FCC Test Report

FCC ID	:	**I88WSR30**
Equipment	:	**Multy U AC2100 Tri-Band WiFi System**
Model No.	:	**WSR30**
Brand Name	:	**ZYXEL**
Applicant	:	**Zyxel Communications Corporation**
Address	:	**No.2 Industry East RD. IX, Hsinchu Science Park, Hsinchu 30075, Taiwan, R.O.C**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Aug. 01, 2018**
Tested Date	:	**Aug, 16 ~ Aug. 23, 2018**

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

Reviewed by:

Along Chen / Assistant Manager

Approved by:

Gary Chang / Manager

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR880101AN	Rev. 01	Initial issue	Oct. 24, 2018

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.165MHz 54.54 (Margin -10.67dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 53.89 (Margin -0.11dB) - 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]: 5150-5250MHz: 26.27 5725-5850MHz: 26.38	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

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	a	5180-5240	36-48 [4]	2	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	MCS 0-15
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	MCS 0-15
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [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.					

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
5725-5850	a	5745-5825	149-165 [5]	2	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	MCS 0-15
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	MCS 0-15
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	MCS 0-9
5725-5850	ac (VHT80)	5775	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.	**Model**	**Type**	**Connector**	**Operating Frequencies (MHz) / Antenna Gain (dBi)**		
				2400~2483.5	**5150~5250**	**5725~5850**
1	RFA-05-AP638_L	PIFA	UFL/IPEX	---	0	0
2	RFA-05-AP638_H	PIFA	UFL/IPEX	---	0	0
3	RFA-25-AP638-L	PIFA	UFL/IPEX	0	0	0
4	RFA-25-AP679-H	PIFA	UFL/IPEX	0	0	0

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 Name: APD Model Name: WB-18R12R Power Rating: I/P: 100-240Vac, 50-60Hz, 0.6A Max O/P: 12Vdc, 1.5A Power Line: 1.8m non-shielded cable without core
2	RJ45 cable	2m non-shielded without core

1.1.5 Channel List

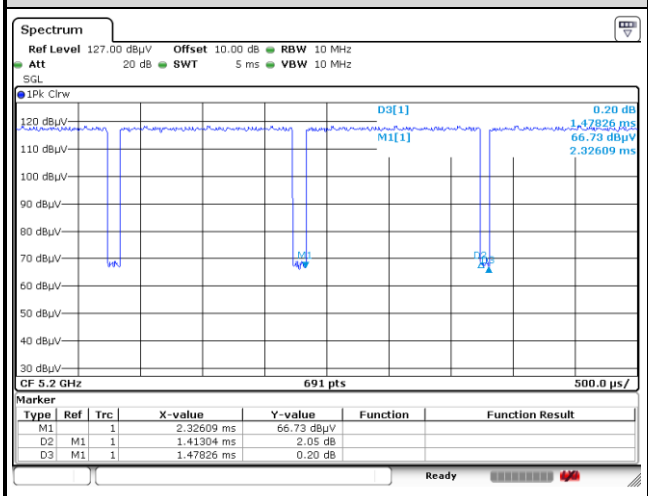
For Frequency band 5150-5250 MHz			
802.11 a / HT20 / VHT20		**HT40 / VHT40**	
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
36	5180	38	5190
40	5200	46	5230
44	5220	**VHT80**	
48	5240	42	5210

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	---	---

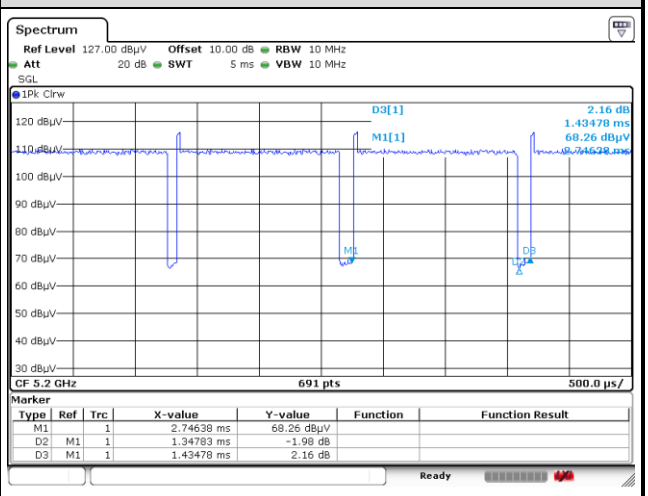
1.1.6 Test Tool and Duty Cycle

Test Tool	MP_TEST, version: RTL819x 3.5		
Duty Cycle and Duty Factor	**Mode**	**Duty cycle (%)**	**Duty factor (dB)**
	11a	95.59%	0.20
	VHT20	93.94%	0.27
	VHT40	87.21%	0.59
	VHT80	75.86%	1.20

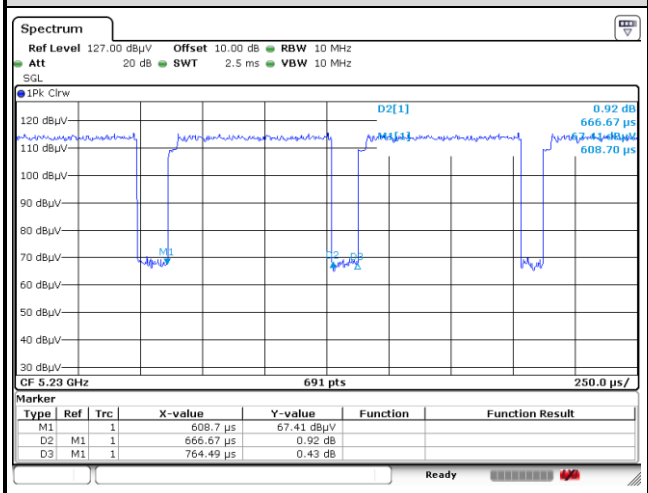
11a



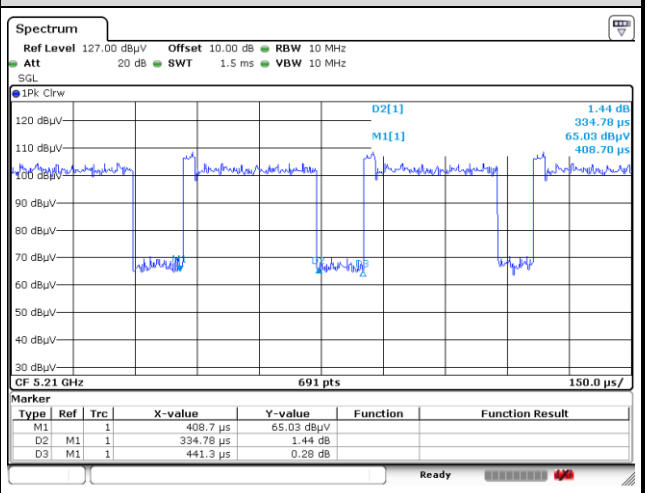
VHT20



VHT40



VHT80



1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5180	43/41
11a	5200	45/42
11a	5240	45/42
VHT20	5180	41/38
VHT20	5200	45/42
VHT20	5240	45/42
VHT40	5190	33/30
VHT40	5230	45/42
VHT80	5210	28/25

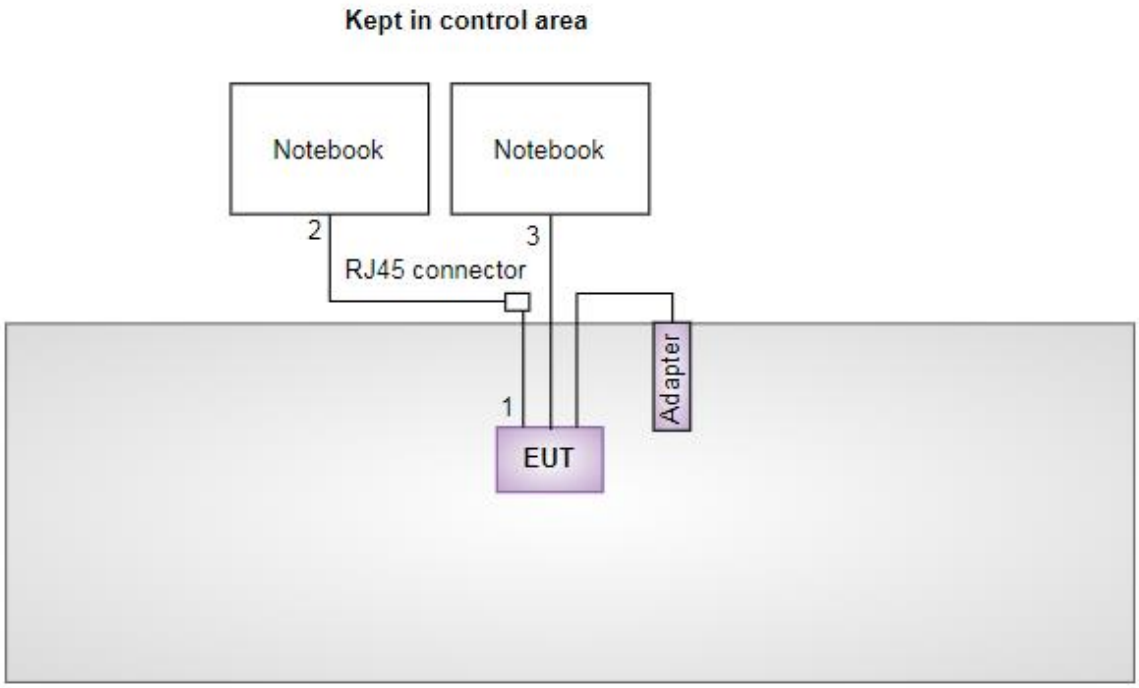
For Frequency band 5725~5850 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5745	37/42
11a	5785	37/42
11a	5825	39/44
VHT20	5745	37/42
VHT20	5785	37/42
VHT20	5825	39/42
VHT40	5755	40/45
VHT40	5795	40/45
VHT80	5775	38/43

1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Remarks**
1	Notebook	DELL	Latitude E5470	DoC	---
2	Notebook	DELL	Latitude E5470	DoC	---

1.3 Test Setup Chart

Test Setup Diagram



No.	Signal cable / Length (m)
1	RJ45, 2m non-shielded.
2	RJ45, 10m non-shielded.
3	RJ45, 10m non-shielded.

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Aug, 23, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	Agilent	N9038A	MY53290044	Sep. 26, 2017	Sep. 25, 2018
LISN	R&S	ENV216	101579	Feb. 13, 2018	Feb. 12, 2019
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 18, 2017	Dec. 17, 2018
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)				
Tested Date	Aug, 17 ~ Aug. 20, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&**S**	FSV40	101499	Jan. 03, 2018	Jan. 02, 2019
Receiver	R&**S**	ESR3	101658	Nov. 20, 2017	Nov. 19, 2018
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-685	Apr. 19, 2018	Apr. 18, 2019
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1206	Jan. 18, 2018	Jan. 17, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 23, 2017	Nov. 22, 2018
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2017	Nov. 12, 2018
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 07, 2017	Dec. 06, 2018
Preamplifier	EMC	EMC02325	980187	Sep. 04, 2017	Sep. 03, 2018
Preamplifier	Agilent	83017A	MY53270014	Aug. 09, 2018	Aug. 08, 2019
Preamplifier	EMC	EMC184045B	980192	Aug. 09, 2018	Aug. 08, 2019
RF cable-3M	HUBER+SUHNER	SUCOFLEX104	MY22620/4	Nov. 27, 2017	Nov. 26, 2018
RF cable-8M	HUBER+SUHNER	SUCOFLEX104	MY32487/4	Nov. 27, 2017	Nov. 26, 2018
RF cable-1M	HUBER+SUHNER	SUCOFLEX104	MY22624/4	Nov. 27, 2017	Nov. 26, 2018
LF cable-0.8M	EMC	EMC8D-NM-NM-800	EMC8D-NM-NM-800-001	Nov. 27, 2017	Nov. 26, 2018
LF cable-3M	EMC	EMC8D-NM-NM-3000	131103	Nov. 27, 2017	Nov. 26, 2018
LF cable-13M	EMC	EMC8D-NM-NM-13000	131104	Nov. 27, 2017	Nov. 26, 2018
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	Aug, 20 ~ Aug. 22, 2018				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Apr. 16, 2018	Apr. 15, 2019
Power Meter	Anritsu	ML2495A	1241002	Oct. 16, 2017	Oct. 15, 2018
Power Sensor	Anritsu	MA2411B	1207366	Oct. 16, 2017	Oct. 15, 2018
Signal Generator	R&S	SMB100A	175727	Oct. 26, 2017	Oct. 25, 2018
AC POWER SOURCE	APC	AFC-500W	F312060012	Dec. 01, 2017	Nov. 30, 2018
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.407
ANSI C63.10-2013
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Frequency error	±34.134 Hz
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.37 dB
Time	±0.1%
Temperature	±0.6 ^{o}C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	23°C / 55%	Alex Huang
Radiated Emissions	03CH03-WS	25°C / 61-62%	Aska Huang Roger Lu
RF Conducted	TH01-WS	24°C / 66%	Aska Huang

- FCC Designation No.: TW0009
- FCC site registration No.: 207696
- IC site registration No.: 10807C-1

2.2 The Worst Test Modes and Channel Details

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

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

3 Transmitter Test Results

3.1 Conducted Emissions

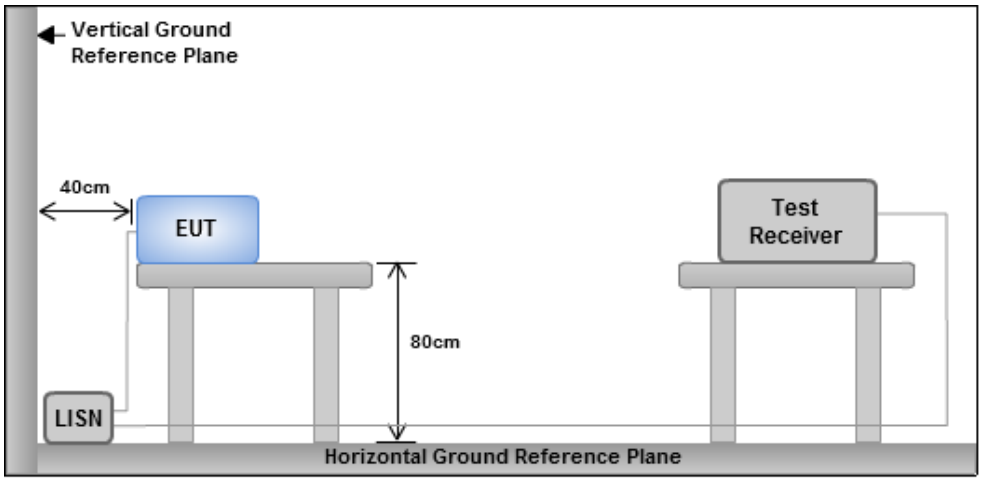
3.1.1 Limit of Conducted Emissions

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.

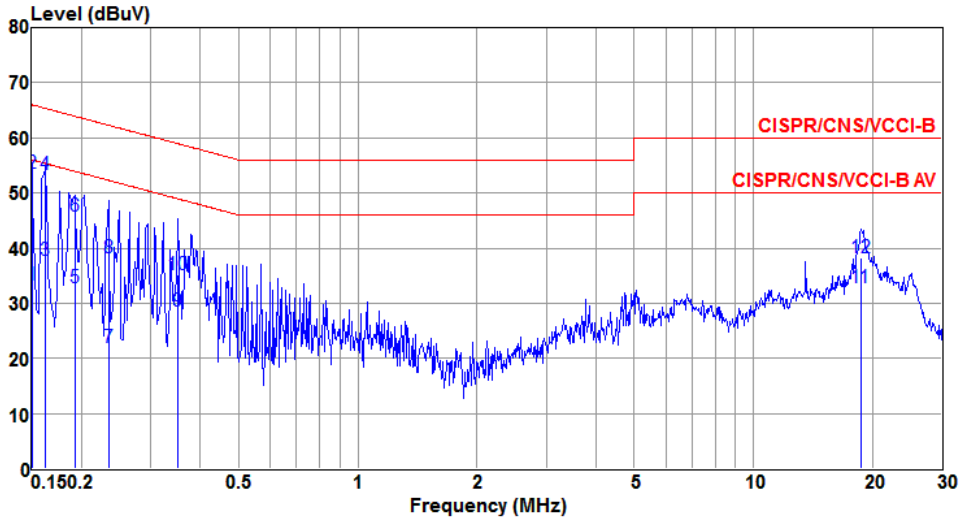
3.1.3 Test Setup



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

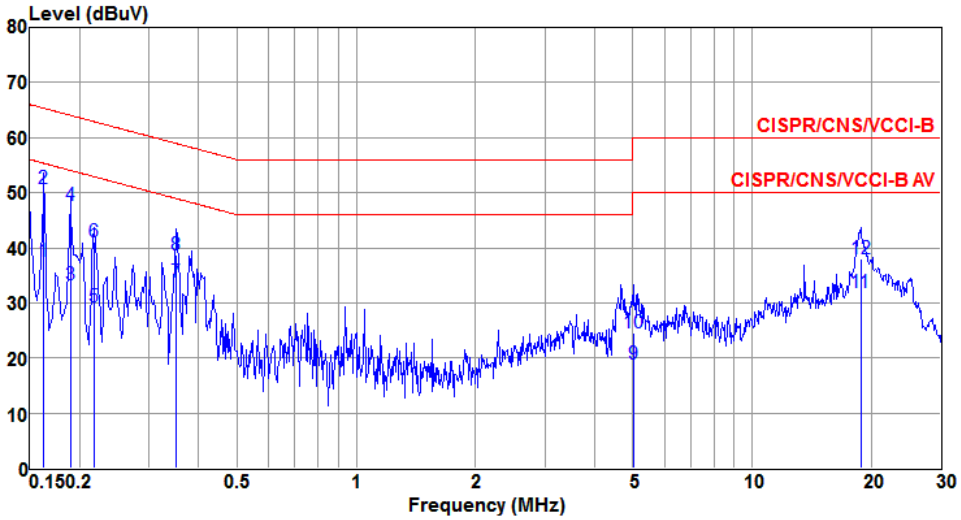
Modulation	VHT20	Test Freq. (MHz)	5240
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.150	33.34	56.00	-22.66	23.60	9.73	0.01	Average
2	0.150	53.61	66.00	-12.39	43.87	9.73	0.01	QP
3	0.162	37.66	55.34	-17.68	27.91	9.73	0.02	Average
4@	0.162	53.42	65.34	-11.92	43.67	9.73	0.02	QP
5	0.192	32.80	53.93	-21.13	23.04	9.73	0.03	Average
6	0.192	45.68	63.93	-18.25	35.92	9.73	0.03	QP
7	0.234	21.97	52.30	-30.33	12.21	9.73	0.03	Average
8	0.234	38.29	62.30	-24.01	28.53	9.73	0.03	QP
9	0.350	28.54	48.96	-20.42	18.79	9.73	0.02	Average
10	0.350	35.15	58.96	-23.81	25.40	9.73	0.02	QP
11	18.721	32.82	50.00	-17.18	22.75	9.73	0.34	Average
12	18.721	38.33	60.00	-21.67	28.26	9.73	0.34	QP

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

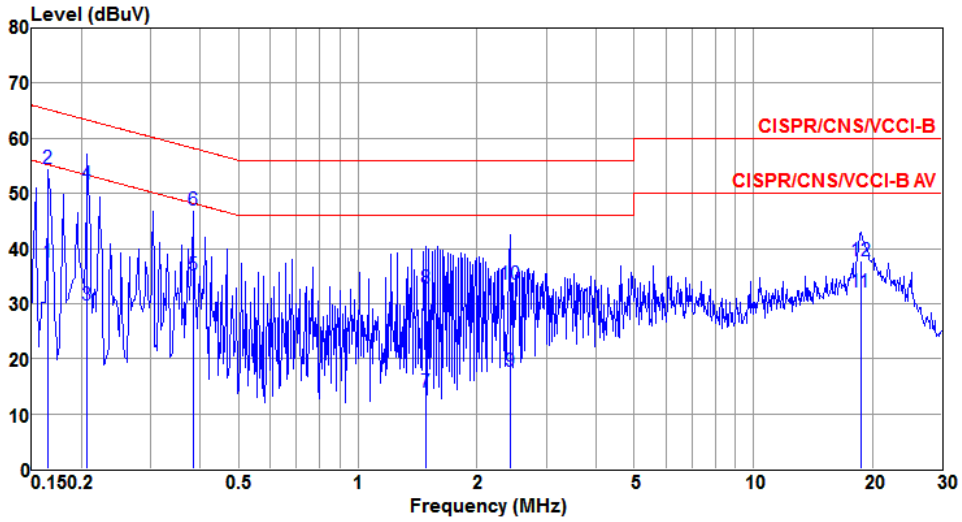
Modulation	VHT20	Test Freq. (MHz)	5240
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.162	37.42	55.34	-17.92	27.72	9.68	0.02	Average
2@	0.162	50.69	65.34	-14.65	40.99	9.68	0.02	QP
3	0.189	33.35	54.06	-20.71	23.65	9.67	0.03	Average
4	0.189	47.62	64.06	-16.44	37.92	9.67	0.03	QP
5	0.219	29.33	52.88	-23.55	19.63	9.67	0.03	Average
6	0.219	41.02	62.88	-21.86	31.32	9.67	0.03	QP
7	0.350	33.81	48.96	-15.15	24.12	9.67	0.02	Average
8	0.350	38.63	58.96	-20.33	28.94	9.67	0.02	QP
9	5.005	18.83	50.00	-31.17	8.89	9.70	0.24	Average
10	5.005	24.49	60.00	-35.51	14.55	9.70	0.24	QP
11	18.820	31.77	50.00	-18.23	21.61	9.82	0.34	Average
12	18.820	38.08	60.00	-21.92	27.92	9.82	0.34	QP

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

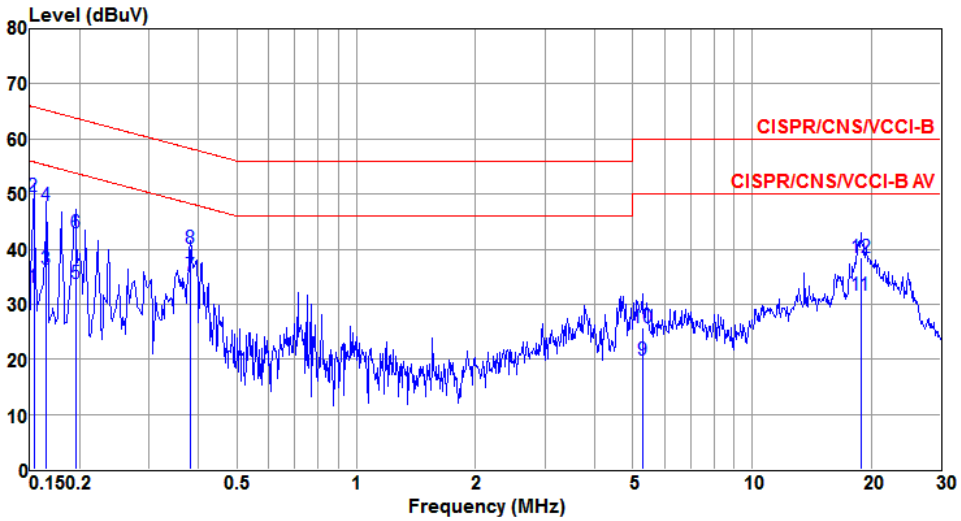
Modulation	VHT40	Test Freq. (MHz)	5755
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.165	37.57	55.21	-17.64	27.82	9.73	0.02	Average
2@	0.165	54.54	65.21	-10.67	44.79	9.73	0.02	QP
3	0.207	29.83	53.32	-23.49	20.07	9.73	0.03	Average
4	0.207	51.77	63.32	-11.55	42.01	9.73	0.03	QP
5	0.383	35.09	48.21	-13.12	25.34	9.73	0.02	Average
6	0.383	46.91	58.21	-11.30	37.16	9.73	0.02	QP
7	1.487	13.90	46.00	-32.10	4.09	9.74	0.07	Average
8	1.487	32.74	56.00	-23.26	22.93	9.74	0.07	QP
9	2.422	17.72	46.00	-28.28	7.84	9.75	0.13	Average
10	2.422	33.51	56.00	-22.49	23.63	9.75	0.13	QP
11	18.721	32.21	50.00	-17.79	22.14	9.73	0.34	Average
12	18.721	37.80	60.00	-22.20	27.73	9.73	0.34	QP

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

Modulation	VHT40	Test Freq. (MHz)	5755
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.153	33.13	55.82	-22.69	23.44	9.68	0.01	Average
2	0.153	49.50	65.82	-16.32	39.81	9.68	0.01	QP
3	0.165	36.39	55.21	-18.82	26.69	9.68	0.02	Average
4	0.165	48.02	65.21	-17.19	38.32	9.68	0.02	QP
5	0.195	33.68	53.80	-20.12	23.98	9.67	0.03	Average
6	0.195	42.92	63.80	-20.88	33.22	9.67	0.03	QP
7@	0.381	35.26	48.25	-12.99	25.57	9.67	0.02	Average
8	0.381	40.11	58.25	-18.14	30.42	9.67	0.02	QP
9	5.277	19.88	50.00	-30.12	9.92	9.71	0.25	Average
10	5.277	25.78	60.00	-34.22	15.82	9.71	0.25	QP
11	18.820	31.67	50.00	-18.33	21.51	9.82	0.34	Average
12	18.820	38.48	60.00	-21.52	28.32	9.82	0.34	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.

