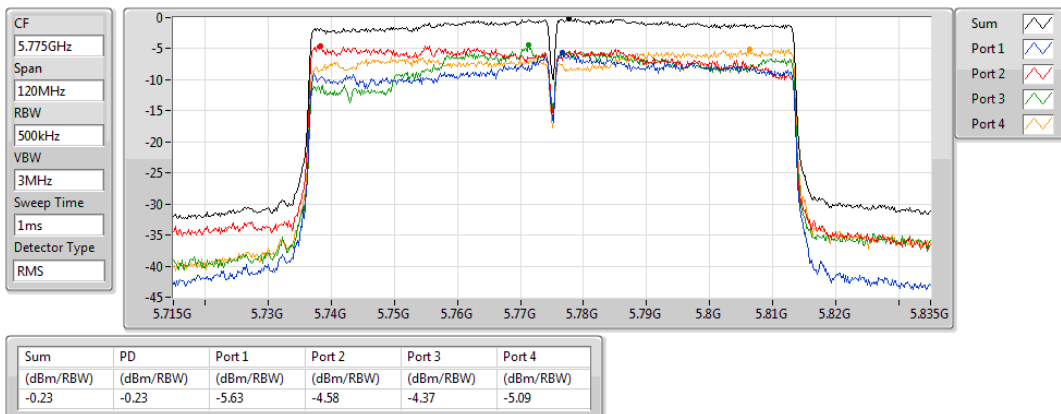
5210MHz



802.11ac VHT80-BF_Nss1,(MCS0)_4TX

PSD

5775MHz



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
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.850 GHz	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

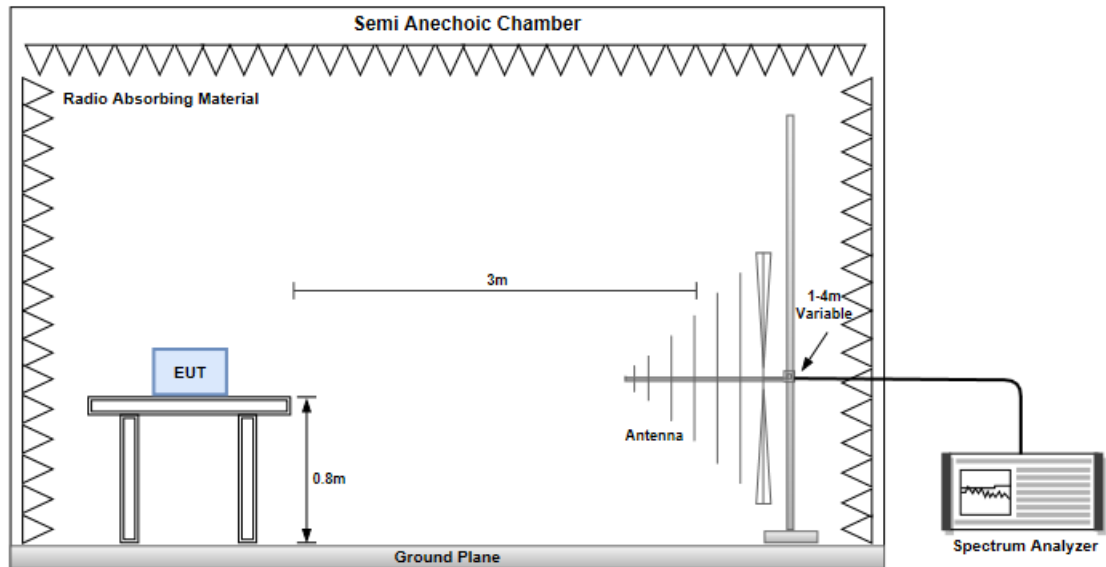
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360° . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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:

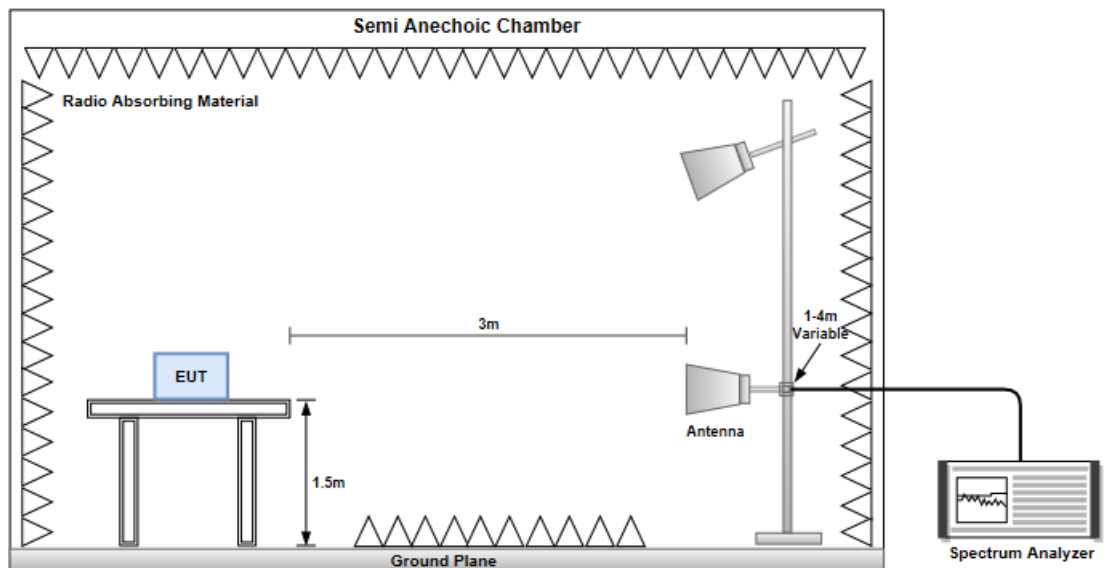
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



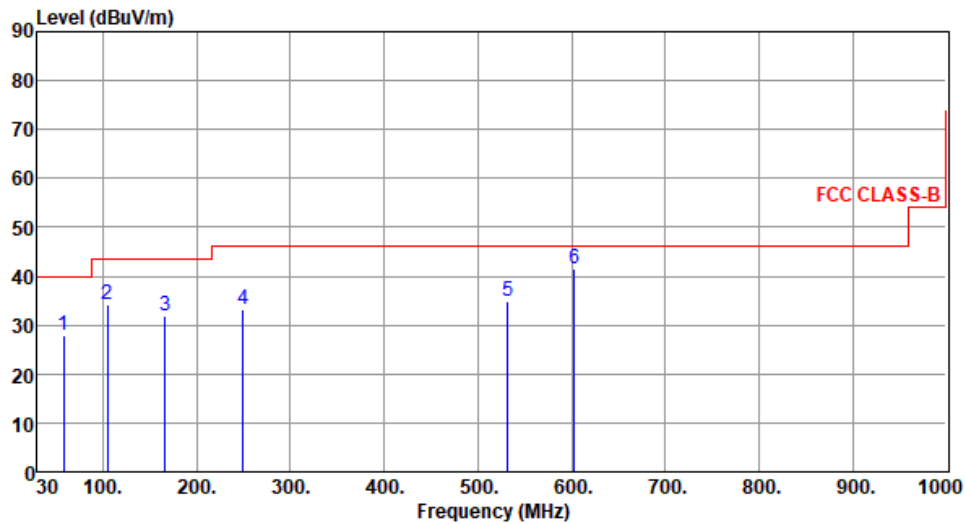
Non- beamforming mode

3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5745
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	58.22	27.83	40.00	-12.17	37.05	-9.22	Peak	---	---
2	104.53	34.27	43.50	-9.23	47.21	-12.94	Peak	---	---
3	166.73	31.81	43.50	-11.69	40.99	-9.18	Peak	---	---
4	249.26	33.05	46.00	-12.95	43.23	-10.18	Peak	---	---
5	531.53	34.75	46.00	-11.25	37.26	-2.51	Peak	---	---
6	603.35	41.42	46.00	-4.58	41.90	-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.

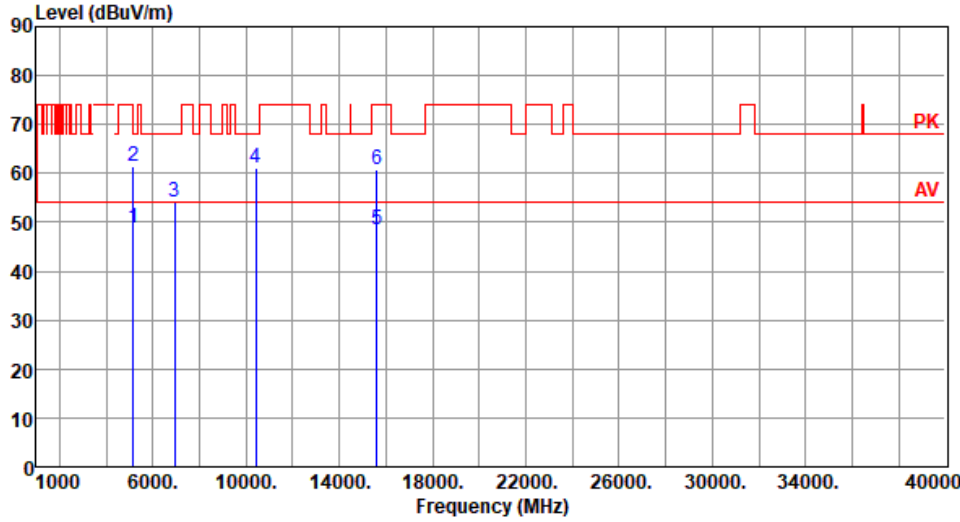
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		
Level (dBUV/m) </			

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

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5200
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	48.74	54.00	-5.26	41.42	7.32	Average	100	243
2	5150.00	61.47	74.00	-12.53	54.15	7.32	Peak	100	243
3	6933.33	53.99	68.20	-14.21	43.57	10.42	Peak	100	50
4	10400.00	61.24	68.20	-6.96	44.96	16.28	Peak	100	38
5	15600.00	48.39	54.00	-5.61	31.12	17.27	Average	100	20
6	15600.00	60.85	74.00	-13.15	43.58	17.27	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)	5200
Polarization	Vertical		



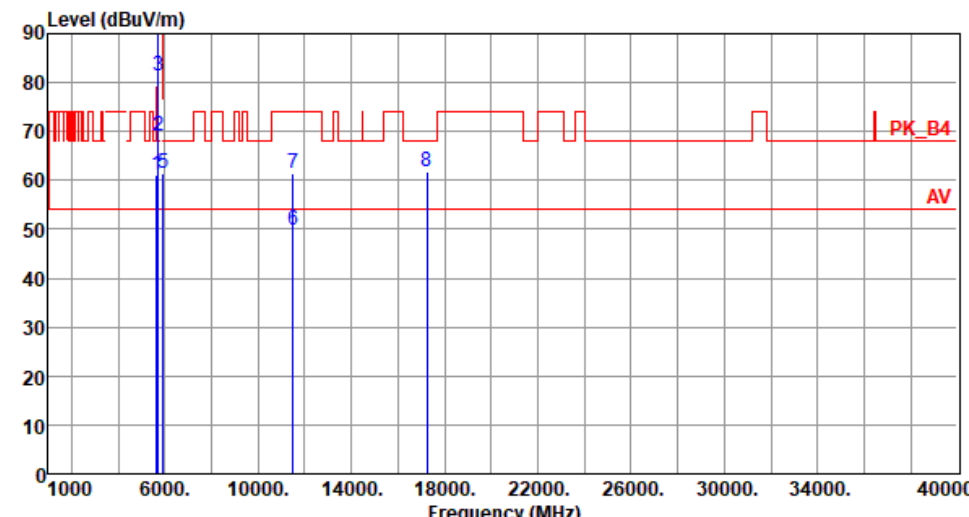
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.36	54.00	-1.64	45.04	7.32	Average	106	11
2	5150.00	66.14	74.00	-7.86	58.82	7.32	Peak	106	11
3	6933.33	54.08	68.20	-14.12	43.66	10.42	Peak	100	20
4	10400.00	64.07	68.20	-4.13	47.79	16.28	Peak	151	180
5	15600.00	49.97	54.00	-4.03	32.70	17.27	Average	215	192
6	15600.00	62.92	74.00	-11.08	45.65	17.27	Peak	215	192

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)	5240
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		
Level (dBuV/m) </			

