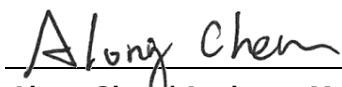


FCC Test Report

FCC ID : MXF-WLTFGT145CBSD
Equipment : WLTFGT-145ACN LTE Cat 12 B48 Indoor CPE
Model No. : WLTFGT-145ACN
Brand Name : Gemtek
Applicant : Gemtek Technology Co., Ltd.
Address : No. 15-1 Zhonghua Road, Hsinchu Industrial
Park, Hukou, Hsinchu, Taiwan, 30352.
Standard : 47 CFR FCC Part 15.407
Received Date : Nov. 19, 2020
Tested Date : Nov. 25 ~ Dec. 31, 2020

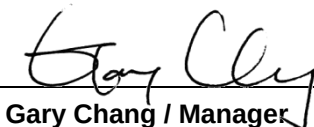
We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval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

Reviewed by:



Along Chen / Assistant Manager

Approved by:



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR0N1901AN	Rev. 01	Initial issue	Feb. 03, 2021

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.258MHz 46.57 (Margin -14.94dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.97 (Margin -1.03dB) – AV 50.75MHz 38.97(Margin -1.03dB) - QP	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]: 5150~5250MHz: 26.20 5725~5850MHz: 26.69	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 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]	2	6-54 Mbps
5150-5250 5725-5850	n (HT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	2	MCS 0-15
5150-5250 5725-5850	n (HT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	2	MCS 0-15
5150-5250 5725-5850	ac (VHT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	2	MCS 0-9
5150-5250 5725-5850	ac (VHT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	2	MCS 0-9
5150-5250 5725-5850	ac (VHT80)	5210 5775	42 [1] 155 [1]	2	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.

1.1.2 Antenna Details

Ant. No.	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
1	dipole	I-PEX	2.45	3.27	3.3

1.1.3 Power Supply Type of Equipment under Test (EUT)

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

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC adapter	Brand: MOSO Model: MSA-C 1500CS12.0-18G-US Power Rating: I/P: 100-240Vac, 50/60Hz, 0.6A max O/P: 12Vdc, 1.5A Power Line: 1.5m non-shielded without core.
2	AC adapter	Brand: APD Model: WB-18Q12FU Power Rating: I/P: 100-240Vac, 50-60Hz, 0.6A max O/P: 12Vdc, 1.5A Power Line: 1.5m non-shielded without core.
3	RJ45	1.5m non-shielded, without core.

1.1.5 Channel List

802.11a / n HT20 / ac VHT20		802.11n HT40 / ac VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	151	5755
48	5240	159	5795
149	5745	802.11ac VHT80	
153	5765	42	5210
157	5785	155	5775
161	5805	-	-
165	5825	-	-

1.1.6 Test Tool and Duty Cycle

Test Tool	Putty, V0.60.0.0		
Duty Cycle and Duty Factor	Mode	Duty Cycle (%)	Duty Factor (dB)
	11a	100.00%	0.00
	VHT20	100.00%	0.00
	VHT40	100.00%	0.00
	VHT80	100.00%	0.00

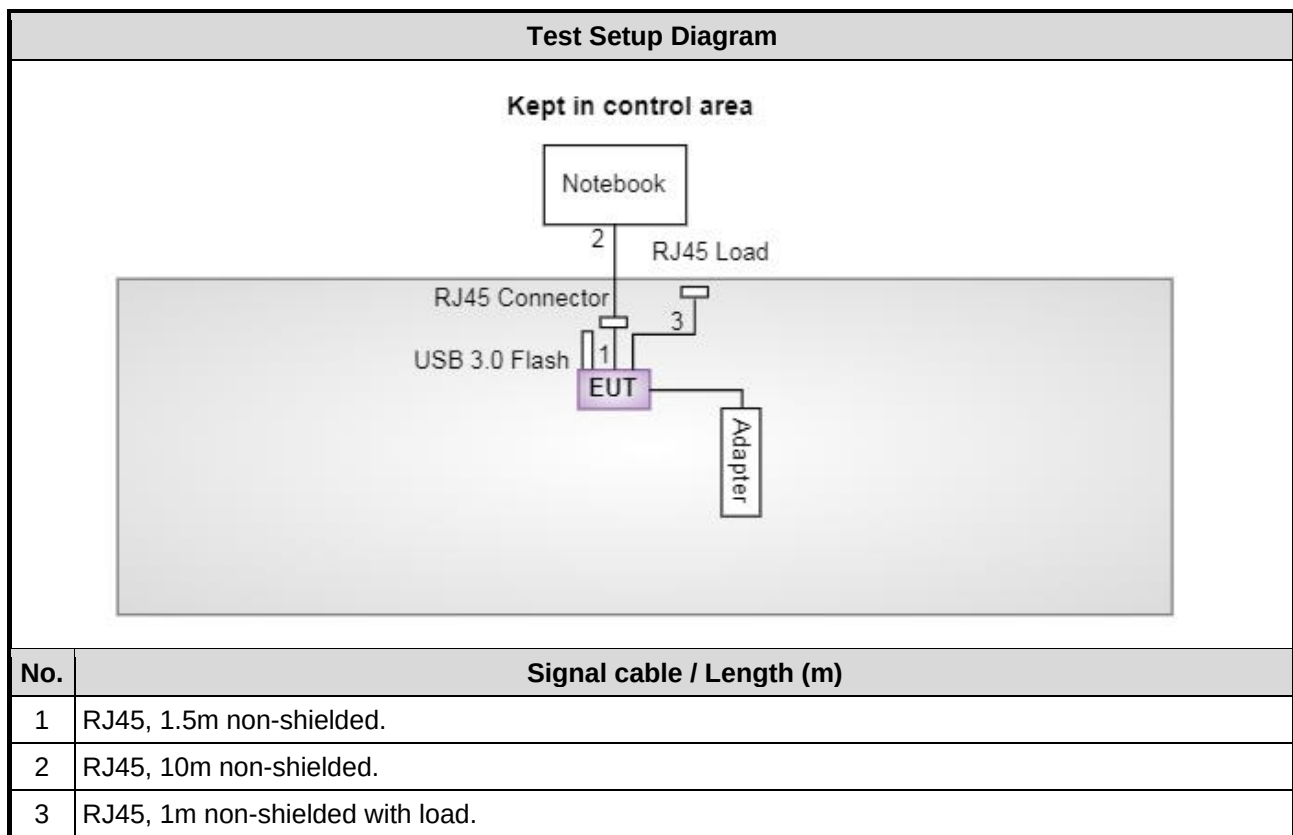
1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
11a	5180	38/42
11a	5200	43/47
11a	5240	40/44
11a	5745	42/46
11a	5785	42/46
11a	5825	42/46
VHT20	5180	38/42
VHT20	5200	46/50
VHT20	5240	40/44
VHT20	5745	42/46
VHT20	5785	42/46
VHT20	5825	42/46
VHT40	5190	30/34
VHT40	5230	40/44
VHT40	5755	43/46
VHT40	5795	43/46
VHT80	5210	28/31
VHT80	5775	36/38

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	Notebook	DELL	Latitude E5470	DoC	---
2	RJ45 Load	ICC	---	---	---
3	USB 3.0 Flash	Transcend	JetFlash 700	---	---

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Dec. 24, 2020				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
LISN	R&S	ENV216	101579	Mar. 12, 2020	Mar. 11, 2021
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 21, 2020	Oct. 20, 2021
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 chamber1 / (03CH01-WS)				
Tested Date	Nov. 28 ~ Dec. 10, 2020				
Instrument	Brand	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	VULB9168-522	Jul. 10, 2020	Jul. 09, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 06, 2020	Nov. 05, 2021
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 17, 2020	Nov. 16, 2021
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 06, 2020	Oct. 05, 2021
Preamplifier	EMC	EMC02325	980225	Jul. 03, 2020	Jul. 02, 2021
Preamplifier	Agilent	83017A	MY39501308	Sep. 26, 2020	Sep. 25, 2021
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 06, 2020	Oct. 05, 2021
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 06, 2020	Oct. 05, 2021
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 06, 2020	Oct. 05, 2021
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 06, 2020	Oct. 05, 2021
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Dec. 31, 2020				
Instrument	Brand	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	Nov. 04, 2020	Nov. 03, 2021
Power Sensor	Anritsu	MA2411B	1207366	Nov. 04, 2020	Nov. 03, 2021
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 04, 2020	Dec. 03, 2021
Measurement Software	Sporton	SENSE-15247_DTS	V5.10	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

1.6 Reference Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

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	$\pm 1 \times 10^{-9}$
Power density	± 0.583 dB
Conducted emission	± 2.715 dB
AC conducted emission	± 2.92 dB
Radiated emission ≤ 1 GHz	± 3.41 dB
Radiated emission > 1 GHz	± 4.59 dB
Time	$\pm 0.1\%$
Temperature	± 0.4 °C

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corp.
Test Site	CO01-WS, 03CH01-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.

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	VHT20	5200	MCS 0	1
Radiated Emissions ≤ 1 GHz	VHT20	5200	MCS 0	2
Radiated Emissions > 1 GHz	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	2
RF Output Power 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	2
Frequency Stability	Un-modulation	5200	---	2
For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	11a	5785	6 Mbps	1
Radiated Emissions ≤ 1 GHz	11a	5785	6 Mbps	2
Radiated Emissions > 1 GHz	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	2
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	2
Frequency Stability	Un-modulation	5785	---	2
Note: 1. The Adapter had been tested by following test configurations. 1) Configuration 1: MOSO Adapter mode 2) Configuration 2: APD Adapter				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

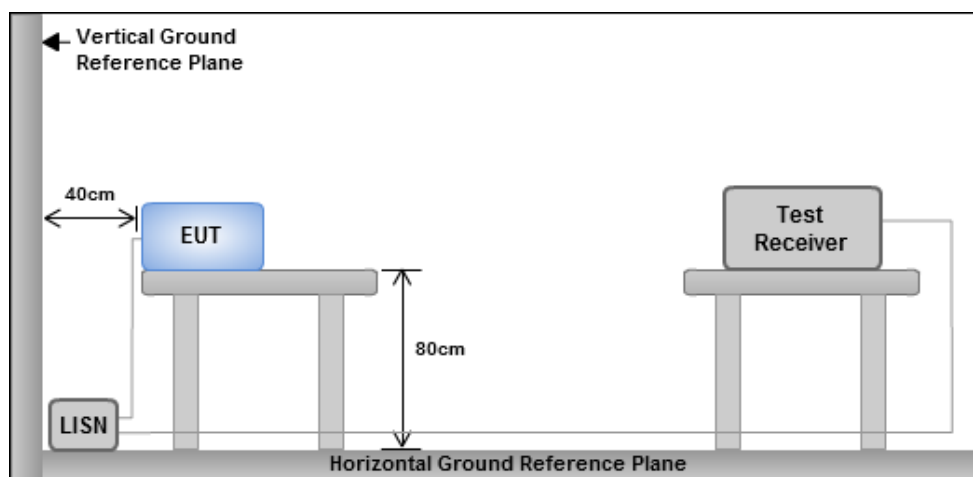
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

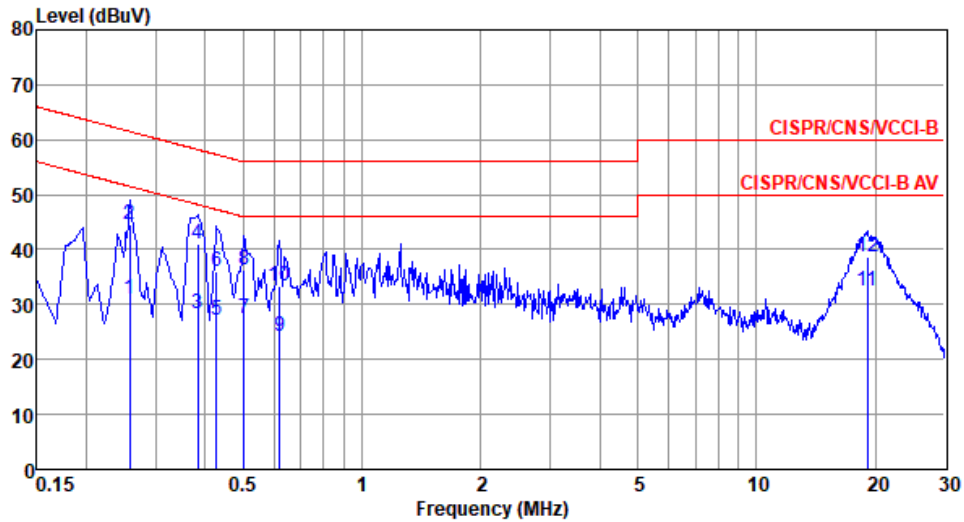
Modulation	VHT20	Test Freq. (MHz)	5200
Power Phase	Line		
Test by : Alex Tsai Temperature: 22°C Humidity: 65%			
Level (dBuV)			

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

Test by : Alex Tsai

Temperature: 22°C

Humidity: 65%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.258	30.96	51.51	-20.55	21.08	9.65	0.07	Average
2*	0.258	44.70	61.51	-16.81	34.82	9.65	0.07	QP
3	0.383	28.25	48.21	-19.96	18.35	9.65	0.08	Average
4	0.383	40.95	58.21	-17.26	31.05	9.65	0.08	QP
5	0.428	27.09	47.29	-20.20	17.19	9.65	0.08	Average
6	0.428	35.91	57.29	-21.38	26.01	9.65	0.08	QP
7	0.502	27.58	46.00	-18.42	17.66	9.65	0.09	Average
8	0.502	36.41	56.00	-19.59	26.49	9.65	0.09	QP
9	0.617	24.26	46.00	-21.74	14.33	9.65	0.10	Average
10	0.617	33.28	56.00	-22.72	23.35	9.65	0.10	QP
11	19.122	32.52	50.00	-17.48	21.54	9.83	0.65	Average
12	19.122	38.59	60.00	-21.41	27.61	9.83	0.65	QP

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

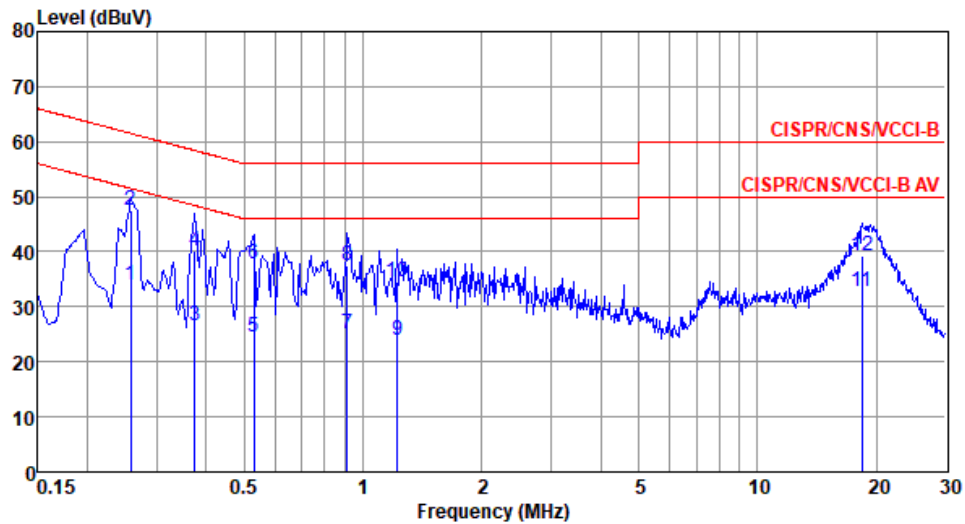
2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).