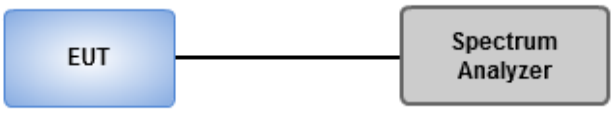
Occupied Bandwidth

1. Set RBW = 1 % to 5 % of the OBW.
2. Set VBW ≥ 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

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	37.754M	17.221M	17M2D1D	27.029M	16.715M
802.11ac VHT20_Nss1,(MCS0)_2TX	37.971M	18.09M	18M1D1D	21.377M	17.583M
802.11ac VHT40_Nss1,(MCS0)_2TX	81.159M	37.192M	37M2D1D	42.319M	36.324M
802.11ac VHT80_Nss1,(MCS0)_2TX	81.449M	75.832M	75M8D1D	80.87M	75.543M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	16.304M	18.09M	18M1D1D	15.725M	16.715M
802.11ac VHT20_Nss1,(MCS0)_2TX	17.029M	18.234M	18M2D1D	16.087M	17.8M
802.11ac VHT40_Nss1,(MCS0)_2TX	36.087M	45.007M	45M0D1D	35.362M	37.627M
802.11ac VHT80_Nss1,(MCS0)_2TX	75.362M	80.174M	80M2D1D	75.362M	76.122M

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;

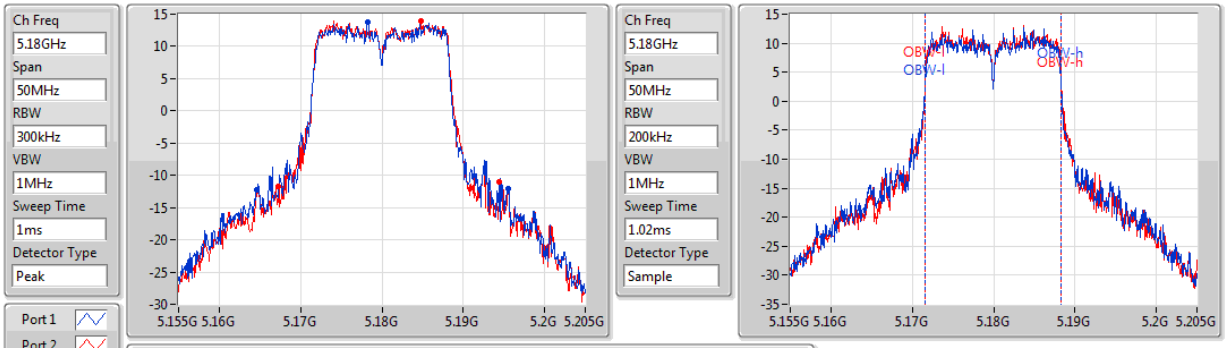
Result

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	30.942M	16.715M	27.101M	16.715M
5200MHz	Pass	Inf	31.159M	16.932M	27.029M	16.787M
5240MHz	Pass	Inf	37.754M	17.221M	31.014M	17.004M
5745MHz	Pass	500k	16.304M	16.715M	15.725M	16.932M
5785MHz	Pass	500k	16.304M	16.715M	16.087M	16.86M
5825MHz	Pass	500k	16.304M	17.004M	16.304M	18.09M
802.11ac VHT20_Nss1, (MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	24.203M	17.728M	21.377M	17.583M
5200MHz	Pass	Inf	34.565M	17.945M	27.536M	17.8M
5240MHz	Pass	Inf	37.971M	18.09M	28.768M	17.873M
5745MHz	Pass	500k	17.029M	17.8M	16.667M	18.234M
5785MHz	Pass	500k	17.029M	17.8M	16.087M	18.09M
5825MHz	Pass	500k	16.377M	17.873M	16.667M	17.945M
802.11ac VHT40_Nss1, (MCS0)_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	42.319M	36.324M	42.609M	36.324M
5230MHz	Pass	Inf	81.159M	37.192M	70.725M	36.758M
5755MHz	Pass	500k	36.087M	37.627M	35.362M	45.007M
5795MHz	Pass	500k	35.507M	38.061M	35.362M	45.007M
802.11ac VHT80_Nss1, (MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	81.449M	75.543M	80.87M	75.832M
5775MHz	Pass	500k	75.362M	76.122M	75.362M	80.174M

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

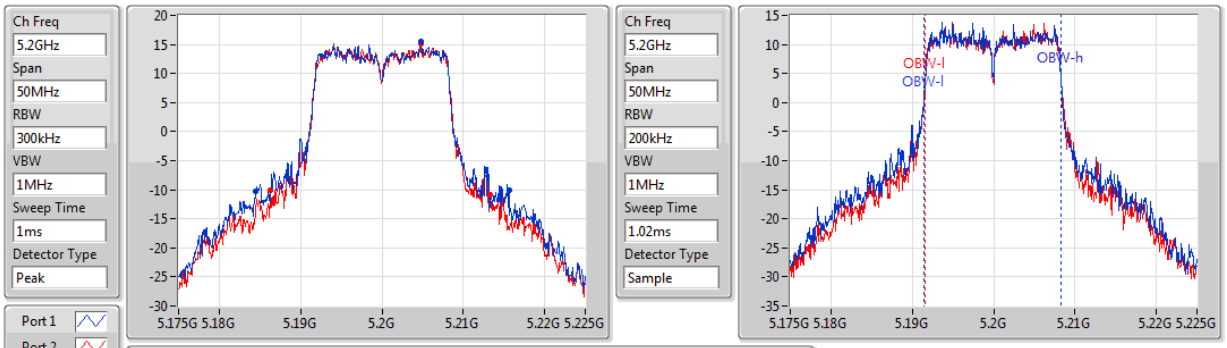
5180MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
30.942M	5.164565G	5.195507G	16.715M	5.171534G	5.188249G	Inf	1
27.101M	5.167319G	5.19442G	16.715M	5.171606G	5.188321G	Inf	2

802.11a_Nss1,(6Mbps)_2TX EBW

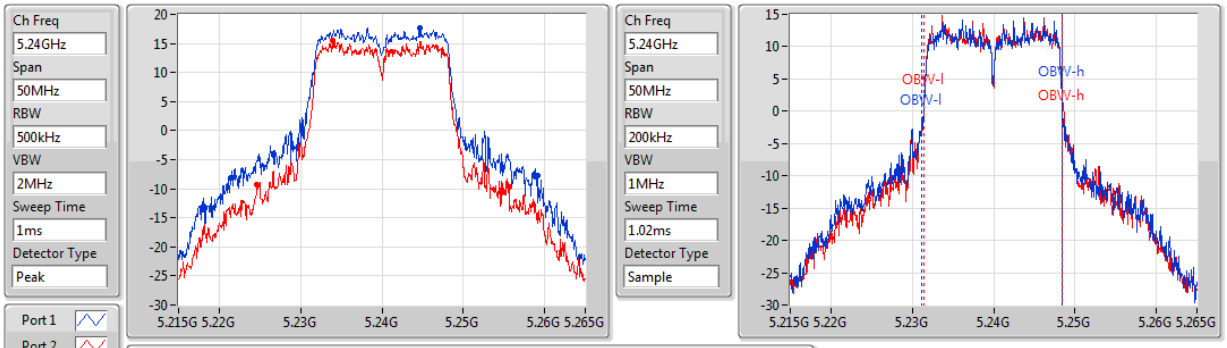
5200MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
31.159M	5.184493G	5.215652G	16.932M	5.191389G	5.208321G	Inf	1
27.029M	5.186304G	5.213333G	16.787M	5.191534G	5.208321G	Inf	2

802.11a_Nss1,(6Mbps)_2TX EBW

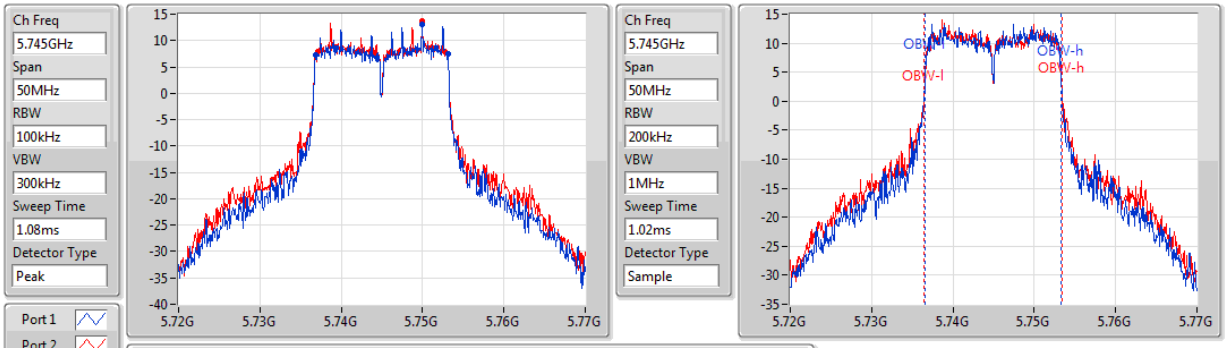
5240MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
37.754M	5.221377G	5.25913G	17.221M	5.231172G	5.248394G	Inf	1
31.014M	5.224638G	5.255652G	17.004M	5.231462G	5.248466G	Inf	2

802.11a_Nss1,(6Mbps)_2TX EBW

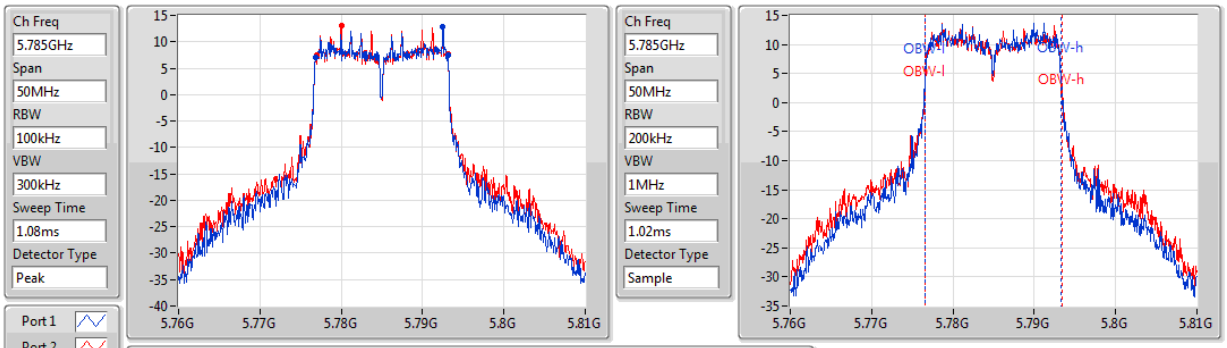
5745MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.304M	5.736812G	5.753116G	16.715M	5.736606G	5.753321G	500k	1
15.725M	5.737174G	5.752899G	16.932M	5.736462G	5.753394G	500k	2

802.11a_Nss1,(6Mbps)_2TX EBW

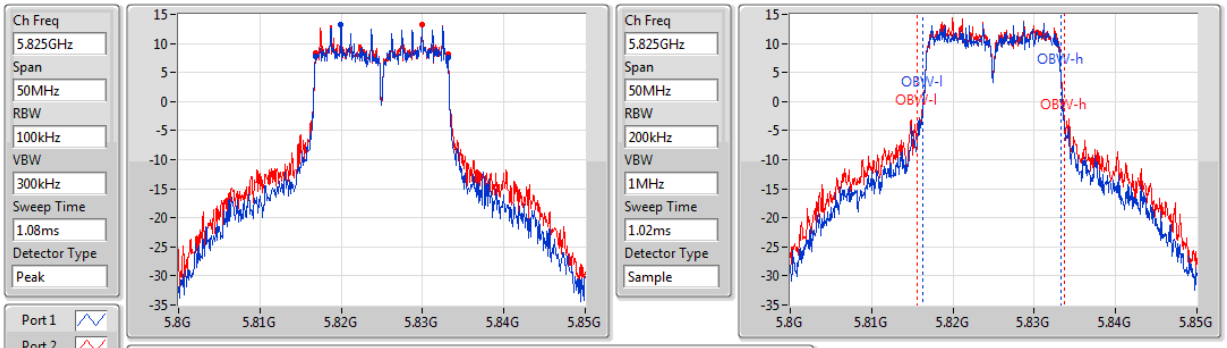
5785MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.304M	5.776812G	5.793116G	16.715M	5.776606G	5.793321G	500k	1
16.087M	5.777029G	5.793116G	16.86M	5.776534G	5.793394G	500k	2

802.11a_Nss1,(6Mbps)_2TX EBW

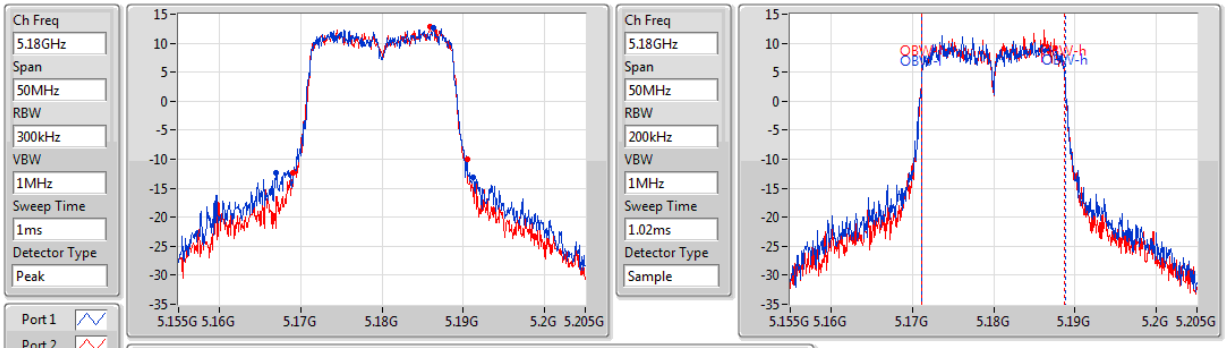
5825MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.304M	5.816812G	5.833116G	17.004M	5.816317G	5.833321G	500k	1
16.304M	5.816812G	5.833116G	18.09M	5.815593G	5.833683G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

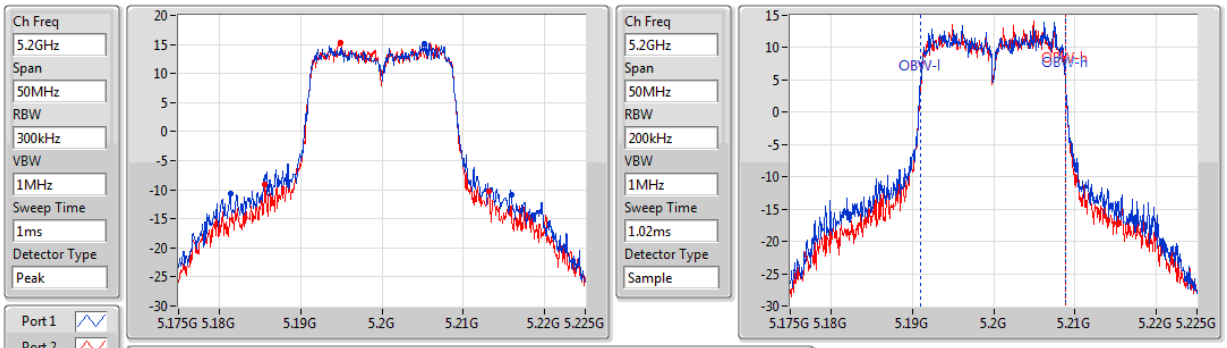
5180MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
24.203M	5.167029G	5.191232G	17.728M	5.1711G	5.188828G	Inf	1
21.377M	5.16913G	5.190507G	17.583M	5.171172G	5.188755G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

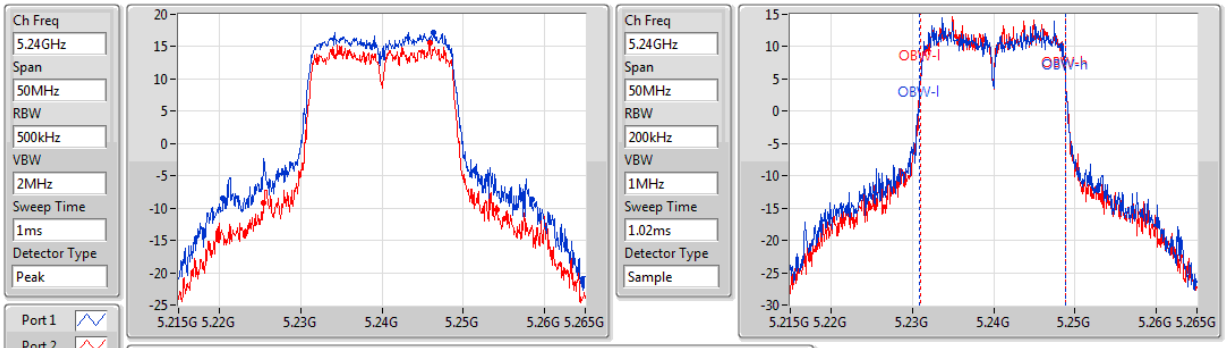
5200MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
34.565M	5.181377G	5.215942G	17.945M	5.190955G	5.2089G	Inf	1
27.536M	5.185652G	5.213188G	17.8M	5.191027G	5.208828G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

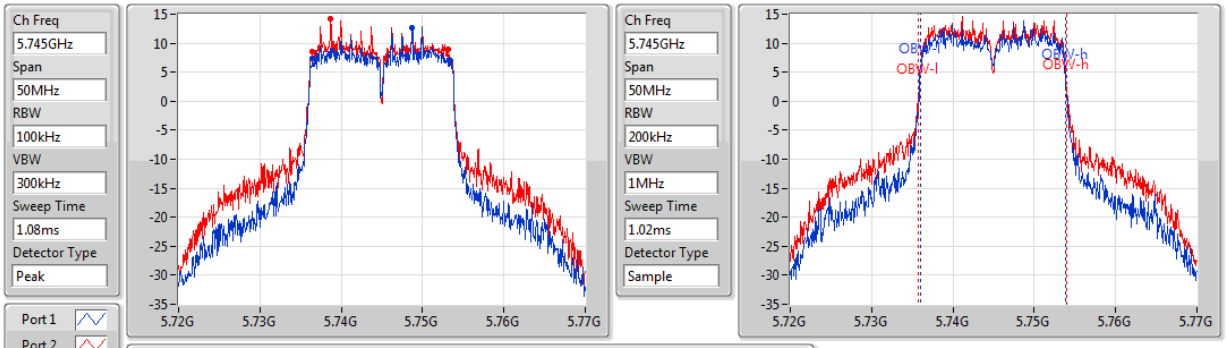
5240MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
37.971M	5.220435G	5.258406G	18.09M	5.23081G	5.2489G	Inf	1
28.768M	5.225435G	5.254203G	17.873M	5.231027G	5.2489G	Inf	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

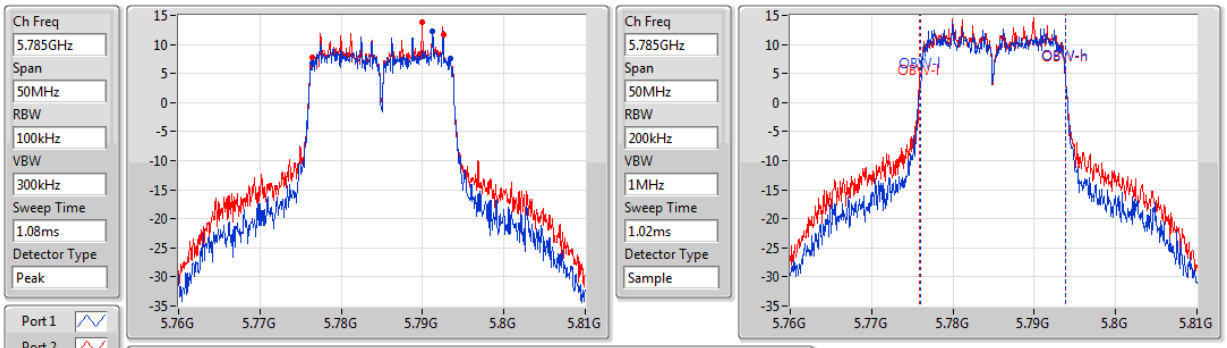
5745MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.029M	5.736449G	5.753478G	17.8M	5.736027G	5.753828G	500k	1
16.667M	5.736449G	5.753116G	18.234M	5.735738G	5.753973G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

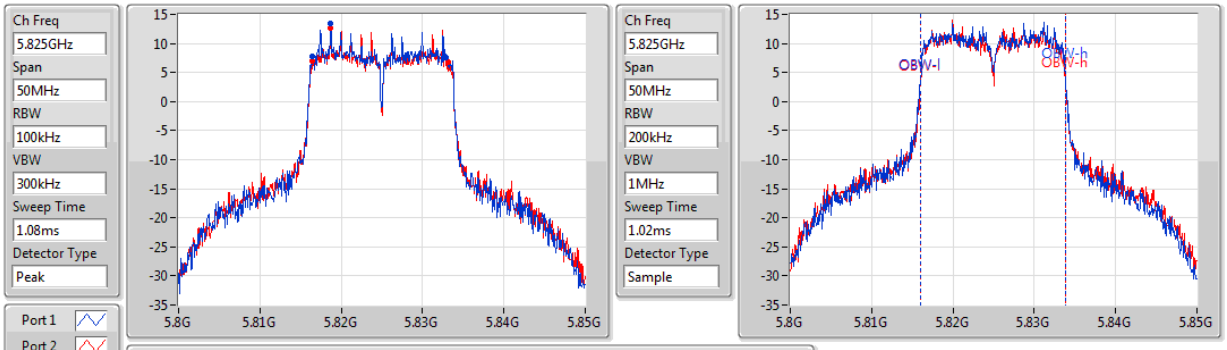
5785MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
17.029M	5.776449G	5.793478G	17.8M	5.776027G	5.793828G	500k	1
16.087M	5.776449G	5.792536G	18.09M	5.77581G	5.7939G	500k	2