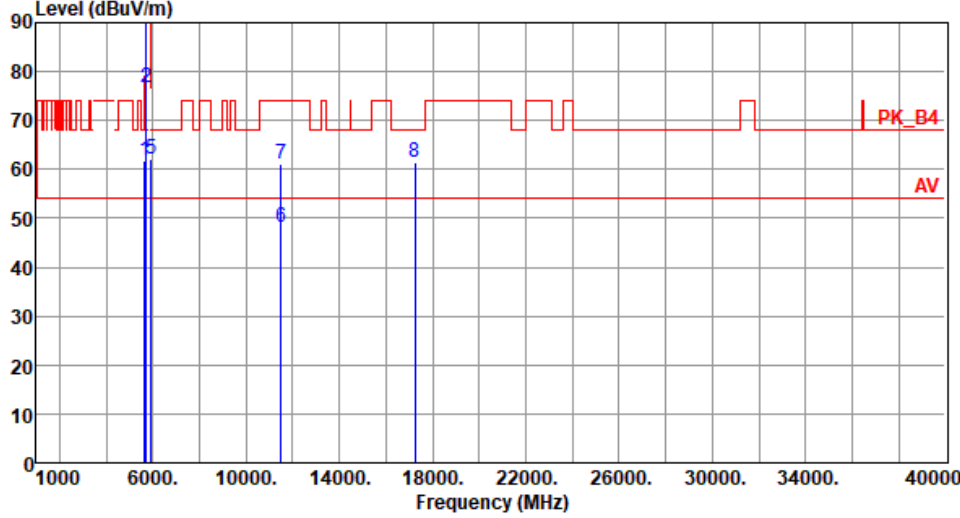
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.94	68.20	-7.26	53.55	7.39	Peak	220	165
2	5700.00	69.04	105.20	-36.16	61.54	7.50	Peak	220	165
3	5720.00	81.23	110.80	-29.57	73.61	7.62	Peak	220	165
4	5725.00	94.21	122.20	-27.99	86.55	7.66	Peak	220	165
5	5925.00	61.50	68.20	-6.70	53.43	8.07	Peak	220	165
6	11490.00	49.78	54.00	-4.22	33.02	16.76	Average	279	230
7	11490.00	61.60	74.00	-12.40	44.84	16.76	Peak	279	230
8	17235.00	61.91	68.20	-6.29	43.27	18.64	Peak	100	90

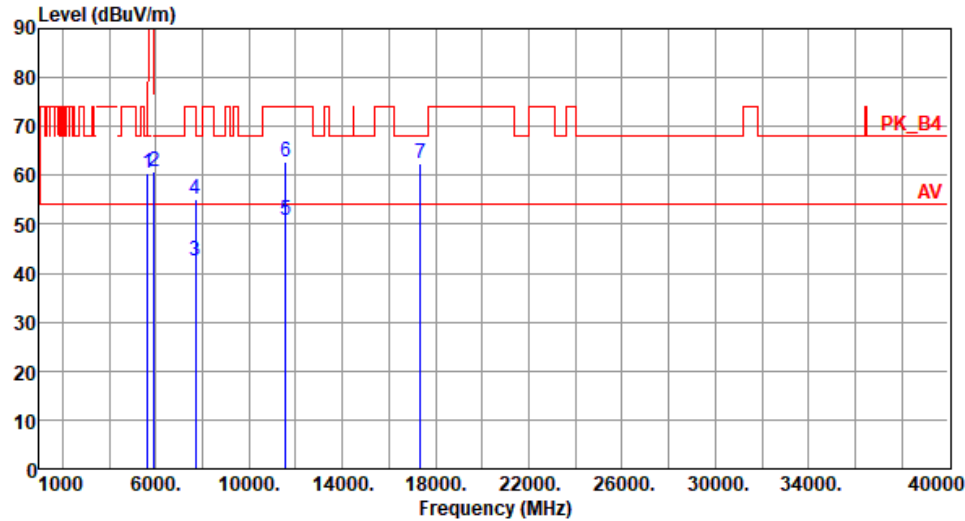
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		

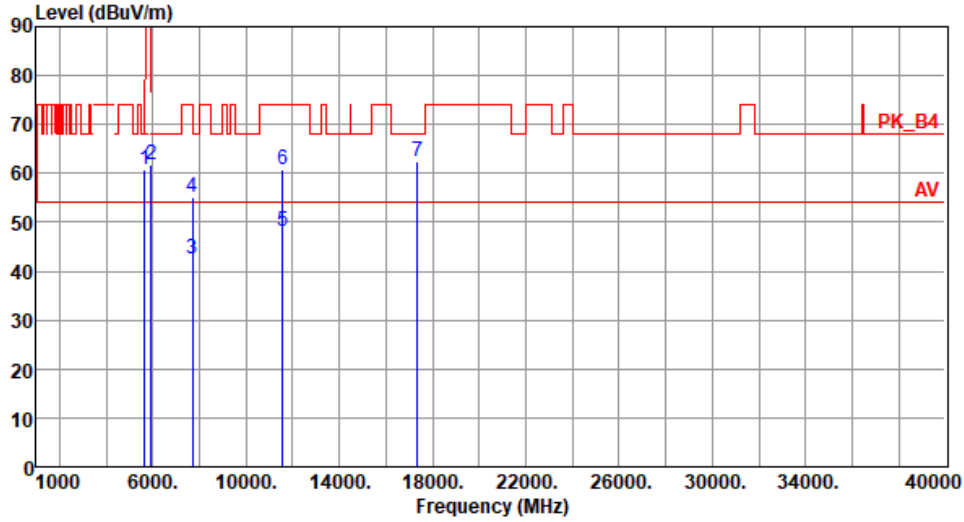


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.92	68.20	-6.28	54.53	7.39	Peak	171	83
2	5700.00	76.85	105.20	-28.35	69.35	7.50	Peak	171	83
3	5720.00	90.88	110.80	-19.92	83.26	7.62	Peak	171	83
4	5725.00	95.75	122.20	-26.45	88.09	7.66	Peak	171	83
5	5925.00	61.95	68.20	-6.25	53.88	8.07	Peak	171	83
6	11490.00	48.19	54.00	-5.81	31.43	16.76	Average	100	185
7	11490.00	61.05	74.00	-12.95	44.29	16.76	Peak	100	185
8	17235.00	61.40	68.20	-6.80	42.76	18.64	Peak	100	45

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)	5785						
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	5650.00	60.51	68.20	-7.69	53.12	7.39	Peak	222	197
2	5925.00	60.93	68.20	-7.27	52.86	8.07	Peak	222	197
3	7713.33	42.61	54.00	-11.39	31.03	11.58	Average	100	50
4	7713.33	55.03	74.00	-18.97	43.45	11.58	Peak	100	50
5	11570.00	50.74	54.00	-3.26	34.13	16.61	Average	295	235
6	11570.00	62.65	74.00	-11.35	46.04	16.61	Peak	295	235
7	17355.00	62.37	68.20	-5.83	43.14	19.23	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).									

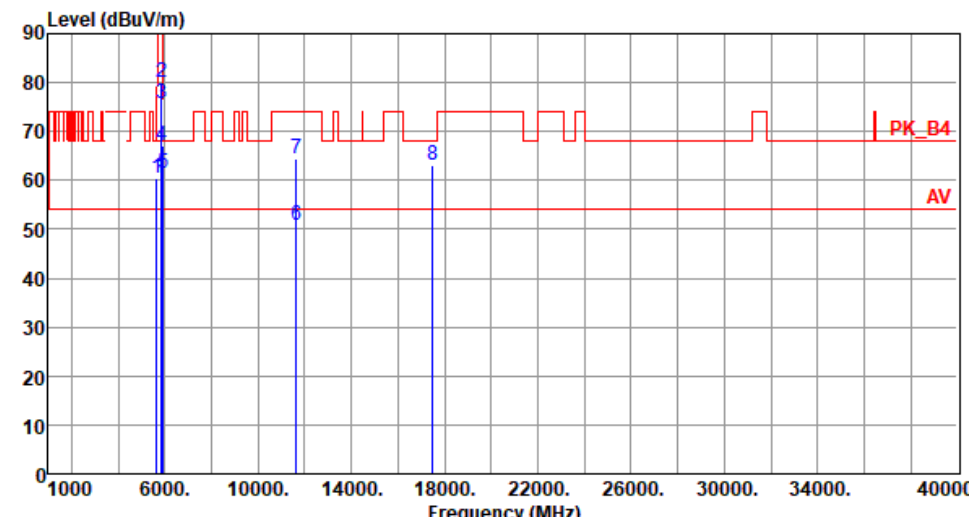
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.93	68.20	-7.27	53.54	7.39	Peak	156	348
2	5925.00	61.70	68.20	-6.50	53.63	8.07	Peak	156	348
3	7713.33	42.66	54.00	-11.34	31.08	11.58	Average	100	161
4	7713.33	55.14	74.00	-18.86	43.56	11.58	Peak	100	161
5	11570.00	48.00	54.00	-6.00	31.39	16.61	Average	286	0
6	11570.00	60.89	74.00	-13.11	44.28	16.61	Peak	286	0
7	17355.00	62.34	68.20	-5.86	43.11	19.23	Peak	100	30

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).

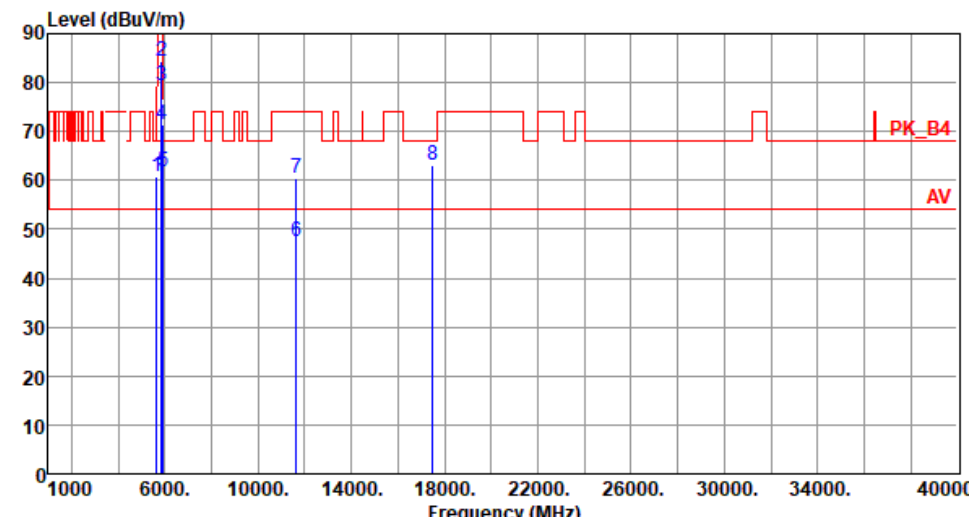
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.51	68.20	-7.69	53.12	7.39	Peak	221	205
2	5850.00	80.04	122.20	-42.16	72.02	8.02	Peak	221	205
3	5855.00	75.77	110.80	-35.03	67.75	8.02	Peak	221	205
4	5875.00	67.17	105.20	-38.03	59.14	8.03	Peak	221	205
5	5925.00	61.56	68.20	-6.64	53.49	8.07	Peak	221	205
6	11650.00	50.96	54.00	-3.04	34.58	16.38	Average	287	235
7	11650.00	64.41	74.00	-9.59	48.03	16.38	Peak	287	235
8	17475.00	62.98	68.20	-5.22	43.24	19.74	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	11a	Test Freq. (MHz)	5825
Polarization	Vertical		

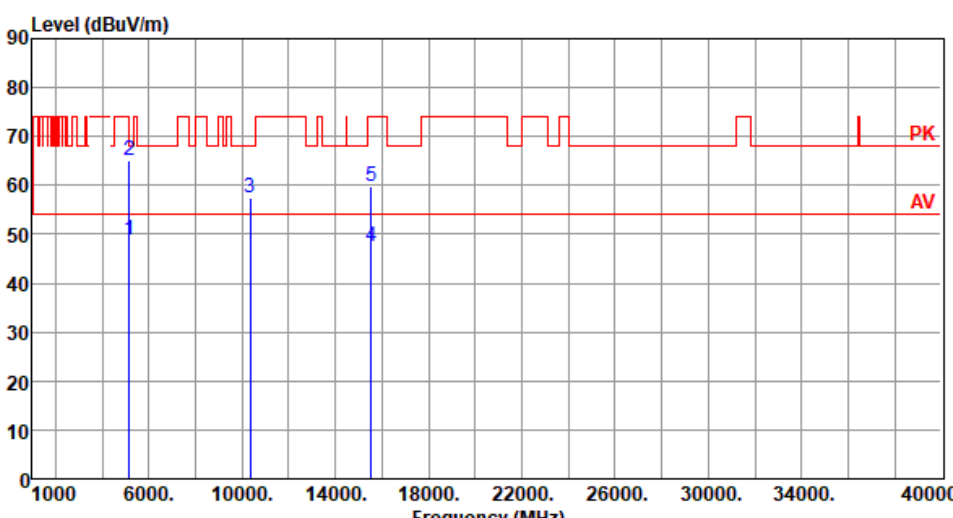


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.73	68.20	-7.47	53.34	7.39	Peak	154	350
2	5850.00	84.44	122.20	-37.76	76.42	8.02	Peak	154	350
3	5855.00	79.39	110.80	-31.41	71.37	8.02	Peak	154	350
4	5875.00	71.46	105.20	-33.74	63.43	8.03	Peak	154	350
5	5925.00	61.62	68.20	-6.58	53.55	8.07	Peak	154	350
6	11650.00	47.63	54.00	-6.37	31.25	16.38	Average	237	3
7	11650.00	60.53	74.00	-13.47	44.15	16.38	Peak	237	3
8	17475.00	63.11	68.20	-5.09	43.37	19.74	Peak	100	41

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).