Modulation	11a	Test Freq. (MHz)	5785
Power Phase	Line		

Test by : Alex Tsai

Temperature: 22°C

Humidity: 65%



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.258	33.93	51.51	-17.58	24.02	9.63	0.07	Average
2*	0.258	47.50	61.51	-14.01	37.59	9.63	0.07	QP
3	0.375	26.44	48.39	-21.95	16.49	9.63	0.08	Average
4	0.375	40.24	58.39	-18.15	30.29	9.63	0.08	QP
5	0.529	24.59	46.00	-21.41	14.60	9.63	0.09	Average
6	0.529	37.72	56.00	-18.28	27.73	9.63	0.09	QP
7	0.914	25.03	46.00	-20.97	14.97	9.63	0.12	Average
8	0.914	37.47	56.00	-18.53	27.41	9.63	0.12	QP
9	1.223	23.78	46.00	-22.22	13.68	9.63	0.14	Average
10	1.223	34.54	56.00	-21.46	24.44	9.63	0.14	QP
11	18.426	32.70	50.00	-17.30	21.77	9.72	0.64	Average
12	18.426	39.13	60.00	-20.87	28.20	9.72	0.64	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)	5785																																																																																																																																							
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Level (dBUV) <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>Line</th><th>Limit</th><th>Level</th><th>factor</th><th>loss</th><th></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></thead><tbody><tr><td>1</td><td>0.258</td><td>31.99</td><td>51.51</td><td>-19.52</td><td>22.11</td><td>9.65</td><td>0.07</td><td>Average</td></tr><tr><td>2*</td><td>0.258</td><td>45.84</td><td>61.51</td><td>-15.67</td><td>35.96</td><td>9.65</td><td>0.07</td><td>QP</td></tr><tr><td>3</td><td>0.365</td><td>22.81</td><td>48.61</td><td>-25.80</td><td>12.91</td><td>9.65</td><td>0.08</td><td>Average</td></tr><tr><td>4</td><td>0.365</td><td>37.47</td><td>58.61</td><td>-21.14</td><td>27.57</td><td>9.65</td><td>0.08</td><td>QP</td></tr><tr><td>5</td><td>0.393</td><td>26.42</td><td>47.99</td><td>-21.57</td><td>16.52</td><td>9.65</td><td>0.08</td><td>Average</td></tr><tr><td>6</td><td>0.393</td><td>39.58</td><td>57.99</td><td>-18.41</td><td>29.68</td><td>9.65</td><td>0.08</td><td>QP</td></tr><tr><td>7</td><td>0.518</td><td>27.94</td><td>46.00</td><td>-18.06</td><td>18.02</td><td>9.65</td><td>0.09</td><td>Average</td></tr><tr><td>8</td><td>0.518</td><td>36.39</td><td>56.00</td><td>-19.61</td><td>26.47</td><td>9.65</td><td>0.09</td><td>QP</td></tr><tr><td>9</td><td>0.654</td><td>24.01</td><td>46.00</td><td>-21.99</td><td>14.07</td><td>9.65</td><td>0.10</td><td>Average</td></tr><tr><td>10</td><td>0.654</td><td>33.00</td><td>56.00</td><td>-23.00</td><td>23.06</td><td>9.65</td><td>0.10</td><td>QP</td></tr><tr><td>11</td><td>18.820</td><td>32.11</td><td>50.00</td><td>-17.89</td><td>21.14</td><td>9.83</td><td>0.65</td><td>Average</td></tr><tr><td>12</td><td>18.820</td><td>38.82</td><td>60.00</td><td>-21.18</td><td>27.85</td><td>9.83</td><td>0.65</td><td>QP</td></tr></tbody></table>					Freq	Level	Limit	Over	Read	LISN	cable	Remark		MHz	dBuV	Line	Limit	Level	factor	loss					dBuV	dB	dBuV	dB	dB		1	0.258	31.99	51.51	-19.52	22.11	9.65	0.07	Average	2*	0.258	45.84	61.51	-15.67	35.96	9.65	0.07	QP	3	0.365	22.81	48.61	-25.80	12.91	9.65	0.08	Average	4	0.365	37.47	58.61	-21.14	27.57	9.65	0.08	QP	5	0.393	26.42	47.99	-21.57	16.52	9.65	0.08	Average	6	0.393	39.58	57.99	-18.41	29.68	9.65	0.08	QP	7	0.518	27.94	46.00	-18.06	18.02	9.65	0.09	Average	8	0.518	36.39	56.00	-19.61	26.47	9.65	0.09	QP	9	0.654	24.01	46.00	-21.99	14.07	9.65	0.10	Average	10	0.654	33.00	56.00	-23.00	23.06	9.65	0.10	QP	11	18.820	32.11	50.00	-17.89	21.14	9.83	0.65	Average	12	18.820	38.82	60.00	-21.18	27.85	9.83	0.65	QP
	Freq	Level	Limit	Over	Read	LISN	cable	Remark																																																																																																																																		
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5	0.393	26.42	47.99	-21.57	16.52	9.65	0.08	Average																																																																																																																																		
6	0.393	39.58	57.99	-18.41	29.68	9.65	0.08	QP																																																																																																																																		
7	0.518	27.94	46.00	-18.06	18.02	9.65	0.09	Average																																																																																																																																		
8	0.518	36.39	56.00	-19.61	26.47	9.65	0.09	QP																																																																																																																																		
9	0.654	24.01	46.00	-21.99	14.07	9.65	0.10	Average																																																																																																																																		
10	0.654	33.00	56.00	-23.00	23.06	9.65	0.10	QP																																																																																																																																		
11	18.820	32.11	50.00	-17.89	21.14	9.83	0.65	Average																																																																																																																																		
12	18.820	38.82	60.00	-21.18	27.85	9.83	0.65	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.

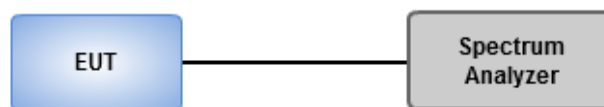
Occupied Bandwidth

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

Ambient Condition	18°C / 63%	Tested By	Aska Huang
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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)_2TX	38.478M	20.333M	20M3D1D	26.449M	16.57M
802.11ac VHT20_Nss1,(MCS0)_2TX	45M	25.977M	26M0D1D	21.159M	17.583M
802.11ac VHT40_Nss1,(MCS0)_2TX	72.754M	37.771M	37M8D1D	41.594M	36.035M
802.11ac VHT80_Nss1,(MCS0)_2TX	81.159M	74.964M	75M0D1D	81.159M	74.964M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.377M	21.852M	21M9D1D	16.304M	18.307M
802.11ac VHT20_Nss1,(MCS0)_2TX	17.609M	25.832M	25M8D1D	17.609M	17.873M
802.11ac VHT40_Nss1,(MCS0)_2TX	36.522M	49.204M	49M2D1D	36.377M	40.087M
802.11ac VHT80_Nss1,(MCS0)_2TX	74.783M	75.543M	75M5D1D	74.783M	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)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	26.449M	16.57M	32.609M	16.643M
5200MHz	Pass	Inf	35.652M	17.945M	38.478M	20.333M
5240MHz	Pass	Inf	35.072M	16.932M	36.087M	18.307M
5745MHz	Pass	500k	16.377M	19.682M	16.377M	19.392M
5785MHz	Pass	500k	16.377M	18.958M	16.377M	21.852M
5825MHz	Pass	500k	16.304M	18.307M	16.304M	19.899M
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	21.159M	17.583M	28.623M	17.656M
5200MHz	Pass	Inf	43.478M	24.313M	45M	25.977M
5240MHz	Pass	Inf	41.957M	17.873M	41.522M	18.524M
5745MHz	Pass	500k	17.609M	17.873M	17.609M	21.708M
5785MHz	Pass	500k	17.609M	18.09M	17.609M	23.01M
5825MHz	Pass	500k	17.609M	25.832M	17.609M	23.806M
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	42.319M	36.035M	41.594M	36.035M
5230MHz	Pass	Inf	72.319M	36.903M	72.754M	37.771M
5755MHz	Pass	500k	36.522M	49.204M	36.522M	40.087M
5795MHz	Pass	500k	36.377M	48.915M	36.377M	43.271M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.159M	74.964M	81.159M	74.964M
5775MHz	Pass	500k	74.783M	75.543M	74.783M	75.253M

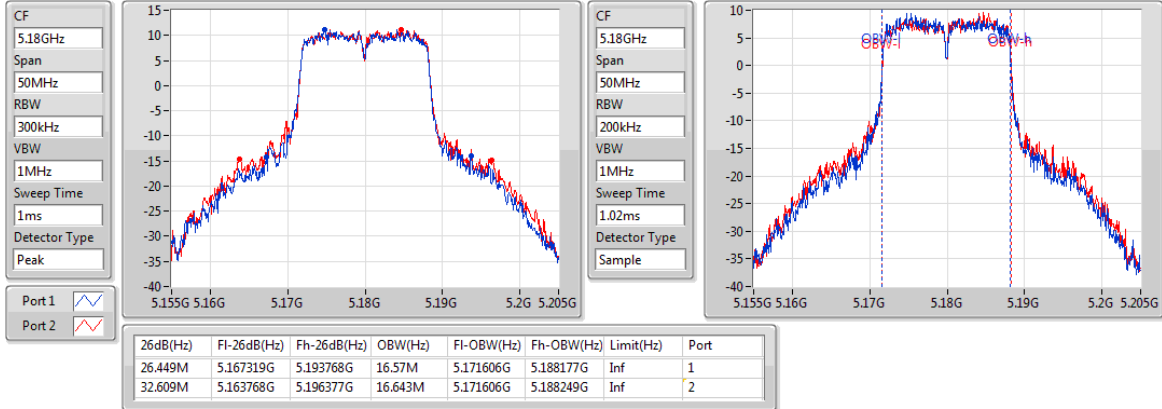
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

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

802.11a_Nss1,(6Mbps)_2TX

EBW

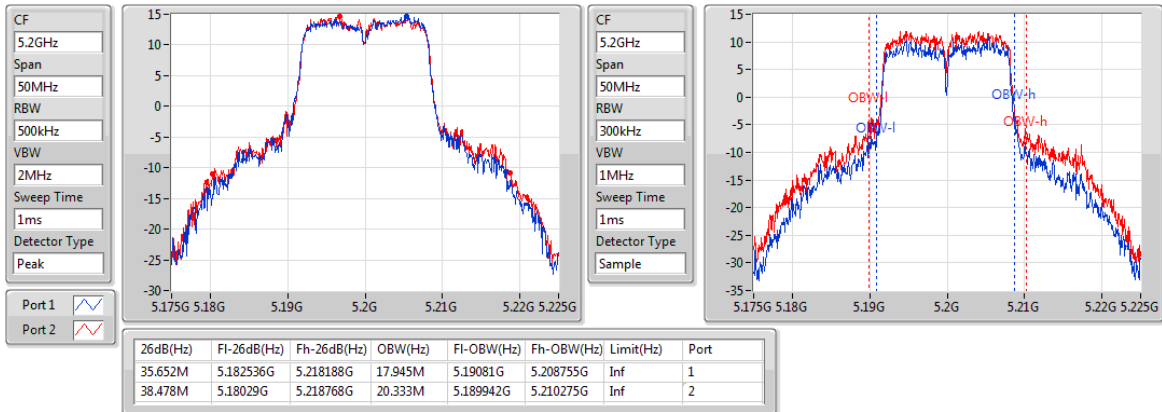
5180MHz



802.11a_Nss1,(6Mbps)_2TX

EBW

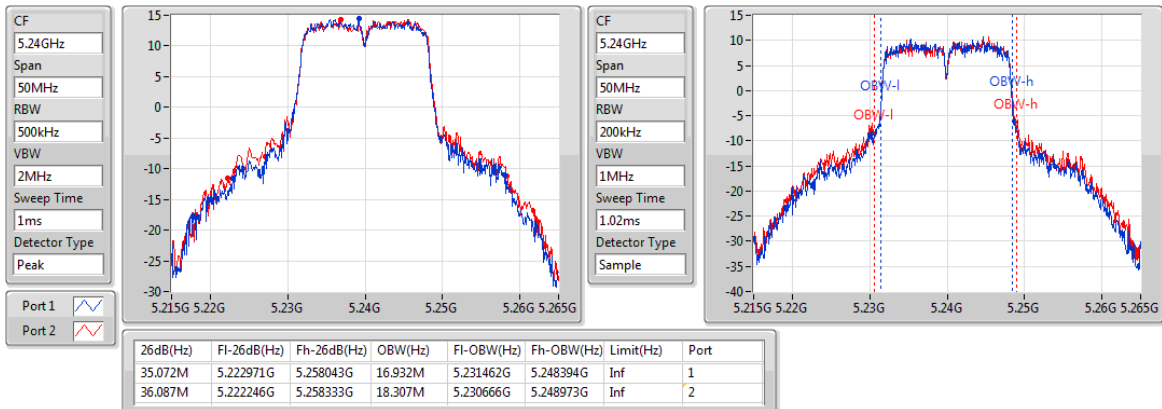
5200MHz



802.11a_Nss1,(6Mbps)_2TX

EBW

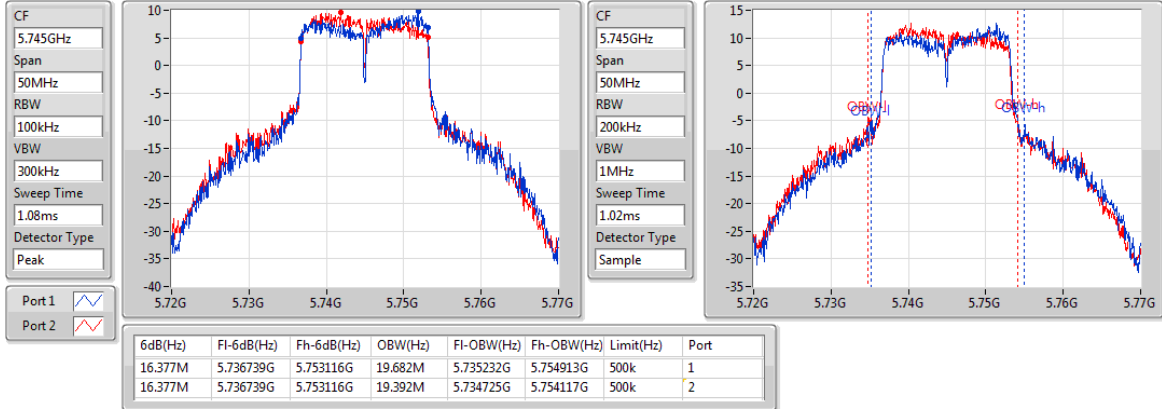
5240MHz



802.11a_Nss1,(6Mbps)_2TX

EBW

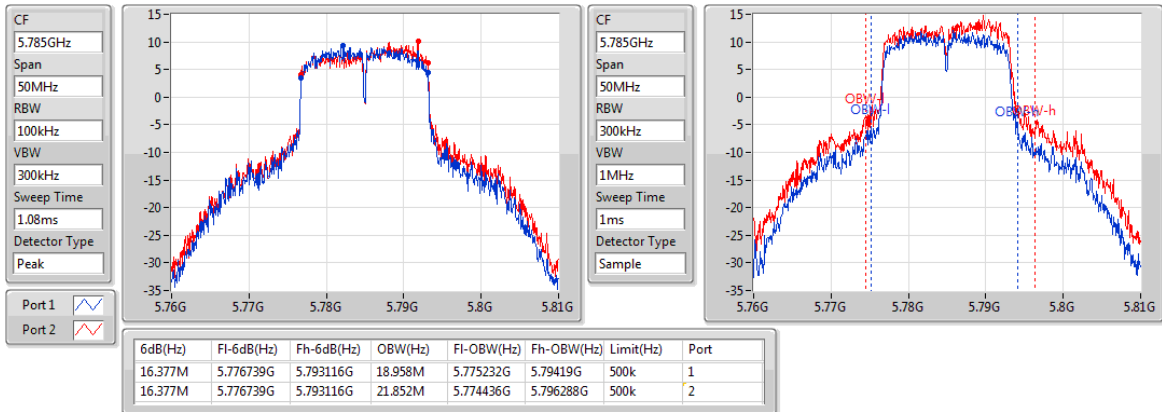
5745MHz



802.11a_Nss1,(6Mbps)_2TX

EBW

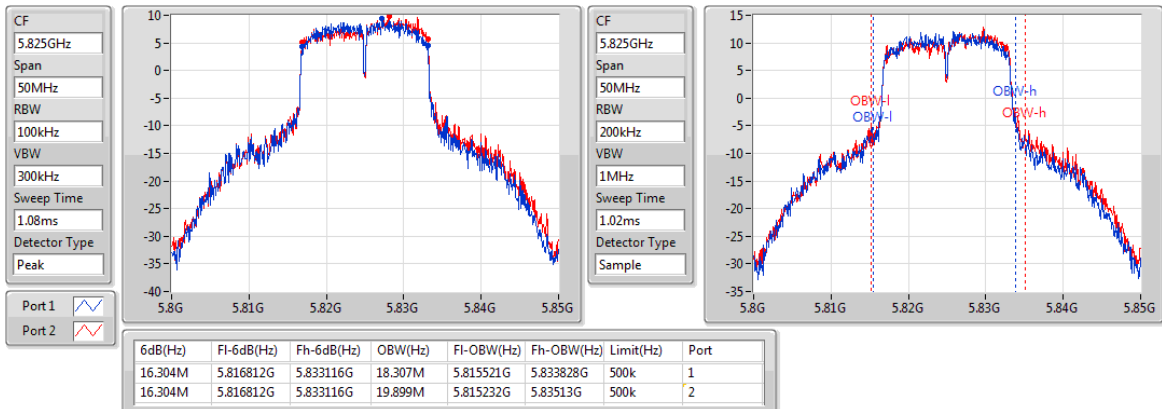
5785MHz



802.11a_Nss1,(6Mbps)_2TX

EBW

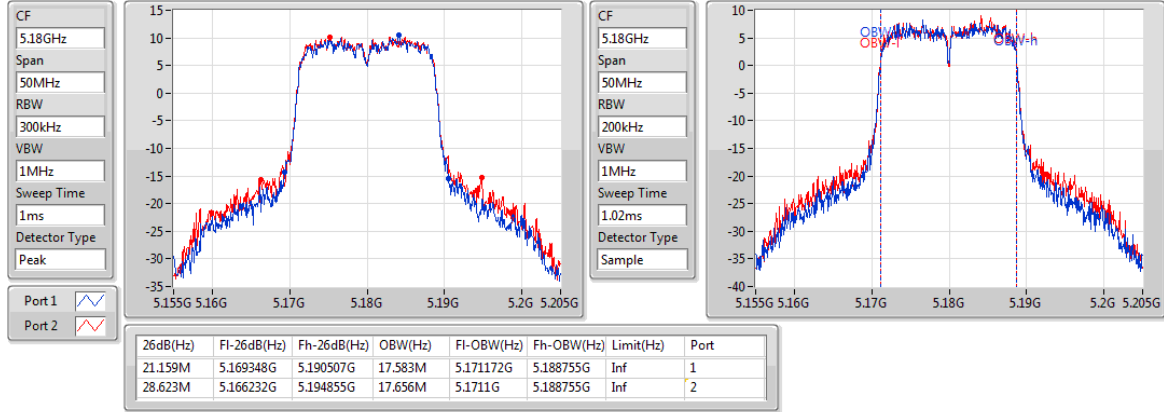
5825MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