802.11ac VHT20_Nss1,(MCS0)_2TX EBW

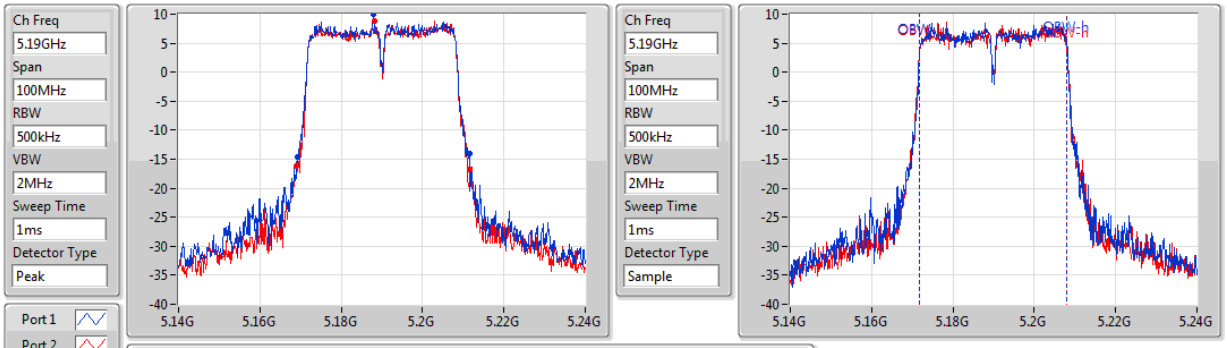
5825MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
16.377M	5.816449G	5.832826G	17.873M	5.815955G	5.833828G	500k	1
16.667M	5.816449G	5.833116G	17.945M	5.815955G	5.8339G	500k	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

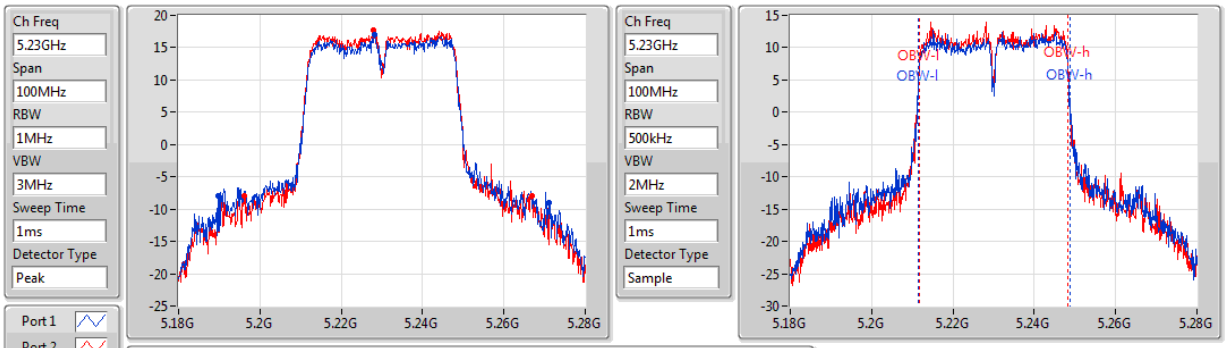
5190MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
42.319M	5.16913G	5.211449G	36.324M	5.171766G	5.20809G	Inf	1
42.609M	5.168986G	5.211594G	36.324M	5.171766G	5.20809G	Inf	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

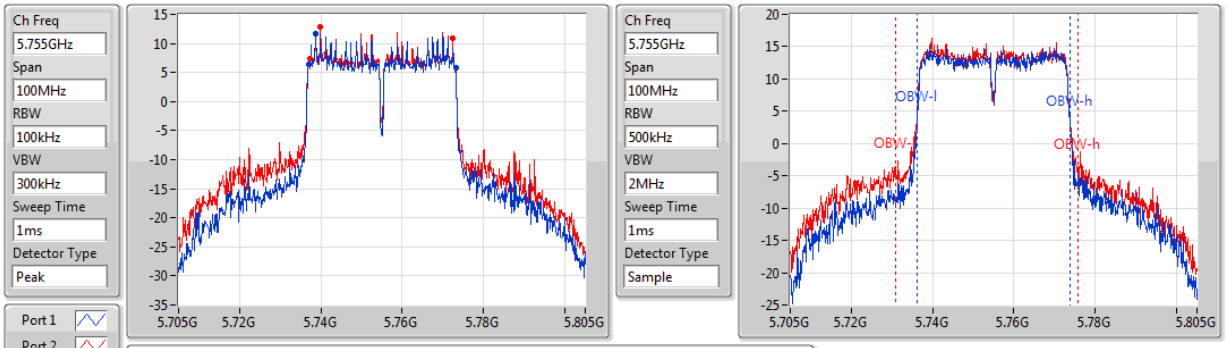
5230MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.159M	5.189855G	5.271014G	37.192M	5.211476G	5.248669G	Inf	1
70.725M	5.196232G	5.266957G	36.758M	5.211621G	5.248379G	Inf	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

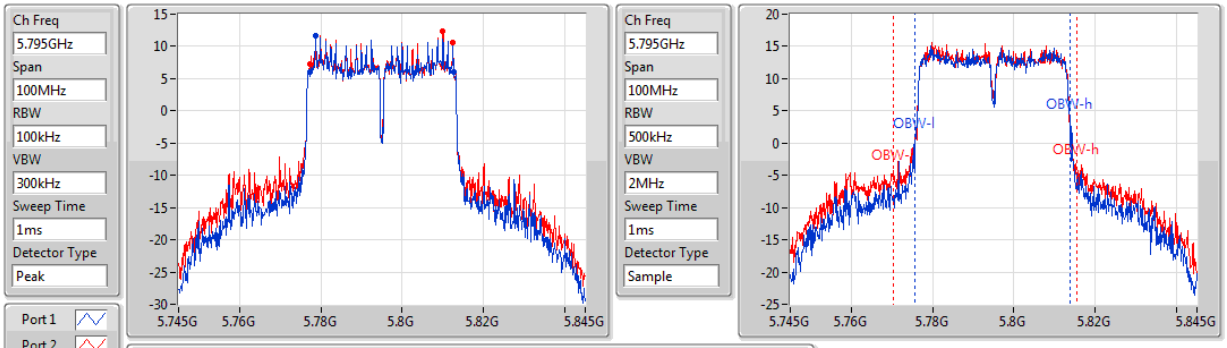
5755MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.087M	5.737029G	5.773116G	37.627M	5.736187G	5.773813G	500k	1
35.362M	5.737174G	5.772536G	45.007M	5.730832G	5.775839G	500k	2

802.11ac VHT40_Nss1,(MCS0)_2TX EBW

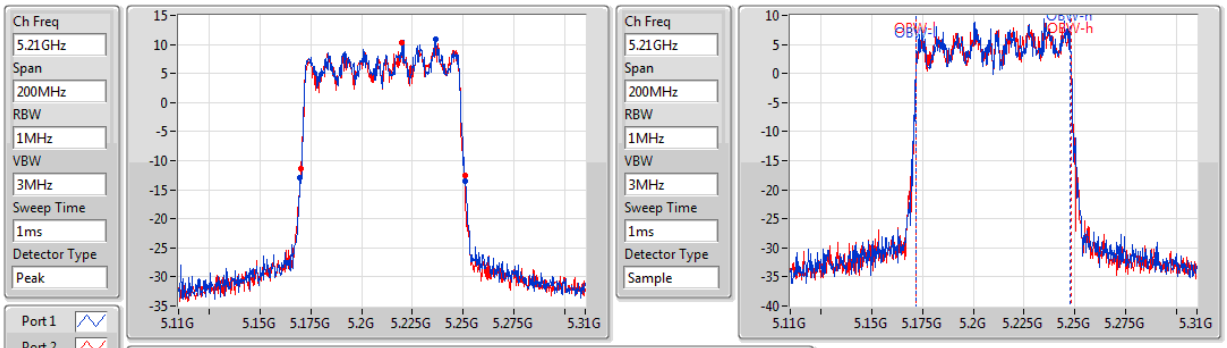
5795MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.507M	5.777174G	5.812681G	38.061M	5.775753G	5.813813G	500k	1
35.362M	5.777174G	5.812536G	45.007M	5.770398G	5.815405G	500k	2

802.11ac VHT80_Nss1,(MCS0)_2TX EBW

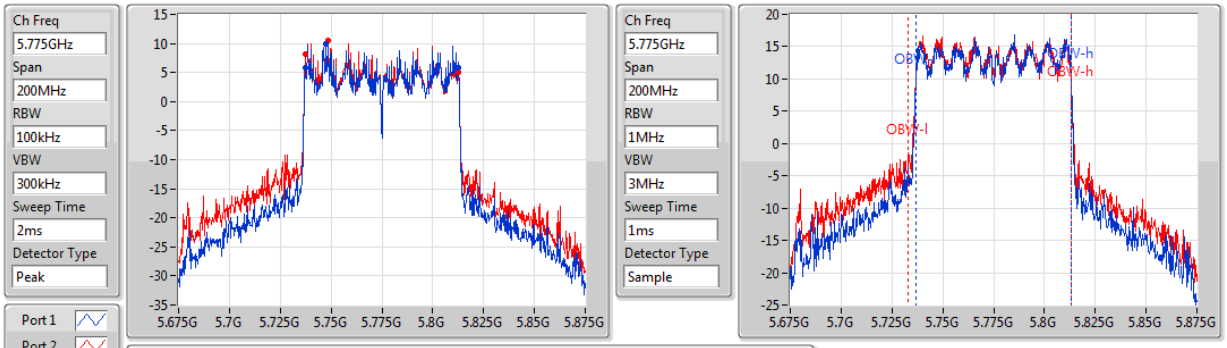
5210MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
81.449M	5.16971G	5.251159G	75.543M	5.172084G	5.247627G	Inf	1
80.87M	5.17G	5.25087G	75.832M	5.172084G	5.247916G	Inf	2

802.11ac VHT80_Nss1,(MCS0)_2TX EBW

5775MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
75.362M	5.737319G	5.812681G	76.122M	5.736795G	5.812916G	500k	1
75.362M	5.737319G	5.812681G	80.174M	5.733032G	5.813205G	500k	2

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	1 W
Note: “B” is the 26dB emission bandwidth in MHz.		

3.3.2 Test Procedures

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

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

3.3.3 Test Setup

3.3.4 Test Result of Maximum Conducted Output Power

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	26.26	0.42267	26.26	0.42267
802.11ac VHT20_Nss1,(MCS0)_2TX	26.27	0.42364	26.27	0.42364
802.11ac VHT40_Nss1,(MCS0)_2TX	26.11	0.40832	26.11	0.40832
802.11ac VHT80_Nss1,(MCS0)_2TX	18.54	0.07145	18.54	0.07145
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_2TX	26.08	0.40551	26.08	0.40551
802.11ac VHT20_Nss1,(MCS0)_2TX	26.10	0.40738	26.10	0.40738
802.11ac VHT40_Nss1,(MCS0)_2TX	26.38	0.43451	26.38	0.43451
802.11ac VHT80_Nss1,(MCS0)_2TX	25.54	0.35810	25.54	0.35810

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	0.00	22.09	22.08	25.10	30.00	25.10	36.00
5200MHz	Pass	0.00	23.22	23.28	26.26	30.00	26.26	36.00
5240MHz	Pass	0.00	23.21	23.25	26.24	30.00	26.24	36.00
5745MHz	Pass	0.00	22.91	23.23	26.08	30.00	26.08	36.00
5785MHz	Pass	0.00	22.81	23.02	25.93	30.00	25.93	36.00
5825MHz	Pass	0.00	22.84	23.07	25.97	30.00	25.97	36.00
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	0.00	20.65	20.43	23.55	30.00	23.55	36.00
5200MHz	Pass	0.00	23.15	23.2	26.19	30.00	26.19	36.00
5240MHz	Pass	0.00	23.29	23.23	26.27	30.00	26.27	36.00
5745MHz	Pass	0.00	22.87	23.29	26.10	30.00	26.10	36.00
5785MHz	Pass	0.00	22.82	23.14	25.99	30.00	25.99	36.00
5825MHz	Pass	0.00	22.87	23.2	26.05	30.00	26.05	36.00
802.11ac VHT40_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	0.00	16.69	16.59	19.65	30.00	19.65	36.00
5230MHz	Pass	0.00	23.06	23.14	26.11	30.00	26.11	36.00
5755MHz	Pass	0.00	23.38	23.36	26.38	30.00	26.38	36.00
5795MHz	Pass	0.00	23.19	23.24	26.23	30.00	26.23	36.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	0.00	15.51	15.55	18.54	30.00	18.54	36.00
5775MHz	Pass	0.00	22.67	22.39	25.54	30.00	25.54	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

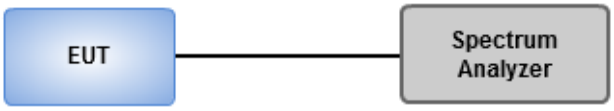
For 5150 ~ 5250 MHz

1. Set RBW = 1 MHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time ≥ 10 * (number of points in sweep) * (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

1. Set RBW = 500 kHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time ≥ 10 * (number of points in sweep) * (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

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	14.48	17.49
802.11ac VHT20_Nss1,(MCS0)_2TX	14.35	17.36
802.11ac VHT40_Nss1,(MCS0)_2TX	11.81	14.82
802.11ac VHT80_Nss1,(MCS0)_2TX	3.27	6.28
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_2TX	12.67	15.68
802.11ac VHT20_Nss1,(MCS0)_2TX	12.62	15.63
802.11ac VHT40_Nss1,(MCS0)_2TX	11.11	14.12
802.11ac VHT80_Nss1,(MCS0)_2TX	9.13	12.14

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

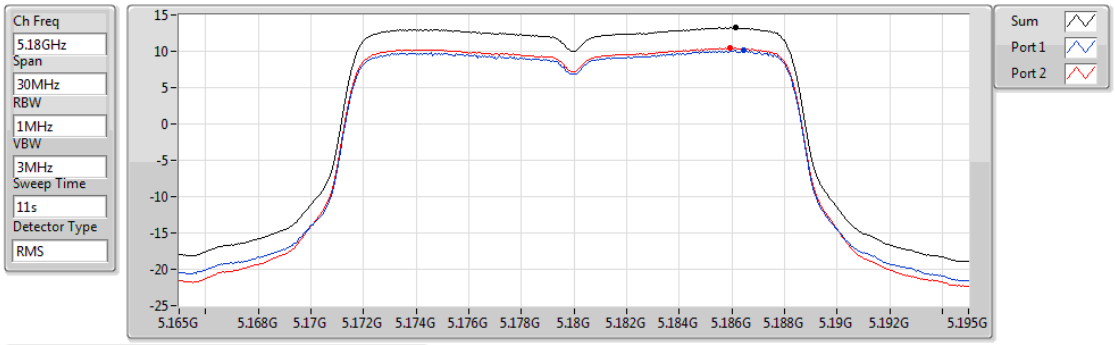
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)	EIRP PD (dBm/RBW)	EIRP PD Limit (dBm/RBW)
802.11a_Nss1, (6Mbps)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.01	10.10	10.46	13.28	17.00	16.29	23.00
5200MHz	Pass	3.01	11.18	11.12	14.10	17.00	17.11	23.00
5240MHz	Pass	3.01	11.44	11.55	14.48	17.00	17.49	23.00
5745MHz	Pass	3.01	9.46	9.68	12.49	30.00	15.50	36.00
5785MHz	Pass	3.01	9.15	9.20	12.14	30.00	15.15	36.00
5825MHz	Pass	3.01	9.40	9.90	12.67	30.00	15.68	36.00
802.11ac VHT20_Nss1, (MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	3.01	9.06	8.93	11.97	17.00	14.98	23.00
5200MHz	Pass	3.01	11.09	10.91	13.97	17.00	16.98	23.00
5240MHz	Pass	3.01	11.32	11.46	14.35	17.00	17.36	23.00
5745MHz	Pass	3.01	9.05	10.19	12.62	30.00	15.63	36.00
5785MHz	Pass	3.01	8.89	9.47	12.15	30.00	15.16	36.00
5825MHz	Pass	3.01	9.32	8.82	12.09	30.00	15.10	36.00
802.11ac VHT40_Nss1, (MCS0)_2TX	-	-	-	-	-	-	-	-
5190MHz	Pass	3.01	3.37	3.16	6.22	17.00	9.23	23.00
5230MHz	Pass	3.01	8.80	8.86	11.81	17.00	14.82	23.00
5755MHz	Pass	3.01	7.84	8.42	11.11	30.00	14.12	36.00
5795MHz	Pass	3.01	7.90	8.12	11.01	30.00	14.02	36.00
802.11ac VHT80_Nss1, (MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	3.01	0.44	0.13	3.27	17.00	6.28	23.00
5775MHz	Pass	3.01	5.93	6.40	9.13	30.00	12.14	36.00

DG = Directional Gain; **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;
Test results of each port are measured value with duty factor

802.11a_Nss1,(6Mbps)_2TX PSD

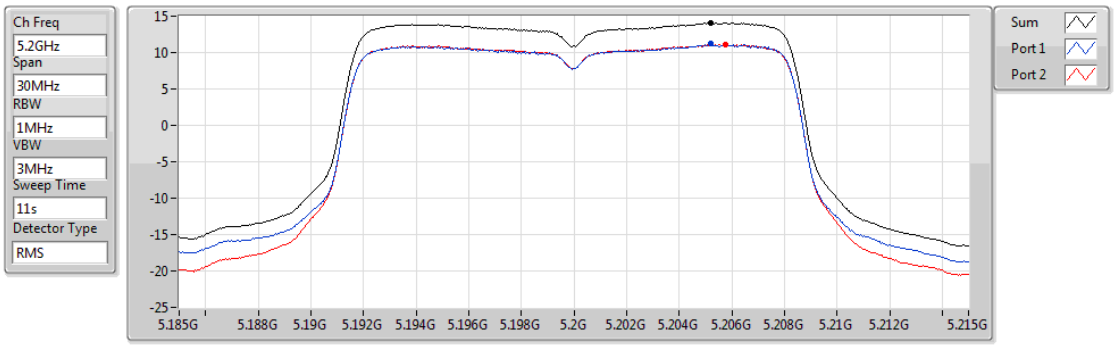
5180MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.28	13.28	10.10	10.46

802.11a_Nss1,(6Mbps)_2TX PSD

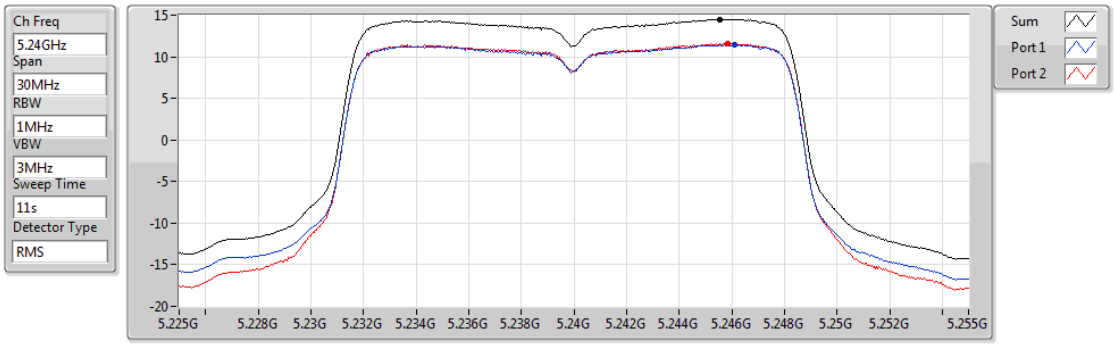
5200MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.10	14.10	11.18	11.12

802.11a_Nss1,(6Mbps)_2TX PSD

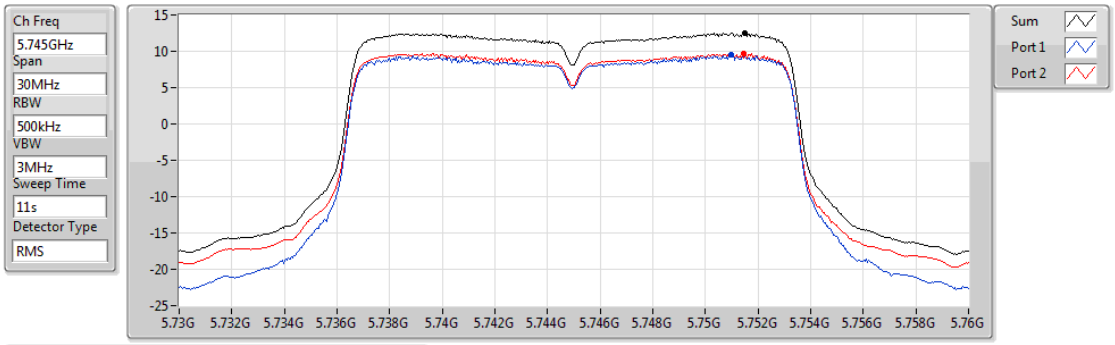
5240MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.48	14.48	11.44	11.55

802.11a_Nss1,(6Mbps)_2TX PSD

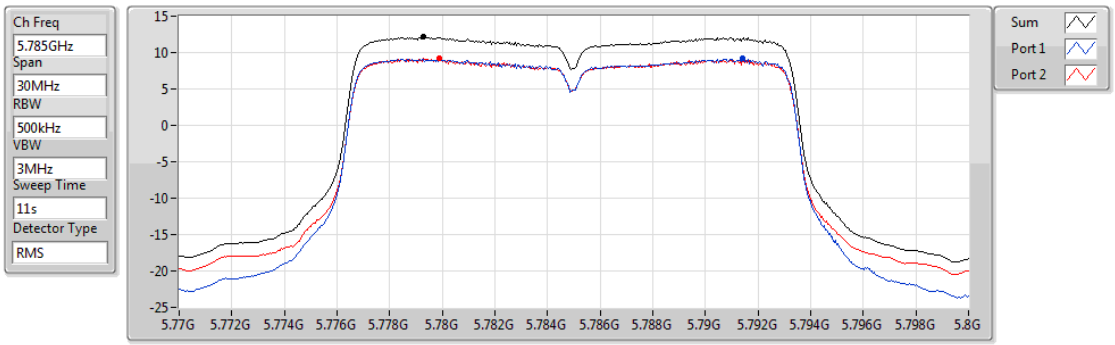
5745MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.49	12.49	9.46	9.68

802.11a_Nss1,(6Mbps)_2TX PSD

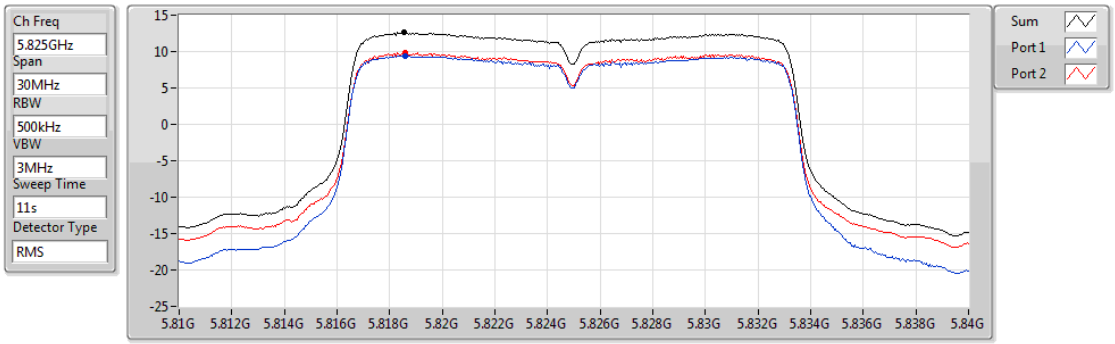
5785MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.14	12.14	9.15	9.20