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

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



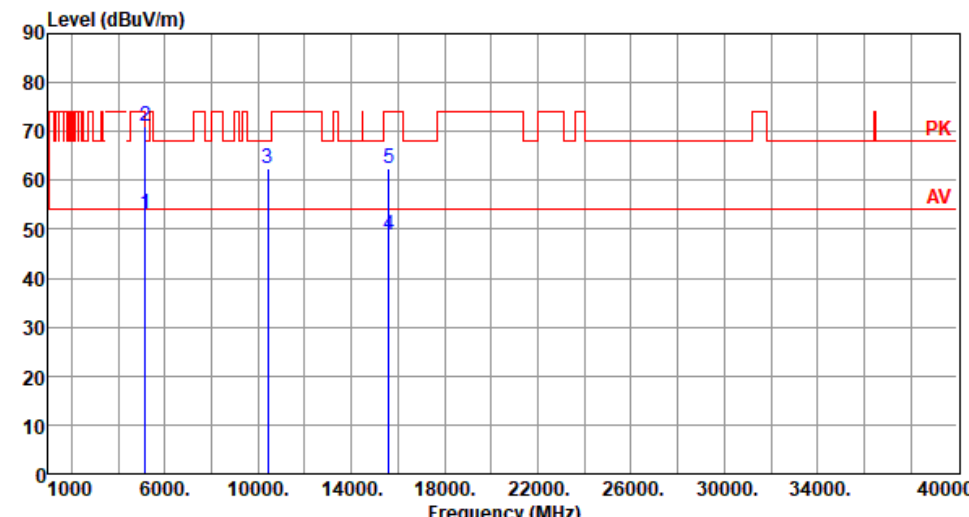
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.83	54.00	-5.17	41.51	7.32	Average	100	240
2	5150.00	65.07	74.00	-8.93	57.75	7.32	Peak	100	240
3	10360.00	57.54	68.20	-10.66	41.45	16.09	Peak	100	37
4	15540.00	47.61	54.00	-6.39	30.24	17.37	Average	100	38
5	15540.00	59.65	74.00	-14.35	42.28	17.37	Peak	100	38

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)	5180
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		

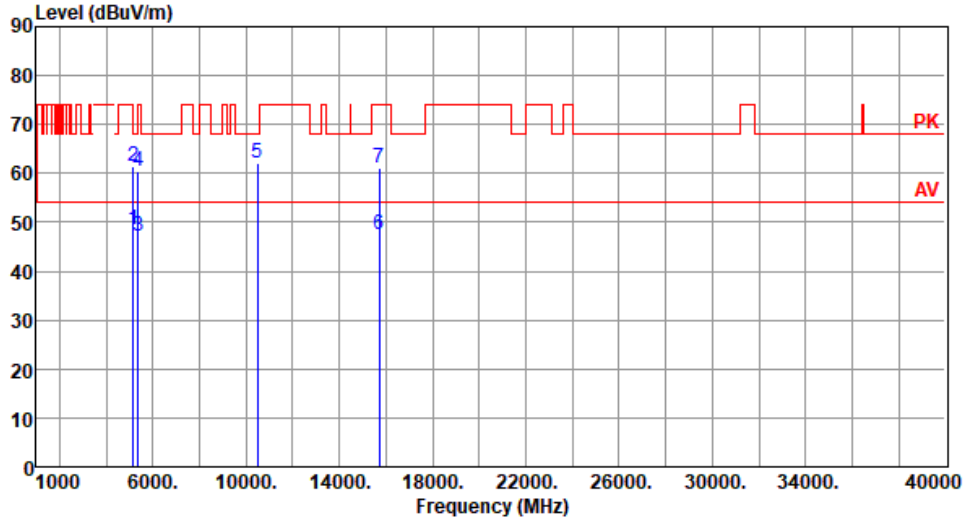


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.99	54.00	-1.01	45.67	7.32	Average	105	2
2	5150.00	71.17	74.00	-2.83	63.85	7.32	Peak	105	2
3	10400.00	62.40	68.20	-5.80	46.12	16.28	Peak	149	172
4	15600.00	48.83	54.00	-5.17	31.56	17.27	Average	200	195
5	15600.00	62.29	74.00	-11.71	45.02	17.27	Peak	200	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).

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		
Level (dBUV/m)			

Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		

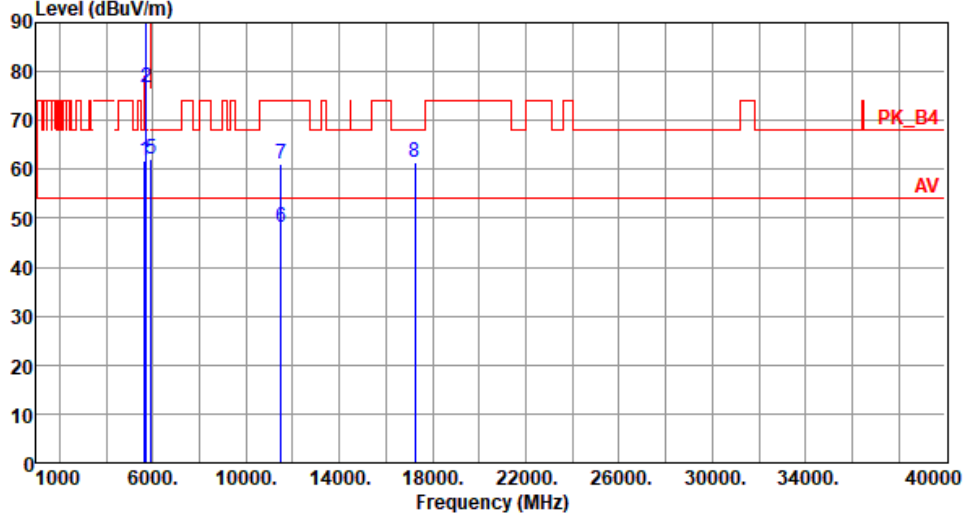


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.44	54.00	-5.56	41.12	7.32	Average	106	1
2	5150.00	61.41	74.00	-12.59	54.09	7.32	Peak	106	1
3	5350.00	47.31	54.00	-6.69	40.46	6.85	Average	106	1
4	5350.00	60.31	74.00	-13.69	53.46	6.85	Peak	106	1
5	10480.00	62.06	68.20	-6.14	45.65	16.41	Peak	150	177
6	15720.00	47.62	54.00	-6.38	31.02	16.60	Average	200	199
7	15720.00	61.06	74.00	-12.94	44.46	16.60	Peak	200	199

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)	5745
Polarization	Horizontal		
Level (dBuV/m)			

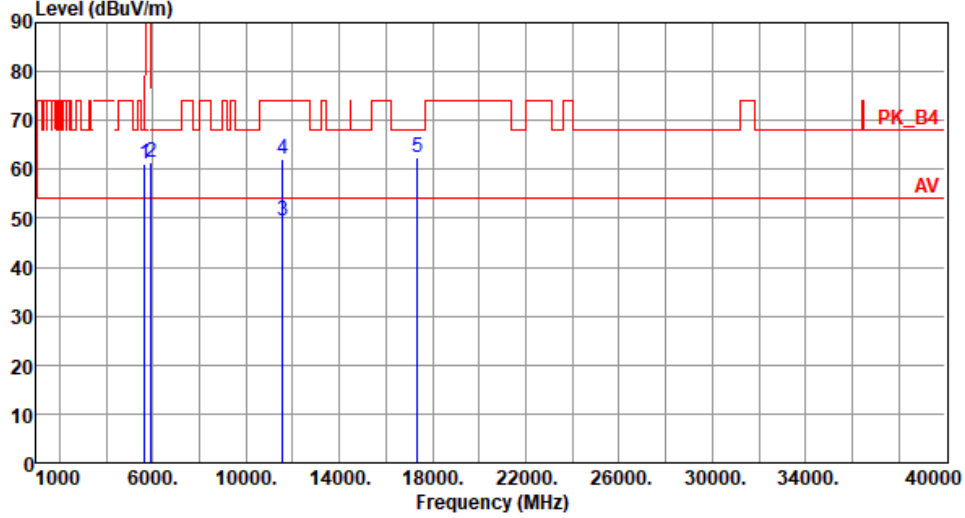
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.92	68.20	-6.28	54.53	7.39	Peak	171	83
2	5700.00	76.85	105.20	-28.35	69.35	7.50	Peak	171	83
3	5720.00	90.88	110.80	-19.92	83.26	7.62	Peak	171	83
4	5725.00	95.75	122.20	-26.45	88.09	7.66	Peak	171	83
5	5925.00	61.95	68.20	-6.25	53.88	8.07	Peak	171	83
6	11490.00	48.19	54.00	-5.81	31.43	16.76	Average	100	185
7	11490.00	61.05	74.00	-12.95	44.29	16.76	Peak	100	185
8	17235.00	61.40	68.20	-6.80	42.76	18.64	Peak	100	45

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).

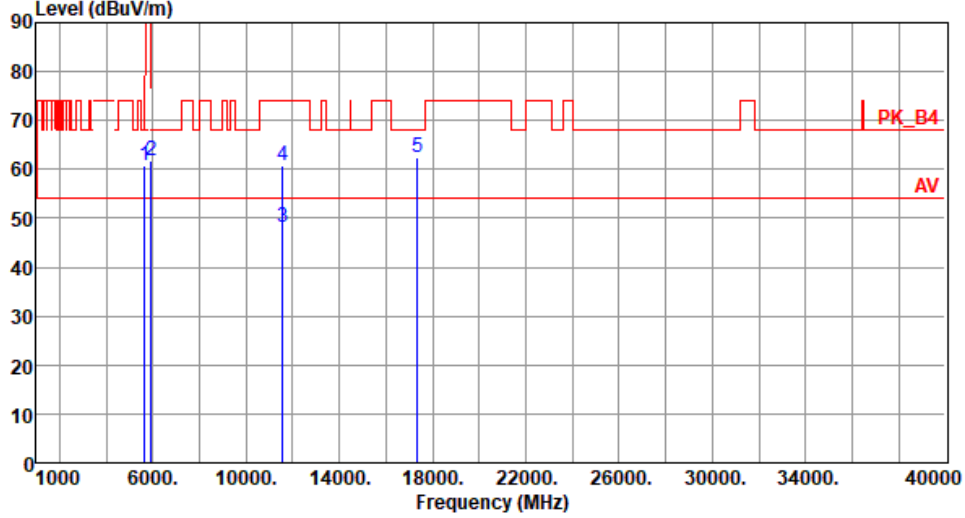
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.24	68.20	-6.96	53.85	7.39	Peak	222	193
2	5925.00	61.53	68.20	-6.67	53.46	8.07	Peak	222	193
3	11570.00	49.57	54.00	-4.43	32.96	16.61	Average	287	230
4	11570.00	62.25	74.00	-11.75	45.64	16.61	Peak	287	230
5	17355.00	62.40	68.20	-5.80	43.17	19.23	Peak	100	90

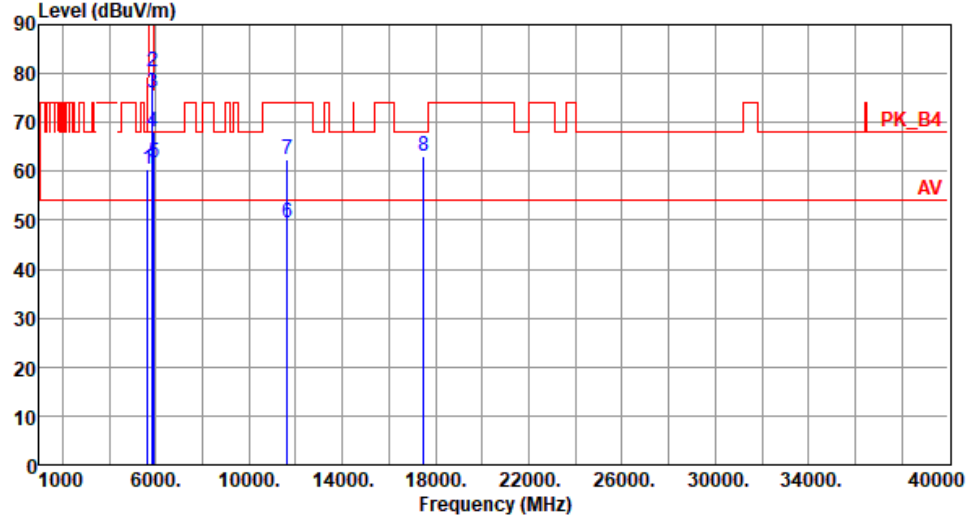
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		