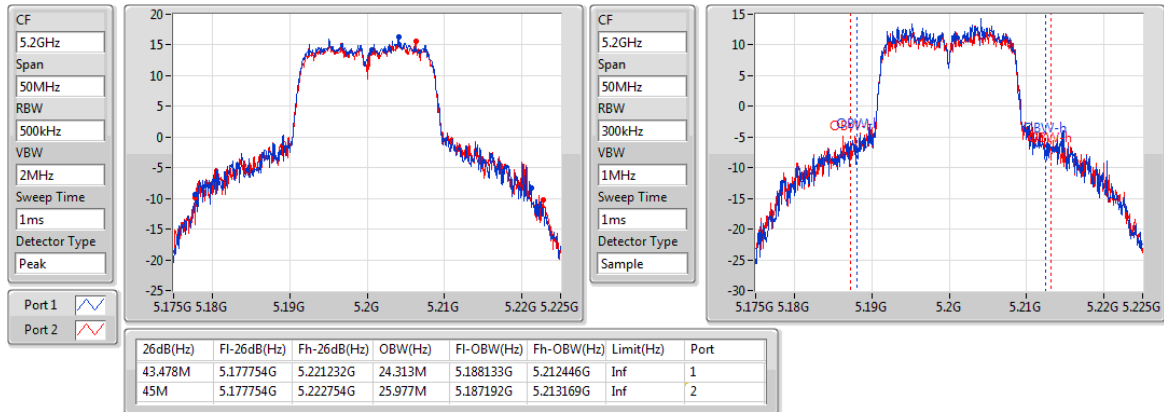
5180MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

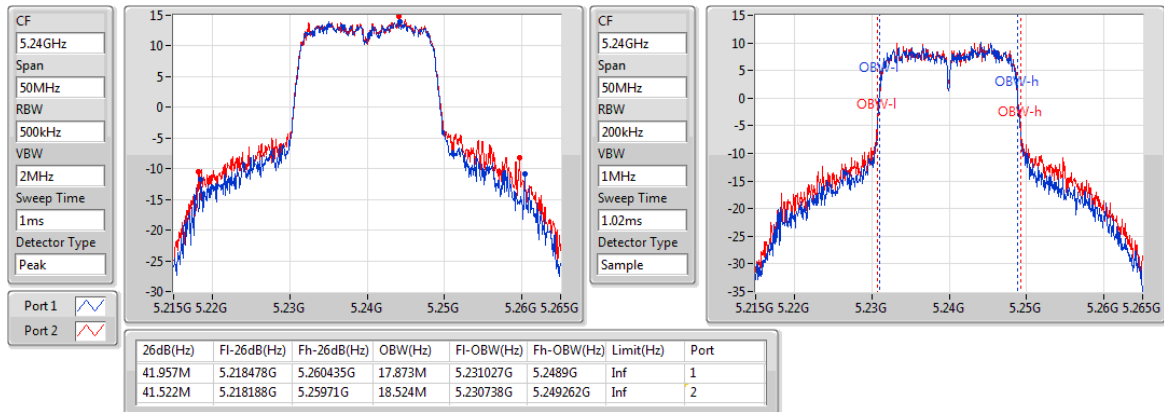
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802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

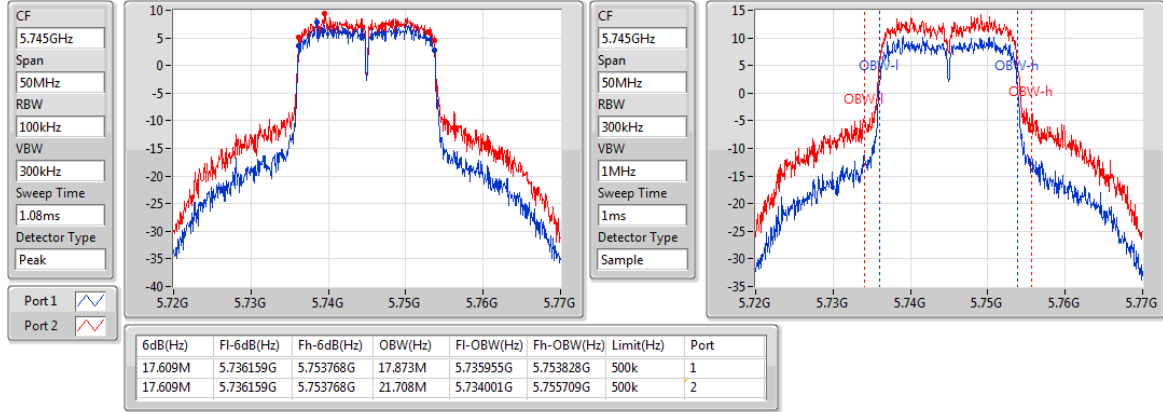
5240MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

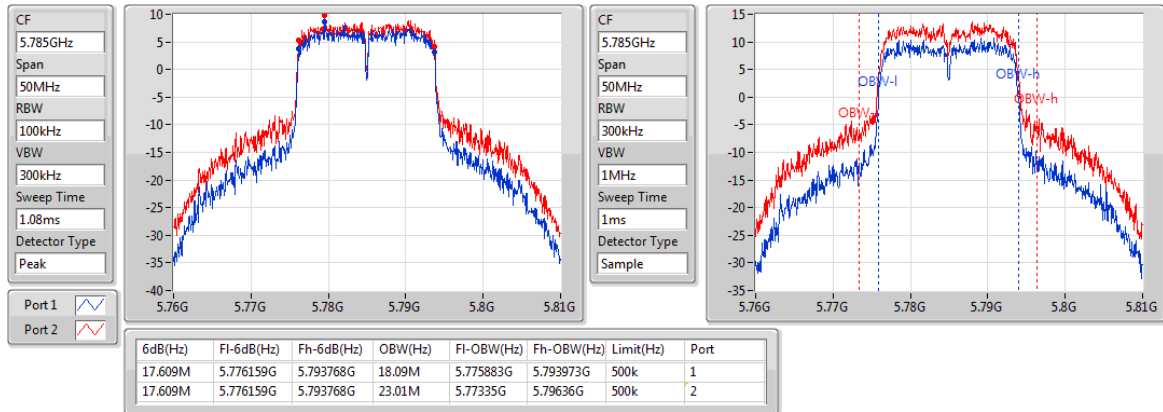
5745MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

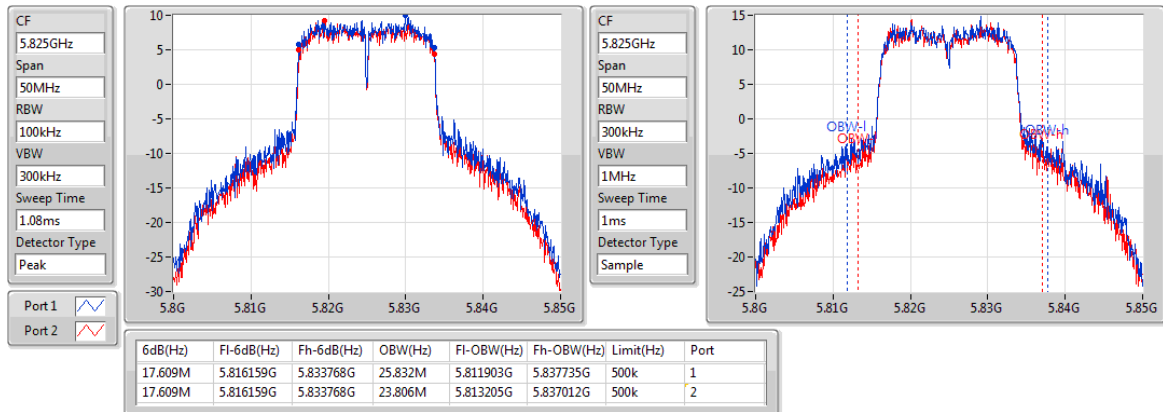
5785MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

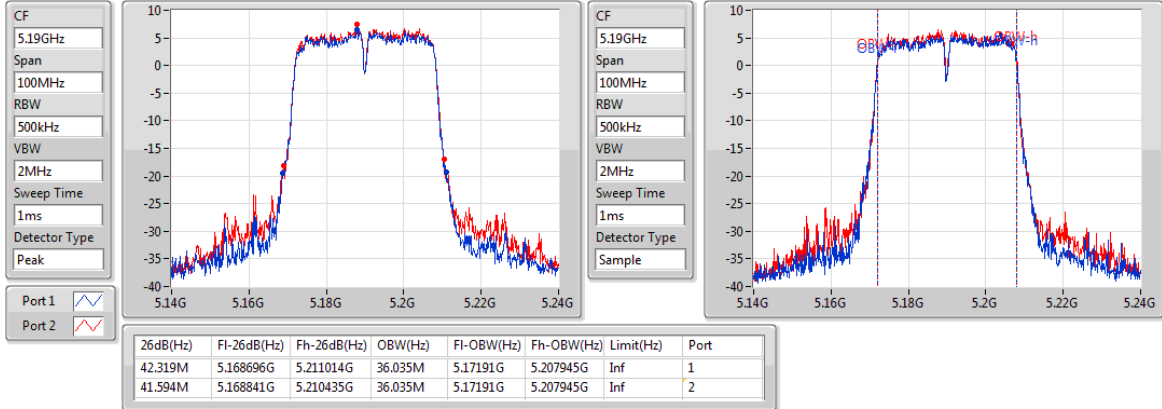
5825MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

EBW

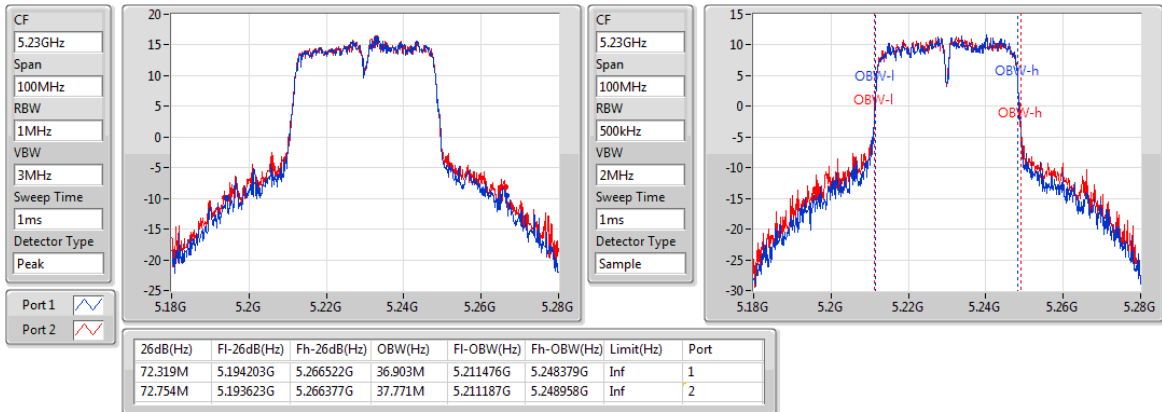
5190MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

EBW

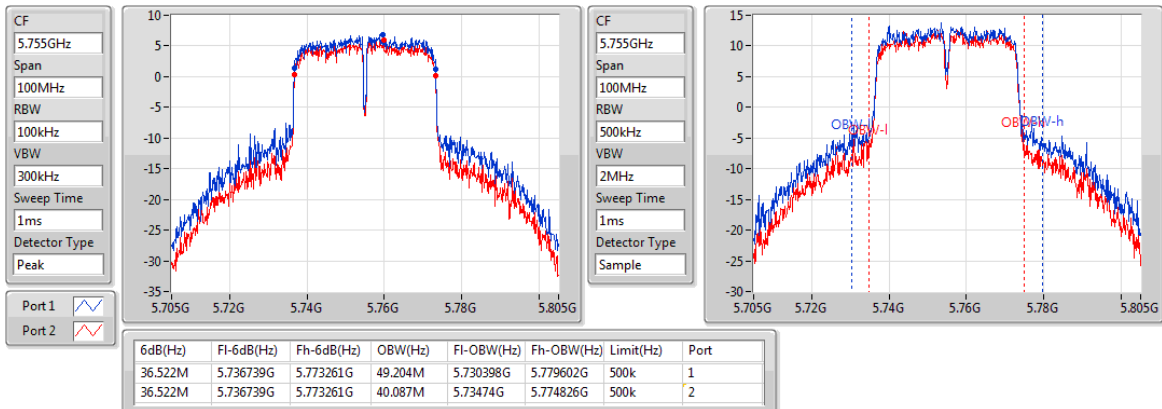
5230MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

EBW

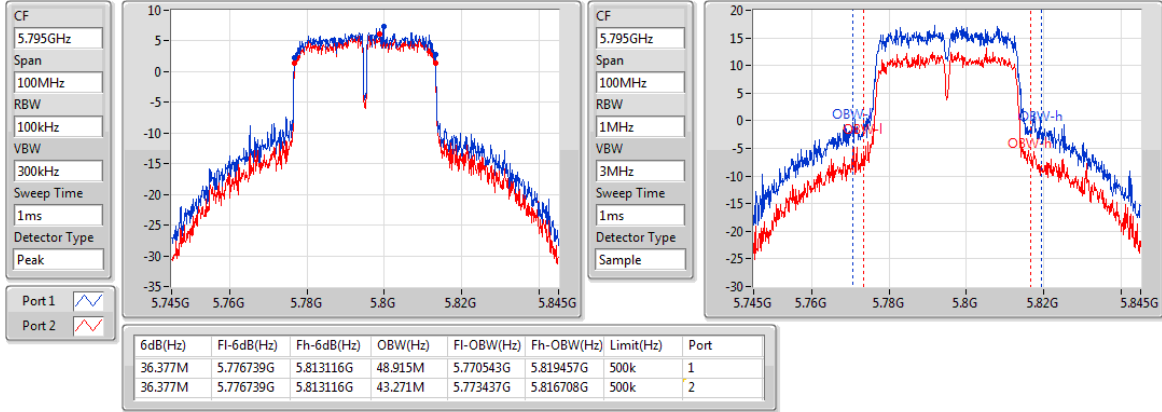
5755MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

EBW

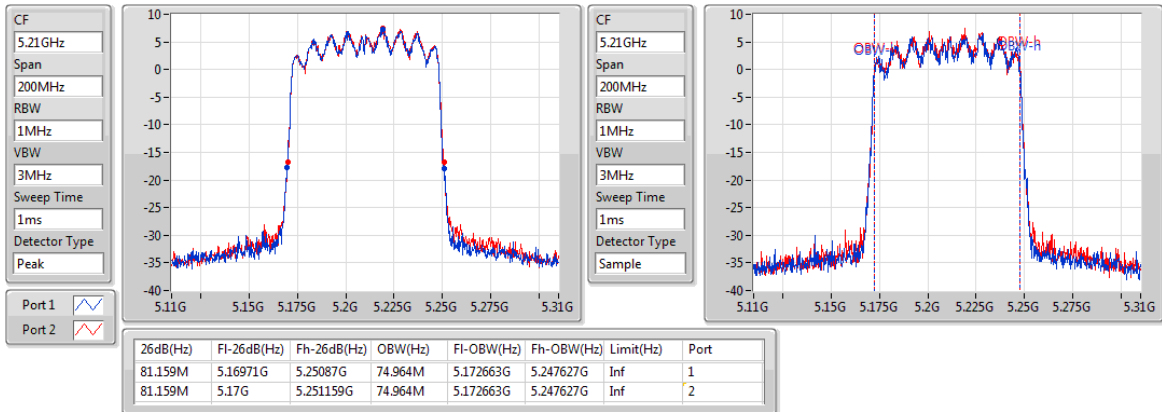
5795MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

EBW

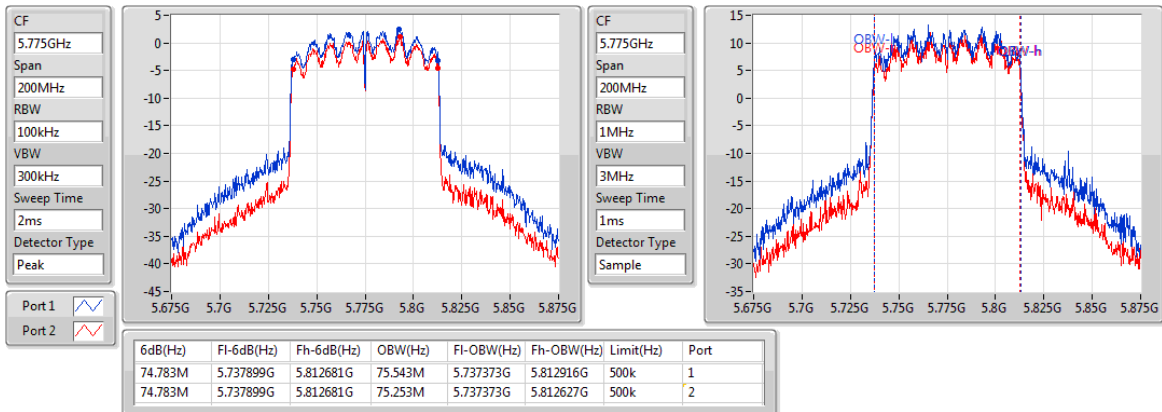
5210MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

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

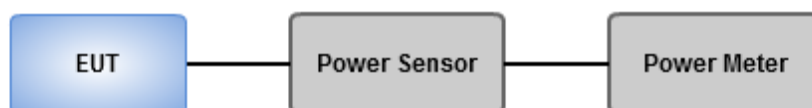
Frequency Band (MHz)	Limit
☒ 5725 ~ 5850	Conducted Power: 1 W

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

Ambient Condition	18°C / 63%	Tested By	Aska Huang
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Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	25.55	0.35892	28.82	0.76208
802.11ac VHT20_Nss1,(MCS0)_2TX	26.20	0.41687	29.47	0.88512
802.11ac VHT40_Nss1,(MCS0)_2TX	25.07	0.32137	28.34	0.68234
802.11ac VHT80_Nss1,(MCS0)_2TX	18.76	0.07516	22.03	0.15959
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	26.69	0.46666	29.99	0.99770
802.11ac VHT20_Nss1,(MCS0)_2TX	26.68	0.46559	29.98	0.99541
802.11ac VHT40_Nss1,(MCS0)_2TX	26.53	0.44978	29.83	0.96161
802.11ac VHT80_Nss1,(MCS0)_2TX	23.28	0.21281	26.58	0.45499

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.27	20.52	20.31	23.43	30.00	26.70	36.00
5200MHz	Pass	3.27	22.65	22.43	25.55	30.00	28.82	36.00
5240MHz	Pass	3.27	22.24	22.13	25.20	30.00	28.47	36.00
5745MHz	Pass	3.30	23.23	23.66	26.46	30.00	29.76	36.00
5785MHz	Pass	3.30	23.57	23.79	26.69	30.00	29.99	36.00
5825MHz	Pass	3.30	23.49	23.72	26.62	30.00	29.92	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.27	20.32	20.23	23.29	30.00	26.56	36.00
5200MHz	Pass	3.27	23.42	22.95	26.20	30.00	29.47	36.00
5240MHz	Pass	3.27	22.22	22.08	25.16	30.00	28.43	36.00
5745MHz	Pass	3.30	23.45	23.56	26.52	30.00	29.82	36.00
5785MHz	Pass	3.30	23.72	23.61	26.68	30.00	29.98	36.00
5825MHz	Pass	3.30	23.25	23.58	26.43	30.00	29.73	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	3.27	17.01	17.15	20.09	30.00	23.36	36.00
5230MHz	Pass	3.27	22.03	22.08	25.07	30.00	28.34	36.00
5755MHz	Pass	3.30	23.36	23.67	26.53	30.00	29.83	36.00
5795MHz	Pass	3.30	23.28	23.64	26.47	30.00	29.77	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	3.27	15.85	15.65	18.76	30.00	22.03	36.00
5775MHz	Pass	3.30	20.11	20.43	23.28	30.00	26.58	36.00

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

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

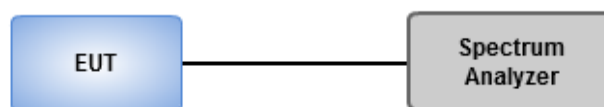
For 5150 ~ 5250 MHz

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.