802.11a_Nss1,(6Mbps)_2TX PSD

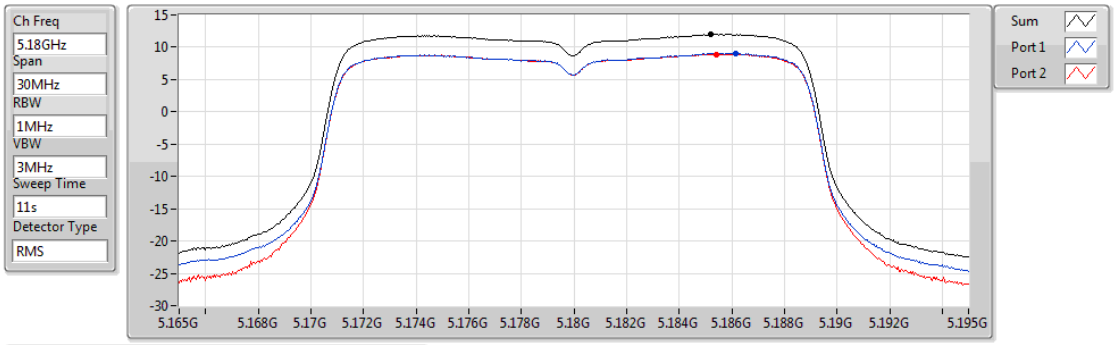
5825MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.67	12.67	9.40	9.90

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

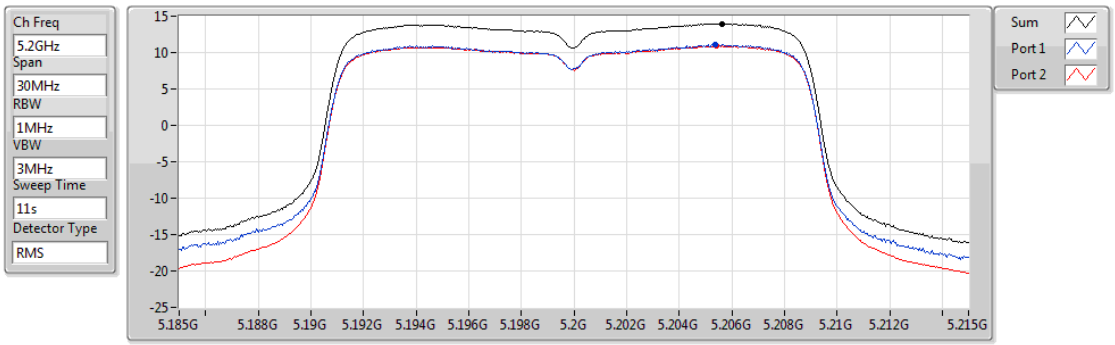
5180MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.97	11.97	9.06	8.93

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

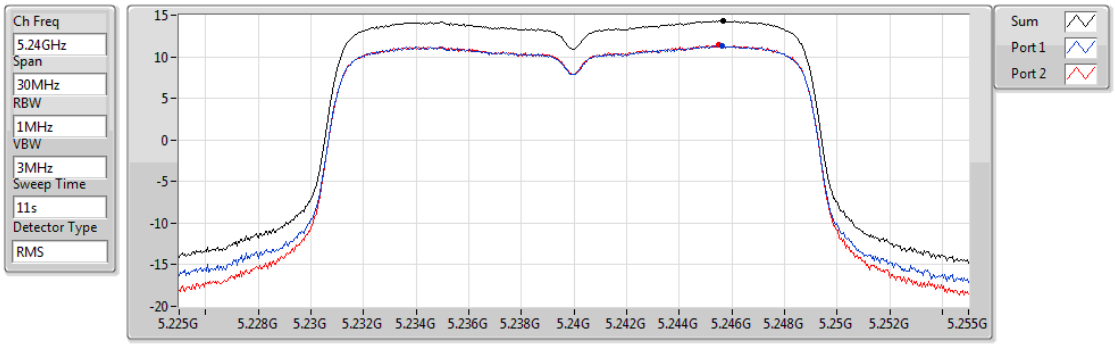
5200MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
13.97	13.97	11.09	10.91

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

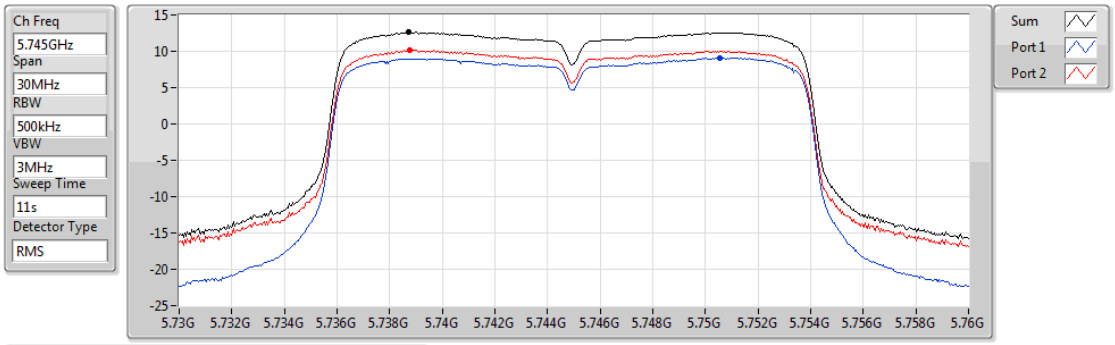
5240MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
14.35	14.35	11.32	11.46

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

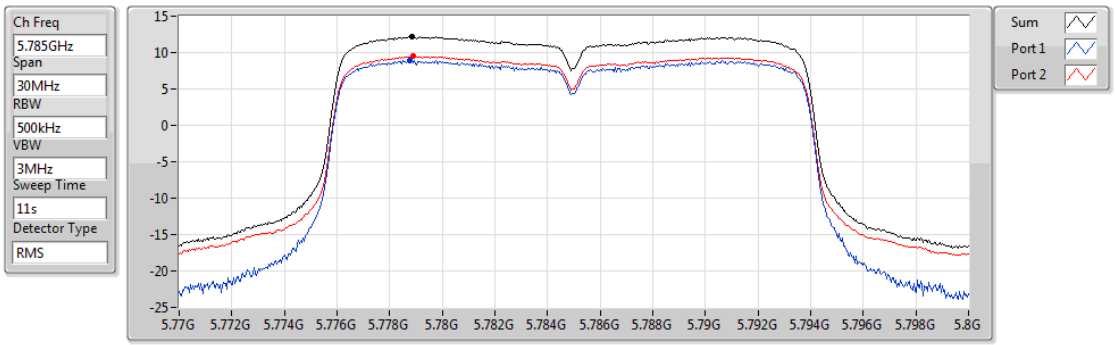
5745MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.62	12.62	9.05	10.19

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

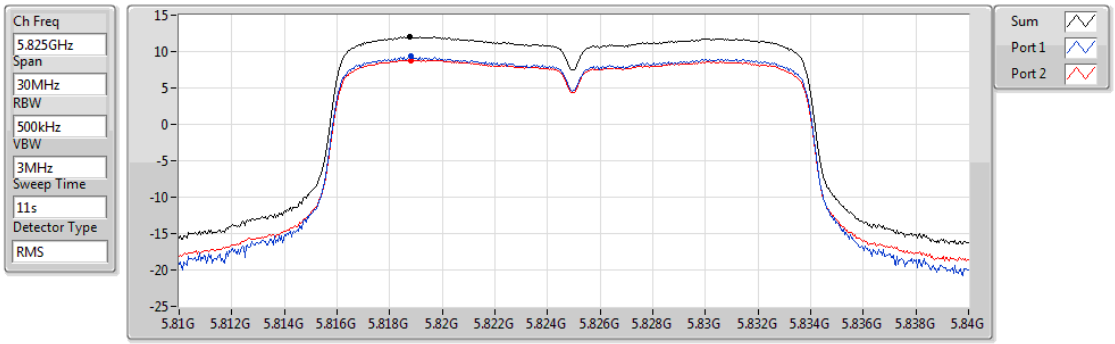
5785MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.15	12.15	8.89	9.47

802.11ac VHT20_Nss1,(MCS0)_2TX PSD

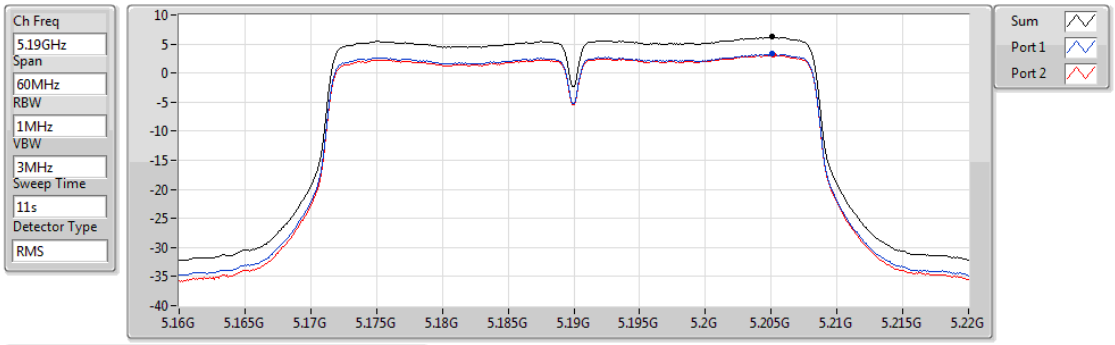
5825MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
12.09	12.09	9.32	8.82

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

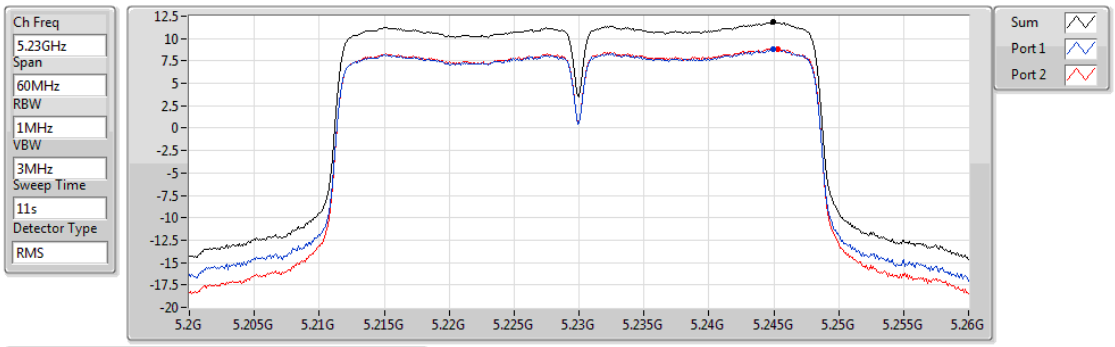
5190MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
6.22	6.22	3.37	3.16

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

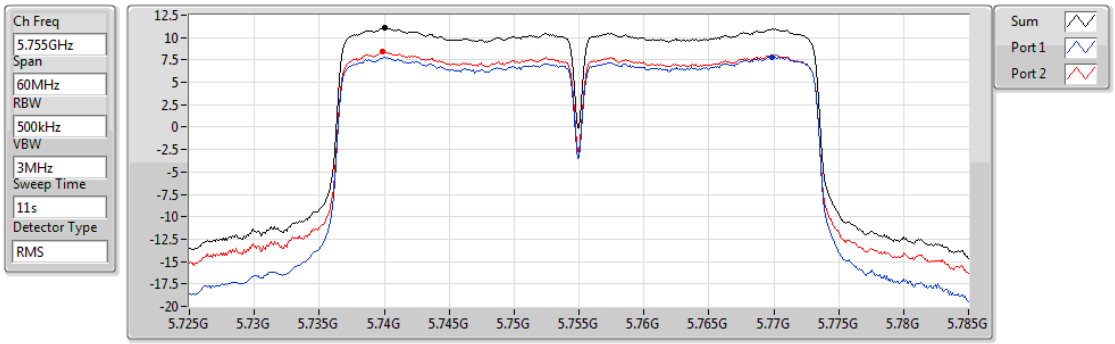
5230MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.81	11.81	8.80	8.86

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

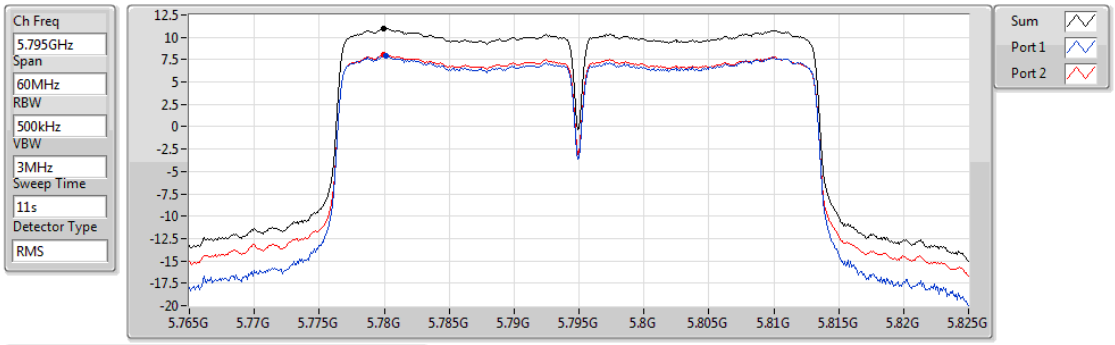
5755MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.11	11.11	7.84	8.42

802.11ac VHT40_Nss1,(MCS0)_2TX PSD

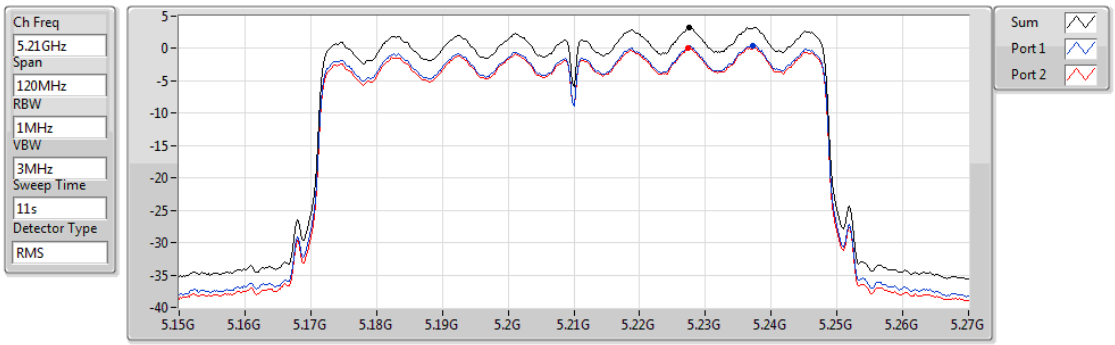
5795MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
11.01	11.01	7.90	8.12

802.11ac VHT80_Nss1,(MCS0)_2TX PSD

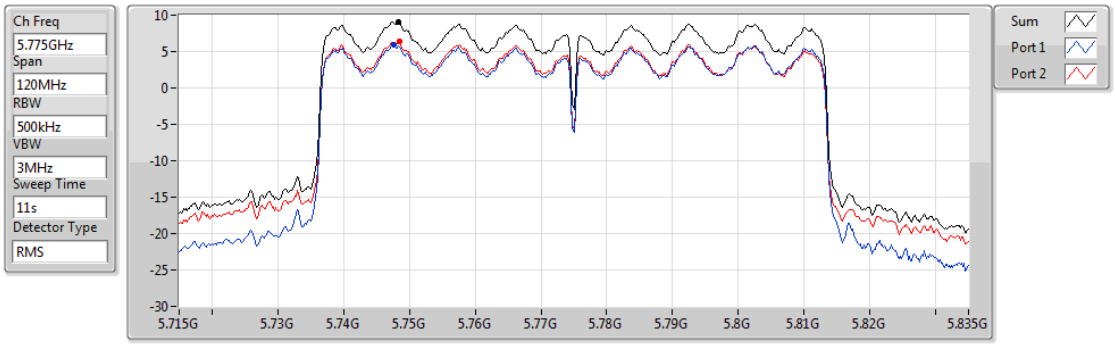
5210MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
3.27	3.27	0.44	0.13

802.11ac VHT80_Nss1,(MCS0)_2TX PSD

5775MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.13	9.13	5.93	6.40

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

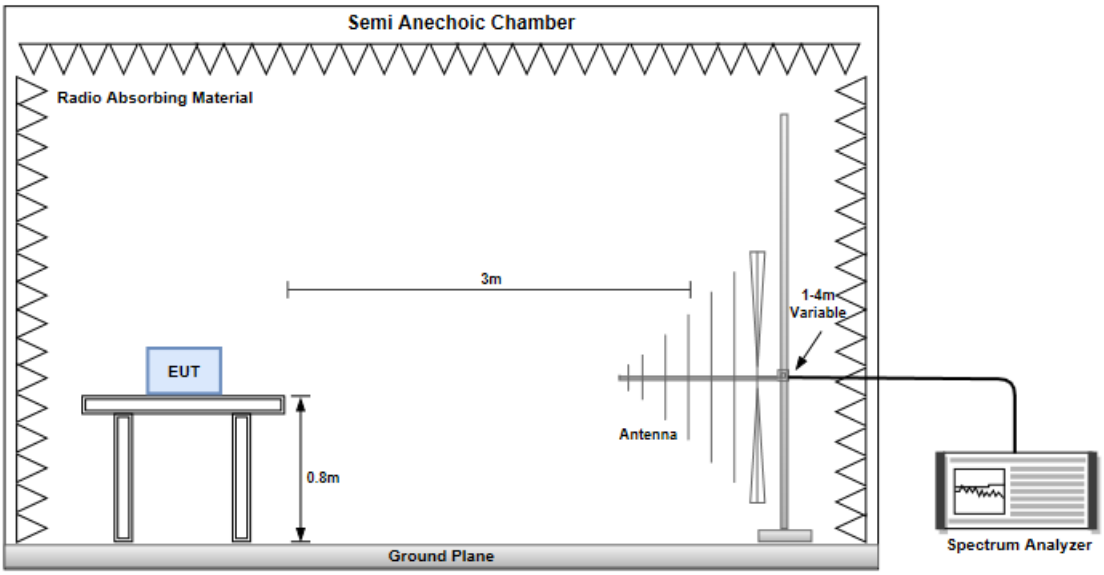
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

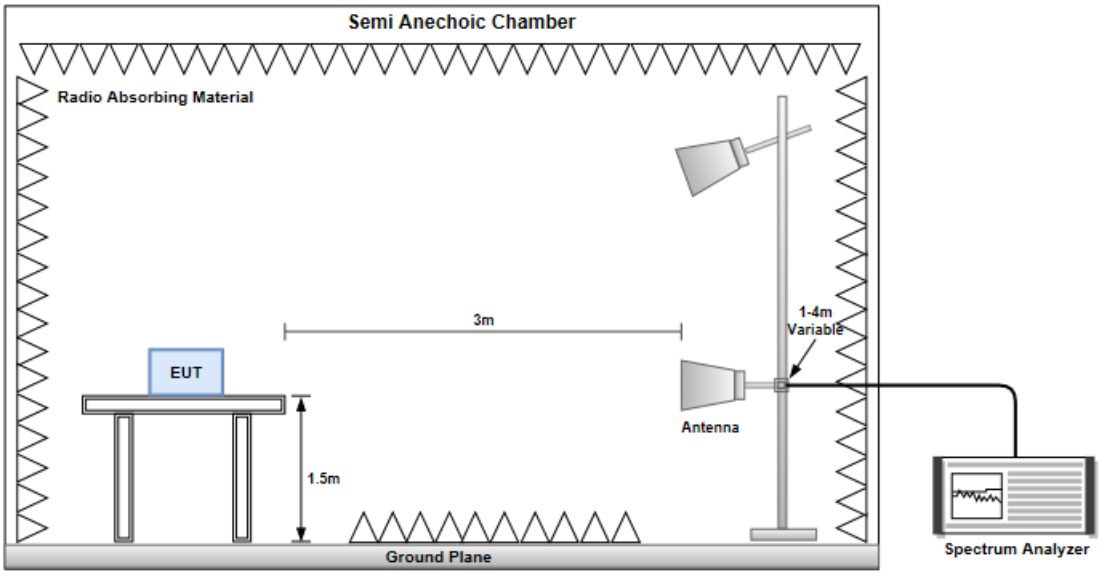
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

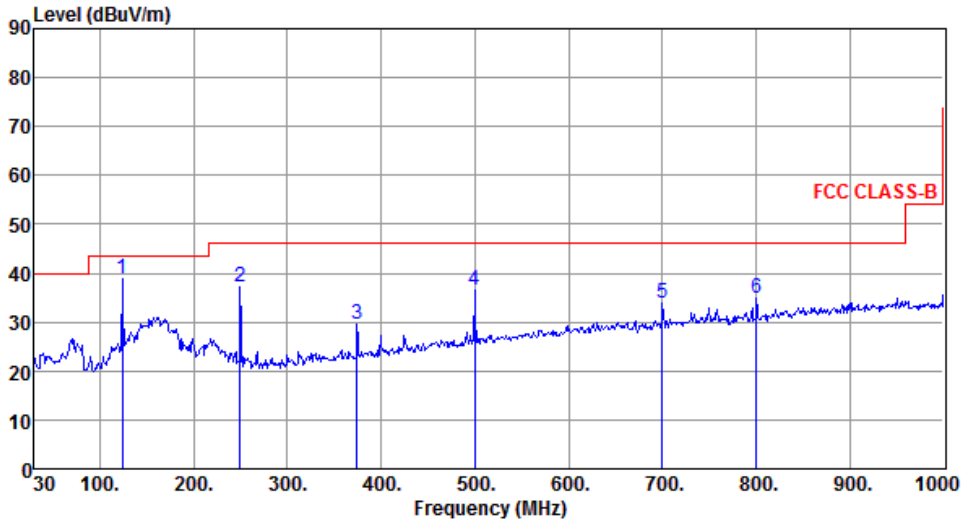


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

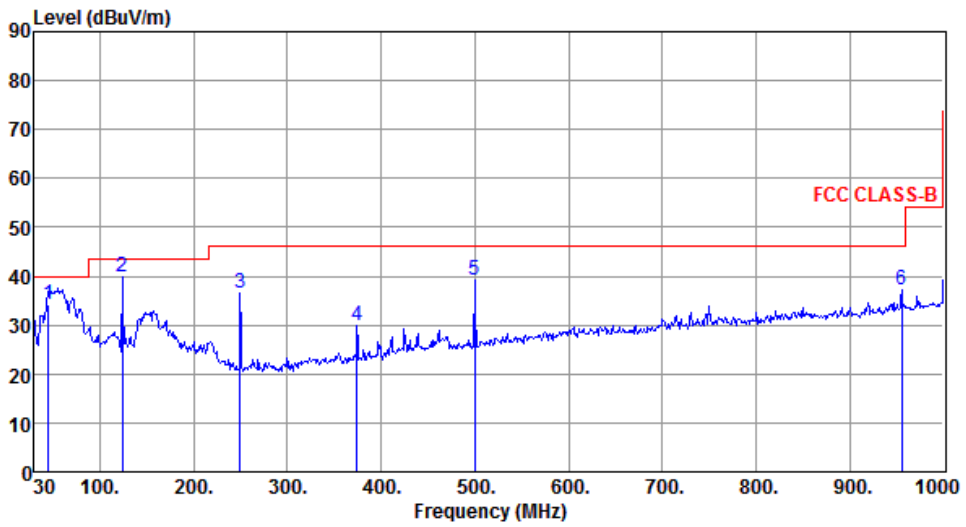
Modulation	VHT20	**Test Freq. (MHz)**	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	124.09	38.82	43.50	-4.68	49.06	-10.24	Peak	---	---
2	249.22	37.20	46.00	-8.80	46.39	-9.19	Peak	---	---
3	374.35	29.58	46.00	-16.42	35.34	-5.76	Peak	---	---
4	499.48	36.59	46.00	-9.41	39.59	-3.00	Peak	---	---
5	700.27	33.87	46.00	-12.13	32.82	1.05	Peak	---	---
6	800.18	34.84	46.00	-11.16	31.94	2.90	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.