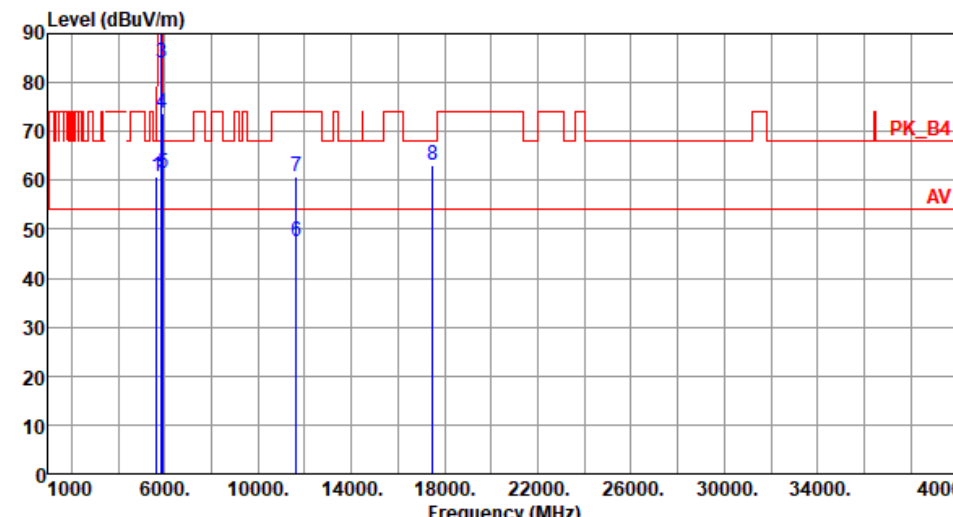


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.85	68.20	-7.35	53.46	7.39	Peak	141	82
2	5925.00	61.63	68.20	-6.57	53.56	8.07	Peak	141	82
3	11570.00	48.13	54.00	-5.87	31.52	16.61	Average	100	82
4	11570.00	60.76	74.00	-13.24	44.15	16.61	Peak	100	82
5	17355.00	62.47	68.20	-5.73	43.24	19.23	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	VHT20	Test Freq. (MHz)	5825																																																																																										
Polarization	Horizontal																																																																																												
 <table><tr><th></th><th>Freq. MHz</th><th>Emission level dBuV/m</th><th>Limit dBuV/m</th><th>Margin dB</th><th>SA reading dBuV</th><th>Factor dB</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>5650.00</td><td>60.44</td><td>68.20</td><td>-7.76</td><td>53.05</td><td>7.39</td><td>Peak</td><td>219</td><td>201</td></tr><tr><td>2</td><td>5850.00</td><td>80.50</td><td>122.20</td><td>-41.70</td><td>72.48</td><td>8.02</td><td>Peak</td><td>219</td><td>201</td></tr><tr><td>3</td><td>5855.00</td><td>75.98</td><td>110.80</td><td>-34.82</td><td>67.96</td><td>8.02</td><td>Peak</td><td>219</td><td>201</td></tr><tr><td>4</td><td>5875.00</td><td>68.15</td><td>105.20</td><td>-37.05</td><td>60.12</td><td>8.03</td><td>Peak</td><td>219</td><td>201</td></tr><tr><td>5</td><td>5925.00</td><td>61.66</td><td>68.20</td><td>-6.54</td><td>53.59</td><td>8.07</td><td>Peak</td><td>219</td><td>201</td></tr><tr><td>6</td><td>11650.00</td><td>49.50</td><td>54.00</td><td>-4.50</td><td>33.12</td><td>16.38</td><td>Average</td><td>289</td><td>232</td></tr><tr><td>7</td><td>11650.00</td><td>62.48</td><td>74.00</td><td>-11.52</td><td>46.10</td><td>16.38</td><td>Peak</td><td>289</td><td>232</td></tr><tr><td>8</td><td>17475.00</td><td>62.99</td><td>68.20</td><td>-5.21</td><td>43.25</td><td>19.74</td><td>Peak</td><td>100</td><td>20</td></tr></table>					Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	5650.00	60.44	68.20	-7.76	53.05	7.39	Peak	219	201	2	5850.00	80.50	122.20	-41.70	72.48	8.02	Peak	219	201	3	5855.00	75.98	110.80	-34.82	67.96	8.02	Peak	219	201	4	5875.00	68.15	105.20	-37.05	60.12	8.03	Peak	219	201	5	5925.00	61.66	68.20	-6.54	53.59	8.07	Peak	219	201	6	11650.00	49.50	54.00	-4.50	33.12	16.38	Average	289	232	7	11650.00	62.48	74.00	-11.52	46.10	16.38	Peak	289	232	8	17475.00	62.99	68.20	-5.21	43.25	19.74	Peak	100	20
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
1	5650.00	60.44	68.20	-7.76	53.05	7.39	Peak	219	201																																																																																				
2	5850.00	80.50	122.20	-41.70	72.48	8.02	Peak	219	201																																																																																				
3	5855.00	75.98	110.80	-34.82	67.96	8.02	Peak	219	201																																																																																				
4	5875.00	68.15	105.20	-37.05	60.12	8.03	Peak	219	201																																																																																				
5	5925.00	61.66	68.20	-6.54	53.59	8.07	Peak	219	201																																																																																				
6	11650.00	49.50	54.00	-4.50	33.12	16.38	Average	289	232																																																																																				
7	11650.00	62.48	74.00	-11.52	46.10	16.38	Peak	289	232																																																																																				
8	17475.00	62.99	68.20	-5.21	43.25	19.74	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)	5825
Polarization	Vertical		



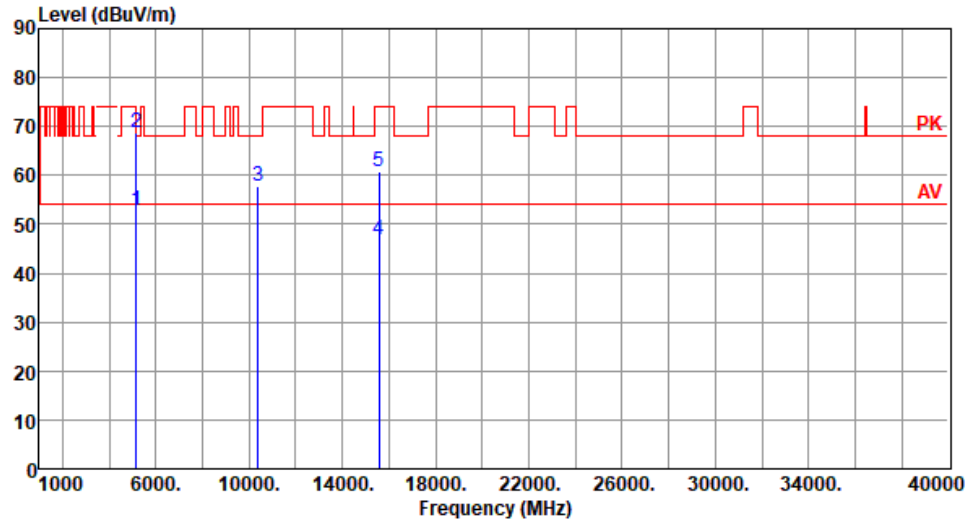
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.84	68.20	-7.36	53.45	7.39	Peak	149	95
2	5850.00	90.07	122.20	-32.13	82.05	8.02	Peak	149	95
3	5855.00	84.04	110.80	-26.76	76.02	8.02	Peak	149	95
4	5875.00	73.72	105.20	-31.48	65.69	8.03	Peak	149	95
5	5925.00	61.55	68.20	-6.65	53.48	8.07	Peak	149	95
6	11650.00	47.51	54.00	-6.49	31.13	16.38	Average	240	5
7	11650.00	60.64	74.00	-13.36	44.26	16.38	Peak	240	5
8	17475.00	62.99	68.20	-5.21	43.25	19.74	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).

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

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



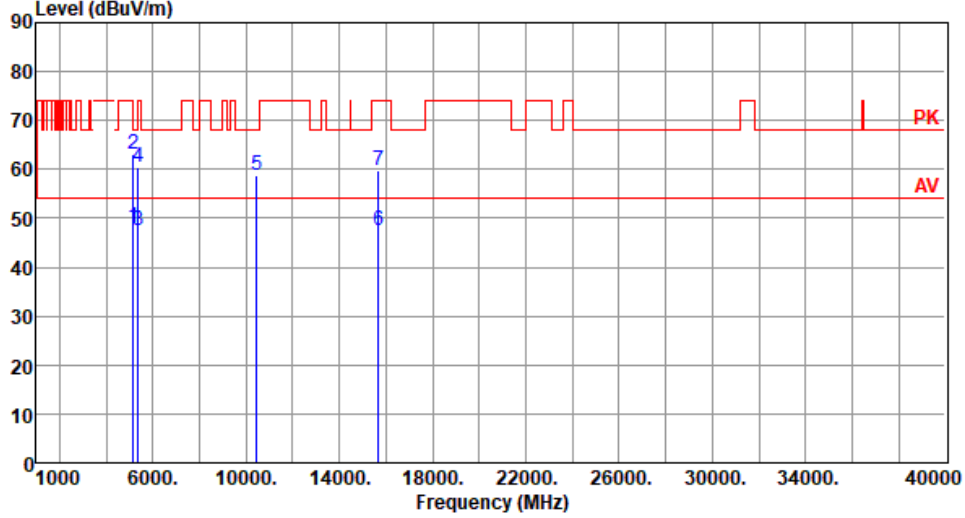
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.85	54.00	-1.15	45.53	7.32	Average	119	2
2	5150.00	68.61	74.00	-5.39	61.29	7.32	Peak	119	2
3	10380.00	57.87	68.20	-10.33	41.69	16.18	Peak	100	33
4	15570.00	46.94	54.00	-7.06	29.62	17.32	Average	100	185
5	15570.00	60.70	74.00	-13.30	43.38	17.32	Peak	100	185

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).

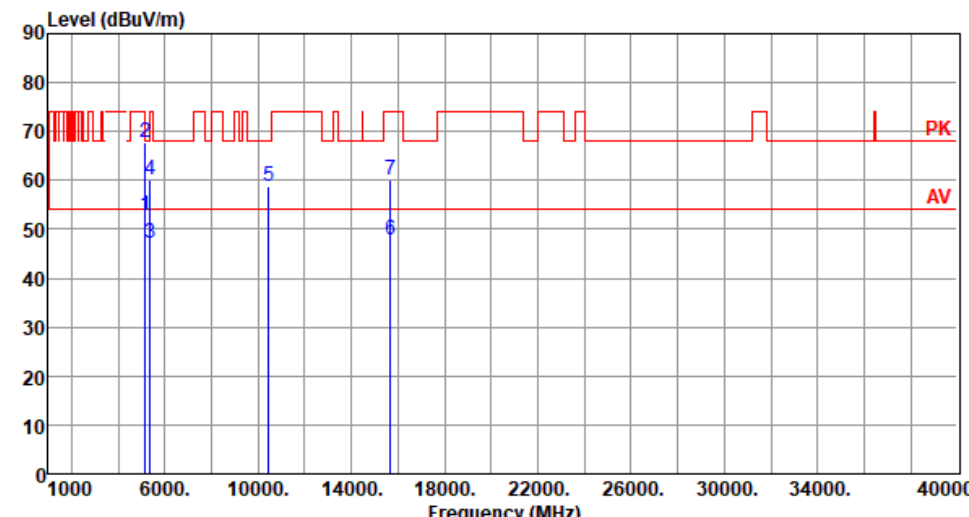
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	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	48.16	54.00	-5.84	40.84	7.32	Average	100	243
2	5150.00	62.93	74.00	-11.07	55.61	7.32	Peak	100	243
3	5350.00	47.48	54.00	-6.52	40.63	6.85	Average	100	243
4	5350.00	60.39	74.00	-13.61	53.54	6.85	Peak	100	243
5	10460.00	58.69	68.20	-9.51	42.32	16.37	Peak	100	163
6	15690.00	47.36	54.00	-6.64	30.68	16.68	Average	100	36
7	15690.00	59.89	74.00	-14.11	43.21	16.68	Peak	100	36

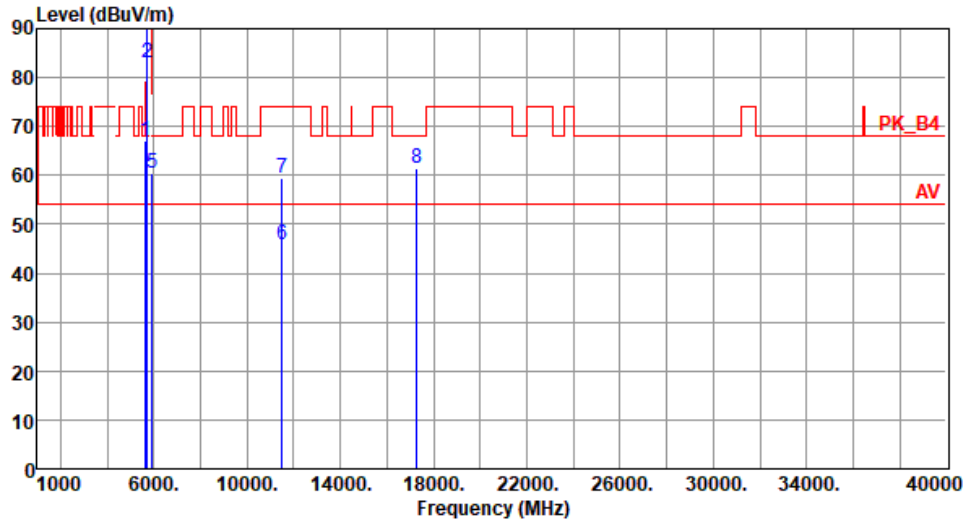
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		