For 5725 ~ 5850 MHz

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.

3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

Ambient Condition	18°C / 63%	Tested By	Aska Huang
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Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	12.36	18.64
802.11ac VHT20_Nss1,(MCS0)_2TX	13.06	19.34
802.11ac VHT40_Nss1,(MCS0)_2TX	9.56	15.84
802.11ac VHT80_Nss1,(MCS0)_2TX	1.43	7.71
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	12.63	18.94
802.11ac VHT20_Nss1,(MCS0)_2TX	11.68	17.99
802.11ac VHT40_Nss1,(MCS0)_2TX	9.87	16.18
802.11ac VHT80_Nss1,(MCS0)_2TX	5.28	11.59

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)	PD (dBm/R BW)	PD Limit (dBm/R BW)	EIRP PD (dBm/R BW)	EIRP PD Limit (dBm/R BW)
802.11a_Nss1,(6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.28	7.91	7.85	10.73	16.72	17.01	23.00
5200MHz	Pass	6.28	9.71	9.43	12.36	16.72	18.64	23.00
5240MHz	Pass	6.28	9.41	9.62	12.25	16.72	18.53	23.00
5745MHz	Pass	6.31	10.00	10.33	12.52	29.69	18.83	36.00
5785MHz	Pass	6.31	9.72	9.82	12.36	29.69	18.67	36.00
5825MHz	Pass	6.31	9.63	10.11	12.63	29.69	18.94	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	6.28	7.37	7.63	10.41	16.72	16.69	23.00
5200MHz	Pass	6.28	10.29	10.14	13.06	16.72	19.34	23.00
5240MHz	Pass	6.28	8.92	9.07	12.01	16.72	18.29	23.00
5745MHz	Pass	6.31	8.27	9.50	11.68	29.69	17.99	36.00
5785MHz	Pass	6.31	8.22	9.10	11.61	29.69	17.92	36.00
5825MHz	Pass	6.31	8.09	9.31	11.44	29.69	17.75	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	6.28	1.46	1.89	4.49	16.72	10.77	23.00
5230MHz	Pass	6.28	6.72	6.98	9.56	16.72	15.84	23.00
5755MHz	Pass	6.31	7.16	6.43	9.70	29.69	16.01	36.00
5795MHz	Pass	6.31	7.25	6.74	9.87	29.69	16.18	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	6.28	-1.70	-0.94	1.43	16.72	7.71	23.00
5775MHz	Pass	6.31	3.10	1.62	5.28	29.69	11.59	36.00

DG = Directional Gain

For 5.15 ~ 5.25 GHz,

Directional gain = $3.27 + 10 \cdot \log(2/1) = 6.28 \text{ dBi} > 6 \text{ dBi}$, limit shall be reduced to $17 \text{ dBm} - (6.28 \text{ dBi} - 6 \text{ dBi}) = 16.72 \text{ dBm}$

For 5.725 ~ 5.85 GHz

Directional gain = $3.3 + 10 \cdot \log(2/1) = 6.31 \text{ dBi} > 6 \text{ dBi}$, limit shall be reduced to $30 \text{ dBm} - (6.31 \text{ dBi} - 6 \text{ dBi}) = 29.69 \text{ dBm}$

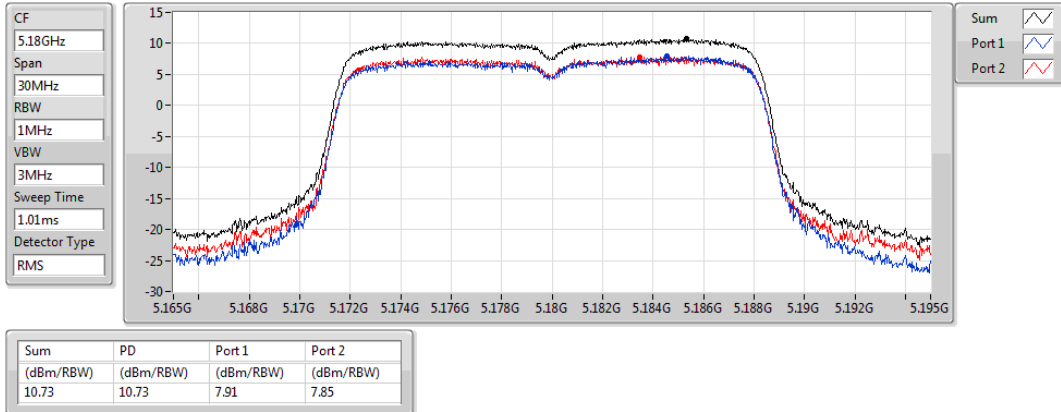
RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

802.11a_Nss1,(6Mbps)_2TX

PSD

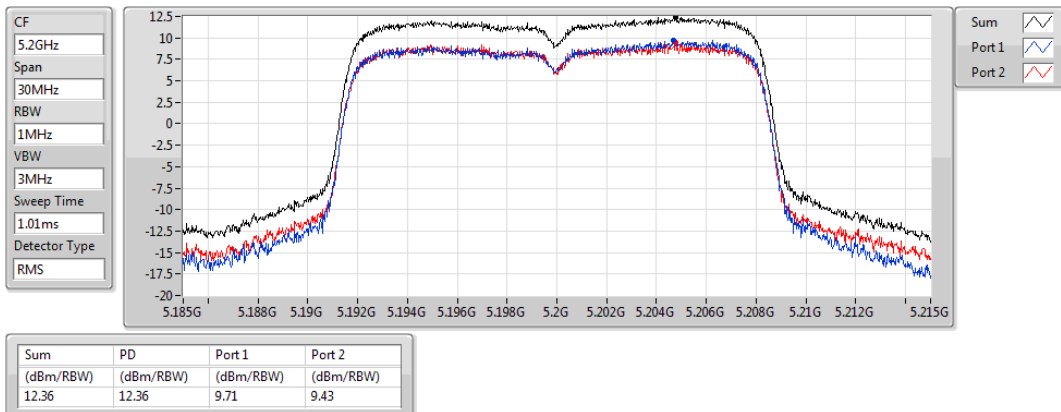
5180MHz



802.11a_Nss1,(6Mbps)_2TX

PSD

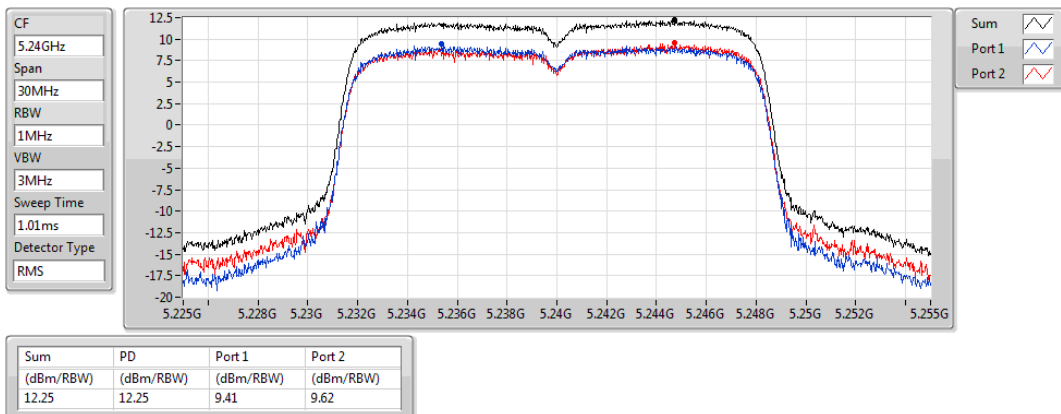
5200MHz



802.11a_Nss1,(6Mbps)_2TX

PSD

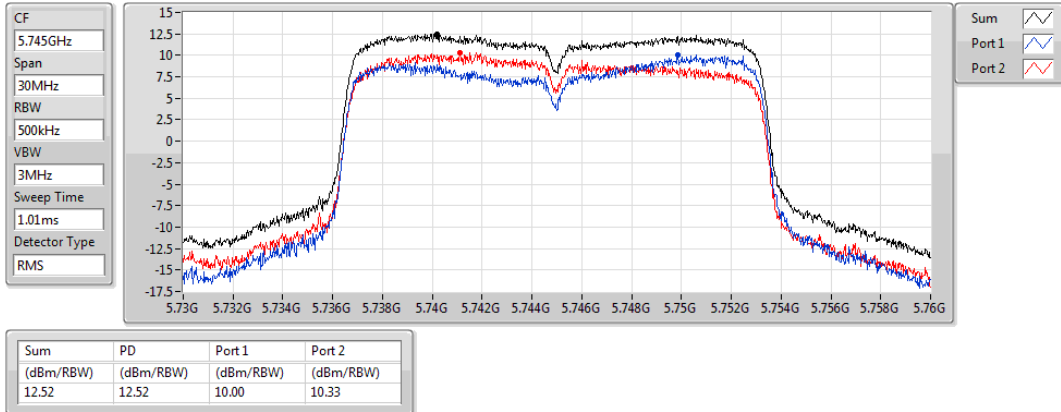
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802.11a_Nss1,(6Mbps)_2TX

PSD

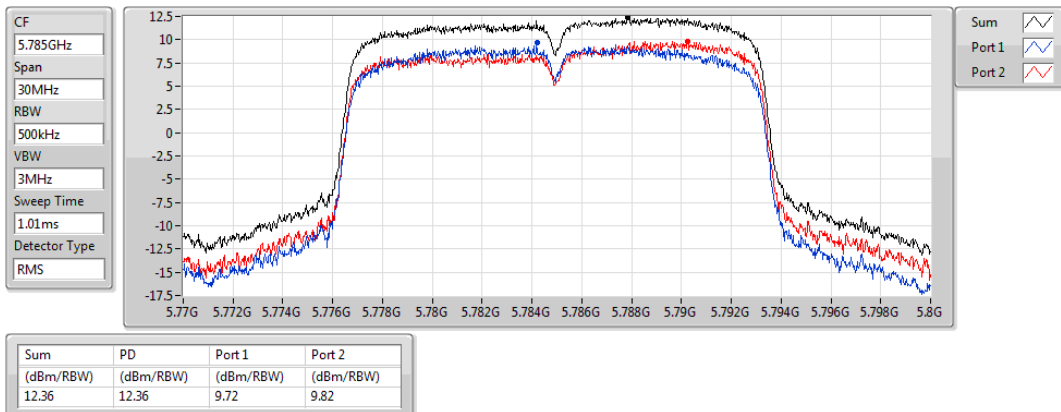
5745MHz



802.11a_Nss1,(6Mbps)_2TX

PSD

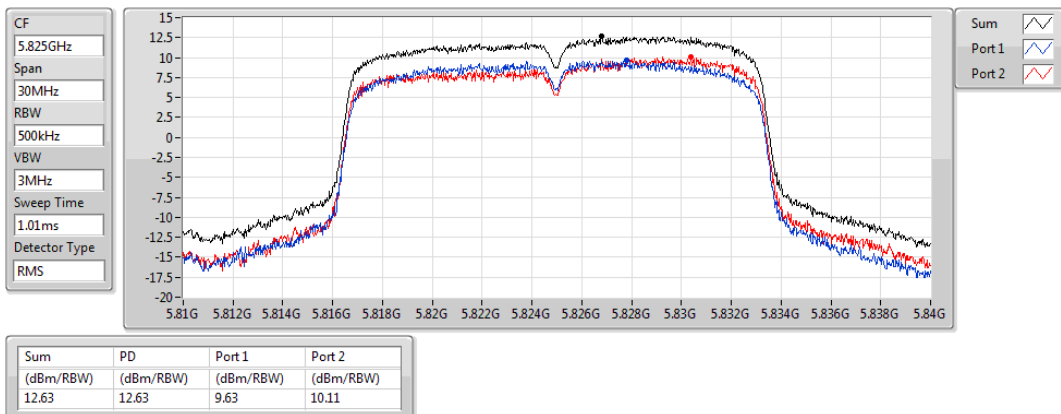
5785MHz



802.11a_Nss1,(6Mbps)_2TX

PSD

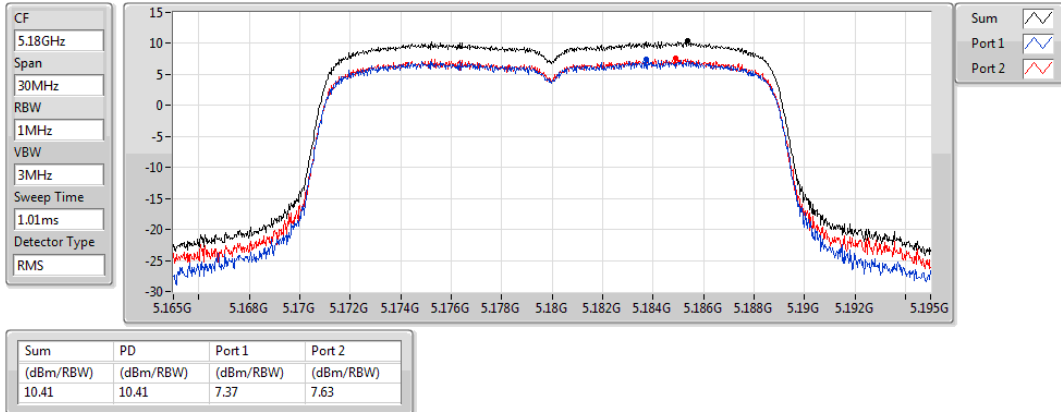
5825MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

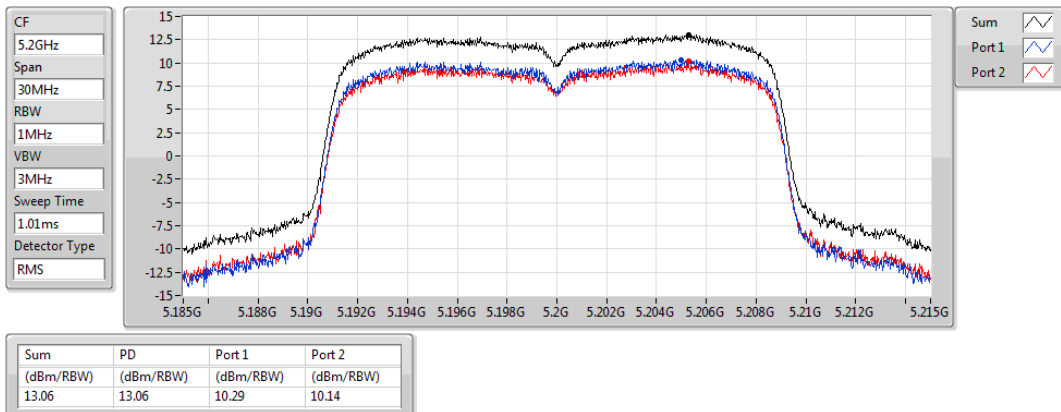
5180MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