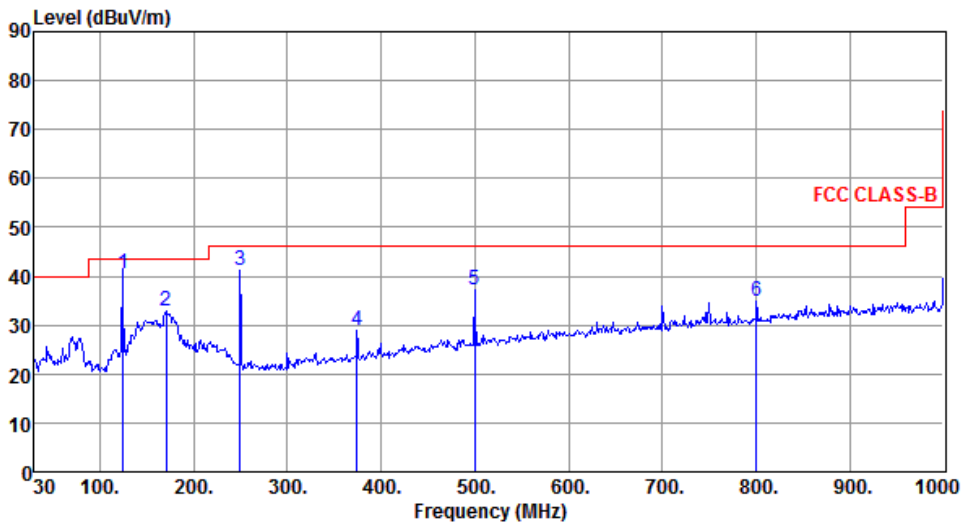
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	45.48	34.24	40.00	-5.76	42.43	-8.19	QP	100	6
2	124.09	39.89	43.50	-3.61	50.13	-10.24	Peak	---	---
3	249.22	36.38	46.00	-9.62	45.57	-9.19	Peak	---	---
4	374.35	29.81	46.00	-16.19	35.57	-5.76	Peak	---	---
5	499.48	39.29	46.00	-6.71	42.29	-3.00	Peak	---	---
6	955.38	37.33	46.00	-8.67	31.85	5.48	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

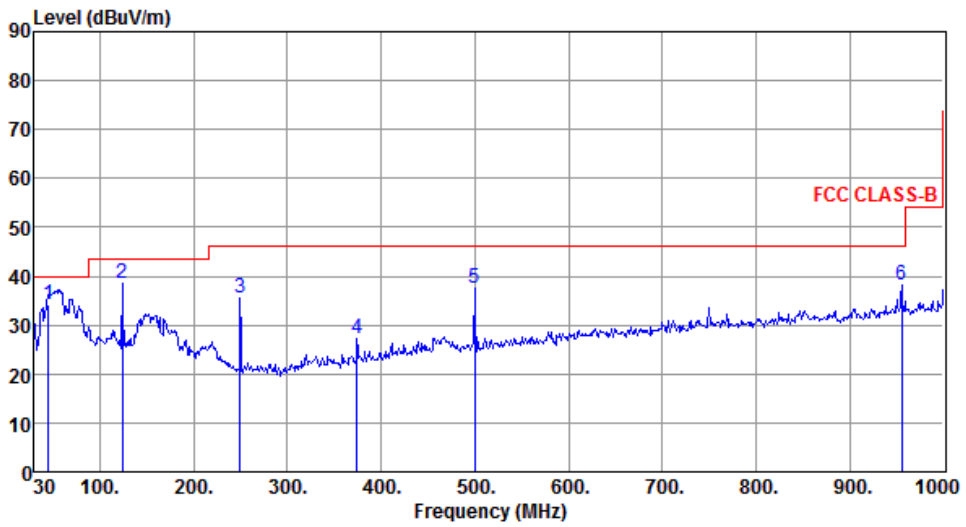
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	125.01	40.49	43.50	-3.01	50.63	-10.14	QP	145	101
2	170.65	32.94	43.50	-10.56	41.37	-8.43	Peak	---	---
3	249.22	41.23	46.00	-4.77	50.42	-9.19	Peak	---	---
4	374.35	28.83	46.00	-17.17	34.59	-5.76	Peak	---	---
5	499.48	37.14	46.00	-8.86	40.14	-3.00	Peak	---	---
6	800.18	34.92	46.00	-11.08	32.02	2.90	Peak	---	---

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		

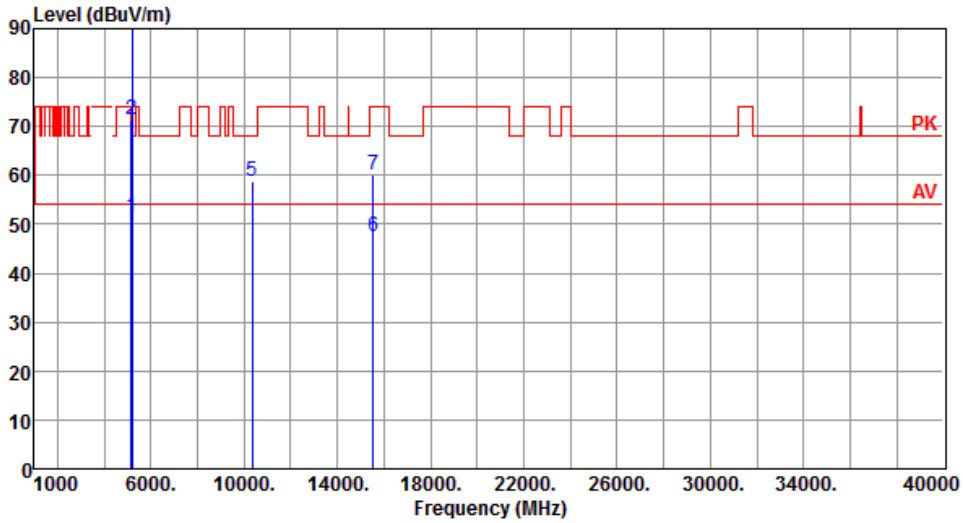


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	45.48	34.26	40.00	-5.74	42.45	-8.19	QP	100	4
2	124.09	38.64	43.50	-4.86	48.88	-10.24	Peak	---	---
3	249.22	35.62	46.00	-10.38	44.81	-9.19	Peak	---	---
4	374.35	27.35	46.00	-18.65	33.11	-5.76	Peak	---	---
5	499.48	37.41	46.00	-8.59	40.41	-3.00	Peak	---	---
6	955.38	38.10	46.00	-7.90	32.62	5.48	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.

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

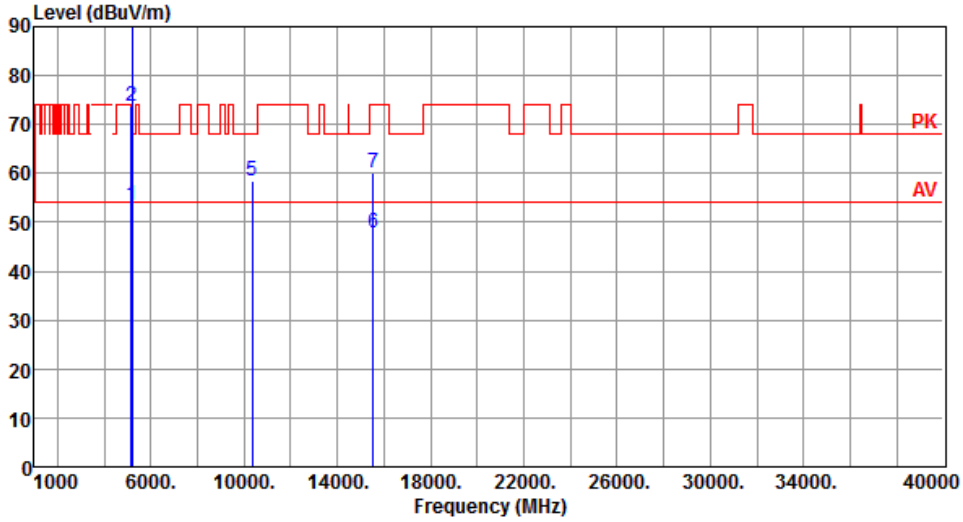
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



		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	51.41	54.00	-2.59	45.20	6.21	Average	100	140
2		5150.00	71.47	74.00	-2.53	65.26	6.21	Peak	100	140
3	*	5180.00	104.65			98.43	6.22	Average	100	140
4	*	5180.00	113.14			106.92	6.22	Peak	100	140
5		10360.00	58.64	68.20	-9.56	42.89	15.75	Peak	100	23
6		15540.00	47.63	54.00	-6.37	31.24	16.39	Average	100	158
7		15540.00	59.97	74.00	-14.03	43.58	16.39	Peak	100	158

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: "*" is Peak / Average value of fundamental frequency

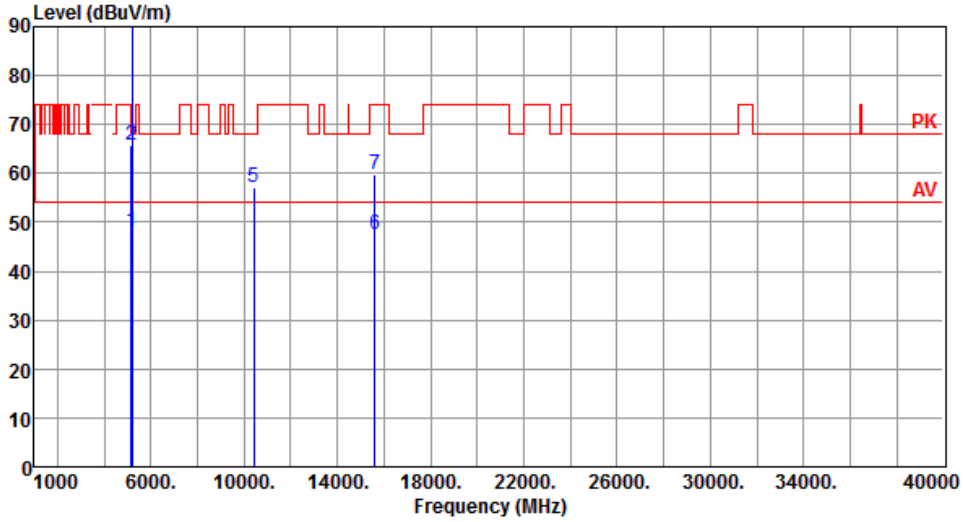
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



		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	53.58	54.00	-0.42	47.37	6.21	Average	260	160
2		5150.00	73.70	74.00	-0.30	67.49	6.21	Peak	260	160
3	*	5180.00	105.74			99.52	6.22	Average	260	160
4	*	5180.00	115.29			109.07	6.22	Peak	260	160
5		10360.00	58.31	68.20	-9.89	42.56	15.75	Peak	100	65
6		15540.00	47.81	54.00	-6.19	31.42	16.39	Average	100	169
7		15540.00	60.24	74.00	-13.76	43.85	16.39	Peak	100	169

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: "*" is Peak / Average value of fundamental frequency

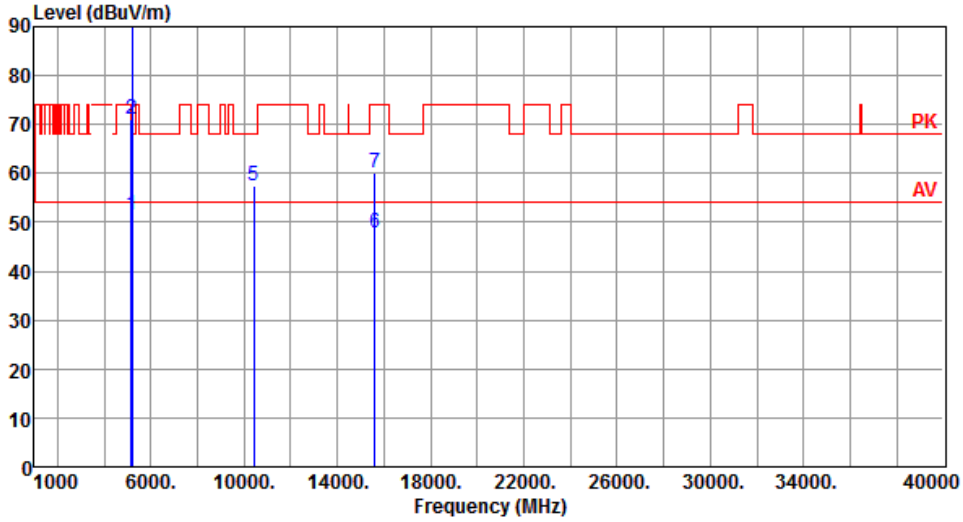
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



		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	48.14	54.00	-5.86	41.93	6.21	Average	100	137
2		5150.00	65.84	74.00	-8.16	59.63	6.21	Peak	100	137
3	*	5200.00	105.48			99.26	6.22	Average	100	137
4	*	5200.00	114.76			108.54	6.22	Peak	100	137
5		10400.00	57.03	68.20	-11.17	41.25	15.78	Peak	100	20
6		15600.00	47.57	54.00	-6.43	31.30	16.27	Average	100	163
7		15600.00	59.68	74.00	-14.32	43.41	16.27	Peak	100	163

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: "*" is Peak / Average value of fundamental frequency

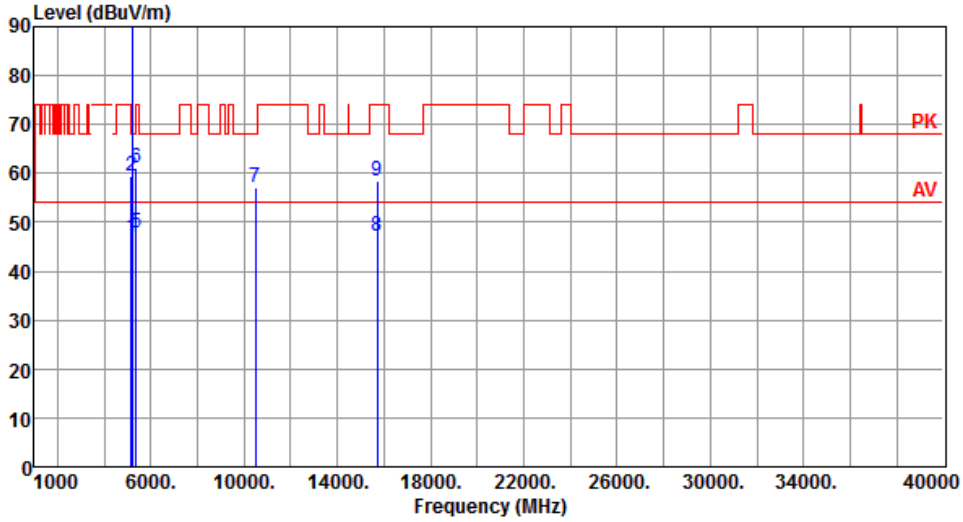
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



		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	51.55	54.00	-2.45	45.34	6.21	Average	266	160
2		5150.00	71.18	74.00	-2.82	64.97	6.21	Peak	266	160
3	*	5200.00	108.00			101.78	6.22	Average	278	160
4	*	5200.00	116.24			110.02	6.22	Peak	278	160
5		10400.00	57.39	68.20	-10.81	41.61	15.78	Peak	100	9
6		15600.00	47.92	54.00	-6.08	31.65	16.27	Average	100	4
7		15600.00	60.04	74.00	-13.96	43.77	16.27	Peak	100	4

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: ”*” is Peak / Average value of fundamental frequency

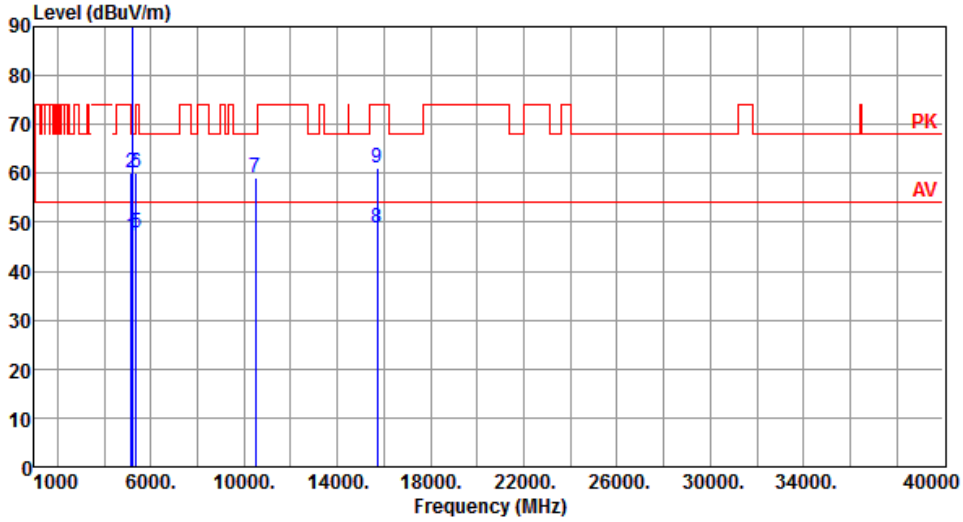
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



		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	46.69	54.00	-7.31	40.48	6.21	Average	100	130
2		5150.00	59.46	74.00	-14.54	53.25	6.21	Peak	100	130
3	*	5240.00	106.97			100.68	6.29	Average	100	130
4	*	5240.00	117.18			110.89	6.29	Peak	100	130
5		5350.00	47.89	54.00	-6.11	41.44	6.45	Average	100	130
6		5350.00	60.97	74.00	-13.03	54.52	6.45	Peak	100	130
7		10480.00	57.03	68.20	-11.17	41.20	15.83	Peak	100	202
8		15720.00	47.13	54.00	-6.87	31.10	16.03	Average	100	161
9		15720.00	58.56	74.00	-15.44	42.53	16.03	Peak	100	161

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: "*" is Peak / Average value of fundamental frequency

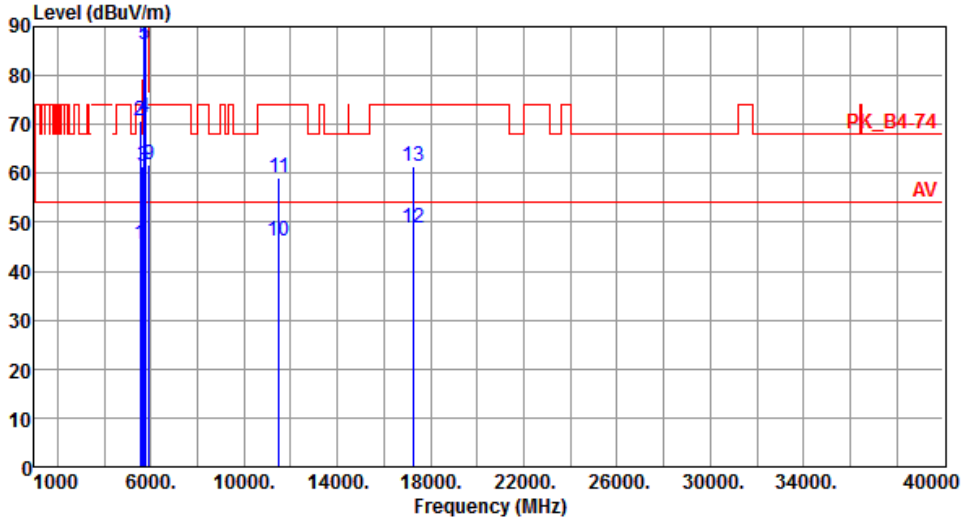
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



		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	47.18	54.00	-6.82	40.97	6.21	Average	259	162
2		5150.00	60.17	74.00	-13.83	53.96	6.21	Peak	259	162
3	*	5240.00	108.24			101.95	6.29	Average	259	162
4	*	5240.00	118.39			112.10	6.29	Peak	259	162
5		5350.00	47.74	54.00	-6.26	41.29	6.45	Average	259	162
6		5350.00	60.24	74.00	-13.76	53.79	6.45	Peak	259	162
7		10480.00	59.17	68.20	-9.03	43.34	15.83	Peak	158	63
8		15720.00	48.73	54.00	-5.27	32.70	16.03	Average	189	253
9		15720.00	61.03	74.00	-12.97	45.00	16.03	Peak	189	253

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: "*" is Peak / Average value of fundamental frequency

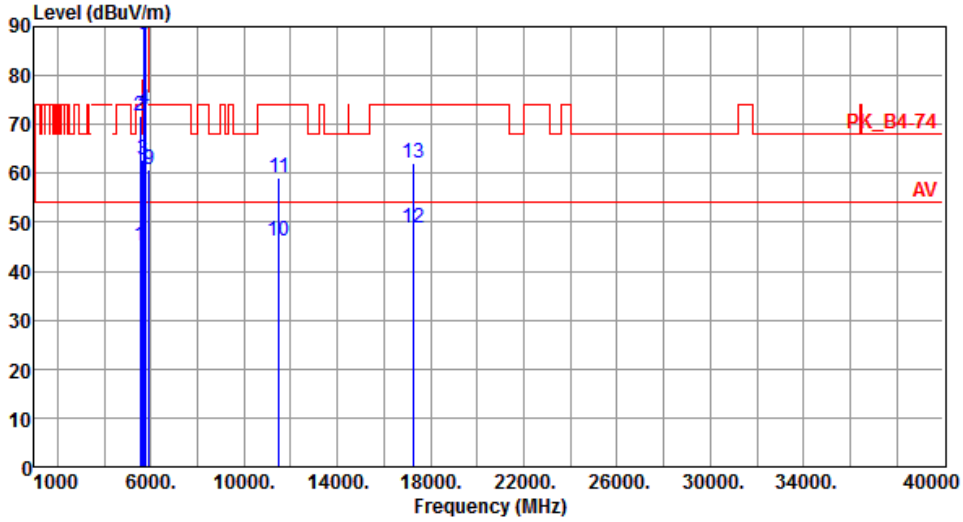
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5545.00	45.54	54.00	-8.46	38.86	6.68	Average	100	49
2		5545.00	70.87	74.00	-3.13	64.19	6.68	Peak	100	49
3		5650.00	61.58	68.20	-6.62	54.72	6.86	Peak	100	49
4		5700.00	71.47	105.20	-33.73	64.51	6.96	Peak	100	49
5		5720.00	86.47	110.80	-24.33	79.47	7.00	Peak	100	49
6		5725.00	93.58	122.20	-28.62	86.58	7.00	Peak	100	49
7	*	5745.00	107.71			100.67	7.04	Average	100	49
8	*	5745.00	116.62			109.58	7.04	Peak	100	49
9		5925.00	61.61	68.20	-6.59	54.23	7.38	Peak	100	49
10		11490.00	46.24	54.00	-7.76	29.75	16.49	Average	100	173
11		11490.00	59.04	74.00	-14.96	42.55	16.49	Peak	100	173
12		17235.00	48.76	54.00	-5.24	30.39	18.37	Average	100	158
13		17235.00	61.36	74.00	-12.64	42.99	18.37	Peak	100	158

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: "*" is Peak / Average value of fundamental frequency