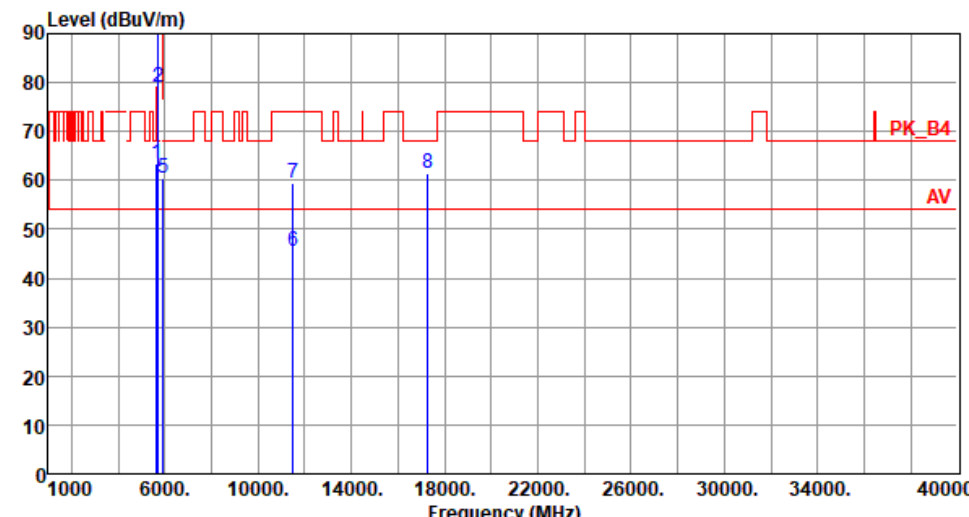


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.91	54.00	-1.09	45.59	7.32	Average	130	357
2	5150.00	67.75	74.00	-6.25	60.43	7.32	Peak	130	357
3	5350.00	47.29	54.00	-6.71	40.44	6.85	Average	130	357
4	5350.00	60.12	74.00	-13.88	53.27	6.85	Peak	130	357
5	10460.00	58.94	68.20	-9.26	42.57	16.37	Peak	100	180
6	15690.00	47.93	54.00	-6.07	31.25	16.68	Average	100	40
7	15690.00	60.14	74.00	-13.86	43.46	16.68	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)	5755																																																																																										
Polarization	Horizontal																																																																																												
																																																																																													
	<table><tr><th></th><th>Freq. MHz</th><th>Emission level dBuV/m</th><th>Limit dBuV/m</th><th>Margin dB</th><th>SA reading dBuV</th><th>Factor dB</th><th>Remark</th><th>ANT High cm</th><th>Turn Table deg</th></tr><tr><td>1</td><td>5650.00</td><td>67.14</td><td>68.20</td><td>-1.06</td><td>59.75</td><td>7.39</td><td>Peak</td><td>143</td><td>80</td></tr><tr><td>2</td><td>5700.00</td><td>83.17</td><td>105.20</td><td>-22.03</td><td>75.67</td><td>7.50</td><td>Peak</td><td>143</td><td>80</td></tr><tr><td>3</td><td>5720.00</td><td>94.07</td><td>110.80</td><td>-16.73</td><td>86.45</td><td>7.62</td><td>Peak</td><td>143</td><td>80</td></tr><tr><td>4</td><td>5725.00</td><td>94.46</td><td>122.20</td><td>-27.74</td><td>86.80</td><td>7.66</td><td>Peak</td><td>143</td><td>80</td></tr><tr><td>5</td><td>5925.00</td><td>60.45</td><td>68.20</td><td>-7.75</td><td>52.38</td><td>8.07</td><td>Peak</td><td>143</td><td>80</td></tr><tr><td>6</td><td>11510.00</td><td>45.87</td><td>54.00</td><td>-8.13</td><td>29.12</td><td>16.75</td><td>Average</td><td>288</td><td>2</td></tr><tr><td>7</td><td>11510.00</td><td>59.61</td><td>74.00</td><td>-14.39</td><td>42.86</td><td>16.75</td><td>Peak</td><td>288</td><td>2</td></tr><tr><td>8</td><td>17265.00</td><td>61.56</td><td>68.20</td><td>-6.64</td><td>42.75</td><td>18.81</td><td>Peak</td><td>100</td><td>144</td></tr></table>		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg	1	5650.00	67.14	68.20	-1.06	59.75	7.39	Peak	143	80	2	5700.00	83.17	105.20	-22.03	75.67	7.50	Peak	143	80	3	5720.00	94.07	110.80	-16.73	86.45	7.62	Peak	143	80	4	5725.00	94.46	122.20	-27.74	86.80	7.66	Peak	143	80	5	5925.00	60.45	68.20	-7.75	52.38	8.07	Peak	143	80	6	11510.00	45.87	54.00	-8.13	29.12	16.75	Average	288	2	7	11510.00	59.61	74.00	-14.39	42.86	16.75	Peak	288	2	8	17265.00	61.56	68.20	-6.64	42.75	18.81	Peak	100	144		
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
1	5650.00	67.14	68.20	-1.06	59.75	7.39	Peak	143	80																																																																																				
2	5700.00	83.17	105.20	-22.03	75.67	7.50	Peak	143	80																																																																																				
3	5720.00	94.07	110.80	-16.73	86.45	7.62	Peak	143	80																																																																																				
4	5725.00	94.46	122.20	-27.74	86.80	7.66	Peak	143	80																																																																																				
5	5925.00	60.45	68.20	-7.75	52.38	8.07	Peak	143	80																																																																																				
6	11510.00	45.87	54.00	-8.13	29.12	16.75	Average	288	2																																																																																				
7	11510.00	59.61	74.00	-14.39	42.86	16.75	Peak	288	2																																																																																				
8	17265.00	61.56	68.20	-6.64	42.75	18.81	Peak	100	144																																																																																				
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)	5755
Polarization	Vertical		

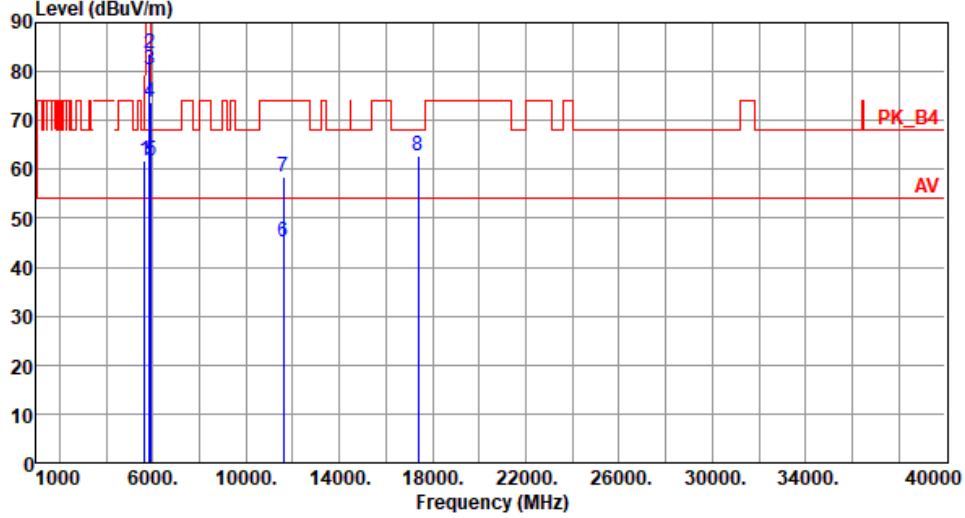


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	63.35	68.20	-4.85	55.96	7.39	Peak	216	215
2	5700.00	79.02	105.20	-26.18	71.52	7.50	Peak	216	215
3	5720.00	89.96	110.80	-20.84	82.34	7.62	Peak	216	215
4	5725.00	98.02	122.20	-24.18	90.36	7.66	Peak	216	215
5	5925.00	60.39	68.20	-7.81	52.32	8.07	Peak	216	215
6	11510.00	45.61	54.00	-8.39	28.86	16.75	Average	100	175
7	11510.00	59.51	74.00	-14.49	42.76	16.75	Peak	100	175
8	17265.00	61.44	68.20	-6.76	42.63	18.81	Peak	100	76

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)	5795
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

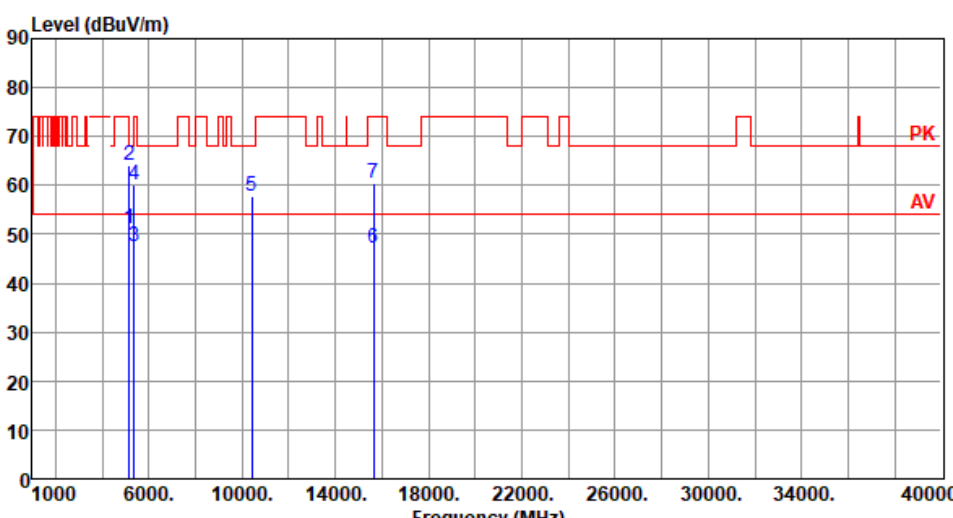


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.85	68.20	-6.35	54.46	7.39	Peak	170	76
2	5850.00	83.61	122.20	-38.59	75.59	8.02	Peak	170	76
3	5855.00	80.26	110.80	-30.54	72.24	8.02	Peak	170	76
4	5875.00	73.77	105.20	-31.43	65.74	8.03	Peak	170	76
5	5925.00	61.73	68.20	-6.47	53.66	8.07	Peak	170	76
6	11590.00	45.24	54.00	-8.76	28.67	16.57	Average	100	155
7	11590.00	58.34	74.00	-15.66	41.77	16.57	Peak	100	155
8	17385.00	62.68	68.20	-5.52	43.33	19.35	Peak	100	201

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).