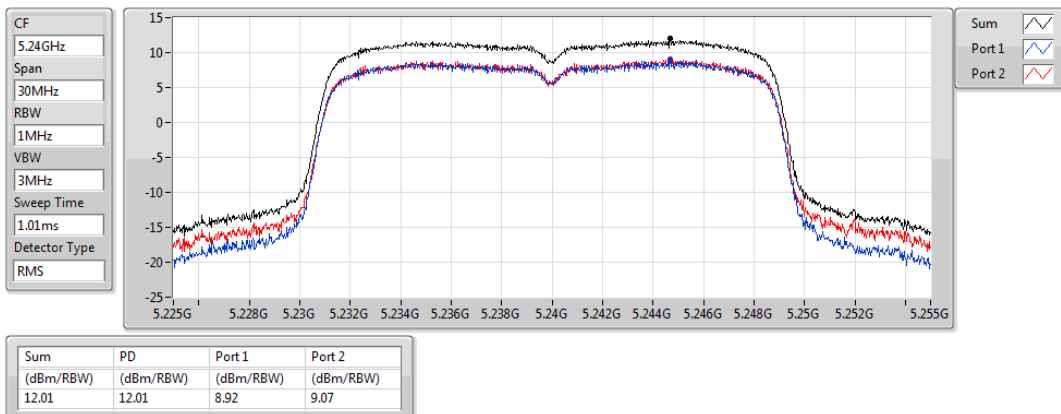
5200MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

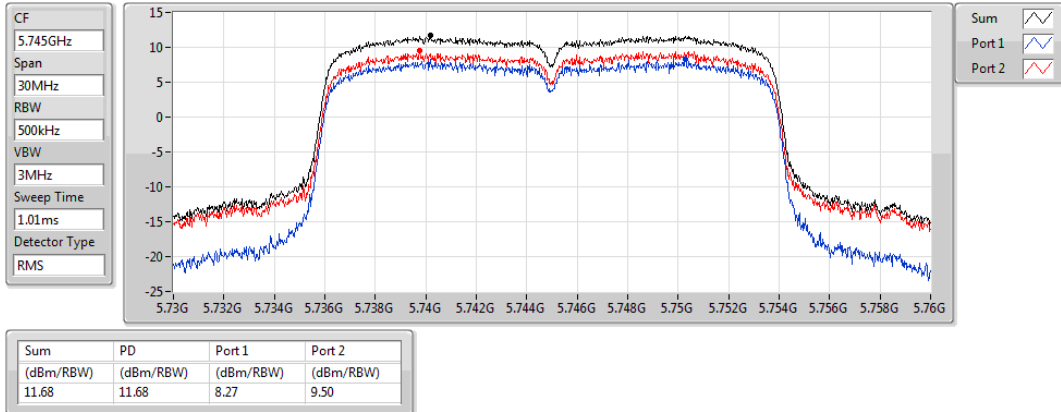
5240MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

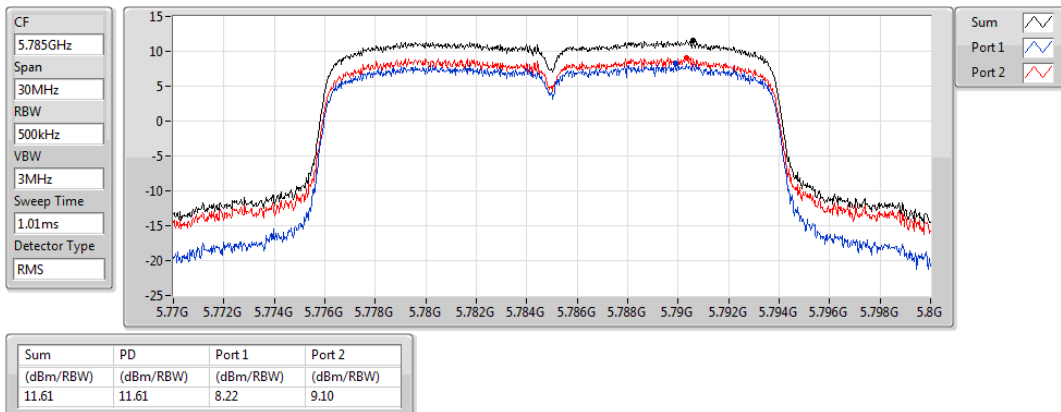
5745MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

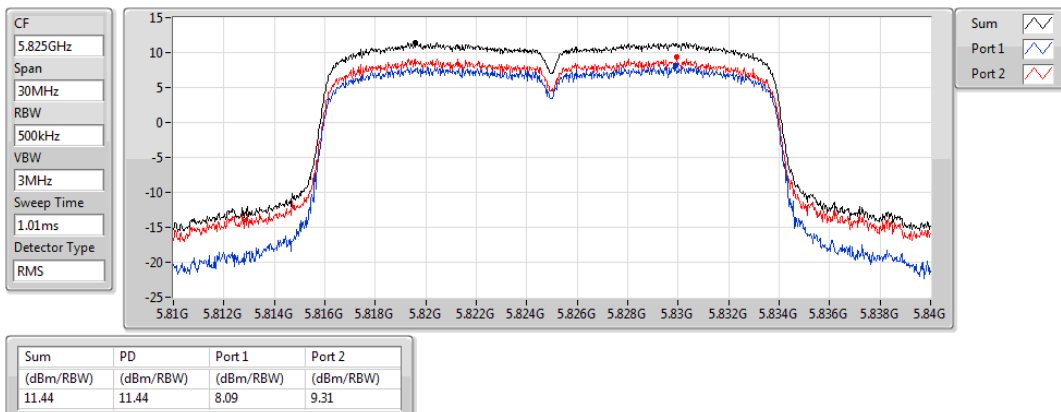
5785MHz



802.11ac VHT20_Nss1,(MCS0)_2TX

PSD

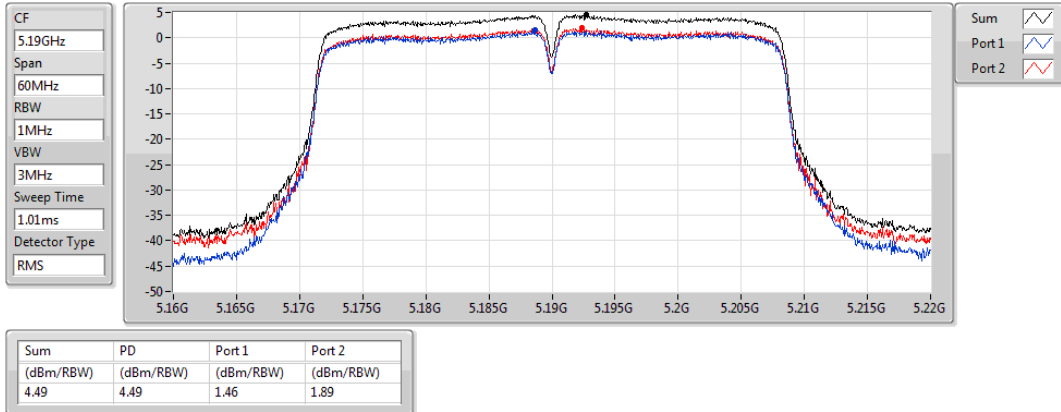
5825MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

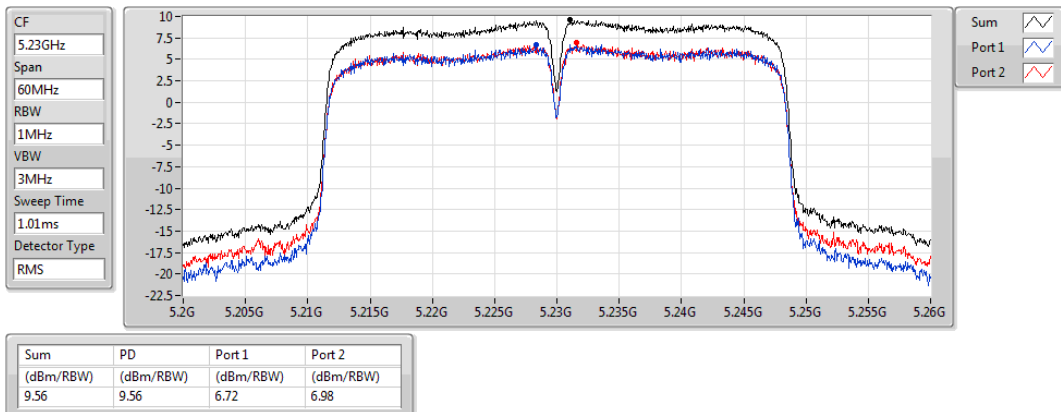
5190MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

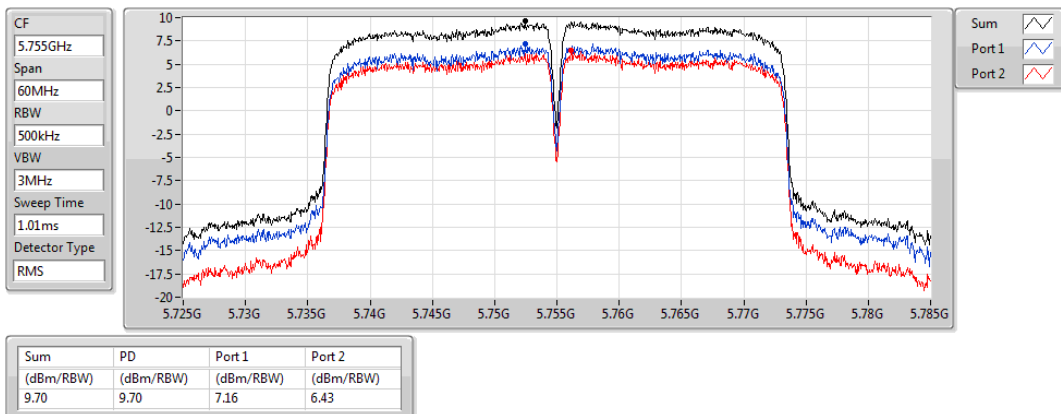
5230MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

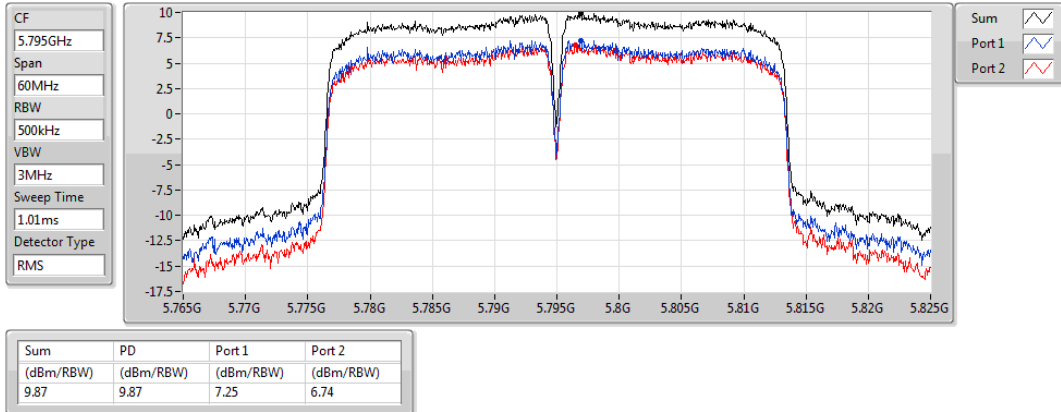
5755MHz



802.11ac VHT40_Nss1,(MCS0)_2TX

PSD

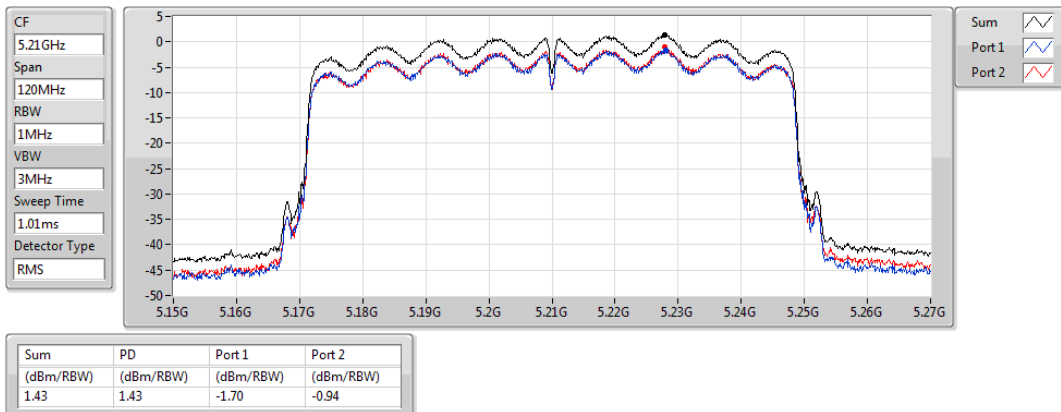
5795MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

PSD

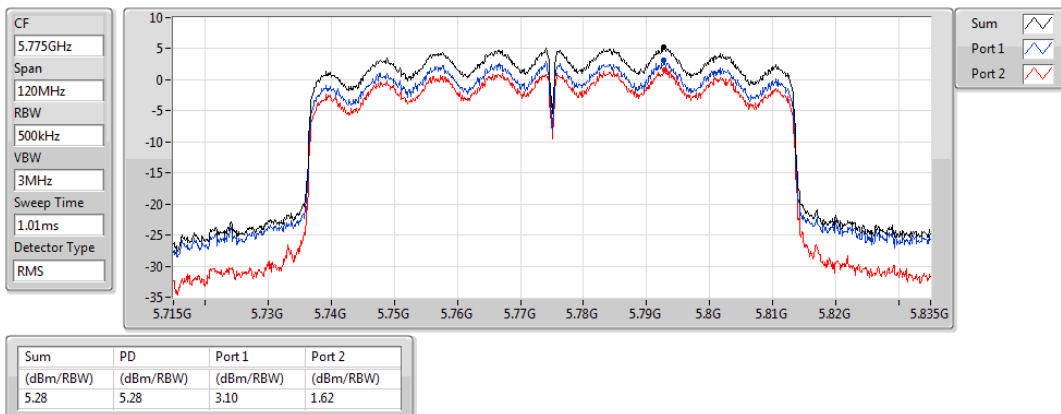
5210MHz



802.11ac VHT80_Nss1,(MCS0)_2TX

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

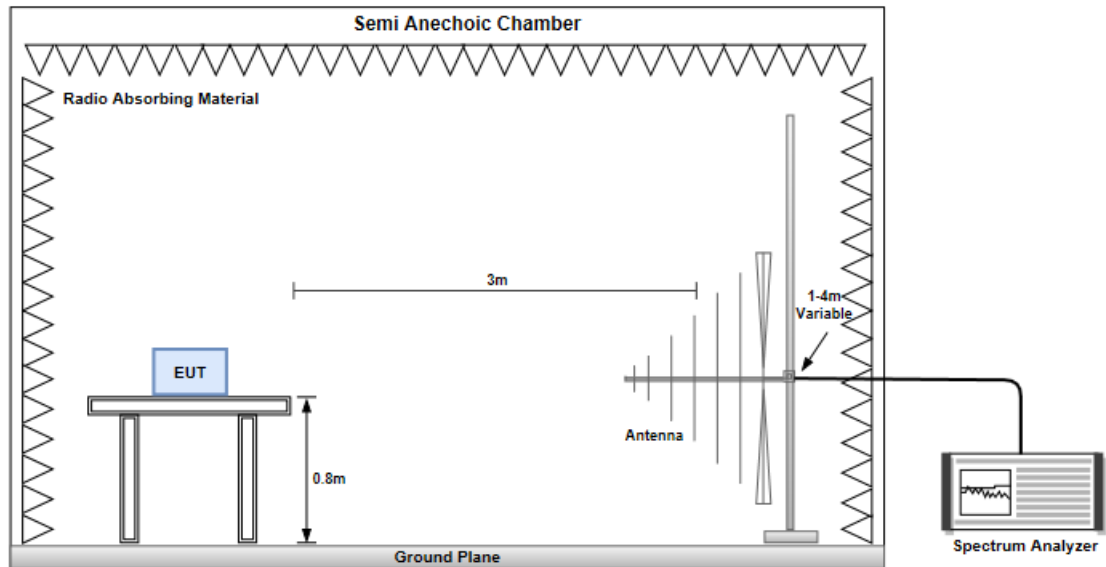
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

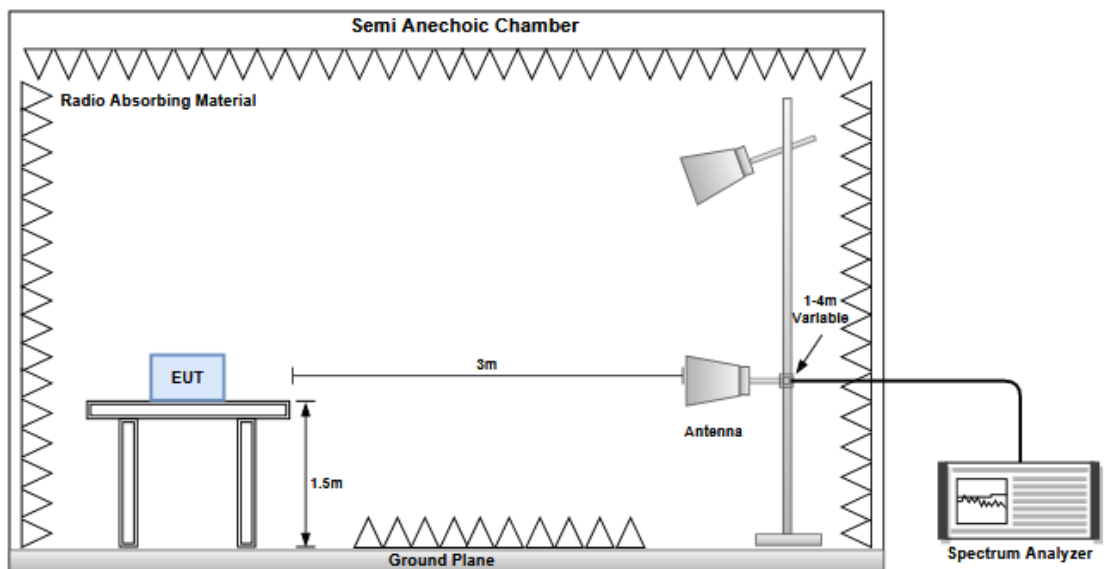
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Test By :Roger Lu Temperature(°C):22 Humidity(%):65			
Level (dBuV/m) <			