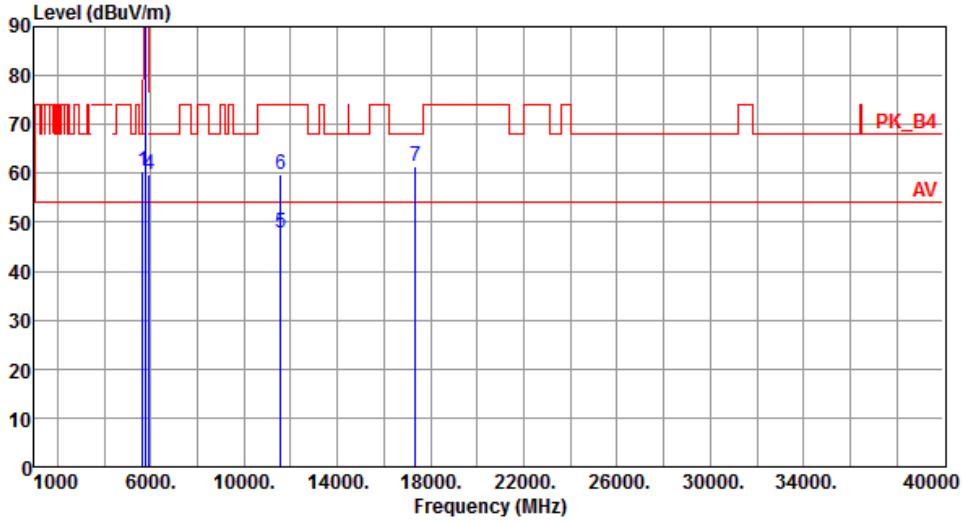
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5545.00	45.01	54.00	-8.99	38.33	6.68	Average	100	313
2		5545.00	71.63	74.00	-2.37	64.95	6.68	Peak	100	313
3		5650.00	62.62	68.20	-5.58	55.76	6.86	Peak	210	261
4		5700.00	73.19	105.20	-32.01	66.23	6.96	Peak	210	261
5		5720.00	88.50	110.80	-22.30	81.50	7.00	Peak	210	261
6		5725.00	93.97	122.20	-28.23	86.97	7.00	Peak	210	261
7	*	5745.00	109.52			102.48	7.04	Average	210	261
8	*	5745.00	118.92			111.88	7.04	Peak	210	261
9		5925.00	60.66	68.20	-7.54	53.28	7.38	Peak	210	261
10		11490.00	46.18	54.00	-7.82	29.69	16.49	Average	100	271
11		11490.00	59.13	74.00	-14.87	42.64	16.49	Peak	100	271
12		17235.00	48.68	54.00	-5.32	30.31	18.37	Average	100	274
13		17235.00	61.96	74.00	-12.04	43.59	18.37	Peak	100	274

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: "*" is Peak / Average value of fundamental frequency

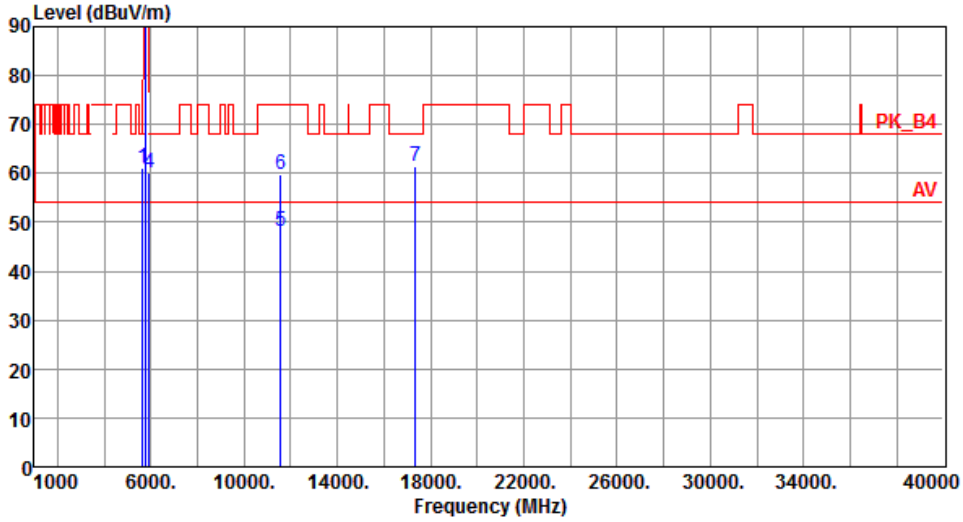
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



		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	60.34	68.20	-7.86	53.48	6.86	Peak	100	45
2	*	5785.00	105.66			98.53	7.13	Average	100	45
3	*	5785.00	114.85			107.72	7.13	Peak	100	45
4		5925.00	59.62	68.20	-8.58	52.24	7.38	Peak	100	45
5		11570.00	47.80	54.00	-6.20	31.41	16.39	Average	185	172
6		11570.00	59.76	74.00	-14.24	43.37	16.39	Peak	185	172
7		17355.00	61.56	68.20	-6.64	42.83	18.73	Peak	100	49

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: "*" is Peak / Average value of fundamental frequency

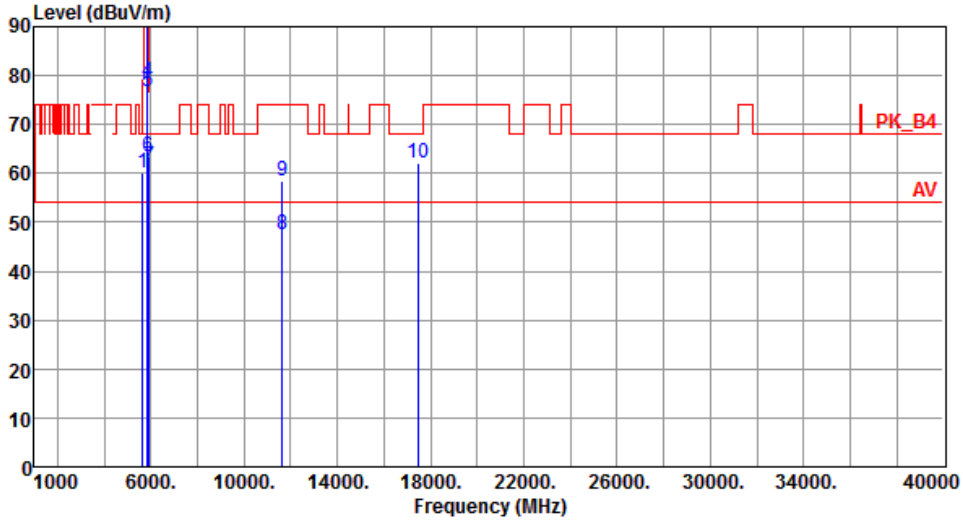
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



		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	61.20	68.20	-7.00	54.34	6.86	Peak	219	262
2	*	5785.00	107.65			100.52	7.13	Average	219	262
3	*	5785.00	117.37			110.24	7.13	Peak	219	262
4		5925.00	60.26	68.20	-7.94	52.88	7.38	Peak	219	262
5		11570.00	48.25	54.00	-5.75	31.86	16.39	Average	188	249
6		11570.00	59.73	74.00	-14.27	43.34	16.39	Peak	188	249
7		17355.00	61.57	68.20	-6.63	42.84	18.73	Peak	100	271

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: "*" is Peak / Average value of fundamental frequency

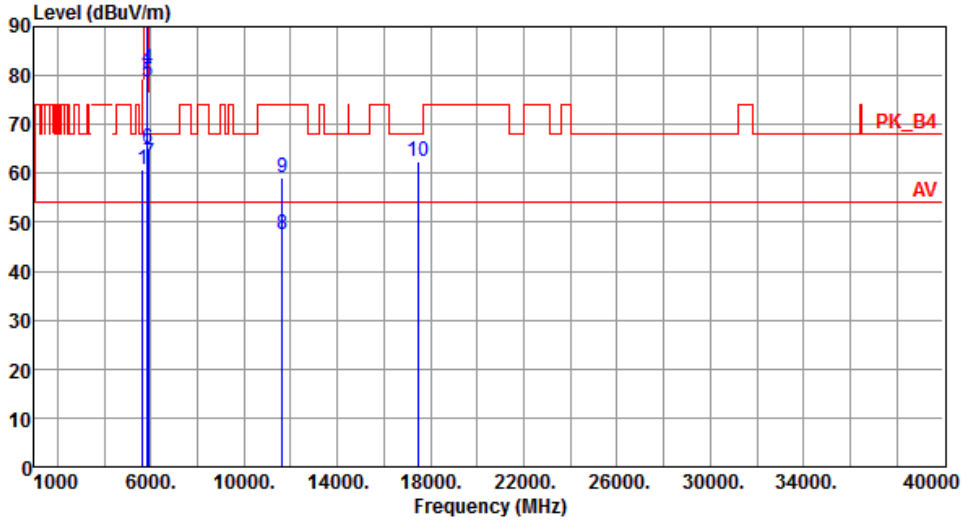
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



		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	60.03	68.20	-8.17	53.17	6.86	Peak	100	51
2	*	5825.00	105.75			98.55	7.20	Average	100	51
3	*	5825.00	115.12			107.92	7.20	Peak	100	51
4		5850.00	78.57	122.20	-43.63	71.33	7.24	Peak	100	51
5		5855.00	76.57	110.80	-34.23	69.31	7.26	Peak	100	51
6		5875.00	63.41	105.20	-41.79	56.12	7.29	Peak	100	51
7		5925.00	61.47	68.20	-6.73	54.09	7.38	Peak	100	51
8		11650.00	47.44	54.00	-6.56	31.17	16.27	Average	100	171
9		11650.00	58.57	74.00	-15.43	42.30	16.27	Peak	100	171
10		17475.00	62.22	68.20	-5.98	43.11	19.11	Peak	100	160

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: "*" is Peak / Average value of fundamental frequency

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

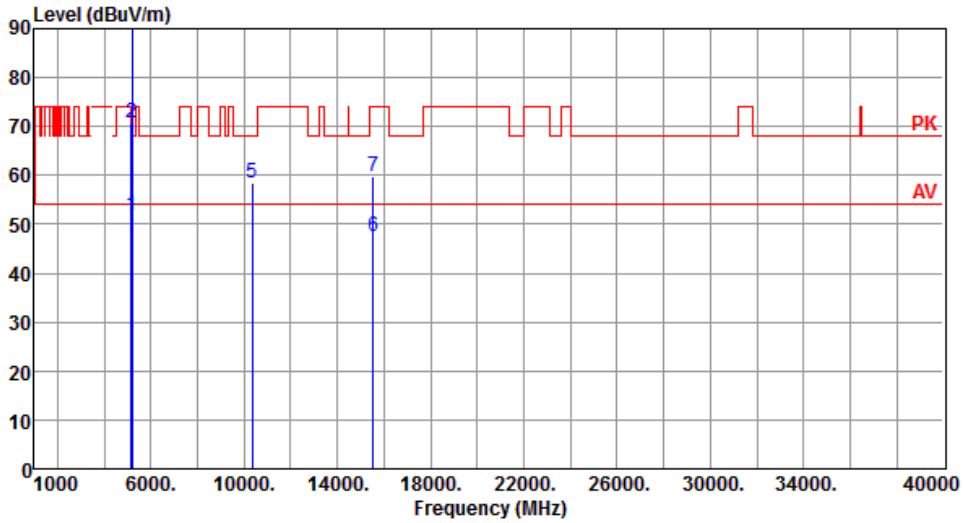


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5650.00	60.78	68.20	-7.42	53.92	6.86	Peak	222	284
2	*	5825.00	108.09			100.89	7.20	Average	222	284
3	*	5825.00	117.48			110.28	7.20	Peak	222	284
4		5850.00	81.31	122.20	-40.89	74.07	7.24	Peak	222	284
5		5855.00	78.76	110.80	-32.04	71.50	7.26	Peak	222	284
6		5875.00	65.00	105.20	-40.20	57.71	7.29	Peak	222	284
7		5925.00	61.98	68.20	-6.22	54.60	7.38	Peak	222	284
8		11650.00	47.42	54.00	-6.58	31.15	16.27	Average	100	250
9		11650.00	59.08	74.00	-14.92	42.81	16.27	Peak	100	250
10		17475.00	62.52	68.20	-5.68	43.41	19.11	Peak	100	271

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: "*" is Peak / Average value of fundamental frequency

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

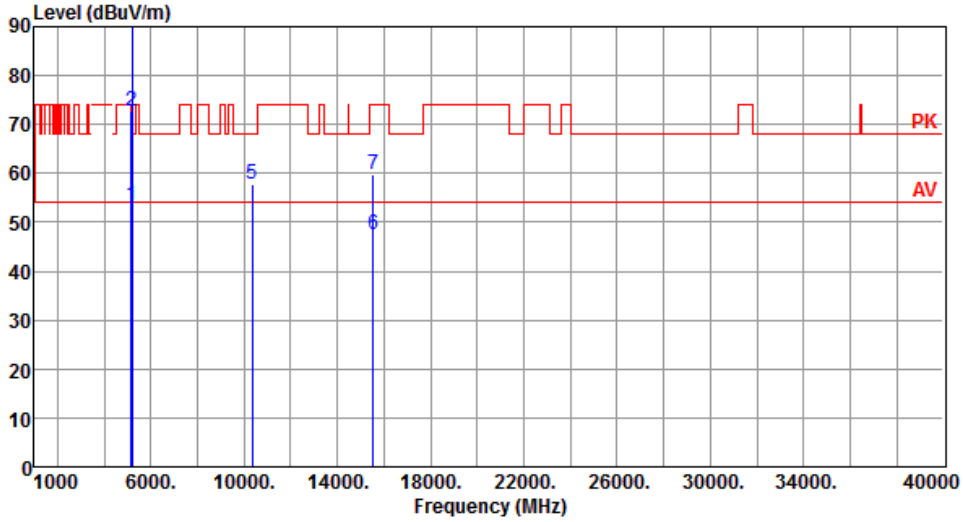
Modulation	VHT20	**Test Freq. (MHz)**	5180
Polarization	Horizontal		



		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	51.86	54.00	-2.14	45.65	6.21	Average	100	135
2		5150.00	70.58	74.00	-3.42	64.37	6.21	Peak	100	135
3	*	5180.00	103.89			97.67	6.22	Average	100	135
4	*	5180.00	114.11			107.89	6.22	Peak	100	135
5		10360.00	58.44	68.20	-9.76	42.69	15.75	Peak	100	23
6		15540.00	47.58	54.00	-6.42	31.19	16.39	Average	100	23
7		15540.00	59.89	74.00	-14.11	43.50	16.39	Peak	100	160

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: "*" is Peak / Average value of fundamental frequency

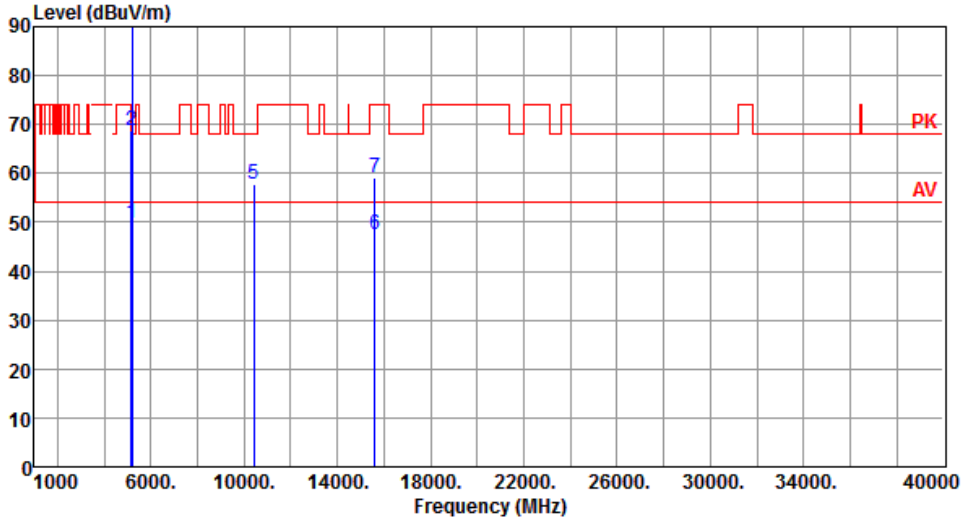
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



		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	53.62	54.00	-0.38	47.41	6.21	Average	263	161
2		5150.00	72.79	74.00	-1.21	66.58	6.21	Peak	263	161
3	*	5180.00	104.99			98.77	6.22	Average	263	161
4	*	5180.00	115.21			108.99	6.22	Peak	263	161
5		10360.00	57.91	68.20	-10.29	42.16	15.75	Peak	100	315
6		15540.00	47.65	54.00	-6.35	31.26	16.39	Average	100	207
7		15540.00	59.67	74.00	-14.33	43.28	16.39	Peak	100	207

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: ”*” is Peak / Average value of fundamental frequency

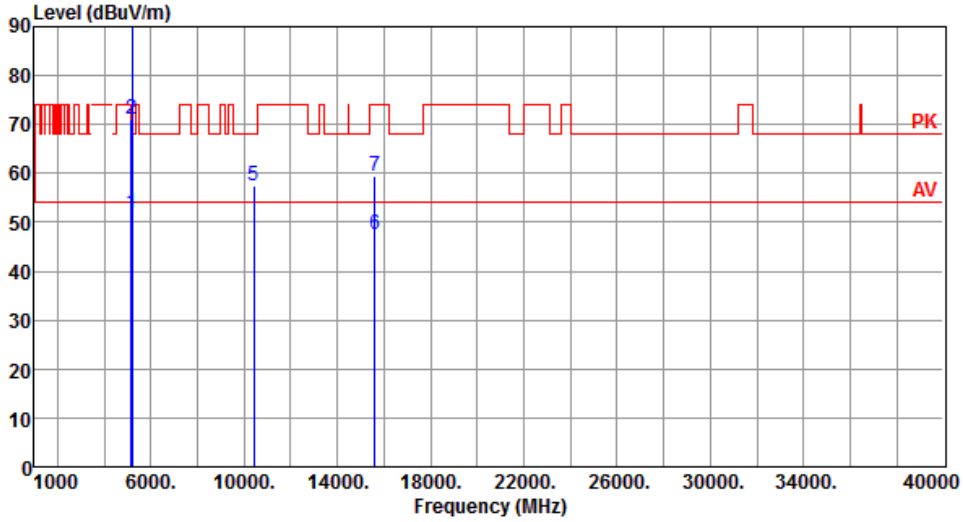
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



		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	49.87	54.00	-4.13	43.66	6.21	Average	100	138
2		5150.00	68.84	74.00	-5.16	62.63	6.21	Peak	100	138
3	*	5200.00	106.78			100.56	6.22	Average	100	138
4	*	5200.00	116.23			110.01	6.22	Peak	100	138
5		10400.00	57.63	68.20	-10.57	41.85	15.78	Peak	100	25
6		15600.00	47.51	54.00	-6.49	31.24	16.27	Average	100	162
7		15600.00	59.21	74.00	-14.79	42.94	16.27	Peak	100	162

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: "*" is Peak / Average value of fundamental frequency

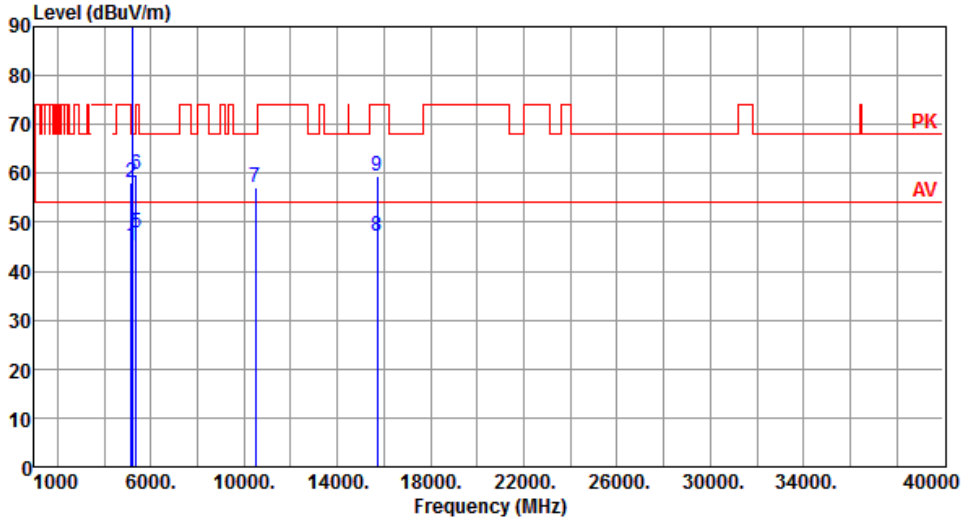
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



		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	51.65	54.00	-2.35	45.44	6.21	Average	243	160
2		5150.00	70.97	74.00	-3.03	64.76	6.21	Peak	243	160
3	*	5200.00	107.98			101.76	6.22	Average	256	160
4	*	5200.00	117.47			111.25	6.22	Peak	256	160
5		10400.00	57.34	68.20	-10.86	41.56	15.78	Peak	100	325
6		15600.00	47.63	54.00	-6.37	31.36	16.27	Average	100	205
7		15600.00	59.53	74.00	-14.47	43.26	16.27	Peak	100	205

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: "*" is Peak / Average value of fundamental frequency

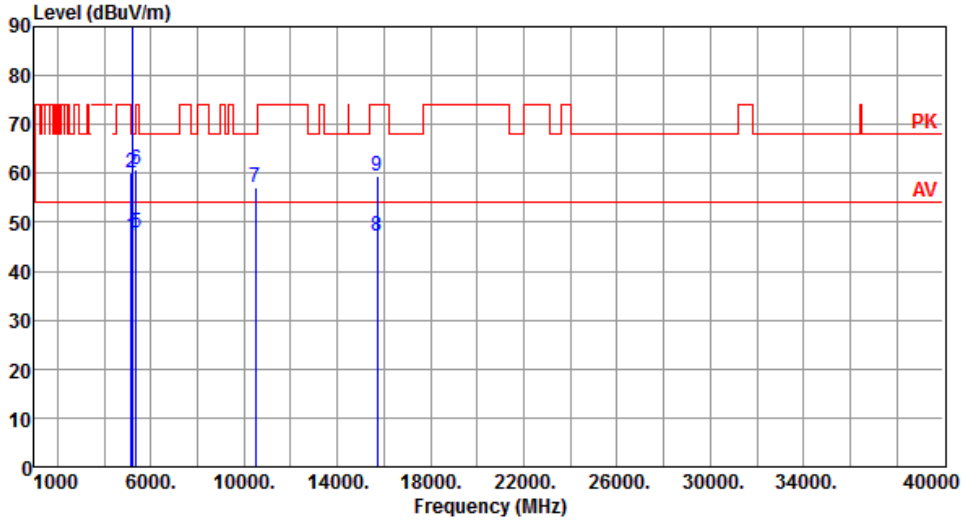
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



		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	45.27	54.00	-8.73	39.06	6.21	Average	100	140
2		5150.00	58.21	74.00	-15.79	52.00	6.21	Peak	100	140
3	*	5240.00	106.75			100.46	6.29	Average	100	140
4	*	5240.00	115.77			109.48	6.29	Peak	100	140
5		5350.00	47.69	54.00	-6.31	41.24	6.45	Average	100	140
6		5350.00	59.74	74.00	-14.26	53.29	6.45	Peak	100	140
7		10480.00	57.11	68.20	-11.09	41.28	15.83	Peak	100	19
8		15720.00	47.14	54.00	-6.86	31.11	16.03	Average	100	161
9		15720.00	59.47	74.00	-14.53	43.44	16.03	Peak	100	161

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: "*" is Peak / Average value of fundamental frequency