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

Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		

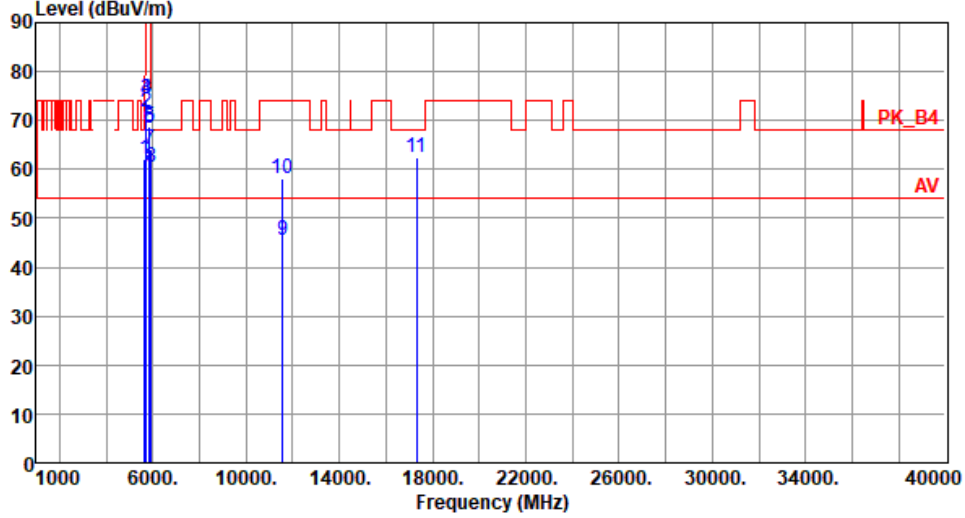


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	51.08	54.00	-2.92	43.76	7.32	Average	100	241
2	5150.00	64.07	74.00	-9.93	56.75	7.32	Peak	100	241
3	5350.00	47.41	54.00	-6.59	40.56	6.85	Average	100	241
4	5350.00	60.09	74.00	-13.91	53.24	6.85	Peak	100	241
5	10420.00	57.62	68.20	-10.58	41.31	16.31	Peak	100	241
6	15630.00	47.22	54.00	-6.78	30.14	17.08	Average	100	30
7	15630.00	60.53	74.00	-13.47	43.45	17.08	Peak	100	30

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)	5210
Polarization	Vertical		
Level (dBUV/m) </			

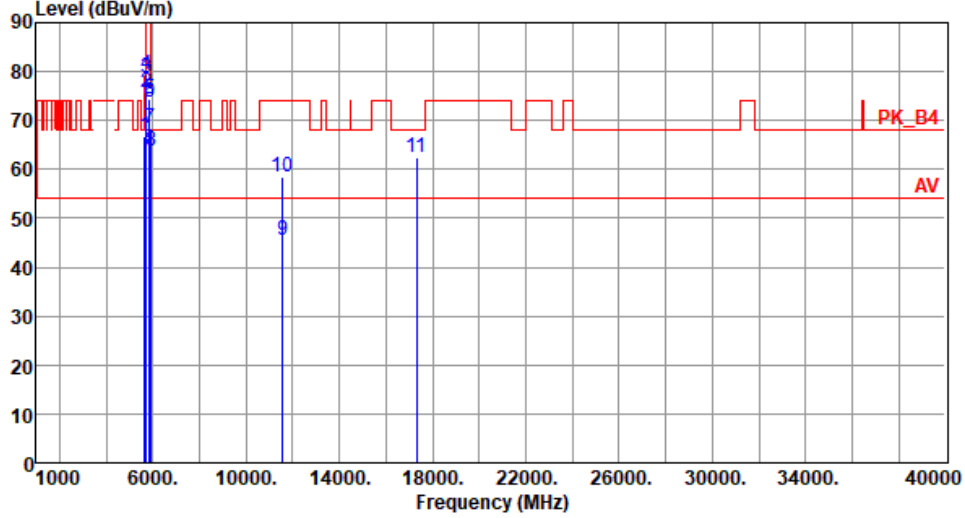
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	62.06	68.20	-6.14	54.67	7.39	Peak	255	196
2	5700.00	71.88	105.20	-33.32	64.38	7.50	Peak	255	196
3	5720.00	74.54	110.80	-36.26	66.92	7.62	Peak	255	196
4	5725.00	74.35	122.20	-47.85	66.69	7.66	Peak	255	196
5	5850.00	68.85	122.20	-53.35	60.83	8.02	Peak	255	196
6	5855.00	68.42	110.80	-42.38	60.40	8.02	Peak	255	196
7	5875.00	64.18	105.20	-41.02	56.15	8.03	Peak	255	196
8	5925.00	60.39	68.20	-7.81	52.32	8.07	Peak	255	196
9	11550.00	45.62	54.00	-8.38	28.96	16.66	Average	100	154
10	11550.00	58.04	74.00	-15.96	41.38	16.66	Peak	100	154
11	17325.00	62.35	68.20	-5.85	43.26	19.09	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)	5775
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	5650.00	66.87	68.20	-1.33	59.48	7.39	Peak	223	8
2	5700.00	75.67	105.20	-29.53	68.17	7.50	Peak	223	8
3	5720.00	78.58	110.80	-32.22	70.96	7.62	Peak	223	8
4	5725.00	79.50	122.20	-42.70	71.84	7.66	Peak	223	8
5	5850.00	74.35	122.20	-47.85	66.33	8.02	Peak	223	8
6	5855.00	73.64	110.80	-37.16	65.62	8.02	Peak	223	8
7	5875.00	68.57	105.20	-36.63	60.54	8.03	Peak	223	8
8	5925.00	63.62	68.20	-4.58	55.55	8.07	Peak	223	8
9	11550.00	45.52	54.00	-8.48	28.86	16.66	Average	223	8
10	11550.00	58.31	74.00	-15.69	41.65	16.66	Peak	223	8
11	17325.00	62.37	68.20	-5.83	43.28	19.09	Peak	100	90

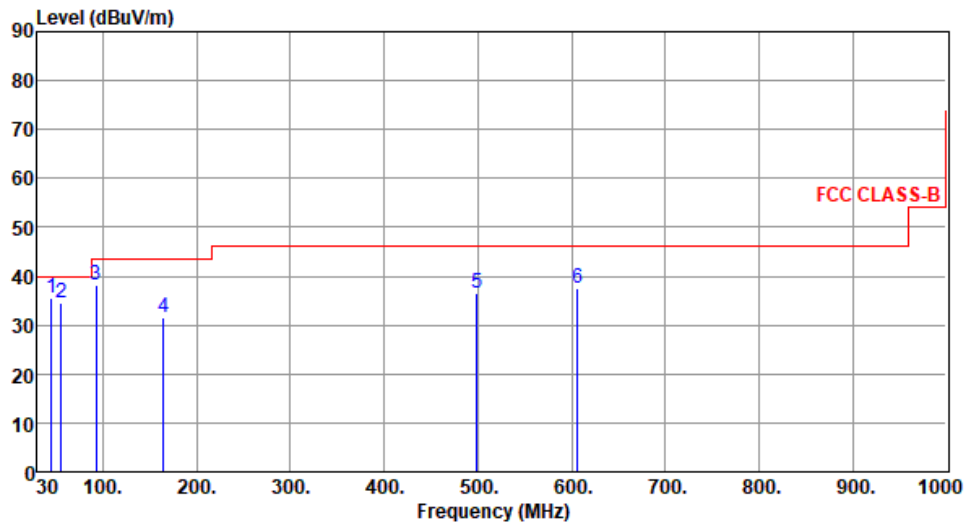
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Beamforming mode

3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5200
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	35.48	40.00	-4.52	44.27	-8.79	Peak	---	---
2	55.27	34.53	40.00	-5.47	43.63	-9.10	Peak	---	---
3	92.28	38.24	43.50	-5.26	53.13	-14.89	Peak	---	---
4	164.31	31.54	43.50	-11.96	40.63	-9.09	Peak	---	---
5	499.36	36.58	46.00	-9.42	39.73	-3.15	Peak	---	---
6	606.28	37.51	46.00	-8.49	37.78	-0.27	Peak	---	---

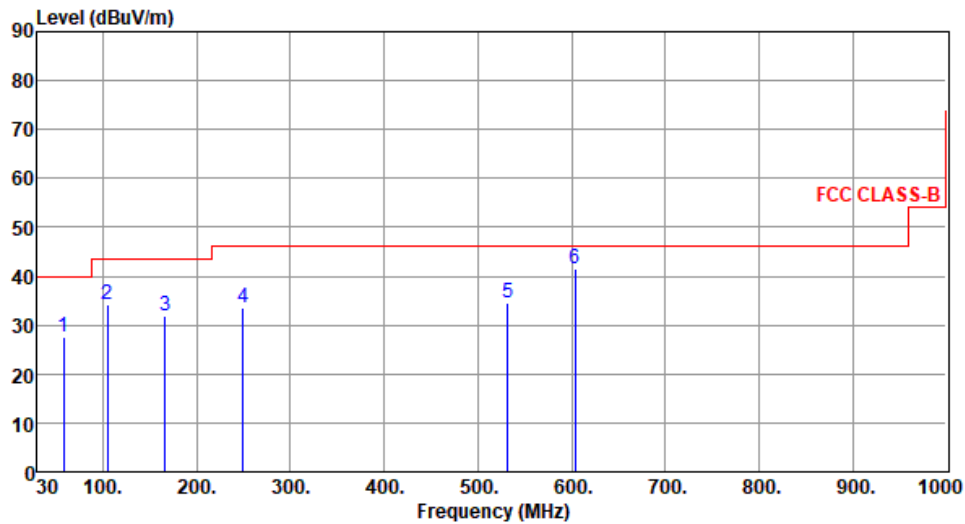
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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.

Modulation	VHT20	Test Freq. (MHz)	5785
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	58.26	27.51	40.00	-12.49	36.73	-9.22	Peak	---	---
2	104.53	34.36	43.50	-9.14	47.30	-12.94	Peak	---	---
3	166.53	31.86	43.50	-11.64	41.04	-9.18	Peak	---	---
4	249.36	33.42	46.00	-12.58	43.60	-10.18	Peak	---	---
5	531.52	34.52	46.00	-11.48	37.03	-2.51	Peak	---	---
6	603.41	41.62	46.00	-4.38	42.10	-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).

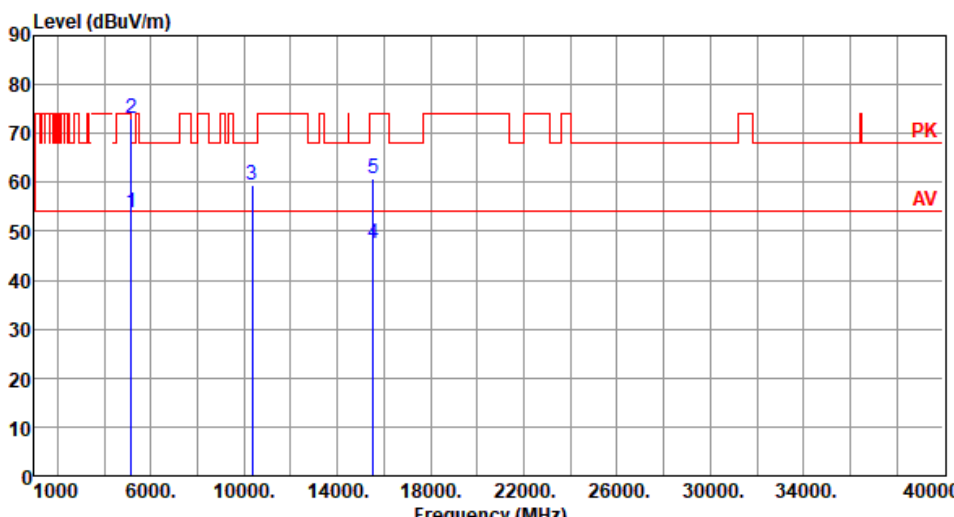
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		
Level (dBuV/m) </			

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

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5180
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	5150.00	53.75	54.00	-0.25	46.43	7.32	Average	142	220
2	5150.00	73.00	74.00	-1.00	65.68	7.32	Peak	142	220
3	10360.00	59.57	68.20	-8.63	43.48	16.09	Peak	100	20
4	15540.00	47.56	54.00	-6.44	30.19	17.37	Average	100	50
5	15540.00	60.82	74.00	-13.18	43.45	17.37	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	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		

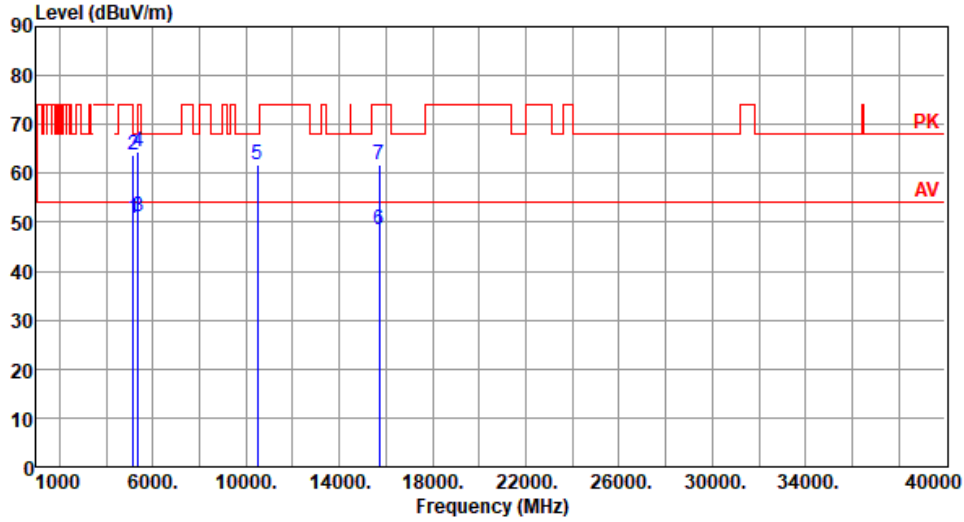


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.76	54.00	-0.24	46.44	7.32	Average	131	351
2	5150.00	72.10	74.00	-1.90	64.78	7.32	Peak	131	351
3	10400.00	62.93	68.20	-5.27	46.65	16.28	Peak	135	180
4	15600.00	49.81	54.00	-4.19	32.54	17.27	Average	100	29
5	15600.00	63.28	74.00	-10.72	46.01	17.27	Peak	100	29

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)	5240
Polarization	Horizontal		
Level (dBuV/m) <			