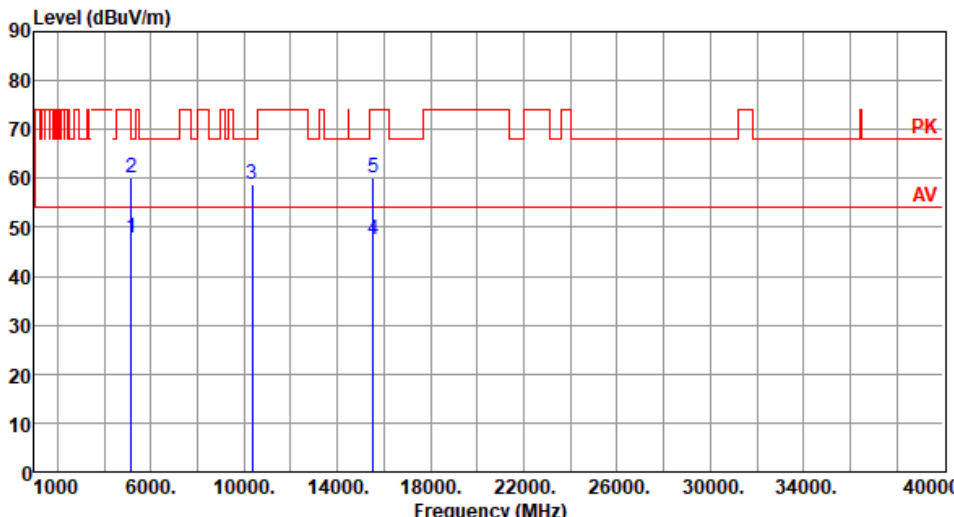
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		
Test By :Roger Lu Temperature(°C):22 Humidity(%):65			
Level (dBuV/m) <			

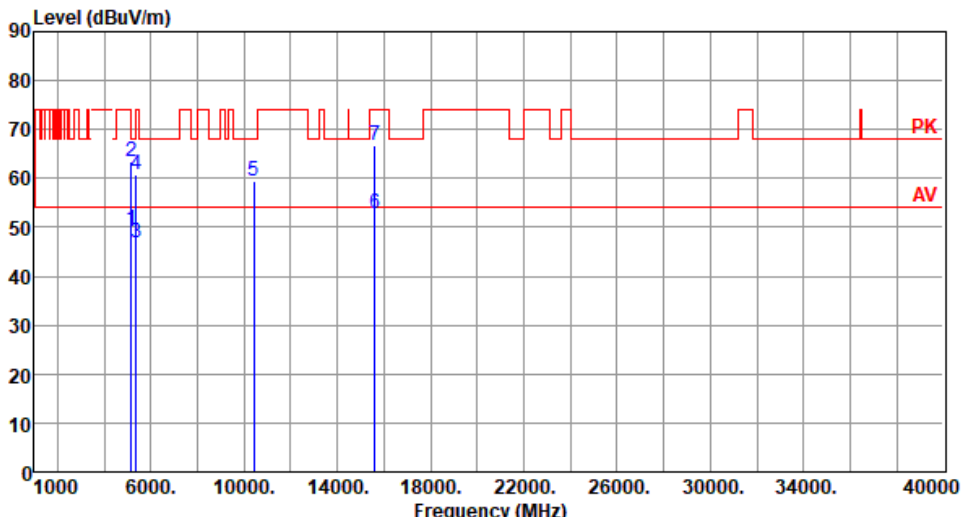
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		
Test By :Roger Lu Temperature(°C):22 Humidity(%):65			
Level (dBuV/m)			

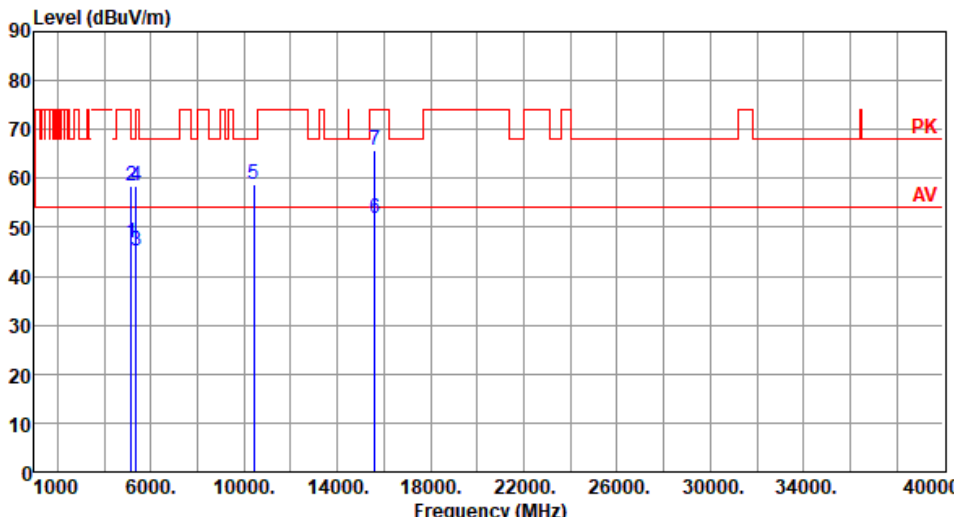
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		
Test By :Roger Lu Temperature(°C):22 Humidity(%):65			
Level (dBuV/m)			

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

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

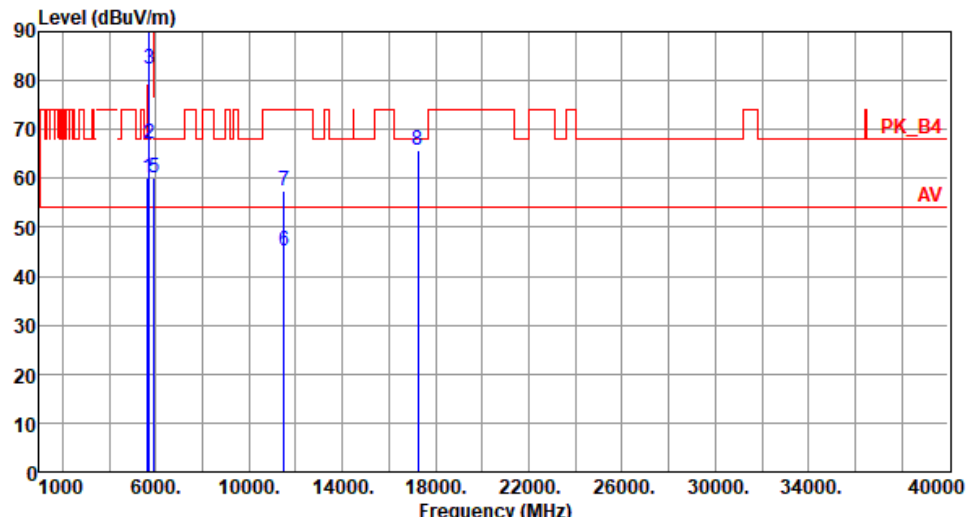
Modulation	11a	Test Freq. (MHz)	5180																																																																								
Polarization	Vertical																																																																										
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																											
Level (dBuV/m)  <table><tr><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>cm</td><td>deg</td></tr><tr><td>1</td><td>5150.00</td><td>47.93</td><td>54.00</td><td>-6.07</td><td>43.35</td><td>4.58</td><td>Average</td><td>160 348</td></tr><tr><td>2</td><td>5150.00</td><td>60.16</td><td>74.00</td><td>-13.84</td><td>55.58</td><td>4.58</td><td>Peak</td><td>160 348</td></tr><tr><td>3</td><td>10360.00</td><td>58.62</td><td>68.20</td><td>-9.58</td><td>44.24</td><td>14.38</td><td>Peak</td><td>100 229</td></tr><tr><td>4</td><td>15540.00</td><td>47.38</td><td>54.00</td><td>-6.62</td><td>32.31</td><td>15.07</td><td>Average</td><td>100 300</td></tr><tr><td>5</td><td>15540.00</td><td>60.14</td><td>74.00</td><td>-13.86</td><td>45.07</td><td>15.07</td><td>Peak</td><td>100 300</td></tr></table>				Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn	MHz	level	dBuV/m	dB	reading	dB		High	Table								cm	deg	1	5150.00	47.93	54.00	-6.07	43.35	4.58	Average	160 348	2	5150.00	60.16	74.00	-13.84	55.58	4.58	Peak	160 348	3	10360.00	58.62	68.20	-9.58	44.24	14.38	Peak	100 229	4	15540.00	47.38	54.00	-6.62	32.31	15.07	Average	100 300	5	15540.00	60.14	74.00	-13.86	45.07	15.07	Peak	100 300
Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																			
MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																			
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5	15540.00	60.14	74.00	-13.86	45.07	15.07	Peak	100 300																																																																			
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).																																																																											

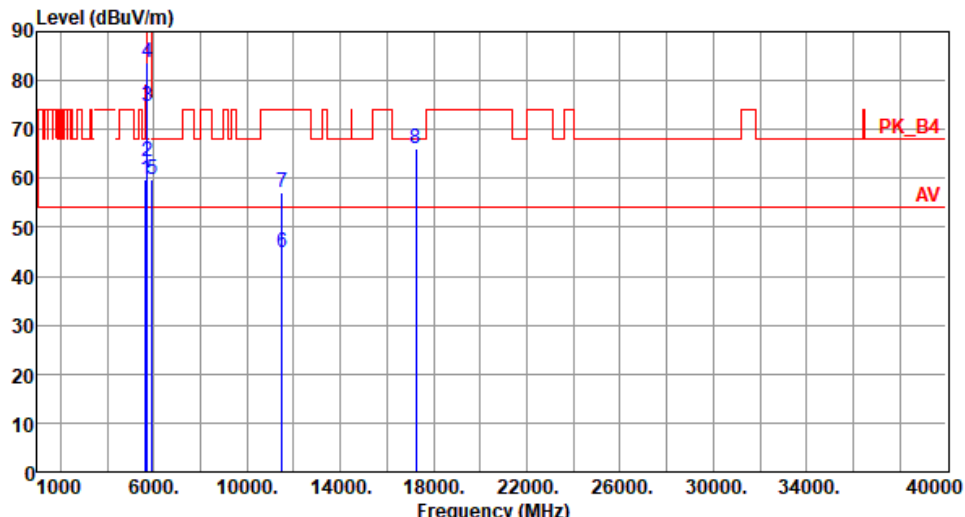
Modulation	11a	Test Freq. (MHz)	5200																																																																																
Polarization	Horizontal																																																																																		
Test By :Akun Chung Temperature(°C):23 Humidity(%):64																																																																																			
Level (dBuV/m)  Frequency (MHz) <table><thead><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></thead><tbody><tr><td>1</td><td>5150.00</td><td>49.47</td><td>54.00</td><td>-4.53</td><td>44.89</td><td>4.58</td><td>Average</td><td>168</td><td>74</td></tr><tr><td>2</td><td>5150.00</td><td>63.29</td><td>74.00</td><td>-10.71</td><td>58.71</td><td>4.58</td><td>Peak</td><td>168</td><td>74</td></tr><tr><td>3</td><td>5350.00</td><td>46.67</td><td>54.00</td><td>-7.33</td><td>42.80</td><td>3.87</td><td>Average</td><td>168</td><td>74</td></tr><tr><td>4</td><td>5350.00</td><td>60.75</td><td>74.00</td><td>-13.25</td><td>56.88</td><td>3.87</td><td>Peak</td><td>168</td><td>74</td></tr><tr><td>5</td><td>10400.00</td><td>59.32</td><td>68.20</td><td>-8.88</td><td>44.83</td><td>14.49</td><td>Peak</td><td>100</td><td>211</td></tr><tr><td>6</td><td>15600.00</td><td>52.80</td><td>54.00</td><td>-1.20</td><td>37.98</td><td>14.82</td><td>Average</td><td>214</td><td>355</td></tr><tr><td>7</td><td>15600.00</td><td>66.70</td><td>74.00</td><td>-7.30</td><td>51.88</td><td>14.82</td><td>Peak</td><td>214</td><td>355</td></tr></tbody></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	5150.00	49.47	54.00	-4.53	44.89	4.58	Average	168	74	2	5150.00	63.29	74.00	-10.71	58.71	4.58	Peak	168	74	3	5350.00	46.67	54.00	-7.33	42.80	3.87	Average	168	74	4	5350.00	60.75	74.00	-13.25	56.88	3.87	Peak	168	74	5	10400.00	59.32	68.20	-8.88	44.83	14.49	Peak	100	211	6	15600.00	52.80	54.00	-1.20	37.98	14.82	Average	214	355	7	15600.00	66.70	74.00	-7.30	51.88	14.82	Peak	214	355
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																										
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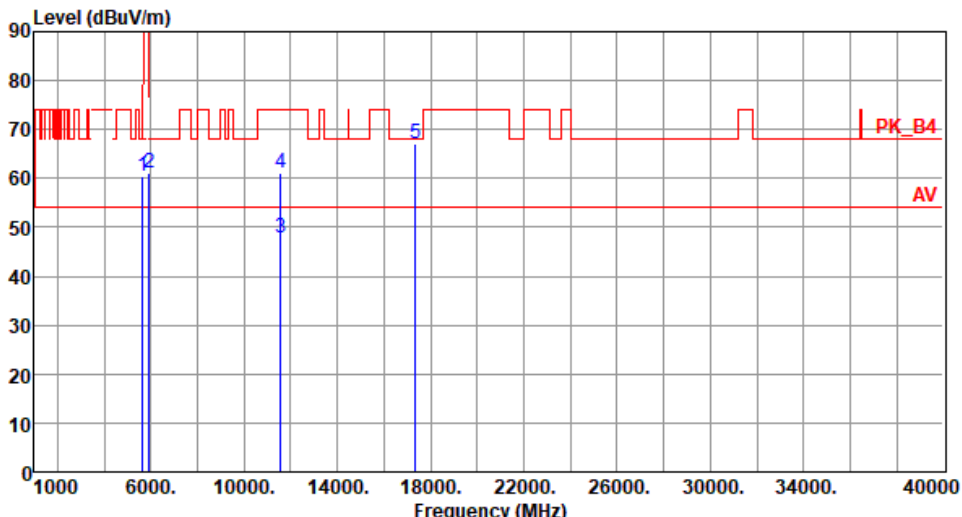
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	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																														
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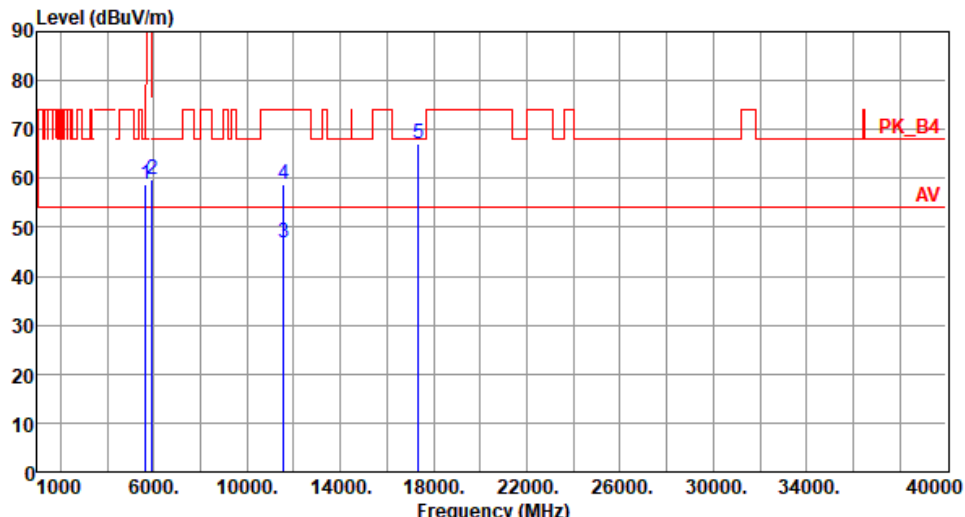
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

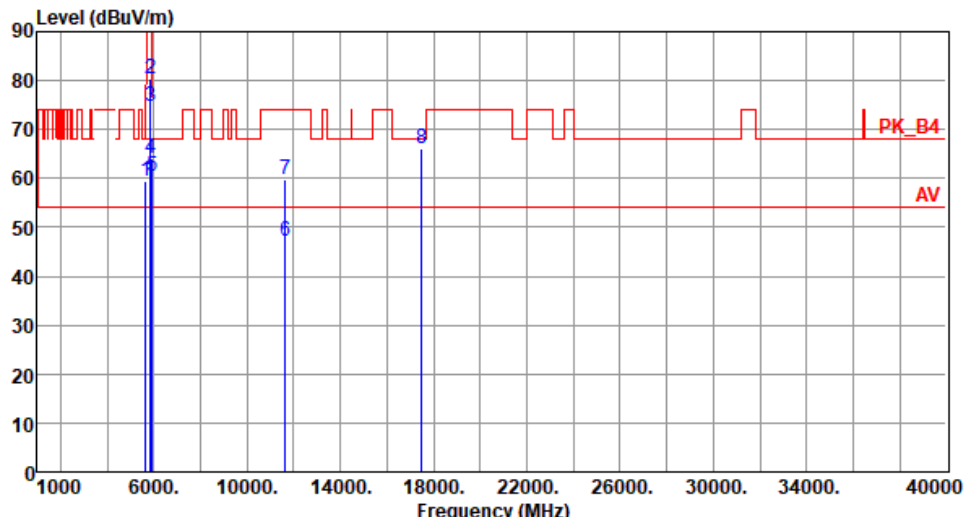
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