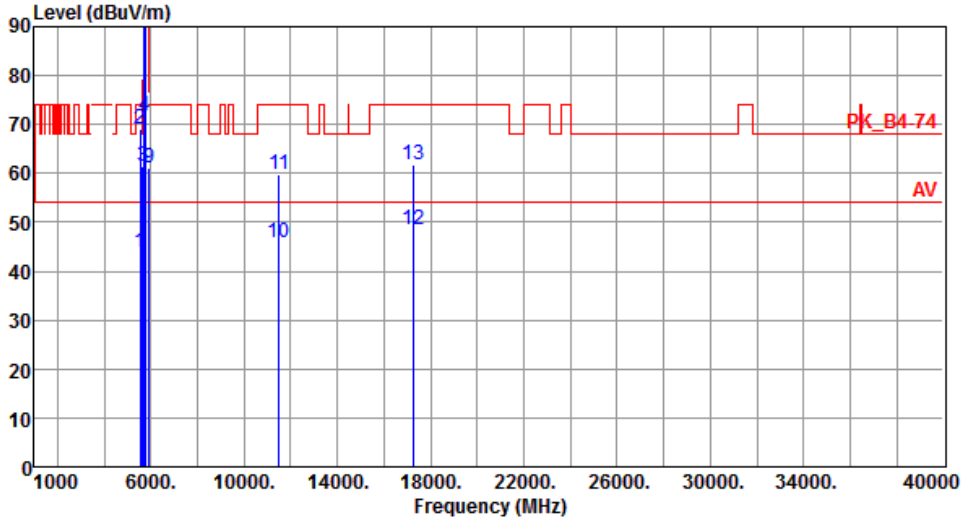
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



		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	47.18	54.00	-6.82	40.97	6.21	Average	258	154
2		5150.00	60.09	74.00	-13.91	53.88	6.21	Peak	258	154
3	*	5240.00	107.15			100.86	6.29	Average	258	154
4	*	5240.00	116.84			110.55	6.29	Peak	258	154
5		5350.00	47.75	54.00	-6.25	41.30	6.45	Average	258	154
6		5350.00	60.80	74.00	-13.20	54.35	6.45	Peak	258	154
7		10480.00	57.29	68.20	-10.91	41.46	15.83	Peak	100	313
8		15720.00	47.32	54.00	-6.68	31.29	16.03	Average	100	204
9		15720.00	59.57	74.00	-14.43	43.54	16.03	Peak	100	204

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: "*" is Peak / Average value of fundamental frequency

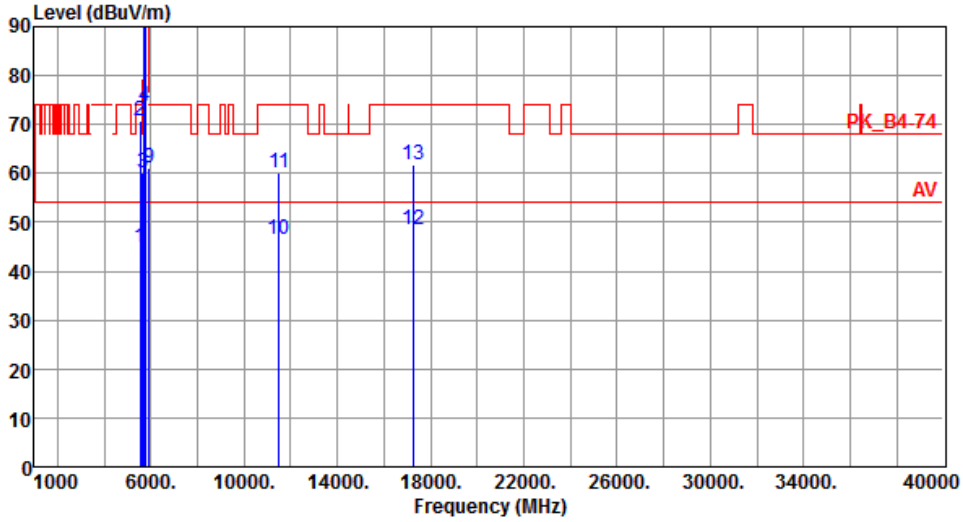
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5545.00	43.87	54.00	-10.13	37.19	6.68	Average	100	58
2		5545.00	68.99	74.00	-5.01	62.31	6.68	Peak	100	58
3		5650.00	61.39	68.20	-6.81	54.53	6.86	Peak	100	49
4		5700.00	71.84	105.20	-33.36	64.88	6.96	Peak	100	49
5		5720.00	89.64	110.80	-21.16	82.64	7.00	Peak	100	49
6		5725.00	95.64	122.20	-26.56	88.64	7.00	Peak	100	49
7	*	5745.00	106.89			99.85	7.04	Average	100	49
8	*	5745.00	116.74			109.70	7.04	Peak	100	49
9		5925.00	61.17	68.20	-7.03	53.79	7.38	Peak	100	49
10		11490.00	45.75	54.00	-8.25	29.26	16.49	Average	100	175
11		11490.00	59.90	74.00	-14.10	43.41	16.49	Peak	100	175
12		17235.00	48.63	54.00	-5.37	30.26	18.37	Average	100	165
13		17235.00	61.93	74.00	-12.07	43.56	18.37	Peak	100	165

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: "*" is Peak / Average value of fundamental frequency

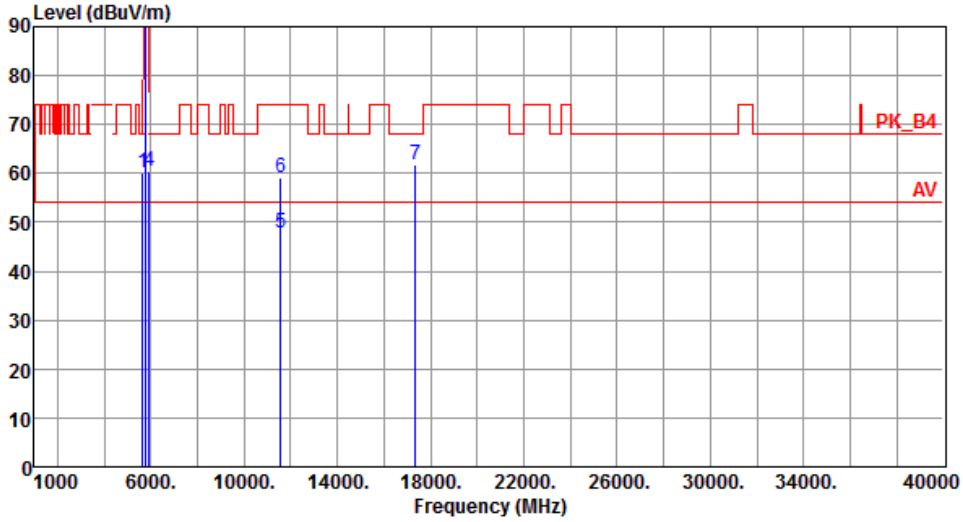
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5545.00	44.67	54.00	-9.33	37.99	6.68	Average	100	298
2		5545.00	70.65	74.00	-3.35	63.97	6.68	Peak	100	298
3		5650.00	60.26	68.20	-7.94	53.40	6.86	Peak	214	309
4		5700.00	73.75	105.20	-31.45	66.79	6.96	Peak	214	309
5		5720.00	91.37	110.80	-19.43	84.37	7.00	Peak	214	309
6		5725.00	97.46	122.20	-24.74	90.46	7.00	Peak	214	309
7	*	5745.00	108.03			100.99	7.04	Average	214	309
8	*	5745.00	117.90			110.86	7.04	Peak	214	309
9		5925.00	61.23	68.20	-6.97	53.85	7.38	Peak	214	309
10		11490.00	46.46	54.00	-7.54	29.97	16.49	Average	100	85
11		11490.00	60.16	74.00	-13.84	43.67	16.49	Peak	100	85
12		17235.00	48.62	54.00	-5.38	30.25	18.37	Average	100	282
13		17235.00	61.82	74.00	-12.18	43.45	18.37	Peak	100	282

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: "*" is Peak / Average value of fundamental frequency

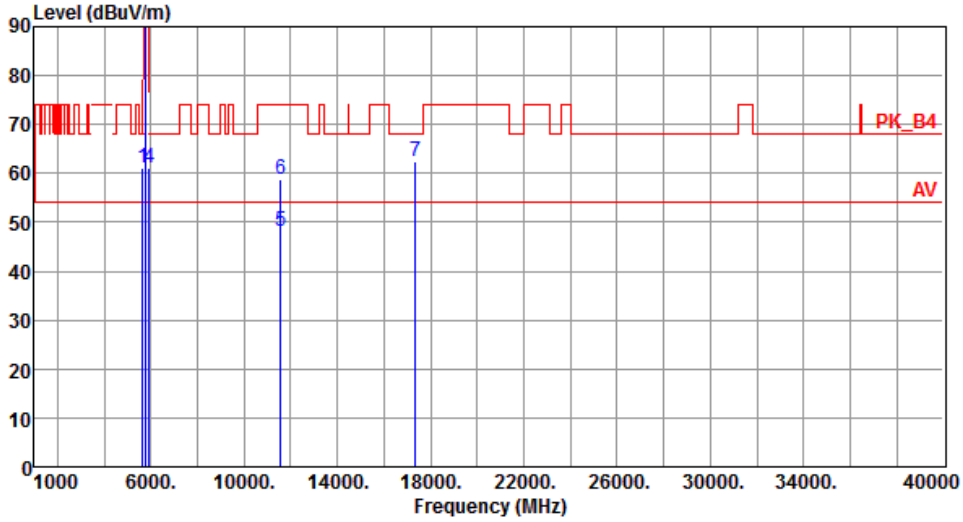
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



		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	59.97	68.20	-8.23	53.11	6.86	Peak	100	42
2	*	5785.00	106.89			99.76	7.13	Average	100	42
3	*	5785.00	116.21			109.08	7.13	Peak	100	42
4		5925.00	60.57	68.20	-7.63	53.19	7.38	Peak	100	42
5		11570.00	47.94	54.00	-6.06	31.55	16.39	Average	100	170
6		11570.00	58.96	74.00	-15.04	42.57	16.39	Peak	100	170
7		17355.00	61.91	68.20	-6.29	43.18	18.73	Peak	100	157

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: "*" is Peak / Average value of fundamental frequency

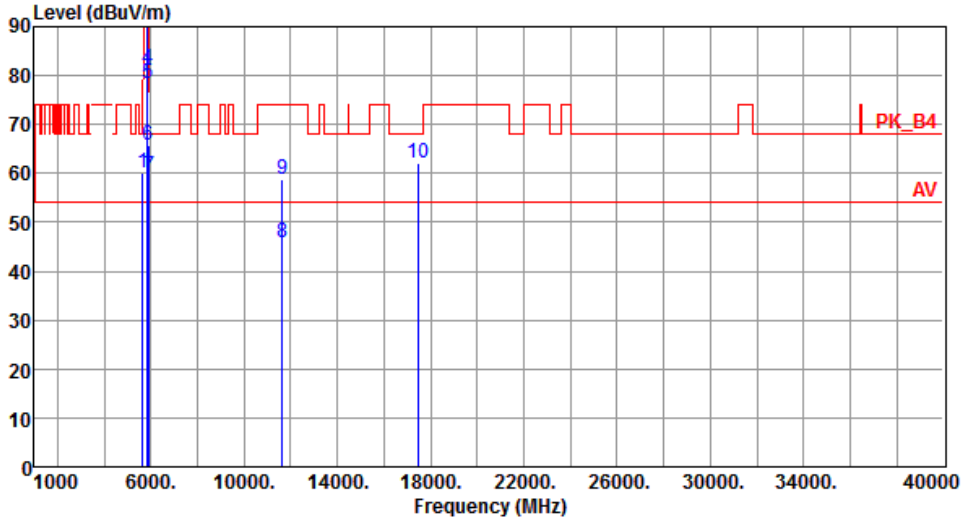
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



		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	61.14	68.20	-7.06	54.28	6.86	Peak	218	290
2	*	5785.00	108.28			101.15	7.13	Average	218	290
3	*	5785.00	117.90			110.77	7.13	Peak	218	290
4		5925.00	61.03	68.20	-7.17	53.65	7.38	Peak	218	290
5		11570.00	48.12	54.00	-5.88	31.73	16.39	Average	188	89
6		11570.00	58.80	74.00	-15.20	42.41	16.39	Peak	188	89
7		17355.00	62.52	68.20	-5.68	43.79	18.73	Peak	100	284

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: "*" is Peak / Average value of fundamental frequency

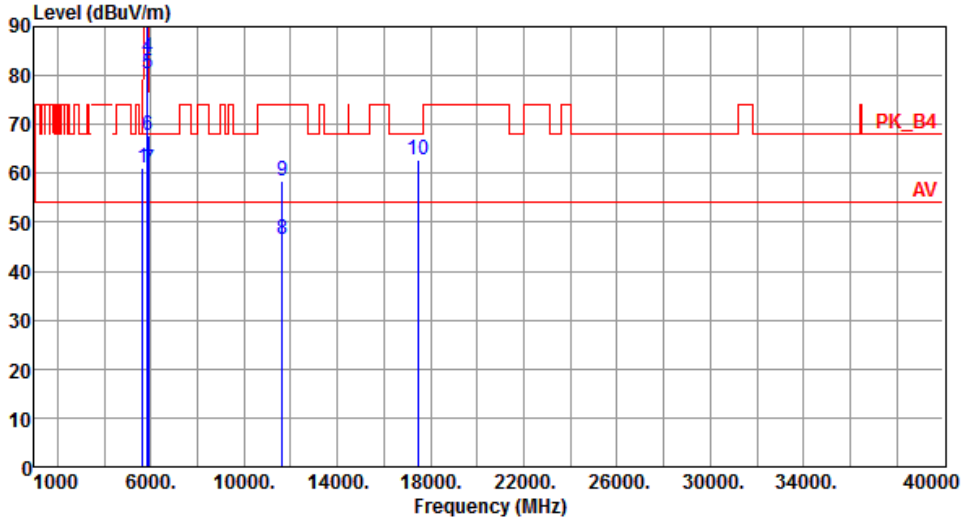
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



		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	60.17	68.20	-8.03	53.31	6.86	Peak	100	41
2	*	5825.00	106.64			99.44	7.20	Average	100	41
3	*	5825.00	115.64			108.44	7.20	Peak	100	41
4		5850.00	81.31	122.20	-40.89	74.07	7.24	Peak	100	41
5		5855.00	78.31	110.80	-32.49	71.05	7.26	Peak	100	41
6		5875.00	65.85	105.20	-39.35	58.56	7.29	Peak	100	41
7		5925.00	59.47	68.20	-8.73	52.09	7.38	Peak	100	41
8		11650.00	45.84	54.00	-8.16	29.57	16.27	Average	100	169
9		11650.00	58.89	74.00	-15.11	42.62	16.27	Peak	100	169
10		17475.00	62.04	68.20	-6.16	42.93	19.11	Peak	100	160

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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		

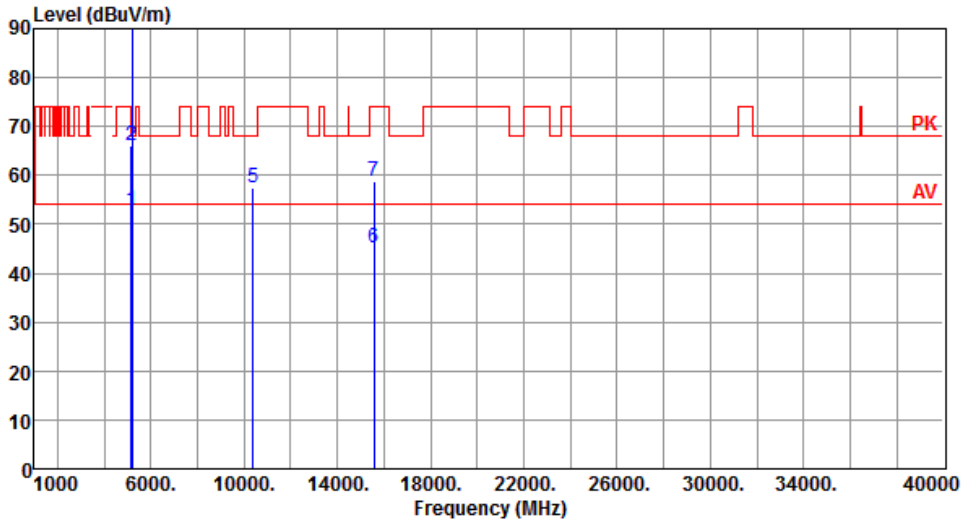


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5650.00	61.21	68.20	-6.99	54.35	6.86	Peak	212	288
2	*	5825.00	107.76			100.56	7.20	Average	212	288
3	*	5825.00	116.96			109.76	7.20	Peak	212	288
4		5850.00	83.53	122.20	-38.67	76.29	7.24	Peak	212	288
5		5855.00	80.27	110.80	-30.53	73.01	7.26	Peak	212	288
6		5875.00	67.61	105.20	-37.59	60.32	7.29	Peak	212	288
7		5925.00	60.73	68.20	-7.47	53.35	7.38	Peak	212	288
8		11650.00	46.51	54.00	-7.49	30.24	16.27	Average	100	87
9		11650.00	58.58	74.00	-15.42	42.31	16.27	Peak	100	87
10		17475.00	62.70	68.20	-5.50	43.59	19.11	Peak	100	284

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: "*" is Peak / Average value of fundamental frequency

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

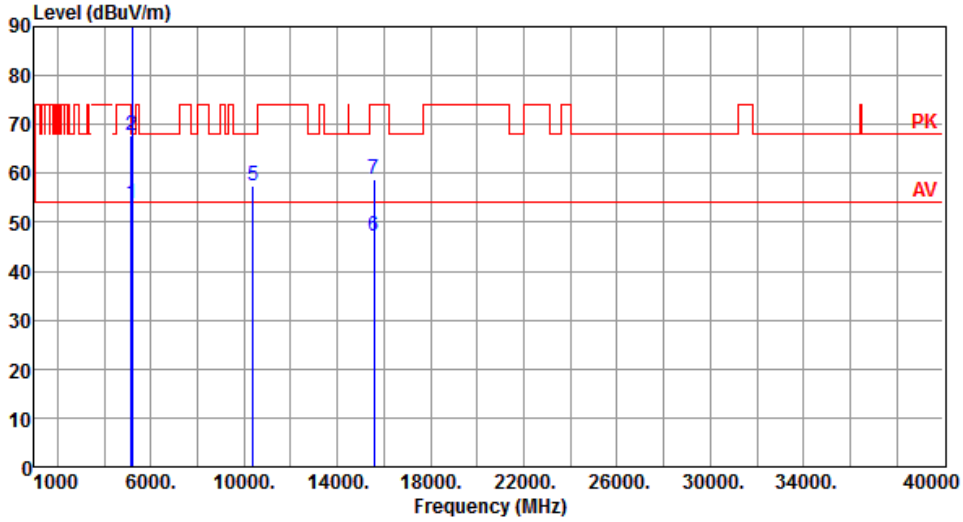
Modulation	VHT40	**Test Freq. (MHz)**	5190
Polarization	Horizontal		



		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	52.80	54.00	-1.20	46.59	6.21	Average	100	128
2		5150.00	66.25	74.00	-7.75	60.04	6.21	Peak	100	128
3	*	5190.00	97.33			91.11	6.22	Average	100	128
4	*	5190.00	107.05			100.83	6.22	Peak	100	128
5		10380.00	57.35	68.20	-10.85	41.59	15.76	Peak	100	23
6		15570.00	45.32	54.00	-8.68	28.99	16.33	Average	100	157
7		15570.00	58.69	74.00	-15.31	42.36	16.33	Peak	100	157

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: "*" is Peak / Average value of fundamental frequency

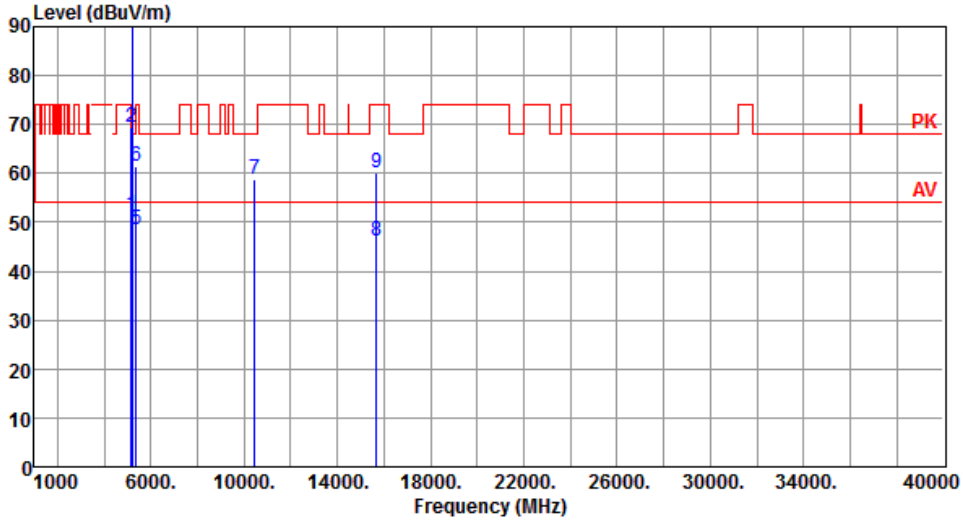
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



		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	53.87	54.00	-0.13	47.66	6.21	Average	269	156
2		5150.00	67.68	74.00	-6.32	61.47	6.21	Peak	269	156
3	*	5190.00	98.91			92.69	6.22	Average	269	156
4	*	5190.00	107.79			101.57	6.22	Peak	269	156
5		10380.00	57.33	68.20	-10.87	41.57	15.76	Peak	100	320
6		15570.00	47.11	54.00	-6.89	30.78	16.33	Average	100	208
7		15570.00	58.92	74.00	-15.08	42.59	16.33	Peak	100	208

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: "*" is Peak / Average value of fundamental frequency

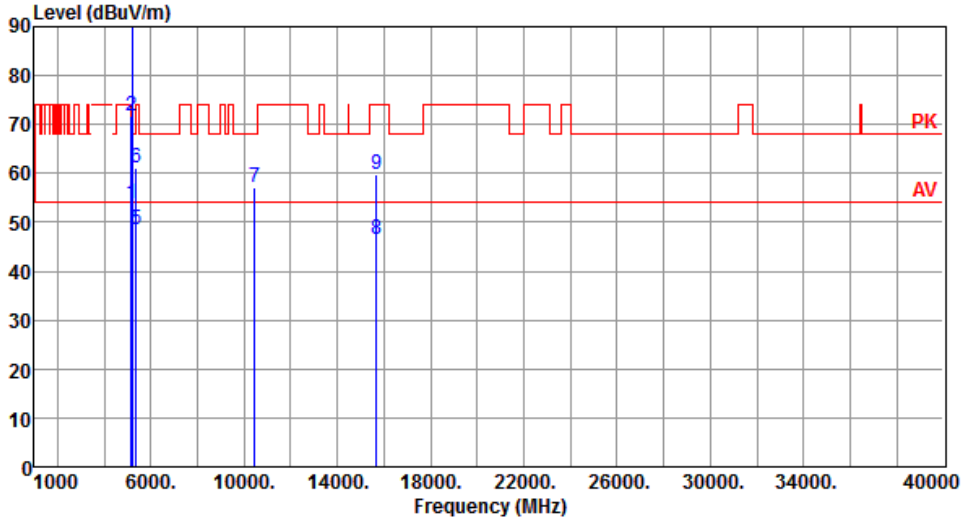
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



		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	51.64	54.00	-2.36	45.43	6.21	Average	100	131
2		5150.00	69.54	74.00	-4.46	63.33	6.21	Peak	100	131
3	*	5230.00	104.21			97.94	6.27	Average	100	131
4	*	5230.00	113.57			107.30	6.27	Peak	100	131
5		5350.00	48.64	54.00	-5.36	42.19	6.45	Average	100	131
6		5350.00	61.57	74.00	-12.43	55.12	6.45	Peak	100	131
7		10460.00	58.64	68.20	-9.56	42.82	15.82	Peak	100	23
8		15690.00	46.23	54.00	-7.77	30.14	16.09	Average	100	168
9		15690.00	59.99	74.00	-14.01	43.90	16.09	Peak	100	168