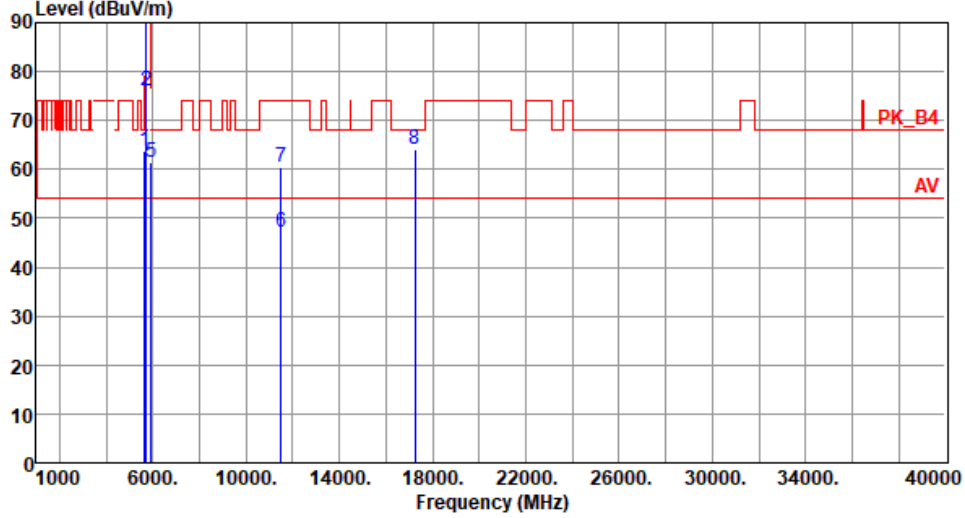
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	50.69	54.00	-3.31	43.37	7.32	Average	100	359
2	5150.00	63.76	74.00	-10.24	56.44	7.32	Peak	100	359
3	5350.00	51.20	54.00	-2.80	44.35	6.85	Average	100	52
4	5350.00	64.36	74.00	-9.64	57.51	6.85	Peak	100	52
5	10480.00	61.70	68.20	-6.50	45.29	16.41	Peak	159	178
6	15720.00	48.55	54.00	-5.45	31.95	16.60	Average	100	52
7	15720.00	61.86	74.00	-12.14	45.26	16.60	Peak	100	52

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)	5745
Polarization	Horizontal		



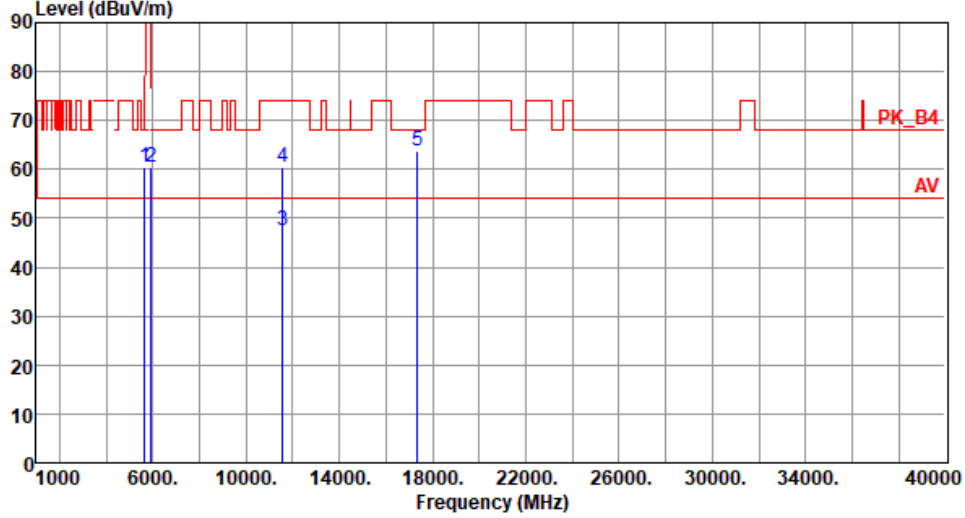
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	63.84	68.20	-4.36	56.45	7.39	Peak	244	186
2	5700.00	76.01	105.20	-29.19	68.51	7.50	Peak	244	186
3	5720.00	91.93	110.80	-18.87	84.31	7.62	Peak	244	186
4	5725.00	98.31	122.20	-23.89	90.65	7.66	Peak	244	186
5	5925.00	61.55	68.20	-6.65	53.48	8.07	Peak	244	186
6	11490.00	47.09	54.00	-6.91	30.33	16.76	Average	100	40
7	11490.00	60.33	74.00	-13.67	43.57	16.76	Peak	100	40
8	17235.00	64.20	68.20	-4.00	45.56	18.64	Peak	100	92

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)	5745
Polarization	Vertical		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		
Level (dBuV/m) </			

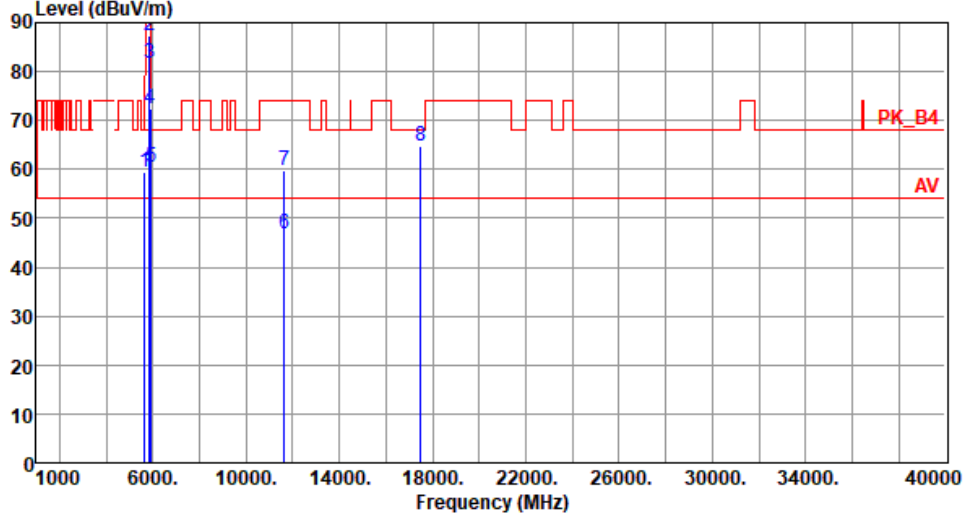
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	60.54	68.20	-7.66	53.15	7.39	Peak	159	2
2	5925.00	60.57	68.20	-7.63	52.50	8.07	Peak	159	2
3	11570.00	47.43	54.00	-6.57	30.82	16.61	Average	100	12
4	11570.00	60.47	74.00	-13.53	43.86	16.61	Peak	100	12
5	17355.00	63.61	68.20	-4.59	44.38	19.23	Peak	100	27

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)	5825
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	5650.00	59.52	68.20	-8.68	52.13	7.39	Peak	244	185
2	5850.00	87.47	122.20	-34.73	79.45	8.02	Peak	244	185
3	5855.00	81.67	110.80	-29.13	73.65	8.02	Peak	244	185
4	5875.00	72.55	105.20	-32.65	64.52	8.03	Peak	244	185
5	5925.00	60.54	68.20	-7.66	52.47	8.07	Peak	244	185
6	11650.00	46.84	54.00	-7.16	30.46	16.38	Average	100	50
7	11650.00	59.86	74.00	-14.14	43.48	16.38	Peak	100	50
8	17475.00	64.75	68.20	-3.45	45.01	19.74	Peak	100	90

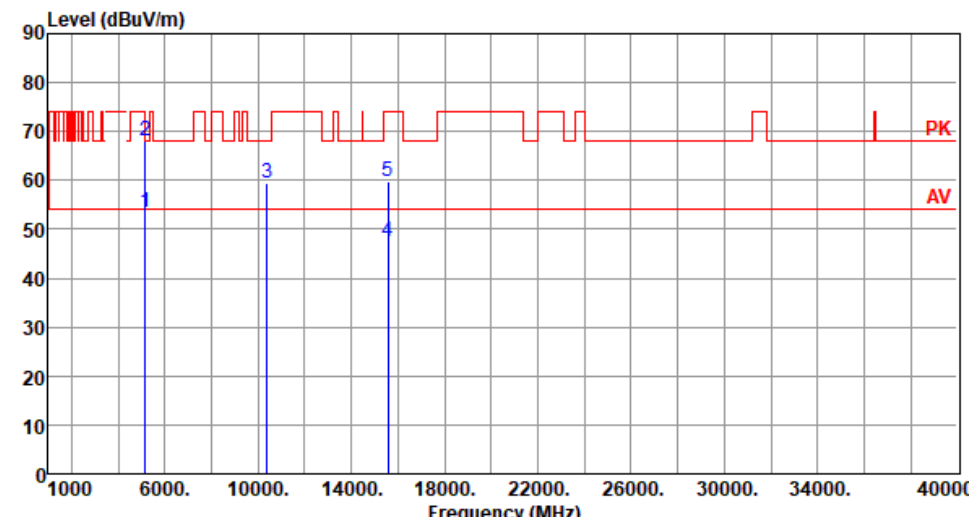
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		
Level (dBuV/m) </			

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

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		
Level (dBuV/m) </			

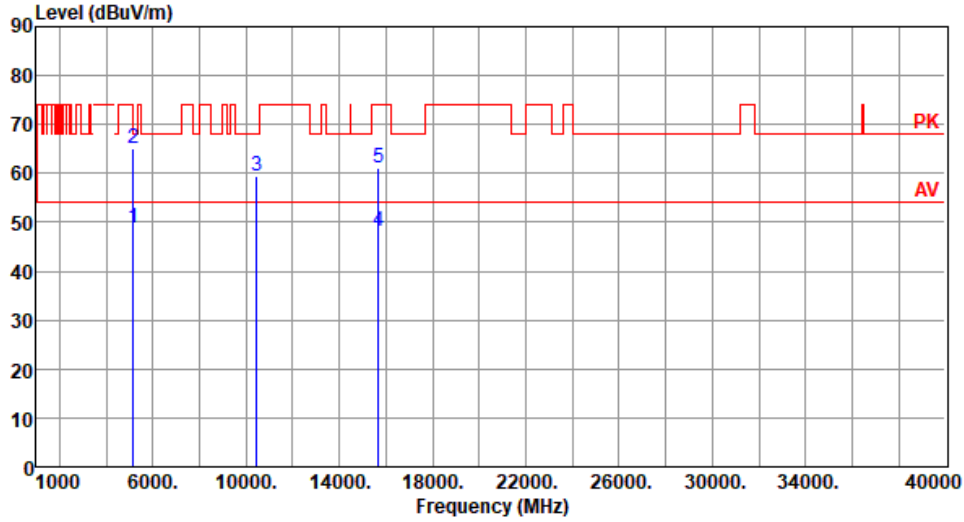
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.56	54.00	-0.44	46.24	7.32	Average	141	329
2	5150.00	68.15	74.00	-5.85	60.83	7.32	Peak	141	329
3	10380.00	59.37	68.20	-8.83	43.19	16.18	Peak	100	40
4	15570.00	47.45	54.00	-6.55	30.13	17.32	Average	100	80
5	15570.00	59.86	74.00	-14.14	42.54	17.32	Peak	100	80

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)	5230
Polarization	Horizontal		

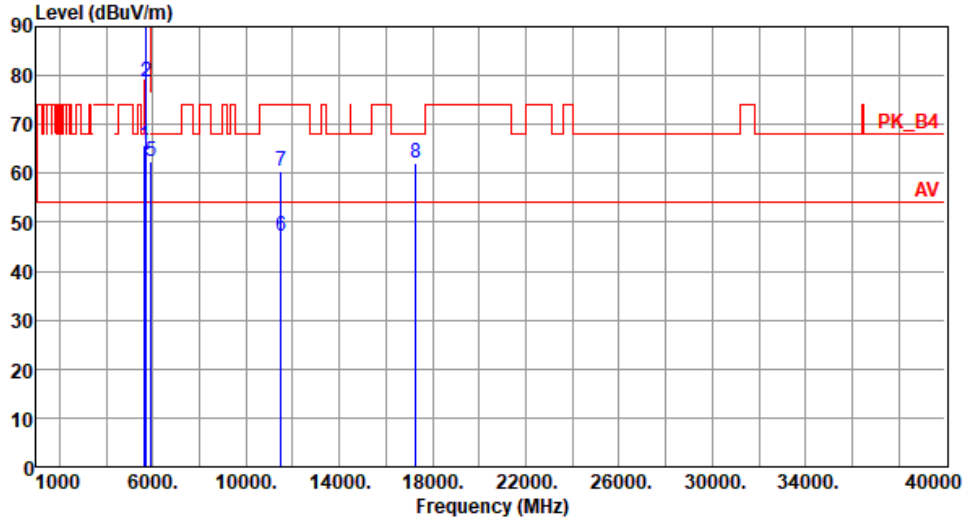


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.97	54.00	-5.03	41.65	7.32	Average	100	245
2	5150.00	64.97	74.00	-9.03	57.65	7.32	Peak	100	245
3	10460.00	59.54	68.20	-8.66	43.17	16.37	Peak	100	40
4	15690.00	48.24	54.00	-5.76	31.56	16.68	Average	100	40
5	15690.00	61.00	74.00	-13.00	44.32	16.68	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)	5230
Polarization	Vertical		
Level (dBuV/m) </			