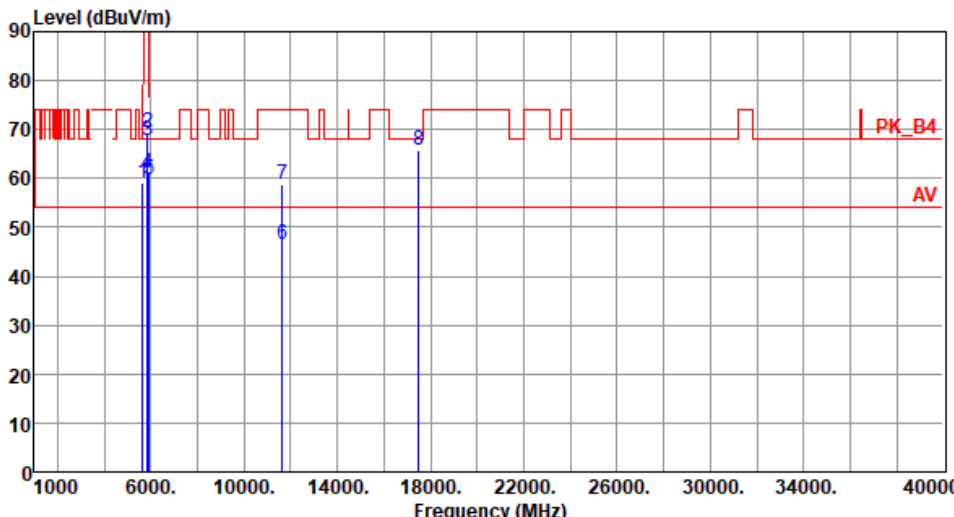
Modulation	11a	Test Freq. (MHz)	5745																																																																																																														
Polarization	Horizontal																																																																																																																
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Level (dBuV/m)  Frequency (MHz) <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5650.00</td><td>60.00</td><td>68.20</td><td>-8.20</td><td>55.55</td><td>4.45</td><td>Peak</td><td>156</td><td>121</td></tr><tr><td>2</td><td>5700.00</td><td>67.12</td><td>105.20</td><td>-38.08</td><td>62.53</td><td>4.59</td><td>Peak</td><td>156</td><td>121</td></tr><tr><td>3</td><td>5720.00</td><td>82.31</td><td>110.80</td><td>-28.49</td><td>77.58</td><td>4.73</td><td>Peak</td><td>156</td><td>121</td></tr><tr><td>4</td><td>5725.00</td><td>91.21</td><td>122.20</td><td>-30.99</td><td>86.45</td><td>4.76</td><td>Peak</td><td>156</td><td>121</td></tr><tr><td>5</td><td>5925.00</td><td>60.12</td><td>68.20</td><td>-8.08</td><td>54.74</td><td>5.38</td><td>Peak</td><td>156</td><td>121</td></tr><tr><td>6</td><td>11490.00</td><td>45.28</td><td>54.00</td><td>-8.72</td><td>30.62</td><td>14.66</td><td>Average</td><td>213</td><td>331</td></tr><tr><td>7</td><td>11490.00</td><td>57.54</td><td>74.00</td><td>-16.46</td><td>42.88</td><td>14.66</td><td>Peak</td><td>213</td><td>331</td></tr><tr><td>8</td><td>17235.00</td><td>65.85</td><td>68.20</td><td>-2.35</td><td>47.77</td><td>18.08</td><td>Peak</td><td>121</td><td>18</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table									cm	deg	1	5650.00	60.00	68.20	-8.20	55.55	4.45	Peak	156	121	2	5700.00	67.12	105.20	-38.08	62.53	4.59	Peak	156	121	3	5720.00	82.31	110.80	-28.49	77.58	4.73	Peak	156	121	4	5725.00	91.21	122.20	-30.99	86.45	4.76	Peak	156	121	5	5925.00	60.12	68.20	-8.08	54.74	5.38	Peak	156	121	6	11490.00	45.28	54.00	-8.72	30.62	14.66	Average	213	331	7	11490.00	57.54	74.00	-16.46	42.88	14.66	Peak	213	331	8	17235.00	65.85	68.20	-2.35	47.77	18.08	Peak	121	18
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																																								
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4	5725.00	91.21	122.20	-30.99	86.45	4.76	Peak	156	121																																																																																																								
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Modulation	11a	Test Freq. (MHz)	5745																																																																																										
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	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
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Modulation	11a	Test Freq. (MHz)	5785																																																												
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	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																						
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	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																										
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Modulation	11a	Test Freq. (MHz)	5825																																																																																																														
Polarization	Horizontal																																																																																																																
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Polarization	Vertical																																																																																												
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																																													
Level (dBuV/m)  Frequency (MHz) <table><thead><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></thead><tbody><tr><td>1</td><td>5650.00</td><td>59.26</td><td>68.20</td><td>-8.94</td><td>54.81</td><td>4.45</td><td>Peak</td><td>132</td><td>349</td></tr><tr><td>2</td><td>5850.00</td><td>69.38</td><td>122.20</td><td>-52.82</td><td>64.00</td><td>5.38</td><td>Peak</td><td>132</td><td>349</td></tr><tr><td>3</td><td>5855.00</td><td>67.63</td><td>110.80</td><td>-43.17</td><td>62.26</td><td>5.37</td><td>Peak</td><td>132</td><td>349</td></tr><tr><td>4</td><td>5875.00</td><td>60.98</td><td>105.20</td><td>-44.22</td><td>55.60</td><td>5.38</td><td>Peak</td><td>132</td><td>349</td></tr><tr><td>5</td><td>5925.00</td><td>59.78</td><td>68.20</td><td>-8.42</td><td>54.40</td><td>5.38</td><td>Peak</td><td>132</td><td>349</td></tr><tr><td>6</td><td>11650.00</td><td>46.48</td><td>54.00</td><td>-7.52</td><td>32.13</td><td>14.35</td><td>Average</td><td>332</td><td>275</td></tr><tr><td>7</td><td>11650.00</td><td>58.76</td><td>74.00</td><td>-15.24</td><td>44.41</td><td>14.35</td><td>Peak</td><td>332</td><td>275</td></tr><tr><td>8</td><td>17475.00</td><td>65.59</td><td>68.20</td><td>-2.61</td><td>46.37</td><td>19.22</td><td>Peak</td><td>120</td><td>63</td></tr></tbody></table> 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).					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	59.26	68.20	-8.94	54.81	4.45	Peak	132	349	2	5850.00	69.38	122.20	-52.82	64.00	5.38	Peak	132	349	3	5855.00	67.63	110.80	-43.17	62.26	5.37	Peak	132	349	4	5875.00	60.98	105.20	-44.22	55.60	5.38	Peak	132	349	5	5925.00	59.78	68.20	-8.42	54.40	5.38	Peak	132	349	6	11650.00	46.48	54.00	-7.52	32.13	14.35	Average	332	275	7	11650.00	58.76	74.00	-15.24	44.41	14.35	Peak	332	275	8	17475.00	65.59	68.20	-2.61	46.37	19.22	Peak	120	63
	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	59.26	68.20	-8.94	54.81	4.45	Peak	132	349																																																																																				
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6	11650.00	46.48	54.00	-7.52	32.13	14.35	Average	332	275																																																																																				
7	11650.00	58.76	74.00	-15.24	44.41	14.35	Peak	332	275																																																																																				
8	17475.00	65.59	68.20	-2.61	46.37	19.22	Peak	120	63																																																																																				

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

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

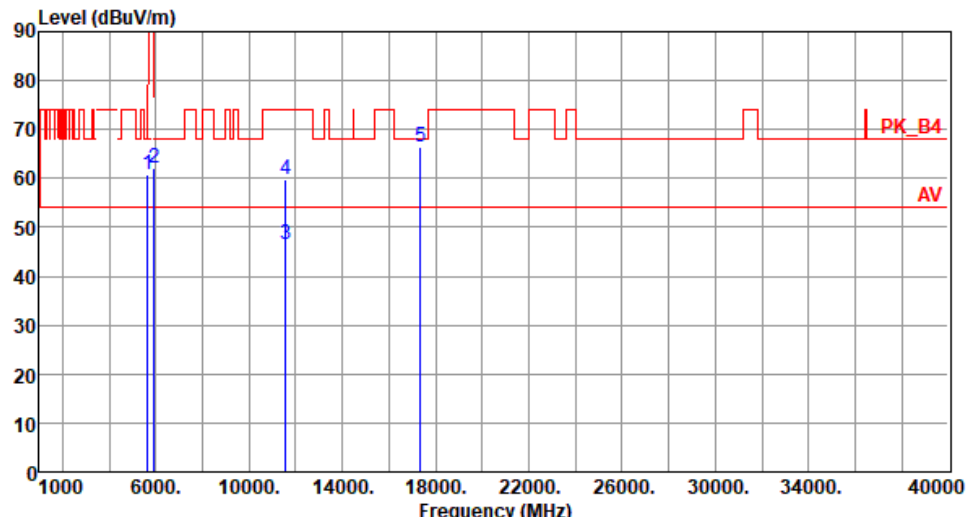
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

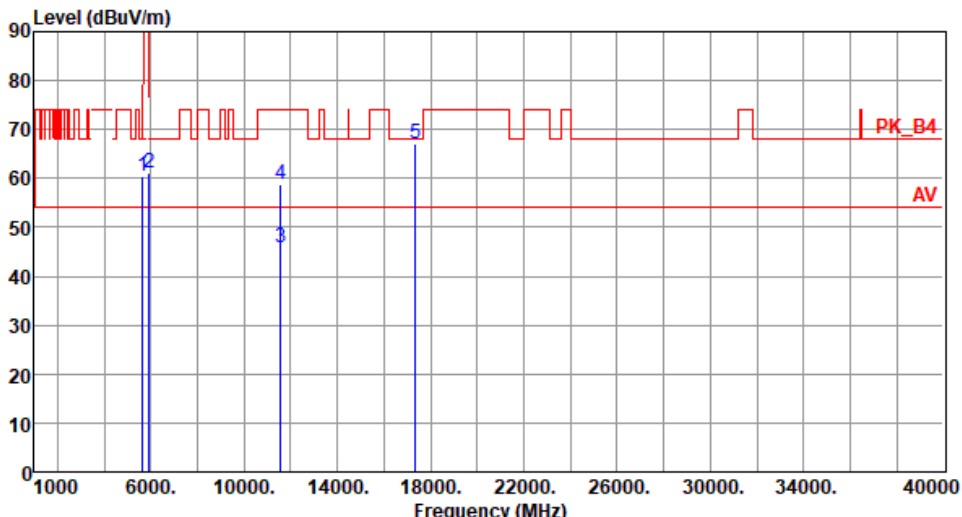
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

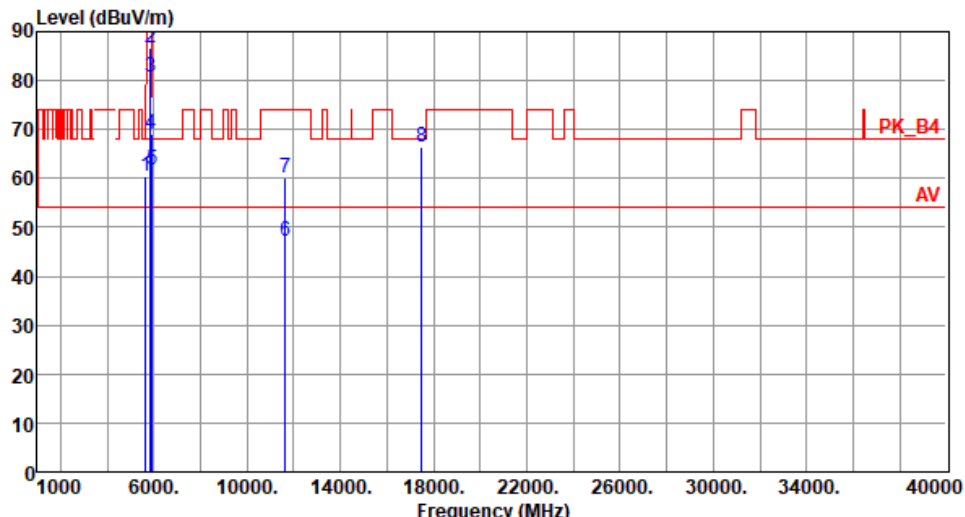
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5785																																																																																
Polarization	Horizontal																																																																																		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																																			
Level (dBuV/m)  Frequency (MHz) <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th>dBuV/m</th><th>dB</th><th>reading</th><th>dB</th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th>dBuV/m</th><th></th><th></th><th>dBuV</th><th></th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5650.00</td><td>60.78</td><td>68.20</td><td>-7.42</td><td>56.33</td><td>4.45</td><td>Peak</td><td>142</td><td>115</td></tr><tr><td>2</td><td>5925.00</td><td>62.03</td><td>68.20</td><td>-6.17</td><td>56.65</td><td>5.38</td><td>Peak</td><td>142</td><td>115</td></tr><tr><td>3</td><td>11570.00</td><td>46.57</td><td>54.00</td><td>-7.43</td><td>31.99</td><td>14.58</td><td>Average</td><td>213</td><td>327</td></tr><tr><td>4</td><td>11570.00</td><td>59.79</td><td>74.00</td><td>-14.21</td><td>45.21</td><td>14.58</td><td>Peak</td><td>213</td><td>327</td></tr><tr><td>5</td><td>17355.00</td><td>66.54</td><td>68.20</td><td>-1.66</td><td>47.83</td><td>18.71</td><td>Peak</td><td>116</td><td>16</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level	dBuV/m	dB	reading	dB		High	Table			dBuV/m			dBuV			cm	deg	1	5650.00	60.78	68.20	-7.42	56.33	4.45	Peak	142	115	2	5925.00	62.03	68.20	-6.17	56.65	5.38	Peak	142	115	3	11570.00	46.57	54.00	-7.43	31.99	14.58	Average	213	327	4	11570.00	59.79	74.00	-14.21	45.21	14.58	Peak	213	327	5	17355.00	66.54	68.20	-1.66	47.83	18.71	Peak	116	16
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																										
	MHz	level	dBuV/m	dB	reading	dB		High	Table																																																																										
		dBuV/m			dBuV			cm	deg																																																																										
1	5650.00	60.78	68.20	-7.42	56.33	4.45	Peak	142	115																																																																										
2	5925.00	62.03	68.20	-6.17	56.65	5.38	Peak	142	115																																																																										
3	11570.00	46.57	54.00	-7.43	31.99	14.58	Average	213	327																																																																										
4	11570.00	59.79	74.00	-14.21	45.21	14.58	Peak	213	327																																																																										
5	17355.00	66.54	68.20	-1.66	47.83	18.71	Peak	116	16																																																																										
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																																																														
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																															
Level (dBuV/m)  Frequency (MHz) <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>60.34</td><td>68.20</td><td>-7.86</td><td>55.89</td><td>4.45</td><td>Peak</td><td>133</td><td>343</td></tr><tr><td>2</td><td>5925.00</td><td>61.08</td><td>68.20</td><td>-7.12</td><td>55.70</td><td>5.38</td><td>Peak</td><td>133</td><td>343</td></tr><tr><td>3</td><td>11570.00</td><td>45.94</td><td>54.00</td><td>-8.06</td><td>31.36</td><td>14.58</td><td>Average</td><td>345</td><td>280</td></tr><tr><td>4</td><td>11570.00</td><td>58.67</td><td>74.00</td><td>-15.33</td><td>44.09</td><td>14.58</td><td>Peak</td><td>345</td><td>280</td></tr><tr><td>5</td><td>17355.00</td><td>67.12</td><td>68.20</td><td>-1.08</td><td>48.41</td><td>18.71</td><td>Peak</td><td>145</td><td>198</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	60.34	68.20	-7.86	55.89	4.45	Peak	133	343	2	5925.00	61.08	68.20	-7.12	55.70	5.38	Peak	133	343	3	11570.00	45.94	54.00	-8.06	31.36	14.58	Average	345	280	4	11570.00	58.67	74.00	-15.33	44.09	14.58	Peak	345	280	5	17355.00	67.12	68.20	-1.08	48.41	18.71	Peak	145	198
	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	60.34	68.20	-7.86	55.89	4.45	Peak	133	343																																																						
2	5925.00	61.08	68.20	-7.12	55.70	5.38	Peak	133	343																																																						
3	11570.00	45.94	54.00	-8.06	31.36	14.58	Average	345	280																																																						
4	11570.00	58.67	74.00	-15.33	44.09	14.58	Peak	345	280																																																						
5	17355.00	67.12	68.20	-1.08	48.41	18.71	Peak	145	198																																																						
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																																																																																																																
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																																																																	
Level (dBuV/m)  Frequency (MHz) <table><tr><th></th><th>Freq.</th><th>Emission</th><th>Limit</th><th>Margin</th><th>SA</th><th>Factor</th><th>Remark</th><th>ANT</th><th>Turn</th></tr><tr><th></th><th>MHz</th><th>level</th><th></th><th></th><th>reading</th><th></th><th></th><th>High</th><th>Table</th></tr><tr><th></th><th></th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dBuV</th><th>dB</th><th></th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5650.00</td><td>60.36</td><td>68.20</td><td>-7.84</td><td>55.91</td><td>4.45</td><td>Peak</td><td>142</td><td>116</td></tr><tr><td>2</td><td>5850.00</td><td>86.67</td><td>122.20</td><td>-35.53</td><td>81.29</td><td>5.38</td><td>Peak</td><td>142</td><td>116</td></tr><tr><td>3</td><td>5855.00</td><td>80.61</td><td>110.80</td><td>-30.19</td><td>75.24</td><td>5.37</td><td>Peak</td><td>142</td><td>116</td></tr><tr><td>4</td><td>5875.00</td><td>69.17</td><td>105.20</td><td>-36.03</td><td>63.79</td><td>5.38</td><td>Peak</td><td>142</td><td>116</td></tr><tr><td>5</td><td>5925.00</td><td>61.85</td><td>68.20</td><td>-6.35</td><td>56.47</td><td>5.38</td><td>Peak</td><td>142</td><td>116</td></tr><tr><td>6</td><td>11650.00</td><td>46.99</td><td>54.00</td><td>-7.01</td><td>32.64</td><td>14.35</td><td>Average</td><td>207</td><td>329</td></tr><tr><td>7</td><td>11650.00</td><td>59.99</td><td>74.00</td><td>-14.01</td><td>45.64</td><td>14.35</td><td>Peak</td><td>207</td><td>329</td></tr><tr><td>8</td><td>17475.00</td><td>66.32</td><td>68.20</td><td>-1.88</td><td>47.10</td><td>19.22</td><td>Peak</td><td>115</td><td>25</td></tr></table>					Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn		MHz	level			reading			High	Table			dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg	1	5650.00	60.36	68.20	-7.84	55.91	4.45	Peak	142	116	2	5850.00	86.67	122.20	-35.53	81.29	5.38	Peak	142	116	3	5855.00	80.61	110.80	-30.19	75.24	5.37	Peak	142	116	4	5875.00	69.17	105.20	-36.03	63.79	5.38	Peak	142	116	5	5925.00	61.85	68.20	-6.35	56.47	5.38	Peak	142	116	6	11650.00	46.99	54.00	-7.01	32.64	14.35	Average	207	329	7	11650.00	59.99	74.00	-14.01	45.64	14.35	Peak	207	329	8	17475.00	66.32	68.20	-1.88	47.10	19.22	Peak	115	25
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn																																																																																																								
	MHz	level			reading			High	Table																																																																																																								
		dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg																																																																																																								
1	5650.00	60.36	68.20	-7.84	55.91	4.45	Peak	142	116																																																																																																								
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7	11650.00	59.99	74.00	-14.01	45.64	14.35	Peak	207	329																																																																																																								
8	17475.00	66.32	68.20	-1.88	47.10	19.22	Peak	115	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	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) </			