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: "*" is Peak / Average value of fundamental frequency

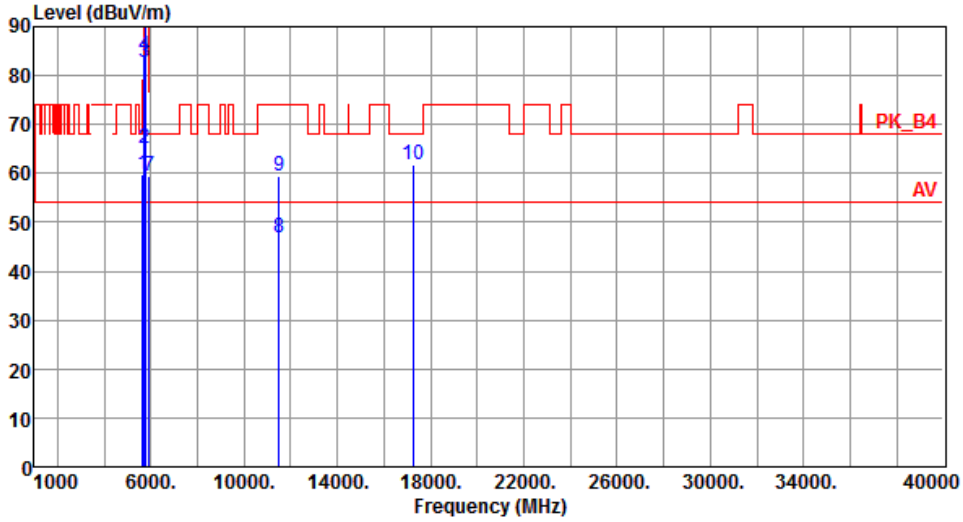
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



		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	53.71	54.00	-0.29	47.50	6.21	Average	251	156
2		5150.00	71.88	74.00	-2.12	65.67	6.21	Peak	251	156
3	*	5230.00	105.53			99.26	6.27	Average	251	156
4	*	5230.00	114.63			108.36	6.27	Peak	251	156
5		5350.00	48.34	54.00	-5.66	41.89	6.45	Average	251	156
6		5350.00	61.03	74.00	-12.97	54.58	6.45	Peak	251	156
7		10460.00	57.21	68.20	-10.99	41.39	15.82	Peak	100	65
8		15690.00	46.47	54.00	-7.53	30.38	16.09	Average	100	79
9		15690.00	59.84	74.00	-14.16	43.75	16.09	Peak	100	79

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: "*" is Peak / Average value of fundamental frequency

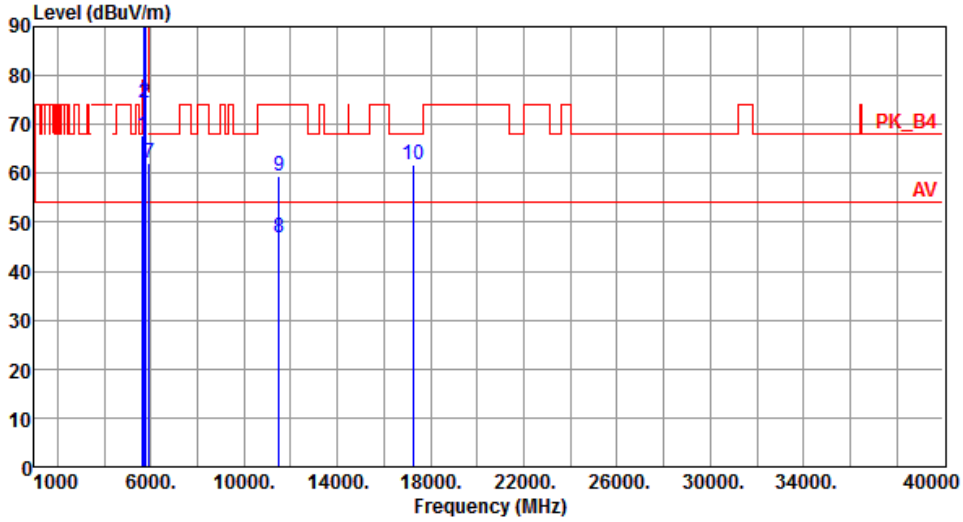
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



		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	59.71	68.20	-8.49	52.85	6.86	Peak	100	43
2		5700.00	65.23	105.20	-39.97	58.27	6.96	Peak	100	43
3		5720.00	82.71	110.80	-28.09	75.71	7.00	Peak	100	43
4		5725.00	83.92	122.20	-38.28	76.92	7.00	Peak	100	43
5	*	5755.00	104.87			97.80	7.07	Average	100	43
6	*	5755.00	114.25			107.18	7.07	Peak	100	43
7		5925.00	59.58	68.20	-8.62	52.20	7.38	Peak	100	43
8		11510.00	46.69	54.00	-7.31	30.21	16.48	Average	100	173
9		11510.00	59.53	74.00	-14.47	43.05	16.48	Peak	100	173
10		17265.00	61.64	68.20	-6.56	43.18	18.46	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).
Note 3: "*" is Peak / Average value of fundamental frequency

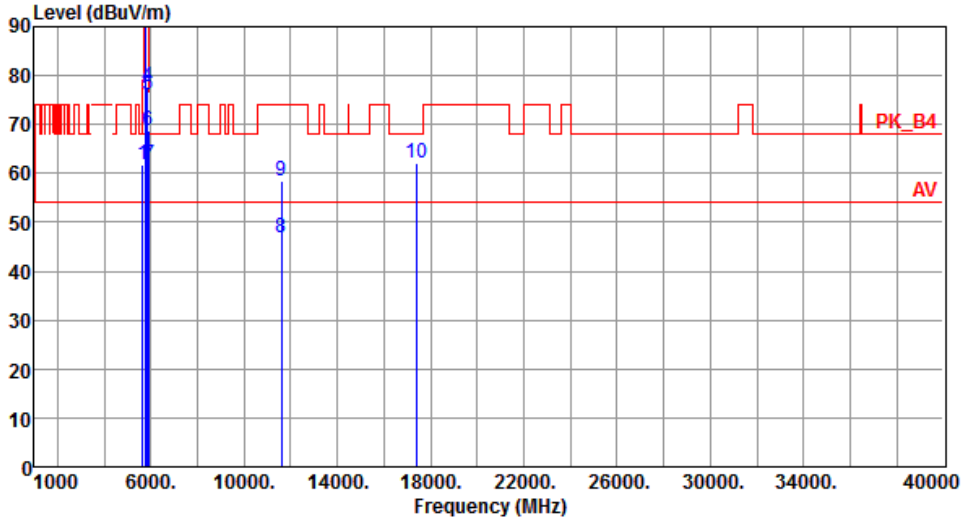
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



		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	67.77	68.20	-0.43	60.91	6.86	Peak	201	307
2		5700.00	74.48	105.20	-30.72	67.52	6.96	Peak	201	307
3		5720.00	92.26	110.80	-18.54	85.26	7.00	Peak	201	307
4		5725.00	92.64	122.20	-29.56	85.64	7.00	Peak	201	307
5	*	5755.00	106.96			99.89	7.07	Average	201	307
6	*	5755.00	116.73			109.66	7.07	Peak	201	307
7		5925.00	62.02	68.20	-6.18	54.64	7.38	Peak	201	307
8		11510.00	46.69	54.00	-7.31	30.21	16.48	Average	100	253
9		11510.00	59.52	74.00	-14.48	43.04	16.48	Peak	100	253
10		17265.00	61.73	68.20	-6.47	43.27	18.46	Peak	100	289

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: "*" is Peak / Average value of fundamental frequency

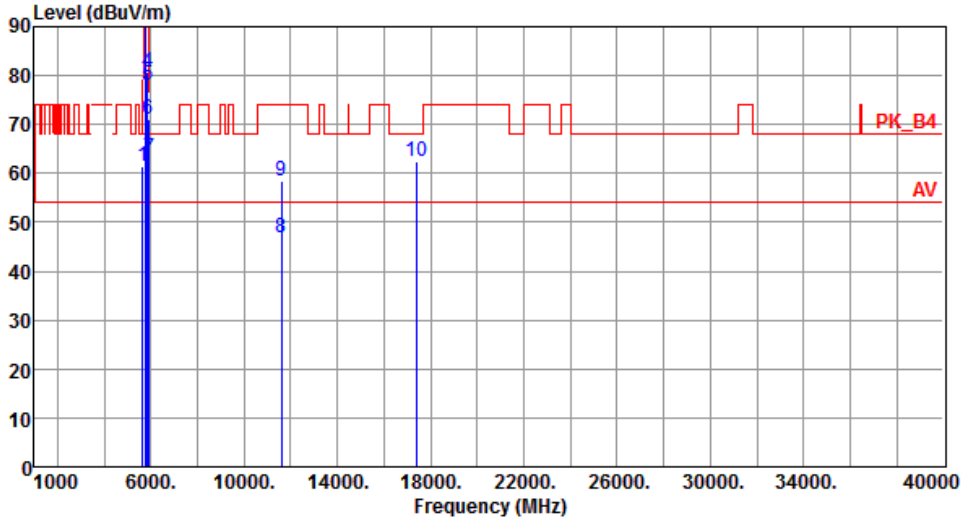
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



		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	61.69	68.20	-6.51	54.83	6.86	Peak	100	43
2	*	5795.00	104.45			97.30	7.15	Average	100	43
3	*	5795.00	113.89			106.74	7.15	Peak	100	43
4		5850.00	77.58	122.20	-44.62	70.34	7.24	Peak	100	43
5		5855.00	75.89	110.80	-34.91	68.63	7.26	Peak	100	43
6		5875.00	68.87	105.20	-36.33	61.58	7.29	Peak	100	43
7		5925.00	61.89	68.20	-6.31	54.51	7.38	Peak	100	43
8		11590.00	46.83	54.00	-7.17	30.47	16.36	Average	100	250
9		11590.00	58.40	74.00	-15.60	42.04	16.36	Peak	100	250
10		17385.00	62.18	68.20	-6.02	43.35	18.83	Peak	100	289

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: "*" is Peak / Average value of fundamental frequency

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

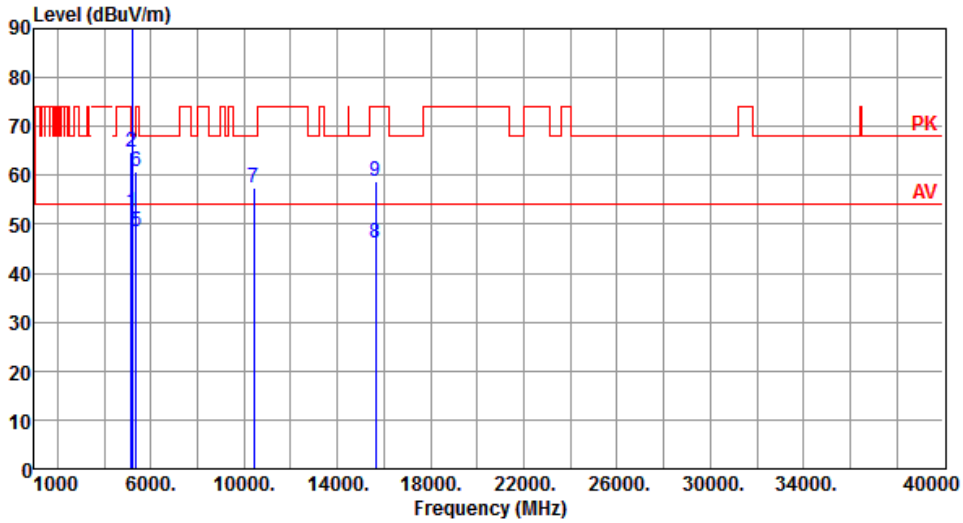


		Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1		5650.00	61.45	68.20	-6.75	54.59	6.86	Peak	207	290
2	*	5795.00	105.60			98.45	7.15	Average	207	290
3	*	5795.00	115.77			108.62	7.15	Peak	207	290
4		5850.00	80.71	122.20	-41.49	73.47	7.24	Peak	207	290
5		5855.00	77.92	110.80	-32.88	70.66	7.26	Peak	207	290
6		5875.00	70.94	105.20	-34.26	63.65	7.29	Peak	207	290
7		5925.00	63.24	68.20	-4.96	55.86	7.38	Peak	207	290
8		11590.00	46.71	54.00	-7.29	30.35	16.36	Average	100	171
9		11590.00	58.60	74.00	-15.40	42.24	16.36	Peak	100	171
10		17385.00	62.58	68.20	-5.62	43.75	18.83	Peak	100	166

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: "*" is Peak / Average value of fundamental frequency

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

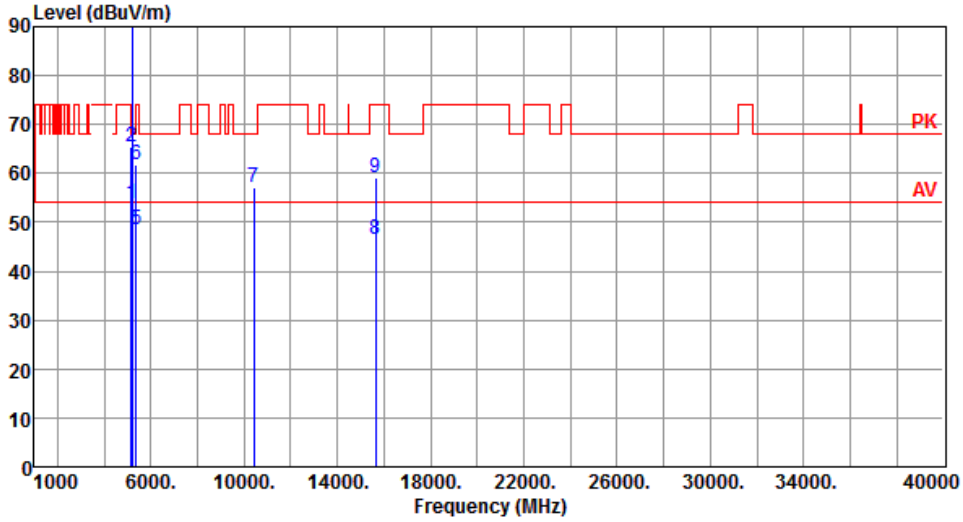
Modulation	VHT80	**Test Freq. (MHz)**	5210
Polarization	Horizontal		



		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	52.46	54.00	-1.54	46.25	6.21	Average	100	127
2		5150.00	64.78	74.00	-9.22	58.57	6.21	Peak	100	127
3	*	5210.00	93.77			87.54	6.23	Average	100	127
4	*	5210.00	103.96			97.73	6.23	Peak	100	127
5		5350.00	48.34	54.00	-5.66	41.89	6.45	Average	100	127
6		5350.00	60.84	74.00	-13.16	54.39	6.45	Peak	100	127
7		10420.00	57.48	68.20	-10.72	41.69	15.79	Peak	100	26
8		15630.00	46.20	54.00	-7.80	29.99	16.21	Average	100	157
9		15630.00	58.92	74.00	-15.08	42.71	16.21	Peak	100	157

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: ”*” is Peak / Average value of fundamental frequency

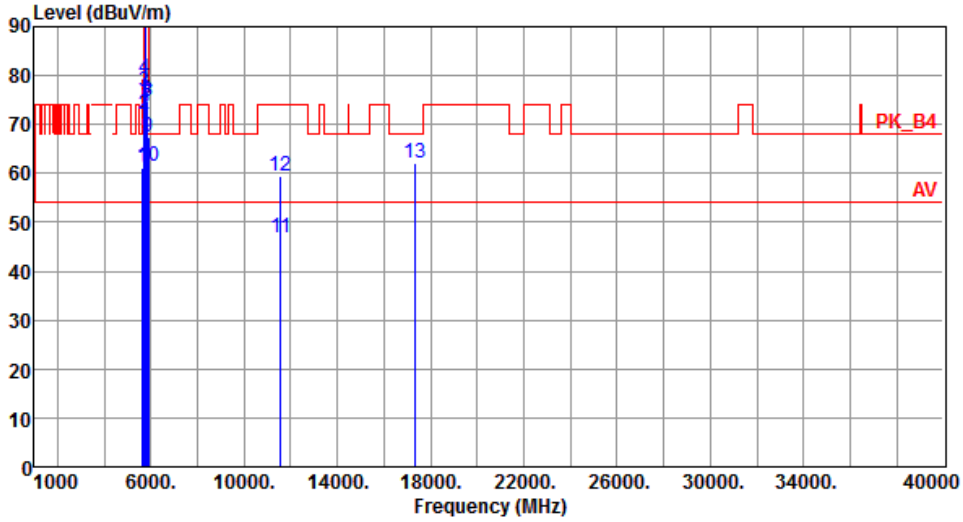
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



		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	53.89	54.00	-0.11	47.68	6.21	Average	266	160
2		5150.00	65.58	74.00	-8.42	59.37	6.21	Peak	266	160
3	*	5210.00	96.06			89.83	6.23	Average	266	160
4	*	5210.00	106.18			99.95	6.23	Peak	266	160
5		5350.00	48.51	54.00	-5.49	42.06	6.45	Average	266	160
6		5350.00	61.71	74.00	-12.29	55.26	6.45	Peak	266	160
7		10420.00	57.15	68.20	-11.05	41.36	15.79	Peak	100	96
8		15630.00	46.60	54.00	-7.40	30.39	16.21	Average	100	200
9		15630.00	59.19	74.00	-14.81	42.98	16.21	Peak	100	200

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: "*" is Peak / Average value of fundamental frequency

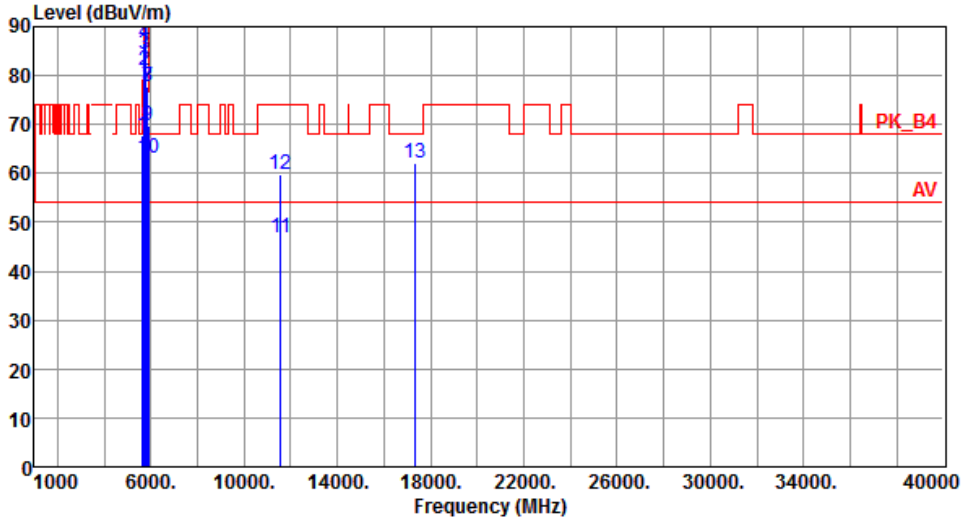
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



		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	61.10	68.20	-7.10	54.24	6.86	Peak	100	42
2		5700.00	71.97	105.20	-33.23	65.01	6.96	Peak	100	42
3		5720.00	76.87	110.80	-33.93	69.87	7.00	Peak	100	42
4		5725.00	79.30	122.20	-42.90	72.30	7.00	Peak	100	42
5	*	5775.00	100.60			93.49	7.11	Average	100	42
6	*	5775.00	110.15			103.04	7.11	Peak	100	42
7		5850.00	74.15	122.20	-48.05	66.91	7.24	Peak	100	42
8		5855.00	74.83	110.80	-35.97	67.57	7.26	Peak	100	42
9		5875.00	67.55	105.20	-37.65	60.26	7.29	Peak	100	42
10		5925.00	61.44	68.20	-6.76	54.06	7.38	Peak	100	42
11		11550.00	46.73	54.00	-7.27	30.31	16.42	Average	100	179
12		11550.00	59.42	74.00	-14.58	43.00	16.42	Peak	100	179
13		17325.00	62.22	68.20	-5.98	43.58	18.64	Peak	100	48

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: "*" is Peak / Average value of fundamental frequency

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	67.80	68.20	-0.40	60.94	6.86	Peak	207	307
2		5700.00	80.88	105.20	-24.32	73.92	6.96	Peak	207	307
3		5720.00	84.24	110.80	-26.56	77.24	7.00	Peak	207	307
4		5725.00	86.76	122.20	-35.44	79.76	7.00	Peak	207	307
5	*	5775.00	102.44			95.33	7.11	Average	207	307
6	*	5775.00	112.08			104.97	7.11	Peak	207	307
7		5850.00	77.69	122.20	-44.51	70.45	7.24	Peak	207	307
8		5855.00	77.68	110.80	-33.12	70.42	7.26	Peak	207	307
9		5875.00	69.74	105.20	-35.46	62.45	7.29	Peak	207	307
10		5925.00	63.19	68.20	-5.01	55.81	7.38	Peak	207	307
11		11550.00	46.84	54.00	-7.16	30.42	16.42	Average	100	259
12		11550.00	59.63	74.00	-14.37	43.21	16.42	Peak	100	259
13		17325.00	62.13	68.20	-6.07	43.49	18.64	Peak	100	289

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: "*" is Peak / Average value of fundamental frequency

3.6 Frequency Stability

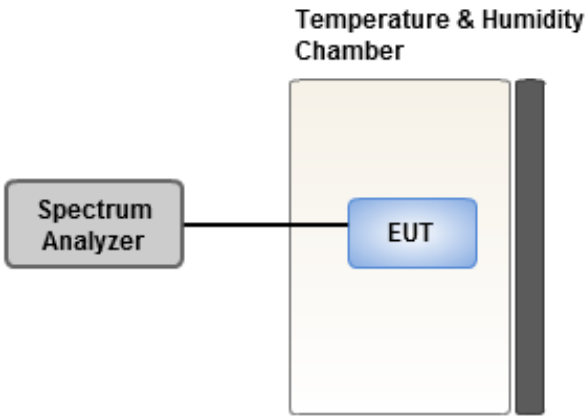
3.6.1 Limit of Frequency Stability

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°CVmax	6.65	6.98	7.09	6.95
T20°CVmin	3.88	4.40	3.65	3.69
T50°CVnom	3.33	3.44	3.82	3.29
T40°CVnom	3.97	4.03	3.79	4.23
T30°CVnom	2.49	2.68	2.66	2.55
T20°CVnom	2.63	2.49	2.71	2.99
T10°CVnom	3.01	3.33	3.56	3.26
T0°CVnom	3.24	3.68	3.63	3.75
T-10°CVnom	2.66	3.20	2.64	3.41
T-20°CVnom	0.96	1.40	1.34	1.28
T-30°CVnom	1.38	1.97	1.78	2.14
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°CVmax	6.19	6.52	5.97	6.00
T20°CVmin	3.91	4.48	4.40	3.97
T50°CVnom	3.05	3.31	2.97	3.36
T40°CVnom	3.35	3.34	3.53	3.37
T30°CVnom	2.74	2.81	2.44	3.08
T20°CVnom	2.68	2.88	2.58	2.95
T10°CVnom	2.40	1.91	2.92	2.32
T0°CVnom	3.22	3.22	3.22	3.41
T-10°CVnom	2.84	3.11	3.02	2.86
T-20°CVnom	0.75	0.76	0.67	0.56
T-30°CVnom	1.45	1.73	1.94	1.20
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.

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

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

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