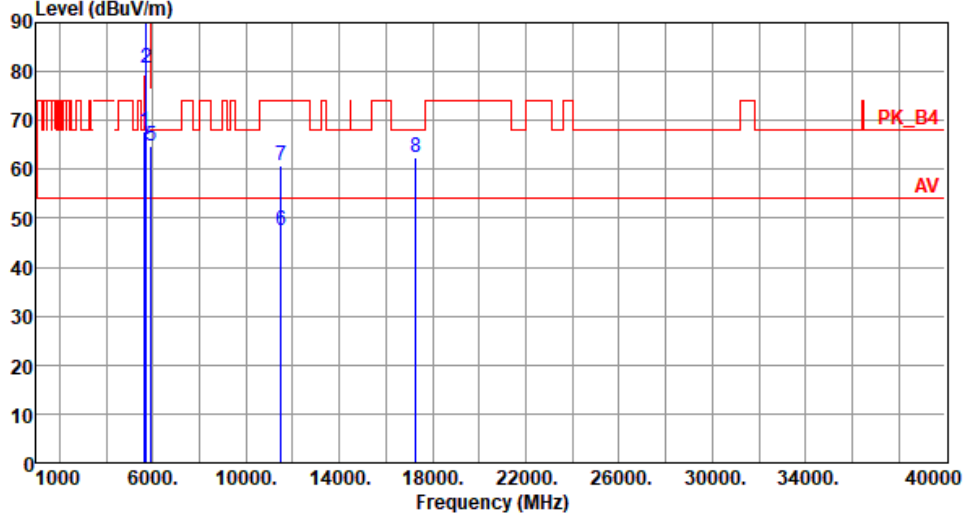
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	65.85	68.20	-2.35	58.46	7.39	Peak	245	182
2	5700.00	78.83	105.20	-26.37	71.33	7.50	Peak	245	182
3	5720.00	90.03	110.80	-20.77	82.41	7.62	Peak	245	182
4	5725.00	92.51	122.20	-29.69	84.85	7.66	Peak	245	182
5	5925.00	62.41	68.20	-5.79	54.34	8.07	Peak	245	182
6	11510.00	47.21	54.00	-6.79	30.46	16.75	Average	100	30
7	11510.00	60.34	74.00	-13.66	43.59	16.75	Peak	100	30
8	17265.00	62.14	68.20	-6.06	43.33	18.81	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)	5755
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	5650.00	67.88	68.20	-0.32	60.49	7.39	Peak	242	88
2	5700.00	80.64	105.20	-24.56	73.14	7.50	Peak	242	88
3	5720.00	91.97	110.80	-18.83	84.35	7.62	Peak	242	88
4	5725.00	94.63	122.20	-27.57	86.97	7.66	Peak	242	88
5	5925.00	64.64	68.20	-3.56	56.57	8.07	Peak	242	88
6	11510.00	47.40	54.00	-6.60	30.65	16.75	Average	100	25
7	11510.00	60.80	74.00	-13.20	44.05	16.75	Peak	100	25
8	17265.00	62.36	68.20	-5.84	43.55	18.81	Peak	100	20

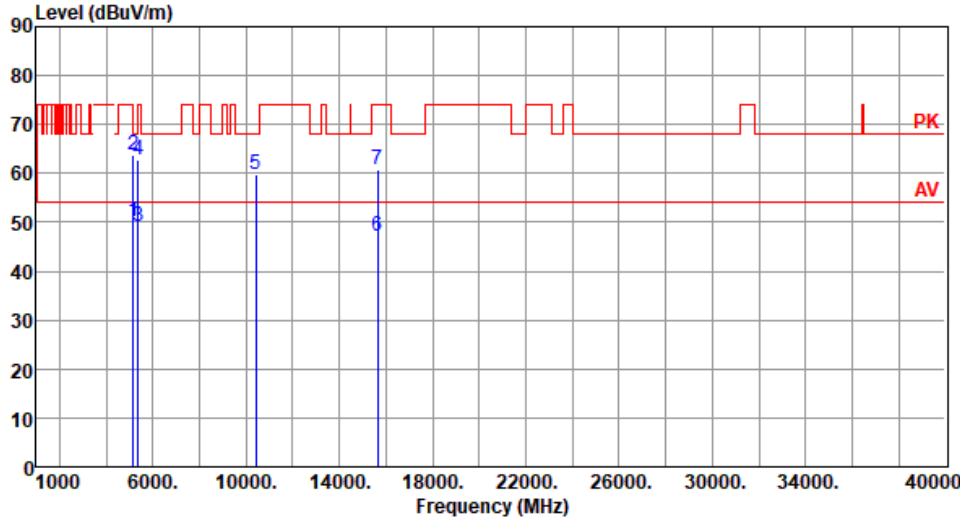
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		
Level (dBuV/m) <			

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

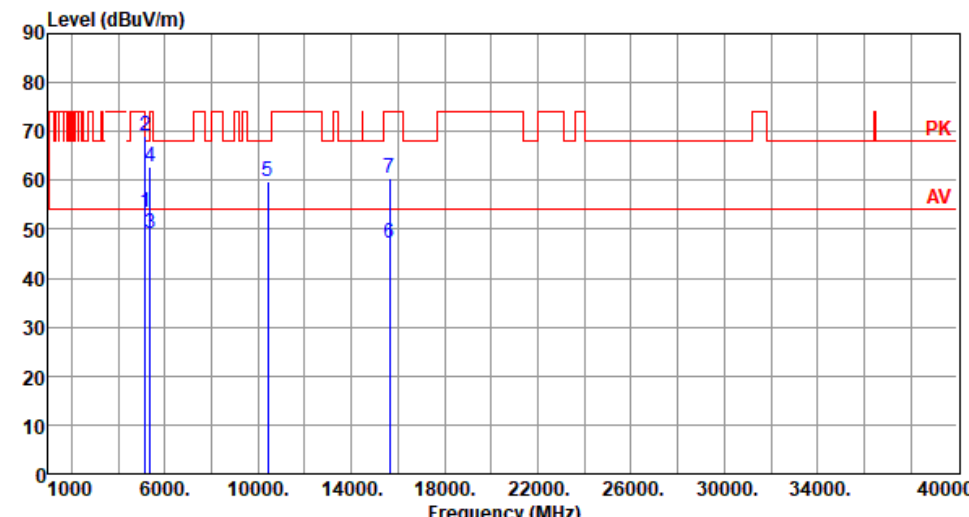
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	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	50.17	54.00	-3.83	42.85	7.32	Average	100	243
2	5150.00	63.66	74.00	-10.34	56.34	7.32	Peak	100	243
3	5350.00	49.01	54.00	-4.99	42.16	6.85	Average	100	243
4	5350.00	62.75	74.00	-11.25	55.90	6.85	Peak	100	243
5	10420.00	59.87	68.20	-8.33	43.56	16.31	Peak	100	20
6	15630.00	47.23	54.00	-6.77	30.15	17.08	Average	100	50
7	15630.00	60.63	74.00	-13.37	43.55	17.08	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).

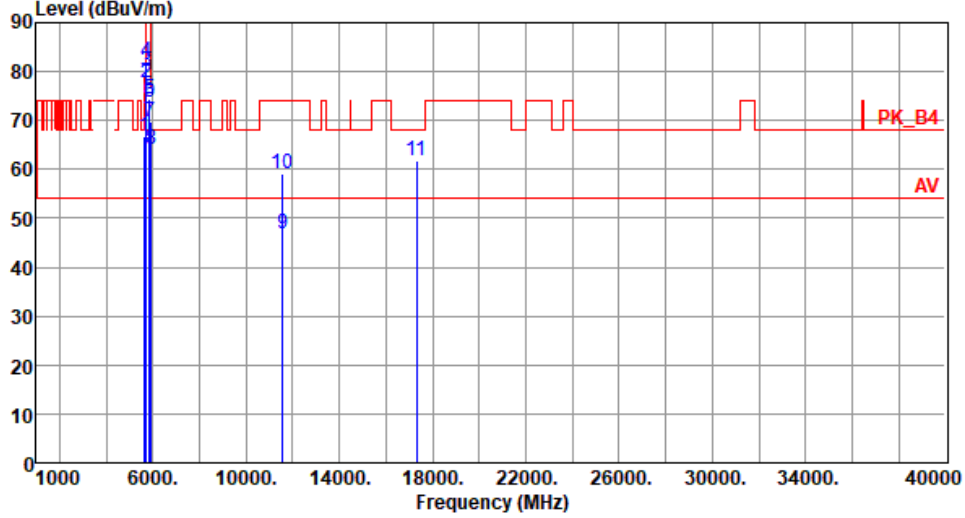
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	53.46	54.00	-0.54	46.14	7.32	Average	100	13
2	5150.00	69.00	74.00	-5.00	61.68	7.32	Peak	100	13
3	5350.00	49.21	54.00	-4.79	42.36	6.85	Average	100	3
4	5350.00	62.87	74.00	-11.13	56.02	6.85	Peak	100	3
5	10420.00	59.77	68.20	-8.43	43.46	16.31	Peak	100	80
6	15630.00	47.26	54.00	-6.74	30.18	17.08	Average	100	60
7	15630.00	60.49	74.00	-13.51	43.41	17.08	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	VHT80	Test Freq. (MHz)	5775
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	5650.00	66.80	68.20	-1.40	59.41	7.39	Peak	246	188
2	5700.00	77.62	105.20	-27.58	70.12	7.50	Peak	246	188
3	5720.00	80.06	110.80	-30.74	72.44	7.62	Peak	246	188
4	5725.00	82.19	122.20	-40.01	74.53	7.66	Peak	246	188
5	5850.00	74.44	122.20	-47.76	66.42	8.02	Peak	246	188
6	5855.00	73.64	110.80	-37.16	65.62	8.02	Peak	246	188
7	5875.00	69.66	105.20	-35.54	61.63	8.03	Peak	246	188
8	5925.00	64.01	68.20	-4.19	55.94	8.07	Peak	246	188
9	11550.00	46.81	54.00	-7.19	30.15	16.66	Average	100	90
10	11550.00	59.24	74.00	-14.76	42.58	16.66	Peak	100	90
11	17325.00	61.68	68.20	-6.52	42.59	19.09	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)	5775
Polarization	Vertical		
Level (dBuV/m) <			

3.6 Frequency Stability

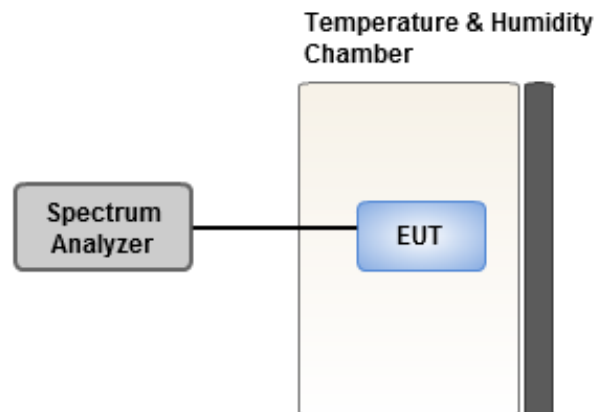
3.6.1 Limit of Frequency Stability

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: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	5.83	6.22	6.00	5.66
T20°C Vmin	4.58	5.17	4.34	4.84
T50°C Vnom	4.78	5.29	4.90	5.27
T40°C Vnom	4.19	4.29	3.98	4.35
T30°C Vnom	2.34	2.57	2.31	2.40
T20°C Vnom	4.58	5.17	4.33	4.83
T10°C Vnom	3.80	3.79	4.02	4.58
T0°C Vnom	4.17	4.68	4.04	4.61
T-10°C Vnom	2.06	2.32	1.88	2.44
T-20°C Vnom	1.94	2.22	2.27	2.39
T-30°C Vnom	1.71	2.17	1.50	2.47
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	5.19	5.58	5.27	5.79
T20°C Vmin	4.42	4.52	5.07	4.56
T50°C Vnom	4.32	4.09	4.53	4.53
T40°C Vnom	3.85	4.22	4.00	3.48
T30°C Vnom	2.21	2.31	2.73	2.44
T20°C Vnom	4.19	4.45	4.58	3.83
T10°C Vnom	3.69	3.38	3.58	4.02
T0°C Vnom	4.16	4.22	4.23	4.28
T-10°C Vnom	2.31	2.92	2.51	2.11
T-20°C Vnom	1.82	2.11	2.20	1.79
T-30°C Vnom	2.05	2.41	2.54	2.24
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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St., Kwei Shan District, Tao Yuan
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