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

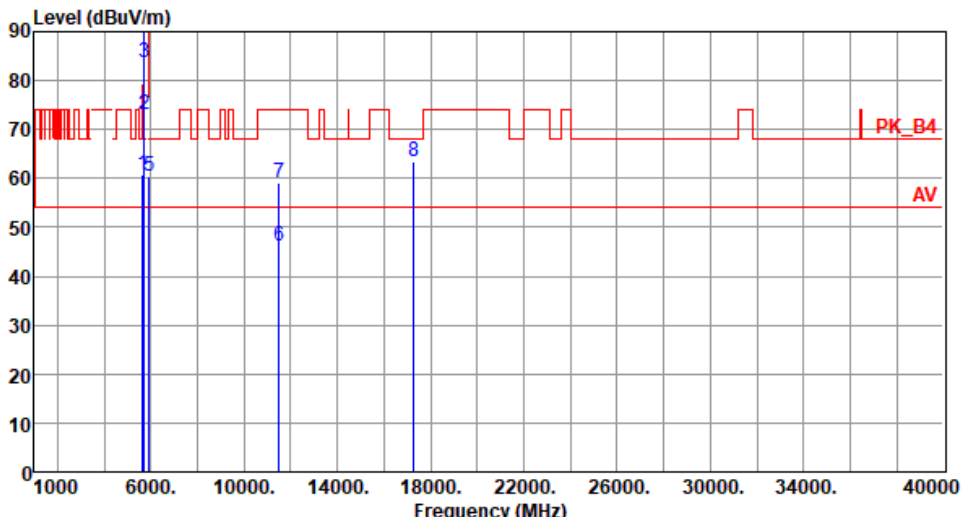
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

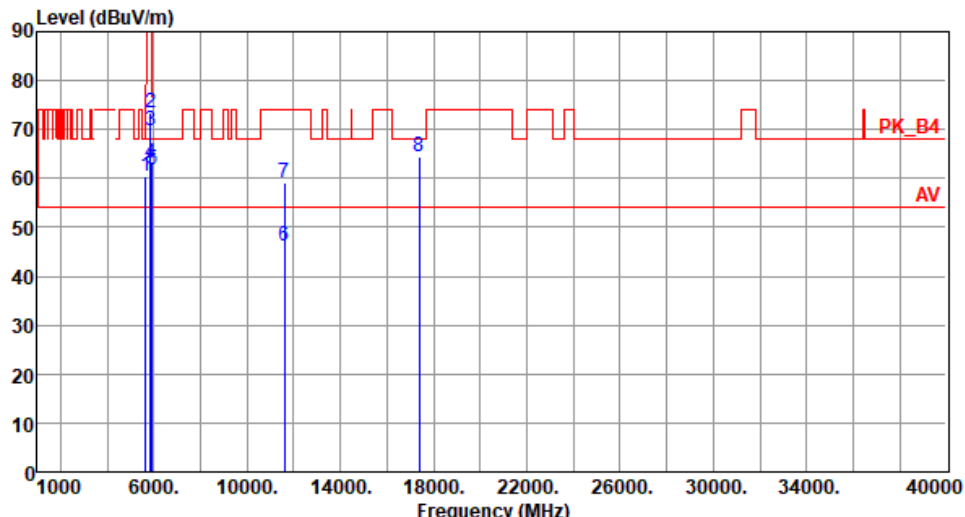
Modulation	VHT40	Test Freq. (MHz)	5755																																																																																										
Polarization	Vertical																																																																																												
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																																													
Level (dBuV/m)  Frequency (MHz) <table><thead><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></thead><tbody><tr><td>1</td><td>5650.00</td><td>60.71</td><td>68.20</td><td>-7.49</td><td>56.26</td><td>4.45</td><td>Peak</td><td>138</td><td>348</td></tr><tr><td>2</td><td>5700.00</td><td>73.07</td><td>105.20</td><td>-32.13</td><td>68.48</td><td>4.59</td><td>Peak</td><td>138</td><td>348</td></tr><tr><td>3</td><td>5720.00</td><td>83.60</td><td>110.80</td><td>-27.20</td><td>78.87</td><td>4.73</td><td>Peak</td><td>138</td><td>348</td></tr><tr><td>4</td><td>5725.00</td><td>90.61</td><td>122.20</td><td>-31.59</td><td>85.85</td><td>4.76</td><td>Peak</td><td>138</td><td>348</td></tr><tr><td>5</td><td>5925.00</td><td>60.53</td><td>68.20</td><td>-7.67</td><td>55.15</td><td>5.38</td><td>Peak</td><td>138</td><td>348</td></tr><tr><td>6</td><td>11510.00</td><td>46.20</td><td>54.00</td><td>-7.80</td><td>31.56</td><td>14.64</td><td>Average</td><td>333</td><td>274</td></tr><tr><td>7</td><td>11510.00</td><td>59.22</td><td>74.00</td><td>-14.78</td><td>44.58</td><td>14.64</td><td>Peak</td><td>333</td><td>274</td></tr><tr><td>8</td><td>17265.00</td><td>63.53</td><td>68.20</td><td>-4.67</td><td>45.33</td><td>18.20</td><td>Peak</td><td>100</td><td>210</td></tr></tbody></table> 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).					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	60.71	68.20	-7.49	56.26	4.45	Peak	138	348	2	5700.00	73.07	105.20	-32.13	68.48	4.59	Peak	138	348	3	5720.00	83.60	110.80	-27.20	78.87	4.73	Peak	138	348	4	5725.00	90.61	122.20	-31.59	85.85	4.76	Peak	138	348	5	5925.00	60.53	68.20	-7.67	55.15	5.38	Peak	138	348	6	11510.00	46.20	54.00	-7.80	31.56	14.64	Average	333	274	7	11510.00	59.22	74.00	-14.78	44.58	14.64	Peak	333	274	8	17265.00	63.53	68.20	-4.67	45.33	18.20	Peak	100	210
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																																				
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4	5725.00	90.61	122.20	-31.59	85.85	4.76	Peak	138	348																																																																																				
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8	17265.00	63.53	68.20	-4.67	45.33	18.20	Peak	100	210																																																																																				

Modulation	VHT40	Test Freq. (MHz)	5795						
Polarization	Horizontal								
Test By :Aska Huang Temperature(°C):22 Humidity(%):67									
Level (dBuV/m) Frequency (MHz)									
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level			reading			High	Table
		dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5650.00	60.95	68.20	-7.25	56.50	4.45	Peak	142	112
2	5850.00	80.46	122.20	-41.74	75.08	5.38	Peak	142	112
3	5855.00	77.38	110.80	-33.42	72.01	5.37	Peak	142	112
4	5875.00	67.97	105.20	-37.23	62.59	5.38	Peak	142	112
5	5925.00	61.97	68.20	-6.23	56.59	5.38	Peak	142	112
6	11590.00	45.98	54.00	-8.02	31.42	14.56	Average	130	335
7	11590.00	59.07	74.00	-14.93	44.51	14.56	Peak	130	335
8	17385.00	64.56	68.20	-3.64	45.65	18.91	Peak	130	15

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT40	Test Freq. (MHz)	5795						
Polarization	Vertical								
Test By :Aska Huang Temperature(°C):22 Humidity(%):67									
Level (dBuV/m)  Frequency (MHz)									
	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level			reading			High	Table
		dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5650.00	60.34	68.20	-7.86	55.89	4.45	Peak	135	342
2	5850.00	73.25	122.20	-48.95	67.87	5.38	Peak	135	342
3	5855.00	69.64	110.80	-41.16	64.27	5.37	Peak	135	342
4	5875.00	63.25	105.20	-41.95	57.87	5.38	Peak	135	342
5	5925.00	61.83	68.20	-6.37	56.45	5.38	Peak	135	342
6	11590.00	46.09	54.00	-7.91	31.53	14.56	Average	100	278
7	11590.00	59.22	74.00	-14.78	44.66	14.56	Peak	100	278
8	17385.00	64.50	68.20	-3.70	45.59	18.91	Peak	100	203

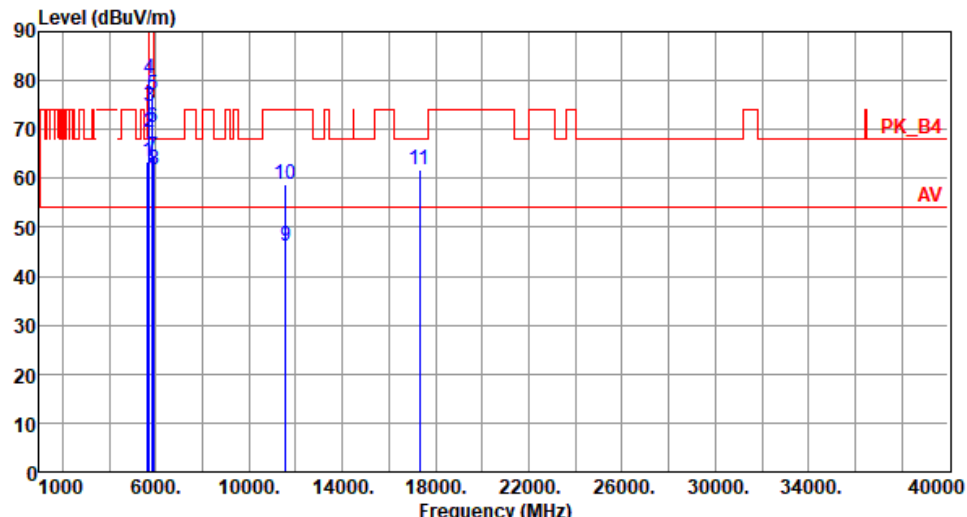
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m)			

Modulation	VHT80	Test Freq. (MHz)	5210																																																																																
Polarization	Vertical																																																																																		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67																																																																																			
Level (dBuV/m) Frequency (MHz) <table><thead><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></thead><tbody><tr><td>1</td><td>5150.00</td><td>48.50</td><td>54.00</td><td>-5.50</td><td>43.92</td><td>4.58</td><td>Average</td><td>137</td><td>347</td></tr><tr><td>2</td><td>5150.00</td><td>60.47</td><td>74.00</td><td>-13.53</td><td>55.89</td><td>4.58</td><td>Peak</td><td>137</td><td>347</td></tr><tr><td>3</td><td>5350.00</td><td>46.35</td><td>54.00</td><td>-7.65</td><td>42.48</td><td>3.87</td><td>Average</td><td>137</td><td>347</td></tr><tr><td>4</td><td>5350.00</td><td>59.12</td><td>74.00</td><td>-14.88</td><td>55.25</td><td>3.87</td><td>Peak</td><td>137</td><td>347</td></tr><tr><td>5</td><td>10420.00</td><td>56.53</td><td>68.20</td><td>-11.67</td><td>42.01</td><td>14.52</td><td>Peak</td><td>100</td><td>329</td></tr><tr><td>6</td><td>15630.00</td><td>45.74</td><td>54.00</td><td>-8.26</td><td>31.03</td><td>14.71</td><td>Average</td><td>100</td><td>327</td></tr><tr><td>7</td><td>15630.00</td><td>56.91</td><td>74.00</td><td>-17.09</td><td>42.20</td><td>14.71</td><td>Peak</td><td>100</td><td>327</td></tr></tbody></table> 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).					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	48.50	54.00	-5.50	43.92	4.58	Average	137	347	2	5150.00	60.47	74.00	-13.53	55.89	4.58	Peak	137	347	3	5350.00	46.35	54.00	-7.65	42.48	3.87	Average	137	347	4	5350.00	59.12	74.00	-14.88	55.25	3.87	Peak	137	347	5	10420.00	56.53	68.20	-11.67	42.01	14.52	Peak	100	329	6	15630.00	45.74	54.00	-8.26	31.03	14.71	Average	100	327	7	15630.00	56.91	74.00	-17.09	42.20	14.71	Peak	100	327
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg																																																																										
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4	5350.00	59.12	74.00	-14.88	55.25	3.87	Peak	137	347																																																																										
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Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		
Test By :Aska Huang Temperature(°C):22 Humidity(%):67			
Level (dBuV/m) <			

Modulation	VHT80	Test Freq. (MHz)	5775																																																																																																																																												
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3.6 Frequency Stability

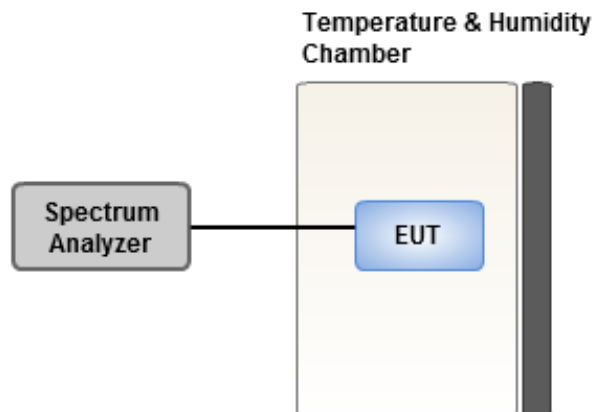
3.6.1 Limit of Frequency Stability

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

Ambient Condition	18°C / 63%	Tested By	Aska Huang
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Frequency: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	-2.92	-2.68	-2.53	-2.90
T20°C Vmin	-2.23	-1.49	-1.64	-1.81
T50°C Vnom	-9.68	-9.61	-9.70	-10.10
T40°C Vnom	-7.94	-8.05	-7.38	-8.17
T30°C Vnom	-4.95	-5.07	-4.34	-4.38
T20°C Vnom	-2.69	-2.73	-2.83	-2.23
T10°C Vnom	-9.74	-9.42	-9.19	-9.48
T0°C Vnom	-12.11	-11.78	-12.08	-11.99
T-10°C Vnom	-8.09	-7.40	-7.66	-8.46
T-20°C Vnom	-4.22	-4.29	-3.86	-3.89
T-30°C Vnom	2.12	2.20	2.51	1.98
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 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	-2.40	-1.73	-1.97	-2.38
T20°C Vmin	-2.10	-1.91	-1.81	-1.61
T50°C Vnom	-9.00	-8.47	-9.05	-8.98
T40°C Vnom	-6.87	-6.81	-6.48	-6.58
T30°C Vnom	-4.61	-4.26	-4.31	-4.24
T20°C Vnom	-2.47	-2.20	-1.89	-2.59
T10°C Vnom	-8.50	-8.72	-8.23	-8.30
T0°C Vnom	-10.73	-10.12	-10.78	-10.75
T-10°C Vnom	-7.30	-6.98	-7.25	-7.53
T-20°C Vnom	-3.41	-3.60	-3.12	-3.18
T-30°C Vnom	2.05	2.14	1.80	2.72
Vnom [V]: 120		Vmax [V]: 138		Vmin [V]: 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>.

Linkou

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin
Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,
Kwei Shan District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan District, Tao Yuan
City 333, Taiwan, R.O.C.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==